

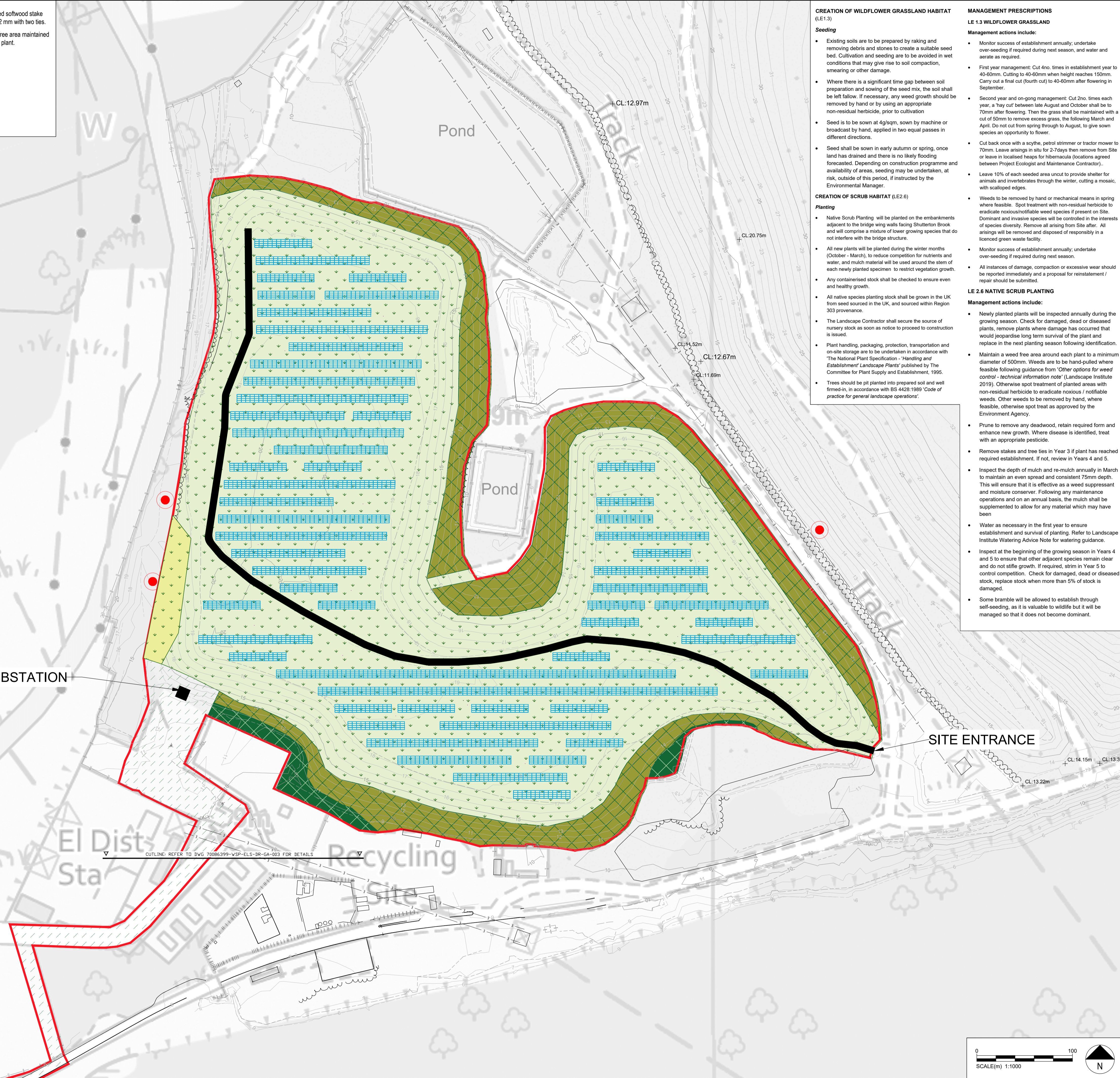
Native Scrub Planting Mix				
Latin Name	Common Name	Mix %	Size	Density
Ligustrum vulgare	Wild Privet	10	60-80mm	1.5Ctr
Euonymus europaeas	Spindle	10	40-60mm	1.5Ctr
Salix cineria	Grey Willow	5	60-80mm	1.5Ctr
Hedera helix	Ivy	15	2ltr pot	1.5Ctr
Prunus spinosa	Blackthorn	10	40-60mm	1.5Ctr
Cornus sanguinea	Dogwood	10	60-80mm	1.5Ctr
Viburnum opulus	Guellder Rose	10	40-60mm	1.5Ctr
Crataegus monogyna	Hawthorn	10	60-80mm	1.5Ctr
Corylus avellana	Hazel	10	60-80mm	1.5Ctr
Lonicera periclymenum	Common Honeysuckle	10	2ltr pot	1.5Ctr

Wildflower Grassland		
Emorsgate EM1 - Basic General Purpose Meadow Mixture (Listed as a native species)		
Wildflowers 20%		
Latin Name	Common Name	Mix %
Achillea millefolium	Yarrow	0.7
Centaurea nigra	Common Knapweed	2.8
Daucus carota	Wild Carrot	2.5
Knautia arvensis	Field Scabious	1.4
Leucanthemum vulgare	Oxeye Daisy - (Moon Daisy)	3
Pastinaca sativa	Wild Parsnip	0.5
Plantago lanceolata	Ribwort Plantain	0.7
Poterium sanguisorba	Salad Burnet	2
Prunella vulgaris	Selfheal	3
Silene dioica	Red Campion	2
Silene vulgaris	Bladder Campion	1.4
Grasses 80%		
Agrostis capillaris	Common Bent	8
Cynosurus cristatus	Crested Dogtail	28
Festuca rubra	Slender-creeping Red-fescue	24
Phleum bertolonii	Smaller Cat's-tail	4
Poa pratensis	Smooth-stalked Meadow-grass	16

Extracts from Ecology Assessment for Tir John, Swansea  
Koru Ecology Associates, 2022

- Careful dismantling of refuge.** Any potential reptile or amphibian refugia areas that need to be removed to allow for construction, should be carried out by hand, under direct supervision of the ECoW and outside the hibernation period. The hibernation period is usually considered to be November to March inclusive, with April to October (the active season) being a suitable time for dismantling refugia. Any individuals found should be removed to areas of suitable habitat adjacent to the Site. Details of what will happen in the unlikely event that great crested newts are found should also be included within the CEMP.
- Two-stage grass cut.** The ECoW should supervise a two-stage directional grass/vegetation cut across the array site and along the private wire route in the area of grassland to the south of Fabian Way, in order to encourage reptiles/amphibians to move away from the construction area and into areas of adjacent grassland. All arisings should be removed immediately from the site following cutting. The vegetation should then be maintained in this condition throughout construction, in order to ensure the Site remains less suitable for reptiles/amphibians. Regular site checks by the ECoW should be carried out during the construction period, at a frequency to be agreed prior to works commencing once the full works program is available.
- Scrub removal outside the bird nesting season.** Should any areas of scrub be removed as part of the development proposals, this should be timed to avoid the bird nesting season, generally considered to be March - August inclusive. Therefore as far as possible scrub removal should be completed between September and February. If that is not possible, the areas concerned should be checked by the ECoW immediately prior to removal, and only cleared if no evidence of nesting birds is observed. Should any nesting birds be present, clearance should not proceed until the young have fledged the nest or if the nest becomes unviable.
- Retention and protection of marshy grassland.** The area of marshy grassland on the western edge of the array site should be retained and appropriately protected using Heras fencing (or similar) during the construction phase of the project.
- Appropriate working methods with regards to the grassland south of Fabian Way.** Since this area of grassland is likely to be reasonably diverse, all trench digging to lay the cable should take place as follows: a) turf stripped and stored adjacent to the cable route, b) top soil taken out and stored, c) sub-soil taken out and stored, d) soil and turf replaced in same order following laying of cable. In addition, the cable trench should be open for as short a time as possible, and the soil/turf replaced as soon as possible.
- Appropriate management of Japanese knotweed during construction.** A Japanese knotweed management plan should be drawn up and put into place prior to works proceeding on the Site, in order to avoid the spread of this plant during construction. Any management practices should follow current and appropriate relevant guidance. In particular, this should address the works around the Tennant Canal / Wern Fawr Road crossing point, where a significant Japanese knotweed stand is present.
- Natural regeneration of scrub habitat.** In areas where the maintenance of grassland habitat is not required in order for the array site to function, existing vegetation should be left to 'scrub up' naturally. In particular, this should include the southfacing bank at the southern edge of the array site, but may also be extended to other areas around the periphery, particularly along the banks of the cap.

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**CREATION OF WILDFLOWER GRASSLAND HABITAT (LE1.3)**

**Seeding**

- Existing soils are to be prepared by raking and removing debris and stones to create a suitable seed bed. Cultivation and seeding are to be avoided in wet conditions that may give rise to soil compaction, smearing or other damage.
- Where there is a significant time gap between soil preparation and sowing of the seed mix, the soil shall be left fallow. If necessary, any weed growth should be removed by hand or by using an appropriate non-residual herbicide, prior to cultivation
- Seed is to be sown at 4g/sqm, sown by machine or broadcast by hand, applied in two equal passes in different directions.
- Seed shall be sown in early autumn or spring, once land has drained and there is no likely flooding forecasted. Depending on construction programme and availability of areas, seeding may be undertaken, at risk, outside of this period, if instructed by the Environmental Manager.

**CREATION OF SCRUB HABITAT (LE2.6)**

**Planting**

- Native Scrub Planting will be planted on the embankments adjacent to the bridge wing walls facing Shuttern Brook and water, and much material will be used around the stem of each newly planted specimen to restrict vegetation growth.
- Any containerised stock shall be checked to ensure even and healthy growth.
- All native species planting stock shall be grown in the UK from seed sourced in the UK, and sourced within Region 303 provenance.
- The Landscape Contractor shall secure the source of nursery stock as soon as notice to proceed to construction is issued.
- Plant handling, packaging, protection, transportation and on-site storage are to be undertaken in accordance with 'The National Plant Specification - Handling and Establishment' Landscape Plants' published by The Committee for Plant Supply and Establishment, 1995.
- Trees should be pit planted into prepared soil and well firmed-in, in accordance with BS 4428:1989 'Code of practice for general landscape operations'.

**MANAGEMENT PRESCRIPTIONS**

**LE 1.3 WILDFLOWER GRASSLAND**

**Management actions include:**

- Monitor success of establishment annually; undertake over-seeding if required during next season, and water and aerate as required.
- First year management: Cut 4no. times in establishment year to 40-60mm. Cutting to 40-60mm when height reaches 150mm. Carry out a final cut (fourth cut) to 40-60mm after flowering in September.
- Second year and on-going management: Cut 2no. times each year, a 'hay cut' between late August and October shall be to 70mm after flowering. Then the grass shall be maintained with a cut of 50mm to remove excess grass, the following March and April. Do not cut from spring through to August, to give sown species an opportunity to flower.
- Cut back once with a scythe, petrol trimmer or tractor mower to 70mm. Leave arisings in situ for 2-7days then remove from Site or leave in localised heaps for hibernacula (locations agreed between Project Ecologist and Maintenance Contractor).
- Leave 10% of each seeded area uncut to provide shelter for animals and invertebrates through the winter, cutting a mosaic, with scalloped edges.
- Weeds to be removed by hand or mechanical means in spring where feasible. Spot treatment with non-residual herbicide to eradicate noxious/notifiable weed species if present on Site. Dominant and invasive species will be controlled in the interests of species diversity. Remove all arising from Site after. All arisings will be removed and disposed of responsibly in a licensed green waste facility.
- Monitor success of establishment annually; undertake over-seeding if required during next season.
- All instances of damage, compaction or excessive wear should be reported immediately and a proposal for reinstatement / repair should be submitted.

**LE 2.6 NATIVE SCRUB PLANTING**

**Management actions include:**

- Newly planted plants will be inspected annually during the growing season. Check for damaged, dead or diseased plants, remove plants where damage has occurred that would jeopardise long term survival of the plant and replace in the next planting season following identification.
- Maintain a weed free area around each plant to a minimum diameter of 500mm. Weeds are to be hand-pulled where feasible following guidance from 'Other options for weed control - technical information note' (Landscape Institute 2019). Otherwise spot treatment of planted areas with non-residual herbicide to eradicate noxious / notifiable weeds. Other weeds to be removed by hand, where feasible, otherwise spot treat as approved by the Environment Agency.
- Prune to remove any deadwood, retain required form and enhance new growth. Where disease is identified, treat with an appropriate pesticide.
- Remove stakes and tree ties in Year 3 if plant has reached required establishment. If not, review in Years 4 and 5.
- Inspect the depth of mulch and re-mulch annually in March to maintain an even spread and consistent 75mm depth. This will ensure that it is effective as a weed suppressant and moisture conservers. Following any maintenance operations and on an annual basis, the mulch shall be supplemented to allow for any material which may have been
- Water as necessary in the first year to ensure establishment and survival of planting. Refer to Landscape Institute Watering Advice Note for watering guidance.
- Inspect at the beginning of the growing season in Years 4 and 5 to ensure that other adjacent species remain clear and do not stifle growth. If required, trim in Year 5 to control competition. Check for damaged, dead or diseased stock, replace stock when more than 5% of stock is damaged.
- Some bramble will be allowed to establish through self-seeding, as it is valuable to wildlife but it will be managed so that it does not become dominant.

**DO NOT SCALE**

**Legend**

- Site Boundary
- Contours
- Existing vegetation retained
- Existing scrub retained
- Existing marshy grassland retained
- Japanese Knotweed observed
- Proposed
- Solar PV Array
- Indicative substation location
- LE 2.6 Native Scrub
- LE 1.3 Wildflower Grass

P02	08/03/2022	DW	For Planning	LG	MH
P01	25/10/2021	DW	First Issue	LG	MH
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS:

**FOR PLANNING**

**wsp**

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CLIENT:

Swansea Council

ARCHITECT:

SITE/PROJECT:

Tir John Solar Farm

TITLE:

Figure 9:  
Soft Landscape General Arrangement  
Solar Farm Site

SCALE @ A1:	1:1000	CHECKED:	LG	APPROVED:	MH
PROJECT NO:	70086399	DESIGNED:	DW	DRAWN:	DW
				DATE:	November 2021

DRAWING NO:	70086399-WSP-ELS-DR-GA-002	REV:	P02
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