



Chwilog, Pen Llŷn

Landscape & Ecology Management Plan

July 2025



LANDSCAPE MANAGEMENT PLAN

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This document is to be read in conjunction with the following drawings and reports:

Land Studio Landscape Planting Plan 465-LST-XX-XX-DR-L-0101 P03

LANDSCAPE MANAGEMENT PLAN

1.0 INTRODUCTION AND DEVELOPMENT PROPOSAL

1.1 Introduction

Land Studio have been instructed to produce a Landscape Management Plan to accompany the residential scheme which proposes 25 new homes and flats for the village of Chwilog, Pen Llŷn, Caernarfon. This plan brings together and builds upon mitigation and enhancement proposals from the Landscape scheme.

1.2 Site Location and Description

The site of the residential scheme is located in the village of Chwilog, on the Llŷn Peninsula. The site is located on the southwest corner of the village on the southern side of the B4354. The name means 'abounding in beetles' and may stem from an earlier name of the Afon Wen, which was formerly called Afon Carrog, that winds through the village to the east.

The site is currently pastureland for sheep.

1.3 Development Proposal

The landscape plan is to provide amenity, play and access to nature for the residents of the scheme as well as ecological benefits for the area. The site is bound by hedgerows and traditional clawdd (hedgebanks) with a few mature trees, and the landscape proposals include enhancing the existing clawdd and hedgerows as well as adding new or relocated clawdd, mixed species hedgerows and mature trees.

2.0 AIMS AND OBJECTIVES OF THE LANDSCAPE MANAGEMENT PLAN

Landscape Management Plan Aim

The Landscape Management Plan sets out the aims and objectives of the new landscape scheme along with a five-year management prescription programme.

- To ensure the healthy establishment and growth of plants.
- To protect planted areas from damage
- To minimise competition by perennials weeds and grasses.
- To ensure adequate watering to enable establishment and survival.
- To ensure that areas of shared open space, including hard surfaces, are maintained to a high level of physical condition, to maintain usability and to ensure health and safety of residents.
- To undertake landscape management in a manner that is sustainable and avoids wherever possible the use of chemicals that could damage the environment.

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2.1 Plan Objectives

- To establish an attractive and low maintenance planting scheme for the general landscape setting of the development.
- To establish the utilisation of green spaces to provide recreational space.
- To ensure that the proposed planted areas are successful in their establishment.
- That all new planting areas are maintained and managed to make sure that the scheme thrives.
- Keep all hard surfaced areas and paths in a good state of repair and free from any potentially dangerous arisings that could cause a slip or trip hazard or reduce visual quality.
- Ensure the site is free from litter and deleterious material to maintain a clean and tidy appearance.
- Ensure attenuation basin and swales are free from litter, functioning correctly and that vegetation is flourishing.

3.0 LANDSCAPE COMPARTMENTS AND MANAGEMENT PRINCIPLES

3.1 Existing Landscape Compartments

The existing hedgerows, clawdd and mature trees to be retained will require ongoing maintenance to ensure their continued health and success.

3.2 Proposed Landscape Compartments

Land Studio Landscape Planting Plan 465-LST-XX-XX-DR-L-0101 P03 for detailed planting plan schedule.

The proposed landscape scheme consists of the following compartments:

3.3 Trees

Trees have been proposed along boundaries and within communal garden areas and the biodiversity enhancement area, to provide amenity and ecological value. Species include *Betula pendula* (Silver Birch), *Prunus avium* (Wild Cherry), *Quercus petraea* (Welsh Oak), *Salix caprea* (Goat Willow), *Sorbus aucuparia* (Rowan), *Sorbus torminalis* (Service Tree)

Management Aim: Ensuring successful establishment.

Management Prescription: Checking tree stakes and prune dead or broken branches, watering and maintaining weed free areas.

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Design Objectives:

- To create a mix of native trees to provide:
 - landscape structure and infrastructure.
 - visual and seasonal interest.
 - pleasant and attractive public and private spaces.
 - localised screening and shading.
 - framing of key views and vistas.
 - a sense of place and define areas of distinctive character within the development.
- To enhance biodiversity by
 - providing habitat for foraging and nesting birds.
 - providing fruiting and flowering plants beneficial to birds and insects.
 - addressing climate change issues (surface water run-off, shade, filtering of particulates, carbon capture).
 - providing natural mitigation for visual impacts on surrounding receptors, and in particular reducing intervisibility between the surrounding village and the proposed development.

3.4 Various Meadow Mixtures

Different types of meadow mixtures have been proposed for the site to complement the needs of different microclimates and areas.

These are:

S1 Wildflowers for Hedgerows - Emorsgate EH1F - 207 m² to be sowed at a rate of 4 g/m² (40 kg/ha)

S5 Meadow Grass - Emorsgate EG1 - 545 m² to be sowed at a rate of 5 g/m² (40 kg/ha)

S6 Woodland Edge Meadow Mix - Emorsgate EG9 - 255 m² to be sowed at a rate of 5 g/m² (40 kg/ha)

S7 Meadow Grass Mix - Emorsgate EG8 - 300 m² to be sowed at a rate of 5 g/m² (40 kg/ha)

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Design Objectives:

- To create species-rich meadow habitats, to provide:
 - seasonal colour and interest.
 - a sense of place and define areas of distinctive character within the development.
- To contribute to biodiversity by:
 - using native species grasses, wildflowers, and bulbs.
 - providing habitat to support insects and other invertebrates.
 - providing feeding opportunities for over wintering birds.
- To follow manufacturer's specifications.

SOWING

- Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture.
- The seed must be surface sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed, but firm in with a roll, or by treading, to give good soil/seed contact.

First Year Management:

- Most of the sown meadow species are perennial and are slow to establish. Soon after sowing there will be a flush of annual weeds, arising from the soil seed bank. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are great for bugs, and they will die before the year is out. So, resist cutting the annual weeds until mid to late summer, especially if the mixture contains Yellow Rattle or has been sown with a nurse of cornfield annuals. Then cut, remove, and compost. Early August is a good time. This will reveal the young meadow, which can then be kept short by grazing or mowing through to the end of March of the following year. Dig out any residual perennial weeds such as dock.

Management Aim: Ensuring successful establishment.

Management Prescription: Litter picking to be carried out by the landscape contractor.

3.5 Strong Lawn Grass Mix

909 m² of amenity grass seed has been specified, to be sowed at a rate of 4g/m².

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Management Aim: Ensuring successful establishment. Encourage biodiversity and reduce fuel use/air pollution.

Management Prescription: Participate in 'No Mow May' and keep mowing height set high throughout rest of growing season, mow fortnightly for biodiversity and sustainability benefit. Litter picking to be carried out by the landscape contractor.

3.6 Rain Garden Mix

A mixture of pollinator friendly perennials and grasses that are able to withstand both wet and dry periods in the soil, as SuDS features often present both extremes. Species include *Carex elata* 'Aurea', *Echinacea purpurea*, *Lythrum salicaria*, *Persicaria bistorta* 'Superba', *Rudbeckia fulgida*

Management Aim: Ensuring successful establishment.

Management Prescription: The landscape contractor to litter pick and maintain weed free growing areas.

Design Objectives:

- To create a pollinator friendly planting with visual and seasonal interest, as well as food and foraging habitat for local wildlife.
- To contribute to biodiversity by:
 - providing pollinator friendly plantings
 - providing habitat for insects and other invertebrates
- To provide water attenuation and an attractive feature that also serves a soft engineering function

3.7 Ornamental Planting

Low maintenance flowering plants, grasses and groundcover planting are proposed throughout the site along building frontages and entrance areas as an attractive welcoming feature to the site. Species include: *Carex elata* 'Aurea', *Lavandula* 'Hidcote', *Salvia rosmarinus*, *Stipa tenuissima*, *Thymus vulgaris*

Management Aim: Ensuring successful establishment.

Management Prescription: The landscape contractor to litter pick and maintain weed free growing areas.

Design Objectives:

- To create mixed ornamental shrub areas, containing a diversity of wildlife and pollinator-friendly plants with a range of forms, textures and structure to provide:
 - landscape structure.

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- sensory and seasonal interest.
- pleasant and attractive public and private spaces.
- a sense of place and defining areas of distinctive character within the development.
- To enhance biodiversity by
 - providing habitat for foraging and nesting birds.
 - providing fruiting and flowering plants beneficial to birds and insects.

3.8 Existing Hedgerow and Boundary Trees Retained and Enhanced

Mixed native hedging, clawdd and trees already occurring along the boundaries will be retained to maintain ecological value and free movement for wildlife and to provide screening for the site.

Management Aim: Ensuring continued successful health.

Management Prescription: The landscape contractor to litter pick and maintain weed free growing areas.

Design Objectives:

- To enhance site's current contribution to biodiversity by:
 - Improving important connected ecological corridors within and along the perimeter of the site.
 - Improving habitat for foraging and nesting birds.
- To improve screening of the development from adjacent areas.
- To mitigate for tree and vegetation removal required as part of the development.

3.9 Hard landscaping

SURFACING:

- Parking Surfacing
- Pedestrian Asphalt
- Footpaths to Properties

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- Vehicular Asphalt

Management Aim: To maintain a high quality, safe and accessible pedestrian, and vehicular network for all users.

Management Prescription:

General:

- Visually inspect the surfacing for ponding during heavy rainfall or following heavy rainfall annually
- Maintenance for aesthetics: Brush with soapy water / Light pressure wash as required.
- Weed control: Hand removal of weeds where possible, or individual spot treatment with weedkiller as required.
- Maintenance during the winter months: De-icing salts as required.

3.10 Structures

FURNITURE PROVISION:

- Fencing and other boundary treatments
- Kerbs
- Gates
- Retaining Walls

Management Aim: To maintain all structures in a safe and serviceable condition, fit for purpose.

Management Prescription: Carry out regular checks of all structures and fixings, and cleaning as required for fencing, kerbs etc (suggest twice annually, in late spring and early autumn). Replace any structures damaged beyond repair with identical specification, or similar if no longer available.

General:

- Check fence lines, structures and repair as necessary.
- Check fixings and general condition of all site furnishings twice annually

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4.0 MANAGEMENT PRESCRIPTIONS

The new landscape compartments will be maintained by the client or their appointed contractor

Table 1 – Year One

New Landscape Compartments			
Any trees or shrubs that fail should be replaced to match original specification.			
Compartment	Actions	Frequency and Timing	Comments
Ornamental Planting	During times of prolonged drought, plants are to be watered to field saturation using clean fresh water	May-September, weekly during dry weather.	
	Maintain weed free planting beds. All areas to be topped up with mulch woodchip to maintain 75mm depth		
	Litter picking to be carried out by hand and disposed of off-site	During every visit	
	Litter picking to be carried out by hand and disposed of off-site	During every visit	
SuDS Planting	During times of prolonged drought, plants are to be watered to field saturation using clean fresh water	May-September, weekly during dry weather.	
	Litter picking to be carried out by hand and disposed of off-site	During every visit	
	If weeds develop, allow them to grow to protect establishing seeds and cut back in late summer	August	
Wildflower and Meadow Planting	Install signage identifying the wildflower area stating – This wildflower meadow area is managed for nature and as such may look untidy at times. Please avoid accessing this area to help the wildflowers establish and limit disturbance to wildlife.	Check during every visit and repair/replace where necessary	

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New Landscape Compartments			
Any trees or shrubs that fail should be replaced to match original specification.			
Compartment	Actions	Frequency and Timing	Comments
Wildflower and Meadow Planting (cont'd)	Mow regularly in the first year after sowing, to encourage perennials to grow strong root systems.	March - August	
	Cut to a height of 5cm six to eight weeks after seedlings appear, and repeat every two months throughout the first summer. These cuts can be lower, at 4cm. Leave arisings in place for a few days to allow seeds to drop to ground. Then rake up and remove, to help reduce soil fertility.		
	Litter picking to be carried out by hand and disposed of off-site.	During every visit	
	Dig out any residual perennial weeds such as docks.	August - March	
Amenity Grass	Plant seeding in spring or autumn and seed again to fill in bare patches 3-6 months after initial seeding as needed. Thereafter mow the new lawn regularly as needed, progressively reducing the mowing height over its first spring/summer to the desired height.	March - September	Once established, participate in 'No Mow May' and keep mowing height set high throughout rest of growing season, mow fortnightly for biodiversity and sustainability benefit.
	Litter picking to be carried out by hand and disposed of off-site.	During every visit	
Tree Planting	Check all stakes and ties, any failures or broken stakes to be replaced.	During every visit	Extra staking may be required if trees are growing at an angle.
	During times of prolonged drought, trees are to be watered to saturation using clean fresh water.	May-September, weekly during dry weather.	

NB: Areas of bare ground must be kept vegetation free and kept clear of blockages to allow access. Rock piles need to be kept free of encroaching vegetation to leave the area clear and allow sunlight to penetrate.

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4.0 MANAGEMENT PRESCRIPTIONS

The new landscape compartments will be maintained by the client or their appointed contractor

Table 2 – Year Two to Five

Landscape Compartments			
Any trees or shrubs that fail should be replaced to match original specification.			
Compartment	Actions	Frequency and Timing	Comments
Ornamental Planting	During times of prolonged drought, plants are to be watered to field saturation using clean fresh water	May-September, weekly during dry weather.	
	Maintain weed free planting beds. All areas to be topped up with mulch woodchip to maintain 75mm depth	Weed during every visit, top up mulch twice annually (spring and autumn)	
	Litter picking to be carried out by hand and disposed of off-site	During every visit	
SuDS Planting	During times of prolonged drought, plants are to be watered to field saturation using clean fresh water	May-September, weekly during dry weather.	
	Litter picking to be carried out by hand and disposed of off-site	During every visit	
Wildflower and Meadow Planting	Spring cut – where grass is crowding out wildflowers, cut to a height of 7.5cm no later than end of April. Sowing yellow rattle in August is an additional way to help manage grass-dominant meadows.	March - April / August (yellow rattle)	
	Main summer cut – aka ‘hay cut’ removes bulk to be composted or baled. Leave cut material in place for a few days to allow seeds to drop to ground. Then rake up and remove, to reduce soil fertility.	Late June to end of August - vary from year to year to encourage variety of plantings	

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New Landscape Compartments Any trees or shrubs that fail should be replaced to match original specification.			
Compartment	Actions	Frequency and Timing	Comments
Wildflower and Meadow Planting (cont'd)	Autumn cut – useful on fertile ground, to use up nutrients. 1-2 cuts between end of August and late November to remove surplus growth and keep grasses at bay, letting wildflowers thrive.	Late August - Late November	
	Litter picking to be carried out by hand and disposed of off-site.	During every visit	
Amenity Grass	Litter picking to be carried out by hand and disposed of off-site.	During every visit	Once established, participate in 'No Mow May' and keep mowing height set high throughout rest of growing season, mow fortnightly for biodiversity and sustainability benefit.
Trees Planting	Check all stakes and ties, any failures or broken stakes to be replaced.	During every visit	Extra staking may be required if trees are growing at an angle.
	During times of prolonged drought, trees are to be watered to saturation using clean fresh water.	May-September, weekly during dry weather.	
	Remove stakes and ties	Years 3 – 5	
	Prune to shape young trees, but don't cut back the leader. Remove crossing branches and branches that grow back towards the centre of the tree.	Years 3 – 5	
	As young trees grow, remove lower branches gradually to raise the crown and remove branches that are too closely spaced on the trunk.	Years 3 – 5	
	Remove multiple leaders on trees where a single leader is desirable.	Years 3 – 5	

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MAINTENANCE OF LOOSE MULCH:

Apply organic biodegradable mulch to all planting areas to ensure adequate weed control.

Do not mulch wildflower seedplanting areas. Do not apply to areas of dense ground cover or herbaceous material where mulch would smother plants.

Frequency:

- Twice a year in February and July

Depth:

- Maintain a thickness (minimum): 75 mm.

Completion:

- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.

LITTER COLLECTION:

Planting areas should be kept free of litter, leaves, and debris to ensure a tidy appearance.

Frequency:

- Fortnightly

Method:

- Remove using correct horticultural practices, appropriate for the debris being collected.

DEAD & DISEASED PLANTS:

All plant deaths should be replaced as soon as practicable:

- Removal: Within one week of notification
- Replacement: Within two weeks unless otherwise agreed (this will be subject to planting season).

TREES:

- Dead /dying root-balled and bare root trees must be replaced during the dormant season.

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Mowing Precautions:

- Do not allow nylon filament rotary cutters and other mechanical tools closer than 500 mm to the stem of any tree. - Operations close to stems: Complete manually using hand tools.

WATERING:

- All newly planted areas of grass, perennials, wildflower plugs, shrub and trees to ensure healthy development and survival.

Frequency:

- Weekly during between March to November year 1
- Fortnightly between April and November year 2
- As required during periods of prolonged dry weather during May – September (exceeding 2 weeks) for years 3 to 5.

Quantity:

- Trees (Transplants to standard) – water to tree-pit capacity; min. 10 litres
- Trees (Heavy Standard and larger) – water to tree-pit capacity; min. 20 litres
- Shrubs and planting area generally – Wet full depth of topsoil

Application:

- Even and without damaging or displacing plants or topsoil.

SOIL AERATION:

- All planting area suffering from compaction by pedestrian or vehicular traffic should be lightly forked over:

Frequency:

- Once every two months between April and December

Method:

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- Prick up to aerate the soil of root areas and break surface crust to a depth of 75mm. Reduce lumps to crumb and level off.

Damage:

- Do not damage plants and their roots.

DEAD HEADING:

- Flowering plants with persistent panicles should be dead headed at each site visit, during flowering season to promote new flower formation.
- Flower head remaining after September should be left over winter and removed in early spring to provide for birds and insects.

Frequency:

- Fortnightly during June to August
- Once in late February

PEST & DISEASE CONTROL:

- Plants should be inspected at each routine visit for pest and disease symptoms and immediate remedial action should be taken where necessary.
- In early winter undertake appropriate preventative pest treatments for forms of pests identified during the previous growing season.
- Pest and disease control should be undertaken by removal and correct disposal of diseased, damaged, or otherwise affected plant material, or wholesale removal of affected plants and soil, rather than use of chemicals. Suitable organic products may be used if proven to be environmentally safe.

APPLYING ORGANIC FERTILISER:

Apply fertilisers as follows to promote healthy growth.

Frequency:

- Annually in early Spring.

Type:

- Organic slow release.

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DIGGING OVER:

- All planting beds are to be dug to promote aeration and permeability of soils.

Frequency:

- Once a year in April

Method:

- Prick up to aerate the soil of root areas and break surface crust to a depth of 75mm. Reduce lumps to crumb and level off.

Damage:

- Do not damage plants and their roots.

THINNING:

- At each routine site visit all plants where thinning is a normal part of cultivation should be carried out as required.

PRUNING:

- Specific pruning requirements by vegetation type are detailed above.

SNOW REMOVAL FROM SHRUBS & TREES:

- Remove all laying snow from evergreen shrubs and trees.

CUTTING AND PRUNING - GENERAL:

Tools:

- Appropriate, well maintained and sharp.

Equipment:

- Chainsaws: Do not use on branches of less than 50 mm diameter.
- Hand saws: Form a smooth cut surface.

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- Anvil type secateurs: Do not use.

Final pruning cuts:

- Removing branches: Do not damage or tear the stem.
- Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
- Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
- Large branches: Remove only if unavoidable.
- Remove in small sections and lower to ground with ropes and slings.

Dead branches and stubs:

- When removing, do not cut into live wood.

Unsafe branches:

- Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.

Disease or fungus:

- Give notice if detected. Do not apply fungicide or sealant unless instructed.

Bark damage:

- Wounds: Do not attempt to stop sap bleeding.
- Bark: Remove ragged edges using a sharp knife.
- Wood: Remove splintered wood from deep wounds.
- Size: Keep wounds as small as possible.

NB: Areas of bare ground must be kept vegetation free and kept clear of blockages to allow access. Rock piles need to be kept free of encroaching vegetation to leave the area clear and allow sunlight to penetrate.

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5.0 MONITORING AND REVIEW

5.1 Monitoring

The client or their appointed Landscape Contractor will undertake the maintenance and management programme set out.

5.2 Plan Review

Monitoring and plan reviews should be undertaken by a qualified Landscape Manager or Ecologist. The purpose of monitoring and reviews will be to ensure that objectives in terms of timings or quantities are having the desired effect and if required make adjustments to those prescriptions in order that the objectives are adequately met. A formal review of the Plan should take place in years five, ten and twenty, which should provide revised objectives and prescriptions for future years. This is particularly important for the areas in which certain activities can occur and perhaps where new primary functions can occur, particularly around the consideration of pedestrian focused spaces and potential community area. Also amend for any additions to the landscape.