PENYRENGLYN LANDSLIDE RISK MANAGEMENT WORKS

Green Infrastructure Statement

Project no. 4021526

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Contents

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Green Infrastructure Statement – Penyrenglyn Landslide Risk Management Works

1.0 Introduction

This document demonstrates the positive multi-functional outcomes that are being delivered as part of this project. The stepwise approach to avoid, minimise and mitigate impacts to the environment has been applied from the outset, and at all stages of project development. In this context the environment is considered in its widest sense, but the statement will also draw out specifically the net benefit for biodiversity and ecosystem resilience delivered as part of the project.

This Report has been produced for proposed drainage works at the former Ynysfeio Colliery spoil tip, also referred to as Penyrenglyn tip, hereafter referred as the 'proposed project', or 'project'.

The project site (the 'site') is situated on the southwestern slopes of Mynydd Ynysfeio along the eastern side of the Rhondda Fawr Valley (Figure 1-1). The site is located directly north of Penyrenglyn, situated between the village of Treherbert to the east and the town of Treorchy to the west. The site comprises valley slopes on which coil spoil had been placed.

The purpose of the proposed project is to install positive drainage measures into slopes to reduce infiltration into the coal tip material, reducing the likelihood of material slips and mitigating future risk to public health and safety.

The project is described in the Project Environmental Report (PER) (Binnies UK Ltd, 2025a) and illustrated on the Environmental Masterplan in Appendix A.

The drainage works are detailed in the Drainage Strategy Report (Binnies UK Ltd, 2025b) and General Arrangement Plan provided with the planning application.

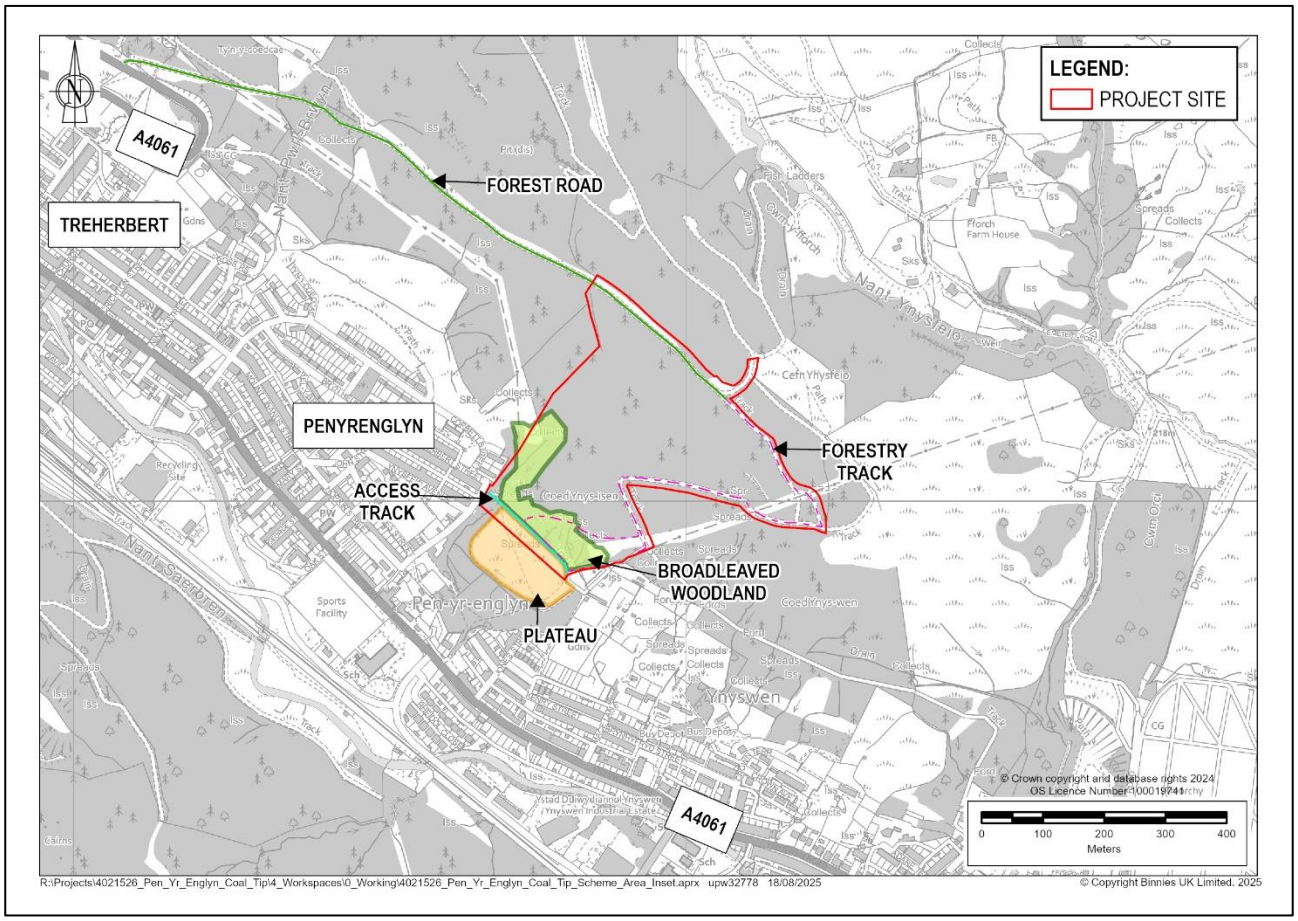

Figure 1-1 Location Plan.

The following additional project documents are also relevant to this Green Infrastructure Statement:

- Ecology Report to support the planning application (Binnies UK Ltd, 2025c)
- Habitat Condition Assessment, Floristic Survey and INNS Survey Report (Binnies UK Ltd, 2024)
- Landscape and Visual Appraisal (Binnies UK Ltd, 2025d)
- Arboricultural Impact Assessment (RSK ADAS, 2025).

2.0 Baseline

2.1 Green Infrastructure Assessment & Strategic Context

In the absence of a Green Infrastructure Assessment (GIA) prepared by the local planning authority, the South Central Wales Area Statement (NRW, 2024a), including ecosystem

profiles, and other available sources of information have been used to gain an understanding of the wider strategic area. In line with PPW12, in the absence of a GIA the Building with Nature Standards Framework (BwNF) (Building with Nature, 2022) is used to assess the proposed development's green infrastructure provision against.

Biodiversity

Climate change and loss of biodiversity are a threat to sustainable management of natural resources. Whilst South Central contains exceptional ecosystems such as ffridd, ecosystems do need protecting and manging to maintain them, and in some cases to restore them (NRW, 2024a).

The importance of colliery spoil habitat is reinforced within the Valley Hills ecosystem profile for South Central (NRW, 2022a). The Valley Hills ecosystems support a range of reptiles and amphibians, invertebrates on colliery spoil, ffridd and upland plateau birds, birds of prey, willow tit and nightjar. Pressures to open mosaic habitats include scrub or bracken encroachment, inappropriate tree planting, colonisation of INNS, climate change including temperature rise and fire risk, dominance of species and loss of habitat diversity, fragmentation, overgrazing, lack of management and urban fringe impacts such as tipping and unauthorised vehicular access.

The grassland ecosystems within South Central encompass varying quality of grasslands (NRW, 2022b), and it is noted 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 (NRW, 2022b). Threats to grassland include scrub encroachment, colonisation of INNS, and damage caused by recreation.

The woodland ecosystems within South Central include a mixture of native and non-native woodlands of varying ages within a range of ecological conditions (NRW, 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. Threats to woodlands include felling, disease, spread of INNS, species dominance resulting in reduced species, structural, and age diversity, overshading of ground flora and lack of open space for natural regeneration.

The Rhondda Cynon Taf Local Nature Partnership Action for Nature Plan identifies habitats and species of importance to improve ecosystem resilience in the borough, and actions to support these. Habitats identified are grasslands, colliery spoil, heathland, ffridd, crags and scree, woodland, scrub and hedgerows, freshwater and urban habitats as well as various plant and animal species.

Rhondda Cynon Taf County Borough Council's Tree and woodland strategy 2022-2032 (RCTCBC, 2022) states that approximately one third of the borough is covered by woodland. This is a valued resource and RCT aims to increase this tree cover over the subsequent 10 years, particularly as a resource within and around urban areas. Natural regeneration is favoured as the approach to extending existing woodlands. Planting will be considered in new woodland creation, though care must be taken to select appropriate species and to avoid tree planting in other important semi-natural habitats.

Supplementary Planning Guidance: Nature Conservation (RCTCBC, 2011b) notes a high extent and variety of semi-natural habitats within the borough, which support a wide range of species. Planning policy relating to nature conservation seeks to halt loss, and to protect and enhance existing ecosystems.

Priority Ecological Networks (PENs) in the terrestrial environment show areas of connectivity between Protected Sites. They 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, or situated at its margins. PENs are identified for heathland habitat through the centre of the RCT borough; woodland habitat around the western and northern borough edges; semi-natural grassland habitat across the southern part and in the north west; and small areas of localised fen habitat.

Resilient Ecological Networks (RENs) show habitat corridors through which species can move. Large areas of the RCT borough are covered by woodland, heath and grassland RENs, with localised areas only of fen and bog RENs.

Ancient woodland sites can be found within the valleys of the RCT borough, several being plantation on ancient woodland sites (PAWS) with a smaller number of ancient semi natural woodland or restored ancient woodland. NRW have stated a preference for PAWS sites to favour natural regeneration, in order to allow space for PAWS species retained within the natural seed bank to re-establish, and avoid competition with manually added species, which is in line with recommendations in the South Central woodlands ecosystem profile.

Health and wellbeing of the local community

South Central is the most densely populated area within Wales, including 29% of the country's population and 18% of the country's urban space. The Area Statement highlights the importance of connecting people with nature, to enhance their appreciation and understanding of nature in order that they may give greater care to the environment, and to improve their physical and mental wellbeing.

Natural Resources Wales' Healthy Hillsides Project Report: Wildfire Wise Wales: A Community Based Approach (NRW, 2024b) highlights the prevalence of wildfire in the South Wales Valleys as a result of environmental, social and cultural factors. The landscape is highly susceptible to wildfire due to its vegetation typologies providing fuel, which poses a risk to human health when in proximity to people and property. Ffridd and moorland habitats in particular are highly susceptible to wildfire, as is the species of bracken which has a high fuel loading.

The South Central and South East areas of Wales score comparatively poorly in the Welsh Index of Multiple Deprivation (IMD) for all elements except housing and access to services. The RCT borough includes areas of the 10% most deprived in Wales in terms of health, community safety, income, employment, education, physical environment and overall deprivation.

Amenity and sense of place

There are approximately 750 km of Public Rights of Way (PRoWs) throughout the borough of RCT.

The Area Statement highlights the link between greenspace provision and human health, noting a requirement within the area for increasing green infrastructure in and around urban areas to deliver benefits such as cleaner air and water, protection from flooding and wildfire, improved health and recreation.

The Area Statement describes the blend of urban and rural land that is intrinsic of South Central, and the need to remove barriers between the two, enabling access to nature for those living in urban areas. However, threats of recreation and access are also acknowledged, with recreation putting pressure on habitats, and tipping and unauthorised vehicle access noted as pressures common to the urban fringe.

The Valley Hills ecosystem profile describes colliery spoil habitat as not only of physical but also of cultural importance to local communities, highlighting the industrial legacy of the area (NRW, 2022a). The sense of place resulting from the coal mining heritage is referred to in both the Rhondda Historic Landscape (Cadw, 2001) and National Landscape Character Areas 37: South Wales Valleys (NRW, 2014).

Pollution

Water environments within South Central have largely improved following detrimental effects from past industrial activity, however these environments are still recovering and new threats are posed to them as a result of increasing population and climate change. Pollution, silt and sediment release, and transport of these downstream, are threats to freshwater habitats. A catchment-based, holistic approach to water management is needed rather than disjointed localised programmes, understanding and working with natural processes.

Whilst air quality in South Central has improved since the decline in industrial activity, poor air quality is still known to have a detrimental impact on human health. Detriments to air quality include transport, agriculture, industry and wildfires. Strategically placed woodland and other green infrastructure is identified as a contributing factor to improving air quality.

The Wales Noise and Air Quality Viewer (Extrium) shows noise pollution from roads, railways and industry, with the south and south east areas of Wales containing the highest proportion of noise pollution from all three areas. Noise pollution is widespread along main roads within the RCT County Borough, with noise pollution from rail and industry being more scattered.

The majority of the RCT borough is in Zone B of the Tranquil Areas Wales map, indicating significant disturbance; areas with some disturbance or undisturbed are found in localised areas within the borough only. Dark skies vary within the borough, with a high overall light pollution compared to Wales; only 69% of the borough has a radiance percentage of under 2 compared to 91% nationally. Areas of higher light pollution are found in and around settlements, with the darker skies found in the northern part of the borough in upland areas.

Climate change resilience

Climate change puts pressure on ecosystems through increased temperatures and extreme weather events. Typically, watercourses in South Central are considered largely modified, losing variety of form and structure, and therefore biodiversity, within the river ecosystem (NRW, 2021). Identified in the Area Statement is the particular need to restore floodplains, naturalise watercourses, restore degraded upland peat habitats, integrate nature-based drainage solutions into urban infrastructure, and for catchment restoration to aid flood prevention. Climate change including temperature rise and fire risk are noted as threats to habitats within the South Central Ecosystem Profiles.

2.2 Project Baseline & how it relates to the GIA

The baseline condition of the site is as described in the Project Environmental Report (Binnies UK Ltd, 2025a) and the Ecology Report for planning (Binnies UK Ltd, 2025c). Key information only relating to green infrastructure within the site and surrounding area, along with how it relates to the wider strategic context as described in Section 2.1, is summarised below.

Biodiversity - DECC Baseline

National Planning Policy in Wales states that every development must deliver a Net Benefit for Biodiversity (NBB). The assessment below is designed to assist in the achievement of this by presenting a baseline assessment of existing ecosystems as relevant to the project with regards Diversity, Extent, Condition and Connectivity (DECC) of habitats and species. This assessment is based upon the DECCA Framework guidance provided within Planning Policy Wales Edition 12. Implementing the Section 6 Duty (Welsh Government, 2024).

Diversity

The primary drivers of diversity in and immediately adjacent the project site are the Open Mosaic Habitat on Previously Developed Land Habitat of Principal Importance (HPI) on the plateau, including an area of lowland acid grassland HPI, and the Wet Woodland HPI on the lower slopes (Figure 2-1).

The area of recently felled conifer plantation within the site, which covers most of project site above the Wet Woodland HPI, is within the Mynydd Ystradffernol site of importance for nature conservation (SINC). The small part of the SINC that is within the site does not contain the habitats for which the SINC is defined but now comprises an ecotone on coal spoil. This habitat is not a feature of the SINC designation but is likely of higher value than when it was previously a conifer plantation, the felling having created habitat similar to that recorded with the Mynydd Blaenrhondda and Mynydd Tylsaf SINC 750m to the west. The Treorchy slopes SINC 150m to the north east also has pockets of coal spoil habitat, although it is not the reason for designation. The project site now offers a stepping stone between these SINC habitats for invertebrates and birds such as nightjar. Nightjar are known to nest on the site (see Nightjar Survey Technical Note, Binnies UK Ltd, 2024a).

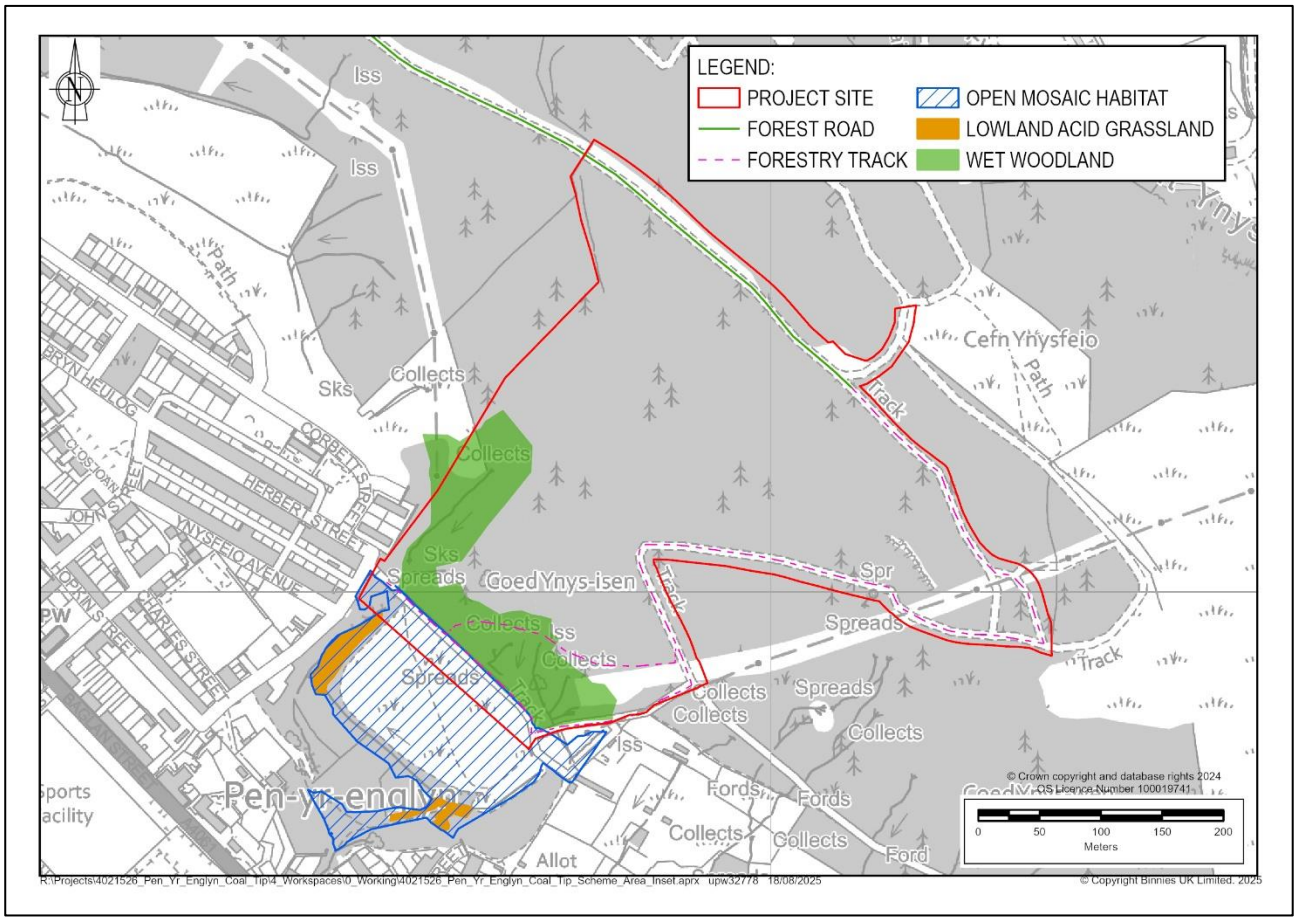

Figure 2-1 Habitats of Principal Importance.

There is a small area of Plantation on Ancient Woodland Site (PAWS) within the project site which extends out to the east, previously used as a forestry plantation. It was felled in 2023/24 and is being left to regenerate naturally in line with recommendations of the South Central woodland ecosystem profile. NRWs approach to PAWS is to classify them as ‘restored’ once conifers have been felled, but with checks and removal of conifer regrowth if needed. Natural regeneration is checked and if there isn't any then native species would be planted to support growth (confirmed in meeting with NRW Land Management Team, February 2025).

The project site is within the Pen Y Cymoedd Forest Resource Plan area. The long term primary objectives map for the Forest Resource Plan (NRW, 2023), defines the Penyrenglyn site as being ‘other land’ with no forest management objective.

The range of habitats present in the project site and surrounding area support bird species. The site supports breeding nightjar (species of principal importance under Section 7 of the Environment (Wales) Act 2016), and nightjar are known to use the nearby Mynydd Blaenrhondda and Mynydd Tylsaf SINC. Areas of clear-fell, coppiced and young forestry plantations are the principal habitats required to support breeding nightjar in this area.

The site provides suitable foraging and commuting habitat for bats, particularly within the wet woodland area and along linear watercourse features, and some trees and structures within the site have suitability to support roosting bats (Ground Level Tree Assessment

Technical Note, Binnies, 2024c). The nearby Afon Rhondda Fawr and woodland parcels provide connectivity to the wider landscape for foraging and commuting bats.

The site provides rich habitat for invertebrates, with its varying ecotone, and the plateau on the southern periphery of the site supports the nationally significant small heath butterfly (Binnies UK Ltd, 2025c). Deadwood within the wet woodland provides further invertebrate habitat.

The South Central Area Statement (Natural Resources Wales, 2024) identifies seven key ecosystems in the wider area. 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 acid 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 acid 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

This ecosystem profile is primarily focussed on river ecosystems, the significance of flood risk within the south central area, and the risks to larger freshwater habitats such as sediment transport. However, 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 also 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.

Extent

The following habitats were identified within the project site during the Phase 1 habitat survey (Binnies, 2025c):

- Open Mosaic Habitat on Previously Developed Land (OMPDL) HPI – 0.33ha (comprises the Lowland Dry Acid Grassland and Semi-Improved Neutral Grassland listed below)
- Lowland Dry Acid Grassland HPI – 0.001ha (12m^2)
- Neutral Grassland - Semi-Improved – 0.33ha
- Wet Woodland HPI / Broadleaved woodland – semi-natural - 1.09ha
- Coniferous Woodland – Recently Felled / Habitat Mosaic on Coal Spoil – 10.39ha
- Bare Ground – 0.65ha
- Bracken – Continuous – 0.02ha
- Other Tall Herb and Fern – Ruderal – 0.04ha
- Scrub – Dense/Continuous – 0.08ha
- Dry Ditch – 282m
- Running Water – 251m.

Condition

The condition of habitats within the site is as described in the Habitat Condition Assessment, Floristic Survey and INNS Survey Report (Binnies, 2024b).

Of the vegetated habitats recorded within the project site, none were assessed as being in good condition.

The OMPDL HPI (including its component habitats neutral semi-improved grassland and acid grassland), broadleaved woodland – semi-natural (wet woodland HPI), scrub - dense / continuous, dry ditch and running water were assessed as being in moderate condition. The main constraints on these were the presence of invasive non-native species, and the lack of structural or species diversity.

The Coniferous Woodland – Recently Felled / Habitat Mosaic on Coal Spoil habitat was considered to be in poor condition prior to felling. This habitat is currently an ecotone in transition, and the ground flora will likely transition into more of a tall ruderal habitat in the short term.

The remaining vegetative habitats were assessed as being in poor condition as a result of poor diversity of floral species and/or a lack of structural diversity.

The landscape habitats aspect of LANDMAP (NRW, Undated) identifies mosaic in the Bridgend/ Caerphilly/ Rhondda region as constituting a good mosaic of valuable habitats including a number of Priority habitats, but which have declined and are fragmented due to conversion to coniferous forestry. The spread of bracken was noted as a threat, and the introduction of habitat for fritillary butterflies as a potential. For Coniferous Woodland habitat, the management recommendations are to change the forestry management to improve its ecological value, and to influence the post-felling strategy to extend surrounding semi-natural habitats, as is happening through natural regeneration on the site.

Invasive non-native species (INNS) listed under Schedule 9 of the Wildlife and Countryside Act 1981 were identified on the site: Japanese knotweed and montbretia are with the project site with rhododendron and cotoneaster in nearby areas. Management of these would be in line with the South Central Area ecosystem profiles.

Connectivity

As previously stated, the site sits within the Mynydd Ystradffernol SINC; that together with Treorchy Cemetery SINC and Treherbert slopes SINC form a wildlife corridor on the eastern slopes of Rhonnda Fawr valley (see plate 1). The site also forms part of a wider network of wildlife sites composed of habitats formed from former colliery activity, including areas that were previously forestry plantations and that have now been harvested. This network provides a vital corridor for rare invertebrate assemblages or specialist bird species such as nightjar.

Connectivity of grassland and woodland within the site with the wider ecological network is demonstrated through the focal and local RENS (see section 2.1).

The primary impacts on connectivity within the study area are likely to be human disturbance and light pollution due the presence of the urban conurbations within the Rhondda Fawr Valley.

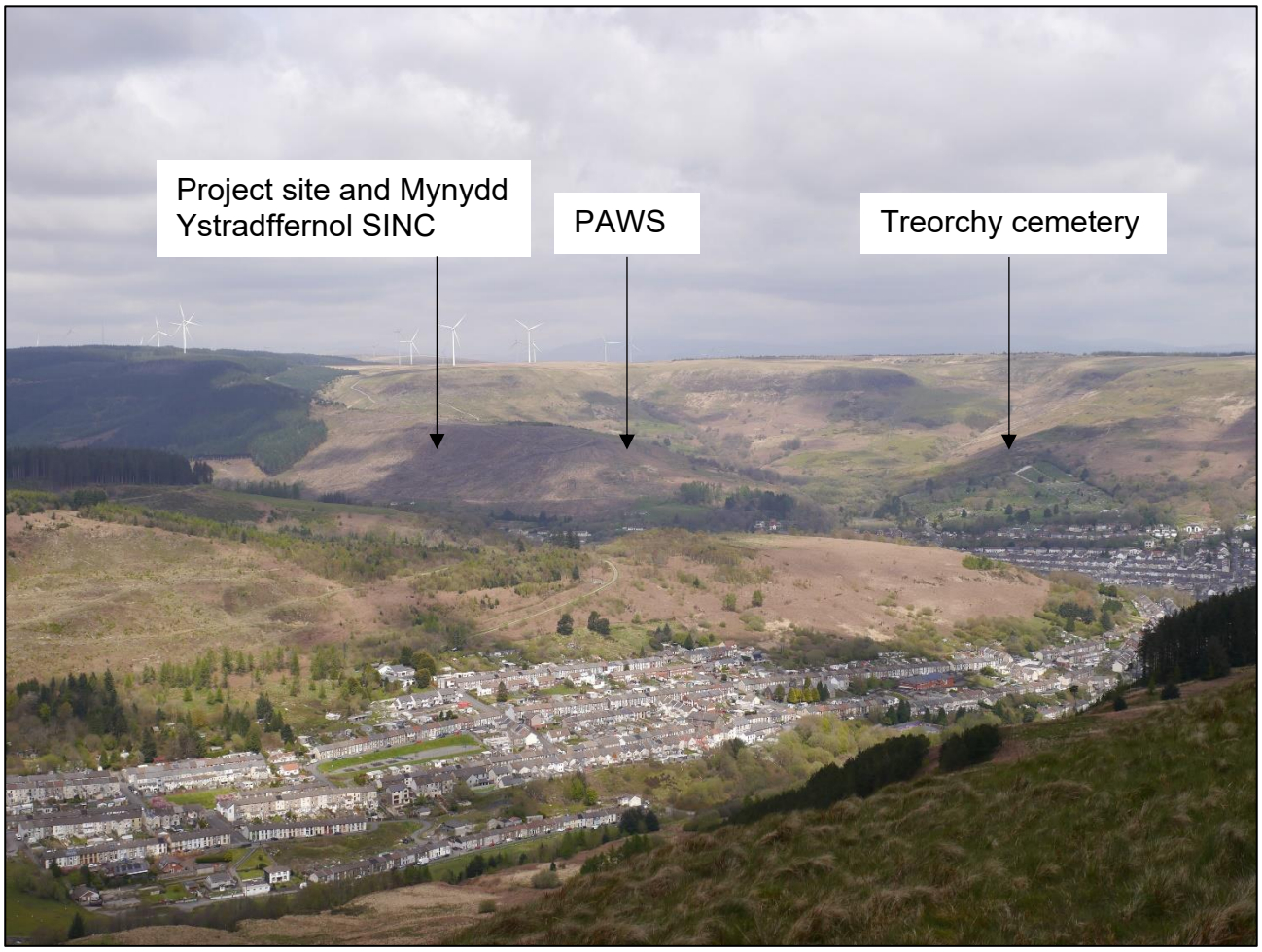

Plate 1: View from the south, showing the site in the context of the surrounding habitats.

Health and wellbeing of the local community

The South Wales Fire and Rescue Service has reported anti-social behaviour in the local area involving arson including to dumped cars. Dumped cars, arson and wildfires pose a risk to the green infrastructure in the project site; the site contains open mosaic and bracken, which are highly susceptible habitats to fire as described in the Healthy Hillsides Project Report (NRW, 2024b). Dumped cars and arson could also increase the % deprivation in terms of community safety and contribute to the area's IMD as outlined in section 2.1.

A Health Screening Advice Note (HSAN) produced for the project (NRW, 2023) also highlighted that the Treherbert and Treorchy Lower Super Output Areas are among the 30% most deprived in the Welsh IMD, with each area ranking in the 10-20% of the most deprived for at least one of the IMD attributes. The HSAN suggested that the project should consider reducing environmental hazards and improving and access to and use of green spaces.

Amenity and sense of place

The site is accessible by the public with access points onto the plateau from Herbert Street (leading to Corbett Street) from the west via an RCT-managed vehicle gate with pedestrian access, a path extending from Jones Street from the east which leads to allotment gardens, and a path that connects to Baglan Street A4061 from the south (see plate 2). There is a permissive footpath from Bryn Rhedyn opposite the community centre on Corbett Street within 200m of the site to Tyn-y-Coedcae and returning to Corbett Street; this path has benches along it and benefits from open views along the valley. The path is connected to the Herbert Street entrance to the site via Corbett Street. The site is used for walking and by dog walkers using the informal paths across the plateau and forestry tracks and also by mountain bikers and motorbikes. It is a valued public open space in the community, but public use is also an existing pressure on ecosystems. None of these paths are surfaced and could be difficult for some less able users to use.

There are no Public Rights of Way (PRoWs) connecting the site to a wider footpath network, although there is a network of PRoWs within 0.5km to the east, and 1km to the west along the forest road. The area of recently felled plantation in the project site is within Dedicated Forest under Section 16 of the Countryside and Rights of Way Act (CROW) 2000), providing for public access on foot. There is also an extensive area of open access land under the CRoW Act to the north east between Cwm Orci and Maerdy.

There is a bus stop on Corbett Street by the community centre for Stagecoach local service 121 from Tynewydd to Tonypandy via Trehebert, Pen-yr-Englyn and Treorchy. There are bus stops for longer distance routes on the nearby A4061 serving Pontypridd/Caerphilly and Blaencwm/Blaenrhondda. There is no car park specifically serving the site, but on-street parking is available on nearly residential streets.

Community facilities in the immediate area and which may promote use of the site include the community centre on Corbett Street to the west, Treorchy allotments off Jones Street to the east, and Penyrenglyn Primary School and sports fields along the A4061 to the south.

The cultural landscape services aspect of LANDMAP describes the St Gwynno area, within which the slopes of the site lie, as having a moderate sense of place/local distinctiveness, scenic quality and character and the area is noted as having a recreational amenity value indicated by picnic sites, trails and carparking. The adjacent Cefn y Rhondda area is described as having a weak sense of place, with low scenic quality and character. Car/refuse dumping is noted as a constraint.

The route and earthwork remains of a former tramway associated with the Incline Haulage System Scheduled Monument outside the project site are evidence of the past mining activity within the site. The site is within the Rhondda Historic Landscape on the Register of Historic Landscapes (Cadw, 2001), which notes that a key feature of the existing landscape character is the anthropogenic modification to the landscape in the form of colliery and industrial development, and that damage to these features would be seen as a threat. The Archaeological Desk-based Assessment (GGAT, 2022) also identifies that the principal heritage assets within the site relate to its past industrial functions, and that clearance of trees within the site and improved walkways could improve access to, and visibility of, heritage assets.

Plate 2: View along A4061 indicating the proximity of the site to Penyrenglyn centre.

Pollution

The ‘Rhondda R - source to conf Afon Rhondda Fach’ WFD river waterbody (GB109057027200) (River Rhondda) was identified in the WFD Screening Assessment (ARUP, 2022) as having a hydrological connection to the site, and is approximately 400m south-west of the plateau. The waterbody was noted as being in poor condition due to failing for fish passage.

The existing site drainage includes a watercourse that flows through the wet woodland in the west and ditches around the toe of the slopes. These connect to a series of above ground and culverted drains which ultimately connect to the Rhondda River. Sediments and pollution from the colliery spoil deposits in the project site therefore can enter the Rhondda River, part of the Taff and Rhondda Rivers SINC.

Contaminated soil as a result of mining and deposition of colliery spoil deposits is a potential cause of harm to human health and pollution to watercourses, identified as an issue in the Area Statement, and could affect the condition of the green infrastructure that the site provides.

Although the Wales Noise and Air Quality Viewer (Extrium) shows pollution from roads southwards along the A4061 from Treherbert, and rail and industrial pollution south of Treorchy, the average noise level on the site is under 55dB and therefore not recorded.

Climate change resilience

The existing watercourses and drainage arrangement for the project site are described in the Drainage Strategy Report (Binnies UK Ltd, 2025b). Above the plateau, the project site is characterised by steeply sloping topography, with a central section protruding out more than the slopes on either side. The site is situated on a steep incline, with gradients varying significantly (from 1:1 slopes on the main central coal spoil area to shallower than 1:10). The forest road at the top of the site has an open channel drain next to it with culverts passing flows underneath the track and down the slope. Sections of the forestry track that traverses down the site currently act as informal drainage channels and in some cases are channelling water towards the main coal spoil area.

There is an existing watercourse that flows through the west side the project site, and a ditch at the base of the slope that runs almost the entire width of the plateau. The ditch and watercourse discharge to an existing drainage network at its west and east ends, which eventually outfall into the Afon Rhondda Fawr. The current drainage arrangements, combined with the recent felling of the plantation woodland, mean the stability of the coal spoil material is vulnerable to the effects of future climate change such as increased rainfall intensities. The existing drainage network that the site drains to is also vulnerable to potential increases in the volumes of water being discharged to it, and land around the project site may be increasingly exposed to increased surface runoff that is not captured by the current drainage regime.

3.0 Implementation of the Stepwise Approach

The principles of the stepwise approach have been embedded into the design process for the project. The stepwise approach is described in Planning Policy Wales, Section 6.4.15 and applies a hierarchical approach to avoid damage to habitats, species and ecosystems as a result of development. It comprises, in the following order of preference: step 1: avoid; step 2: minimise; Step 3: mitigate/restore; step 4: compensate on site; step 5: compensate off site; step 6: refuse planning permission. The steps taken within the design are described below.

Further measures will be required to avoid and minimise negative impacts during construction. These will be detailed in the project Environmental Action Plan and Construction Environmental Management Plan. The Ecology Report for Planning provides a list of topics which must be addressed in the Construction Environmental Management Plan.

Avoid

As the purpose of the proposed development is to reduce the risk of destabilisation at a specified former coal tip, the possibility of siting the development at an alternative site is not applicable. It should however be noted that the development proposed is not in a statutory designated site, and the works have been screened out of requiring Environmental Impact Assessment.

Design decisions have been made to locate proposed development features to avoid negative effects to green infrastructure where possible:

- The need for new culverts on watercourses has been avoided in line with the Freshwater ecosystem services profile aim to avoid modification or loss of variety of form and structure within the river ecosystem (NRW, 2021) and South Central Area Statement aim to maintain natural watercourses. Open cross-track channels have been specified in the north east reaches of the forest track to maintain natural catchment flow. Culverts below the lower reach of the forest track are part of the drainage network (i.e. they are not on watercourses), and they have been specified to maintain continuity of flow across the lower slopes and into the wet woodland area.

- No drainage assets are proposed in the PAWS with the exception of cross drains within the footprint of the existing forestry track (shown on the Environmental Masterplan), avoiding loss of this irreplaceable habitat. Planting within the PAWS has been avoided in order to allow space for ancient woodland species retained within the natural seed bank to re-establish, and avoid competition with manually added species in line with recommendations of the South Central Area woodland ecosystem profile.

- The locations of the below ground tank, outfall pipeline and headwall avoid the area of lowland acid grassland HPI on the plateau identified in section 2.2 and shown on the Environmental Masterplan.

- A reduction of runoff into the wet woodland HPI identified in section 2.2 will be avoided by having outfall channels from the forestry track drainage ditches to retain overland drainage flows (shown on the Environmental Masterplan), ensuring this habitat remains wet and can continue to function as wet woodland habitat.

- New drainage assets have been located to avoid the route and earthwork remains of the former incline haulage tramway, as shown on the Environmental Masterplan, thereby retaining features which contribute to sense of place and historic character as described in section 2.2.

- Downstream flooding has been avoided through modelling of water flows and provision of an adequately sized attenuation tank as part of the scheme design, solving the current vulnerability of the existing drainage network downstream of the site from excess runoff as described in section 2.2.

Minimise

The following design decisions have been made to minimise negative effects to green infrastructure:

- The installation of drainage as an alternative to reprofiling of the tip site, as was outlined within a previously accepted design, thereby reducing habitat impacts from large scale to localised disturbance.

- The early drainage design included two cascade structures of approximately 600m in length, a requirement for a large attenuation pond at the base of the slope to manage downstream flood risk and a large number of other channels and drains. Through development of the design the length of the cascade required has been

reduced to approximately half, the attenuation tank will be sub-surface, and the length of other channels and drains required has been reduced. This has reduced the footprint of the project and therefore effects to existing habitats, and avoided further modification of watercourses.

- When developing the drainage solution, the drainage design focussed on locating drainage elements adjacent to existing infrastructure and utilising existing drainage and topographic features wherever possible to avoid the need for additional infrastructure. This includes gaining the most benefit possible from forest road and forest track drainage, connecting the cascade on the west of the site into an existing watercourse/drain feature, and connecting track drainage into an existing watercourse/drain on the east of the site. This layout is shown on the Environmental Masterplan. Minimising the need for additional infrastructure reduces the carbon cost of the project, contributing to climate change resilience.

- Damage to the habitat mosaic on coal spoil in the area of recently felled woodland has been minimised to maintain the distinctive sense of place, cultural and nature conservation importance of this habitat type as outlined in section 2.1. This has been done through:

    - Drainage has been designed to be sub-surface or vegetated where possible, to minimise loss or fragmentation.

    - Locating drainage elements adjacent to existing infrastructure and utilising existing drainage and topographic features wherever possible.

    - Replacement woodland planting is located to avoid the main spoil material area and the steepest slopes, and the PAWS. The planting extent is limited to the minimum requirements of PPW12 to minimise effects to the developing habitat mosaic on coal spoil: planting will contribute to the overall habitat Diversity on the hillside, but the limited amount protects the Extent of the habitat mosaic on coal spoil.

    - These measures will retain the habitat mosaic on coal spoil as a stepping stone between other similar habitats in the area and as habitat for the species of principal importance nightjar as described in section 2.2.

- Siting drainage channels to the north of the wet woodland to minimise tree loss within the wet woodland and ensure connectivity of this habitat with other woodland is retained. This will retain the foraging and commuting habitat that the wet woodland provides for bats.

- Where clearance is required to facilitate access for the works, trees will be coppiced rather than fully removed where possible, retaining the extent of woodland on site and its connections with woodland in the surrounding area as far as possible.

- The primary construction compound and bulk delivery site will be located in an area recently used as a forestry compound and timber storage area, accessed from an existing forestry road, minimising temporary disturbance to existing habitats from construction access.

Mitigate/Restore

The following mitigation and restoration activities are proposed:

- The need for an attenuation tank was reviewed as part of the drainage design, but it is not possible to provide sufficient storage capacity in the drains installed on the slopes to avoid the need for a flow attenuation feature at the base of the slopes. Although the tank will be sited below ground, the construction working area will temporarily encroach on an area of OMPDL habitat on the plateau. The working area will be reinstated by replacing stripped and temporarily stored topsoil and allowing it to naturally revegetate. This in effect 'resets' the ecological succession on one part the plateau and will allow species in the project site to naturally recolonise the newly exposed coal spoil substrate, contributing to maintaining an open mosaic and halting the decline of mosaic habitats noted as a threat within the Bridgend/Caerphilly/ Rhondda region by LANDMAP.
- The requirement for a secondary compound, temporary material storage area and works area including a crane pad in the area of OMPDL on the plateau cannot be avoided, and the extent is dictated by the safe working requirements. Individual elements will be sited through direction of a suitably qualified ecologist to be in the least sensitive area, avoiding notable plant species and areas of higher interest for invertebrates.
- There are INNS on site that could be spread by construction activity. This risk will be managed through use of biosecurity measures during construction, including removal of one area of Japanese knotweed which is within the construction working area and cannot be avoided. Management of these is in line with the South Central Area Ecosystem Profiles which note INNS as threats to habitats within South Central, as described in section 2.1.

Compensate on site

The following compensation on site is proposed:

- Woodland removed to facilitate the works will be replanted at a scale and design equivalent to those removed, in accordance with PPW12. The area of woodland lost to the works will be approximately 1,300m^2. 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. 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, as shown on the Environmental Masterplan. This will provide habitat connectivity.

Compensate off site

Negative effects of the development are considered to be adequately mitigated for/ compensated for by the proposals and no off-site compensation is proposed or deemed required.

4.0 Net Benefit for Biodiversity & Wider Environmental Benefits

4.1 Net Benefit for Biodiversity

This section describes enhancement measures to be delivered through the project which will result in a net benefit for biodiversity (NBB) as defined by the DECCA Framework: Diversity, Extent, Condition, Connectivity and so is Adaptive and Resilient. Building with Nature Standards Framework (BwNF) wildlife standard 11: Delivers Wildlife Enhancement is delivered through the below enhancements to habitat diversity, extent, condition and connectivity provided by the proposed project which supports the conservation and enhancement of priority habitat and delivers positive benefit for wildlife.

The baseline habitats within the project site, and mitigation required to compensate for any loss or detriment to habitats as a result of the works, are described in the Ecology Report for planning (Binnies UK Ltd, 2025c). The DECC baseline is described in section 2.2 of this report.

Diversity
The project will increase diversity of species and habitats as follows:

- Following completion of drainage works, the area of recently felled woodland (now an ecotone transitioning into tall ruderal with patches of self-seeded broadleaved trees) will be allowed to continue to naturally regenerate, to develop into a habitat mosaic on coal spoil instead of restocking. Diverse and intricate habitat mosaics that are allowed to develop on coal spoils, with their nutrient poor soils and varied substrate, pH, hydrology and topography, can provide great biodiversity significance (Olds, 2023) and habitat for a diverse range of faunal species. This is an important habitat in the South Central area and provides not only ecological but also cultural benefits to local communities, highlighting the industrial legacy of the area and contributing to the local sense of place.

- Vegetation will be kept cut short in approximately 2.4m zones either side of the forestry track through the project site (see also Condition). This management will create areas of differing sward height, thereby providing higher botanical variety which will support a more diverse invertebrate group.

- One third of the willow trees in the existing wet woodland HPI south of the forestry track (‘retained wet woodland’ on the Environmental Masterplan) will be coppiced during construction to allow space for natural regeneration, improving structural and age diversity and providing light to aid establishment of ground flora. Willow trees dominate the wet woodland and coppicing improves the resilience of trees. The creation of a more diverse structure will support birds and invertebrates. Dominance resulting in reduced species, structural, and age diversity, overshading of ground flora and lack of open space for natural regeneration are noted as threats in the South Central Area woodland ecosystems profile. Opening up the canopy to allow space for natural regeneration rather than interplanting is favoured in line with

recommendations in the Tree and woodland strategy 2022-2032 (RCTCBC, 2022) and to avoid the risk of planting inappropriate species noted as a threat in the South Central Area woodland ecosystem profile.

- Where new woodland is being planted as mitigation for woodland loss ('proposed wet woodland planting' on the Environmental Masterplan), the new woodland will be of greater diversity than the woodland removed. The woodland removed is largely self-set willow; whereas the new woodland planting will include a variety of locally native species to improve woodland structure and species diversity, improving the habitat functionality for faunal species. This will include planting of berry and nut rich trees and shrubs to will improve the foraging habitat for birds and mammals such as hazel dormouse. Planting of night flowering species will improve the habitat for invertebrates and bats.

- Headwalls for the horizontal sub-surface drainage pipes (locations are shown on the Environmental Masterplan) will be created from stone to create niches as new habitat for invertebrates such as solitary wasps and bees.

Extent
The project will increase extent of species and habitats as follows:

- Management of the area of recently felled woodland (see also Diversity) will stall the natural succession that would typically occur on coal spoil habitats, instead retaining the transitional habitat mosaic on coal spoil which has begun to establish since felling of the conifer plantation. This will increase the extent of habitat mosaic which remains in the area in the longer term.

- Removal of self-set scrub along the plateau access track as part of works to install the below ground tank will temporarily improve the extent of the OMPDL HPI, allowing it to extend into the area of removed scrub. However, in the long term it is likely that scrub will re-establish.

Condition
The project will increase condition of species and habitats as follows:

- A fuel break (also referred to as fire break) will be created along the forestry track and forest road through the project site by removing all brash left over from forestry works from approximately 2.4m either side of the track and then keeping vegetation low within these zones by annual cutting. The extent of the fire break is shown on the Environmental Masterplan. Fuel breaks are identified by the Healthy Hillsides Demonstration Project evaluation report (NRW, 2024b) (as described in Section 2.1) as one land management measure that can reduce the impact of wildfires across the South Wales Valleys and increase resilience of hillside mosaic habitats. Fuel breaks can reduce the extent of fire intensity and the rate of spread across mosaic habitats, and can even extinguish a fire once started, when the fuel break is reached and thus protect the coal spoil habitat from the pressure of fire damage as noted in the South Central Area Valley Hills ecosystem profile.

- A new vehicle access gate on the forestry track will also be installed on the NRW Forestry Estate boundary to reduce the risk of cars being driven up the track, being dumped and set fire to. The new gate and fuel break proposals have been developed in liaison with South Wales Fire and Rescue Service (SWFRS).

- The stands of Japanese knotweed and montbretia within the wet woodland will be removed during construction, stopping the risk of natural spread (note 6 on the Environmental Masterplan). The wet woodland is currently assessed to be in 'moderate' condition (see habitat condition assessment, Binnies UK Ltd, 2024b) and removal of these INNS would help to improve the condition of this habitat (see also Connectivity).

- The condition of wet woodland habitat, noted in the habitat condition assessment (Binnies UK Ltd, 2024b) as having a lack structural diversity and age classes, and having invasive species present, will be improved through coppicing (see also Diversity), allowing space for natural regeneration to improve age and structural diversity.

- Deadwood from trees that are removed or coppiced during construction will be placed within the existing wet woodland and compensation woodland planting to enhance woodland habitat conditions, habitat for invertebrates and associated foraging for birds.

- The drainage design includes gravel filled filter drains to trap sediment. Ditches will be vegetated, which will slow flow velocity allowing sediment and heavy metals to settle. These measures will reduce sediment and associated nutrient and pollution loading in the existing watercourse, the ditch at the toe of the slopes and downstream watercourses.

- The dry ditch which runs parallel to the access track alongside the wet woodland is seasonally wet from run off from the slopes above. Silt that has built up in the ditch will be removed, and banks regraded where needed, to reinstate its original design and capacity and it will continue to receive water from the new drainage system. The habitat condition assessment (Binnies UK Ltd, 2024b) noted that the ditch is clogged with debris from the slopes and that there was a lack of in-ditch and marginal vegetation due to the overhead canopy from adjacent woodland; the condition of the ditch will be improved through removal of debris and coppicing within the woodland which will reduce shading. Clearing debris from the ditch will also enhance the quality and flow of the water.

Connectivity

The project will increase connectivity of species and habitats as follows:

- Through management, the project will retain the mosaic on coal spoil habitat that provides a stepping stone between other mosaic and SINC habitats in the wider area, and that supports breeding nightjar, as opposed to allowing succession to woodland.

- The location of the woodland mitigation planting will bridge the gap between the existing wet woodland in the project area and the PAWS overlapping the project site

in the east, when that regenerates. This planting together with the PAWS regeneration could link two areas of lowland local network for woodland as identified through the RENS.

- Prevention of the spread of INNS by removal of Japanese knotweed and Montbretia will prevent undesired flows and is in line with the South Central Area ecosystem profile's recommendations.

- Clearing debris, sediments and pollutants will prevent undesired flows within watercourses, improving the quality of the water which reaches the Taff and Rhondda Rivers SINC and the Rhondda R - source to conf Afon Rhondda Fach waterbody with which the scheme has a hydrological connection. This is in line with the South Central freshwater ecosystem recommendations, which notes sediment and pollution transportation as a threat to freshwater ecosystems within the area.

Improving connectivity of habitats to surrounding ecological networks in line with local needs and providing stepping stone habitats is in line with BwNF core standard 01: Optimises Multifunctionality and Connectivity and wildlife standard 12: Underpins Nature's Recovery. Water quality improvements which positively impact downstream water ecosystems also meets core standard 03: Maximises Environmental Net Gain.

Conclusion of overall net benefit

If the above actions are undertaken the project will result in an overall Net Benefit for Biodiversity when compared to the DECC baseline.

4.2 Health and wellbeing of the local community

Wildfires are a risk to human health and an issue noted as prevalent in south Wales in NRW's Healthy Hillsides Project Report and in the Valley Hills ecosystem profile of the South Central Area. Fuel breaks implemented through the project to reduce the risk of fire will thereby provide an improvement to both ecosystem resilience and human health. In addition a vehicular gate will be installed at the request of South Wales Fire and Rescue Service (SWFRS), to stop people driving vehicles up the tracks and setting fire to them. This will improve community safety, for which element RCT scores poorly in the IMD.

Improving health inequality in line with wellbeing standard 08: Supports Equitable and Inclusive Places, and consulting with the SWFRS to identify local priorities and addressing these in the design follows core standard 04: Champions a Context Driven Approach.

4.3 Amenity and sense of place

Restoration of colliery spoil habitat and retention of the former tramway remnant earthworks will maintain and improve sense of place as described in section 2.2, promoting the local area's heritage, in accordance with BwNF core standard 05: creates distinctive spaces.

The project proposals include levelling existing forestry tracks within the project area and surfacing with crushed stone. These tracks are currently heavily rutted from past forestry activity, and levelling and surfacing these will make them more accessible for users. This will aid use of the area by people, connecting people with nature which is highlighted as important within the South Central Wales area statement to enhance appreciation and understanding of nature, and to improve wellbeing. Improving accessibility is in accordance with BwNF wellbeing standard 07: Brings Nature Closer to People, and in line with considerations suggested in the HSAN (NRW, 2023) to improve and access to and use of green spaces.

4.4 Pollution

Detailed information on the drainage strategy is provided in the Drainage Strategy Report (Binnies UK Ltd, 2025b) submitted to the SUDS Approving Body (SAB); a summary only of elements relating to water quality improvements (section 4.4) and climate change resilience (section 4.5) is provided in this report.

Drainage proposed as part of the works includes drains, trenches, cascades and ditches. Proposed filter drains will be gravel filled and will capture sediment and reduce contaminant loading downstream. Gravel will be vegetated, providing habitat for flora and fauna and reducing visual intrusion. Blockstone cascades are proposed in areas where mitigation of soil erosion is required and will improve slope stability. Oxygenation of water is improved using structures of this nature which promotes purification processes, and pollutant loads are reduced as sediment settlement and microbial breakdown are encouraged. Flow velocity will be slowed following establishment of vegetation in ditches, allowing sediment and heavy metals to settle.

Improving water quality through green infrastructure to improve the local environment in line with local priorities is in accordance with BwNF core standard 03: maximising net gain, and water standard 09: delivering climate resilient water management.

4.5 Climate Change resilience

The proposed drainage strategy has been developed using a 30% uplift to rainfall intensities to account for climate change. This allowance is considered appropriate for managing future flood risk at the site and represents a value midway between the central and upper estimates provided in Welsh Government guidance. This approach has been adopted to ensure a robust management of climate change impacts, particularly given the sensitive nature of the coal tip.

In addition to ecosystem resilience and health and wellbeing improvements provided by fuel breaks, reduction in fire risk also provides climate change resilience. The likelihood and potential intensity of fires will increase as the climate becomes warmer and drier, and fuel breaks will help reduce the likelihood of fires as a result of this climate change. Offering adaptation to climate-based hazards is in line with BwNF core standard 02: Positively Responds to the Climate Emergency.

4.6 Review of other opportunities

In order to deliver an effective drainage design, that can be constructed and maintained safely, there are some potential green infrastructure improvements which were considered but which have not been able to be incorporated into the design:

- Drainage channel morphology: Due to the steepness of the site and the need to manage flow velocities, cascades had to be retained in the design. The complexities of constructing and maintaining drainage on steep slopes of coal spoil material also means sinuosity could not be incorporated into the cascades or track drainage.

- Scrapes to improve habitat variation on the slopes were not taken forward due to the steepness of the slope and associated health and safety risks when constructing and maintaining the scrapes.

- Reinstating the temporary working area the below ground tank to include mounds and hollows to provide habitat niches and structural diversity was considered and discussed with the RCTCBC ecologist. This was not taken forwards as it would require more complex maintenance needs which are not secured and could also encourage use by cyclists or motorbikes.

- Tree planting was considered on the western slope to soften the edge of the adjacent conifer plantation and increase extent of woodland habitat, but was not taken forward due to the preference of natural regeneration over planting by RCTCBC and NRW.

- Diverting additional run off into the wet woodland was considered but was not feasible due to the risk of erosion of the coal spoil; existing levels of drainage runoff into the wet woodland will however be maintained.

5.0 Long Term Management Plan

5.1 Recently felled plantation woodland: habitat mosaic on coal spoil

Management of this habitat will be coordinated with the need to maintain the new drainage assets. This is a pragmatic and realistic approach to managing habitats across steep slopes where access and use of machinery is difficult. Management will be carried out by NRW as part of their site's Maintenance Schedule, and will comprise:

- Removal of all self-seeded conifer trees: the former plantation area in the project site will be monitored every three years following completion of drainage installation works and conifer saplings removed.

- As part of drainage asset maintenance to prevent vegetation encroaching into the assets and affecting performance, vegetation will be cut back along and around the assets when needed, including regenerating shrubs and trees, resetting these areas

back to a more open habitat structure as part of the mosaic. As part of asset maintenance works vegetation will be cut back from larger areas than needed for just drainage maintenance, e.g. instead of just controlling vegetation along the footprint of ditches and gravel drains, broader areas that encompass several assets will be cut back. Vegetation will also be cut a back along access routes where they are needed beyond the forestry tracks. Cutting will be timed to avoid the main bird nesting season; 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).

- The frequency of vegetation being cut back will be determined by maintenance identified as being needed during annual asset inspections. The need to maintain assets and therefore carry out associated periodic vegetation control will continue for the lifetime of the drainage scheme.

5.2 Fuel breaks and areas of vegetation sward diversity

Management will be carried out by NRW as part of their site's Maintenance Schedule. An approximately 2.4m wide strip on alternating sides of the forestry track and forest road through the project site will be cut back each year to maintain the fuel break and sward diversity. Cutting will be timed to avoid the main bird nesting season.

5.3 Removal of Invasive Non-Native Species (INNS)

Removal of the existing INNS from within the woodland will be carried out as part of the capital works contract, with a removal plan being developed in advance of the works starting and then adhered to. Any use of herbicide within the wet woodland (e.g. if full excavation is not possible without losing additional tress) would need to be approved, but stem injection of herbicide into Japanese knotweed could be a viable option given the size of the stands. Five years of control will be carried under a maintenance contract. Following that period, management will return to RCTCBC as landowner.

5.4 Woodland coppicing and dead wood

Selective willow coppicing in the exiting woodland, and placement of dead wood, will be carried out as part of the capital works contract as a one-off activity that will provide structural and habitat diversity. A coppicing plan will be developed in advance of the works starting, taking into account the coppicing needing to facilitate works access), and then adhered to. Management will return to RCTCBC as landowner upon completion of the drainage installation works.

5.5 Woodland planting

Woodland planting will be carried out as part of the capital works contract with planting establishment managed for 5 years under a maintenance contract. The woodland planting area is within NRW land ownership and will be allowed to develop naturally following establishment.

5.6 Habitats provided by new stone headwalls

Inspection and maintenance of horizontal drain headwalls will take place annually by NRW as part of their site's Maintenance Schedule. As part of this a short sward will be maintained around stone headwalls. To gain access to inspect headwalls where they are not accessible directly from a permanent track, localised vegetation cutting will be carried out which will retain a shorter sward in these areas and contribute to overall structural diversity of the mosaic. The need to maintain assets and therefore carry out vegetation control will continue for the lifetime of the drainage scheme.

5.7 Opening up existing drainage ditches

Cutting back overhanging vegetation and clearing silt and flow obstructions such as rubble from the existing drainage ditches at the toe of the slopes will be carried out as part of the capital works contract as a one-off activity. Management will return to RCTCBC as landowner upon completion of the drainage installation works.

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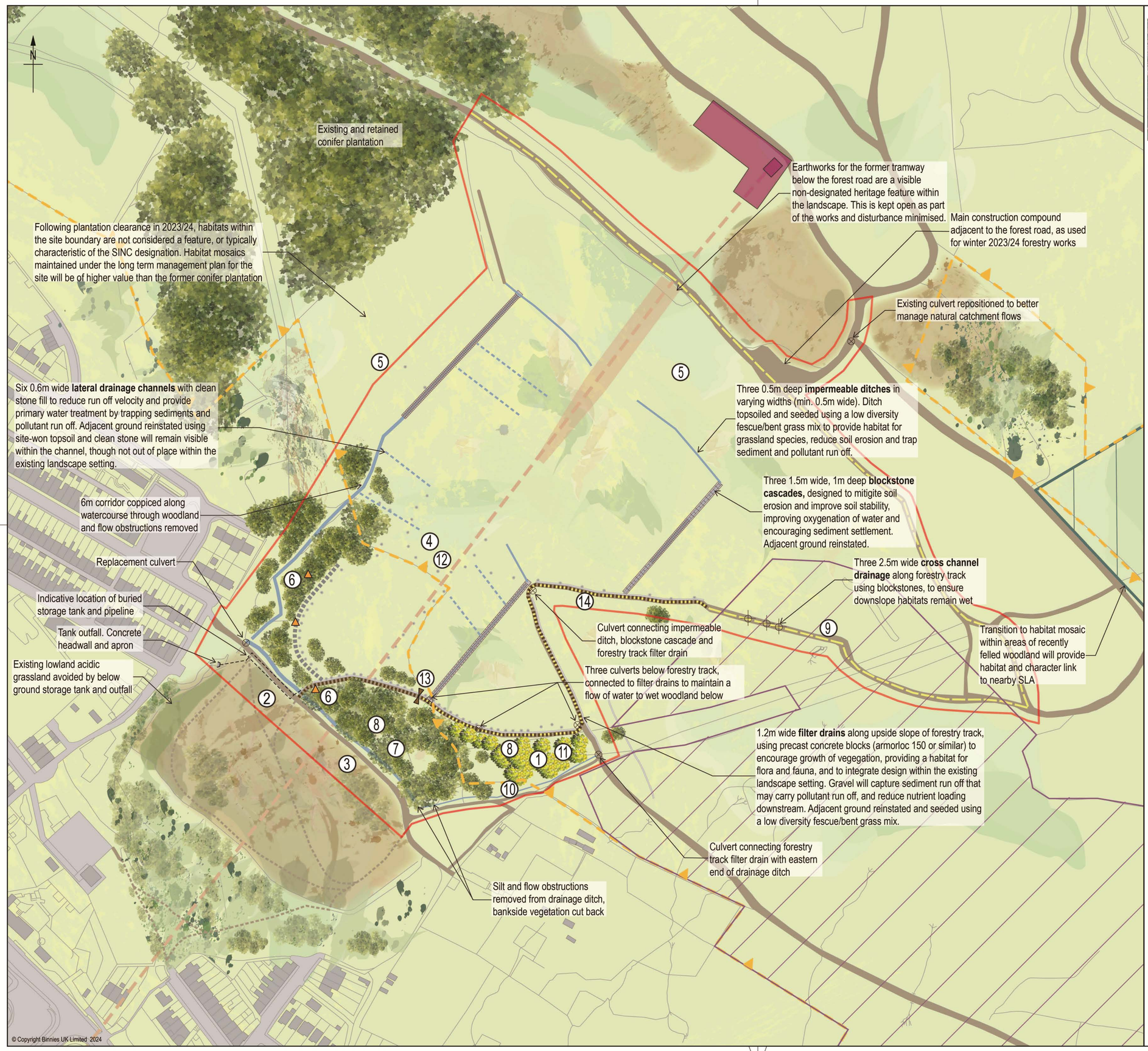
Appendix A Environmental Masterplan

Document reference 4021526-BUK-ZZ-00-DR-EN-00015



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