

Richards, Moorehead and Laing Ltd



Ffos-y-Fran Final Restoration Strategy 2025

Green Infrastructure Statement – February 2025

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Foreword

The Ffos-y-Fran final restoration strategy will signal the end of a long legacy of coal mining in the South Wales Valleys and the final phase of the wider East Merthyr Reclamation Strategy. Coal mining in Merthyr Tydfil has played a significant part in the lives of the local community spanning many generations. It has also had a major impact on the environment and caused a significant transformation of the physical and social landscape over a long period of time.

The final restoration strategy for Ffos-y-Fran, presents a valuable opportunity to rehabilitate the landscape that has been lost and despoiled over centuries of industrial exploitation, to a new landscape that can develop and adapt for use by future generations. Within a new landscape framework, there is opportunity to create and enhance opportunities for biodiversity, while returning much of the land back to Urban Common that has been absent during several periods of coal mining. The final restoration of the land and the surrounding area of Ffos-y-Fran is the start of a long road of recovery for biodiversity and natural ecosystems, but also brings fresh opportunities for diversity, including community benefits and alternative development.

Since the original restoration proposals were prepared in 2003, there have been many changes in environmental legislation and government policy, particularly surrounding the subject of climate change and sustainability. There is also more responsibility on public authorities to promote and deliver, more sustainable and long-term solutions. The Well-being of Future of Generations (Wales) Act 2015 has made a significant change in how we approach sustainable development and how we should all work towards the same purpose and the seven well-being goals as set out in the Act.

The final restoration strategy for Ffos-y-Fran has been carefully formulated and developed to align closely with Welsh Government policies and relevant environmental legislation, and particularly with the seven goals of the Well-being of Future of Generations (Wales) Act 2015 (WFGA) and Planning Policy Wales (PPW 12 Edition). The final restoration strategy is an alternative to a previously approved scheme and is aligned particularly closely with the Step-Wise approach and principles of DECCA as outlined in PPW. This Green Infrastructure Statement describes the approach to the project, and sets out how the proposed scheme is closely aligned with the goals of WFGA and PPW. The final restoration strategy will take some time to start delivering against these goals, but this is a long-term project that requires involvement from a range of public bodies and an integrated approach to deliver long term benefits.

The closure of the Ffos-y-Fran mine in November 2023 was a significant step change enforced by Welsh Government policies addressing climate change and pressures from climate action groups. 2023 was a symbolic year when a traditional coal mining industry, historically so important to the working culture and identity of the South Wales valleys, drew to a close, and a new healthier and globally responsible part of Wales emerged as an opportunity for future generations.



The seven goals of The Well-being of Future of Generations (Wales) Act 2015

- A Prosperous Wales
- A Resilient Wales
- A Healthier Wales
- A More Equal Wales
- A Wales of Cohesive Communities
- A Wales of Vibrant Culture and Thriving Welsh Language
- A Globally Responsible Wales

1. Introduction

1.1 Green Infrastructure Statements

This is a Green Infrastructure Statement (GInFS) prepared in accordance with the requirements of Planning Policy Wales (PPW – Edition 12 – February 2023) for the proposed final restoration strategy of the former surface mine at Ffos-y-Fran, Merthyr Tydfil, South Wales. The final restoration strategy is an alternative approach to a scheme that was originally approved in 2003 and has been partially completed prior to the closure of the mine at the end of November 2023. The alternative proposals are subject to a Section 73 planning application being approved by Merthyr Tydfil County Borough Council.

The requirements of Green Infrastructure Statements are set out in Chapter 6 Distinctive and Natural Places of Planning Policy Wales (PPW) that covers environmental and cultural components of placemaking. Places that are distinctive and natural are seen as contributing to seven goals of the Well-being of Future Generations (Wales) Act 2015.

The Seven Goals	How to contribute to the seven well-being goals
A Prosperous Wales	By valuing the quality of our landscapes and by protecting, maintaining and enhancing biodiversity and our natural environment and promote low carbon and appropriate resource choices which address the causes of climate change and can provide cost effective ecosystems
A Resilient Wales	Supported by protecting and providing sufficient scale, extent, diversity and connectivity to maintain and enhance biodiversity and the resilience of ecosystems
A Healthier Wales	By enabling opportunities for connecting with the natural and historic environment, tackling airborne pollution and other environmental risks and encouragement of improving physical and mental well-being
A More Equal Wales	By promoting facilitating access to the natural and historic environment for physical and social benefits and beneficial use of historical mining and industrial legacies
A Wales of Cohesive Communities	By providing spaces for people to interact and to connect with nature and by mitigating risks such as pollution or flooding, and by maximising opportunities for communities to flourish in healthy, attractive and pleasant surroundings
A Vibrant Culture and Thriving Welsh Language	By building on those unique and special characteristics which give places their distinct ‘feel’, identity and a sense of place through the protection and enhancement of the natural, historic and built environment.
A Globally Responsible Wales	By reducing carbon emissions, addressing airborne pollution and managing environmental risks and promoting a natural and historic environment which should be protected and enhanced for its special characteristics and nature conservation.

¹ PPW 12 – para 6.2.1

1.2 Green Infrastructure

PPW defines Green Infrastructure as *“the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places”* and *“at the landscape scale green infrastructure can comprise entire ecosystems such as wetlands, waterways, peatlands and mountain ranges or be connected networks of mosaic habitats, including grasslands”*.¹

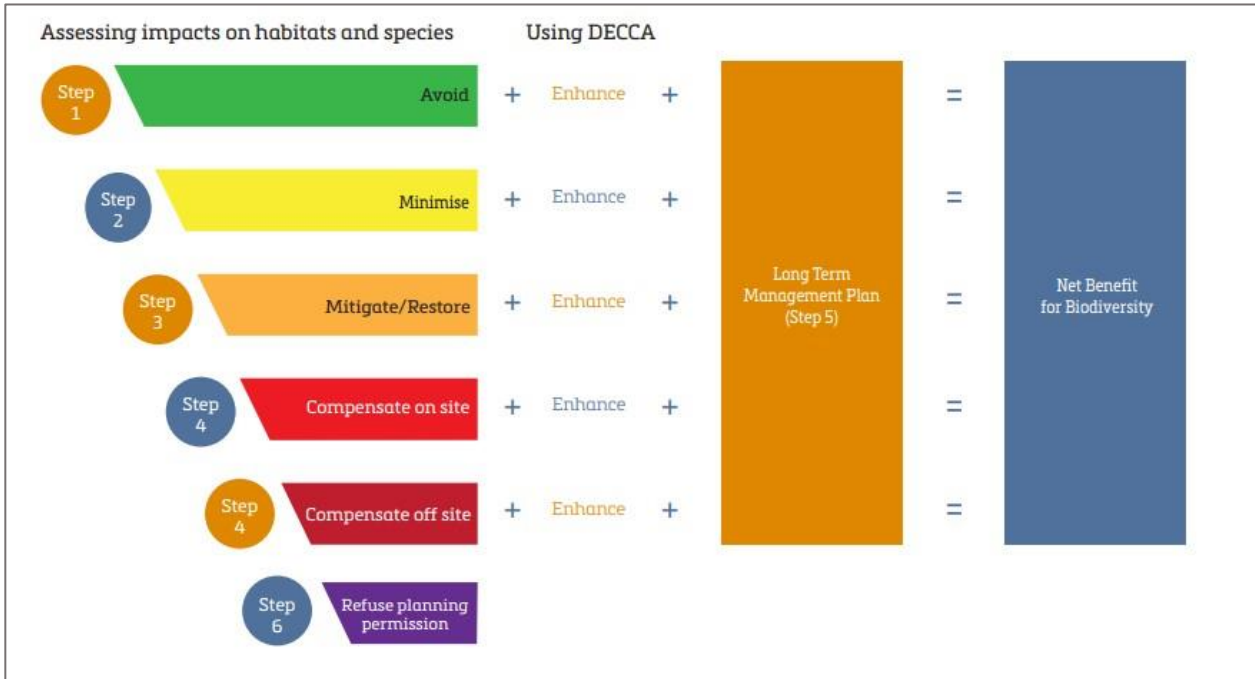
PPW also refers to the Environment (Wales) Act 2016 and how the Act provides a context for the delivery of multi-functional green infrastructure that can make a significant contribution to the sustainable management of natural resources by protecting, maintaining and enhancing biodiversity and promoting the resilience of ecosystems.

Green infrastructure statements should be submitted with all planning applications and be proportionate to the scale and nature of the proposed development and describe how green infrastructure has been incorporated into the scheme.

1.3 Planning Policy Wales and The Step-Wise Approach

A Green Infrastructure Statement is an effective way of demonstrating positive multi-functional outcomes which are appropriate to the site in question and should be used for demonstrating how the ‘Step-Wise Approach’ (Paragraph 6.4.21) has been applied. PPW states that the first priorities for planning authorities to consider, is if the proposed development avoids damage to biodiversity (in its widest sense). If there are any potential harmful environmental effects, then planning authorities must be satisfied that all reasonable alternatives have been considered. Sites that contain protected species and habitats which are irreplaceable should be safeguarded.

PPW – Figure 12: Summary of the Step-Wise Approach



Landscape Character

PPW acknowledges that the character and special qualities of all places and landscapes can provide a strong sense of place, inspiration and belonging, and can contribute to the distinctive cultural identity of Wales. It places emphasis on the characteristics of both nationally protected areas such as National Parks and local landscapes, and areas of high landscape importance that may be unique or distinctive to a particular area.

Common Land

PPW recognises the importance of Common Land as a finite resource and that should not be developed without good reason. It is valued in agricultural terms but also for recreation and leisure, habitat conservation and wider environmental interests. Access to Common Land should not be prevented or impeded unnecessarily to ensure its proper management.

1.4

The Environment (Wales) Act 2016

Section 6 (S6) under Part 1 of the Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (the S6 duty) for public authorities in the exercise of functions in relation to Wales. Under section 6 of the Act, public authorities that exercise their functions in relation to Wales have a duty to maintain and enhance biodiversity and promote the resilience of ecosystems

The S6 duty states that:-

“A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.”

Section 6 of the Act also sets out the requirements for a public authority to take account of the resilience of ecosystems and particularly the following five key aspects.

- (a) diversity between and within ecosystems;
- (b) the connections between and within ecosystems;
- (c) the scale of ecosystems;
- (d) the condition of ecosystems (including their structure and functioning);
- (e) the adaptability of ecosystems.

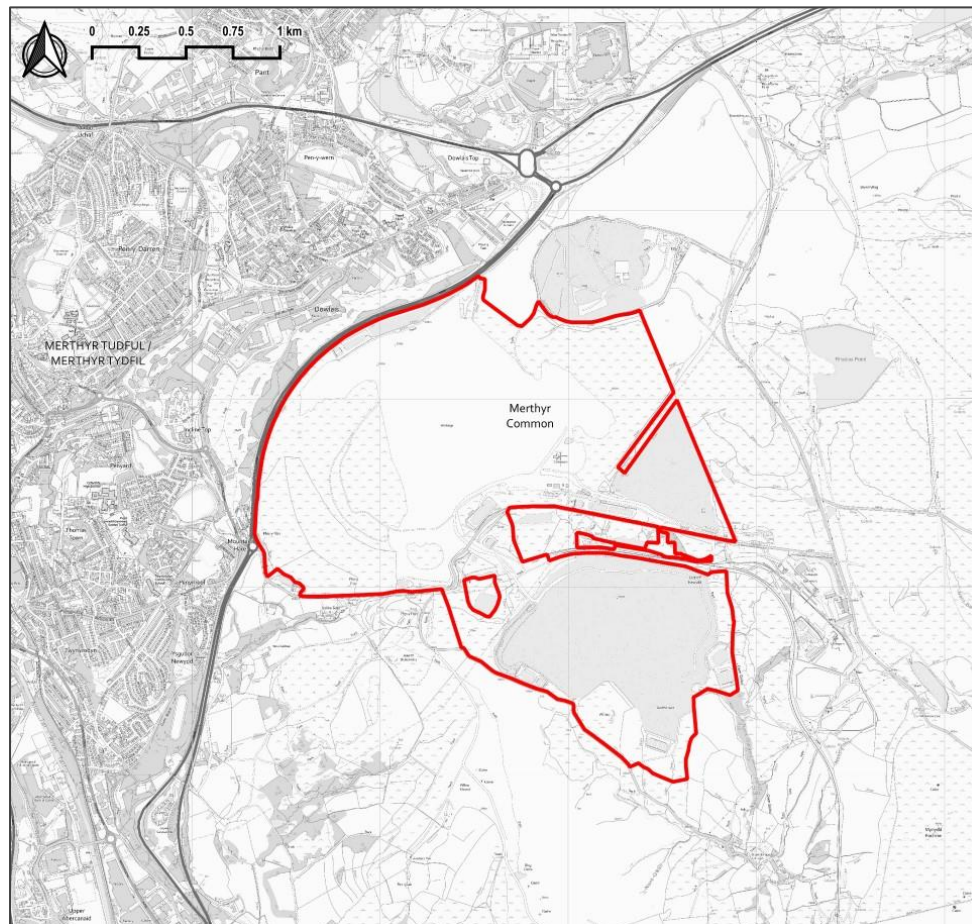
These have been incorporated into Planning Policy Wales (11th Edition) where they are presented as the DECCA principles along with the stepwise approach. It was decided in the early stages of the project that these principles should be followed in the development of an alternative restoration strategy for Ffos-y-Fran and were subsequently incorporated into the scheme objectives during the developmental stages of the project.

D	Diversity: to ensure mechanisms are in place to minimise further loss and where circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. More diverse ecosystems are more resilient to external influences (this includes biological, geological and physical diversity on a site). This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity;
E	Extent: to ensure mechanisms allow for the identification of potential habitat, the maintenance of existing assets and networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. This means that planning decisions should incorporate measures which seek the creation, restoration and appropriate management of green networks and linkages between habitats and maintaining and enhancing other green infrastructure features and networks;
C	Condition: Ecosystems need to be in a healthy condition to function effectively, to deliver a range of important ecosystem services. Planning decisions should not compromise the condition of ecosystems. By taking an integrated approach to development, for example, which considers both direct and wider impacts and benefits it should be possible to make a positive contribution. Planning for the long-term management of retained habitats is key to maintaining condition through for example, the use of planning obligations;
C	Connectivity: to take opportunities to develop functional habitat and ecological networks within and between ecosystems and across landscapes, building on existing connectivity and quality and encouraging habitat creation, restoration and appropriate management. The opportunities could include enlarging habitat areas, developing buffers around designated sites or other biodiversity assets or corridors, including transport and river corridors, and the creation of 'stepping stones' which will strengthen the ability of habitats and ecological networks to adapt to change, including climate change; and
A	Adaptability to change: primarily in the form of climate change, for both species (diversity) and ecosystems requires action to protect the extent, condition and connectivity of habitats, features and ecological networks. Development plans, planning proposals and applications which build on protecting designated sites and securing and enhancing green infrastructure will be key ways of addressing the attributes of ecosystems resilience identified in the Environment (Wales) Act as well as facilitating social and economic resilience aspirations of the Well-being of Future Generations Act.

2. Environmental Baseline Conditions

2.1 Context

The Ffos-y-Fran Land Reclamation Scheme (FLRS) covers a total area of approximately 400 hectares of land to the east of Merthyr Tydfil and approximately 1.5 kilometres from the town centre. The site encompasses an extensive upland area that has been subject to open cast mining activities over several years and that will cease at the end of November 2023. The Ffos-y-Fran site forms the final part (and Phase III) of the East Merthyr Reclamation Scheme (EMRS) and has seen the extraction of circa 11 million tons of coal over the last 16 years. This last period of mining activity commenced in 2007 following planning permission being granted by the National Assembly for Wales under appeal on 11th April 2005. For the purposes of the S73 application, the baseline conditions of the site are generally taken as being at the end of November 2023 when coal extraction ended, and the site entered a period of care and maintenance.



Site Location Plan

2.2 Site Description

The Ffos-y-Fran opencast mine lies within an area of upland moorland east of Merthyr Tydfil. The surrounding land is open and exposed and includes extensive areas of old tips and land reclaimed from the coal industry over extended periods of time. Much of the site and surrounding area also lies within the Gelligaer and Merthyr Common, a vast area of upland with secondary heath and dry acid grasslands primarily grazed by sheep, cattle, and horses.

The site lies to the south-east of the A4060 that connects the A470 at Pentrebach, south of Merthyr Tydfil, to the A465 Heads of Valleys Road at Dowlais Top. To the north of the site lies the Trecatti Landfill site and to the east, a minor road that serves the nearby villages of Fochriw, and Pontllytyn, and Pentwyn to the south. The Cwmbargoed Disposal Point including a coal washery and rail head, lies on the eastern boundary and central section of the site. It also contains buildings associated with the Ffos-y-Fran mining operation including site offices and welfare facilities and is the entrance to the operational mine. Bogey Road, a minor road runs through the central section of the site in an east-west direction connecting Cwmbargoed to the A4060 at Mountain Hare. Bogey Road effectively divides the site into two forming the northern and southern sections of the site. South of the site runs another minor road and beyond to open moorland and wooded river valleys of Nant Gyrawd and Taff Bargoed. An overhead 400 KW power line supported by pylons crosses the central section of the site and the Bogey Road in a north-east to south-west direction.



View west across operational mine in August 2023 from upper levels of OB1

Main Void

Within the site lies the main void approximately 175 metres deep, this was the final excavation to enable the extraction of the remaining coal reserves from deep lying seams. There are three main tips or overburden mounds within the site formed by the recent surface mining operations that began in 2007. The three overburden mounds, referred to as OB1, OB2 and OB3, contain a total of approximately 37 million cubic metres of material removed during the opencast operations. OB1 lies adjacent to the main void, OB2 to the east of OB1 and the main void, and OB3 south of the Bogey Road in the southern section of the site.



Photograph of the main void and pit lake in October 2023 before the mine closed in November 2023

River Catchment Areas

The site forms the upper part of the river catchments of the Bargod Taff and Nant Gyrrawd which flow south towards the Afon Taff. Historically, the site has drained via a network of surface water drainage ditches, ponds, reservoirs, and leats, some of which form part of historic workings on the site from previous mining activity and known as the Dowlais Free Drainage System (DFDS), that provided water to the Dowlais Ironworks. The system also acted to drain a variety of coal seams and eventually drained into a water pit at Tyle Dowlais Pit located within the western flank of the site. Some of these features are reservoirs and leats that form part of a wider drainage system and are now designated Scheduled Monuments (SM's). These include SM's such as Sarn Howell Pond, Penydarren Pond and Isaac Morgan Pond that formed part of the Dowlais Free Drainage System and lie in the central section of the site. Many of the historic workings such as the Tyle Dowlais Pit Building, discovered in 2017, were carefully uncovered by mining operations and recorded by GGAT before operations continued.

Cwmbargoed Disposal Point

The Cwmbargoed Disposal Point including a coal washery and rail head, lies on the eastern boundary and central section of the site, south of the Bogey Road and was also the entrance to the operational surface mine. It contains buildings associated with the Ffos-y-Fran mining operation such as a coal washery, rail head, site offices and welfare facilities. The CDP site continues to be used as the operational base of the site and is currently occupied by the C&M team. The facility is likely to be closed, or an alternative use found following completion of the final restoration.

Pit Lake

Surface mining operations in the main void in the northern section of the site ranged from around 60 metres deep in the north-west to a maximum of approximately 175 metres deep against the south-eastern high wall which was the final excavation profile to enable the extraction of the coal reserves from deep lying seams. During the operational phases of the mine, water was pumped from the void to keep the surface mine sufficiently dry to enable the extraction of coal from these lower seams. Towards the end of the operational phase the base of the void in the south-east was backfilled with overburden (to a height of circa 250m AOD) and the pumps were removed. Further tipping took place in the southern half of the void to a level of around 267m AOD at the base of the backfill slope before coaling operations finally ceased in November 2023. As a result of the cessation of all mining and pumping operations, the void naturally filled at a controlled rate with a combination of direct rainfall, groundwater and surface water run-off. The pit lake level is anticipated to seasonally fluctuate in height between 275 – 285 metres AOD (Above Ordnance Datum).

Rivers and Watercourses

The site forms the upper part of the river catchments of the Bargod Taff and Nant Gyrawd which flow south towards the Afon Taff. Historically, the site has drained via a network of surface water drainage ditches, ponds, reservoirs, and leats, some of which form part of historic workings on the site from previous mining activity. These workings are known as the Dowlais Free Drainage System (DFDS) which provided water to the Dowlais Ironworks. Some of these features are reservoirs and leats that form part of a wider drainage system and are now designated Scheduled Monuments (SM's). The majority of the main surface water catchments at Ffos-y-Fran eventually feed into the River Taff to the south and west with some draining to the south-east towards the River Rhymney.

Overburden Mounds

There are three main tips or overburden mounds within the site formed by the recent surface mining operations that began in 2007. The three overburden mounds, referred to as OB1, OB2 and OB3, contain a total of approximately 37 million cubic metres of overburden excavated and placed during the surface mining operations. OB1 lies adjacent to the main void, OB2 to the east of OB1, the power lines and north of the Bogey Road, and OB3 south of the Bogey Road in the southern section of the site.



View of overburden mound OB3 that will remain as part of the final restoration scheme

Ponds and Settlement Lagoons

There are several ponds and settlement lagoons that were constructed as part of an earlier phase of the surface mine and that remain on site today. These lagoons were used to contain water during periods of inclement weather to ensure suspended solids were settled out before discharging clean water back into the surrounding watercourses in accordance with NRW consents to discharge. Some of the ponds are lined to prevent water loss which is contained and managed by a combination of small dams and penstock valves. Most of the ponds are fenced off to prevent access by grazing animals and to deter trespass by the public. It is the intention to retain and improve these ponds, as some are showing signs of nature recovery with marginal vegetation colonising along some banks and some of which have tested positive for presence of great crested newts.

Central Ecological Area

In the centre of the FLRS but outside the site boundary, lies the 'Central Ecological Area' to the south of the Bogey Road. Now incorporated into the LDP as the Merthyr Common Central Site of Importance for Nature Conservation (SINC), it comprises the retained part of a larger, former candidate SINC. The site benefits from a mosaic of interconnecting habitats, notably; acid grassland, dwarf shrub heath, small woodland, short ephemeral vegetation, wet flushes, and ponds. The vegetation includes plants such as lesser skullcap and marsh speedwell and Southern marsh orchids. the SINC supports protected species; barn owl, bats, reptiles including common lizards, great crested newts, and other amphibians such as palmate newts, toads, and frogs. It also offers foraging and breeding potential for birds such as lapwing and reed bunting.

3.0 Description of the Development

3.1 The Final Restoration Scheme

The Scheme involves the final restoration of 285 hectares of land that has previously been part of the surface mine operations at Ffos-y-Fran. The Scheme is a variation to an existing planning permission that is in place, and that has previously been approved in 2011 and subsequently revised and updated. Since that time, the approach to the restoration of former coal tips has adopted a more sustainable approach. The traditional approach to dutifully pursuing bulk earthworks in the restoration process is now considered outdated and unsustainable and more pragmatic alternatives involving less earthworks are also more affordable. Less bulk earthworks also reduce potential environmental risks associated with such activities on air quality and noise sensitive receptors and the use of carbon in the process. Less bulk earthworks can also present opportunities to restore and deliver a more interesting and naturally biodiverse landscape.

Many areas of the Ffos-y-Fran site have already been progressively restored or have remained dormant and undisturbed for some time. These areas are starting to show signs of nature recovery. Wetland habitats have developed around the margins of ponds and watercourses. Evidence of great crested newts has been recorded (in 2024) in over half the ponds on site, southern marsh orchids have colonised in some of the wetland and peregrine falcons have been seen flying over the site.

To implement the original and consented scheme would require significant bulk earthworks, the removal of existing ponds and wetlands and inevitable potential disruption to the local environment. An alternative approach has therefore been adopted that embraces the Step-Wise approach described previously in this Green Infrastructure Statement.



Southern marsh orchids have started to naturally colonise on the site in wetland flushes around the margins of waterbodies such as settlement lagoons and old reservoirs



Visualisation A - View north-west across restored site towards Merthyr Tydfil from OB1.

3.2 Scheme Objectives

The scheme objectives were identified at the early stages of the project in summer 2023 to align with national planning policy and approaches to biodiversity as referred to above. The scheme objectives were to :-

- Develop a restoration strategy to leave the site as a safe environment for future generations.
- Implement a progressive, cost effective, achievable and sustainable restoration scheme by 2025/2026 (Note: these dates are now time expired).
- Deliver community benefits on site for local communities of Merthyr Tydfil and Caerphilly
- Align with the Environment (Wales) Act 2016 and the principles DECCA (Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience).
- Create a framework for a diverse landscape and a range of habitats that encourage long term net biodiversity benefit (NBB).

3.3 Alternatives Considered

The EIA regulations require that any alternatives to the proposed development that have been considered should be recorded in the ES as part of the EIA process. Alternative schemes were considered as options early in the design development stages.

Two options were developed as alternatives to the consented scheme and presented to MTCBC in the report Ffos-y-Fran Final Restoration Strategy 2023. The two options presented in the document were for a low level and medium level restoration scheme. The two options are presented in the following table.

The preferred option of the two at that time was selected as Option 2 subject to further investigations and feasibility assessments. Option 2 medium level restoration was considered as having the most potential to deliver the scheme objectives.

Option 1 – Low Level Restoration	Option 2 – Medium Level Restoration
Filling of void to circa 270 metres AOD with approximately 925,000 cubic metres of fill material – potential for permanent water body to form above minimum groundwater level of 269-270 AOD.	Main void filled to approximately 300 AOD with approximately 4.2 million cubic metres – reduced height of OB1 – batters trimmed – no lake – above minimum groundwater level of 269-270 AOD.
Resulting slopes likely to be extensive and steep sided and unsuitable for rough grazing and return to common land.	Approximate level of Rhas Las Seam – minimum risk of future slippage and subsidence and well below level of Big Seam.
Areas might need fencing off for health and safety reasons depending on steepness of slope profiles.	Potential for some level areas for access/maintenance.
Alternative land for Common Land return may be required	Some areas suitable for return to Common Land.
Relatively short time-period for restoration and cessation of earthworks – less environmental impact caused by construction period.	Potentially some funding available for landscape remediation and visual amenity and 5-year establishment maintenance period.
Remaining slopes of void could provide interesting opportunities for biodiversity on sheltered slopes.	Potential to further enhance restoration of areas of Phases I & II on western flank of reclaimed tip.
Potential for lake or wetland area to form naturally	Lake or wetland unlikely to form naturally at level of 300 AOD without remediation works to form lake-bed level.
Potentially more funding available for landscape remediation and visual amenity and 5-year establishment maintenance period.	Potential for localised tree planting on OB2 and OB3 and improve visual amenity from locally public areas i.e., Bogey Road and Phase I slopes visible from Dowlais
Potential to partially restore additional slopes on OB2 and OB3 and improve visual amenity from locally public and visible areas	Potential to partially restore additional slopes on OB2 and OB3 and improve visual amenity from locally public and visible areas



Visualisation B – View north across pit lake and eastern side slopes of OB1 towards Dowlais Top.

3.4 Design Development

Option 2 was initially taken forward as the preferred option through the design development stages and its feasibility evaluated. At the time (Summer 2023), the mine was still operational with the final seams being extracted from the bottom and lower levels of the pit void. Water was being pumped out of the void in significant volumes to keep the pit void operational for coal extraction. MSW had a water abstraction and discharge licence in place for this operation to continue which was granted by NRW subject to environmental conditions.

As coal extraction was coming to an end and all remaining coals had been removed from the deepest part of the mine, there was no requirement for the base of the pit void to remain dry, therefore, MSW took a commercial decision to cease pumping as this was a high-cost operation and was no longer required for the continued operation of mining activities which were still taking place at a higher level elsewhere in the void.

Following the cessation of pumping, the water levels in the void started to rise and recover back to its natural levels forming a pit lake. At this stage, backfill continued to be tipped into the base of the void above the rising water levels and a large part of the void was filled to a level of around 268m AOD before the water levels rose and submerged the backfill in this area. This made any further backfilling operations in the void impossible, unless the pumps were re-deployed to reduce water levels once more. This would enable the tipping and placing of backfill in a relatively 'dry' environment to ensure its long-term geotechnical stability. Following the final cessation of mining operations in November 2023, monitoring of the lake levels continued to better understand the relationship between rainfall, water levels and groundwater drainage.

Lake levels continued to rise reaching a maximum level of approximately 281m AOD in April 2024 and then started to stabilise over the summer months. The only way that backfilling could recommence in the void to enable Option 2 to be a viable proposal would have been to undertake a long and extremely expensive pumping operation to fully dewater the void, which would have led to lengthy delays and additional environmental disturbances. It was therefore decided that the most pragmatic and environmentally sensible approach to the design of the restoration proposals was to incorporate the existing groundwater lake into the scheme as a permanent body of water which would rise and fall seasonally in line with groundwater levels which were recorded before mining operations commenced. This would also significantly reduce the need for bulk earthworks, significantly reducing carbon emissions into the atmosphere and saving time and money that could be spent on other aspects of the restoration scheme such as planting and habitat creation.

3.5 Restoration and Aftercare Proposals

The key elements of the restoration and aftercare proposals are: -

Key Features

1. The overburden mound OB1 in the northern part of the site which is visible from parts of Merthyr and sections of the Heads of Valley Road, A4060 and surrounding area, would be reduced in height, re-profiled and grass seeded.
2. Sections of exposed rock on the western side of OB1 would be retained as open scree and as a geological feature for visual amenity and open cliff habitat providing potential habitat for lichens and mosses, and possibly a suitable location for breeding birds such as Raven and Peregrine.
3. The two overburden mounds OB2 and OB3 would remain largely as they appear today, and the lower slopes grass seeded and planted with native tree species.
4. Old reservoirs, dams and leats that remain from previous phases of mining activity including the Dowlais Free Drainage System would be retained and enhanced for biodiversity. Other water bodies such as settlement lagoons used in the earlier phases of Ffos -y-Fran would also be retained and protected
5. The groundwater lake that has formed naturally in the main void would be retained with shallow banks and margins around the shores of the lake. The surrounding slopes of the lake would be re-profiled and planted with native trees to form a mixed woodland
6. Demolition and removal of existing buildings associated with the operational mine such as workshops used for vehicle maintenance and storage of materials such as fuel and machinery would be demolished and removed from the site.
7. A proportion of the site would be returned to urban common as rough grazing land. This would require areas to be fenced off to aid establishment of vegetation and to prevent grazing by livestock.
8. Areas outside the urban common would be prepared to enable habitat creation and the establishment of species rich grassland, broad-leaved and mixed woodland, open cliff, acid wetland and flushes and heath.
9. Land adjacent to A4060 would be re-profiled to provide potential for future light industrial use and grass seeded for general amenity until opportunities for development come forward.
10. Creation of a network of footpaths and Public Rights of Way (PRoW) and a Byway Open to all Traffic (BOAT)

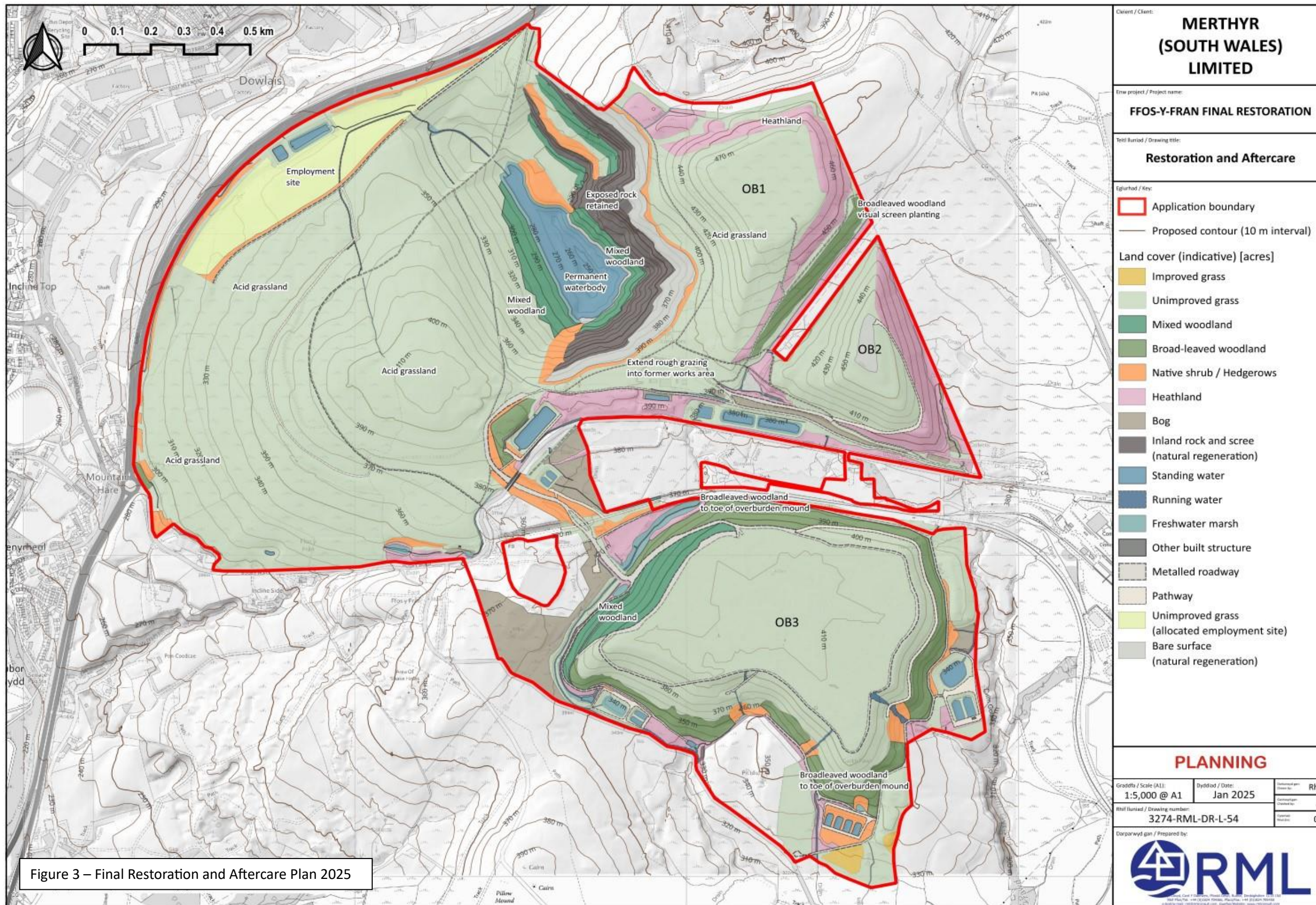


Figure 3 – Final Restoration and Aftercare Plan 2025

4.0 Applying the Step-Wise Approach and principles of DECCA

4.1 A Sustainable Alternative

By applying the Step-Wise approach, the final restoration strategy provides an alternative scheme to that currently consented and approved by MTCBC. The differences between the two schemes are summarised below and the outcomes of the Step-Wise approach set out in the following table.

The alternative scheme retains many of the existing site features that are of environmental, ecological, cultural and heritage value that would be lost if the original and approved scheme was implemented. The alternative scheme also requires significantly fewer bulk earthworks to achieve the final restoration profiles and as a result, saves a substantial amount of fuel to run the plant and machinery and consequently generates much less CO₂. In summary, the alternative scheme has the following advantages over the currently approved and consented scheme: -

- The alternative scheme has a significantly reduced carbon footprint compared to the approved scheme that would represent a saving of around 90% of CO₂ emissions. This accords with new approaches to best practice and Welsh Government environmental policies.
- The currently approved scheme does not align well with new approaches to nature conservation or national planning policies. To implement the approved scheme would see the destruction of waterbodies and wetland habitat that developed on the site during the operating period and that now support great crested newt and southern meadow orchids.
- The footprint of the final restoration strategy is significantly less than the approved scheme with just over an eighth of the overall site being affected by most of the earthworks needed for the restoration. This can be delivered in works packages at the most appropriate times of year and due to its seasonal nature is a more flexible approach than a bulk earthworks programme associated with previous land reclamation projects such as would be required by the original approved scheme.
- The alternative final restoration strategy aligns well with the Step-Wise approach advocated in Planning Policy Wales by avoiding and minimising potential loss and damage to elements of biodiversity while promoting opportunities for mitigation. It is therefore considered that the alternative restoration scheme has many environmental merits and can offer and deliver substantial environmental benefits when compared to the approved scheme.

The Step-Wise Approach	Outputs from adopting the Step-Wise Approach
Avoid	• Implementing the consented scheme would result in loss of existing waterbodies, including water treatment areas known to support wetland habitats and great crested newts and other priority species and the loss of valuable baseline habitat that has established on the site during progressive restoration (acid flush and wetland). The alternative scheme avoids these impacts.
Minimise	• The Alternative Scheme follows the Stepwise approach and principles of DECCA that avoids and minimises adverse effects on protected species and biodiversity, which would be significantly enhanced. • Biodiversity would be reduced with most of the restored land used for upland grazing. • The approved scheme would likely cause risk to air borne pollution through major earthworks operations with plant and machinery and associated effects on local habitat and the central ecological area (SINC). The alternative scheme minimises air borne pollution. • The surface water catchment area of the northern section of the site would be modified and much of the surface water would drain into the groundwater at the pit lake and drain gradually or reduce through evapotranspiration
Mitigate/Restore	• Adopting the alternative Scheme would result in a significantly more diverse landscape than that of the consented scheme, which would mainly consist of upland grassland returned to urban common. The alternative Scheme would provide a groundwater and surface water fed lake and retain some of the post surface mining features such as open cliff and water bodies and provide a diverse landscape framework for visual amenity and recreational opportunities • The Alternative Scheme provides greater resilience to climate change and through the formation of a groundwater and surface water fed lake creates a permanent body of water for livestock and mammals during drought. The Urban Common would be restored for grazing livestock.
Compensate On-Site	No compensation on site is considered necessary – the proposed mitigation provides extensive opportunities for net benefits to biodiversity
Compensate Off-Site	No compensation off site is required
Refuse Planning	The alternative final restoration scheme is considered to comply with the requirements set out in PPW12. It presents an opportunity to change and improve the approved scheme by implementing a pragmatic and sustainable alternative with significantly less adverse environmental effects. As such, there is no reason why the alternative scheme cannot be approved as an alternative to the currently approved and consented scheme.

4.2 Compliance with the principles of DECCA

The final restoration strategy provides significant opportunities to align with the five principles of DECCA and how these are achieved are summarised below:-

Diversity: The alternative scheme does not cause any significant loss of habitats or populations of species, locally or nationally and provides a net benefit for biodiversity. The existing water bodies such as ponds and reservoirs that would be lost if the approved scheme was implemented, would be retained and enhanced. Once established, the alternative scheme will provide a wide range of habitat types that has the potential to support an equally wide range of plant and animal species to recolonise. The varied nature of the habitats will provide better resilience to climate change than if the whole area was to be returned to Urban Common for the grazing of livestock.

Extent: The implementation of the final restoration scheme will enable the maintenance of existing assets and especially the surface water networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. The aftercare period will encourage the successful establishment of a landscape framework that will further develop naturally over time and be managed in the long term as Urban Common.

Condition: Planning for the long-term management of retained habitats is key to maintaining condition and the active management of the land as Urban Common will provide opportunities to monitor and manage the land and implement changes if required.

Connectivity: the alternative scheme provides opportunities to develop functional habitat and ecological networks across a significant area of upland building on existing connectivity and encouraging habitat creation, restoration and applying appropriate management. The proposals provide opportunities for enlarging habitat areas, developing buffers around designated sites such as the Central Ecological Area and SINC.

Adaptability to change: the proposals provide potential resilience to climate change through a network of green and blue infrastructure to protect the extent, condition and connectivity of habitats, features and ecological networks. The adaptability of the site to change through nature recovery is already taking place and the proposals seek to maintain and enhance this natural process through deployment of the Step-Wise approach as demonstrated in this green infrastructure statement.

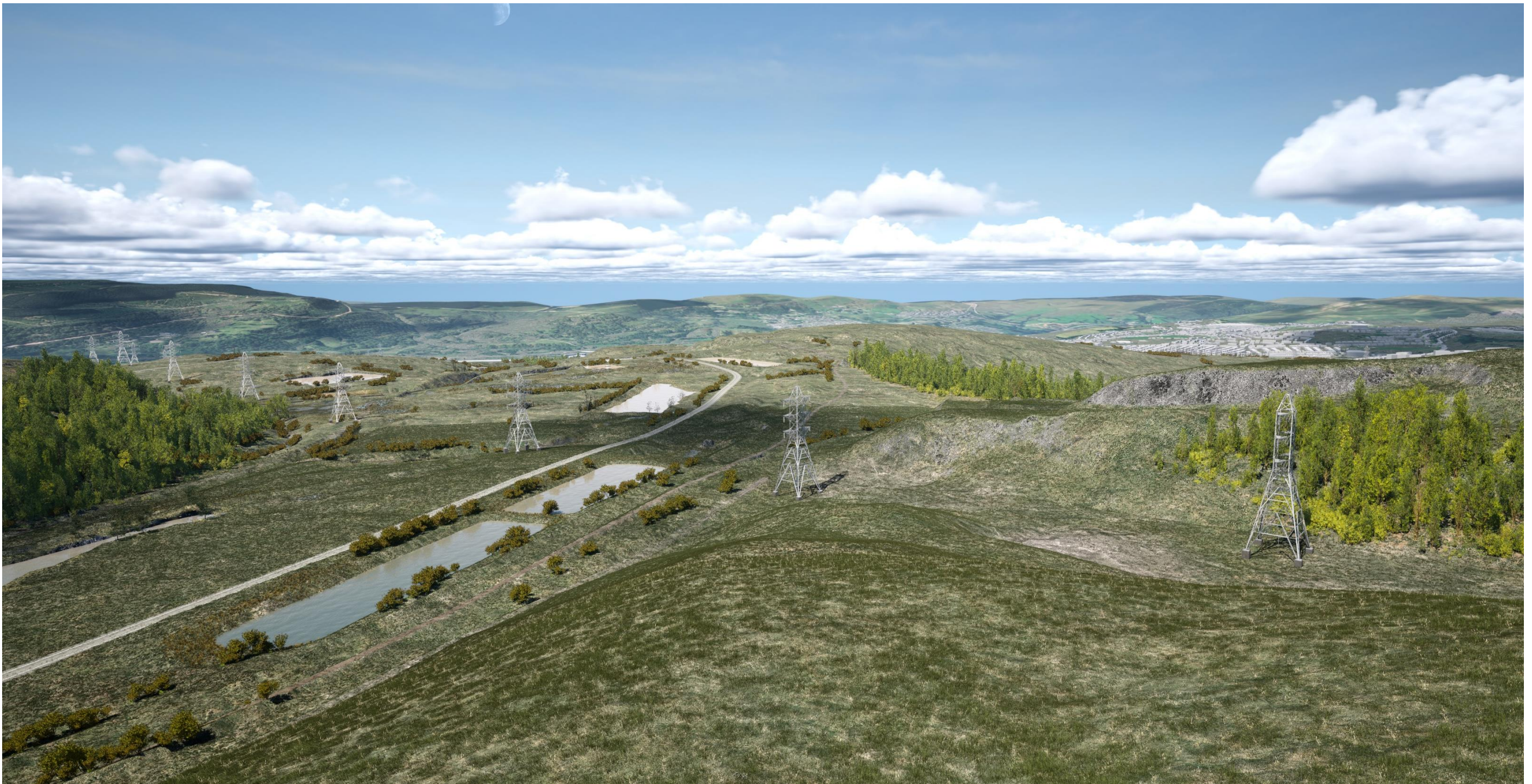
4.3 Summary and Conclusions

The alternative final restoration scheme presents an opportunity to change and improve the approved scheme by implementing a pragmatic and sustainable alternative with significantly less adverse environmental effects and more opportunities for biodiversity enhancements.

The approved scheme does not align well with new approaches to nature conservation or national planning policies. To implement the approved scheme would see the destruction of waterbodies and wetland habitat that developed on the site during the operating period and that now support nature recovery with minimal interventions.

The footprint of the final restoration strategy is significantly less than the approved scheme with just over an eighth of the overall site being affected by most of the earthworks needed for the restoration. This can be delivered in works packages at the most appropriate times of year and due to its seasonal nature is a more flexible approach than a bulk earthworks programme associated with previous land reclamation projects such as would be required by the original approved scheme.

The alternative final restoration strategy aligns well with the Step-Wise approach advocated in Planning Policy Wales (12th Edition) by avoiding and minimising potential loss and damage to elements of biodiversity while promoting opportunities for mitigation. It is therefore considered that the alternative restoration scheme has many environmental merits and can offer and deliver substantial environmental benefits when compared to the approved scheme, and that the application to amend the current scheme is therefore approved.



Visualisation C – View from OB2 across central section of the site with existing waterbodies retained and enhanced and woodland planting establishing around the main void and on flanks of OB2