



ERI Reclamation

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# BEDWAS TIPS RECLAMATION PROJECT

DRAFT - Design and Access Statement





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DRAFT - Design and Access Statement

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# 1 INTRODUCTION AND BACKGROUND

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## 1.1 INTRODUCTION

1.1.1. This Design and Access Statement (DAS) has been prepared by WSP in the UK (the 'agent') on behalf of Energy Recovery Investments Ltd (ERI) (the 'applicant') to support a full planning application for works at two colliery spoil sites outside the town of Bedwas with the intention of land reclamation for ecological enhancement. ERI has previous experience of tip reclamation at Six Bells between 2009 and 2016, where ERI undertook, in the public interest, similar works to those proposed in this application at Bedwas for the land reclamation of colliery spoil. ERI and its staff also have extensive knowledge of coal tip reclamations with Ryan Group, ERI's predecessor, who carried out more coal tip reclamation schemes, (circa 100) in Wales and Europe than any other company.

## 1.2 BACKGROUND TO SCHEME

1.2.1. Bedwas is located in Caerphilly County Borough (CCB), South Wales being home to the Bedwas Navigation Colliery which was operational between 1913 and 1985. Caerphilly County Borough Council (CCBC) are the Local Planning Authority (LPA) in the area the proposed scheme occupies. From the findings of the 2021 Census<sup>1</sup>, Caerphilly was found to have 175,900 residents out of the 3,107,500 total for Wales.

1.2.2. South Wales has a long association with coal mining and as a result of its legacy reclamation schemes have been created of which the proposed scheme is one. The proposed scheme involves the reclamation of the two colliery spoil tips formed from the workings of the Bedwas Navigation Colliery utilising the extracted coal to fund the works, and reprofiling the land with appropriate seed mixes for use as upland grazing.

1.2.3. WSP in the UK has been commissioned to undertake an Environmental Impact Assessment (EIA) and planning application for the Proposed Scheme.

### THE NEED FOR THE SCHEME

1.2.4. As outlined in the previously submitted EIA Scoping Opinion Request ref: EIASCO/20/0001, "*The proposed scheme is a project to restore the CCBC owned degraded and derelict land of the Bedwas coal spoil tips to a more natural habitat in keeping with the surrounding area, in the process extracting coal from colliery spoil providing the means of funding the restoration. The land is to be suitable for upland grazing, thereby enhancing the natural environment and improving the resilience of ecosystems and ecological networks by:*

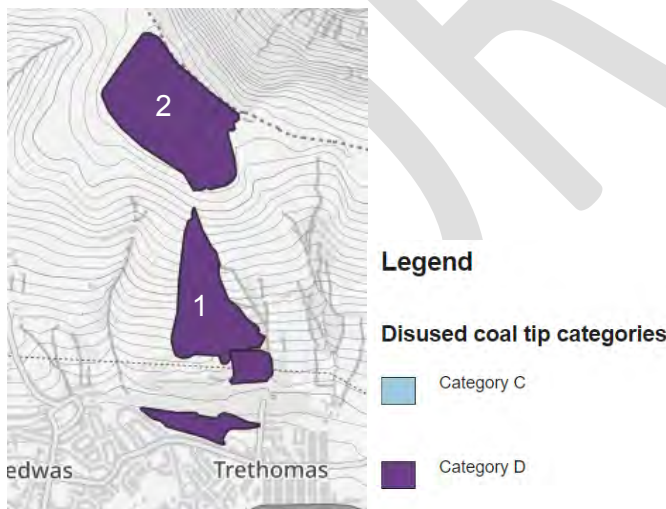
- *re-landscaping in keeping with the natural character of the area;*
- *improving site drainage and run-off water quality;*
- *improving physical ground conditions and land stability; and*
- *promoting soil recovery, revegetation and enhanced biodiversity.*

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<sup>1</sup> [Caerphilly population change, Census 2021 – ONS](#)

*The proposed scheme is likely to result in community benefits, including providing mineral products which are essential for housing and infrastructure. The proposed scheme will also deliver a high standard of restoration by remediating a derelict site and restoring it to upland grazing and grassland, likely leading to vast improvement of the local environment. The Scheme will also improve the geotechnical stability of the tips due to the engineering techniques used to reprofile the final tip landform”*

- 1.2.5. In February 2020, due to Storm Dennis, a section of the upper Tylorstown Tip collapsed causing damage to the local area highlighting concerns regarding the stability of other disused coal tips located across Wales. As a result of this, the Welsh Government established the joint Coal Tip Safety Taskforce to assess the immediate risk of unused coal tips<sup>2</sup>. WSP in the UK has previously worked on the Tylorstown landslip project to safely the remaining colliery spoil left on the hillside after this event involving the submission of a planning application and accompanying Environmental Statement.
- 1.2.6. Coal tip safety is regulated under the Mines And Quarries (Tips) Act 1969<sup>3</sup> of which reforms to policy are currently underway with a White Paper being written from consultation on changes to policy<sup>4</sup>.
- 1.2.7. The tips located at Bedwas have been categorised as of 14<sup>th</sup> November 2023 via a Welsh Government Database<sup>5</sup>. The tips have been given a unique registration code (Tip 1 – T49562, Tip 2 – T36144). As per the map shown in Figure 1 the Tips are classified as Category D which is defined as “A tip with the potential to impact public safety, to be inspected at least twice a year.” From this information, there is further reason for the Proposed Scheme to be undertaken to remove a potential impact to public safety and for the reasons outlined previously.



**Figure 1 – Extract from Coal Tip Safety database map**

<sup>2</sup> [Coal tip safety | GOV.WALES](https://gov.wales/coal-tip-safety)

<sup>3</sup> [Mines And Quarries \(Tips\) Act 1969 \(legislation.gov.uk\)](https://legislation.gov.uk)

<sup>4</sup> [Coal Tip Safety \(Wales\) White Paper | GOV.WALES](https://gov.wales/coal-tip-safety-white-paper)

<sup>5</sup> [Find disused coal tips | GOV.WALES](https://gov.wales/find-disused-coal-tips)



- 1.2.8. The proposed land reclamation works are an essential step towards cleaning up waste sites created in the past from coal mining for present and future generations within the context of the Future Generations Act (Wales) 2015<sup>6</sup>. The Scheme promotes a move away from using coal as a fuel by reusing material considered spoil as a product in new construction materials. The need for the scheme is to help further enhance and improve the Bedwas area for the ecological benefit of the local area as well as promoting the economic growth of Wales.
- 1.2.9. As of 7<sup>th</sup> November 2023, during a Plenary meeting (Questions to the First Minister) of the Welsh Government Senedd, a question regarding the restoration of coal tips was raised<sup>7</sup>. During the meeting, the first minister, Mark Drakeford, stated the following:
- “As to the involvement of private sector companies in tip remediation, we don't have any objection, of course, to that. They would have to follow the same processes as any other organisation seeking to carry out remediation work, and that normally involves a planning application to the local authority, to make sure that whatever work is planned will genuinely contribute to the improvement of the area, because tip remediation brings with it economic opportunities as well as environmental opportunities, and the system is in place to make sure that those advantages can be gathered for local communities.”*
- 1.2.10. From the above extract, the need for the Proposed Scheme as well as support for the Proposed Scheme in principle is established. The main objectives of the Proposed Scheme are to transform the existing coal site into a visually appealing, biodiversity-rich area, to address fire and tip safety, to promote its recreational use by the public and contribute to economic development. From this description and the information stated above, the need for the Proposed Scheme is justified.

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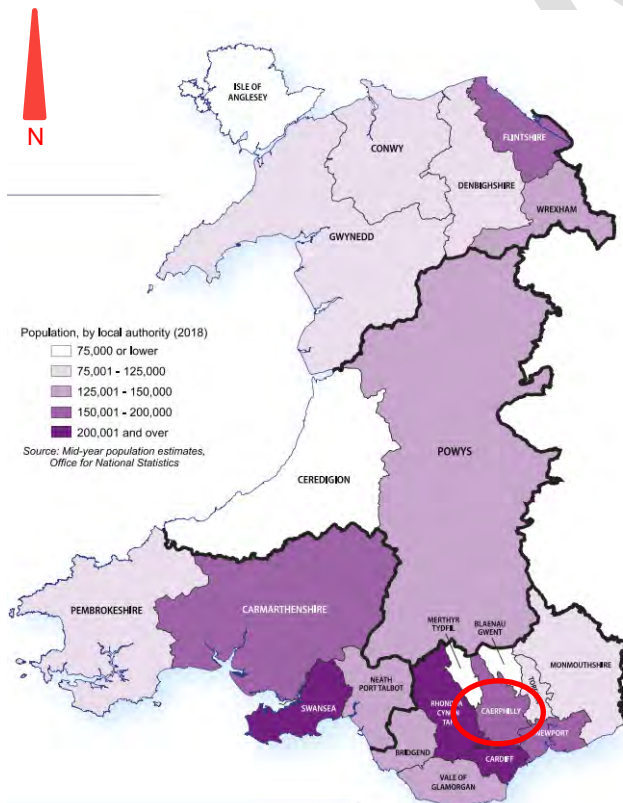
<sup>6</sup> [Well-being of Future Generations \(Wales\) Act 2015: the essentials \[HTML\] | GOV.WALES](#)

<sup>7</sup> [Coal Tips: 7 Nov 2023: Senedd debates - TheyWorkForYou](#)

## 2 THE APPLICATION SITE

### 2.1 WIDER CONTEXT

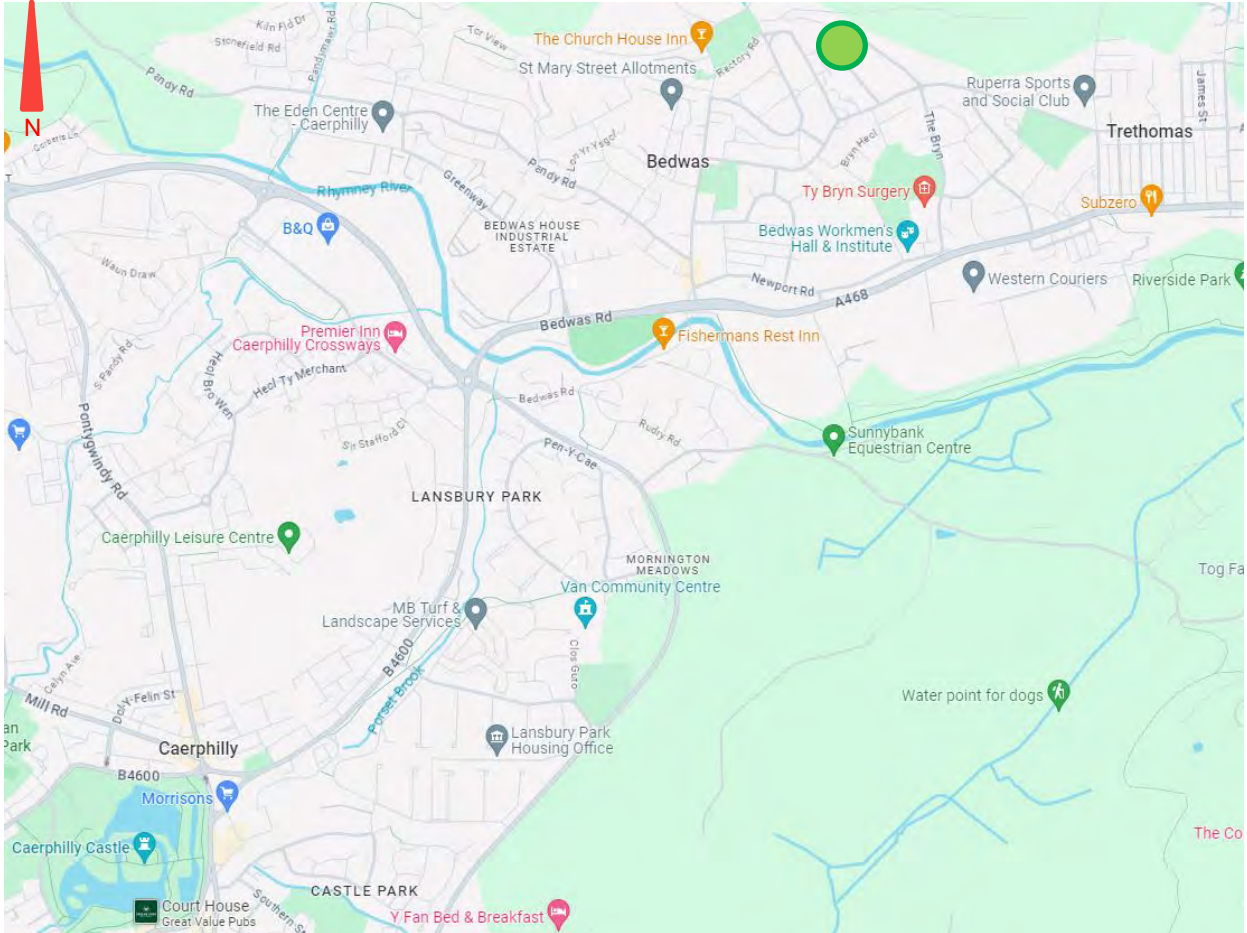
- 2.1.1. Bedwas is situated in CCB, South Wales. Bedwas was historically home to four coal mines including the Bedwas Navigation Colliery which opened in 1913 and closed after the miners’ strike of 1984 – 1985. As seen in Figure 2, CCB borders Torfaen, Cardiff, Newport and Rhondda Cynon Taf and others making the area an important county allowing access to these areas. The Bedwas Navigation Colliery is part of the wider legacy of Welsh coal mining which has received recent attention regarding the visual, fire and stability risks these tip sites present to those using them for recreation and to those living nearby. As such, these tips have an economic impact to local councils to ensure their safety and to reduce the potential impact of these sites.
- 2.1.2. In terms of road infrastructure, to the north of the county is the Heads of the Valleys Road (A465), a critical route connecting the Welsh valleys and facilitating improved access for communities and business as well as an alternative access to the M4 east to west. Additionally, the A472 is another principal route passing through the middle of the county allowing access to the various areas of the county and those bordered by it.
- 2.1.3. A number of main rivers are located through the county such as the rivers Rhymney, Sirhowy and Ebbw flowing north to south and entering the Bristol Channel at Newport and Cardiff. These main rivers define the distinctive Welsh valley geography.



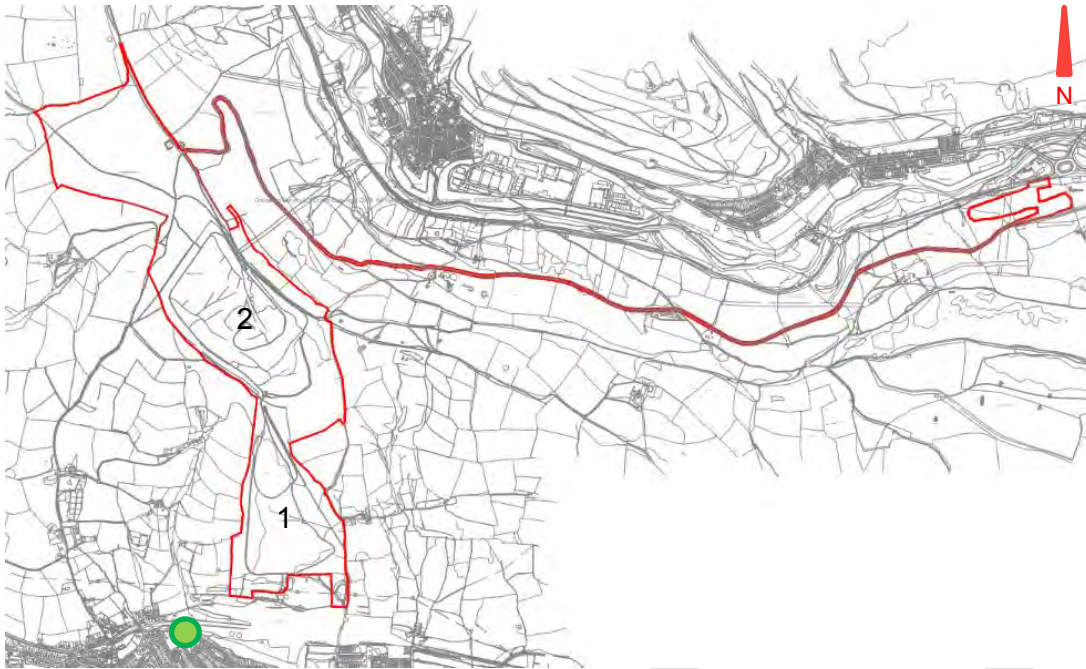
**Figure 2 - Map of Welsh counties (Extract from Welsh National Plan 2040) (Red circle to indicate Proposed Scheme to wider Wales)**

## 2.2 THE APPLICATION SITE

2.2.1. As shown in Figure 3, Bedwas is a small town located approximately 2km northeast of Caerphilly consisting of mainly residential properties with a small amount of commercial units. Located to the east is the town of Trethomas which is of a similar majority. As shown in Figure 4, the Proposed Scheme is located 1km north of Bedwas situated on the hillside surrounding the town. Figure 4 shows the Red Line Boundary of the Proposed Scheme in proximity to the surrounding area.



**Figure 3 - Site location of Bedwas and Trethomas (Sourced from Google maps 2023) (Green circle to show proximity of Bedwas to Proposed Scheme, see Figure 4)**



**Figure 4 - Proposed Scheme General Arrangement Plan (Extract from Red Line Boundary drawing V2-S02/0001) (Green circle to show proximity to Bedwas, see Figure 3)**

- 2.2.2. There are no conservation areas within 2km of the Proposed Scheme, however, the site does border several listed buildings as well as two Scheduled Monuments namely Cairn Cemetery on Mynydd Bach, Bedwas (306 SAM MM196) and Twyn Cae-Hugh Round Barrow (2971 SAM MM033).
- 2.2.3. CCBC has Air Quality Management Areas (AQMA) in place in the centre of Caerphilly Town Centre however these are not found in or near to the application site.
- 2.2.4. The site is not in proximity to any Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), Ramsar sites, Special Protection Areas (SPA) but does contain a Site of Importance for Nature Conservation (SINC) namely Mynydd y Grug as well as the proposed haul road which runs through the Graig Goch Local Nature Reserve (LNR). The site is also designated as a Sandstone safeguarding area with coal mining development referral areas to the north and south. Designations identified in proximity to the Proposed Scheme are shown in V2-S03-0001.

## 3 THE PROPOSED DEVELOPMENT

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### 3.1 INTRODUCTION

- 3.1.1. As stated, the Bedwas Tips are located in CCB and were in operation between 1913 - 1985 and overlook the town of Bedwas. A review of the planning history of the site, shows that a previous Scheme by CCBC was designed in 2010 to reclaim the site though, due to funding issues, this could not be undertaken. As explained in this planning application, the proposal is to reclaim the Bedwas Tips for the benefit of Bedwas and the wider community/economy, allowing the re-introduction of upland grazing and ecological enhancement.
- 3.1.2. As outlined in the Environment Statement Scoping Opinion Request:
- “The proposed scheme involves the extraction of coal, from colliery spoil, which will provide the funding for the restoration of Bedwas Colliery Tips. The coal will not be used as a thermal fuel in for instance power stations but will be used in essential industrial processes. The spoil will be processed in an on-site beneficiation plant, and the recovered coal will be sold as a reductant (element in material production to reduce oxygen) in cement plants or steel works and as a colourant in brickmaking. The coal produced from this reclamation scheme will reduce reliance on imported coals currently serving these end-users.”*
- 3.1.3. Bedwas Colliery Tips comprises of two colliery spoil tips from the Bedwas Colliery named Tip 1 (Lower and Middle) and Tip 2 (Upper), see Figure 4. Tip 2 is located on the ridge at the top of Mynydd y Grug to the north of Bedwas, while Tip 1 (comprised of multiple tiers) is on the hill side just above Bedwas and Trethomas. Based on historical estimates, the total volume of the Tips is approximately 5,000,000m<sup>3</sup> which equates to around 8,500,000 tonnes of colliery spoil. The Lower Tips have an approximate volume of 2,000,000m<sup>3</sup> and the Upper Tip has an approximate volume of 3,000,000m<sup>3</sup>. The Proposed Scheme is anticipated to cover an area of approximately 80 ha during operations, with the final restored, landscaped and revegetated Tips covering an area of approximately 52ha at Tip 2, and an area of approximately 19ha at Tip 1 being returned to its original land contour. The total area within the red line boundary, including the haul road is 122ha. At present, there is little topsoil or vegetation to be found on the site with previous drainage projects to prevent erosion and scour proving ineffective.
- 3.1.4. The Proposed Scheme works to resolve these issues through the reprofiling of the site, stabilising any remaining tips after the works and through the removal and repurposing of the existing tips. The Proposed Scheme works to revegetate the site while improving the overall condition of the site ensuring the area is safe for those on or off the site.
- 3.1.5. As part of the reclamation works, the subsoil under the Tips will be excavated and used to form the new topsoil of the site allowing vegetation to grow in keeping with the surrounding landscape being considered a Special Landscape Area (SLA). The soil will be returning ‘sealed soils’ to a productive, functioning soil profile, in line with the Welsh Government’s Natural Resources Policy (NRP). This will allow enhanced biodiversity at the site, including a range of habitats. These habitats will support several other ecosystem services such as climate and flood regulation. With the removal of the colliery spoil, water will be able to naturally drain off the site as it would have before mining activities in the area were in operation.

- 3.1.6. The Reduced Carbon Coal (RCC) on site will be washed through the beneficiation/processing plant to remove the usable material. The usable product is then dried and transferred onto the coal loading vehicles for transportation off-site. The specific details of this process and the plant to be installed are attached as part of this planning submission. The remaining material (aggregate and shale) will be used to form part of the modified landforms.
- 3.1.7. An existing Natural Resources Wales (NRW) forestry track is to be expanded to meet the existing B4251 allowing coal loading vehicles to access and exit the site. This haul route will be closed to the public for the duration of the works with provisions in place to stop unauthorised access. Electrically operated security barriers will be sited at either end of the haul road to ensure only tip related traffic will be able to utilise the road. Once works have been completed, the created haul route will be taken over by NRW to access the site and nearby forest.

## **3.2 CONSTRUCTION**

- 3.2.1. The construction activities of the Proposed Scheme will be undertaken during a period of six to nine months. It is anticipated that up to 80 staff members will be on site per day during the construction phase. Working hours will be 6am to 10pm Mon-Fri and 7am to 10pm Saturday, with only maintenance activities being undertaken at other hours.

### **NEW HAUL ROAD**

- 3.2.2. The new section of haul road will be a 575m long and 6m wide sloping road cut into the rock. The rock excavated will be spread to the drop side of the road, to make a bund for safety and also to make the road surface.
- 3.2.3. The road will consist of three sections, with gradients of between 1 in 5 and 1 in 8.5, with two turning circles with an outer diameter of 17m. Land reprofiling will be undertaken to construct the road and provide flat turning circles.
- 3.2.4. The new section of the haul road will tie into the Sirhowy Valley Country Park and to the B4251 and A467, to the north, and the existing forestry track, to the south, see V2-S03/0003.
- 3.2.5. Temporary construction area, compound, facilities for the haul road are detailed on V2-S03/0004.

### **IMPROVEMENTS TO EXISTING FORESTRY TRACK**

- 3.2.6. Sandstone from Tip 2 will be excavated to improve the existing forestry road, where necessary. Several additional passing places with a width of 4-6m for the road and 20m long will be installed every 300m to 400m along the existing forestry track or more frequent if deemed necessary avoiding sensitive receptors where present. The passing places will also be excavated into the hillside or, ideally, where the land allows it, the passing place will be built without excavation. The work will be supplemental to the existing passing places built by the Forestry Commission (FC).
- 3.2.7. It is assumed that NRW will want to retain this access after the Scheme has been completed. The existing site access involves forestry traffic passing through residential streets and unsuitable road networks of which these improvements would be beneficial to improve this current situation. As part of the Proposed Scheme, the proposed haul road will be used for access and transport of material.

## ON-SITE HAUL ROAD

- 3.2.8. An additional Haul Road will be constructed on site, to connect Tip 1 to the Process Plant. This haul road will be seeded in between the sandstone surface once the reclamation works have been completed to act as improved access for maintenance by stakeholders. Vehicles and equipment will use already cleared areas to avoid the need for compounds.
- 3.2.9. Sandstone excavated during the construction of ponds and ditches on site will be used as material to build this haul road. Shale from the excavation of the Tips is considered to be unsuitable for the works and so sandstone (available on-site) has been chosen as an alternative, thereby reducing the need for additional stone to be delivered.

## DRAINAGE NETWORK

- 3.2.10. The drainage network will be constructed, as depicted in V2-S03/0004, at Tip 1 and Tip 2 before operational activities commence. This will include:
- A clean water pond; 10,000m<sup>3</sup>
  - Site water collection and treatment, including the following:
    - Two settling lagoons, at the base of Tip 1 and southern tip of Tip 2;
    - Main process water lagoon, at the southern tip of Tip 2;
    - Plant process water pond, adjacent to the Process Plant;
    - Total of four storage ponds, two ponds at the northern tip of Tip 2, one pond to the south-east of Tip 2 and one pond at the northern tip of the deposition area (Tip 3); and
    - Discharge pond adjacent to the main process water lagoon.
  - The ponds will include an automatic pumping station, flocculent station and associated pipework. All ponds will be safety fenced; and
  - Site bunding and water drainage channels – The soils excavated from the pond will be used in the site bunds. These, along with the constructed drainage channels, will collect water from the site and link to water collection and treatment ponds.
- 3.2.11. The drainage network will collect surface water flows around the site and direct it towards the main process pond. This water will be utilised to feed into the processing during operation.
- 3.2.12. Additional pumps and pipes will be installed to transport water from the clean water pond to the processing plant and from the legacy quarry to the clean water pond.

## TEMPORARY SPOIL TIP PROCESSING PLANT AND ASSOCIATED BUILDINGS

- 3.2.13. A temporary spoil tip processing plant will be installed on-site. This will require excavation and laying concrete foundations for the Process Plant, approximately 37m by 35m as shown in V2-S03/0005. Topsoil will be stripped away and the subsoil used in bunds to create a stockyard. Water channels will be created to link into clean water ponds using intermediary ponds to remove suspended solids in water running off the stockyard.
- 3.2.14. Portable buildings for workers and project administration will also be transported to site and assembled, within close vicinity to the processing plant, as indicated on V2-S03/0002.

### 3.3 CONSTRUCTION PLANT AND EQUIPMENT OPERATION

- 3.3.1. The Scheme will operate over a seven year duration, with suitable tip spoil being processed from the temporary onsite beneficiation plant with RCC transported off site as proposed.
- 3.3.2. It is anticipated that approximately 40 staff will be on site per day during the operation phase. The operating hours at the site will be 6am to 10pm Mon-Fri and 7am to 10pm Saturday. Excavation and tip hauling will cease at 6pm each day (excluding Saturday when it will be 1 pm), with loading of spoil by front loader continuing at the washery until 10pm. Process Plant maintenance activities will be undertaken during other hours (nightshift). Nightshift working hours are unlikely to cause a nuisance to residential receptors due to being a distance from operational work on site.
- 3.3.3. At all non-working times the site will have security in place including 24 hour CCTV, barriers where required and security lighting.
- 3.3.4. The likely vehicles and plant on site during operation will be as follows:
- 45 tonne excavator excavating the Tip;
  - Seven 40 tonne dump trucks;
  - A 35-tonne excavator loading the coal spoil;
  - A 12 tonne excavator for ditching etc
  - Two D6 or equivalent Bulldozers;
  - A front loading Shovel;
  - A heavy vibrating roller;
  - A small 5 tonne excavator for tidying up works around the washery; and
  - A JCB 540 telehandler or equivalent for lifting / unloading etc.

#### HAUL ROAD

- 3.3.5. The haul road will be in operation during the majority of the operational phase, with an estimated average of 90 hauls per week to occur over the seven years operational period. This is equivalent approximately to 18 hauls per day. Haulage trucks will have a maximum speed of 20mph along the haul road. The trucks will join the public highway at the Wattsville (B4251/A467) roundabout, and continue south along the A467 before joining the M4. The haul road will be used only by construction staff and is restricted to the public.

#### EXCAVATION OF THE TIPS

- 3.3.6. Tip 1 will be excavated first, followed by Tip 2 with the excavated RCC hauled up to the process plant for beneficiation. It will be excavated from the top down and the area gradually restored to a topography closely aligned with its original topography. The excavation will use best practice to shield the excavation activities from the town of Bedwas and other neighbours such as digging the processing plant into the existing tips to screen from the majority of views.
- 3.3.7. Excavation of the Upper Tip will occur thereafter and be undertaken in select sections. Spoil will be deposited in a specified manner to create the final and stabilised restored tip landform.
- 3.3.8. Excavation and reclamation works will be completed in parallel to each other in phases as work is completed.



- 3.3.9. Subsoil will be excavated from beneath sections of the spoil tips and stored in piles on the new deposition area to be spread as part of the soil forming material throughout the operations when weather permits.

### **SPOIL PROCESSING**

- 3.3.10. The spoil will be transported from the respective Tips to the spoil process plant where the spoil will be processed to recover the RCC.
- 3.3.11. The RCC is fed into the process plant, into the feed hopper, at which point the rest of the process is entirely automated. The process plant will be partially dug into the Tips to allow an elevated position to deposit material into the feed hopper. This will reduce the temporary impact of the processing plant on the site from a visual perspective.
- 3.3.12. It is anticipated that water required for the coal processing will be sourced from the site drainage network and the clean water pond. The clean water pond will store top up water for the process plant. The washing plant will be separating and screening coal fines and shale overburden and will enable a range of homogenous materials to be either recovered or used as part of the remediation. A settling pond of approximately 500m<sup>3</sup> to 1000m<sup>3</sup> will be required to catch any dirty water emanating from the process plant and can be used as an emergency pond.

### **SOIL DEPOSITION**

- 3.3.13. Processed spoil will be deposited in the landform deposition areas, V2-S03/0007 overlapping the Upper Tip and on the northerly deposition area.
- 3.3.14. New areas of deposition will occur to the north / northwest of the Upper Tip. The topsoil from these areas will be made into an outer 3m high bund, with an inner sub soil bund above and below the land intended for deposition. The subsoil will mostly be used to form the inner part of this bund.
- 3.3.15. All soils and sub-soils from areas where spoil will be deposited and re-landscaped will be appropriately stored for use in the final restoration as shown in the soil deposition plans attached to this planning submission. Given that there will be a shortfall of excavated topsoil for the Upper Tip site, subsoil will be used instead. This is possible through the management of the seed mixes to be planted and will ensure the successful revegetation and restoration to upland grazing habitats of the whole reclaimed site.
- 3.3.16. All tip areas will be formed into the appropriate landform in phases, this will commence during the operational phase and be finalised post-operation. The final landform profile of the reclaimed Bedwas Tips will have boundaries corresponding with V2-S03/0008. These will be landscaped to follow original contours, as close as practicable, but with some landscaping features to make the land look natural and attractive.
- 3.3.17. The reformed Tips will be compacted by a vibratory roller to improve stability, apart from the top 2m which will be left uncompacted in order to better support revegetation and drainage. At completion, all areas of the reformed Tips will have a cap of suitable soil forming material.
- 3.3.18. The areas exposed by the removal of the Lower and Upper Tips will also be reformed into a profile essentially following the contours that existed prior to the deposition of the colliery spoil. The subsoil will be excavated and re-spread with green fertiliser and approved biosolids in order to restore the upland grassland on the Upper Tip. ERI will be able to restore the Lower Tip to grazing or amenity land depending upon the requirements of the local community. There will also be some tree planting

where feasible as shown on V2-S03/0004. Drainage of these lower slopes will be maintained by the culverts channelling water to the old quarry where water is culverted to the River Rhymney.

### **DRAINAGE NETWORK**

- 3.3.19. During the operation of the Proposed Scheme, the drainage network at the bottom of the Upper Tip will collect surface water and direct it eastwards, to a setting pond, before it is discharged via the current concrete culvert into an existing quarry at the base of Tip 2. From the existing quarry, the water is then pumped up to the main processing pond for use in the processing plant.
- 3.3.20. The drainage network around Tip 2 will capture surface water across the area surrounding Tip 2 and direct it towards the settling pond before it then feeds into the main processing pond. From this pond, the water will either be pumped up to the processing plant or when clean discharged into an existing culvert.
- 3.3.21. A Sustainable Drainage System (SuDS) will be required as per the works on site which will be completed according to SuDS statutory standards<sup>8</sup>. These SuDS proposals will be sent to the SuDS Approval Body (SAB), CCBC, to ensure the proposal is suitable for the waterflow predicted.

## **3.4 POST CONSTRUCTION AND AFTER PLAN**

### **TEMPORARY SPOIL TIP PROCESSING PLANT AND OTHER BUILDINGS**

- 3.4.1. Once processing operations have ceased, the processing plant and other buildings will be dismantled and removed from site. Final land forming will take place in areas previously occupied by plant and equipment, with final landscaping completed within six months of ceasing operations.

### **DRAINAGE NETWORK**

- 3.4.2. A five-year aftercare period will commence in which any necessary maintenance works are completed. The aftercare programme will include any water and drainage requirements under any relevant planning conditions attached to a consent, should permission be granted. Drainage channels and a selection of ponds will remain after works have concluded as part of this aftercare.

### **LANDSCAPING OF THE SITE AND VEGETATION PLANTING**

- 3.4.3. The final profiling and landscaping of the Tips and new deposition area will be completed within several weeks of ceasing operations. Seeding will be completed according to the time of year/season to ensure the seed grows. Appropriate landscape features, such as ponds, tree planting will be incorporated into the reformed Tips, in keeping with the surrounding terrain. This will help visually integrate the reclaimed land into the surrounding landscape.
- 3.4.4. Prior to seeding, the subsoil will be ploughed lightly and de-stoned. Grass will then be seeded with a quick acting fertiliser being added. Green fertiliser will then be used to improve the substrate and body of the topsoil.

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<sup>8</sup> [statutory-national-standards-for-sustainable-drainage-systems.pdf \(gov.wales\)](#)

- 3.4.5. In order to produce a sustainable grass sward that will resist soil erosion and ensure stability, the seed mix has to contain a quick growing ryegrass typically used on lowland farms. The seed mix will consist of a 70% biodiverse mix with the other 30% quick growing ryegrass. The ryegrass will act as a nurse crop providing quick cover forming thick grassland binding the soil and preventing scour. ERI's previous experience shows that the ryegrass will slowly die out with the slower growing native fescues and bent grasses developing as they are more suited to the local climate. This process takes from five to 10 years to establish. Once established the grassland will return to the various habitats found in upland grasslands. It is considered that as little interference as possible should take place during the period in which the original habitat develops.
- 3.4.6. Soil covering and seeding of re-landscaped areas will take place in the Spring and Autumn of each year commencing within six months from the start of operations progressing in phases during the reclamation works.
- 3.4.7. As the maximum elevation of the Upper Tip is 330m, there will be tree planting in the landscaping Scheme predominantly below the Upper Tip (as shown on V2-S01/0006) in order to reduce water migration and to slow the water flows to the existing watercourses.
- 3.4.8. The Proposed Scheme will also include up to two years of additional compost, green waste or approved biosolids to encourage the re-establishment of the upland grazing and grassland habitats.
- 3.4.9. It is possible that there may be some maintenance required on the site which would be dealt with accordingly at the time (for example if heavy rains have disturbed establishment of new vegetation). A five year maintenance period will be in place once works have been completed at the Proposed Scheme. On the basis that the final Tip profiling and landscaping is completed in phases during operations and completed utilising best practice methodologies as intended, the amount of remedial work would be expected to be minimal.

## 4 DESIGN AND LAYOUT

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### 4.1 SCHEME ASSESSMENT

4.1.1. As stated in the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 Article 7<sup>9</sup>:

*“(4) A design and access statement must, in relation to design—*

*(a) explain the design principles and concepts that have been applied to the following aspects of the development—*

- (i) environmental sustainability;*
- (ii) movement to, from and within the development;*
- (iii) character; and*
- (iv) community safety; and*

*(b) demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account in relation to its proposed use and each of the aspects specified in sub-paragraph (a).*

*(5) A design and access statement must, in relation to access, explain—*

- (a) the policy or approach adopted as to access and how policies relating to access in the development plan (1) have been taken into account;*
- (b) how any specific issues which might affect access to the development have been addressed; and*
- (c) how features which ensure access to the development are to be maintained.”*

4.1.2. Guidance is available from the Welsh Government “*Design and Access Statements in Wales 2017*”<sup>10</sup>. The document outlines how a DAS should be formatted to best describe a Proposed Scheme. These include:

- i. Character
- ii. Access
- iii. Movement
- iv. Environmental Sustainability
- v. Community Safety
- vi. Response to planning policy (covered under Planning Statement)

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<sup>9</sup> [The Town and Country Planning \(Development Management Procedure\) \(Wales\) Order 2012 \(legislation.gov.uk\)](https://legislation.gov.uk)

<sup>10</sup> [design-and-access-statements.pdf \(gov.wales\)](https://gov.wales)

4.1.3. In addition to this, TAN 12, Design<sup>11</sup>, outlines the Welsh Governments advice on how “*Promoting sustainability through good design*’ and ‘*Planning for sustainable building*’ may be facilitated through the planning system”. Although the document is in relation to physical structures and their design, the report outlines core principles linked to that outlined in 4.1.2 of this DAS (see Figure 5).



Figure 5 - Extract from TAN 12, Design, Core Principles

## 4.2 CHARACTER

4.2.1. Restoring the character of the application site to its original condition and purpose is one of the key objectives of the Proposed Scheme. This will be achieved through remodelling the land and landscaping. The following sections explain the Proposed Scheme and works to be completed at Bedwas Tips from a design perspective including landscaping works, temporary facilities and buildings required to facilitate the works.

### LANDSCAPING

4.2.2. The Proposed Scheme is split into two colliery tips, Tip 1 (Lower and Middle) and Tip 2 (Upper) being positioned over multiple landscape levels. The existing site sits above and overlooks the town of Bedwas. As seen in the associated drawing package submitted with this application, a large proportion of the landform will be removed/remodelled and the land profile returned to that existing before the colliery site was developed. The restored area will then be used for upland grazing as

<sup>11</sup> [27918 TAN 12 \(gov.wales\)](https://gov.wales)

well as retaining and enhancing its use as an area for recreation and walking. The Proposed Scheme spans over an 80 hectare area with no associated built structures on the site.

- 4.2.3. As part of the reclamation works a comprehensive landscaping scheme will be implemented following the remodelling work. This will involve, over the majority of the site's area, the seeding of the reclaimed land. The seed mix to be used on site has been created alongside discussions with the Caerphilly county ecologist who has advised providing a diverse seed mix to maximise ecological enhancement on site while also allowing it to be used for upland grazing. As stated in paragraph 3.4.5 of this DAS, the seed mix will consist of a 70% biodiverse mix with a 30% ryegrass mix.
- 4.2.4. Additional trees are also to be planted at Bedwas Tips to further increase biodiversity at the site and enhance the recreational space. These trees will be used as screening for the new landform positioned along the edges of Tip 2. Planting of these trees is provisionally shown on V2-S03/0004.
- 4.2.5. Examples of the end result can be seen through previous work by ERI at the Six Bells reclamation site<sup>12</sup> resulting in a high quality landscape for the public to enjoy and for usage as upland grazing. The rye grass seed mix is an annual mix and will set the ground for local, native species to take root on the site once the rye grass has retreated out of season.



**Figure 6 - Before and after photos of works at Six Bells**

## PROCESSING PLANT / TEMPORARY FACILITIES

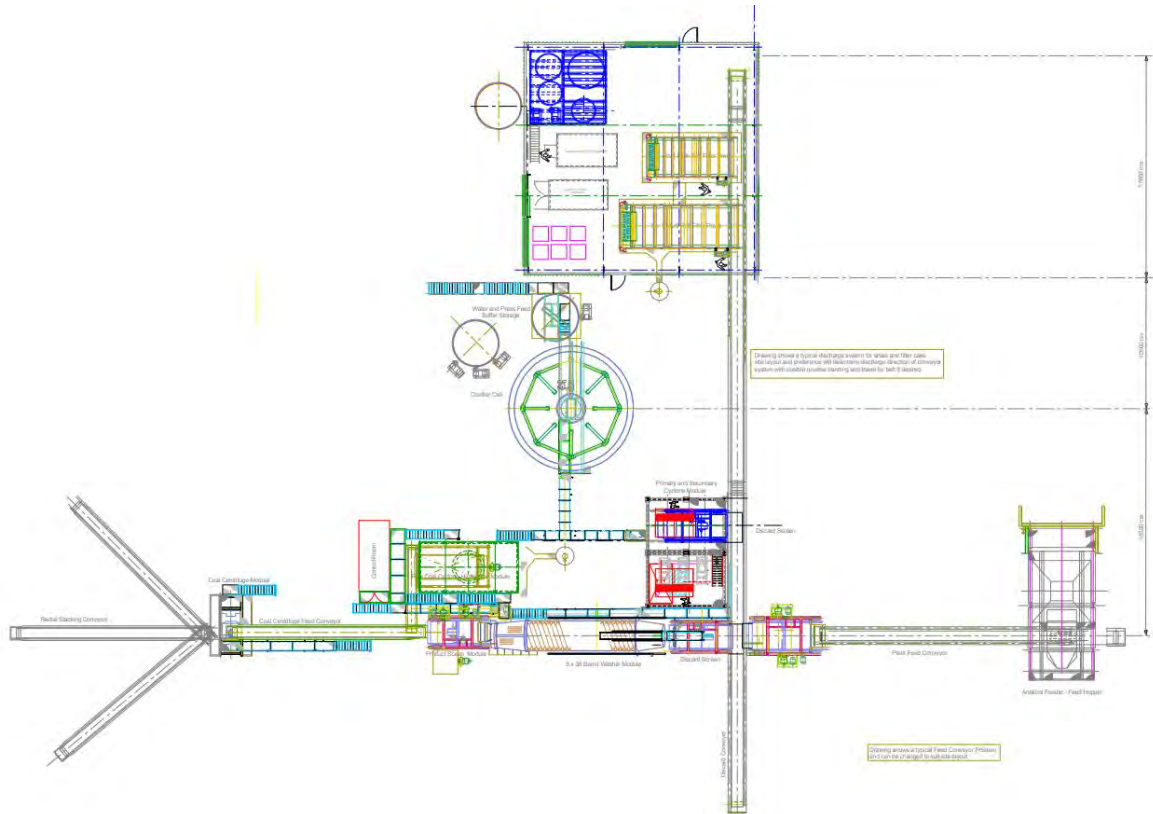
- 4.2.6. A temporary processing plant, see Figure 7, will be positioned on site to wash and process the RCC into a deliverable product which can then be transported off-site for use in construction products.
- 4.2.7. This will require excavation and laying concrete foundations for the Process Plant of approximately 37m by 35m. The processing plant will be approximately 8m in height dug into the side of the existing tip to screen from the majority of views. Topsoil will be stripped away and the subsoil used in bunds to create a stockyard as shown in Figure 8. Topsoil is to be stored separately for later use according to good soil management measures. Any run off from the soil storage area will be

<sup>12</sup> [Six Bells - ERI Reclamation](#)

captured by water channels created to link into a clean water pond via intermediary ponds designed to remove suspended solids in any water running off the stockyard.

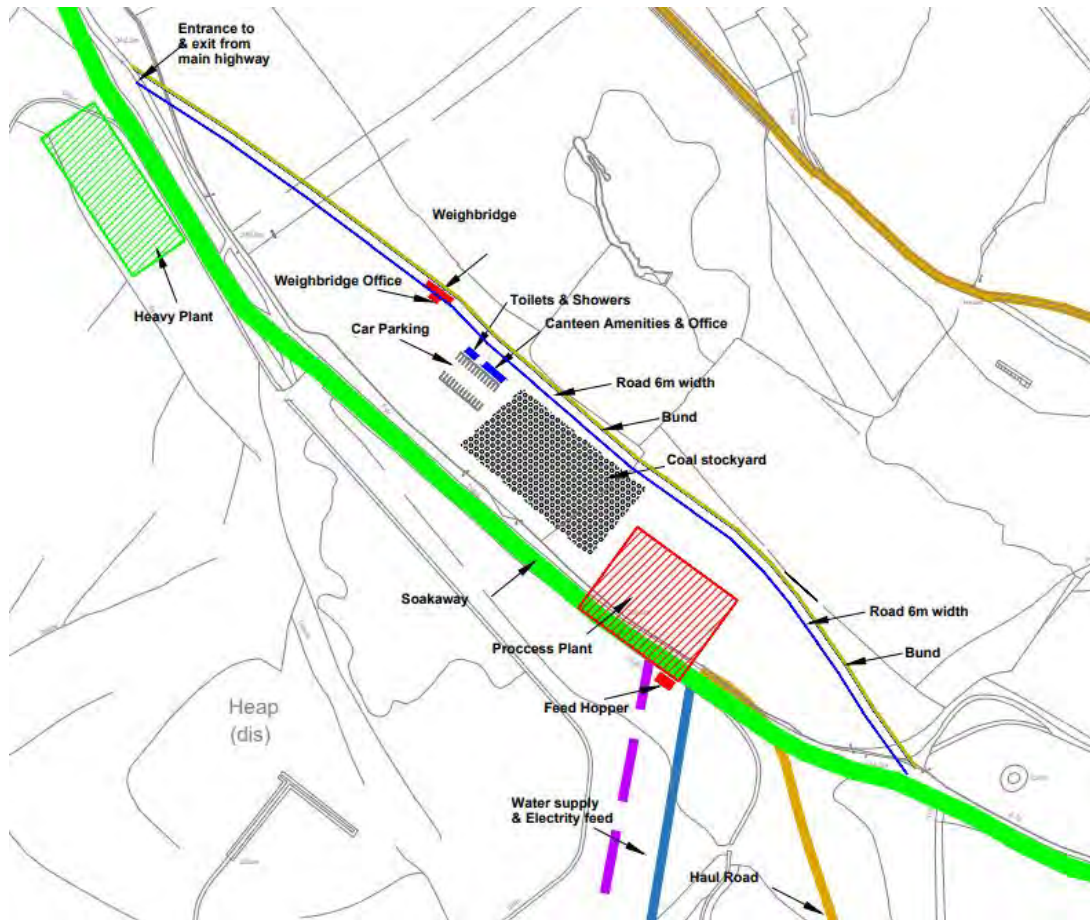
4.2.8. The processing plant will consist of the following elements:

- Feed Arrangements;
- Main coal separation equipment;
- Coal drying and storage; and
- Water Treatment equipment.



**Figure 7 - RCC on-site processing plant (V2-S03/0005)**

4.2.9. Portable buildings for workers welfare and project administration will also be transported to site and assembled, within close vicinity to the processing plant, as indicated in Figure 8. These consist of portable offices, amenity facilities such as toilets, canteen and showers as well as vehicle parking.



**Figure 8 - Temporary onsite compound layout (Extract from V2-S03/0004)**

- 4.2.10. Care has been taken to the siting of the processing plant to reduce the visual impact the plant and buildings might have on the area whilst meeting operational criteria for efficient management of the construction activities. The processing plant will be excavated to be positioned partially within the tips. The tip material surrounding the plant will be the last to be excavated from site to prevent visual impacts from the plant. The processing plant and temporary facilities will be in place during the reclamation works and removed after work has been completed with the majority of the land being fully restored to its original landform and reseeded accordingly. It is anticipated that it will operate for seven years.
- 4.2.11. It is accepted that the plant and associated works building will have a visual impact on the site where mitigation cannot be achieved. However, the visual impact caused by the processing plant is outweighed by the ecological and visual impacts that will come from the land reclamation works and so the temporary negative impact is justified.

### **SOIL BUNDS**

- 4.2.12. To reduce the visual impact of the operational works on the surrounding Bedwas area, a set of soil bunds will be set up around Tip 2 ranging from 3 – 5m in height. These have been chosen as a better alternative to traditional site fencing while also preventing access to the public for health and safety reasons. These bunds are temporary and will be removed after the operational phase of the



works has been completed. As works progress on site, the soil and sub soil from the bunds will be reinstated above the deposited material to form the final landform.

## HAUL ROAD IMPROVEMENTS AND EXTENSION

- 4.2.13. An extension to the existing NRW forestry Haul Road is proposed to allow construction and coal loading vehicles to access the site, see V2-S03/0003. Sandstone on the main tip site will be excavated to improve the existing forestry road, where necessary qualities are estimated at approximately 2,000 tonnes of sandstone which is considered to be minor in comparison to the existing deposit which is located in a sandstone safeguarding area. As part of these works, several additional passing places with a width of 4-6m for the road and 20m long, every 300m to 400m along the existing forestry track or more frequent if deemed necessary are proposed. These passing places are included within the RLB and are included as part of this planning application. The passing places will also be excavated into the hillside or, ideally, where the land allows it, the passing place will be built without excavation. Passing place locations to be discussed through consultation with NRW Forestry.
- 4.2.14. The new section of haul road will be a 575m long and 6m wide sloping road cut into the rock – see Figure 9. The rock excavated will be spread to the drop side of the road, to make a bund for safety and also to make the road surface.
- 4.2.15. The haul road extension will consist of three sections, with gradients of between 1 in 5 and 1 in 8.5, with two turning circles with an outer diameter of 17m. Land reprofiling will be undertaken to construct the roads and provide flat turning circles.
- 4.2.16. The haul road extension will tie into the Sirhowy Valley Country Park and to the B4251 and A467, to the north, and the existing forestry track, to the south.
- 4.2.17. After work has been completed on site, the improved haul road will be handed back to NRW for their usage. The creation of the haul road extension will provide NRW improved access from the forestry area to the road network.



**Figure 9 - Proposed extension and improvements to NRW Haul Road to existing highway (B4251 and A467)**

## ONSITE HAUL ROAD

- 4.2.18. An additional haul road will be constructed on site, to connect Tip 1 to the Process Plant.
- 4.2.19. Stone excavated during the construction of ponds and ditches on site will be used as materials to build this haul road. The haul road will be used for farming access once have concluded.

## DRAINAGE NETWORK (CONSTRUCTION WORKS)

- 4.2.20. The drainage network will be constructed, as depicted in V2-S03-0004, at Tip 1 and Tip 2 before operational activities commence. This will include:
  - A clean water pond; 10,000m<sup>3</sup>
  - Site water collection and treatment, including the following:
    - Two settling lagoons, at the base of Tip 1 and southern tip of Tip 2;
    - Main process water lagoon, at the southern tip of Tip 2;
    - Plant process water pond, adjacent to the Process Plant;
    - Total of four storage ponds, two ponds at the northern tip of Tip 2, one pond to the south-east of Tip 2 and one pond at the northern tip of the deposition area (Tip 3); and
    - Discharge pond adjacent to the main process water lagoon.
  - The ponds will include an automatic pumping station, flocculent station and associated pipework. All ponds will be safety fenced; and
  - Site bunding and water drainage channels – The soils excavated from the pond will be used in the site bunds. These, along with the constructed drainage channels, will collect water from the site and link to water collection and treatment ponds.
- 4.2.1. The washing plant will be separating and screening coal fines and shale overburden and will enable a range of homogenous materials to be either recovered or used as part of the remediation. The drainage network will collect surface water flows around the site and direct it towards the main process pond. This water will be utilised to feed into the processing plant during operation.
- 4.2.2. Additional pumps and pipes will be installed to transport water from the clean water pond to the processing plant and from the legacy quarry to the clean water pond.

## DRAINAGE NETWORK (OPERATIONAL WORKS)

- 4.2.3. Existing surface water at the Bedwas Tips involves a set of concrete opencast channels located around the edge of each tip. This water flows down from the north towards a culvert where the surface water is discharged into an existing watercourse.
- 4.2.4. The existing system cannot convey the required level of surface water sufficiently. The condition of the existing site drainage is unknown though it can be assumed it is no longer fit for purpose. A Sustainable Drainage System (SUDs) is to be installed around Tip 2 and the deposition area to resolve this issue as part of this application. This proposal is in line with the Flood and Water Management Act 2010 (Schedule 3) which as of January 2019, all new developments that include more than one building or have a construction area of 100m<sup>2</sup> or more require the implementation of SUDs.
- 4.2.5. Around Tip 2, it is proposed that a 5m wide by 10m deep trench be created and filled with porous material allowing water to drain off the landform into the existing groundwater. The existing concrete opencast channels will be removed from the site around Tip 2 as part of these works becoming

redundant due to the proposed SUDs system. Tip 1 has been found to not require further drainage with existing flows draining north to south. There is no notable change in the way surface water will flow at Tip 1 which will continue to use the existing concrete channels and discharge into the existing culvert to the south (See V2-S03-0004).

## 4.3 ACCESS

- 4.3.1. Within the Caerphilly County Borough Council Local Development Plan 2010<sup>13</sup>, emphasis is given to ensuring the public have “*Access to public open space, natural green space and recreational facilities*” being “*important in promoting public health and wellbeing and enhancing quality of life for both residents and visitors.*” (Section 1.86).

### CONSTRUCTION ACCESS

- 4.3.2. As part of the Proposed Scheme, a haulage route has been outlined allowing construction vehicles and coal-laden vehicles to access the site and connecting it to the B4251. The proposed haulage route is presently used as an access route for woodland maintenance by NRW. This haulage route will be extended to connect onto the existing B4251 which currently does not have access to the highway for ease of access. Construction vehicles will access the site from the entry road to the Sirhowy Valley Country Park of which a major/minor junction will be created at the roundabout with the minor being the proposed haul road extension.
- 4.3.3. By extending the haulage route, coal-laden vehicles and construction vehicles can easily access the land directly from the highway while also benefitting NRW by the improvements to their haulage route. Advantages to using the existing NRW haul road include avoiding impacts to the built up areas surrounding the Proposed Scheme considering the amount of vehicles that will be using the road to transport equipment and RCC. The haul road is the best choice for access to the site while preventing disruption to residential receptors. Electrically controlled barriers will be sited at either end of the haul road to ensure only tip related traffic will utilise the road. The barriers will be set back to ensure that HGVs do not block other traffic whilst they wait for the barriers to open.

### PUBLIC FOOTPATHS

- 4.3.4. There are multiple Public Rights of Way (PRoW) and byways which cross the Proposed Scheme. Once the Proposed Scheme is completed the existing site access will be retained for the public allowing continued recreational use of the hillside. The PRoWs will be diverted during works but reopened after work on site has been completed. The alignment of the existing PRoWs will not have changed after works are completed, however, there will be areas where RCC has been extracted which may result in a slight change in elevation.
- 4.3.5. The new landforms and enhanced landscape will benefit those using the footpaths while also encouraging sustainable forms of transport through walking in the area. The proposals also work to reduce anti-social behaviour from dirt biking by making a more appealing area and by making changes to the landform further encouraging usage of the site for recreational and health reasons.

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<sup>13</sup> [written-statement.aspx \(caerphilly.gov.uk\)](https://www.caerphilly.gov.uk/written-statement.aspx)

## 4.4 MOVEMENT

- 4.4.1. Although the Proposed Scheme does not increase sustainable travel opportunities, the existing PRoWs will be retained across the site promoting sustainable active travel allowing nearby residents and visitors to walk over the site. An appropriate footpath diversion application will be submitted for those footpaths affected during the proposed reclamation works under Section 257 of the Town and Country Planning Act 1990<sup>14</sup>.

## 4.5 ENVIRONMENTAL SUSTAINABILITY

- 4.5.1. The Proposed Scheme is split into two phases. Firstly, the RCC on site will be removed and processed resulting in the new landform. Secondly, the coal product will then be sold and revenue used to fund the ecological enhancement on site including the creation of upland grazing. The reprofiling work and seeding will take place at the same time during the lifetime of the project. The Proposed Scheme shows an efficient use and protection of natural resources by utilising material regarded as spoil for use in the construction sector.
- 4.5.2. The Proposed Scheme enhances the biodiversity of the Bedwas Tips through the reclamation works allowing upland grazing as well as encouraging other wildlife to utilise the site. A diverse seed mix will be used for the Proposed Scheme in line with advice from the county ecologist and to help bring further biodiversity into the area. The seed mix will consist of a 70% biodiverse to 30% ryegrass species mix. The site is designed for the future, reversing some of the ecological harm caused by historic mining, looking towards a greener future through recreational usage and working towards limiting climate change effects through the reuse of RCC instead of the use of virgin coal extracted from the ground which is in conflict with the Welsh Government wanting to move away from this.

## 4.6 COMMUNITY SAFETY

- 4.6.1. In the past, there have been reports of anti-social behaviour through the use of dirt bikes from the lack of vegetation and landform. It is anticipated that from the landform changes and the incorporation of grass and vegetation that these activities will be deterred allowing the site to provide for ecological, recreational and agricultural benefits.
- 4.6.2. It should also be noted that the site as it currently stands is a potential fire risk due to the amount of RCC found on the site which could set alight if the effects of climate change continue. By completing the works at Bedwas Tips, this risk is reduced through the extraction of this material.
- 4.6.3. The processing plant will not be accessible to the public during the extraction/operational phase and will be monitored through 24 hour CCTV and security to ensure no unauthorised access and so prevent harm to the public. In order to prevent harm to those nearby the haul route will only be accessible to construction vehicles or coal loading vehicles. Barriers will be in place to prevent the public using this access. As stated, the soil bunds at Tip 2 will deter access to the site while also screening off the works from the public.

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<sup>14</sup> [Town and Country Planning Act 1990 \(legislation.gov.uk\)](https://www.legislation.gov.uk)

## 5 CONCLUSIONS

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- 5.1.1. This Design and Access Statement demonstrates that careful attention has been given to the design of the Proposed Scheme in order to minimise any disturbance during the 'operational' phase. The avoidance of impacts, given the scale and nature of the proposed activities is not practical, however with the information provided in this DAS including all mitigation shown, the applicant considers that all reasonable efforts have been identified that will minimise them. The long-term future use of the site is also considered to provide a range of benefits and enhancements which outweigh any temporary harms caused during the operational phase.
- 5.1.2. The Proposed Scheme will also ensure that the same level of access currently enjoyed by the public is retained as part of the works on site. No access enhancements have been identified, however, all PRoWs affected as part of the Proposed Scheme will be reinstated after works have been completed.
- 5.1.3. The Proposed Scheme works to benefit the Bedwas area as well as ensuring a good quality design as shown from the above assessment.

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