

A large teal graphic on the left side of the page, consisting of a tall vertical rectangle with a diagonal cutout at the top right, and a triangle on top of the rectangle's upper left portion.

Pengarnddu Landscape Management Plan

November 2022

This page left intentionally blank for pagination.

Mott MacDonald Bentley
Ty Awen
Spooner Close
Celtic Springs Business
Park
Coedkernew
Newport NP10 8FZ
United Kingdom

mottmacbentley.co.uk

Pengarnddu Landscape Management Plan

November 2022

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
P01	10/05/22	Myfanwy Brewster Kay Morris	Paul Wyeth	Rob A Evans	First Issue
P02	9/06/22	Myfanwy Brewster	Kay Morris	Rob A Evans	Updated following LPA Comments
P03	24/08/22	Elliott Hughes	Myfanwy Brewster	Rob A Evans	Updated following LPA Comments
P04	28/10/22	Elliott Hughes	O Judge	Alexander Cooper	Updated following LPA Comments
P05	03/11/22	Elliott Hughes	Kay Morris	Alexander Cooper	Updated following LPA Comments

Document reference: | B10237-123532-XX-XX-PL-NA-DG0290 | PO5 |

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

1	Introduction	1
1.1	Objective	1
1.2	Site Location	1
1.3	Planning and development context	1
2	Operational Notes	2
3	Landscape Management Table	3
4	Appendices	7
A.	Landscape Plan	9
B.	Additional Species for Overseeding (When or if they become commercially available)	10
C.	Hibernacula and Brash Pile Specification	11
Tables		
	Table 1 Landscape Management Table	3
	Table 2 Re-seeded Wet Dwarf Heath	10
	Table 3 Re-seeded Acid Grassland	10
Figures		
	Figure 1. Landscape Plan	9

1 Introduction

This Landscape Management Plan has been produced by Mott MacDonald on behalf of Welsh Water to provide a framework for landscape management and maintenance of the landscape associated with Pengarnddu Service Reservoir scheme.

1.1 Objective

To retain the site's existing vegetation and structural quality.

1.2 Site Location

Pengarnddu Service Reservoir is situated approximately 3.5km north-east from the centre of Merthyr Tydfil and approximately 3.7km north-west of Rhymney. The Site is located to the east of an area of common land (Blaenmorlais SINC) and to the west of an industrial estate. To the north of the Site is moorland, with further common land, a traveling community and an industrial estate being found to the south. It is situated at NGR: SO07592 08923 within the county borough of Merthyr Tydfil.

1.3 Planning and development context

Full planning permission was granted by Merthyr Tydfil Borough Council on the 28 June 2021 (application No. P/21/0157) for the construction of a 9 ML (mega litre) 2-cell reservoir and associated engineering, access and landscaping works.

A planning application (Application No. P/21/0142) was also granted on the 28th June 2021 for the construction of a temporary haul road to facilitate construction of a new service reservoir.

P/21/0157 Condition 6

A landscape management plan, including management responsibilities and maintenance scheduled for all landscaped areas, shall be submitted to and approved in writing by the local planning authority prior to the development being brought into use. The landscape management plan shall be carried out as approved and all planting, seeding or turfing comprised in the approved details of landscaping shall be implemented in the first planting and seeding seasons following the completion of the development.

P/21/0142 Condition 4

*A landscape management plan, including management responsibilities and maintenance schedules for all landscaped areas to be reinstated, shall be submitted to and approved in writing by the local planning authority **prior to the approved reservoir, under application P/20/0228, being brought into use.** The landscape management shall be carried out as approved and all planning, seeding or turfing comprised in the approved details of landscaping for the reinstatement of the land shall be implemented in the first planting and seeding seasons following the completion of the approved reservoir development.*

This management plan has been compiled to discharge the above conditions.

2 Operational Notes

The following should be implemented: -

- The works must be read in association with Mott MacDonald drawing number B10237-123532-XX-XX-DR-LA-DI9003 P04 a copy of this can be found in Appendix A.
- A list of additional species to plant on the site can be found in Appendix B. These species were present onsite prior to works commencing, however they are not included in Appendix A due to availability issues. These species should be overseeded at a later date should they become available.
- Undertake maintenance visits as necessary to maintain the works in a tidy and healthy condition.
- Maintain grass areas and vegetation free from rubbish and debris.
- Weed control should be undertaken by cutting or removal by hand. The use of herbicides is forbidden.
- Water as necessary, without damaging or displacing plants or soil, to promote healthy growth.
- Where wind rocking or soil heave has occurred, straighten plant and lightly firm soil around without compacting.
- Remove plant growth overhanging public access ways and weak, dead or damaged material. Prune back to healthy and strong buds or growth points between November and March. Remove all other arisings and dispose of off-site.
- Plants that have failed to thrive (unless due to theft or malicious damage after completion) should be replaced with equivalent plants during the next planting season, between November and March. Replacements should match either size of adjacent or nearby plants of same species or match original specification, whichever is the greater size.
- Check fencing and repair or replace as necessary to maintain the area free of grazing animals.
- Leave the works clean and tidy. Remove all arisings and dispose of off-site. Do not light fires.
- Undertake all pruning, lopping, coppicing, felling and other shrub/scrub operations between November and March.
- Undertake protected species checks prior to carrying out any site operations and take all necessary measures to avoid disturbance

3 Landscape Management Table

Table 1 Landscape Management Table

Vegetation type	Management operation task	Year 1	Year 2	Year 3	Year 4	Year 5	Years 5-10	Years 10-15	Years 15-20	Years 20-30	Years 30-50	50-year module continues in perpetuity
Existing scrub /shrubs retained	Check stock proof fencing to prevent grazing at every maintenance visit. Repair or replace as necessary when encountered.	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Check for, and manage, rabbits and squirrels annually in spring/summer	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Check for, and manage, plant pests and diseases annually in summer	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Control bramble, ivy and honeysuckle growth. Cut down to ground and remove from growth from canopies between Nov-Feb every 5 years	x				x	Every 5 years	Every 5 years	Every 5 years	Every 5 years	Every 5 years	Every 5 years
	Coppice shrubs. Remove 25% of coverage every 5	x					Every 5 years	Every 5 years	Every 5 years	Every 5 years	Every 5 years	Every 5 years

	years. Undertake the work in a random manner spread throughout the total area											
	Control all pernicious weeds and the following in accordance with current legislation: - Common ragwort - Spear thistle - Creeping or field thistle - Broad leaved dock - Curled dock - Japanese knotweed - Giant hogweed - Himalayan balsam - Rhododendron ponticum	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
Existing grass retained	Control bracken growth in mid-July/ August	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Control bramble growth in November	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Control all pernicious weeds and the following in accordance with current legislation: - Common ragwort	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually

	- Spear thistle - Creeping or field thistle - Broad leaved dock - Curled dock - Japanese knotweed - Giant hogweed - Himalayan balsam - Rhododendron ponticum											
	Remove any self-seeded trees and shrubs on a 5 yearly basis					x	Every 5 years	Every 5 years	Every 5 years	Every 5 years	Every 5 years	Every 5 years
	Cut acid grassland to a height of 50 to 75 mm annually after the majority of seed has set in September. Leave 5 days between cutting and removing arisings off site to allow seed to fall.	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Cut neutral grass to a height of 50 to 75 mm annually after the majority of seed has set in September. Leave 5 days between cutting and	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually

	removing arisings off site to allow seed to fall.											
	In areas of scattered scrub, control woody vegetation to prevent over dominance on grass and lower growing species. Cut back/remove on a 3 year basis	x			x		Year 7, 10	Year 13,16	Year 19, 22	Year 25, 28	Year 31, 34, 37, 40, 43, 46, 49	Every 3 years
	In areas of scattered scrub, cut tall herbs to ground biannually in October	x		x		x	Biannually	Biannually	Biannually	Biannually	Biannually	Biannually
	In areas of heath, control shrubs to prevent over dominance on grass and lower growing species, annually after they have flowered	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	In areas of heath trim sward twice annually to between 150 and 300 mm in November and March	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
Re-seeded Acid Grassland	Undertake 1st season cuts, broadly monthly, to maintain a height of between 100 and 150mm.	x										
	Undertake cutting in 2nd season and beyond. Divide area into		x									

	25%, 25% and 50% sections. Cut each section separately, to a height of between 50 and 150mm. Cut the lushest 25% area in late June, the main 50% in late July and the final 25% in late August. Cut whole area in October and November. Check the 1st 25% section for breeding birds prior to cutting. Leave 2m wide edge strips uncut as winter refuge for insects. Remove arisings 5 - 7 days after cutting each section.											
	From the third season onwards cut acid grassland to a height of 50 to 75 mm annually after the majority of seed has set in September. Leave 5 days between cutting and removing arisings off site to allow seed to fall.			x	x	x	1 cut annually in September	1 cut annually in September	1 cut annually in September	1 cut annually in September	1 cut annually in September	1 cut annually in September
	Control bracken growth in mid-July/ August	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Control bramble growth in November	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually

	Control all pernicious weeds and the following in accordance with current legislation: - Common ragwort - Spear thistle - Creeping or field thistle - Broad leaved dock - Curled dock - Japanese knotweed - Giant hogweed - Himalayan balsam - Rhododendron ponticum	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
Re-seeded Wet Dwarf Heath	Cut heath in November or December and spread heather cuttings into areas where it is less prevalent. If heather becomes overly dominant cut in September and remove cuttings	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Control bracken growth in mid-July/ August	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
	Control bramble growth in November	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually

	Control all pernicious weeds and the following in accordance with current legislation: - Common ragwort - Spear thistle - Creeping or field thistle - Broad leaved dock - Curled dock - Japanese knotweed - Giant hogweed - Himalayan balsam - Rhododendron ponticum	x	x	x	x	x	Annually	Annually	Annually	Annually	Annually	Annually
--	---	---	---	---	---	---	----------	----------	----------	----------	----------	----------

4 Appendices

A. Landscape Plan



- NOTES:
1. SITE ADDRESS:
PENGARNDDU SRV, MERTHYR TYDFIL, CF48 2TA.

2. DO NOT SCALE FROM THIS DRAWING.

3. EXISTING SEMI-IMPROVED ACID GRASSLAND TO BE REINSTATED WITH:
20% SHEEP'S FESCUE (FESTUCA OVINA)
15% CREEPING BENT (AGROSTIS STOLONIFERA)
15% WAVY HAIR-GRASS (AVENELLA FLEXUOSA)
15% MAT-GRASS (NARDUS STRICTA)
15% SWEET VERNAL-GRASS (ANTHOXANTHUM ODORATUM)
5% SHEEP'S SORREL (RUMEX ACETOSELLA)
5% TORMENTIL (POTENTILLA RECTA)
5% HEATH BEDSTRAW (GALIUM SAXATILE)
5% HEATH WOOD-RUSH (LUZULA MULTIFLORA).

4. EXISTING WET DWARF SHRUB HEATH TO BE REINSTATED WITH:
WET DWARF SHRUB HEATH PLANTING DOMINATED BY COMMON HEATHER (CALLUNA VULGARIS) AND BELL HEATHER (ERICA CINEREA L.) (TOTAL OF 1,000 -9CM IMMATURE PLANTS TO BE PLANTED, IN ADDITION LOCAL CUTTINGS LEFT TO SEED).
PLUS SEEDING OF 25% PURPLE MOORGRASS (MOLINIA CAERULEA) 15% SHEEP'S FESCUE (FESTUCA OVINA) AND 15% WAVY HAIR-GRASS (AVENELLA FLEXUOSA).
OTHER SPECIES REQUIRED HERE INCLUDE:
5% TORMENTIL
5% HEATH WOOD-RUSH
5% HEATH BEDSTRAW
5% SHEEP'S FESCUE
5% COMMON MILKWORT (POLYGALA VULGARIS)
5% DEVIL'S-BIT SCABIOUS (SUCCISA PRATENSIS)
5% SHEEP'S SORREL (RUMEX ACETOSELLA)

5. EXISTING EPHEMERAL / SHORT PERENNIAL TO BE LEFT BARE FOR RE-COLONISATION.

- LEGEND:
- PLANNING APPLICATION BOUNDARY

EXISTING SITE BOUNDARY

WELSH WATER OWNERSHIP BOUNDARY AND PROPOSED FENCE LINE

STRUCTURES AND ACCESS ROAD

EXISTING WATERBODY

EXISTING WET DWARF SHRUB HEATH TO BE REINSTATED WITH SAME HABITAT POST-CONSTRUCTION

EXISTING SEMI-IMPROVED NEUTRAL GRASSLAND RETAINED, OR GRASSLAND REINSTATED TO MATCH EXISTING WHERE DISTURBED DURING CONSTRUCTION

EXISTING SEMI-IMPROVED ACID GRASSLAND TO BE REINSTATED WITH SAME HABITAT POST-CONSTRUCTION

EXISTING SEMI-IMPROVED ACID GRASSLAND TO BE RETAINED AND PROTECTED

RETAINED WET DWARF SHRUB HEATH AND SCATTERED SCRUB

EXISTING EPHEMERAL / SHORT PERENNIAL TO BE REINSTAED WITH SAME HABITAT POST-CONSTRUCTION

PROPOSED HIBERNACULA FOR GREAT CRESTED NEWTS

PROPOSED BRASH PILE FOR REPTILES

P04	27.07.22	AD	UPDATED FOR CORRECT HABITAT TYPES	KM	RE	09.09.22
P03	07.04.21	BSW	UPDATED FOR TEMPORARY HAUL ROAD PLANNING APPLICATION	NA	MT	08.04.21
P02	11.09.20	BSW	UPDATED FOLLOWING PUBLIC CONSULTATION	EH	MT	14.09.20
P01	25.06.20	TSM	FOR INFORMATION	SC	MT	25.06.20
Rev.	Date.	BIM.	Description.	Chk.	App.	Iss Date.



Project Name:		PENGARNDDU SERVICE RESERVOIR	
Drawing Title:		LANDSCAPING AND PLANTING GENERAL ARRANGEMENT	
Suitability: FOR INFORMATION		Suitability Code S2	
Originator:	TM	Designer:	SC
Internal Project Number:	IS44	Scale:	1:500 @ A1
Drawing Number:	B10237-123532-XX-XX-DR-LA-DI9003	Date:	25.06.20
		Rev.	P04
		MMB	
		MOST MACDONALD REINLEY	

Dwr Cymru Cyf gives this information as to the position of its underground apparatus by way of general guidance only on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus and any onus of locating the apparatus before carrying out any excavations rests entirely on you. It must be understood that the furnishing of the information is entirely without prejudice to the provision of the New Roads and Streetworks Act 1991 and of the Company's right to be compensated for any damage to its apparatus.

Dwr Cymru Cyf has no duty to identify private apparatus and the information as to the position of the private apparatus is given by way of general guidance only on the strict understanding that it is based on the best information available and no warranty as to the correctness is relied upon. Not all private apparatus is identified but their presence should be anticipated.

B. Additional Species for Overseeding (When or if they become commercially available)

Table 1 Re-seeded Wet Dwarf Heath

Common Name	Scientific Name
Common Club-rush	<i>Schoenoplectus lacustris</i>
Common sedge	<i>Carex nigra</i>
Cuckooflower	<i>Cardamine pratensis</i>
Gorse	<i>Ulex europaeus</i>
Marsh Thistle	<i>Cirsium palustre</i>
Marsh willowherb	<i>Epilobium palustre</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Soft rush	<i>Juncus effusus</i>
Sow thistle	<i>Sonchus arvensis</i>
Sweet Vernal-grass	<i>Anthoxanthum odoratum</i>

Table 2 Re-seeded Acid Grassland

Common Name	Scientific Name
Annual meadow-grass	<i>Poa annua</i>
Common Yellow-sedge	<i>Carex demissa</i>
Creeping buttercup	<i>Ranunculus repens</i>
Daisy	<i>Bellis perennis</i>
Field wood-rush	<i>Luzula campestris</i>
Greater plantain	<i>Plantago major</i>
Heath speedwell	<i>Veronica officinalis</i>
Hop trefoil	<i>Trifolium campestre</i>
Marsh Stitchwort	<i>Stellaria palustris</i>
Marsh thistle	<i>Cirsium palustre</i>
Mouse-ear-hawkweed	<i>Pilosella officinarum</i>
Ragwort	<i>Senecio jacobaea</i>
Red clover	<i>Trifolium pratense</i>
Rough hawkbit	<i>Leontodon hispidus</i>
Selfheal	<i>Prunella vulgaris</i>
Silverweed	<i>Potentilla anserina</i>
Yorkshire fog	<i>Holcus lanatus</i>

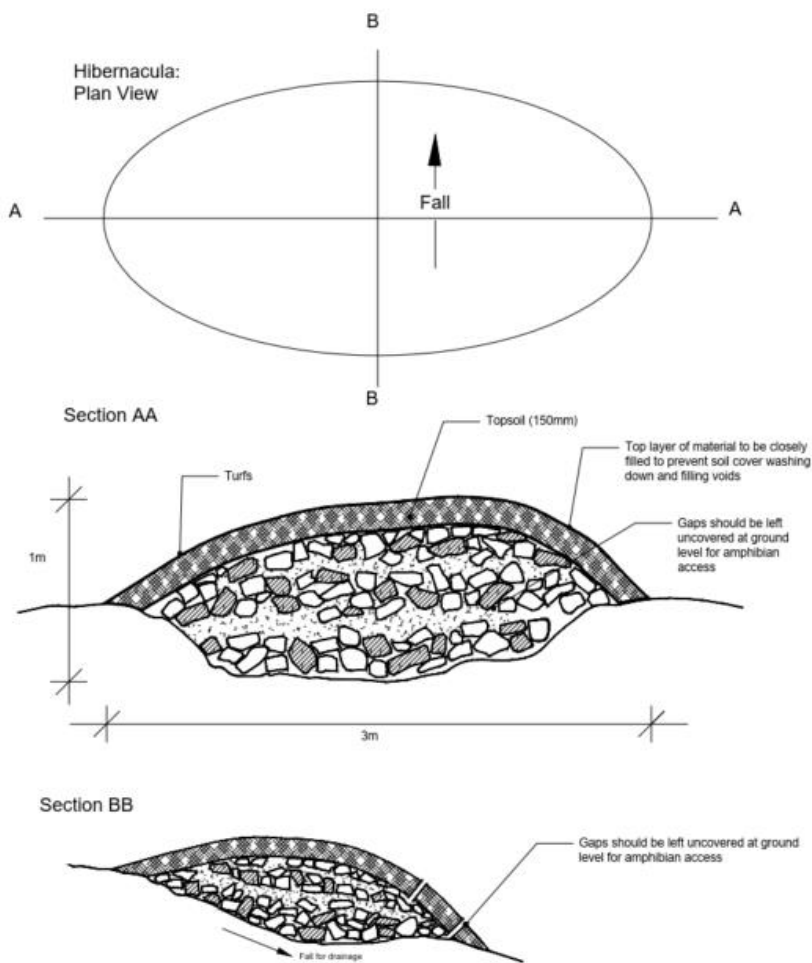
C. Hibernacula and Brash Pile Specification

Pengarnddu Hibernacula Guidance

Hibernacula to be installed in area of grassland and wildflower planting to the south of the proposed service reservoir. Specification as per the Natural England GCN Mitigation Guidelines and using material cleared from site.

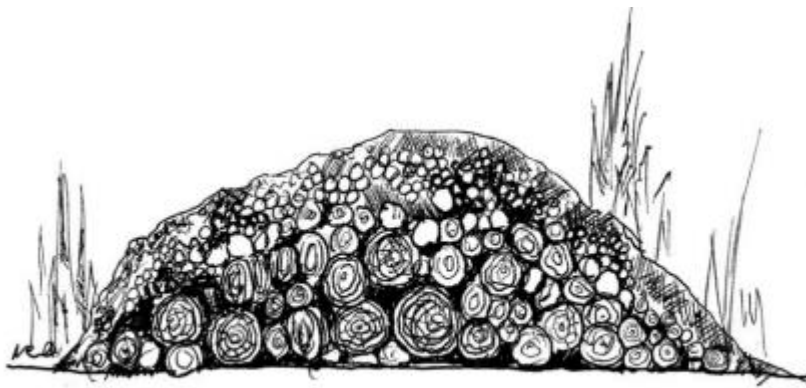
- The hibernaculum hole is to be no less than 2m in diameter and 0.5m deep.
- The hole is to be lined with sand and gravel.
- Turfs are removed prior to excavation for re-use on top of the hibernaculum.
- The hibernaculum is to be constructed from new, clean bricks, (brick sizes to be half and full brick) and/or untreated logs.
- Vertical gaps to be no more than 50% filled with soil/vegetative matter so that voids are created for amphibians.
- Bricks or logs to be hand placed, roughly coursed with some bricks placed at 45° to the ground and locally found soil/dead leaves/grass roots to be placed in 300mm layers between courses.
- The mound is to be covered with 150mm topsoil and turfs.
- The hibernaculum should measure 1.5m in height from the base of the hole to the top of the mound.
- Once vegetation has established on top of the hibernaculum, this should be cut every 2 to 3 years. More frequent cutting will be required if nettles and thistle start to establish.

Hibernacula Details Scale 1:25



Brash Pile Guidance

- The brash pile is to be no less than 2.0m in width and 1.0m in height.
- The pile is to be constructed of untreated logs of different sizes and branches.
- Logs and branches need to be compacted at the core of the brash pile, and looser on the outer layers on top.
- Monitor the brash pile to ensure that it stays intact and is not destroyed by bad weather/large mammals.



An artificial brush pile created from arisings from woodland management work.

Source: Amphibian and Reptile Group UK.

