



**DALCOUR
MACLAREN**

Global Centre of Rail Excellence

Wildlife Connectivity Strategy

To inform Discharge of Condition 14 of Outline Planning
Permission 21/0559/OUT
May 2023



Project Details

Project Name	Global Centre of Rail Excellence
Scheme Number	21006904
Report Number	002

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1 Introduction

1.1.1 The Global Centre of Rail Excellence (GCRE) is a rail testing centre project that will be delivered by GCRE Ltd on behalf of the Welsh Government. The GCRE Site occupies 475 hectares of land within and surrounding the Nant Helen Surface Mine (Nant Helen Site) and Onllwyn Coal Washery (Washery Site). It is located within the counties of Powys and Neath Port Talbot at approximate centroid Ordnance Survey Grid Reference (OSGR) SN 82890 10976. The GCRE Site (including the relative locations of the Nant Helen and Washery Sites are shown on **Figure 1**).

1.1.2 An outline planning application submitted by Ove Arup & Partners Ltd (Arup) (on behalf of the Welsh Ministers (Department for the Economy and Transport) to Neath Port Talbot Council (planning reference P2021/0327) and Powys County Council (21/0559/OUT) was granted conditional approval in July 2021 for the following:

“Development of a Global Centre of Rail Excellence, comprising of two test tracks of loop configuration including an electrified high speed rolling stock test track of 6.9 km in length and an electrified low speed infrastructure test track of 4.5 km, with overhead line equipment (OLE) and dual platform station test environment; together with operations and control offices (including staff accommodation and welfare), shunter cabins (2 no.), research and development, education and training, rolling stock storage sidings and maintenance/cleaning/decommissioning facilities; associated drainage, internal vehicular accesses, branch line rail connection, staff and visitor car parking, lighting, electrical infrastructure, (including substations and lineside shore supplies and transformers), fencing (perimeter security, acoustic and stock proof), land reformation and hard and soft landscaping, together with demolition of existing building/structures.”

1.1.3 The permission is subject to planning conditions. Condition 14 states:

1.1.4 *“No development shall take place in any phase of development as identified in condition 7 (including demolition, ground works, site or vegetation clearance) until details of the proposed site-wide strategy to maintain and enhance wildlife corridors supporting wildlife movement within and without of the development site has been submitted to and approved in writing by the Local Planning Authority. This will include but is not limited to the following:*

- *Detailed specification of culverts*

- *Locations of culverts*
- *A plan showing key wildlife corridors across the site, as informed by up to date ecological surveys*
- *Details of landscaping and fencing to encourage use*
- *Monitoring of use"*

1.2 Purpose of report

- 1.2.1 The purpose of this Wildlife Connectivity Strategy (WCS) is to provide the information necessary to allow the discharge of Condition 14 of Outline Planning Permission 21/0559/OUT for all phases of the development. The WCS presents an outline (based on draft plans) of how the project will be designed to maintain and enhance wildlife corridors supporting wildlife movement within and immediately beyond the development site.
- 1.2.2 This WCS will form the basis of separate Phase-specific Wildlife Corridor Schemes that will be produced for each phase of the GCRE development (as required by Condition 15 of the planning consent). Each Phase-specific Wildlife Corridor Scheme will consider updates to the baseline ecological survey information and changing conditions of the Site.
- 1.2.3 In addition, the contents of this WCS may need to be amended and updated depending on the outcome of review by the Council during discharge of Condition 14. The WCS is therefore draft until Condition 14 has been discharged.

1.3 Supporting Documentation

- 1.3.1 Documents have been submitted to inform discharge of pre-commencement Conditions 13 to 18 inclusive relating to ecology and biodiversity. These include:
- Phase 1A Ecological Protection Plan (P1A-EPP)
 - Phase 1A Phase Biodiversity Plan (P1A-PBP)
 - Washery Ecological Management and Monitoring Plan (W-EMMP)
 - Nant Helen Ecological Protection Plan (NH-EPP)
 - Nant Helen Ecological Management and Monitoring Plan (NH-EMMP)
 - Strategic Biodiversity Plan (SBP)
- 1.3.2 The detail of the PBP, EPP and W-EMMP documents account for the working plans for Phase 1A of the development. The SBP provides a wider strategy that provides the basis for Phase 1A and subsequent phases of the GCRE development.
- 1.3.3 This WCS should be read in conjunction with the above documents, in addition to other supporting documentation, including:

- Soft Landscape Management and Maintenance Plans (LMMPs) (which will detail the landscape and planting schedules for each phase of the development).
- The Lighting Strategy (which will set out operational-phase lighting specifications for the GCRE development).
- The Fencing Strategy (which will set out operational-phase fencing specifications for the GCRE development).
- The Construction Environment Management Plan (CEMP) (which will set out construction-phase fencing details, lighting, and measures to control nuisances (such as noise and vibration)).

1.4 Report Structure

1.4.1 This WCS is set out to address the requirements of Condition 14 of the planning consent. The report is structured as follows:

- Section 1: sets out the purpose of the report and provides an overview of the project.
- Section 2: signposts the ecological baseline conditions as presented in supporting documents.
- Section 3: describes the existing key wildlife corridors across the site, supported by **Figure 2**.
- Section 3: describes how the proposed landscape, fencing and crossing point design should retain habitat connectivity post-construction. This is supported by the crossing plan in **Figure 3**, and landscape plans for the Nant Helen Site (in **Figure 4**) and Washery Site (in **Figure 5**).
- Section 4: sets out the monitoring principals to evidence use post-construction

2 Summary of Ecological Baseline Conditions

- 2.1.1 A suite of ecological surveys was undertaken by Ove Arup & Partners Ltd to inform the Ecological Impact Assessment within Chapter 7 of the Environmental Statement (ES) (Arup, 2021a), and to update the ecological baseline post consent.
- 2.1.2 The initial baseline survey reports are provided in Appendices 7C to 7P of the ES and contains full details of the baseline ecological data for GCRE development.
- 2.1.3 Additional survey work has been undertaken within the Washery Site during 2022 to update the baseline. The work has included:
- Botanical survey (Dalcour Maclaren, 2022a)
 - A check for notable plant species (Sturgess Ecology, 2022)
 - Riparian mammal and badger survey (BSG Ecology, 2022a)
 - Bat roost survey (BSG Ecology, 2022b)
 - Reptile survey (Dalcour Maclaren, 2022b)
- 2.1.4 A full summary of the survey results for the washery site is presented in Sections 2 and 3 of the P1A EPP (BSG Ecology, 2023).
- 2.1.5 Additional survey work at the Nant Helen site in 2022 has included:
- Updated walkover survey (Atkins, 2022)
 - Botanical survey (Atkins, 2023a)
 - Protected species surveys (Atkins, 2023b), including:
 - Badger surveys for evidence of badger including badger setts and monitoring of setts using remote cameras
 - Bat ground and aerial tree assessments
 - Great crested newt Habitat Suitability Index (HSI) scoring of all ponds
 - Otter habitat suitability surveys
 - Water vole habitat suitability surveys
 - Reptile population surveys
- 2.1.6 A full summary of the survey results for the Nant Helen site is presented in Section 2 of the NH-EPP (Atkins, 2023c).
- 2.1.7 Further survey work at the Nant Helen site is proposed (by Atkins) for 2023, and will include:
- Dormouse nest tube and footprint tunnel surveys;
 - Bat hibernation surveys;
 - Bat aerial tree surveys and emergence/ return to roost surveys; and
 - Great crested newt environmental DNA surveys.

- 2.1.8 This WCS document will, therefore, be reviewed following completion of these surveys.

3 Baseline Wildlife Corridors

- 3.1.1 Survey work undertaken to inform the Ecological Impact Assessment within Chapter 7 of the ES (Arup, 2021a), and updated in 2022, has identified the following principles.

Habitats

- 3.1.2 Woodland (broadleaved and coniferous) areas are present in the northern part of the Nant Helen site, and in isolated areas at the center of the Nant Helen site and the southern edge of the washery. Coniferous woodland extends to the north-west of the Nant Helen site, and broadleaved woodland blocks in the wider landscape are connected to the site by scattered trees, field boundaries and existing road-side planting. This wooded part of the landscape provides good habitat connectivity across the northern edge of the GCRE site, and is supplemented by the occurrence of occasional dense scrub and hedgerows.
- 3.1.3 The western part of the site is dominated by quarry spoil, and provides very limited habitat connectivity across it. Marshy and acid grassland dominates the western part of the site and is likely to provide suitable foraging and commuting habitat for a range of species; however, the occurrence of linear or wooded features through this area are limited.
- 3.1.4 Ditches and minor watercourses are present at the boundaries of the Site, and are associated with the Afon Dulais (along the southern boundary of the Nant Helen Site and northern boundary of the Washery Site) and the Nant Helen (at the northern boundary of the Nant Helen site).

Species

- 3.1.5 The broadleaved woodland in the northern part of the Nant Helen Site provides suitable roosting habitat for several species of bat. Soprano pipistrelle bats *Pipistrellus pygmaeus* roost in buildings within the Washery Site. Activity surveys have recorded low-level use of the Nant Helen and Washery Sites by at least eight species of bat. Soprano and common pipistrelle *Pipistrellus pipistrellus* were by far the most commonly recorded during the survey work at the Site, and *Myotis* sp. bats¹, brown long-eared bat *Plecotus auritus*, noctule *Nyctalus noctula*, serotine *Eptesicus serotinus*, and greater horseshoe bat *Rhinolophus ferrumequinum*² were also recorded. Figure 2 illustrates the key corridors for bats across the Site

¹ Bats in the genus *Myotis* are difficult to separate on calls alone due to overlapping call parameters.

² Five passes of greater horseshoe bat were recorded within the Nant Helen Site during survey between April and October 2019. This species was not recorded during emergence survey work at the Washery Site in 2022.

based on existing survey data (Aktins, 2023b and BSG Ecology, 2022b) and a review of aerial imagery.

- 3.1.6 Evidence of otter *Lutra lutra* use has been recorded within a ditch forming the northern boundary of the Washery Site. Otters also use the Nant Helen and Afon Dulais and may commute along connected watercourses at other parts of the Site. Possible key corridors for otter (based on the occurrence of suitable watercourses; Atkins, 2023b and BSG Ecology, 2022a) are presented in **Figure 2**.
- 3.1.7 Badger *Meles meles* outlier and subsidiary setts have been identified within the north-eastern part of the Nant Helen site (associated with areas of broadleaved woodland), in addition to evidence of use (runs, footprints, hairs, and latrines) throughout the grassland habitats in the eastern and southern parts of the site. Indicative badger movements across the Site (based on records of setts, latrines and hairs; Atkins, 2023b and BSG Ecology, 2022a) are illustrated on **Figure 2**.
- 3.1.8 Dormouse *Muscardinus avellanarius* may use areas of broadleaved woodland and scrub within and beyond the site; however, survey work completed to inform the ES did not find evidence of dormouse. Update survey work is proposed to be completed in 2023 given the occurrence of suitable habitat for this species.
- 3.1.9 Reptiles and amphibians are likely to move through areas of marshy grassland and heathland, and along woodland edges within the site. Survey work at Nant Helen and Washery Sites has confirmed a good local population of common lizard *Zootoca vivipara*. Survey work undertaken to inform the ES did not record great crested newts *Triturus cristatus*, but other species of amphibian, such as common toad, are present in waterbodies, and are likely to disperse through marshy grassland.

4 Post-construction Wildlife Corridors

- 4.1.1 The landscape, fencing, and lighting plans for the GCRE development are in draft at the time of first issue of this WCS document. However, these draft plans set out the principal requirements for the scheme, and a basis for setting out the WCS. Refinements to the relevant plans for each Phase of the development will be reflected in each Phase-specific Wildlife Corridor Scheme.

4.2 Construction phase requirements

- 4.2.1 All retained habitats will be protected by using a robust barrier fence during site preparation and construction. The fencing will prevent incursion / disturbance to retained habitats and allow animals to move around the periphery of the Site. The work will result in a temporary impact on mobile animals as a result of isolation of the land within the Site boundary. Movements of mammals will be restricted by the barrier fence, and reptiles and amphibians will be prevented from accessing the Site through installation of reptile fencing. Further details are presented in the NH-EPP and P1A-EPP documents.
- 4.2.2 Night working should be avoided where possible to minimise adverse impacts on bat behaviour. If Site lighting is used, the following points will be considered to avoid and reduce impacts on bats:
- As a guide, the retained habitats (beyond the protective fencing) should be subject to less than 0.5 lux, with the exception of access and haulage routes to the Site which will have low level lighting as far feasible given other constraints such as safety.
 - Light spill towards retained habitats can be reduced using cowls, reduced height columns, lower intensity lamps, and motion activation.
 - Lights will not be left on when the Site is unoccupied. If security lamps are required, these will be motion activated.

4.3 Operation phase requirements

Fencing and lighting

- 4.3.1 A fencing strategy for the GCRE Site is being developed by 5th Studio, and will set out full details of the operation phase fence design. However, the following principles will apply.
- 4.3.2 Security fencing will be installed alongside rail loops, both internally and externally, within the Nant Helen Site. The fencing will comprise 1.8 m high chainlink fencing. Welded mesh panel fencing (also 1.8 m high) will be provided around the Washery Site. The foot of the fencing will be at ground

level, and will prevent access for animals such as fox *Vulpes vulpes*, badger and otter. The fencing will also serve to reduce the likelihood of collision mortality of bats and birds by presenting a barrier at collision risk height.

- 4.3.3 Operation of trains will not occur after dusk between May and September inclusive. Operational lighting will not be required during this period, and dark corridors surrounding the site will be retained. The risk of visual disturbance and displacement of nocturnal mammals will, therefore, be avoided. The absence of night-time operation will also reduce the risk of collision mortality of nocturnal animals such as bats.

Track crossing points

- 4.3.4 Underpasses and bridges will be provided at key locations around the outer and inner track loops. These will be associated with retained public rights of way and service / vehicular access, but will also be located to retain, as far as practicable, existing corridors identified in **Figure 2**. The locations of crossing points are presented in **Figure 3**.
- 4.3.5 All crossing points will be associated with ‘funnel’ planting (tapering in width) to encourage use by wildlife³. Underpasses will have internal dimensions of at least 2 m height x 2 m width to allow passage by bats (as set out in section 7.22 of the ES; Arup, 2021a). Underpasses designed for access by heavy goods or farm traffic will be at least 3 m height x 3 m width. At least 600 mm width should be retained alongside the road within each underpass and on road bridges to provide space for movement of terrestrial animals such as badger and otter. The use of low-level barrier fencing at the roadside within underpasses and on road bridges will be beneficial to provide defined corridors (see **Drawing 1**, below). Where underpasses are designed to culvert watercourses or provide drainage, the ‘footpaths’ for wildlife movement should form ledges at least 150 mm above the 1 in 100-year flood level (including 25% for climate change).

***Drawing 1.** Example underpass entrance (Courtesy of 5th Studio).*

³ Many species of bat (including greater horseshoe bat) and terrestrial mammals are known to follow linear habitat features such as hedgerows, walls and woodland edge, when commuting and foraging.



- 4.3.6 The drainage scheme will include additional culverts that are at least 600 mm in diameter to allow additional passage opportunities for otter and amphibians (as set out in section 7.22 of the ES; Arup, 2021a). Such culverts will also be suitable for use by badger and reptiles in dry conditions. Indicative locations of enlarged culverts (to be confirmed by the final drainage scheme design) are presented in **Figure 3**.

Boundary habitats

- 4.3.7 Indicative landscape plans for the Nant Helen Site and Washery Site are presented in **Figures 4** (Atkins Drawing GCRE001-AWJ-XX-XX-DR-YL-00001) and **5** (JCLA Drawing OW181.P.00.LP) respectively.
- 4.3.8 Woodland (broadleaved and coniferous) areas will be retained within, and immediately north of the GCRE Site. Broadleaved native woodland core planting is proposed along the northern embankment of the earthworks. This will connect to and extend existing retained woodland habitats that occur to the east (as set out in the NH-EMMP). Scattered tree planting on terraces and scrub planting on cuttings will contribute to connecting woodland habitats within and beyond the site.
- 4.3.9 Acid grassland seeding of large areas of earthworks, and enhancement of existing grasslands will provide foraging habitat for a wide range of species, and enhance the green infrastructure within and surrounding the site. The creation of new wetland features (including ponds and swales with marginal and swamp vegetation) will also contribute to the diversity of habitats locally.
- 4.3.10 Roosting opportunities for bats will be retained within existing woodland and enhanced with the provision of artificial roosting opportunities. New planting will ensure connectivity across the northern part of the Nant Helen

Site for species such as greater horseshoe bat (that are considered highly dependent on habitat features for dispersal). Track-side and embankment planting will encourage bats to move around the Site periphery, and forage over newly-created habitats at the center of the Site.

- 4.3.11 Watercourses will be retained (or locally replaced) to provide continued commuting corridors for otter. The provision of additional screen planting and removal of encroaching bramble along the northern edge of the Washery Site will benefit otter dispersal.
- 4.3.12 Retained broadleaved woodland and new boundary tree and scrub planting will allow badger to move around the periphery of the GCRE Site. Marshy and acid grassland to the east of Nant Helen will be retained to provide continued foraging opportunities for badger. Dispersal and foraging habitat for badger will also be provided around the western and southern periphery of the Nant Helen Site. Woodland retention and new tree planting will also avoid fragmentation of habitats for species such as dormouse.
- 4.3.13 Enhancements to existing areas of marshy grassland, and the creation of new wetland features will benefit reptiles and amphibians.

5 Monitoring Plan

- 5.1.1 Monitoring will aim to confirm the predicted development of new and retained habitats, in addition to the continued presence of the baseline species assemblage post-development.
- 5.1.2 The requirements for monitoring at the Nant Helen and Washery Sites are set out in the NH-EMMP and W-EMMP respectively. In summary, monitoring of woodland, grassland and wetland features will take place every three to five years. The broad objectives being to:
- Determine whether new habitat creation is successful;
 - Determine trends in floral diversity in tree/shrubs, ground flora, and aquatic habitat;
 - Determine condition of habitat in relation to tree/shrub health, structural and species diversity; and
 - Identify any remedial action that may be needed.
- 5.1.3 Monitoring of bat activity of the site should take place in years 1, 3 and 5 post construction. Bat activity surveys should follow the methodology set out in the BCT good practice guidelines (2016). Surveys should include a combination of walked transects and static bat detector surveys. Transects should follow those designed during the original baseline surveys with surveys taking place monthly between April and October in suitable weather conditions. Transects should be walked by experienced bat surveyors using bat detectors to record and map all bat activity heard and seen throughout the survey. Static detector surveys should look to deploy detectors in identical locations as to the original baseline data surveys. Data analysis should compare results of monitoring surveys with those of the original baseline survey data.
- 5.1.4 The monitoring requirements for badger will be set out in the sett closure licence method statement, and will include post-construction walkover survey work to check for signs of use. The requirement for otter monitoring will depend on the outcome of further survey work at the Nant Helen Site scheduled for 2023. However, in the absence of evidence of regular use of watercourses within and adjacent to the Site, the value of targeted monitoring of this species is unclear. Field signs of badger and otter will be searched for and recorded during habitat monitoring visits every three to five years (as defined in the Site EMMPs).
- 5.1.5 The success of underpasses and bridges as wildlife corridors will be evidenced through bat activity and badger monitoring within the Site, and incidental observations of badger and otter field signs during habitat

monitoring work. If surveys indicate failure of the crossing points for wildlife, then further targeted survey (which may include use of trail cameras or hair traps) will be designed to monitor use. Remedial action may be required to address avoidance of use (if apparent), and this may include use of additional planting and landscape alteration. If required, a remedial action plan will be agreed with the local planning authority prior to implementation.

5.2 Responsibilities

- 5.2.1 Responsibility for the implementation of the WCS will lie with the GCRE. The GCRE will appoint an appropriately qualified landscape management contractor to undertake the physical works needed within the site.
- 5.2.2 The GCRE will additionally enlist the services of an appropriately qualified ecologist to act as the supervising Ecologist. The supervising ecologist will advise, and where needed supervise, the implementation of the maintenance and management tasks set out in the WCS.
- 5.2.3 The ecologist, or another appropriately qualified (and where required) licensed contractor, will undertake the monitoring tasks set out within the WCS. They will conduct regular monitoring visits, post-construction, for a period of 25 years and provide reports detailing works carried out and the results of monitoring surveys, in line with the WCS.
- 5.2.4 The GCRE will provide all of the resources and funding required to implement the ecological management plan in perpetuity for as long as they are the landowner of the site. If the ownership is transferred to any new landowner they will be made contractually responsible for continued provisions. This will include the monitoring requirements, in addition to revisions to the management plans and delivery of any additional management measures or changes to management practices, which may be identified at a later date following the results of monitoring surveys.
- 5.2.5 For any off-site habitat management and enhancement measures these will be resourced and funded by the GCRE and agreed with the landowner in writing.
- 5.2.6 Monitoring results will be reported through a steering group led by the site owner in partnership with Neath Port-Talbot County Borough Council, Powys County Council, Natural Resources Wales and invited parties such as users/managers, advisory consultants/independent experts and local interested parties (e.g. Commoners representative) as appropriate. The Site owner and local authorities will agree where additional remedial measures are required to ensure the objectives of the WCS are implemented.

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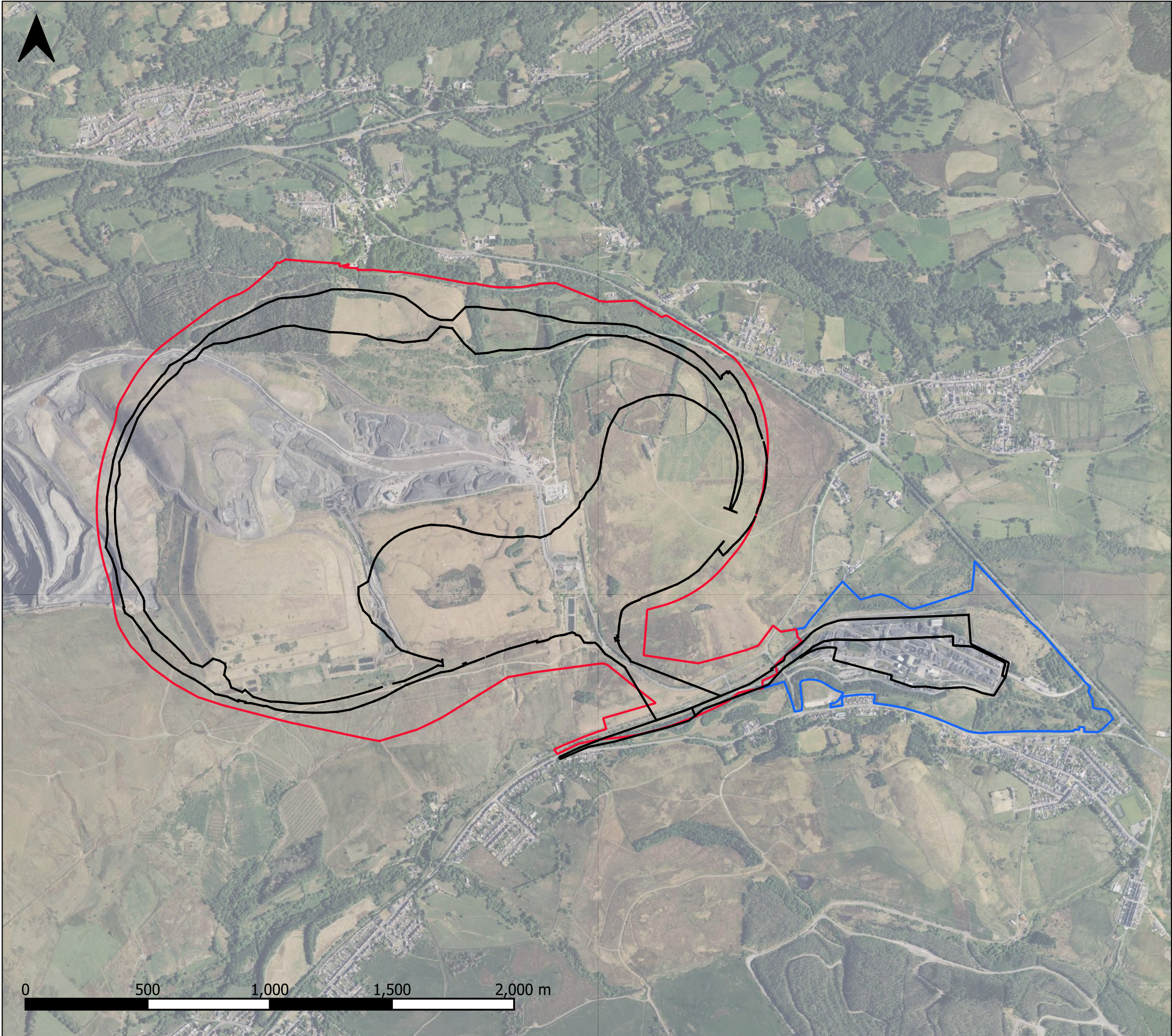
Sturges Ecology (2022) GCRE Phase 1A: check for notable plant species. Issued to Dalcour Maclaren (Figure 1 provided in **Appendix 2**).

Wales Biodiversity Partnership (2008) Wildlife Sites Guidance Wales – A Guide to Develop Local Wildlife Sites System in Wales. Available at <https://www.biodiversitywales.org.uk/Local-Wildlife-Sites>

7 Appendix

Appendix 1: Figures

(overleaf)



- Legend
- Washery Site
 - Nant Helen Site
 - Proposed locations of track loops and sidings

BSG | ecology

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JOB REF: P21-913

PROJECT TITLE
GCRE
Wildlife Connectivity Strategy

DRAWING TITLE
Figure 1: GCRE Site

DATE: 10.05.2023	CHECKED: JB	SCALE: 1:15,000
DRAWN: GL	APPROVED: JB	VERSION: 1.0

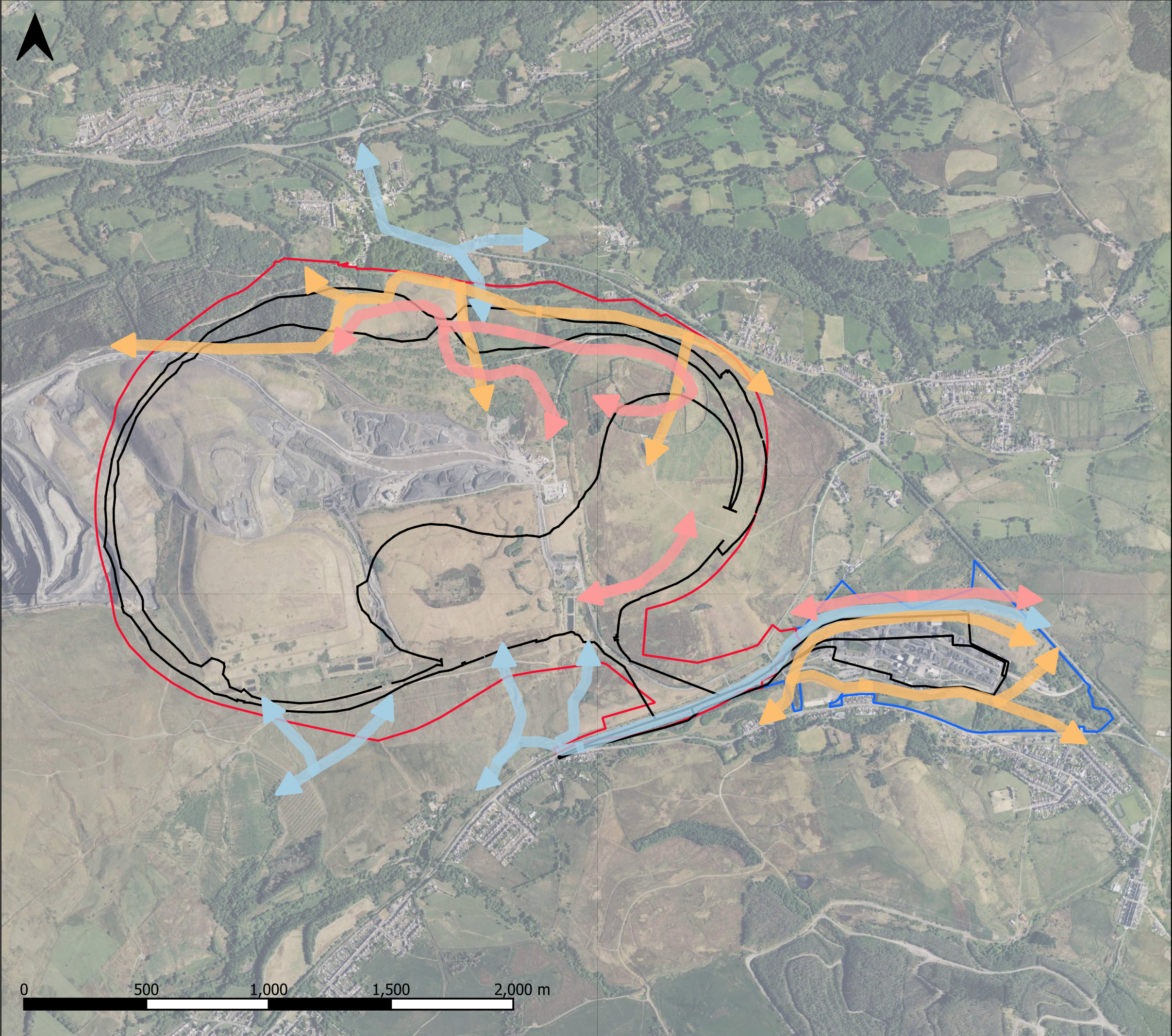
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All dimensions are to be checked on site.
Area measurements for indicative purposes only.

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Sources: GCRE Ltd



- Legend
- Washery Site
 - Nant Helen Site
 - Proposed locations of track loops and sidings
 - Bat corridors
 - Otter corridors
 - Badger corridors

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JOB REF: P21-913

PROJECT TITLE
GCRE
Wildlife Connectivity Strategy

DRAWING TITLE
Figure 2: Existing Corridors

DATE: 10.05.2023	CHECKED: JB	SCALE: 1:15,000
DRAWN: GL	APPROVED: JB	VERSION: 1.0

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Sources: GCRE Ltd

KEY

 Fenced rail corridor

 Crossing locations (approximate)
facilitating existing/adapted
wildlife movement corridors
based on BSG Fig. 2:

 Badgers

 Bats

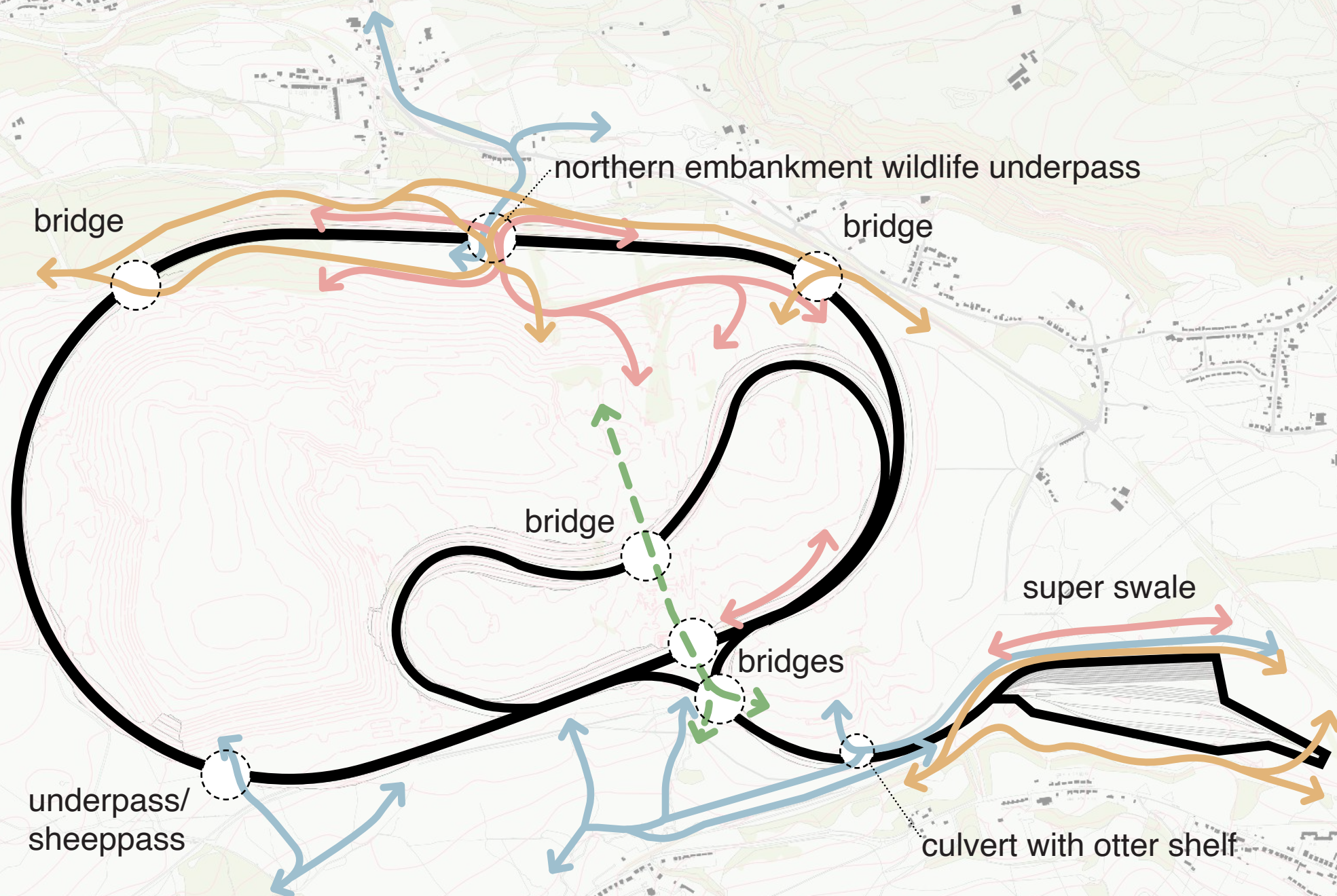
 Otters

 Other connectivity
for wildlife

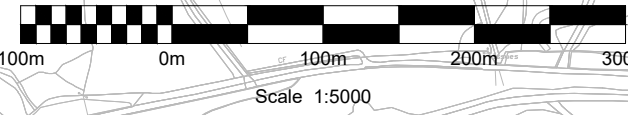
GCRE

Wildlife Crossings Strategy
May 2023

NTS



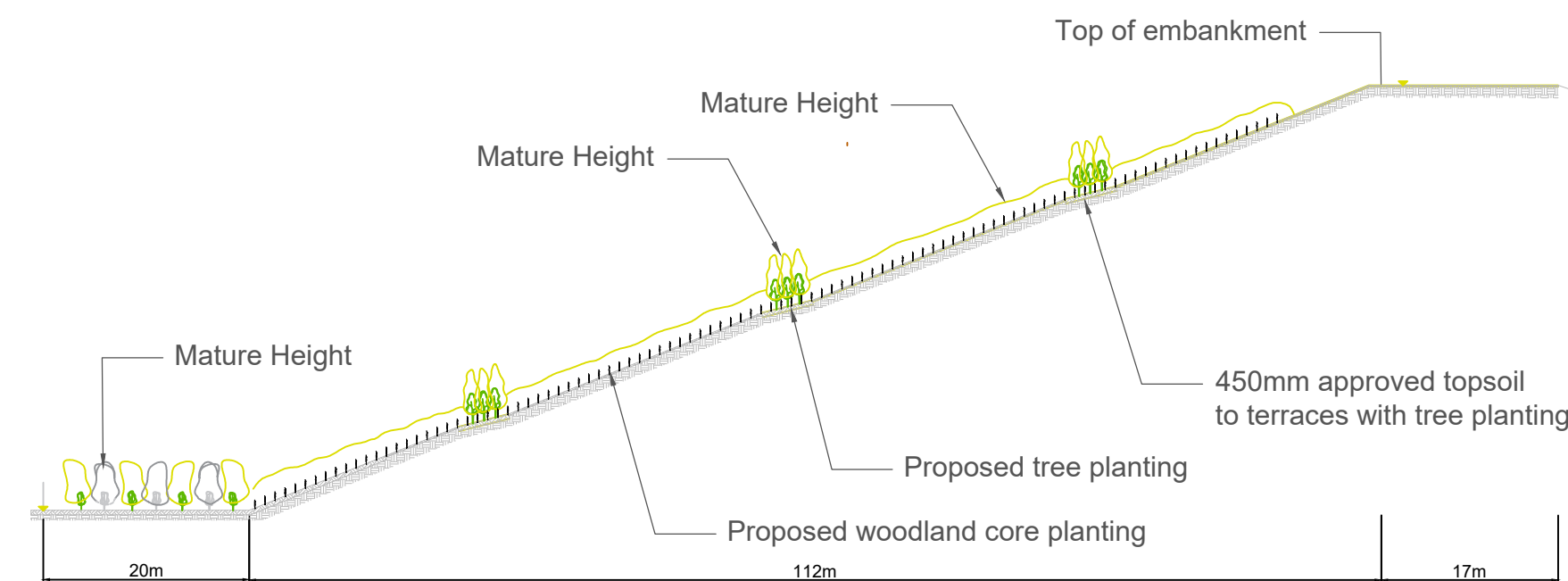
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0 10
Millimetres



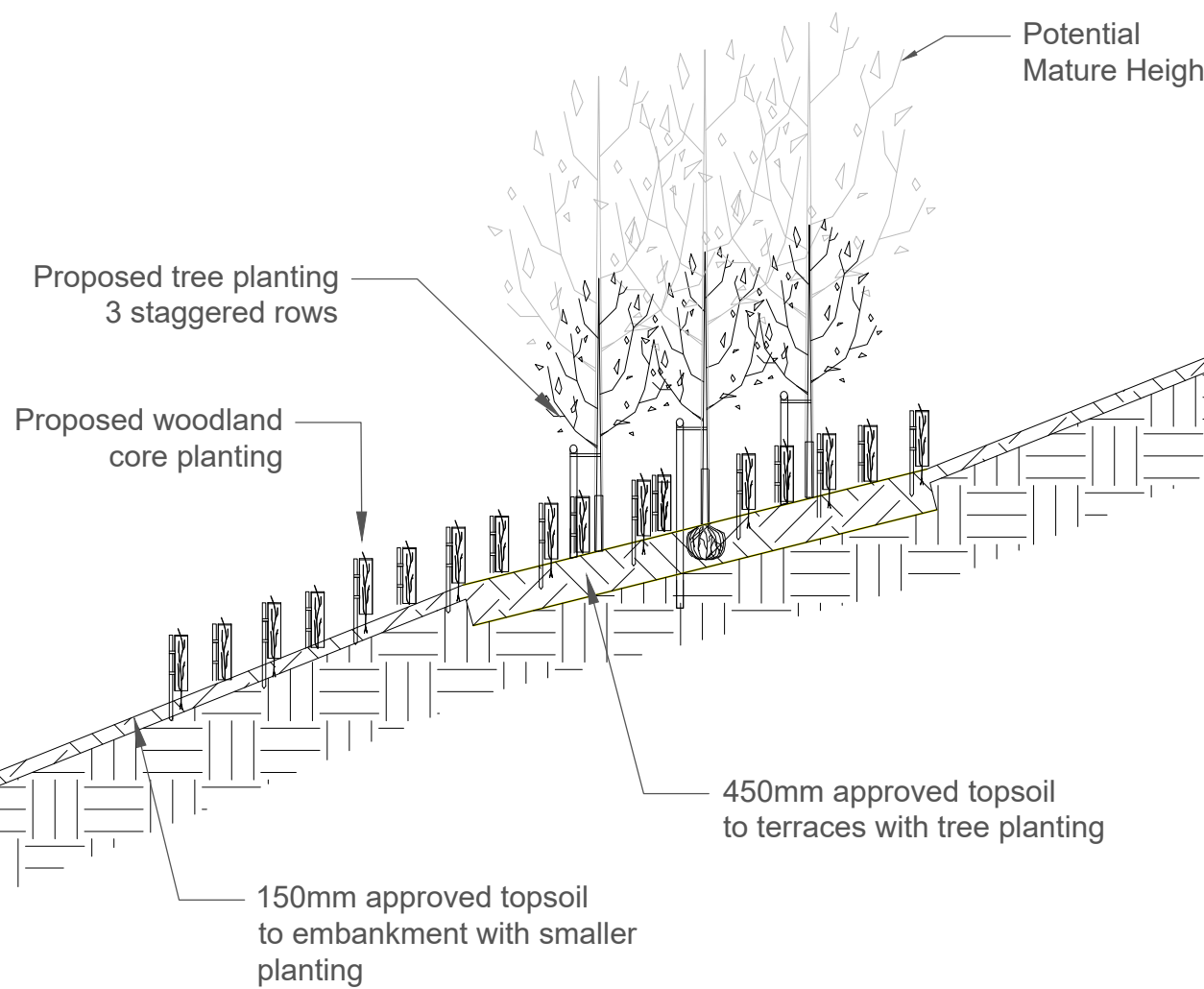
Section line through embankment

Indicative section through northern embankment NTS
Refer to earthworks design for earthworks profiles

DO NOT SCALE



Close up section of tree planting on northern embankment terrace NTS



NOTES:
- To be read in conjunction with indicative pond design drawing GCRE001-AWJV-XX-XX-DR-YL-00004, refer to this drawing for pond planting schedule.
- To be read in conjunction with Landscape strategy GCRE001-AWJV-XX-XX-DO-YL-00002 and landscape specification.
- To be read in conjunction with engineers drawings and specification.
- Utilities not shown, position of utilities to be checked before any planting/landscaping occurs. It is the responsibility of the contractor to confirm positions of utilities before work commences.

Proposed Planting Schedule

TREE PLANTING ON TERRACES					
Botanical name	Common name	Form	Size	Code	%
<i>Acer campestre</i>	Field maple	Feathered; 5 Breaks	2x, 250-300, B	Ac	15
<i>Betula pubescens</i>	Downy Birch	Feathered; 5 Breaks	2x, 250-300, B	Bp	15
<i>Malus sylvestris</i>	Crab apple	Feathered; 5 Breaks	2x, 250-300, B	Ms	5
<i>Pinus sylvestris</i>	Scot's Pine	Feathered; 5 Breaks	2x, 250-300, B	Ps	25
<i>Populus nigra</i>	Black Poplar	Feathered; 5 Breaks	2x, 250-300, B	Pn	5
<i>Quercus petraea</i>	Sessile Oak	Feathered; 5 Breaks	2x, 250-300, B	Op	10
<i>Quercus robur</i>	Common Oak	Feathered; 5 Breaks	2x, 250-300, B	Or	15
<i>Salix fragilis</i>	Crack Willow	Feathered; 5 Breaks	2x, 250-300, B	Sf	10
To be mixed in with woodland core mix at terraced areas. Trees to be staked. Trees to be planted in staggered rows of 3					

WOODLAND CORE 'RIPARIAN' MIX					
Botanical name	Common name	Form	Size		%
<i>Alnus glutinosa</i>	Alder	Feathered; 2 Breaks	2x, 125-150, B		10
<i>Betula pubescens</i>	Downy Birch	Feathered; 2 Breaks	2x, 125-150, B		30
<i>Populus nigra</i>	Black Poplar	Cutting	0/2, 125-150, B		10
<i>Populus tremula</i>	Aspen	Feathered	2x, 150, B		10
<i>Salix alba</i>	White Willow	Cutting	0/2, 100-125, B		20
<i>Salix fragilis</i>	Crack Willow	Cutting	0/2, 100-125, B		20
To be planted irregularly at between 1.0m and 3m centres (Average of 2.0m centres), in groups of 3-7. Plants to be protected with tree shelters / Rabbit guards					

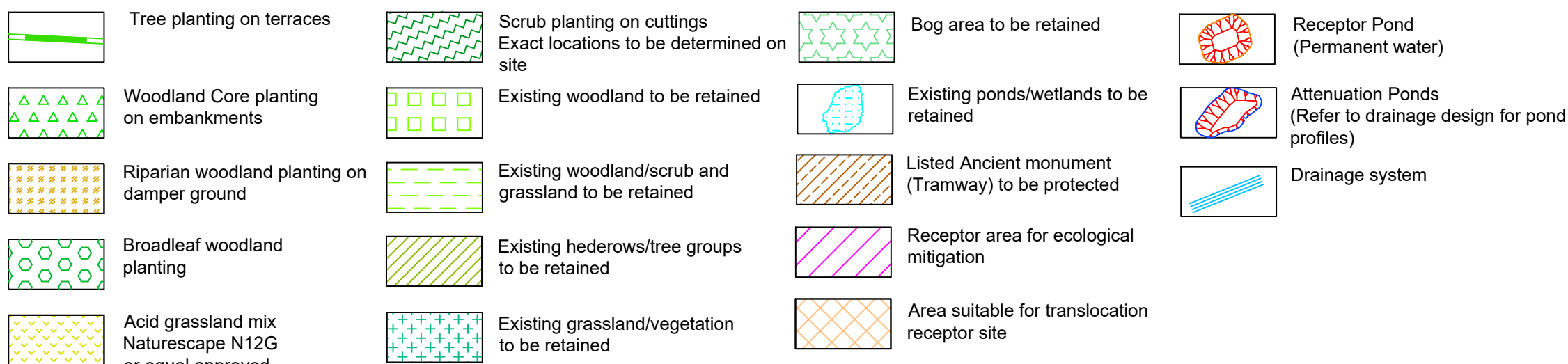
BROADLEAF WOODLAND					
Botanical name	Common name	Form	Size		%
<i>Acer campestre</i>	Field maple	Transplant	1+2, 60-90, B		15
<i>Alnus glutinosa</i>	Alder	Transplant	1+2, 60-90, B		15
<i>Betula pendula</i>	Silver Birch	Transplant	1+2, 60-90, B		15
<i>Corylus avellana</i>	Hazel	Transplant	1+2, 60-90, B		10
<i>Malus sylvestris</i>	Crab apple	Transplant	1+1, 60-90, B		5
<i>Pinus sylvestris</i>	Scot's Pine	Transplant	2+2, 60-80, B		20
<i>Prunus avium</i>	Wild Cherry	Transplant	1+1, 60-90, B		10
<i>Quercus robur</i>	Oak	Transplant	1+2, 60-90, B		15
<i>Sambucus nigra</i>	Elder	Transplant	1+2, 60-90, B		15
To be planted irregularly at between 1.0m and 3m centres (Average of 2.0m centres), in groups of 3-7. Plants to be protected with tree shelters / Rabbit guards.					

WOODLAND CORE (ON EMBANKMENTS BETWEEN TERRACES)					
Botanical name	Common name	Form	Size		%
<i>Acer campestre</i>	Field maple	Transplant	1+2, 60-90, B		15
<i>Crataegus monogyna</i>	Hawthorn	Transplant	1+1, 60-90, B		15
<i>Betula pendula</i>	Silver Birch	Transplant	1+2, 60-90, B		15
<i>Corylus avellana</i>	Hazel	Transplant	1+2, 60-90, B		10
<i>Malus sylvestris</i>	Crab apple	Transplant	1+1, 60-90, B		5
<i>Pinus sylvestris</i>	Scot's Pine	Transplant	2+2, 60-80, B		20
<i>Prunus avium</i>	Wild Cherry	Transplant	1+1, 60-90, B		10
<i>Quercus robur</i>	Oak	Transplant	1+2, 60-90, B		20
<i>Sambucus nigra</i>	Elder	Transplant	1+1, 60-90, B		5
To be planted irregularly at between 1.0m and 3m centres, (Average of 2.0m centres), in groups of 3-7. Plants to be protected with tree shelters / Rabbit guards.					

DENSE SCRUB PLANTING			
Botanical name	Common name	%	Size
<i>Acer campestre</i>	Field maple	4	1+2, 60-90, B
<i>Crataegus monogyna</i>	Hawthorn	17	1+1, 60-90, B
<i>Cornus sanguinea</i>	Dogwood	4	1+1, 60-90, B
<i>Euonymus europaeus</i>	Spindle	4	1+1, 60-90, B
<i>Ligustrum vulgare</i>	Privet	4	1+1, 60-90, B
<i>Malus sylvestris</i>	Crab apple	4	1+1, 60-90, B
<i>Ulex europaeus</i>	Gorse	20	1+1, 60-90, B
<i>Prunus spinosa</i>	Blackthorn	40	1+1, 60-90, B
<i>Sambucus nigra</i>	Elder	3	1+1, 60-90, B
To be planted at 1m centres, minor species in groups of 3-7. Plants to be protected with rabbit guards.			

ACID GRASSLAND MIX- NATURESCAPE N12G		
Botanical name	Common name	%
<i>Agrostis capillaris</i>	Common Bent	4%
<i>Anthoxanthum odoratum (N)</i>	Sweet Vernal Grass	3%
<i>Cynosurus cristatus</i>	Crested Dogtail	11%
<i>Deschampsia flexuosa (N)</i>	Wavy Hairgrass	2%
<i>Festuca Trachyphylla</i>	Hard Fescue	35%
<i>Festuca rubra ssp. litoralis</i>	Slender Creeping Red Fescue	15%
<i>Festuca rubra ssp. rubra</i>	Strong Creeping Red Fescue	15%
<i>Poa pratensis</i>	Smooth Stalked Meadow Grass	15%
8 Grass species		100%

Key



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

N/A

MAINTENANCE/CLEANING

N/A

DECOMMISSIONING/DEMOLITION

N/A

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

Rev.	Date	Description	By	Chk'd	App'd
P01		Issue for Planning	JS	DB	
02.01	---	Issue for Planning	JS	DB	MP

Drawing Status

Suitable for information

Suitability

S2

Project Title

GLOBAL CENTRE
OF RAIL EXCELLENCE

Drawing Title

Soft Landscape Plan

Client

WALTERS ATKINS

GCRE

Global Centre of Rail Excellence
Canolfan Fyd-Cang Rhagoriaeth Rheilffyrdd

Scale

NTS

Original Size

A1

Drawing Number

GCRE001-AWJ-XX-XX-DR-YL-00001

Drawn

J.Skellern

Date

2023-04-13

Checked

D.Browne

Date

2023-04-13

Approved

M.Podmore

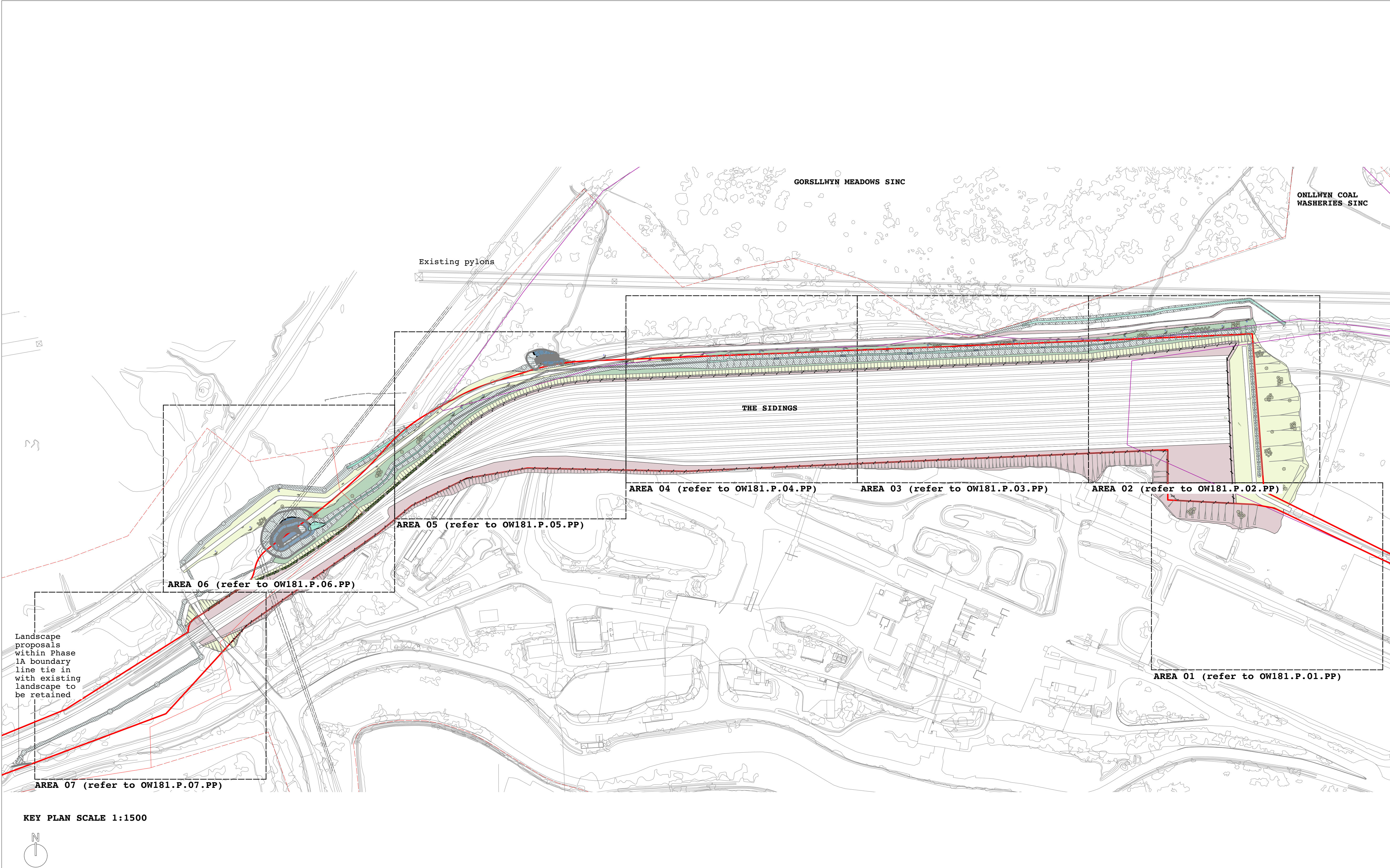
Date

2023-04-13

Authorised

Revision

P02.01



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Do not scale from this drawing. Any discrepancies or queries should be brought to the attention of the authors. Dimensions are to be verified on site prior to construction.

To be read in conjunction with all relevant Architects', Services and Structural Engineers' drawings.

All existing site, tree and building information has been compiled from different sources.

Refer to current revisions of all referenced files.

Notes:

- Refer to ecologists information for Phase1A SINC & Receptor area mitigation measures and enhancements.
- To be read in conjunction with Soft Landscape Maintenance plan: **OW181.Doc2.MP**.
- To be read in conjunction with Planting schedule: **OW181.Doc1.PS**.
- Refer to Engineers drawings for earthworks, hard landscape, levels and drainage information.

- Key:
- Refer to planting plans for detailed species information
- SINC Boundaries - illustrative only
 - Planning Application Boundary
 - PHASE 1A Boundary
 - OPEN MOSAIC HABITAT
 - LOWLAND DRY ACID GRASSLAND
 - GRASSLAND TERRACE
 - WET MEADOW
 - MARGINAL TERRACE
 - AQUATIC TERRACE
 - SUBMERGED / OPEN WATER
 - CHANNEL VEGETATION (SWALE)
 - FENCE LINE TO ARCHITECTS DETAILS
 - PROPOSED TREES

Rev	Date	Description
P01	22.12.2022	FOR PLANNING

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Client
GCRE

Project
OW181 GCRE Phase 1A

Drawing Title
Proposed Soft Landscape Plan

Drawing Status	
FOR PLANNING	
Date	Scale
22.12.2022	1:1500 @ A1
Drawing Number	Revision
OW181.P.00.LP	P01

Appendix 2: Summaries of Relevant Legislation

7.1.1 This section briefly summarises the legislation, policy and related issues that are relevant to the main text of the report. The following text does not constitute legal or planning advice.

Environment (Wales) Act 2016

7.1.2 The Environment (Wales) Act 2016 passed into law in March 2016. Part 1 of the Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

7.1.3 Section 6 of the Act places a duty on public authorities to '*seek to maintain and enhance biodiversity*' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to '*promote the resilience of ecosystems*'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 in relation to Wales, and applies to those authorities that fell within the previous duty.

7.1.4 Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience. This is expanded on in sub-section (2):

7.1.5 In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects—

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

7.1.6 Section 7 concerns biodiversity lists and the duty to take steps to maintain and enhance biodiversity. It replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

7.1.7 The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

European protected species (Animals)

7.1.8 The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

7.1.9 “European protected species” (EPS) of animal are those which are shown on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are subject to the provisions of Regulation 43 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

- Intentionally or deliberately capture, injure or kill any wild animal included amongst these species
- Possess or control any live or dead specimens or any part of, or anything derived from a these species
- deliberately disturb wild animals of any such species
- deliberately take or destroy the eggs of such an animal, or
- intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place
- For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—
 - a. to impair their ability—
 - i. to survive, to breed or reproduce, or to rear or nurture their young, or
 - ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - b. to affect significantly the local distribution or abundance of the species to which they belong.

7.1.10 Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in Wales are currently determined by Natural Resources Wales. In accordance with the requirements of the Regulations (2017, as amended), a licence can only be issued where the following requirements are satisfied:

- a. The proposal is necessary ‘to preserve 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’
- b. ‘There is no satisfactory alternative’

- c. The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Definition of breeding sites and resting places

- 7.1.11 Guidance for all European Protected Species of animal, including bats and great crested newt, regarding the definition of breeding and of breeding and resting places is provided by The European Council (EC) which has prepared specific guidance in respect of the interpretation of various Articles of the EC Habitats Directive.⁴ Section II.3.4.b) provides definitions and examples of both breeding and resting places at paragraphs 57 and 59 respectively. This guidance states that 'The provision in Article 12(1)(d) [of the EC Habitats Directive] should therefore be understood as aiming to safeguard the ecological functionality of breeding sites and resting places.' Further the guidance states: 'It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.'

Birds

- 7.1.12 All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.
- 7.1.13 The Conservation of Habitats and Species Regulations 2017 (as amended) places duties on competent authorities (including Local Authorities and National Park Authorities) in relation to wild bird habitat. These provisions relate back to Articles 1, 2 and 3 of the EC Directive on the conservation of

⁴ Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. (February 2007), EC.

wild birds (2009/147/EC, 'Birds Directive'⁵) (Regulation 10 (3)) requires that the objective is the 'preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of Article 2 of the new Wild Birds Directive...' Regulation 10 (7) states: 'In considering which measures may be appropriate for the purpose of security or contributing to the objective in [Regulation 10 (3)] Paragraph 3, appropriate account must be taken of economic and recreational requirements'.

- 7.1.14 In relation to the duties placed on competent authorities under the 2017 Regulations, Regulation 10 (8) states: 'So far as lies within their powers, a competent authority in exercising any function [including in relation to town and country planning] in or in relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds (except habitats beyond the outer limits of the area to which the new Wild Birds Directive applies).'

Badger

- 7.1.15 Badger is protected under the Protection of Badgers Act 1992. It is not permitted to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it. A badger sett is defined in the legislation as "a structure or place, which displays signs indicating current use by a badger".
- 7.1.16 ODPM Circular 06/2005⁶ provides further guidance on statutory obligations towards badger within the planning system. This guidance relates to the planning system in England, but is also applicable in Wales. Of particular note is paragraph 124, which states that "The likelihood of disturbing a badger sett, or adversely affecting badgers' foraging territory, or links between them, or significantly increasing the likelihood of road or rail casualties amongst badger populations, are capable of being material considerations in planning decisions."
- 7.1.17 Natural England provides Standing Advice⁷ (that is also applicable in Wales), which is capable of being a material consideration in planning

⁵ 2009/147/EC Birds Directive (30 November 2009. European Parliament and the Council of the European Union.

⁶ ODPM Circular 06/2005. *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impacts within the Planning System* (2005). HMSO Norwich.

⁷ <http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/standingadvice/specieslinks.aspx>

decisions. Natural England recommends mitigation to avoid impacts on badger setts, which includes maintaining or creating new foraging areas and maintaining or creating access (commuting routes) between setts and foraging/watering areas.

Reptiles

- 7.1.18 All native reptile species receive legal protection in Great Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Viviparous lizard, slow-worm, grass snake and adder are protected against killing, injuring and unlicensed trade only. Sand lizard and smooth snake receive additional protection as “European Protected species” under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) and are fully protected under the Wildlife and Countryside Act 1981 (as amended).
- 7.1.19 All six native species of reptile are included as ‘species of principal importance’ for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act 2006 and Section 7 of the Environment (Wales) Act 2016.
- 7.1.20 Current Natural England Guidelines for Developers⁸ states that ‘where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.’ Further the guidance states: ‘Normally prohibited activities may not be illegal if ‘the act was the incidental result of a lawful operation and could not reasonably have been avoided’. Natural England ‘would expect reasonable avoidance to include measures such as altering development layouts to avoid key areas, as well as capture and exclusion of reptiles.’
- 7.1.21 The Natural England Guidelines for Developers state that ‘planning must incorporate two aims where reptiles are present:
- To protect reptiles from any harm that might arise during development work;
 - To ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the reptile population, either on-site or at an alternative site, with no net loss of local reptile conservation status.

⁸ English Nature, 2004. *Reptiles: guidelines for developers*. English Nature, Peterborough.
<https://webarchive.nationalarchives.gov.uk/20150303064706/http://publications.naturalengland.org.uk/publication/76006>

Wild mammals in general

- 7.1.22 The Wild Mammals (Protection) Act 1996 (as amended) makes provision for the protection of wild mammals from certain cruel acts, making it an offence for any person to intentionally cause suffering to any wild mammal. In the context of development sites, for example, this may apply to rabbits in their burrows.



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