

Plans. Species specific enhancements such as bat and bird boxes will also be installed prior to the site clearance works commencing.

- 2.5.4 Habitats within some receptor sites will be subject to specific habitat enhancements outlined in the Nant Helen ES and GCRE ES, including the creation of waterbodies within marshy grassland between the smaller test track. These will be created early on in the earthworks for that phase.
- 2.5.5 SuDs features are envisaged to be created during the earthworks programme for each phase' although these will not be planted initially. Once earthworks are completed, and GCRE infrastructure installed, these SuDS features will be planted with aquatic plants, and adjacent grassland areas sown. Grassland will also be sown in areas around track infrastructure in accordance with landscaping plans. As detailed under 'grassland' in Section 3 below, the re-use of colliery spoil is also required in areas around the sidings; therefore, providing similar conditions to those present, which support a species rich open mosaic habitat suitable for fungi, lichen and heathland establishment.
- 2.5.6 Tree planting across the site will occur at the end of the programme in the next available planting season (following autumn, winter, spring period) to ensure that these areas are not subject to further disturbances.
- 2.5.7 Once in place all habitats will be subject to long term management. Further management and monitoring of any enhancements will also be detailed within the sites EMMP, which will be produced in line with the Site's masterplan and phase specific landscaping being designed.

Phasing Plans

- 2.5.8 Phasing plans for habitat creation and enhancements as well as species enhancements are provided in Appendix 11 to illustrate the programme of delivery. These should also correspond to Table 10 below, which provides an indicative programme of delivery.
- 2.5.9 These plans detail the original habitat creation and or habitat / species enhancement proposals for each application (i.e. Nant Helen Complementary Earthworks and GCRE: habitats and species), overlaid with the GCRE earthworks and railway infrastructure phasing, along with corresponding receptor area for each phase of development; with the aim to visualise what habitat creation / enhancements are being delivered per phase of the development.

Table 10: Earthworks phasing of the GCRE development and approximate programme of habitat creation and enhancement delivery (Start and Finish dates are indicative).

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
Phase 1A	Earthworks and veg clearance	Feb 23	May 23	Loss of open mosaic habitat (including habitats within the designated Gorswllyn Meadow SINC) Loss of buildings and trees, bat roosts recorded, although there is low to moderate potential in some. Trees, scrub and grassland have potential for nesting birds.	Creation of reptile habitat within the adjacent Phase 1A receptor area including creation of hibernaculum, brash piles and egg laying habitat (September - October 22)	Creation of new ditch and pond within the receptor area (prior to any destruction of ponds to allow transfer of plant material)	Installation of 5 bird and 5 bat boxes in Phase 1A receptor area. Installation of 5 house sparrow boxes
	Drainage	April 23	May 23			Creation of SuDS features (planting to be provided at the end of the phase).	
	Track and rail infrastructure	May 23	June 23	Moderate population of reptiles (common lizard) within vegetated areas. Likely presence of common amphibians and section 7 mammals such as		Aquatic planting in SuDS, as well as surrounding grassland Use of existing substrate within the site around track infrastructure -	

¹⁷ It is acknowledged that these surveys are currently being updated and therefore species lists particularly notable plants are likely to be change.

¹⁸ Exact details will be confirmed within final landscape drawings and subsequent phased biodiversity plans

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
				hedgehog within similar habitat. Badger may also occur in grassland/scrub/woods though no setts recorded to date.		to support establishment of similar ground flora	
	Commissioning	June 23	July-23	Presence of notable plants (alternate water milfoil, brookweed, floating bur-reed, greater tussock and sedge). Also potential for brown sedge, small cudweed, bee orchid and eyebright. Ponds also likely to support common amphibians.		Sowing of additional grassland seed mixes where required around tracks	
	Sidings enter operation	July-23	July-23	Ditch with no previous signs of otter or water vole, but potential habitat.			
Phase 2A	Demolition	TBC / 2023	TBC / 2023	Loss of open mosaic habitat (including habitats within the designated Onllwyn Coal Washery SINC).		Creation of reptile habitat within the adjacent Phase 2A receptor area including creation of	Installation of 5 bird and 5 bat boxes in Phase 2A receptor area

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
				Loss of buildings and trees, bat roosts recorded, although there is low to moderate potential in some. Trees, scrub and grassland have potential for nesting birds.		hibernaculum, brash piles and egg laying habitat	Installation of 5 house sparrow boxes
	Earthworks and veg clearance	Jul-23	Dec-23				
	Drainage	Jul-23	Dec-23	Likely Moderate population of reptiles. Low numbers of common lizard previously recorded.		Creation of SuDS features (planting to be provided at the end of the phase). A number of permanent waterbodies are proposed	
	Track and rail infrastructure	2024	2024	Potential presence of notable plants (potential for brown sedge, small cudweed, bee orchid and eyebright). Moderate population of reptiles within vegetated areas. Likely presence of common amphibians and section 7 mammals such as hedgehog within		Aquatic planting in SuDS, as well as surrounding grassland Use of existing substrate within the site around track infrastructure - to support establishment of similar ground flora	

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
	Testing and Commissioning	2024	2024	similar habitat. Badger may also occur in grassland/scrub/woods though no setts recorded to date. Fungi areas 3 and 4 within Phase 2A. area 3 has county value for fungi.			
	Site infrastructure (Roads / Drainage / Services)	2024	2024				
	Key buildings construction	2024	2024			Biodiverse roofs to be created	
	GCRE facilities washeries area enter operation	2024	2024				
Phase 1	Earthworks and primary drainage	April 23 **Possibly early winter works outside of reptile area***	July 23	Habitats lost (as assessed in Nant Helen ES) are those to be created as part of the Celtic Energy restoration i.e. grassland/pasture. Existing habitats comprise Si grassland, scrub and species poor marshy grassland. Moderate population of reptiles across Nant Helen. Small numbers common lizard recorded between quarry and overburden mound.	Creation of reptile habitat within the adjacent Phase 1 and 2 receptor area including creation of hibernaculum, brash piles and egg laying habitat Creation of three waterbodies within marshy grassland (receptor area 1 and 2)	Creation of SuDS features (planting to be provided at the end of the phase).	Installation of 5 bird and 5 bat boxes in adjacent woodland (North west of the site/phase 1 area) Installation of two barn owl boxes in accordance with separate barn owl strategy.
	Soil placement and landscaping	July 23	Sept 23			Aquatic planting in SuDS, as well	

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
				No notable plants recorded to date in this area No buildings/trees present		as surrounding grassland Use of existing substrate within the site around track infrastructure – to support establishment of similar ground flora.	
	Track and rail infrastructure	Nov-23	Jan-23			Sow grassland habitat around tracks.	
Phase 2	Vegetation clearance	Feb-23	March 23	Habitats lost (as assessed in Nant Helen ES) are the existing baseline i.e. species poor marshy grassland, hedgerows/small areas of broadleaved woods and streams. Moderate population of reptiles across Nant Helen. No surveys undertaken within Phase 2 area specifically.	Reptile receptor area already enhanced (see phase 1 above).		Installation of 5 bird and 5 bat boxes in Phase 2 receptor area.
	Temporary drainage	April 23	May 23				
	Soil stripping	June 23	June 23				
	Earthworks and primary drainage	July 23	Sept 23			Creation of SuDS features (planting to be provided at the end of the phase). Proposed at least one	

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
				No notable plants recorded to date in this area.		permanent waterbodies.	
	Soil placement and landscaping	Oct 23	Nov 23	No buildings/trees present; therefore, no bat roost potential.		Aquatic planting in SuDS, as well as surrounding grassland.	
	Track and rail infrastructure (including track drainage)	Jul 24	Sept 24			Sow grassland habitat around tracks.	
Phase 4	Vegetation clearance	Jan 23	March 23	Habitats lost (as assessed in Nant Helen ES) are the existing baseline i.e. species poor marshy grassland, as well as agreed Celtic energy grassland/pasture. Badger subsidiary setts recorded in woodland - ancient woodland to be protected. Moderate population of reptiles across the Nant Helen site. Moderate numbers of common lizard	Creation of reptile habitat within the adjacent Phase 3 and 4 receptor area including creation of hibernaculum, brash piles and egg laying habitat. (Note that the location of the receptor areas is subject to the design of the adjacent Nant Helen scheme.)		Installation of 5 bird and 5 bat boxes in adjacent woodland
	Temporary drainage	April 23	May 23				
	Soil stripping	April 23	June 23				

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
	Earthworks and primary drainage (including structure)	May 23	Sept 24	recorded in the area north of the buildings/offices. Ditches/streams with no previous signs of otter or water vole, but potential habitat. No notable plants recorded to date in this area.		Creation of SuDS features, although primarily for drainage, over time these features will provide an enhancement for biodiversity on the Site.	
	Soil replacement and landscaping	Aug 24	Oct 24	One building with low potential and trees with moderate/low potential. No bat roosts recorded to date.			
	Track and rail infrastructure	Jul 24	Dec 24	Fungi areas 1 and 2 within Phase 4. area 2 has county value for fungi			
	planting	Dec 24	Jan 25				
Phase 3	Vegetation clearance	Jan-24	Feb-24	Habitats lost (as assessed in Nant Helen ES) are the agreed Celtic energy grassland/pasture with ponds and	Reptile receptor area already enhanced (see phase 4 above. Note that the location of the		Installation of 5 bird and 5 bat boxes in adjacent woodland

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
				retained ponds/heathland and marshy grassland (existing baseline)	receptor areas is subject to the design of the adjacent Nant Helen scheme.)		
	SM protection measures	Jan-24	Feb-24	Moderate population of reptiles across Nant Helen. Small numbers of common lizard recorded around lagoons and track to the washery.			
	Temporary drainage	Jan-24	Feb-24				
	Soil stripping	Mar-24	Apr-24				
	Earthworks and primary drainage (including structure)	Apr-24	Jul-24	Ditches/streams with no previous signs of otter or water vole, but potential habitat. Likely presence of common amphibians in ponds/adjacent terrestrial habitat and section 7 mammals in similar vegetated areas.		Creation of SuDS features, although primarily for drainage, over time these features will provide an enhancement for biodiversity on the Site.	
	Soil placement and landscaping	Aug-24	Aug-24	No notable plants recorded to date in this area. No buildings/trees present.			

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
				Fungi areas 7 and 8 within Phase 3. Both areas have county value for fungi.			
	Track and rail infrastructure	Aug-24	Dec-24				
Remai ning areas	Vegetation clearance	March 23	April 23				
	Temporary drainage	April 23	June 23				
	Soil stripping	June 23	July 23				
	Earthworks and primary drainage	July 23	Dec 24			Creation of SuDS features although primarily for drainage, over time these features will provide an enhancement for biodiversity on the Site.	
	Soil placement and landscaping	Apr 25	Jun 25			All woodland planting (to follow winter 2025) including north of the large track embankment and screening	

Phase	Task	Start (indicative)	Finish (indicative)	Ecological baseline considerations (based on 2018-2019 data) ¹⁷	Corresponding habitat enhancements ¹⁸	Habitat creation	Species specific measures
						provision around the site.	
Comm issioni ng works		Jan-24	Jun-25				
Entry into service			Jun-25				
Monito ring and mainte nance		Jun-25	onwards		Long term habitat management		

3 Biodiversity Design Principles

3.1.1 A summary is provided below detailing the principles for habitat creation and enhancements within the site.

3.2 Peatland – fen habitat

3.2.1 As detailed within the Nant Helen Complementary Earthworks ES3, to compensate for the loss of peatland-fen habitat, as a result of hydrology changes, creation of a similar habitat has been proposed in another area of the Site where the current hydrology is suitable to allow the habitat to establish (northwest of the overburden mound). It was not proposed to create the same habitat, but rather a habitat with a similar peatland function. The indicative location is shown in Appendix 5.

3.2.2 Current proposals are to protect the hydrology in the area of the peatland-fen complex during the earthworks and installation of GCRE infrastructure, which would therefore remove the requirement to provide compensatory habitat as part of the project. However, even in the event that the Peatland fen habitat is protected it is still proposed to enhance the existing peatland – fen habitat.

3.2.3 The existing peatland fen-mire complex and marshy-grassland feeder-steam components would be left in situ and protected during and post construction. The acidic grassland-heathland mosaic surrounding the peatland mire-heathland complex would be left in situ and heathland as a source of propagules to inoculate and enhance the remaining acid grassland that surrounded the complex as a more extensive area of heathland and a source for wider natural colonisation potential. Additionally, trees will be removed from the peatland-fen area.

3.2.4 A method statement for the peatland-fen habitat enhancement is provided in Appendix 12.

3.2.5 As a precautionary approach, in case there are any impacts on existing peatland fen-habitat from the development, it is proposed that a similar habitat will be created northwest of the overburden mound as summarised below, in accordance with recommendations provided in the ES. The area of peatland fen created will be dependent on the availability of suitable soil materials, but the aim will be to attain as close to a like-for-like basis as possible.

3.2.6 Peat from disturbed areas of the Site (see Materials Management Plan¹⁹), would be relocated to the proposed location northwest of the overburden mound (as shown in Appendix 5). Here, in the former coal-washing facility

¹⁹ GCRE Ltd (2022) Materials Management Plan

there are ponds and a landform that could be formed into a valley-mire and pond complex²⁰. The area to receive the removed peat would be sculptured to create a basin complex of wet heath / wet grassland / ephemeral ponds. The methods to achieve both are well proven²¹.

3.3 Grassland

- 3.3.1 As detailed within the ES for Nant Helen³ and GCRE¹, areas of grassland will be created within the Site. This will namely comprise areas of acid grassland on track embankments in the Nant Helen site, and around sidings within the washery site. New grassland will establish on recently formed earthworks and provide a pioneering habitat for lichen and fungi communities as well as heathland. Establishing species will be similar to existing species rich grassland (as detailed in Appendix 12).
- 3.3.2 Additionally, areas of earthworks between the tracks such as the overburden mound will be established with acid grassland and facilitate the establishment of heath / lichen habitats on its slopes.
- 3.3.3 Within the washery, coal spoil will be re-used where possible, for newly created grassland habitats, so that a similar assemblage of species establishes. At these locations of the land will be profiled to provide a varied topography, with sheltered areas and more exposed areas for basking by invertebrates and reptiles etc. They will be left to be colonised by plants in the local area, such as bird's-foot trefoil (*Lotus corniculatus*) and black medick (*Medicago lupulina*) which are favoured foodplants for invertebrates such as dingy skipper and six-belted clearwing. The establishment / enhancement of short grassland will also provide a pioneering habitat for heathland, lichen and fungi.
- 3.3.4 The above habitat creation will in places re-use calcareous substrates available within the Site, or where these are not available, additional calcareous substrate will be brought into the Site. This will facilitate the establishment of base-rich grassland habitats and in particular vascular plants such as kidney vetch, the favoured food plant of the small blue butterfly, a notable invertebrate within the Washery. To aid the establishment of kidney vetch (*Anthyllis vulneraria*), additional seeds will be sown in these areas.
- 3.3.5 A method statement for the species rich grassland creation including planting lists is provided in Appendix 12.

²⁰ Humphries R N & Meade R. 2007. Design and reporting criteria for reed bed and fen restoration in mineral workings: Scope & Opportunity. In Mead R and Humphries R N (eds), Proceedings of a Workshop on Mineral Extraction and Wetland. Natural England, Peterborough.

²¹ Humphries R N. 2000. Biodiversity, Curse or Opportunity. Mining Quarrying & Recycling, 29: 26-29

3.4 Woodland

- 3.4.1 Areas of woodland creation are proposed within the scheme. The creation of native woodland is proposed at the south and west perimeters of the Site, which will replace similar habitat lost as a result of the project. It will provide connectivity to new planting proposed as part of the revised restoration plan; and which will be important for species such as bats known to use the woodland for foraging / commuting in addition to providing landscape benefit.
- 3.4.2 Pasture land with small woodland and hedgerows is to be established on land yet to be restored at the Nant Helen Surface Mine Site on land between the earthworks for the train loops and land restored as part of the mining operation. A method statement for the enhancement of pasture and woodland in this location, including planting lists, is provided in Appendix 12.
- 3.4.3 Additionally, where development is adjacent to areas of woodland, measures will need to be taken to ensure the protection of adjacent trees. Such measures will be detailed within the EPP.

3.5 Wetland

- 3.5.1 A sustainable vegetated drainage system comprising features such as swales, detention and attenuation ponds, ditches and semi-natural wetlands (scrapes) will be constructed.
- 3.5.2 Primarily this drainage is for the management of water on the Site and to minimise the impact on the water environment during the operational phase, but it will also contribute to biodiversity value.

Semi natural wetland habitat/Scrapes

- 3.5.3 Shallow scrapes of varying sizes (area and depth) will be created within the plateaus of marshy grassland, which occur in the smaller enclosed areas in the east / south-east of the site. The creation of waterbodies in this area will provide a more diverse habitat, with the opportunity to develop into a species rich habitat.
- 3.5.4 Vegetation will be allowed to naturally regenerate in the scrapes.

Ponds

- 3.5.5 Ponds will be provided in both Nant Helen and the Washery, of different sizes within the various catchments of the Site. Where permanent water storage is possible attenuation ponds will be created, but in areas where this is not possible detention ponds, that store water temporarily, will be more suitable. The preferred approach will be to allow vegetation in and around the ponds to naturally colonise, as the water chemistry cannot be controlled

and only species that are adapted to the specific conditions will colonise and thrive.

- 3.5.6 To convey run-off to low points within catchments, cut-off ditches are to be created across the Site. These will include swale features which will be grass lined owing to the shallow 1:100 longitudinal gradient and relatively small areas. Additionally, at a number of locations on site where cut off ditches are required to flow down the side of engineered slopes, cascade features will be required.
- 3.5.7 These measures along with other mitigation measures manage point source pollution management are outlined in the Nant Helen earthworks and GCRE outline Drainage Strategy (as shown on Figure 7.9 (Appendix 6); although it is acknowledged that detailed drainage strategies will need to be produced for each phase of development and approved by the Local Planning Authority prior to any development commencing.
- 3.5.8 A method statement for the creation of drainage features is provided in Appendix 12.

3.6 Biodiverse Roofs

- 3.6.1 The GCRE ES¹ details the requirement to provide green or brown roofs where opportunities exist on buildings, providing these do not compromise their operational requirements. Furthermore, it states that roof spaces of the decommissioning building and carriage-wash will support essential services, and roofs of the larger depots will provide a rainwater harvesting function. The creation of green / brown roofs would not be suitable if this compromises the main objective of sustainable drainage. Smaller roof spaces such as those of the staff accommodation and control block, are not anticipated to house any additional infrastructure and or services and as such are likely to provide opportunities for the creation of green / brown roofs. Planting will include food plants for notable invertebrates such as six-belted clearwing (*Bembecia ichneumoniformis*), small blue (*Cupido minimus*) and dingy skipper.
- 3.6.2 GCRE Ltd aims to construct buildings that are both low carbon and sustainable. As such GCRE will, as part of the appointment for designing buildings ensure that designers create green or brown roofs as part of the design brief, at locations where they are viable.
- 3.6.3 A method statement for the creation of a biodiverse roofs including planting lists is provided in Appendix 11.

3.7 Species habitat creation and enhancements

Plants and fungi

- 3.7.1 The design within the site facilitates the creation of a habitat mosaic using a varied landform. The re-profiled overburden mound within the larger enclosed area, which is proposed to be acid grassland, will facilitate the establishment of heath / lichen habitats²² on its slopes and marshy grassland on its plateau (existing habitats which have developed on the existing structure over time). Lichen heath will also likely recolonise the sides of cuttings.
- 3.7.2 Re-profiled land in the form of cuttings / embankments by the earthworks will also provide an ideal habitat for the establishment of acid grassland and other habitats. This area will provide a pioneering habitat which can be colonised by lichen and heathland species, from adjacent areas. In addition, it will provide ideal conditions for the establishment of fungi species over time.
- 3.7.3 There will be small-scale habitat creation within the Washery including species rich grassland and woodland, as well as enhancements of retained habitats namely marshy grassland.
- 3.7.4 Method Statements are provided in Appendix 12, to create a mosaic of habitats within the Site along with species lists for planting.
- 3.7.5 Rare / notable plant species within the construction footprint will be translocated to suitable habitat within adjacent receptor areas. Methods for translocations will be detailed within separate EPPs produced per phase of the development, and habitat creation proposals (where required) will be set out in the phase specific Biodiversity Plans.

3.8 Invertebrates

- 3.8.1 Invertebrates including potentially notable species are considered likely to quickly utilise new habitats such as established grassland, woodland and waterbodies created as part of the earthworks, and GCRE project.
- 3.8.2 There will be small-scale habitat creation within the Washery including species rich grassland, as well as enhancements of retained habitats namely marshy grassland. Embankments of the test track will provide newly

²² Humphries R N 2013. Case Study: The contribution of active surface mines in the conservation of lichen communities in the South Wales Coalfield, United Kingdom. Journal of American Society of Mine Reclamation, 2, 1, 80-98.

establishing acid grassland habitat. Across the site SuDs and landscaping will also provide additional habitats for invertebrates.

- 3.8.3 Method Statements are provided in Appendix 12, to create a mosaic of habitats within the Site along with species lists for planting which will also be suitable for a range of invertebrates.

3.9 Bats

- 3.9.1 The habitat retention and creation around the perimeter of the Site creates a diverse mosaic of habitats that will offer habitat connectivity to the wider landscape and around the perimeter of the Site for bats. Woodland planting on both embankments proposed for the northern part of the Site will encourage bats to fly at greater heights when crossing the track. This will retain connectivity between foraging sites and reduce the risk of collision with trains.
- 3.9.2 The proposed habitat mosaic will create diverse areas for invertebrate species, enhancing the food resource for foraging bats. Edges of woodland planting will also provide dark corridors for the more light sensitive bat species (such as greater horseshoe bat) to enhance habitat connectivity from retained woodlands across the wider landscape.
- 3.9.3 There is a sensitive lighting scheme proposed for the construction phase and a Dark Skies statement for the operational stage. This will comply with PCCs Dark Skies Policy²³, limit light pollution that has potential to impact on the local bat population and allow free passage of bats over the track.
- 3.9.4 A range of bat boxes and / or bat bricks in buildings and bridges (no less than 20) will be provided on mature trees, and where possible buildings and bridge structures, within the Site, and or adjacent habitats (subject to landowner agreement). The number and location will be selected by the ECoW and would be informed by the number of appropriate trees, buildings and bridge structures within / adjacent to the Site. These should be of woodcrete construction, such as Schwegler models, which are more durable and require minimal maintenance. Indicative locations are shown (Appendix 7) on land which is within ownership of the applicant.
- 3.9.5 Bat boxes will be mounted at least 4m from the ground (preferably 5m) in locations where they cannot be readily accessed by predators or humans (e.g. away from footpaths). Entrances to boxes will not be obscured by

²³ Policy DM7 – Dark Skies and External Lighting Local Development Plan 2011 – 2026. Available at: <https://powys.moderngov.co.uk/mgConvert2PDF.aspx?ID=26190>

overhanging vegetation and will not be illuminated at night. Bat boxes will be installed in groups of three around the south-east, south-west and south aspects of a single tree.

- 3.9.6 Additionally, the mosaic of habitats created within Nant Helen and the Washery, will be suitable for the bat foraging and commuting including the provision of wetland, grassland and woodland habitat.
- 3.9.7 Method Statements are provided in Appendix 12, to create a mosaic of habitats within the Site along with species lists for planting.

3.10 Birds

- 3.10.1 Considering the S7 bird species recorded, the provision of a net positive balance of species-rich grassland, will benefit some key species including skylark, lapwing and curlew. Retained and regenerating scattered scrub across the Site, combined with grassland habitats will provide suitable habitat for tree pipit, dunnock and linnet populations. These same habitats will also be used by meadow pipit populations and it this species and dunnock that are most likely hosts of local cuckoo populations. Whilst the only yellowhammer territory recorded during baseline was over 1km west of GCRE, newly created grassland habitats and associated scrub will also be suitable for this species.
- 3.10.2 The provision of a wetland habitats, including SuDS, with associated native wetland planting, will also benefit key bird populations. These will include reed buntings that are present in good numbers in the local area and ponds may be used by lapwing and other waterbirds. It should be noted that lapwing recorded in baseline surveys used pools with a relatively high level of existing disturbance from mining activity and may therefore habituate to any operational phase disturbance from GCRE.
- 3.10.3 Retained and planted woodland and associated woodland edge ecotones will provide habitat suitable for local populations of bullfinch, song thrush and lesser redpoll. Retained coniferous woodland will be suitable for common crossbill populations, noting these tend to be nomadic with nesting locations and timings varying between years associated with local cone crop availability.
- 3.10.4 Habitats created, notably species-rich grassland subject to grazing, will provide foraging habitat for many species including the S7 species starling. This species was not found to nest within the GCRE area but providing adequate foraging opportunities both in the breeding and wintering period is relevant given results obtained during baseline surveys.
- 3.10.5 The washery was found to support a small colony of house sparrows with nests found in and around existing structures and adjacent habitats. To assist

this small colony, house sparrow nesting boxes (minimum 10) will be installed on the fabric of new structures and/or in adjacent habitats as directed by the project ecologist.

- 3.10.6 A range of bird boxes (no less than 30) will be provided on mature trees, and where possible buildings and bridge structures, within the Site, and or adjacent habitats (subject to landowner agreement). The number and location will be selected by the Project Ecologist (PE), appointed by the Main Contractor, and will be informed by the number of appropriate trees and buildings within / adjacent to the Site. Swift (*Apus apus*) boxes and house sparrow boxes should be prioritised for buildings, and grey wagtail / dipper (*Cinclus cinclus*) boxes for bridges and culverts. Similar to bat boxes, these should be of woodcrete construction, such as Schwegler models, which are more durable and require minimal maintenance. Indicative locations are shown (Appendix 6) on land which is within ownership of the applicant.
- 3.10.7 Boxes will be mounted at least 4m from the ground (preferably 5m) in locations where they cannot be readily accessed by predators or humans (e.g. away from footpaths). Entrances to boxes will not be obscured by overhanging vegetation and will not be illuminated at night. Bird boxes will be installed singly, at intervals of about 5-10m.

3.11 Reptiles and amphibians

- 3.11.1 Four areas which are under ownership of GCRE Ltd have been put forward as reptile receptor areas, to support reptiles subject to trapping and relocation during the site clearance. The indicative areas are shown in Appendix 7. The locations are subject to change, depending on the final design of the adjacent Nant Helen scheme. The final details will be included within the relevant PBPs.
- 3.11.2 Reptile Mitigation Strategies will be produced for phases of the development, which will detail specific enhancements to these receptor areas to enhance their carrying capacity for any reptiles translocated during trapping and relocation programme.
- 3.11.3 These strategies will need to be informed by up-to-date reptile presence / absence surveys, in addition to habitat suitability assessments which provide specific recommendations for habitat enhancements based on the existing suitability of habitats.
- 3.11.4 Specific enhancements are likely to include:
- Creation of hibernacula;
 - Creation of egg laying habitat;

- Creation of wetland habitat such as ponds, scrapes and or ditches (although this may overlap with other habitat creation plans such as SuDS creation);
- Creation of a more diverse grassland sward; and
- Creation of brash piles.

3.11.5 Wetland and grassland creation are detailed in Appendix 12.

3.11.6 Reptile receptor areas will also be suitable for common amphibians, which will also be translocated during site clearance as part of any reptile trapping / relocation exercise.

3.11.7 SuDS design including waterbodies and adjacent terrestrial habitat will also be suitable for common amphibians, so that relocated amphibians and reptiles will be able to move back into the landscaped site post construction.

3.12 Barn Owl Boxes

3.12.1 A separate barn owl conservation strategy document²⁴ details measures that will be implemented in relation to barn owl conservation.

²⁴ Dalcour Maclaren (2022) Barn owl conservation strategy

4 Amendments to Habitat Calculations in PBPs

- 4.1.1 Condition 18 of the planning consents requires the SBP to provide information on the 'Methodology to update and confirm the quantitative assessment of habitat loss and creation (updating Environmental Statement 7.19.48, table 7.8 and Appendices 7T and 7V1)'.
- 4.1.2 It is anticipated that final calculations for habitat loss and creation will be detailed within PBPs and will follow the methodology set out below. Final calculations can then be compared to the agreed calculations provided within the Nant Helen Complementary Earthworks ES and GCRE ES.
- 4.1.3 Habitat loss, retention, creation and enhancement calculations for the GCRE project and Nant Helen Complementary Earthworks are detailed within the respective ES Ecology Chapters; as summarised in Table 8 and 9 (in Section 2 above). Calculations for the Nant Helen Complementary Earthworks will be completed differently to calculations for the GCRE project; as explained below under the respective headings.

Nant Helen Complementary Earthworks

- 4.1.4 Earthwork calculations for habitat loss will be based on the existing ecological baseline for the site (2018-2019) and the Celtic energy restoration plan; calculations will be provided for habitats lost per phase of the earthworks.
- 4.1.5 Earthwork calculations for habitat creation and enhancement will be based on the landscaping plans designed for the site's restoration in accordance with the Nant Helen Complementary Earthworks Habitat creation and enhancement plan (Appendix 5) but using the latest landscaping plans. They will exclude any habitats proposed as part of the Celtic Energy restoration plan (since these are accounted for within the previous Celtic Energy application). Calculations will be provided for habitats created / enhanced per phase of the earthworks.
- 4.1.6 It should be noted that this habitat calculation method applies to earthworks within the Nant Helen site only and excludes the washery site; since this part of the site was not included in the Nant Helen Complementary Earthworks application. Calculations for earthworks within the washery will be included in the GCRE project calculations (described below).

GCRE Project

- 4.1.7 GCRE calculations for habitat loss will be based on the 'Future Baseline' as set out in Appendix 9 (and detailed in Appendix 10). Since the Nant Helen Earthworks scheme had already obtained planning consent, it was anticipated that the proposed Nant Helen habitat creation and enhancement

would be in place at the time of GCRE commencing. The Future Baseline includes new habitats and enhancements proposed as part of the Nant Helen Complementary Earthworks (and Celtic energy restoration) alongside retained / protected habitats including those within the Washery (which was not included within the red line boundary of the Nant Helen Earthworks application). Calculations will be provided for habitat loss per phase of the GCRE development.

- 4.1.8 GCRE calculations for habitat creation and enhancement will be based on the latest landscaping plans designed for the site's restoration in accordance with the GCRE Habitat creation and enhancement plan (Appendix 6). Calculations will be provided for habitats created / enhanced per phase of the earthworks.

4.2 General principles

- 4.2.1 Detailed calculations will be provided within each phase specific Biodiversity Plan for habitat loss, enhancement and creation for each habitat type (present and proposed); using the latest landscaping plans.
- 4.2.2 These calculations can then be compared to the agreed calculations provided within either the Nant Helen Complementary Earthworks ES or GCRE ES.
- 4.2.3 The habitat calculations will be based on GIS layers / shapefiles, which are available for the relevant plans.
- 4.2.4 Similarly, to the Nant Helen ES3 and GCRE ES1 it would be useful to include the area of habitat to be retained within the project boundary but which are not subject to any enhancements – as these will contribute to the overall total value of the phase / Site.

Tracker

- 4.2.5 A tracker template is provided in Appendix 16, which can be updated within each Phase-specific Biodiversity Plan to demonstrate how habitat creation / enhancement goals (as detailed in Appendix 15) are being met in each Phase and ensures that there is no residual requirement for habitat creation / enhancement once the scheme has been completed.
- 4.2.6 Approximate areas of habitat creation and enhancement to be delivered per phase, based on Approved plans provided in Appendix 11 (i.e. phasing plans), are detailed in Appendix 15.
- 4.2.7 Final habitat calculations provided within each Phase-specific Biodiversity Plan will be detailed within a tracker (example template in Appendix 16), comparing the approved habitat area / length to what is likely to be

delivered within the relevant phase; therefore demonstrating where there may be shortfalls in habitat creation or enhancements for the scheme.

5 Updated Surveys and Pre-construction Surveys

- 5.1.1 Condition 18 of the planning consents requires the SBP to provide information on 'Methodologies and principles for scheduling of pre-commencement ecological checks and where necessary update to ecological surveys, particularly for protected species, taking account of CIEEM Advice note on the Lifespan of Ecological Report and Surveys'²⁵.
- 5.1.2 Appendix 4 provides a summary of the ecology surveys that were undertaken to provide the 2018-2019 baseline; and Section 1.9 details the 2018-2019 baseline. This information was used to inform the Nant Helen Complementary Earthworks ES3 and GCRE ES1.

5.2 Updating the Ecological Baseline

- 5.2.1 It is important to ensure that the clearance and development of each phase within the site takes into account potential changes in the ecological baseline, which may have occurred since the completion of previous surveys between 2018 and 2019; this will also ensure that the correct mitigation measures / enhancements are implemented and there is sufficient time to implement these on Site including obtaining any specie's derogation licences from Natural Resources Wales (NRW) that may be required.
- 5.2.2 In accordance with CIEEM guidance⁵, a Preliminary Ecological Appraisal (PEA) including the desk study and local biological records centre search, will need to be updated at least 18 months, and at most, before 3 years, after the original PEA was undertaken, and a review undertaken to determine which protected species surveys need updating in addition to the appropriate scope, timing and methods for the updated surveys.
- 5.2.3 Factors which reduce the lifespan of the report / survey and indicate that the PEA / protected species surveys would be required include:
- Whether the Site supports, or may support, a mobile species which could have moved on to Site, or changed its distribution within the site;
 - Whether there have been significant changes to the habitats present (and / or the ecological conditions / functions / ecosystem functioning upon which they are dependent) since the surveys were undertaken, including through changes to the site management; and
 - Whether the local distribution of a species in the wider area around a site has changed (or knowledge of it updated, increasing the likelihood of its presence).
- 5.2.4 In some circumstances, a consideration should be given to the validity of survey data after a period of 12 to 18 months from the date of the survey.

²⁵ <http://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

Surveys may be required after 12 months, and before 18 months, in the following circumstances:

- Where a site may offer existing or new features which could be utilised within a short timeframe for example trees or buildings on site have been surveyed for evidence of bat roosts and none were found; new roosts may be present, and trees or buildings may have developed new features which were not previously present;
- Where a mobile species is present on site or in wider area and can create new features of relevance to the assessment for example a badger survey confirmed the presence of badgers on site; new setts may have been excavated within the site; and
- Where country-specific or species-specific guidance dictates otherwise.

5.2.5 Baseline surveys as detailed in Section 1.9, were completed between December 2018 and November 2019. Surveys to update the baseline data for Phase 1A of the proposed development were carried out in 2021 and 2022 and used to inform the EPP and EMMP for this phase. Further updated survey work to inform subsequent phases will be undertaken to ensure that the EPP and PBP for each Phase is based on up-to-date survey data.

5.2.6 Additionally, in accordance with CIEEM guidance, the following points have been considered relevant to the requirement to update the baseline surveys:

- The site supports mobile species including badger, roosting and foraging bats, otter, reptiles, amphibians (excluding great crested newts), invertebrates and arboreal mammals (excluding dormouse);
- Parts of the site lack active management of habitats and or there will have been a change of management as a result of the reduced presence on site by Celtic energy; and
- Mobile species such as marsh fritillary are present in the wider area, which could utilise habitats within the site in the event that their management favours the establishment of their favourite food plant, devils-bit scabious.

5.2.7 Furthermore, the GCRE ES (Chapter 7)¹ states ‘Where there is a delay to site clearance / construction, and more than 18 months has lapsed, the Local Planning Authority will need to confirm whether any of the ecological surveys undertaken will need to be repeated prior to site clearance / construction commencing. It is anticipated that there would be the requirement to update bat surveys of buildings and trees, within 60 m of the development.

5.2.8 Therefore, it will be necessary to provide an updated PEA including a data search with the local biological records centre prior to the clearance or development of each specific-phased area of the site. This will be undertaken, ahead of the clearance / development works, allowing sufficient

time to undertake further protected species surveys should these be required i.e. undertaking a PEA in March / April, with further surveys undertaken over the following spring / summer survey season, ahead of site clearance and development planned the following autumn / winter. The PEA will be detailed within a separate report which sets out methods, limitations, findings and recommendations for further surveys. Where updated protected / notable species are considered not to be required, this should be justified within the PEA. An indicative programme for updating surveys is detailed in Table 11 below.

- 5.2.9 Any subsequent updated protected / notable species surveys, that may be required, should follow up to date best practice survey guidance detailed in Appendix 14. Methodologies for great crested newt, honey buzzard, goshawk and dormouse have been excluded based on previous survey findings, and the low risk of encountering these species within the Site. A precautionary approach will be followed with regard to the potential presence of this species (as described under Precautionary Method of Working below in Section 5.5).
- 5.2.10 Surveys will be undertaken by a PE or other Suitably Qualified Ecologist (SQE) with the relevant personal survey licences, where these are required. Where the survey scope deviates from the methodology set out in this document and that used in previous surveys (such as survey timing), it will be necessary to agree the methodology with PCC and NPTC ecologists, before commencing on site.
- 5.2.11 Updated protected / notable species surveys will cover the area of the specific Phase of Development / site clearance and the Zone of Influence for the phase of development, relevant to the sensitivities of different species for example: badger surveys will be required within 50m. The results of any updated ecological surveys will be detailed in a separate report outlining the survey methods, surveyor qualifications / experience, limitations, site conditions, results and recommendations for avoidance, mitigation, and enhancement measures, as appropriate. The report/s will need to detail whether any protected species licences need to be obtained from NRW. This updated species survey report will be submitted to NPTC and PCC ecologists; and reviewed as per the approach set out in Section 6.
- 5.2.12 The phase specific Biodiversity Plan produced for each phase of development will need to reference the survey findings; and provide a review of findings against the existing baseline and proposed mitigation and enhancements (within the Nant Helen Complementary earthworks and GCRE ES Ecology Chapters¹³ (and as shown in the habitat creation and enhancements plans, and species enhancement plans). Where necessary,

additional or new mitigation / enhancement measures will need to be set out for review and approval by NPTC and PCC.

5.2.13 Where the presence of a protected species is confirmed (including but not limited to badger setts, otter laying up or resting area, water vole signs and or bat roosts), a derogation licence may need to be obtained from NRW before any site clearance / development commences. A minimum of 30 working days is required by NRW to process any licence applications. Any NRW Development licence will need to be accompanied by a Site-specific method statement detailing avoidance, mitigation and compensation measures. Where a derogation licence is not required a non-licensed method statement may be required.

5.3 Preconstruction surveys

5.3.1 The GCRE ES Ecology Chapter (Chapter 7)¹ identifies the following preconstruction surveys or checks that will be required:

- Badger;
- Otter;
- Section 7 mammals such as West European hedgehog
- Breeding birds including schedule 1 species;
- Common toad (Section 7 amphibian).

5.3.2 The requirement for these surveys will be reviewed further to PEAS and updated species being completed (as outlined above in Section 5.2). For example, where the above updated surveys end up being completed close to the commencement of activities on site, there may not be the requirement to update them and undertake further pre construction checks.

5.3.3 Additionally, the PEA or further protected species surveys may identify the requirement for other preconstruction surveys that are not listed above.

Birds

5.3.4 Pre-construction surveys for breeding birds (if works are planned between March and August inclusive), will be undertaken to determine the presence of breeding birds within an appropriate distance from the construction works. 30m should be used in most instances, to assess the presence of breeding birds in proximity to the construction footprint.

5.3.5 Larger buffers will be required for more sensitive species (including some breeding birds such as lapwing and curlew) or where more significant impacts are likely to occur such as vibrations (for example in these instances a buffer of up to 100m may be required). Details of buffer distances will be agreed with a SQE and the Local Planning Authority's in advance.

Otter and badger

5.3.6 Pre-construction surveys for otter and badger will be undertaken to determine the presence of these species within an appropriate distance from the construction works. This will be 100m for otter and 50m for badger. Surveys will need to confirm the presence / absence of otter resting and or breeding areas, and badger setts.

Section 7 mammals

5.3.7 Pre-construction checks will also be undertaken of vegetation clearance areas where it is likely to support any Section 7 mammals such as West European hedgehog. Searches should be undertaken of any vegetation that needs to be cleared.

Section 7 amphibian (common toad)

5.3.8 Pre-construction checks will also be undertaken of vegetation clearance areas where it is likely to support amphibians, particularly common toad, a Section 7 species. Searches should be undertaken of any vegetation that needs to be cleared.

General

5.3.9 An indicative programme of updating surveys and completing preconstruction surveys is provided in Table 11.

5.3.10 All surveys will be undertaken by a SQE with the relevant personal survey licences, where these are required.

5.3.11 Preconstruction surveys will be completed in advance of any site clearance and or construction activities for the relevant phase of development. The specific timing will be detailed within the phase specific Biodiversity Plan, as it will be dependent on the species likely to be present for example reptile / breeding birds checks will be required no more than 24hrs before Site clearance begins to ensure that no species have started to use habitats within the site when site clearance / construction commences.

5.3.12 Where the presence of a protected species is confirmed, a Development Licence may need to be obtained from NRW before any site clearance / development commences, if these are likely to adversely affect any protected species. A minimum of 30 working days is required by NRW to process any licence applications.

5.3.13 Any NRW Development Licence will need to be accompanied by a site-specific method statement detailing avoidance, mitigation and compensation measures. Where a derogation licence is not required a non-licensed method statement may also be required.

- 5.3.14 It is anticipated that species likely to require a derogation licence, if present on site – would also be surveyed as part of a suite of surveys timed to update the ecological baseline (as outlined in Section 5.2 above), and which would be undertaken at least a few months before the any site clearance. This would therefore allow time to obtain any derogation licences that may be required.
- 5.3.15 The results of any preconstruction surveys will be reported in the Phase Specific Biodiversity Plan, along with avoidance and or mitigation / compensation measures. The Phase specific Biodiversity will be submitted to NPTC and PCC; and reviewed as per the approach set out in Section 6.

5.4 Project Ecologist (PE)

- 5.4.1 Where required, a PE will be appointed by the Main Contractor. The PE will be a Suitably Qualified Ecologist.
- 5.4.2 They will have copies of previous surveys that have been undertaken on the Site, EPP, CEMP and Phase Specific Biodiversity Plan. they will attend the site, where required (for example to oversee vegetation clearance where this is undertaken during the bird breeding season) under instruction of GCRE Ltd. Where remedial measures or changes to agreed methods are required the PE will liaise with the Main Contractor, GCRE Ltd and the LPA ecologists to implement these.

5.5 Method Statements and Precautionary Method Working

- 5.5.1 As discussed above, where protected species are confirmed within the Site, and impacts anticipated, a licence will be obtained from NRW and an accompanying method statement produced detailing methods of working to avoid and minimise disturbance to species.
- 5.5.2 For some species, a licence will not be required to cover potential disturbance such as notable plants, breeding birds and reptiles. However Precautionary Methods of Working (PMoW) will be set out within Ecological Protection Plans (EPP) to ensure these species are protected during site clearance and construction. Method Statements will detail protection measures such as translocation.
- 5.5.3 Reptile Method Statements are also considered appropriate to cover the potential presence of great crested newts. Although these species are considered unlikely to be present within the site, in the event that any great crested newts are present, they would be detected during reptile trapping and relocation exercises undertaken for reptiles (which will be detailed within the relevant EPP).

Table 11: Earthworks phasing of the GCRE development and updated surveys/ preconstruction surveys required, based on existing baseline

Year /Quarter (Indicative only)	Phase	Previous baseline surveys	Updated surveys required	Timeframe	Preconstruction surveys
Washery					
February 2023 - July 2023 (1 st Qtr 2023 onwards)	Phase 1A (Washery)	- Breeding birds - Wintering birds - Dormouse - Roosting bats - Foraging/commuting bats - Reptiles - Notable plants - Riparian mammals - Badger - Section 7 mammals - Fungi - NVC	Preliminary Ecological Appraisal Further surveys: • Breeding birds • Reptile • Habitat Suitability Assessment for Great crested newt • Inspection of buildings/trees for bat potential • Further emergence/re-entry surveys of trees/buildings for bats or aerial inspections of trees • Notable plants / NVC • Riparian mammals • badger	April to September 2022	Potential for breeding bird, hedgehog, reptile and amphibian checks if vegetation clearance or if demolition proposed between March and August Badger and otter preconstruction checks recommended.
July 2023 - Dec 2024 (4 th Qtr 2023 onwards)	Phase 2A (Washery)	- Breeding birds - Wintering birds - Dormouse - Roosting bats - Foraging/commuting bats - Reptiles - Notable plants - Riparian mammals	Preliminary Ecological Appraisal Further surveys: • Breeding birds • Reptile • Habitat Suitability Assessment for Great crested newt	April to September 2022 (majority of surveys) December 2022 to February 2023 - bat	Potential for breeding bird, hedgehog, reptile and amphibian checks if vegetation clearance or if demolition proposed between March and August

Year /Quarter (Indicative only)	Phase	Previous baseline surveys	Updated surveys required	Timeframe	Preconstruction surveys
		- Badger - Section 7 mammals - Fungi - NVC	• Inspection of buildings/trees for bat potential • Further emergence/re-entry surveys of trees/buildings for bats or aerial inspections of trees • Bat hibernation surveys • Riparian mammal surveys • Notable plants / NVC • Badger	hibernation surveys) May/June 2023 - remaining bat emergence Brick wall structures April 2023 - water vole and otter survey	Badger and otter preconstruction checks recommended.
Nant Helen					
April 2023 – Jan 2024 (2 nd Qtr 2023 onwards)	Phase 1 (Nant Helen)	- Breeding birds - Wintering birds - Dormouse - Roosting bats - Foraging/commuting bats - Reptiles - Notable plants - Riparian mammals - Badger - Section 7 mammals - Fungi - NVC	Preliminary Ecological Appraisal Further surveys: • Reptile • Habitat Suitability Assessment for Great crested newt • Inspection of buildings/trees for bat potential or aerial inspections of trees • Riparian mammals • Notable plants / NVC • Badger	April to September 2022 (majority of surveys) NVC / notable plants – May / June 2023	Potential for breeding bird, hedgehog, reptile and amphibian checks if vegetation clearance or if demolition proposed between March and August Badger and otter preconstruction checks recommended.

Year /Quarter (Indicative only)	Phase	Previous baseline surveys	Updated surveys required	Timeframe	Preconstruction surveys
Feb 2023 – Sep 2024 (1 st Qtr 2023 onwards)	Phase 2 (Nant Helen)	- Breeding birds - Wintering birds - Dormouse - Roosting bats - Foraging/commuting bats - Reptiles - Notable plants - Riparian mammals - Badger - Section 7 mammals - Fungi - NVC	Preliminary Ecological Appraisal Further surveys: • Reptile • Habitat Suitability Assessment for Great crested newt • Inspection of buildings/trees for bat potential or aerial inspections of trees • Badger • NVC / notable plants	April to September 2022 (majority of surveys)	Potential for breeding bird, hedgehog, reptile and amphibian checks if vegetation clearance or if demolition proposed between March and August Badger and otter preconstruction checks recommended
Jan 2023 – Jan 2025 (1 st 2023 Qtr onwards)	Phase 4 (Nant Helen)	- Breeding birds - Wintering birds - Dormouse - Roosting bats - Foraging/commuting bats - Reptiles - Notable plants - Riparian mammals - Badger - Section 7 mammals - Fungi - NVC	Preliminary Ecological Appraisal Further surveys: • Reptile • Habitat Suitability Assessment for Great crested newt • Inspection of buildings/trees for bat potential or aerial inspections of trees • Badger • NVC / notable plants	April to September 2022 (majority of surveys)	Potential for breeding bird, hedgehog, reptile and amphibian checks if vegetation clearance or if demolition proposed between March and August Badger and otter preconstruction checks recommended

Year /Quarter (Indicative only)	Phase	Previous baseline surveys	Updated surveys required	Timeframe	Preconstruction surveys
Jan 2024 – Dec 2024 (1 st Qtr 2024 onwards)	Phase 3 (Nant Helen)	- Breeding birds - Wintering birds - Dormouse - Roosting bats - Foraging/commuting bats - Reptiles - Notable plants - Riparian mammals - Badger - Section 7 mammals - Fungi - NVC	Preliminary Ecological Appraisal Further surveys to be confirmed but likely to at least include: • Reptile • Habitat Suitability Assessment for Great crested newt • Inspection of buildings/trees for bat potential • Badger • NVC / notable plants	April to September 2022 (majority of surveys)	Potential for breeding bird, hedgehog, reptile and amphibian checks if vegetation clearance or if demolition proposed between March and August Badger and otter preconstruction checks recommended

6 Phased Biodiversity Plans

- 6.1.1 As discussed earlier in the document Phase-specific Biodiversity Plans, in accordance with Condition 19 of the planning consents, will be produced further to this SBP, for each phase of development (following Phases 1A and 2A). The Phased Biodiversity Plans (PBP) shall be in line with this SBP as well as implement and demonstrate compliance with the approach set out in the SBP agreed under condition 18.
- 6.1.2 Therefore, each Phase-specific Biodiversity Plan will detail survey's findings of updated surveys and preconstruction surveys (as detailed in Section 5), along with avoidance, mitigation and or compensation measures for likely impacts to sites, habitats and species.
- 6.1.3 The Phase specific Biodiversity Plan will detail enhancements which are planned for the site's biodiversity.
- 6.1.4 Additionally, the Phase-specific Biodiversity Plan, will set out calculations for habitat loss, creation and enhancement, relative to what is outline in the SBP for each Phase of the development.
- 6.1.5 Therefore, the Phase -specific Biodiversity Plan will be structured as follows:
- Up to date ecological baseline
 - Avoidance, mitigation and compensatory measures
 - Enhancement measures
 - Habitat calculations

7 Mechanisms for ensuring the delivery of adequate Mitigation, Compensation Measures and Enhancement

- 7.1.1 Condition 18 of the planning consents requires the SBP to ‘detail the mechanism, including principles to be applied, for the review of the adequacy of mitigation, compensation and enhancement measures in light of pre-commencement ecological checks and / or surveys. This will include the inclusion of new, revised and additional measures where necessary to ensure the scheme delivers an overall net benefit.’
- 7.1.2 As detailed in Section 5, further surveys are required to confirm the presence or absence of certain species prior to the commencement of clearance and construction activities within each phase of the GCRE development. The specific survey requirements will be set out in each updated PEA (produced for each phase of development). Further species surveys will then be reported separately.
- 7.1.3 Further to the updated surveys being completed the Phase Specific Biodiversity Plan will identify whether any further mitigation will be required in addition to what has been agreed within the GCRE1 and Nant Helen ES Chapters³. An assessment will need to be made regarding the appropriateness of any proposed mitigation within each phase of development, and whether any additional mitigation measures are required including specific species mitigation, habitat creation, enhancements as well as any long-term management and or monitoring that may be required.
- 7.1.4 Details provided within the PBP will include whether additional enhancements are required to deliver biodiversity net gain; as set out in Section 3, which details the requirement to deliver enhancements in accordance with the requirements of the Environment (Wales) Act 2016 and Planning Policy Wales²⁴; with specific information included on suitable enhancements that can be delivered within the specific phase of works.
- 7.1.5 PBPs relevant to each new phase of the GCRE development will be shared with the NPTC and PCC ecologists, to agree the any additional mitigation and enhancements, that are recommended.

8 Review of the SBP

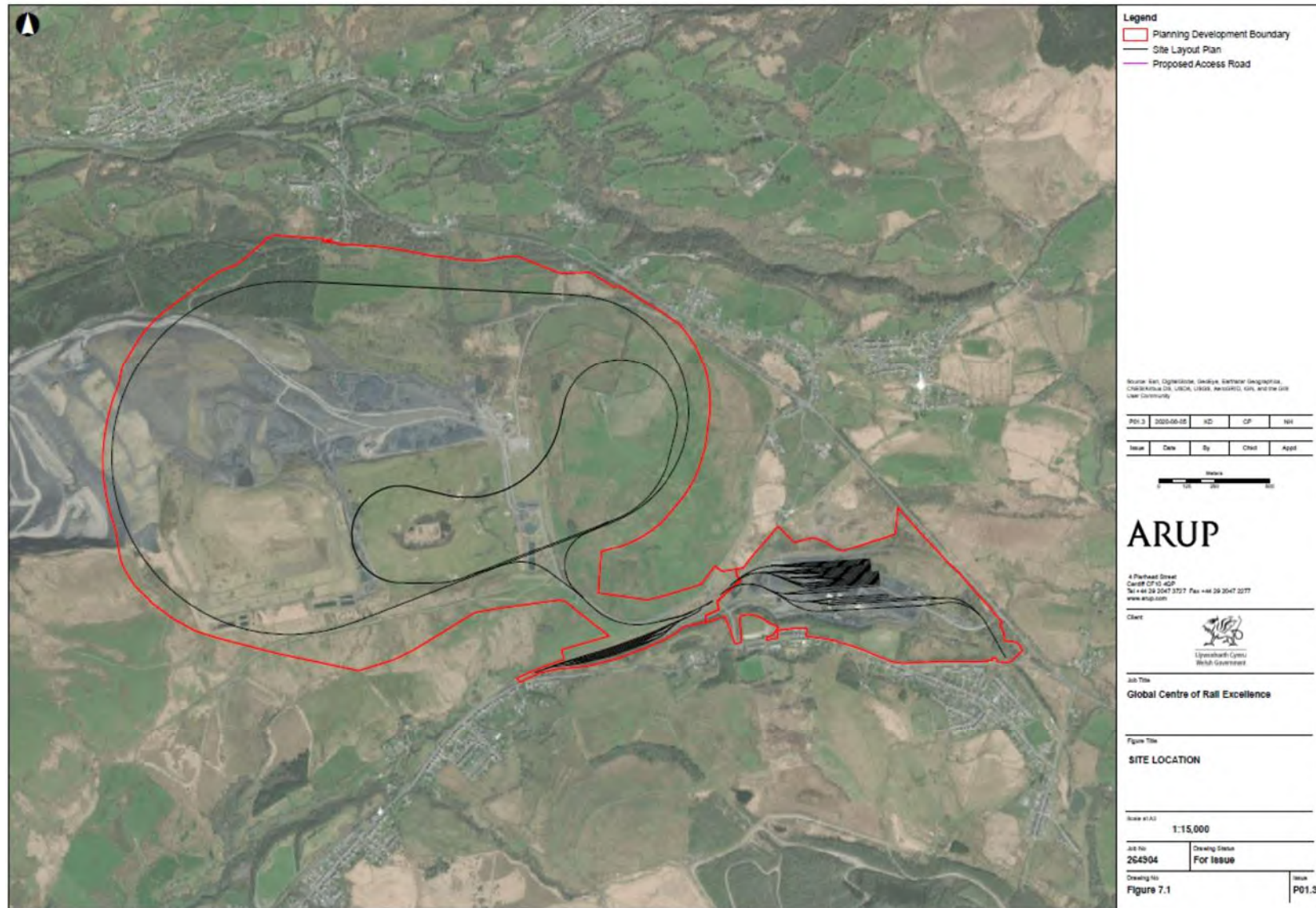
- 8.1.1 In the event that any changes are required to this document, an amended version will be submitted to the LPA ecologists at NPTC and PCC, for review and approval.

Appendices

Appendix 1

Consented Planning Boundary

Appendix 1: Consented Planning Boundary



Appendix 2

Relevant Planning Policy and Legislation

Appendix 2: Relevant Planning Policy & Legislation

Legislation

A framework of international, European, national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. This is described in the following sections.

Conservation of Habitats and Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') transpose the requirements of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) into law within England and Wales. These regulations provide for the designation and protection of sites of European importance known as European Sites or the National Site Network.

European Sites comprise:

- Special Areas of Conservation (SACs), including candidate sites, designated under the Conservation of Habitats and Species Regulations 2017 (as amended); and
- Special Protection Areas (SPAs) including candidate sites, designated under the Wildlife and Countryside Act 1981 (as amended)
- Ramsar Sites designated under the Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 are also considered as European Sites as a matter of UK Government policy along with proposed SACs and SPAs.

The Habitats Regulations require that consideration is given to the implications of plans and projects (developments) on European Sites. Specifically, Regulation 63(1) states:

"A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which:

(a) is likely to have a significant effect on a European site or European marine site (either alone or in combination with other plans or projects), and;

(b) is not directly connected with or necessary to the management of that site. must make an appropriate assessment of the implications for that site in view of that site's conservation objectives".

The formal consideration of effects on European Sites is therefore undertaken by the determining authority such as the Local Planning Authority under the Town and Country Planning Act 1990. The determining authority is known as the Competent Authority with the Regulations.

The Habitats Regulations also convey special protection to a number of species, which are listed in Schedule 2 of the Regulations and are referred to as European Protected Species (EPS). Those relevant to the Scheme include:

- All UK resident bat species;
- Common dormouse (*Muscardinus avellanarius*);
- Great crested newt (*Triturus cristatus*);
- Otter (*Lutra lutra*);
- Marsh fritillary butterfly (*Euphydryas aurinia*).

Regulation 43 makes it an offence to:

- Deliberately capture, injure or kill any wild animal of a EPS;
- Deliberately disturb wild animals of such a species;
- Deliberately take or destroy the eggs of such a species;
- Damage or destroy a breeding site or resting place of such an animal.

Disturbance in the context of the offences above is disturbance, which is likely to impair the ability of the animals to survive, to breed or reproduce, to nurture their young, to hibernate, to migrate; or to affect significantly the local distribution of the species.

Licences can be granted by the relevant Statutory Nature Conservation Organisation (SNCO) for developments (sometime referred to as EPS Licences or Derogation Licences) providing the purposes of the licence is for "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".

Ramsar Convention 1971

Wetlands of International Importance (Ramsar Sites) declared under the Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 are considered European Sites as a matter of UK and Local Government Policy.

Wildlife and Countryside Act 1981 (as amended)

A network of nationally designated sites has been established through the designation of Sites of Special Scientific Interest (SSSIs) under the Wildlife and Countryside Act 1981. The protection afforded by the Act means it is an offence to carry out or permit to be carried out any operation listed within the notification without the consent of the Statutory Nature Conservation Organisation (Natural Resources Wales). The protection afforded to SSSIs is used to underpin the designation of areas at a European Level.

The Wildlife and Countryside Act also places obligations on Welsh Ministers and other public bodies with regard to the conserving and enhancing of the features of SSSIs in the exercise of their functions.

The Wildlife and Countryside Act 1981 provides protection to both EPSs and other species including wild birds, water voles and reptiles.

All wild birds, their nests and eggs are protected, with some rare species afforded extra protection from disturbance during the breeding season (these species are listed in Schedule 1 of the Act). It is illegal to take any wild bird or damage or destroy the nests and eggs of breeding birds. There are certain exceptions to this in respect of wildfowl, game birds and certain species that may cause damage.

In England and Wales water voles are listed on Schedule 5 of the Wildlife and Countryside Act 1981, receiving full protection since 2008. The Wildlife and Countryside Act 1981 together with amending legislation, lists the following offences:

- Intentionally killing, injuring or taking a water vole by any method.
- Intentionally or recklessly damaging or destroying a water vole place of shelter or protection.
- Intentionally or recklessly damaging disturbing a water vole whilst it is occupying such a structure or place it uses for shelter or protection.
- Intentionally or recklessly obstructing access to a water vole's place of shelter or protection.
- Selling, offering for sale, or possessing or transporting for the purposes of sale, any live or dead water vole, or any part or derivative, or advertising any of these for buying or selling.

All native reptile species in the UK are subject to partial protection from intentional or reckless killing or injury only.

The Act also includes provisions for the control of invasive non-native species (INNS). Under these provisions it is an offence to:

- Release or allow to escape into the wild any animal which is not ordinarily resident or a regular visitor to Great Britain, or is included in Schedule 9 of the Act.
- Plant or otherwise cause to grow in the wild any plant which is included in Schedule 9 of the Act.

People undertaking works in proximity to invasive non-native plant species should take all reasonable steps and exercise all due diligence to avoid committing an offence.

The Invasive Alien Species (Enforcement and Permitting) Order 2019

The order came into effect on the 1st December 2019 to allow for enforcement of EU Regulations (Regulation (EU) No. 1143/2014 on the prevention and management of the introduction and spread of invasive alien species in England and Wales) also known as the IAS Regulations.

It lists 66 species which are of European Union concern. There are currently 19 species listed in the Order (16 of these species are found in Wales). Species include:

- Chinese mitten crab (*Eriocheir sinensis*)
- Red Swamp crayfish (*Procambarus clarkii*)
- Crayfish signal (*Pacifastacus leniusculus*)
- Spiny cheek crayfish (*Orconectes limosus*)
- Muntjac deer (*Muntiacus reevesi*)
- Ruddy duck (*Oxyura jamaicensis*)
- Egyptian goose (*Alopochen aegyptiacus*)
- Grey squirrel (*Sciurus carolinensis*)
- Himalayan balsam (*Impatiens glandulifera*)
- Fanwort (otherwise known as Carolina water shield) (*Cabomba caroliniana*)
- Giant hogweed (*Heracleum mantegazzianum*)
- Water hyacinth (*Eichhornia crassipes*)
- Parrots Feather (*Myriophyllum aquaticum*)
- Floating pennywort (*Hydrocotyle ranunculoides*)
- Floating water primrose (*Ludwigia peploides*)
- Water Primrose (*Ludwigia grandiflora*)
- Giant rhubarb (*Gunnera tinctoria*)
- Curly waterweed (*Lagarosiphon major*)
- Nuttall's waterweed (*Elodea nuttallii*)

This Order allows for the enforcement of, including the relevant licences, permits and rules for keeping invasive alien species.

The amendments remove these Invasive Alien Species (IAS) of Union concern from the ambit of the provisions relating to invasive non-native species in sections 14 and 14ZA of the Wildlife and Countryside Act 1981. This is to make the legislation more transparent and easier to use by bringing all the offences relating to species of Union concern into one place.

Criminal offences are introduced for breaches of the main restrictions of The IAS Regulation, as well as offences relating to:

- False statements;
- Altering, or not meeting, the conditions of permits and licences;
- Attempts to commit offences;
- Obstruction; and
- Offences for companies and partnerships.

It is also an offence to:

- Allow the escape or release into the wild an animal that is not normally a resident or regular visitor to Great Britain, or an animal listed in Part 1 of Schedule 2, including species of crabs, ducks and squirrel.
- Plant, or allow to grow in the wild, plants listed in Part 2 of Schedule 2.

Sell, or be involved in the sale of, any plant listed in Part 3 of Schedule 2, including Water Primrose and Floating Pennywort.