

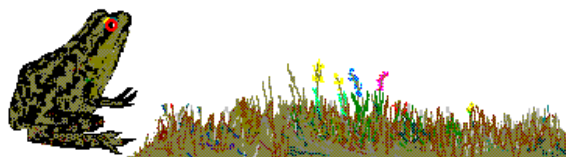
Energybuild

**ABERPERGWM COLLIERY
REFERENCE NO: P2014/0729**

**ECOLOGICAL MANAGEMENT
AND MONITORING PLAN**

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1 INTRODUCTION

- 1.1 This Ecological Management and Monitoring Plan (EMMP) has been commissioned by Energybuild to provide a proposed strategy for the creation and long-term management of the habitat and associated species, which will be included as part of the development strategy at Aberpergwm mine (hereafter referred to as 'the Site').
- 1.2 In summary, approval has been granted for an application for an extension to and reconfiguration of the underground coal workings at Aberpergwm; Creation of a mine waste repository with the retention and improvement of the associated haul road (to dispose of mine waste and discard from coal preparation at the mine) and the delivery of further peat habitat mitigation works; Mine Surface development, including - regularisation and time extension of existing mine related operations and mine surface development, consolidation of existing planning permissions and planning controls, construction of infrastructure/buildings, formation of materials storage and stocking areas, drainage works, and landscaping. This approval is subject to compliance with a number of conditions, the ecological aspects of which are comprehensively dealt with in this EMMP.
- 1.3 Areas with nature conservation designations that are located partially within or immediately adjacent to the Site include Aberpergwm Colliery Coalspoil Biodiversity Priority Site (CBPS), a Plantation on Ancient Woodland Site (PAWS) and a Restored Ancient Woodland Site (RAWS). None of these sites will be directly affected by the works. No other designated protected sites such as Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs) or Sites of Importance for Nature Conservation (SINCs) occur within the site boundary.
- 1.4 The Plan has been produced in support of a supplementary planning submission to NPTCBC and is provided in response to conditions laid out in the NPTCBC letter of Approval of Full Planning Permission, Reference No: P2014/0729, dated 23 July 2014.

This Ecological Management and Monitoring Plan (EMMP) covers all aspects of the ecological conditions outlined by NPTCBC including:

- Details of ecological surveys undertaken and the results of these surveys.
 - Measures to protect species and habitats during site preparation, construction and occupation.
 - Measures to increase the ecological value of the site once the development is complete, to ensure a net gain for biodiversity.
 - Measures to ensure the biodiversity value of the site is maintained for the long term (5 years +) after development is complete, including a monitoring programme. The developer and / or site manager will ensure the EMMP is handed over and explained to any operatives or staff responsible for works that might impact upon the conservation interest of the Site.
- 1.5 The first two parts of this policy (results of ecological surveys undertaken and measures to protect species and habitats) are not provided in detail in the EMMP, as these are already set out in Environmental Statement (ES) Chapter 12 Ecology and

Wildlife and its associated appendices, which accompany the planning application. These documents set out in detail the survey methodologies employed, and the results of the various surveys undertaken. Therefore, the Plan should be read alongside Chapter 12 and Appendix 12 of the ES.

- 1.6 The overall aim of the Plan is to help guide the restoration, maintenance and enhancement of the biodiversity of the Site, integrating this closely with the landscaping proposals. This will ensure the successful implementation of measures to safeguard and enhance the Site's ecological resources ensuring ecosystems resilience across the site.

2 DETAILS OF ECOLOGICAL SURVEYS UNDERTAKEN

- 2.1 Baseline information was gathered about existing habitats, plant and animal species during a range of ecological surveys carried out between 2003 – 2013; these surveys are reported in the Environmental Statement, referred to in section 1.5 above. Additional survey data were gathered for an extension to the Site during 2021 and a baseline report has been produced as an additional appendix. This baseline information was used in the development and updating of this Plan to help identify the most appropriate actions and locations for managing the site's biodiversity interest, to ensure that the species and habitats selected help mitigate and offset impacts on existing habitats and species.
- 2.2 The Extended Phase 1 habitat survey produced in 2014, was updated in 2021 to take into account the small scale changes that have taken place and is shown on figure 1. Much of the application site has been significantly modified by former mining and forestry operations and the range of habitats present include deciduous woodland, coniferous plantation, scrub and secondary grassland on spoil, watercourses and bare ground along tracks and in areas of mining operations. Whilst woodland is the most prominent and significant of these habitats, the small areas of secondary grassland habitats on spoil provide the greatest diversity, most notably where the project edges onto the Maclean Tip and along the haul road verges. Whilst the level of biodiversity at the site is moderately rich, including several species of regional importance, no species of special significance were recorded within the study site.
- 2.3 Surveys indicate that use of the site by Badger is likely to be very limited and that only seasonal foraging opportunities for Otters occur away from the Neath River and Neath Canal. Brown Hare was noted at very low density in open areas and roost opportunities for bats are limited to the extent that none were identified within the application area, the species recorded foraging were Pipistrelles, Whiskered, Daubenton's and Noctule Bats. Fully protected bird species known to breed within the general area of the application site include Honey-buzzard, Goshawk, Peregrine and Crossbill, but other than potential nesting habitat on the quarry face for Peregrine (not used), there is no suitable breeding habitat for these species within the application site. Nightjar is of regional importance and the site supports several pairs annually during the summer months.

- 2.4 Away from the canal margins where the Slow-worm is well established much of the site provides only poor habitats for reptiles and amphibians with only small numbers of Common and ubiquitous species being recorded.

3 MEASURES TO PROTECT SPECIES AND HABITATS AND TO INCREASE THE ECOLOGICAL VALUE OF THE SITE, TO ENSURE A NET GAIN FOR BIODIVERSITY

- 3.1 A wide range of measures have been identified to help protect species and habitats during the operation of the mine. There is considerable detail provided in the mitigation section of the Environmental Statement, Chapter 12. This document draws together all the actions required to safeguard and enhance the key ecological features of the Site.
- 3.2 The habitats lost to the surface mining/repository area are already on highly disturbed ground, mostly dense plantations of Sitka Spruce on ploughed peat. This habitat is botanically species-poor, though some pockets of remnant blanket bog are evident in areas of deeper peat where habitat condition was found to be generally poor. The faunal interest in these conifer plantations varies with the development of the crop, with the first 10+ years after planting supporting locally important assemblage of ground-nesting birds, with good numbers of Nightjar and Skylark most notable. When considering mitigation opportunities, restoration options were identified with significant potential to improve upon habitat quality and species diversity at the Site.
- 3.3 For the biodiversity and landscape features identified within the development, suitable objectives for management have been devised to meet the aims of the Plan (see Table 1). It was considered appropriate to set objectives at habitat level, with habitats grouped into four landscape types as follows:
- deciduous woodlands
 - coniferous plantations,
 - acid grassland/heath mosaics,
 - peat cells
 - water courses
 - ponds
 - track verges.
- 3.4 The Plan is outlined in Table 1 which details the objectives and Management prescriptions, describing the measures proposed to manage and create habitats. This will ensure that the biodiversity value of the Site is maintained with enhancements focusing on the long-term vision delivered during the phased restoration of the project. The Plan will be communicated to the site management team responsible for site works and it will facilitate the preparation and implementation of an annual work programme to plan the ecological management from year to year. This annual work programme will be informed by a monitoring schedule to determine the success or otherwise of

habitat management/creation, leading to changes, if necessary, to ensure the objectives of this Plan are met.

- 3.5 For the purpose of the Plan, the site has been sectioned into the areas identified on figure 2, to clarify the extent of specific prescriptions.

4 ECOLOGICAL MANAGEMENT & MONITORING PRESCRIPTIONS

Features	Cdn No.	106 Planning Conditions & Reasons	Scheduled Actions	Compartments Refer to Fig. 2
All bats species	43	The <i>Myotis</i> bat light mitigation scheme, as approved under application P2011/0319 on 07th November 2011 shall be fully implemented on site throughout the operational phase of the development, and retained as such thereafter. <i>Reason:</i> To limit the impact of lighting on bat flight corridors	The site already has an established lighting system. An investigation was carried out in 2021 to determine the sphere of illumination >3 lux, which was mapped to identify where habitats likely to support feeding / travel routes might be adversely affected, as detailed in Method Statement 4 and ES 12.3. The results of the investigation are presented on figure 3. Some limited modifications to the lighting scheme are proposed to better control light spill and improve connectivity in key locations, i.e. by ensuring dark corridors (<3 lux) are provided. Recommendations are based on Bat Conservation Trust <i>Guidance Note 08/18: Bats and artificial lighting in the UK</i>, including potential options for light barriers such as fencing, planting, cowling/ deflectors, etc. The lighting scheme will avoid/minimize the use of broad spectrum lights (particularly blue-white light) with high UV, instead using narrow spectrum lights with no UV content. Downlighting is to be used by default to limit light spread and illumination levels minimized wherever possible. Options to limit the period of illumination will be examined in combination with the use of barriers to shield ecologically sensitive areas. The woodland corridor running parallel with the Neath Canal on its northern side is likely to be a key part of the site for bats and a dark corridor, shown on figure 3, has been identified which is to be maintained. Other marginal habitats around the periphery of compartment 20 will similarly adhere to conditions to restrict the illumination of adjacent habitats below that of the upper limit of 3 lux.	17, 18, 19, 20, 21
Breeding birds: Hole-nesting species	44	Within 12 months of the commencement of underground operations at the mine as notified in accordance with Condition 3, a scheme for the provision of bird	In 2011, to satisfy condition 63, the provision of bird boxes to Cae Capel surface works, planning reference number: p2010/0498, an exercise to place bird boxes around the wooded boundary of the Mine Surface Area was undertaken. Three types of nest boxes were deployed: Tit boxes (target	17, 21

		boxes/artificial nests shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented as approved. <i>Reason:</i> To provide bird mitigation within the development site	species being Blue Tit and Great Tit), chat boxes (for Robin, Redstart and Spotted Flycatcher) and Owl boxes (primarily for Tawny Owl). In autumn/winter 2021, a full check on the boxes erected in 2011 will be made to service / replace all boxes erected in four zones, shown on figure 2 by EMMP areas 18, 19, 21 & 29. These will match the number and types of boxes initially erected, i.e. 43 Tit boxes, 21 large hole Chat boxes, 6 open-fronted Chat boxes and 3 Owl boxes. All boxes will be erected before the end of March 2021, as detailed in Method Statement 2.	
All reptiles	45	During all stages of site clearance and vegetation clearance an ecological watching brief shall be undertaken. If any reptiles are encountered during these activities they should be carefully captured and relocated to a suitable habitat in accordance with a mitigation strategy for the conservation of reptiles to be submitted to and approved in writing by the Local Planning Authority prior to any vegetation clearance. <i>Reason:</i> In the interest of nature conservation	Conifer rides and track verges offer suitable habitats for reptiles though surveys indicate that only small populations of Slow-worm and Common lizard occur within the site. The creation of acid-grassland/lichen-bryophyte heath, the maturation of peat cell bog vegetation and improved verge management will all contribute to developing greater botanical and invertebrate diversity, which will theoretically make these areas more favourable for these and other reptile species. There is an abundance of hibernation opportunities for reptiles and the creation of additional hibernacula is not required. Habitat management focusing on verges will increase the connectivity of all reptile habitats. Due to the low density of animals across a very large area, trapping programmes and hand searches are unlikely to prove effective unless considered otherwise by the site ecologist, in which case Method Statement 4, should be adopted. In any case, all personnel employed in vegetation clearance will be instructed to be mindful of the potential presence of reptiles and avoid disturbing, damaging or killing them. Where it is necessary to remove or modify any areas with potentially good reptile habitat, immediately prior to the commencement of such work, a finger-tip search of the habitat will be undertaken by the Site Ecologist and initial disturbance carried out only with hand-tools prior to the use of mechanical plant. As far as possible any vegetation clearance will be undertaken during late summer and early autumn, at a time following the bird breeding season but when reptiles will still be active and more likely to be able to escape disturbance.	Whole Site

			Future management of the site will seek to maintain and enhance the range of habitats and structural diversity of vegetation. Management will include the retention of open areas which currently provide reptile basking habitat and the controlling of scrub encroachment where open areas need to be retained. No monitoring is proposed as reptiles are not a significant feature of the site and no adverse impact is anticipated, but all incidental observations will be noted and collated. Any reptile issues will be included in the annual reports submitted to the site operators and appropriate authorities.	
Invasive alien plants	46	Within 12 months of the date this permission a scheme shall to be submitted to and approved in writing by the Local Planning Authority for the eradication of all invasive species listed under Section 9 of the Wildlife and Countryside Act 1981 that are located on the site. The scheme shall be implemented as approved <i>Reason:</i> In the interests of amenity, and to ensure that the treatment is carried out in accordance with recognised good practice	Rhododendron is established and is locally frequent in areas of woodland on site, whilst Japanese Knotweed is highly localised. Appropriate actions to control and eradicate these species will be undertaken as detailed in Method Statements 5 & 6. Other invasive species noted in small quantities during surveys such as Butterfly-bush, Himalayan Balsam, Montbretia and Wall Cotoneaster, will be monitored and assessed for potential eradication programmes.	16, 17, 18
Peat	47	Prior to the stripping of any peat from the Mine Waste Repository site full details of the peat bog construction and mitigation together with method statements, restoration and aftercare management of those areas shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented as approved. <i>Reason:</i> To ensure adequate restoration and aftercare and ecological mitigation	Undisturbed peat and soil resources which exist on site, mainly at the southern and eastern areas, will be excavated prior to the deposition of discard. Full details of the methods to be used are provided in ES Vol.1: section 10.8. The methods will follow the same techniques used to successfully construct peat cells 2, 3 and 4, with the objective being to safeguard all deep peat on site and to return this resource to an active state of peat formation. Aftercare will employ responsive management aimed at controlling optimal water levels, the removal of any invasive scrub and increasing the abundance of peat forming species such as <i>Sphagnum</i> mosses and cotton-grasses.	01, B1, B2, B3, B4, B5, Bs

All amphibians	48	Prior to any works to any existing ponds on site or the movement of any peat into Peat Bog 1 as labelled on Drawing Number CA10649-005A, an amphibian survey of those areas shall be undertaken by a suitably qualified ecologist and any amphibians identified shall be captured and relocated to an appropriate pond on the site. <i>Reason:</i> In the interests of biodiversity and ecology	Common Frog, Common Toad, Palmate Newt are all known to breed within the site and colonization of new habitats is likely to be unrestricted. Whilst the site provides breeding opportunities for these species in settlement ponds there are excellent opportunities to provide a series of small seasonally flooded / semi-permanent ponds to help increase the size of the amphibian population, which would be beneficial for predators including Otter and Honey-buzzard. Six amphibian ponds, each with a minimum surface area of 40m², are to be constructed in compartments 05 and 09, as detailed at Method Statement 4. Once constructed, at these sites, site operations will avoid unnecessary habitat disturbance and personnel employed in vegetation clearance will be instructed to be mindful of the likely presence of amphibians and avoid disturbing, damaging or killing them. As far as possible, vegetation clearance will be undertaken during late summer and early autumn, at a time following the bird breeding season but when amphibians will still be active and more likely to be able to escape disturbance. Disturbance to existing ponds resulting from programmed management, will be undertaken during early autumn when amphibians will have generally left their breeding habitat. Details of pond management are provided in the section of this table dealing with 'Ponds & lagoons'. No monitoring is proposed as amphibians are not a significant feature of the site and no adverse impact is anticipated, but all incidental observations will be noted and collated. Any relevant amphibian matters will be included in the annual reports submitted to the site operators and appropriate authorities.	P1-P15
Safeguarding all legally protected species of birds and mammals	49	Prior to the removal of any vegetation on the site the operator shall check that there are no breeding birds or protected species (i.e. bats, badger, otter) on that part of the site. The results of the checks (which must	Schedule 1 (fully protected) birds are dealt with under condition 50 below. Bats are dealt with under condition 52 below. Otters are dealt with under condition 52 and 52ii below.	Whole Site

		be undertaken by a suitably qualified ecologist) shall be submitted to the Local Planning Authority, together with any mitigation proposals for approval if species are recorded. Mitigation shall be implemented as approved. <i>Reason:</i> In the interests of the biodiversity	Badgers & Brown Hare: Surveys indicate that use of the site by Badger is likely to be very limited and no setts have been identified within or adjacent to the Site. Brown Hares are noted occasionally, but occur at very low density in open areas. No specific proposals are made for these species, but those involved with site management and operatives will be informed to be vigilant to the possibility of these animals on site and ensuring their safety, in particular, ensuring that hazards where animals might be harmed or trapped are avoided.	
Schedule 1 Breeding Birds: • Honey Buzzard • Peregrine • Goshawk • Crossbill Plus: • Nightjar • Sand Martin	50	Within 12 months of the re-commencement of underground operations a Bird Monitoring Programme shall be submitted to the Local Planning Authority for approval. The Programme shall detail annual surveys to monitor nesting Schedule 1 birds, particularly Honey Buzzard and Nightjar and mitigation measures if any nesting birds are encountered. <i>Reason:</i> In the interests of ecology and biodiversity	Honey-buzzards breed annually in the Neath valley, although only foraging behaviour has been observed at the site. Peregrines regularly breed on the nearby rocky outcrop at Craig Clwyd, which is sufficiently well-buffered for works not to affect the nest site. Goshawk and Crossbill also nest in adjacent woodland, but have not been recorded nesting within the site. There are no perceived threats to these species from the development and annual monitoring will be undertaken to identify if any of these species breed within the Site and to identify any operations that have potential to impact on breeding. The site and adjacent habitats support a healthy and diverse bird community that includes a number of Section 7 species, particularly in areas of both deciduous and coniferous woodland. Of these, Nightjar is the most significant species that breeds within the Site. Its populations are fluid, moving between areas of clear-fell and young plantations, largely abandoning areas of closed canopy forest after a period of 10 years or more. The restoration of 30.4 ha of commercial forestry (Sitka Spruce plantation, compartment 4 on figure 2) at the MWR site, as detailed in the Environmental Statement, will ensure the cycle of habitat renewal is perpetuated within the site. Annual monitoring will be undertaken and will inform operations on site to prevent disturbance to territories. Sand Martins have opportunistically bred in coal duff stocks at the Site. By default, this habitat will be available for birds to breed in, and should similar opportunistic nesting occur again, the same provisions will be implemented;	03, 04

			i.e. safeguarding the section of coal duff stock that the birds are nesting in from disturbance. Note, that as coal duff is a very unstable substrate for nesting Sand Martins and several nests were lost previously to slippage and digging by foxes, no measures are proposed to encourage birds to nest in this inherently unstable and toxic substrate.	
Ecological Management and Monitoring Plan (EMMP)	51	Within 12 months of the re-commencement of underground operations at the mine as notified in accordance with Condition 3, an Ecological Management and Monitoring Plan for the entire site shall be submitted to and approved in writing by the Local Planning Authority. The Plan shall include all details of all proposed habitat management works, enhancements and monitoring and include a commitment to take remedial action in light of monitoring results indicate they are required. The Plan shall also provide for opportunities such as the use of coal duff stocks for sand martin nesting. The Plan shall be implemented as approved. <i>Reason:</i> To allow the identification of positive and negative indicators in restored habitats and to allow adjustments to aftercare operations as necessary to achieve the objectives of the aftercare scheme.	This Ecological Management and Monitoring Plan has been prepared to satisfy Condition 51 and covers all points raised. It supports the Environmental Statement by providing additional details that focus on how the nature conservation interest of the site is to be safeguarded, by means of providing additional details of monitoring and reporting and provides method statements not covered in the ES. The EMMP will be regularly updated and responsive to monitoring and any other changes that occur at the Site. Annual reporting of all items will be provided in October.	Whole Site
European Protected Species (EPS): • Bats (all species)	52	Where any species listed under Schedules 2 or 5 of the Conservation of Habitats and Species Regulations 2010 is present on	No roost opportunities for bats on the active working or restored areas of the site have been identified, though the entire site is likely to be used by	16, 17, 18, 19, 20, 21

• Eurasian Otter		the surface land and structures of the site in respect of which permission is hereby granted, no works of site clearance, demolition or construction shall take place in pursuance of this permission unless a license to disturb any such species has been granted in accordance with the aforementioned Regulations and a copy provided to the Local Planning Authority. <i>Reason:</i> In the interests of ecology and biodiversity	foraging bats at night. Surveys indicate most flight lines occur along forest edges and watercourses. Other than implementing a bat light mitigation scheme (see Condition 43), no specific mitigation is required to protect potential roost and foraging features of value to bats. All peripheral trees, woodland and scrub will be retained and will require a minimum of management. If for any reason it should become necessary to remove or lop any trees which might have potential to harbour roosting bats, they will be examined by a licensed bat surveyor prior to the commencement of any such work. If bat-roosts are found and their disturbance cannot be avoided, a development licence may be required from NRW before work can proceed. If any potential roost sites are removed or disturbed, bat boxes of a range of types will be positioned within the mature woodland retained along the northern and eastern peripheries of the site. Bat foraging habitat will be provided by the establishment of new woodland and acid grassland/ L-b heath and ponds during progressive restoration of the MWR site and following the cessation of landfill operations. These habitats will provide high insect-productivity and will provide additional habitats that can be exploited by a range of bat species. The restoration scheme will provide a greater area of high quality woodland and grassland/heath habitats than currently exists within the site.	
Ponds & lagoons	52i		Ponds will be monitored periodically including the compilation of species lists with estimates of species frequency and % of open water, as detailed at Method Statement 3. A report will be produced detailing the survey results, an assessment of pond condition set against aims of the management objective for each pond and, if necessary, recommendations for changes in management will be made. The report will be distributed to Neath Port Talbot Council staff and any review of the management plan agreed with them.	P1-P15, 26, 27, 28

Water courses	52ii		Runoff from the MWR runs both south-west into Nant Clwyd and south-east into the smaller Nant Ysgwrfa. The eastern boundary is marked by the Nant Pergwm. Additionally, a series of smaller seasonally dry streams drain Aberpergwm Wood. Those watercourses that collect sediment from mine operations are diverted into the series of settlement lagoons shown on figures 1 & 2 and established procedures are in place to minimize the risk of polluting potential receptors, which include the Neath Canal and the Neath River, both SINC's. The main ecological interest of these features is their functionality as travel routes for Otters and all works will be conditioned to ensure all potentially harmful works pose no risk to animals using these corridors.	26, 27, 28
Supplementary planting	53	Within 6 months of the date of this permission a scheme for a) the supplementary planting of the Mine Surface Area and in particular along the southern boundary and b) phasing of vegetation removal to ensure continual provision of appropriate ground nesting habitat shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented as approved in the first planting season following such approval. <i>Reason:</i> To diversify plant species, improve structural integrity and to provide additional screening from the B4242	The landscape scheme in the ES already includes elements of amenity woodland planting as detailed in section 10.10. This section contains details of the plant spacing and stocking density together with a breakdown of plant numbers by compartment. The southern boundary of the Mine Surface Area at Compartment 21 is mostly already well-screened from the B4242, but additional planting will be undertaken in winter 2021/22 in a few locations where trees have died or fallen and along the parking area fence line to help establish a dark flight corridor for bats and other wildlife, as shown on figure 3. The use of native shrubs and small trees is more appropriate for this area and is to comprise Alder Buckthorn, Crab Apple, Dogwood, Hawthorn and Purging Buckthorn & Spindle. Planting stock will be obtained from nurseries within South Wales and / or Herefordshire. Planting will be carried out in the winter period November to March. Trees will be fitted with tree guards to assist establishment and to provide protection from browsing. There is no history of ground-nesting birds in this area and no provisions have been made for this group, which are restricted to the upland parts of the site where ongoing operations have created an abundance of suitable	20

			habitats utilised ground-nesting birds, greatly extending the area formerly available within the development footprint.	
Trees and hedgerows	54	All existing deciduous trees, bushes and hedgerows within and bounding the site or within the developer/operators control (including their root systems) shall be retained and protected and shall not be lopped, topped, removed or felled without the prior written approval of the Local Planning Authority. Any requests for approval to remove, lop, top or fell deciduous trees, bushes or hedgerows must be supported by an Arboricultural Method Statement and a Bat Roost Survey. <i>Reason:</i> The protection of the environment and protected species such as bats, in the interests of visual amenity and to ensure the development is adequately screened by natural vegetation	The arboricultural assessment by Rankine (2013) concluded the proposed development was unlikely to impact on the existing trees at the Site, and that direct mitigation was not be required. Opportunities for supplementary planting have been identified along the southern boundary of the site, which would diversify species and structural integrity, as detailed under Condition 53 above. Requests for approval by the LPA will be made if it is required to remove, lop, top or fell deciduous trees, bushes or hedgerows and will be supported by an Arboricultural Method Statement and a Bat Roost Survey.	16, 17, 18, 19, 21
Tree protection zones	55	Within 6 months of the commencement of underground operations at the mine as notified in accordance with Condition 3, details of measures for the protection of trees from damage shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented as approved and be maintained for the duration of mining activity at the site.	There are no proposed works identified that will impact on the root protection areas (RPA) of any existing trees at the site. However, should any future operations be scheduled to take place within distances closer than 12 x the diameter of trunks (i.e. RPA conforming to British Standard 5837 (2012)), there will be the requirement for a pre-commencement meeting with an appointed tree officer / tool box talk with the site contractor/ groundworkers / site manager. This will determine if and where any of the following measures are required: • Installation of tree protection fencing / temporary ground protection / tree trunk boxing	16, 17, 18, 19, 21

		<i>Reason:</i> The protection of the environment	• Supervision of the installation of any excavations within the RPA's of retained trees. • Tree Protection Plan	
Management and maintenance of trees	56	All trees and shrubs planted in accordance with an approved scheme shall be maintained and any plants which within 5 years of planting die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of a similar size and species. <i>Reason:</i> In the interests of amenity, the environment and to ensure the site is adequately restored	The health of all planted trees will be monitored annually by the site ecologist and maintained in accordance with condition 56. Further details of this are provided at Method Statement 7	16, 17, 18, 19, 21

5 ECOLOGICAL MANAGEMENT & MONITORING SCHEDULE

Note, that due to Covid-19, the schedule was redrafted, with most actions moved on one year or more.

	Scheduled prescriptions
	Responsive prescriptions
MS	Prepare Method Statement
R	Reporting

2021														
Cdn#	J	F	M	A	M	J	J	A	S	O	N	D	Prescription	Methods / MS Ref.#
43-56										R			General liaison between Energybuild staff and PCE, with responsive surveillance/action where required	All personnel
43						MS				R			Survey of bat activity around Mine Surface Area to inform lighting scheme.	MS4 & ES Vol.1:12.3
43										R			Implement any changes required to lighting scheme, including planting and/or works required to create dark corridors	To be informed by survey
44										R			Service / replace the 73 bird boxes erected in 2011	MS2
45										R			Responsive reptile searches/clearance ongoing through life of scheme	MS4
46					MS					R			Map distribution of Rhododendron & prepare MS for eradication programme	MS5
46										R			Implement phase 1 of Rhododendron eradication programme	MS5
46						MS				R			Map distribution of Japanese Knotweed & prepare MS for eradication programme.	MS6
46										R			Implement phase 1 of Japanese Knotweed eradication programme	MS6
47										R			Peat cells monitoring	ES Vol.1
48										R			Responsive reptile searches/clearance ongoing through life of scheme	MS4
50										R			Responsive ongoing monitoring for all legally protected birds and mammals through life of scheme	See details for Conditions 52, 52i & 52ii
50										R			Nightjar survey (2 evening visits to all areas above MSA)	MS4
52										R			European Protected Species: All Bats & Otter as detailed in ES Vol.1:12. Responsive ongoing monitoring through life of scheme	MS to be produced on an as needed basis

52i										R			Pond clearance - clearing half of each of P9, P10, P11, P12	MS3
53										R			Undertake supplementary planting at MSA	ES Vol.1:10.10
54										R			Bat roost surveys and arboricultural assessments responsive to any felling requirements	MS to be produced on an as needed basis
55										R			All trees have a mandatory 5m buffer placed around the ground projection of the canopy spread. No works permitted without prior ecological assessment	MS to be produced on an as needed basis
56										R			Annual monitoring of all new plantings.	MS to be produced on an as needed basis
										R			Meeting of steering group to discuss annual review of ecological matters with Energybuild, NRW & NPTCBC ecologist.	
2022 onwards														
43-56													General liaison between Energybuild staff and PCE, with responsive surveillance/action where required	All personnel
43										R			Implement any changes required to lighting scheme, including planting and/or works required to create dark corridors	
44										R			Service and check condition of boxes. To be undertaken annually thereafter.	MS2
45										R			Responsive reptile searches/clearance ongoing through life of scheme	MS4
46					MS					R			Review and update Rhododendron eradication programme	MS5
46										R			Implement phase 2 of Rhododendron eradication programme. Repeat annually until species is eradicated	MS5
46						MS				R			Review and update Japanese Knotweed eradication programme	MS6
46										R			Carry out any repeat treatments of Japanese Knotweed required for eradication programme. Repeat annually until species is eradicated	MS6
47										R			Peat cells monitoring	ES Vol.1
48										R			Responsive reptile searches/clearance ongoing through life of scheme	MS4
50										R			Responsive ongoing monitoring for all legally protected birds and mammals through life of scheme	See details for Conditions 52, 52i & 52ii
50										R			Nightjar survey (2 evening visits to all areas above MSA). To be undertaken annually thereafter.	MS4
52										R			European Protected Species: All Bats & Otter as detailed in ES Vol.1:12. Responsive ongoing monitoring through life of scheme	MS to be produced on an as needed basis
52i										R			Pond clearance - clearing half of each of P9, P10, P11, P12. Thereafter, works to be undertake every 2 to 5 years or as directed by the Site ecologist.	MS3

54										R			Bat roost surveys and arboricultural assessments responsive to any felling requirements	MS to be produced on an as needed basis
55										R			All trees have a mandatory 5m buffer placed around the ground projection of the canopy spread. No works permitted without prior ecological assessment	MS to be produced on an as needed basis
56										R			Annual monitoring of all new plantings for first five years.	MS to be produced on an as needed basis
										R			Meeting of steering group to discuss annual review of ecological matters with Energybuild, NRW & NPTCBC ecologist.	

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7 FIGURES

Legend for Phase 1 habitat plan: Figures 1a - 1d:



Figure 1a: Phase 1 habitat plan

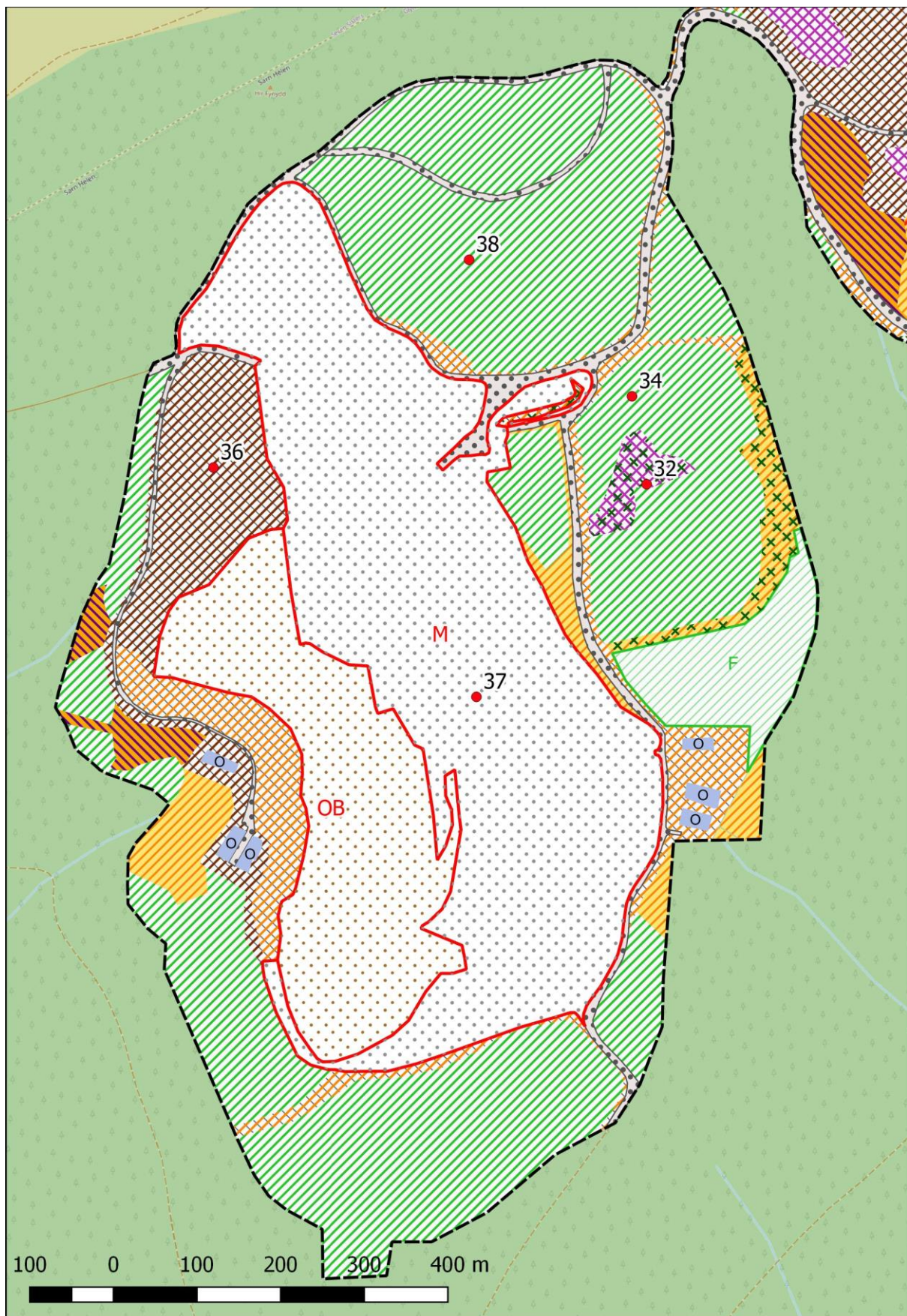


Figure 1b: Phase 1 habitat plan

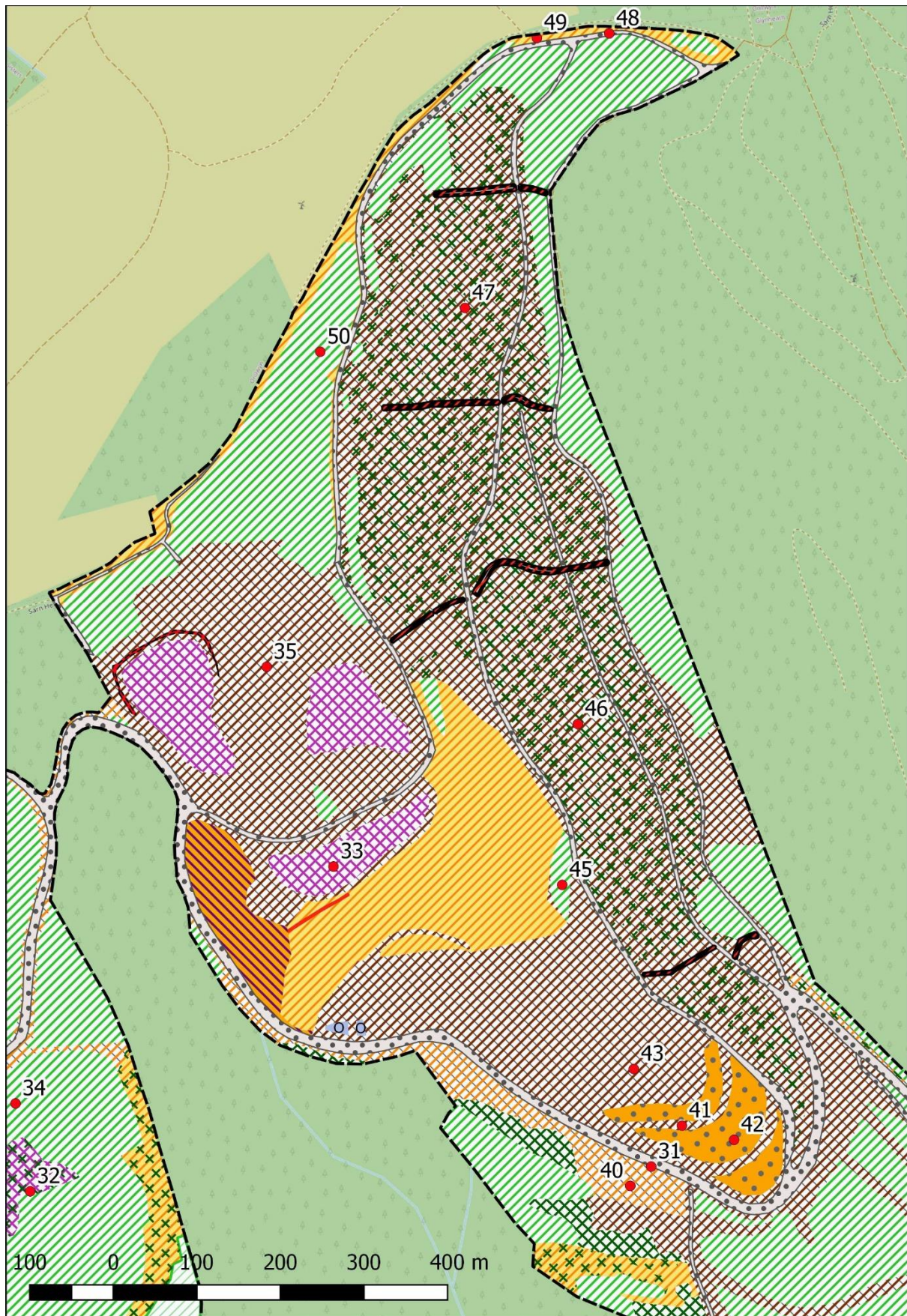


Figure 1c: Phase 1 habitat plan

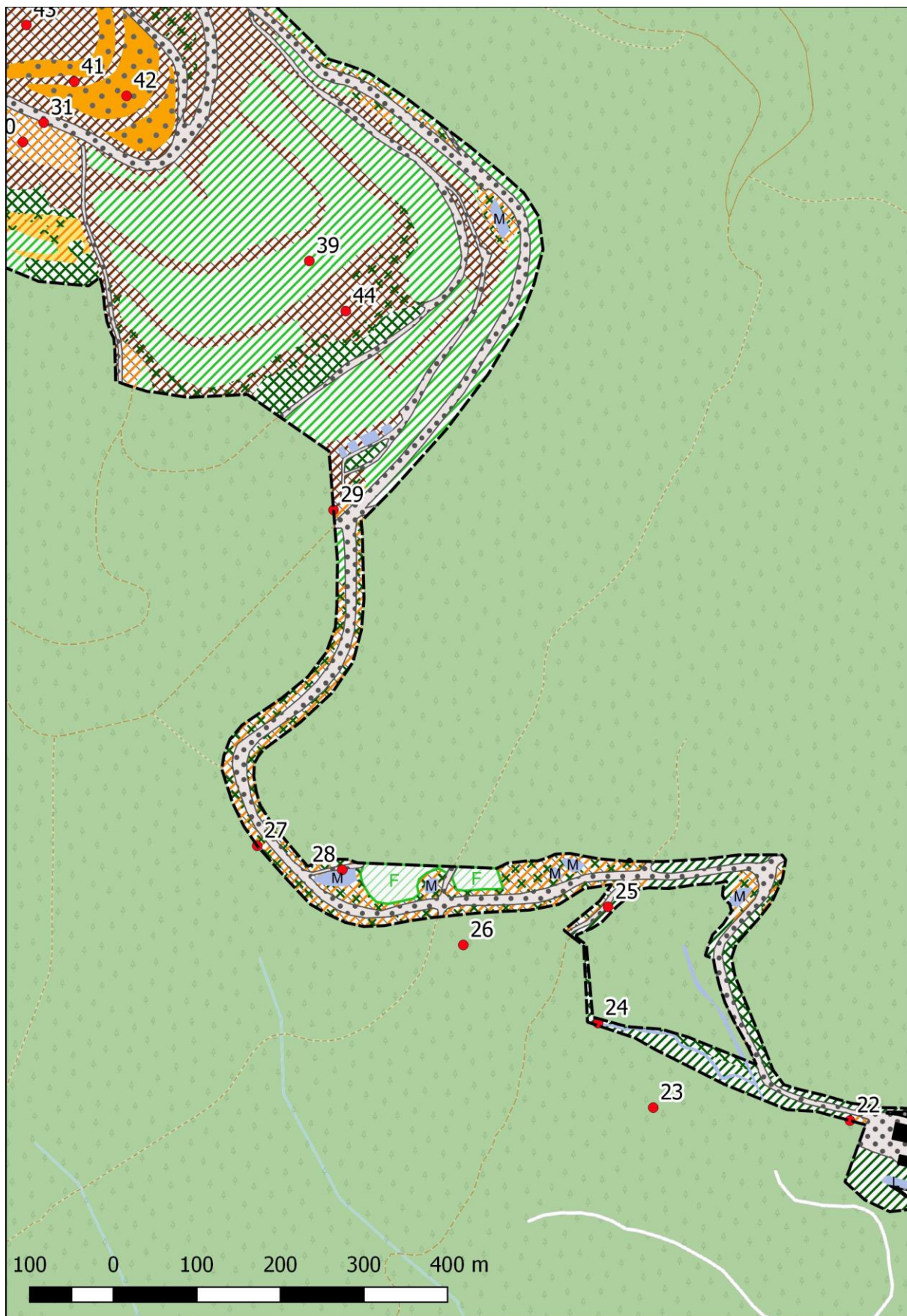


Figure 1d: Phase 1 habitat plan

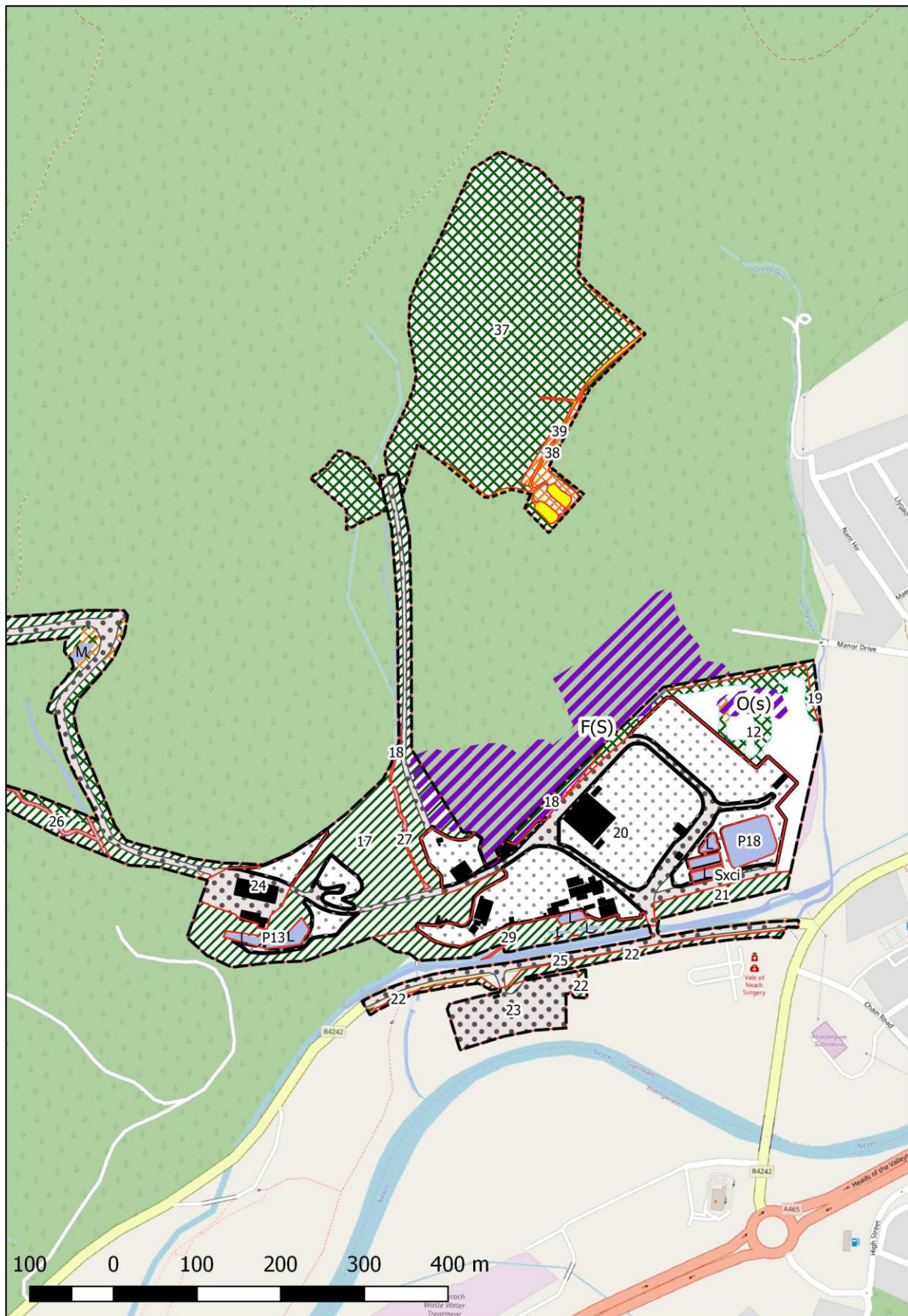


Figure 2a: Ecological Management and Monitoring Plan Compartments

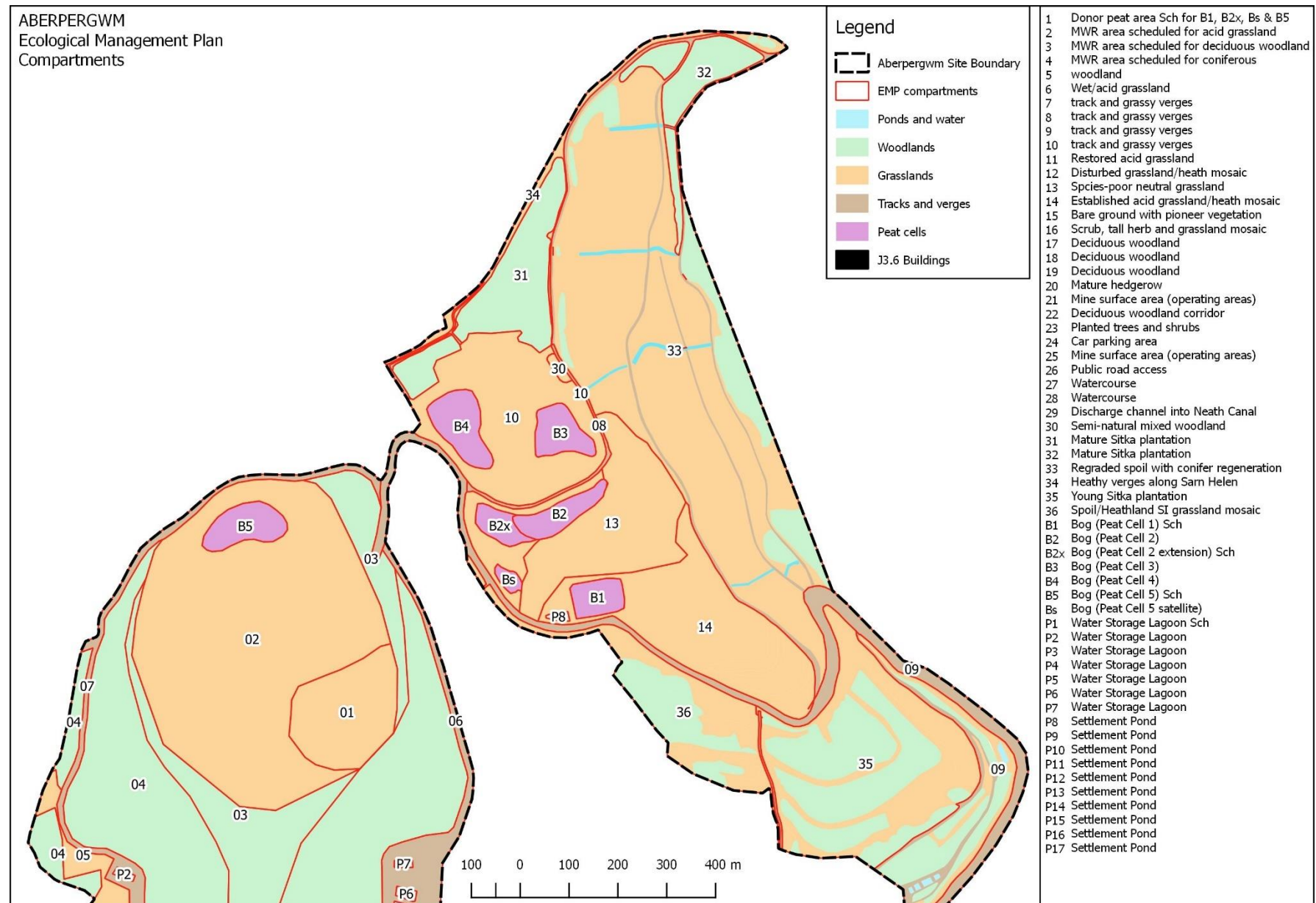


Figure 2b: Ecological Management and Monitoring Plan Compartments



Figure 2c: Ecological Management and Monitoring Plan Compartments

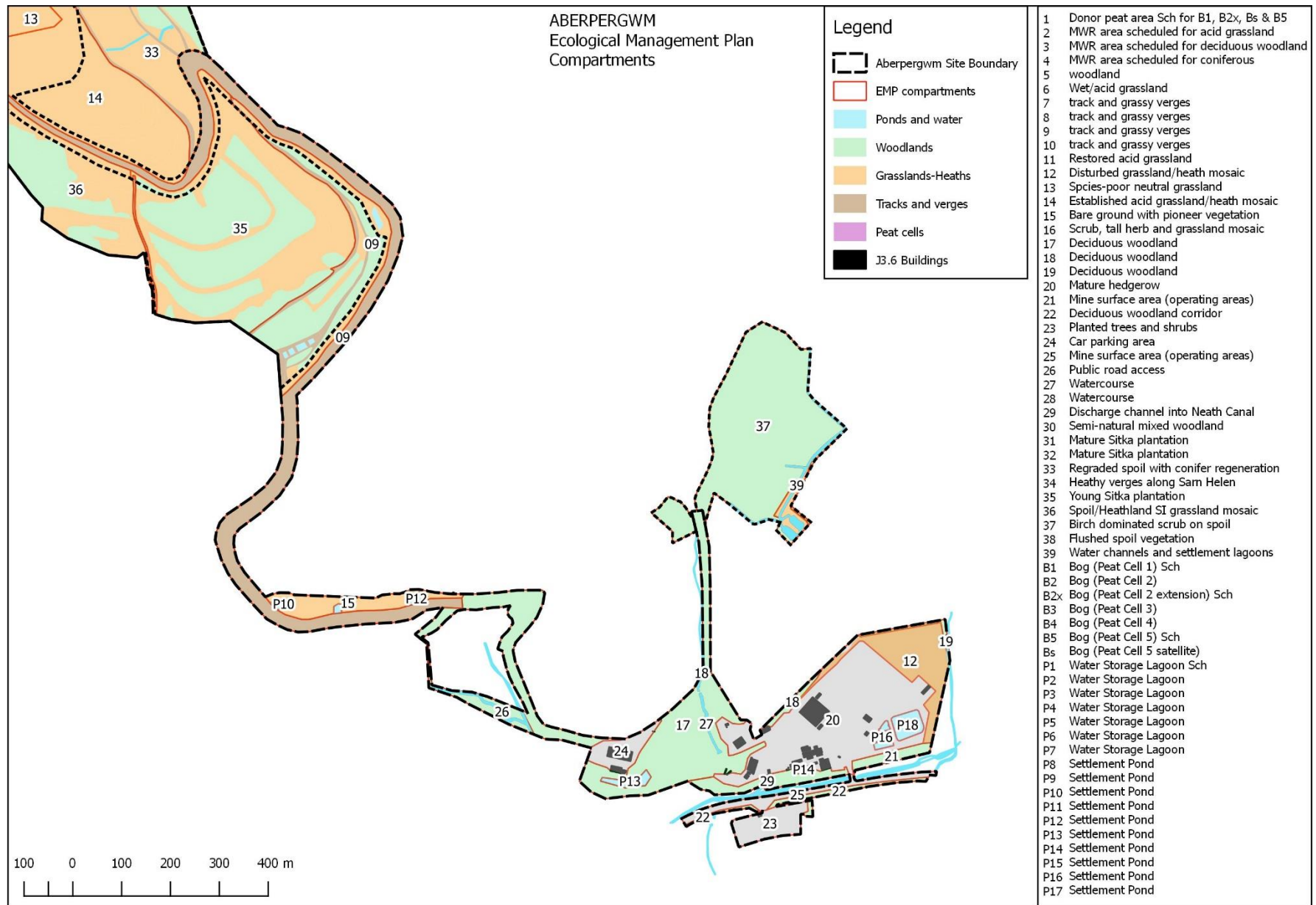
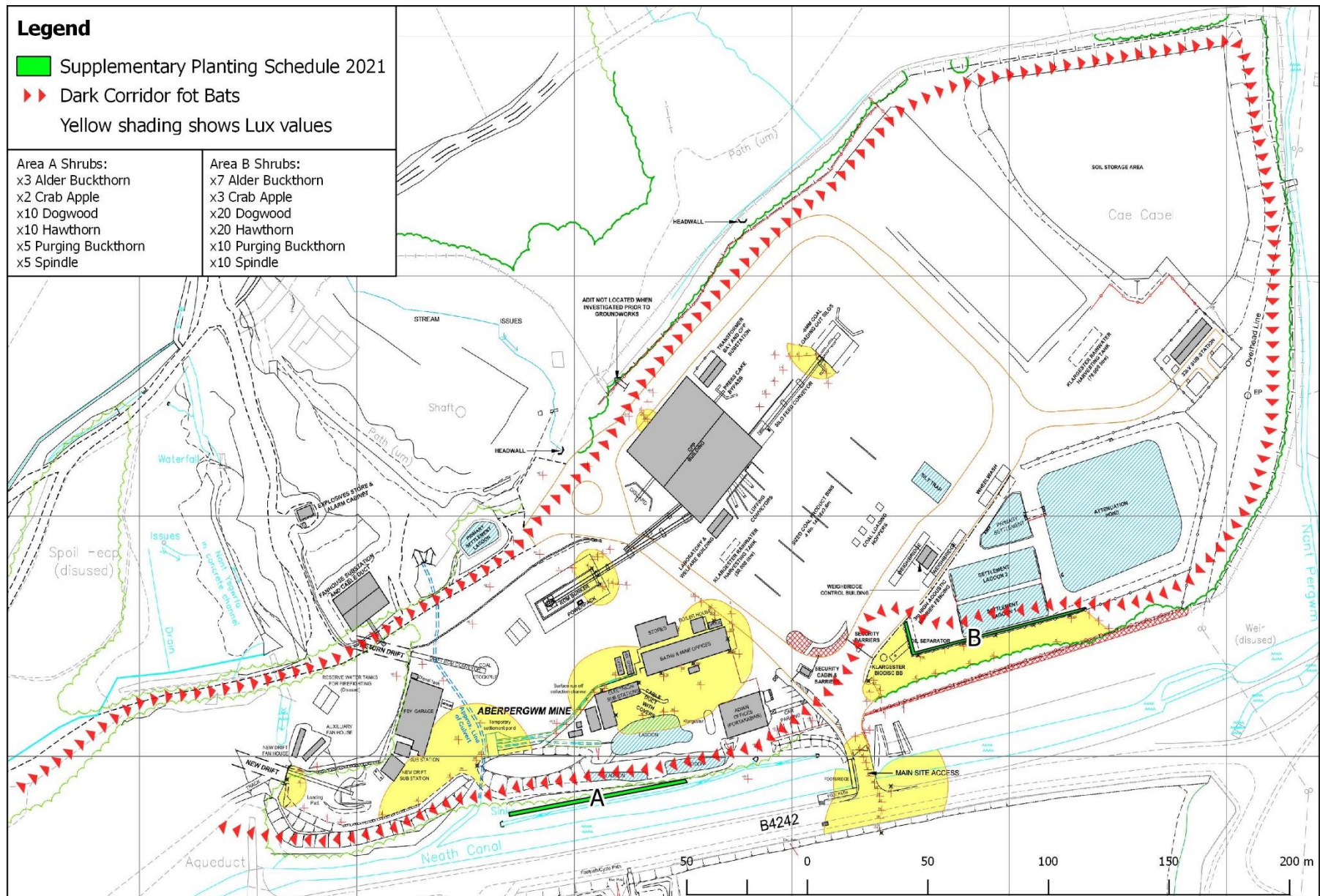


Figure 3: Light Survey Results and Supplementary Planting Schedule



APPENDIX 1: METHOD STATEMENTS

MS 1: Acid grassland/lichen-bryophyte heath on restored ground

MS2: Breeding birds: Hole-nesting species

MS3: Lagoons and ponds

MS4: Actions specific to the needs of protected species

MS5: Japanese knotweed eradication

MS6: Rhododendron eradication

METHOD STATEMENT 1

ACID GRASSLAND/LICHEN-BRYOPHYTE HEATH ON RESTORED GROUND

1.0 Purpose

To create and maintain diverse acid grassland/lichen-bryophyte heath.

2.0 Scope of Work

Following the restoration of surface profile with appropriate soils, seeding and inoculation of the ground will be followed by a responsive management regime that will encourage the development and maintenance of diverse and resilient acid grassland.

3.0 Principal Personnel and Equipment:

- Appropriately experienced workers
- Tractor-mounted mower, topper and baler.
- Light grazing (medium to long term)

4.0 Method/Procedure/Constraints

Ground preparation

Soils and inferior peat will be utilized to provide early restoration of the southern flank and progressive restoration of the repository as deposition proceeds. Existing excavated soils currently maintained in storage mounds on the eastern side of the site will be utilized in a similar fashion. Full details are provided in the ES Vol.1, chapter 10.

Management

Rotational topping, using a tractor-mounted mower will ensure each area is cut periodically in response to sward monitoring. Any topping that is required will be undertaken in the period September to November, so as to avoid the bird nesting period and to allow plants to set seed and to accommodate late-flowering species which are important for invertebrates.

Arisings

Where there is an abundance of cut material, its removal by baling may be required to prevent a buildup of nutrient in the soil; all baled arisings should be removed and disposed of offsite or within a designated area approved by the site ecologist. It is anticipated topping in many areas will produce only limited quantities of material which the Site Ecologist in consultation with the Site Manager may decide can be left *in situ*.

Grazing

Once the sward becomes established, the introduction of light grazing will be considered as a management tool.

5.0 Responsibilities

Name	Position	Duty
Neil Price	Assistant Manager	Liaise with site personnel, third parties including emergency services, to ensure safe method of working. Supervision of site personnel and subcontractors.

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		Issue of appropriate PPE ensuring all workforce and sub contractors wear high visibility clothing. Tool box talks and checking methods of working by contractors and sub contractor operatives. Checking test certificates, operators' licenses and certificates, etc and issue of permits to work.
	Tractor operative	Topping & baling
Barry Stewart	Ecologist	Advise on topping programme, need for baling and harrowing.

6.0 **Contacts**

Neil Price (Energybuild) TEL 01639 729210

Barry Stewart (Pryce Consultant Ecologists) 01792 539447, 07730 502738

Richard Pryce (Pryce Consultant Ecologists) 01554 775847, 07900 241371

7.0 **Environmental Considerations**

- There will be no tracking of any vehicle except within the woodland areas.
- Consideration will be given to the possibility of existing trees as to their potential to support other wildlife such as bat roosts.

8.0 **COSHH**

Appropriate PPE will be worn.

9.0 **Specific Requirements for Risk Assessment**

Risk assessment to be conducted by the Chief Operating Officer.

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METHOD STATEMENT 2
BREEDING BIRDS: HOLE-NESTING SPECIES

1.0 **Purpose**

To provide bird mitigation within the development site

2.0 **Scope of Work**

A scheme to place bird boxes around the wooded boundary of the mine surface working area has prepared that focuses on three types of nest boxes.

- Tits (including Blue Tit and Great Tit)
- Chats (including Robin, Redstart and Pied Flycatcher)
- Owls (Tawny Owl)

3.0 **Principal Personnel and Equipment:**

- Bird boxes, fixings, ladder.
- Gloves, hammer, nails, screws, screw-driver, etc
- Appropriately experienced workers

4.0 **Method/Procedure/Constraints**

The nest boxes will be placed on suitable trees growing in the wooded area that surrounds the mine surface development. These wooded areas are split up into 4 zones as shown by EMP compartments 18, 19, 21 & 29 on figure 2:

- EMP Cmpt 21 - Mixed wooded strip that runs along the Southern boundary of the development on either side of the main site entrance. This zone contains mainly mature trees and has good cover opportunities for nest box placement and also has a stream running through it
- EMP Cmpt 19e - Short length of mixed wooded strip and a long hedgerow containing intermitting trees of varying ages. This area is adjacent to farmland on the other side.
- EMP Cmpt 19n - Shortest and most awkward zone which runs along the Northern boundary. Far fewer opportunities to place bird boxes here due to the trees along this stretch occurring just outside the site boundary.
- EMP Cmpt 18 – The most wooded of the zones occurring along the North-western edge of the mine surface development. This area contains many mature trees and this zone is situated next to some nice undisturbed land to its North.

To maximize the potential success of this exercise a preliminary survey was conducted to establish the suitability of these zones for nest box placement. Prior to this visit nest box number targets were in place for each zone. These targets were used as guides to possible numbers available for each zone. However, it was found that in some areas placing nest boxes was going to be a wasted task due to unsuitable fixing locations as well as promoting territorial disputes when placing nest boxes too close together.

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The placement of each box will follow the route taken during the preliminary walk and precise locations will be recorded to allow subsequent monitoring of the nest boxes during the following years.

The following details the nest box information for the four zones shown on figure 1:

EMMP Cmpt 21

1	London Plain	Tit box
2	Oak (with Ivy)	Chat box
3	Oak (with lots of Ivy)	Tit box
4	Yew	Chat box
5	Yew	Tit box
6	Yew (large)	Chat box
7	Poplar	Tit box
8	Horse Chestnut	Tit box
9	Horse Chestnut	Chat box
10	Lime	Tit box
11	Lime	Tit box
12	Alder (dead tree at entrance)	Chat box
13	Sycamore	Tit box
14	Oak	Chat box
15	Sycamore	Tit box
16	Oak (good 45° lower branch)	Owl box
17	Red Oak	Tit box
18	Sycamore (with Ivy)	Chat box
19	Oak	Tit box
20	Lime	Chat box (open faced)
21	Lime	Chat box
22	Oak (at back)	Tit box
23	Lime	Tit box
24	Dead tree	Tit box
25	Red Oak	Tit box
26	Red Oak	Tit box

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27	Red Oak	Chat box (open faced)
28	Red Oak	Chat box

Box Type	Zone totals
Tit boxes	16
Chat Boxes (large hole entrance)	9
Chat Boxes (open fronted entrance)	2
Owl Boxes	1

EMMP Cmpt 19 east

1	Lime	Tit box
2	Lime	Chat box
3	Oak	Chat box
4	Lime	Tit box
5	Lime	Tit box
6	Lime	Chat box
7	Lime (at back, good 45° branch)	Owl box
8	Trees within vicinity of Owl box	Chat box
9	Trees within vicinity of Owl box	Chat box
10	Trees within vicinity of Owl box	Tit box
11	Trees within vicinity of Owl box	Tit box
12	Ash	Chat box (open faced)
13	Oak (old with hollowed trunk)	Tit box
14	Ash (with Ivy)	Chat box (open faced)
15	Oak	Tit box
16	Dead Tree	Tit box
17	Oak	Tit box
18	Yew	Chat box

Box Type	Zone totals
Tit boxes	9

Chat Boxes (large hole entrance)	6
Chat Boxes (open fronted entrance)	2
Owl Boxes	1

EMMP Cmpt 19 north

1	Alder	Tit box
2	Oak sp	Tit box
3	Sycamore	Tit box
4	Oak (lone)	Chat box (open faced)
5	Area of wood at West end of zone 3. Spread out the nest boxes evenly in this area. To be decide at the time of placement	Tit box
6		Chat box
7		Tit box
8		Chat box

Box Type	Zone totals
Tit boxes	5
Chat Boxes (large hole entrance)	2
Chat Boxes (open fronted entrance)	1
Owl Boxes	0

EMMP Cmpt 18

1	Sycamore	Tit box
2	Oak	Tit box
3	Oak	Chat box
4	Oak	Chat box
5	Alder	Tit box
6	Holly	Tit box
7	Spread out next 5 nest boxes around the next area of large Oaks. Positions to be decided at the time of placement	Tit box
8		Tit box
9		Tit box
10		Chat box (open faced)

11		Chat box
12	Beech (next to field with good 45deg)	Owl box
13	Beech (before stream)	Tit box
14	Spread next 3 boxes around the area after the stream. Positions to be decided at time of placement	Tit box
15		Tit box
16		Chat box
17	Wellingtonia	Tit box
18	Oak	Tit box
19	Beech	Tit box

Box Type	Zone totals
Tit boxes	13
Chat Boxes (large hole entrance)	4
Chat Boxes (open fronted entrance)	1
Owl Boxes	1

Summary

Box Type	Running totals
Tit boxes	43
Chat Boxes (large hole entrance)	21
Chat Boxes (open fronted entrance)	6
Owl Boxes	3

All nest box locations are to be recorded and will form part of an on-going monitoring exercise to assess the effectiveness of the scheme as well as carrying out any maintenance as required.

5.0 Responsibilities

Name	Position	Duty
Neil Price	Assistant Manager	Liaise with site personnel, third parties including emergency services, to ensure safe method of working. Supervision of site personnel and subcontractors.

		Issue of appropriate PPE ensuring all workforce and sub contractors wear high visibility clothing. Tool box talks and checking methods of working by contractors and sub contractor operatives. Checking test certificates, operators' licenses and certificates, etc and issue of permits to work.
Barry Stewart & another	Ecologist & banksman	To source suitable bird boxes, identify appropriate locations for boxes and supervise erection of boxes.

6.0 **Contacts**

Neil Price (Energybuild) TEL 01639 729210

Barry Stewart (Pryce Consultant Ecologists) 01792 539447, 07730 502738

Richard Pryce (Pryce Consultant Ecologists) 01554 775847, 07900 241371

7.0 **Environmental Considerations**

- There will be no tracking of any vehicle except within the woodland areas.
- Consideration will be given to the possibility of existing trees as to their potential to support other wildlife such as bat roosts.

8.0 **COSHH**

Appropriate PPE will be worn.

9.0 **Specific Requirements for Risk Assessment**

Risk assessment to be conducted by the Chief Operating Officer.

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METHOD STATEMENT 3
LAGOONS AND PONDS

1.0 Purpose

To maintain open water and marginal habitats capable of supporting a range of plant communities and faunal assemblages. Some sites should be managed to provide productive breeding habitats for amphibians, which will potentially help support the local breeding population of Honey-buzzards and Otters.

2.0 Scope of Work

Periodic cutting/scraping of marginal scrub and pond dredging is programmed to encourage the development and maintenance of diverse aquatic and marginal vegetation in selected ponds lagoons. The creation of a small number of breeding ponds for amphibians is to be undertaken in compartments 5, 6, 10 and 14, based on the methods detailed in the Million Ponds Project (Freshwater Habitats Trust, undated).

3.0 Principal Personnel and Equipment:

- Appropriately experienced workers
- Long-arm excavator with wide bucket
- High capacity dumper truck

4.0 Method/Procedure/Constraints

Clearance

Rotational desilting/weed removal of ½ of each pond will be undertaken periodically, based on inspection results reported by the Site Ecologist. Silt and vegetation will be scraped using a long-arm excavator with wide bucket will, where necessary, ensure each pond is cleared every five years (or as directed by monitoring), as indicated on the Management Plan Spreadsheet. Pond clearance is to be undertaken in the period October to December, so as to minimize the risk of harming amphibians and to avoid the bird nesting season.

Arisings

Any dredgings of material with a high organic content will be added to the topsoil overburden mound. Where cleared sediments are of low organic content, these will be redistributed and leveled the furthest distance from the pond the excavator arm will reach.

Profiles

The pond profile after clearance, will aim to be roughly similar to the original design, or where appropriate shallowly graded edges will be created. Additional advice needs to be sought to ensure this work is undertaken without risk of damaging any liners/membranes.

5.0 Responsibilities

Name	Position	Duty
Neil Price	Assistant Manager	Liaise with site personnel, third parties including emergency services, to ensure safe method of working and to ensure that no damage to liner membranes occurs

		Supervision of site personnel and subcontractors. Issue of appropriate PPE ensuring all workforce and sub contractors wear high visibility clothing. Tool box talks and checking methods of working by contractors and sub contractor operatives. Checking test certificates, operators' licenses and certificates, etc and issue of permits to work.
	General Foreman	General supervision
	Excavator driver	Pond clearance
	Dumper truck driver	Transfer of dried organic matter off site
Barry Stewart	Ecologist	Advise on level and extent of pond clearance and safeguarding any protected species.

6.0 **Contacts**

Neil Price (Energybuild) TEL 01639 729210

Barry Stewart (Pryce Consultant Ecologists) 01792 539447, 07730 502738

Richard Pryce (Pryce Consultant Ecologists) 01554 775847, 07900 241371

7.0 **Environmental Considerations**

- There will be no tracking of any vehicle except within the operational area of the site.
- No refueling of plant will be permitted except in designated bunded areas. Diesel/oil or other spillages must be avoided at all times.

8.0 **COSHH**

Appropriate PPE will be worn.

9.0 **Specific Requirements for Risk Assessment**

Risk assessment to be conducted by the Chief Operating Officer.

METHOD STATEMENT 4
ACTIONS SPECIFIC TO THE NEEDS OF PROTECTED SPECIES

1.0 Purpose

The purpose of this method statement is to ensure that full account is taken of all protected species interests.

2.0 Scope of Work

The Site Ecologist will advise actions as necessary as detailed below.

3.0 Principal Personnel and Equipment:

- Site ecologist and team
- Site and ground works staff, equipment and tools as required.

4.0 Method/Procedure/Constraints**Bats**

- Woodland habitats around the periphery of the Mine Surface Area are likely to be used by bats as feeding habitat and potentially provide established flight lines. Some mature trees also have potential to provide roost sites. None of these features will be disturbed by scheduled site operations.
- All trees or features with potential to harbour roosting bats which are to be removed or lopped will be examined by a licensed bat surveyor immediately prior to the commencement of any such work. If any bat-roosts are found and their disturbance cannot be avoided, a development licence may be required from Natural Resources Wales before work can proceed.
- Outside lighting will be reduced/switched off when not in use and will be directed away or shielded from woodland, hedgerows and all other habitats of value to bats. Modifications may be required following a site review to be undertaken in 2021.

Reptiles

- Slow-worm, Grass Snake and Common Lizard are known to occur within the general vicinity of the site, but no surveys have been undertaken.
- All personnel employed in vegetation clearance will be instructed to be mindful of the likely presence of reptiles and avoid disturbing, damaging or killing them.
- Where it is necessary to remove reptile habitat, immediately prior to the commencement of such work, a finger-tip search of the habitat will be undertaken by the Site Ecologist and initial disturbance carried out with hand-tools prior to the use of mechanical plant.
- As far as possible vegetation clearance will be undertaken during late summer and early autumn, at a time following the bird breeding season but when reptiles will still be active and more likely to be able to escape disturbance.
- Habitat piles to provide reptile refugia will be created from wood obtained from arisings generated from scrub removal and located in suitable areas around the periphery of the site as identified by the Site Ecologist.
- The construction of new ponds and wet-areas will provide additional habitat for Grass Snake.
- The findings of the monitoring surveys and any other reptile issues will be included in the annual reports submitted to the site operators and appropriate authorities. Survey findings will be reviewed with the Planning Authority during the annual liaison meetings.

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Amphibians

- Common Frog, Common Toad and Palmate Newt are all known to occur within the general vicinity of the site. No surveys have been undertaken as no existing ponds have been or are to be adversely affected. Newly created ponds (see Method Statement 3) will be managed positively for amphibians and construction details will employ techniques and principles outlined in the Million Ponds Project.
- All personnel employed in vegetation clearance will be instructed to be mindful of the likely presence of amphibians and avoid disturbing, damaging or killing them.
- As far as possible, vegetation clearance and any disturbance to existing ponds will be undertaken during early autumn when amphibians will have generally left their breeding ponds but will still be active and more likely to be able to escape disturbance
- Where possible, ponds will be linked by vegetated wet ditches which will provide potential amphibian travel routes.
- The findings of the monitoring surveys and any other amphibian issues will be included in the annual reports submitted to the site operators and appropriate authorities. Survey findings will be reviewed with the Planning Authority during the annual liaison meetings.

Bird Assemblages

- Woodland, scrub, acid grassland, heath, bog, ponds and open areas within the site collectively support a locally important assemblage of bird species.
- Woodland habitats include coupes of commercial coniferous plantations, which will be subjected to updated forestry practices that support sustainable management, with enhanced biodiversity. Additional deciduous woodland will be created on the MWR area that will provide additional habitats of value to woodland birds. The creation of acid grassland/heath mosaics and bog habitats will provide net gains in the long term.
- Removal of trees, shrubs and other dense vegetation will be undertaken between September and February inclusive to ensure that disturbance to nesting birds is kept to a minimum and, when possible, between mid September and mid-October to minimize other faunal-disturbance issues. If it is necessary to remove any trees, scrub or other dense vegetation within the bird breeding season, such work will only be permitted after it has been certified by a qualified ornithologist from the Site Ecologist's team, that no active nests will be disturbed. If any active nests are found, clearance work will be delayed until the nesting has been completed.
- The overall habitat restoration plan will be of benefit to the local bird assemblage and no additional specific management actions are required.
- The findings of the monitoring surveys and any other bird issues will be included in the annual reports submitted to the site operators and appropriate authorities. Survey findings will be reviewed with the Planning Authority during the annual liaison meetings.

5.0 Responsibilities

Name	Position	Duty
Neil Price	Assistant Manager	Liaise with site personnel, third parties including emergency services, to ensure safe method of working. Supervision of site personnel and subcontractors. Issue of appropriate PPE ensuring all workforce and sub contractors wear high visibility clothing.

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		Tool box talks and checking methods of working by contractors and sub contractor operatives. Checking test certificates, operators' licenses and certificates, etc and issue of permits to work.
Barry Stewart	Ecologist	General ecological advice. Tool box talks and checking methods of working by site-staff and sub contractor operatives.

6.0 **Contacts**

Neil Price (Energybuild) TEL 01639 729210

Site staff and equipment as required (to be appointed)

Barry Stewart (Pryce Consultant Ecologists) 01792 539447, 07730 502738

Richard Pryce (Pryce Consultant Ecologists) 01554 775847, 07900 241371

7.0 **Environmental Considerations**

- No refueling of plant will be permitted except in designated bunded areas. Diesel/oil or other spillages must be avoided at all times.

8.0 **COSHH**

Appropriate PPE will be worn.

9.0 **Specific Requirements for Risk Assessment**

Risk assessment to be conducted by the Chief Operating Officer.

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METHOD STATEMENT 5
JAPANESE KNOTWEED ERADICATION

1.0 Purpose

Japanese Knotweed is an invasive, non-native species which is included in Schedule 9, Part 11 of the Wildlife and Countryside Act 1981. This makes it an offence to plant Japanese Knotweed or otherwise cause it to grow in the wild. A series of regulations and acts also provides legislation designed to reduce its spread and control the handling and disposal of the plant.

Japanese Knotweed is very localized on Site and most stands have been treated. A full survey and review of the species is to be undertaken in 2020. A full eradication programme will be undertaken to satisfy planning condition 46. This Method Statement details the means by which this will be achieved.

2.0 Scope of Work

There are various methods of treating knotweed. At Aberpergwm site some knotweed control and eradication has been undertaken using standard herbicide treatment methods.

A survey of the entire site will be undertaken and any remnant stands identified will be permanently fenced to enclose all visible stems plus a buffer extending to 10m all around the stand in compliance with BS1722-2.

All knotweed stands will continue to be treated *in situ* with herbicide to standard methodology and will be applied by experienced, accredited operators.

Care will be taken not to disturb any knotweed during site operations. No excavation or re-contouring work will be undertaken within 10m of any knotweed stands until all knotweed has been certified eradicated.

3.0 Principal Personnel and Equipment:

- Post and wire fencing materials
- No entry notices warning of contaminated material
- Ground works team with appropriate experience and tools
- Accredited herbicide application personnel
- Appropriate herbicide
- Equipment to clean all plant and tools used for excavation, handling or haulage of contaminated material

4.0 Method/Procedure/Constraints

KNOTWEED HERBICIDE TREATMENT

- Knotweed stands will not be disturbed by site operations and will be treated *in situ*.
- All knotweed stands will be permanently fenced to enclose all visible stems plus a buffer extending to 10m all around each stand. Fencing will be to agricultural post and wire standard in compliance with BS1722-2

- One application of a glyphosate based herbicide will be made just after the leaves start to die-down in autumn.
- The knotweed re-growth will be monitored in the following spring and herbicide re-applied.
- Further regrowth will receive repeat herbicide applications in spring and autumn for a further two years.
- If regrowth is still evident after this time, further treatment will be undertaken by injecting glyphosate directly into each individual knotweed stem using a specialist contractor. Injection treatment could be introduced earlier if the site operators decide to do so.
- Any further regrowth will receive repeat injection treatment during the following two years or until the contaminated area can be certified to be clear of the plant.
- The decontaminated area must be vigilantly monitored and any knotweed regrowth controlled by spot-injection.

MONITORING EFFECTIVENESS OF TREATMENT

- The appointed site staff member responsible for knotweed control, assisted, if necessary, by the Site Ecologist will monitor all knotweed infested areas, all of which will have been subject to eradication treatment, at least once per month between March and November each year.
- Any knotweed regrowth will be noted and re-treated as described above.

5.0 Responsibilities

Name	Position	Duty
Neil Price	Assistant Manager	Liaise with site personnel, third parties including emergency services, to ensure safe method of working. Supervision of site personnel and subcontractors. Issue of appropriate PPE ensuring all workforce and sub contractors wear high visibility clothing. Tool box talks and checking methods of working by contractors and sub contractor operatives. Checking test certificates, operators' licenses and certificates, etc and issue of permits to work.
	Member of site staff qualified to apply herbicide	Herbicide application
	Specialist Herbicide Contractor for injecting plants	Herbicide injection
Barry Stewart	Site Ecologist	General ecological advice.

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		Tool box talks and checking methods of working by site-staff and sub contractor operatives.
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6.0 **Contacts**

Neil Price (Energybuild) TEL 01639 729210

Specialist Herbicide Contractor (to be appointed)

Barry Stewart (Pryce Consultant Ecologists) 01792 539447, 07730 502738

Richard Pryce (Pryce Consultant Ecologists) 01554 775847, 07900 241371

7.0 **Environmental Considerations**

- There must be no tracking of any vehicle over any areas contaminated with Japanese Knotweed before or during treatment until no regrowth is detected.
- Particular care should be taken not to contaminate any uncontaminated areas of the site with fragments of Japanese Knotweed
- Particular care should be taken not to inadvertently export knotweed propagules out from the site
- Before moving away from any knotweed infested area, all vehicles, equipment, personal effects and PPE must be thoroughly inspected and, if necessary, washed to ensure that they are not contaminated with knotweed debris or potential propagules.
- No refueling of plant will be permitted except in designated bunded areas. Diesel/oil or other spillages must be avoided at all times.

8.0 **COSHH**

Appropriate PPE will be worn.

9.0 **Specific Requirements for Risk Assessment**

Risk assessment to be conducted by the appointed site staff member responsible for knotweed control.

METHOD STATEMENT 6
RHODODENDRON ERADICATION

1.0 Purpose

Rhododendron *Rhododendron ponticum* is an invasive non-native species and is known to have an adverse impact on native woodland and heathland flora and fauna. The locations of stands and individual plants of Rhododendron have not been mapped in detail, though the baseline vegetation surveys undertaken have shown that Rhododendron is well-established in some woodland units including 16, 17 and 18 shown on figure 2. Eradication of these plants is required to satisfy planning condition 46 and this method statement details the means by which this will be achieved.

2.0 Scope of Work

A seven stage control operation will be implemented, based on guidance detailed by Edwards (2006) to provide the most appropriate management strategy for the Site. This will require:

1. Surveying the Site to determine the extent of the problem
2. Prioritising areas to be cleared.
3. Choosing appropriate control measures
4. Preparing a management plan
5. Implementing control techniques
6. Re-surveying the site
7. Follow-up control measures

3.0 Principal Personnel and Equipment:

- Surveying to be undertaken by the appointed site staff member responsible for Rhododendron control, assisted by the site ecologist, who will oversee and liaise with accredited herbicide application personnel
- No entry notices warning of contaminated material
- Ground works team with appropriate experience and tools (appointed specialist contractors)
- Appropriate herbicide to be used following consultation with ecologist to assess potential harmful effects of adjacent features.
- Details for the removal and disposal of killed carcasses will be provided following the site assessment.
- Equipment to clean all plant and tools used for excavation, handling or haulage of contaminated material

4.0 Method/Procedure/Constraints

TREATMENT METHOD TO BE DETERMINED

- Rhododendron stands will be treated *in situ*.
- Details for the removal and disposal of killed carcasses will be provided following the site assessment.
- Re-growth will be monitored in the following spring and herbicide re-applied.
- Further regrowth will receive repeat herbicide applications until no further sign of regrowth is noted.

- The decontaminated area will be vigilantly monitored and any regrowth controlled by spot-spraying or stump injection.

MONITORING EFFECTIVENESS OF TREATMENT

- The appointed site staff member responsible for Rhododendron control assisted, if necessary, by the Site Ecologist will monitor all affected areas
- Any regrowth will be noted and re-treated as described above.

5.0 Responsibilities

Name	Position	Duty
Neil Price	Assistant Manager	Liaise with site personnel, third parties including emergency services, to ensure safe method of working. Supervision of site personnel and subcontractors. Issue of appropriate PPE ensuring all workforce and sub contractors wear high visibility clothing. Tool box talks and checking methods of working by contractors and sub contractor operatives. Checking test certificates, operators' licenses and certificates, etc and issue of permits to work.
	Member of site staff qualified to apply herbicide	Herbicide application
	Specialist Herbicide Contractor for injecting plants	Herbicide injection
Barry Stewart	Site Ecologist	General ecological advice. Tool box talks and checking methods of working by site-staff and sub contractor operatives.

6.0 Contacts

Neil Price (Energybuild) TEL 01639 729210

Specialist Herbicide Contractor (to be appointed)

Barry Stewart (Pryce Consultant Ecologists) 01792 539447, 07730 502738

Richard Pryce (Pryce Consultant Ecologists) 01554 775847, 07900 241371

7.0 Environmental Considerations

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- There must be no tracking of any vehicle over any areas contaminated with Rhododendron before or during treatment until no regrowth is detected.
- Particular care should be taken not to contaminate any uncontaminated areas of the site with potential propagules
- Particular care should be taken not to inadvertently export propagules (primarily soil supporting seeds of Rhododendron) out from the site
- No refueling of plant will be permitted except in designated bunded areas. Diesel/oil or other spillages must be avoided at all times.

8.0 **COSHH**

Appropriate PPE will be worn.

9.0 **Specific Requirements for Risk Assessment**

Risk assessment to be conducted by the appointed site staff member responsible for Rhododendron control.