Green Infrastructure Statement

PROPOSED DEVELOPMENT WORKS AT LAND OFF LLON CARDI BACH, CILGERRAN, PEMBROKESHIRE, SA43 2TF

Prepared for:

Date:
May 2025

Prepared By:

Table of Contents

1. Introduction

RDS Landscaping Ltd has been commissioned by Wales and West Housing to produce a Green Infrastructure (GI) Statement for a proposed residential development at land off Llon Cardi Bach, Cilgerran.

This Statement is informed by the revised **Planning Policy Wales (PPW) Edition 12 (2024)**, specifically Chapter 6: *Distinctive and Natural Places*, which identifies green infrastructure as essential to delivering multifunctional spaces that support biodiversity, landscape character, and environmental resilience.

> *"*6.0.1 The Distinctive and Natural Places theme of planning policy topics covers historic environment, landscape, biodiversity and habitats, coastal characteristics, air quality, soundscape, water services, flooding and other environmental (surface and sub-surface) risks."

> "6.2.5 A green infrastructure statement should be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. In the case of minor development this will be a short description and should not be an onerous requirement for applicants. The green infrastructure statement will be an effective way of demonstrating positive multifunctional outcomes which are appropriate to the site in question and must be used for demonstrating how the step-wise approach (Paragraph 6.4.21) has been applied."

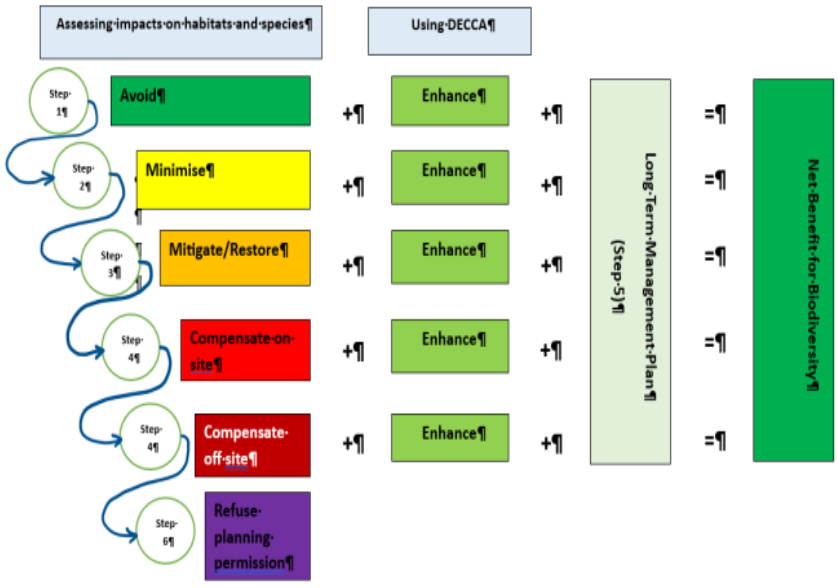


Figure 1. Summary of the Step-Wise Approach

This GI Statement outlines how green infrastructure will be embedded into the development to deliver ecological and community value.

Supporting surveys and reports informing this statement include:

- Topographical Site Plan – RLH (April 2025)
- Extended Phase 1 and Protected Species Survey – Kite Ecology (April 2025)
- Proposed Ecology Plan – RLH (April 2025)
- Geotechnical and Geoenvironmental Report – Terrafirma (January 2025)
- BS5837:2012 Tree Survey and Arboricultural Constraints Report – The Arb Team (April 2025)

2. Existing Site Context

The proposed site is located on the southern outskirts of Cilgerran, approximately 20 meters to the south of Llon Cardi Bach, grid reference, SM 95125 36780. The site is an irregular polygon in shape and runs in a northerly to southerly direction along the long axis.

Llon Cardi Bach with residential housing on both sides, runs parallel to the northern site boundary with the Avon Teifi located a further 250 meters to the north. There is farmland located to the east and west of the site and a single homestead on the southern boundary with further open farmland towards the south.

The whole development site extends to approximately 0.8 Hectares in size and is currently farmland covered by improved grassland. The habitats recorded on the site include mature species rich boundary hedgerows with sporadic trees and semi-improved grassland with ruderals along the periphery between the boundary hedges and central improved grassland sward. The site topography is slightly undulating with a gradient which falls in south-easterly to north-westerly direction.

A mosaic of elements forms the wider surrounding landscape, the conservation of these elements is vital to meet the needs of many local species. The surrounding elements include mainly small pasture fields enclosed by hedgerows with some trees and varying sized patches of woodland. Refer to Figure 2. - Site indicated by red boundary line.

Figure 2. Site Location (Google Earth Image)

3. Proposed Development

The development proposal comprises the construction of 23 residential units, featuring a mix of single and double storey dwellings. The scheme also includes all necessary infrastructure and services to support the operation of the estate.

To accommodate the proposed layout, substantial earthworks will be undertaken. These works will involve terracing of several plots with the inclusion of low retaining walls, while other plots will be shaped using graded earth banks to manage level changes across the site.

Each dwelling will include off-street parking located between the housing and the shared access roads. The layout will incorporate tree lined roads and ornamental planting along roadside verges and in key public open spaces. Rear gardens will consist of private, lawned spaces enclosed by timber fencing. Provision has also been made for landscaped SuDS components.

Primary vehicular access will be provided through a new entrance in the western boundary, positioned just north of the current field gate. A secondary pedestrian and cycle access will be introduced further south of the main entrance, improving connectivity within and beyond the site.

Most of the existing mature trees and boundary hedgerow vegetation would be retained to form part of the wider landscape scheme and would be managed according to BS5837:2012 Trees in relation to design, demolition and construction

4. Green Infrastructure Baseline

The baseline information for this Green Infrastructure statement refers to the Extended Phase 1 and Protected Species Survey, prepared Kite Ecology – April 2025
and the BS5837:2012 Tree Survey and Arboricultural Constraints Report, prepared by The Arb Team – April 2025.

Designated Sites within 2km

- SAC Afon Teifi (400m NE) – Supports otter, salmon, lamprey, floating water-plantain
- SSSI Afon Teifi – Lowland unimproved pasture, species-rich grassland, nationally significant insect fauna
- SSSI Gwaun Pen Lan – Herb-rich pasture, orchids, and rare reed species
- SSSI Coedydd a Corsydd Aber Teifi – Estuarine marshes and flood meadows supporting waders and waterfowl
- Local Wildlife Trust Sites: Teifi Marshes and Coed Maidie B. Goddard

On-site Habitats

- Improved grassland: Low ecological value, no mitigation required
- Native hedgerows and trees: High ecological value; key GI assets to be retained and protected

Tree and Vegetation Impacts

- One low-quality (Category C) boundary tree (Norway Spruce, T6) to be removed

- Minor sections of hedgerow to be removed for access points

5. Green Infrastructure Strategy

Policy Framework

In accordance with PPW 12 (2024), green infrastructure is recognised as a multifunctional asset that provides connectivity, biodiversity, climate resilience, and recreational benefits. GI must address habitat fragmentation, promote ecological corridors, and integrate natural features into built environments.

Site Connectivity

Located within a highly interconnected landscape, the site is surrounded by a network of hedgerows extending towards Coed Gwastad and into neighbouring farmland to the south-east. To the north, across the high street, lies the Afon Teifi and further vast areas of similar agricultural land, featuring hedges and woodlands. The site benefits from its proximity to established wildlife corridors, making it ideally positioned to support and enhance the local ecosystem through thoughtful design. The Preliminary Ecological Appraisal Report Recommends the following ecological enhancement measures:

- The proposed development lies adjacent to existing residential developments. However, as the site is adjacent to proposed developments, it is very unlikely to impact on the designations.
- The proposed development relates to the construction of new dwellings. This will inevitably lead to the loss of the improved grassland. Therefore, any planting should utilise locally sourced, native species in all gardens and landscaping. Hedgerows could be used to demarcate property boundaries as these can also act as natural wildlife corridors.
- All lighting must be hooded and downward facing and positioned to avoid shining directly onto the features such as woodland edges and hedgerows. The lighting should also be PIR sensitive LED type which have a much more directional lighting range.
- Only cut existing and fully established hedgerows every 2 years; this reduces maintenance and labour costs, creates a bushier hedge for wildlife and allows flower and berry production in the intervening years. Leave 1-2 metre (or wider) verges of tall grass by hedges which provides nesting habitat for birds and protects hedgerows from pesticide or fertiliser spray drift.
- New buildings will include artificial habitats such as bat bricks/boxes, bird boxes/bricks or Swift/Swallow cups as appropriate; the details of which should be agreed with the LA ecologist.
- Existing mature trees can support bird nesting boxes and artificial bat roosts.

Additionally, the general GI measures included within the proposed development layout are described below:

- Hedgerows and Native Tree Species - Planting of new hedgerows and using native tree species throughout the site and along the boundaries to enhance local biodiversity.

- Ecological Enhancement - Improving existing natural features and creating habitat and creating connections to broader ecological networks.
- Wildlife Habitats - Installation of bird and bat boxes within buildings and trees, use of hedgehog friendly fencing for movement through the site.
- Planting in Public Spaces - Public amenity areas will include a mix of native and ornamental, wildlife friendly plants to support pollinators and enhance local biodiversity while improving visual appeal.
- SuDS: Native plant mixes will be used in swales for stormwater management.
- Public Footpath/Cycle route - A new pedestrian footpath and cycle route will link to neighbouring green spaces and allow movement beyond the site.
- Sustainable Landscaping -Use of permeable hard surfaces to manage stormwater runoff.
- Bat-Friendly Lighting - A lighting scheme designed to minimise disturbance to bats.
- Recreation Areas **-** Large area of public open space and an informal area for play and recreation will be provided.

The Proposed Landscape Scheme (Refer to Appendix 8.1 Landscape Scheme) illustrates how both existing and new green infrastructure will be integrated within the proposed development. Additionally, a proposed Ecology Plan illustrates the positions and quantities of various biodiversity enhancements for wildlife within the development. The specific green infrastructure targets are detailed below.

A. Existing Boundary Vegetation

Most boundary hedgerows and trees will be retained and protected during construction. A 1–2m Construction Exclusion Zone (CEZ) will be established using protective fencing as per BS5837:2012.

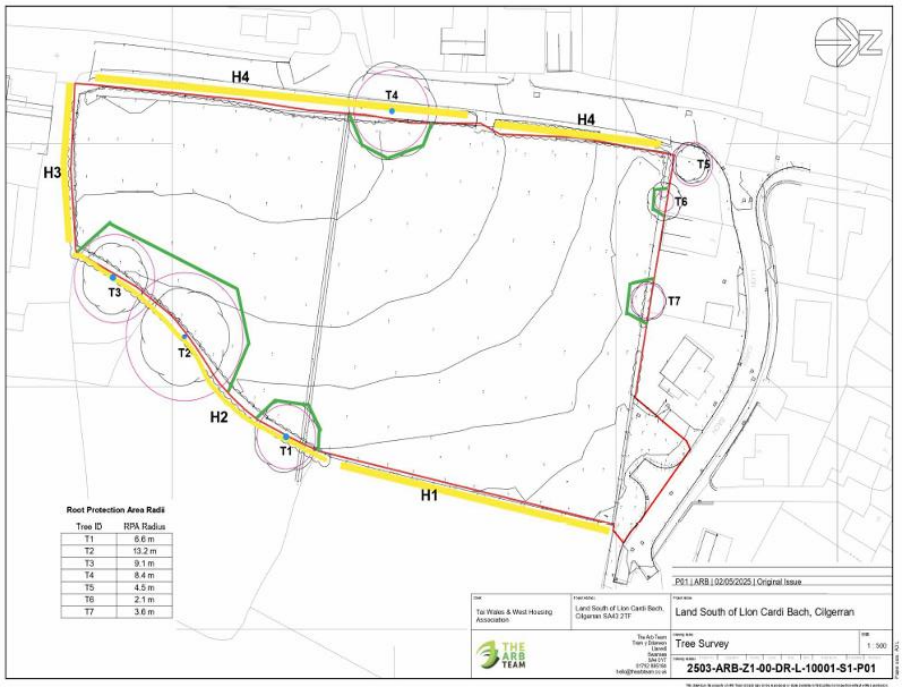


Figure 3. Tree Protection Plan

B. Landscape Rehabilitation and Amenity Planting

1. Native Trees

New tree planting along roads and in POS will include native and fruiting species such as Sessile Oak (*Quercus petraea*), Rowan (*Sorbus aucuparia*), Field Maple (*Acer campestre*), and Bird Cherry (*Prunus padus*). These trees will enhance biodiversity, provide shade and define character areas.

Figure 4. New roadside tree planting

2. Native Hedgerows

Hedgerow planting will use native species including Hawthorn, Hazel, Holly, and Blackthorn to reinforce ecological networks and act as wildlife corridors.

3. Understorey and Scrub Planting

Thicket and scrub planting along site edges and within POS will create natural buffers between residential plots and adjacent farmland, thereby enhancing habitat complexity.

4. Wildflower Meadows and Grassland

Species rich meadows will be created along site peripheries and within POS. Locally sourced seed mixes (e.g., Wyndrush Wild) will include Red Fescue, Cuckoo Flower, and Meadow Buttercup, attracting pollinators and supporting amphibians and reptiles.

5. Ornamental Beds

Native and pollinator-friendly ornamental beds in focal areas will improve visual appeal and offer nectar sources. Proposed species include *Heuchera sanguinea, Libertia grandiflora*, and *Choisya ternata*.

Figure 5. *Libertia grandiflora and Heuchera sanguinea*

C. Sustainable Drainage Systems (SuDS)

A preliminary drainage strategy, prepared by Roger Casey and Associates (see Engineering Site Plan - Drainage), outlines a sustainable approach to managing surface water. The strategy is subject to SAB approval and is fully integrated into the site's landscape design.

Key SuDS features include:

- Sub-surface attenuation and infiltration tanks to manage runoff from roofs and permeable roads, reducing peak flows and promoting infiltration.
- Roadside swales to collect surface runoff, planted with native wet-tolerant species such as *Deschampsia cespitosa*, *Juncus effusus*, *Iris pseudacorus*, and *Filipendula ulmaria*, enhancing
- Permeable block paving for driveways and shared surfaces, allowing direct infiltration and reducing surface runoff.

Figure 6. Typical roadside swale

Biodiversity Enhancement Measures

A suite of ecological enhancements is proposed, as illustrated in the Proposed Ecology Plan (Appendix 8.3):

- Bird Boxes: 5 integrated bird boxes (including 2 x Swift/Swallow cups and 3 x Sparrow terraces).
- Bat Boxes: 5 surface-mounted bat boxes to compensate for lost foraging routes.
- Hedgehog Highways: 15cm-by-15cm hole cut into base of fences to allow hedgehogs to move between gardens, so increasing their access to foraging and nesting sites
- Lighting: Bat-sensitive lighting design (hooded, PIR-activated, downward-facing)
- Habitat Management: Biennial hedgerow trimming and uncut grass margins retained

6. Benefits of Green Infrastructure

The integration of green infrastructure (GI) within the proposed development delivers a wide range of interlinked environmental, ecological and social benefits. These enhancements contribute to the sustainability, resilience, and overall quality of life for future residents while supporting the surrounding natural environment.

A. Improved Visual Amenity and Sense of Place

- Green Screening and Softening of Built Form: Native trees and hedgerows planted throughout the estate, particularly along boundaries and roadsides, will soften the appearance of buildings and infrastructure, creating a visually cohesive and appealing streetscape.
- Character and Seasonal Interest: The use of flowering native trees, shrubs, and ornamental species will enhance seasonal variation and character, improving the site's overall aesthetic and contributing to placemaking.
- Landscape Integration: The GI strategy ensures that the development sits sympathetically within its rural surroundings, reinforcing local landscape character and providing continuity with adjacent agricultural land and hedgerow networks.

B. Enhanced Environmental Sustainability

- Surface Water Management: Features such as swales, attenuation tanks, and permeable surfaces will slow down and naturally filter surface water runoff. This will in turn reduce pressure on drainage systems and lower flood risk. This sustainable drainage approach contributes to improved water quality and groundwater recharge.
- Pollution Reduction: Rain gardens and bio-retention areas remove pollutants from surface water runoff, helping to protect nearby sensitive ecosystems such as the Afon Teifi SAC.

- Improved Air Quality: Trees and hedgerows will trap airborne pollutants and absorb carbon dioxide, improving local air quality.
- Urban Cooling and Microclimate Regulation: Shade provided by street trees and green spaces will mitigate urban heat effects, creating a cooler and more comfortable living environment during warmer months.

C. Ecological Value and Biodiversity Enhancement

- Habitat Creation and Connectivity: Wildlife corridors formed by retained and newly planted hedgerows and native vegetation will support species movement across the site. These corridors link into the wider ecological network extending towards Coed Gwastad and the Teifi Marshes.
- Biodiversity Features: Provision of bird and bat boxes, hedgehog highways, and wildflower meadows will attract a range of fauna. These would include invertebrates and pollinators to small mammals and birds, enriching the site's biodiversity.
- Support for Protected Species: The strategy aligns with ecological survey recommendations, ensuring that protected species such as bats and birds are considered through the implementation of habitat features and sensitive lighting design.

D. Community and Health Benefits

- Accessible Green Space: A well-designed public open space offers recreational and social opportunities for residents, contributing to physical and mental well-being.
- Nature-Based Play and Relaxation: Informal outdoor areas and walking routes through green spaces will provide opportunities for exercise and interaction with nature.
- Sense of Community: Shared green spaces foster community cohesion and encourage social interaction among residents, enhancing overall neighbourhood identity.

E. Long-Term Resilience and Adaptation

- Climate Adaptation: The multifunctional GI features increase the development's resilience to climate change by reducing flood risk, mitigating heat, and supporting species adaptation.
- Low Maintenance and Long-Term Viability: Use of native species, two-year hedge cutting cycles, and informal planting ensures a low-input landscape that supports biodiversity with reduced maintenance costs over time.

7. Conclusion

This Green Infrastructure Statement outlines a clear commitment to embedding green infrastructure and biodiversity enhancements into the proposed development from the earliest design stages. The approach ensures that environmental quality and community well-being are central to the project.

The scheme retains and strengthens existing natural features, such as mature hedgerows and trees, and incorporates new elements including native planting, meadow creation and sustainable drainage systems. These contribute to improved habitat connectivity, biodiversity and surface water management, while also enhancing the visual and recreational value of the site.

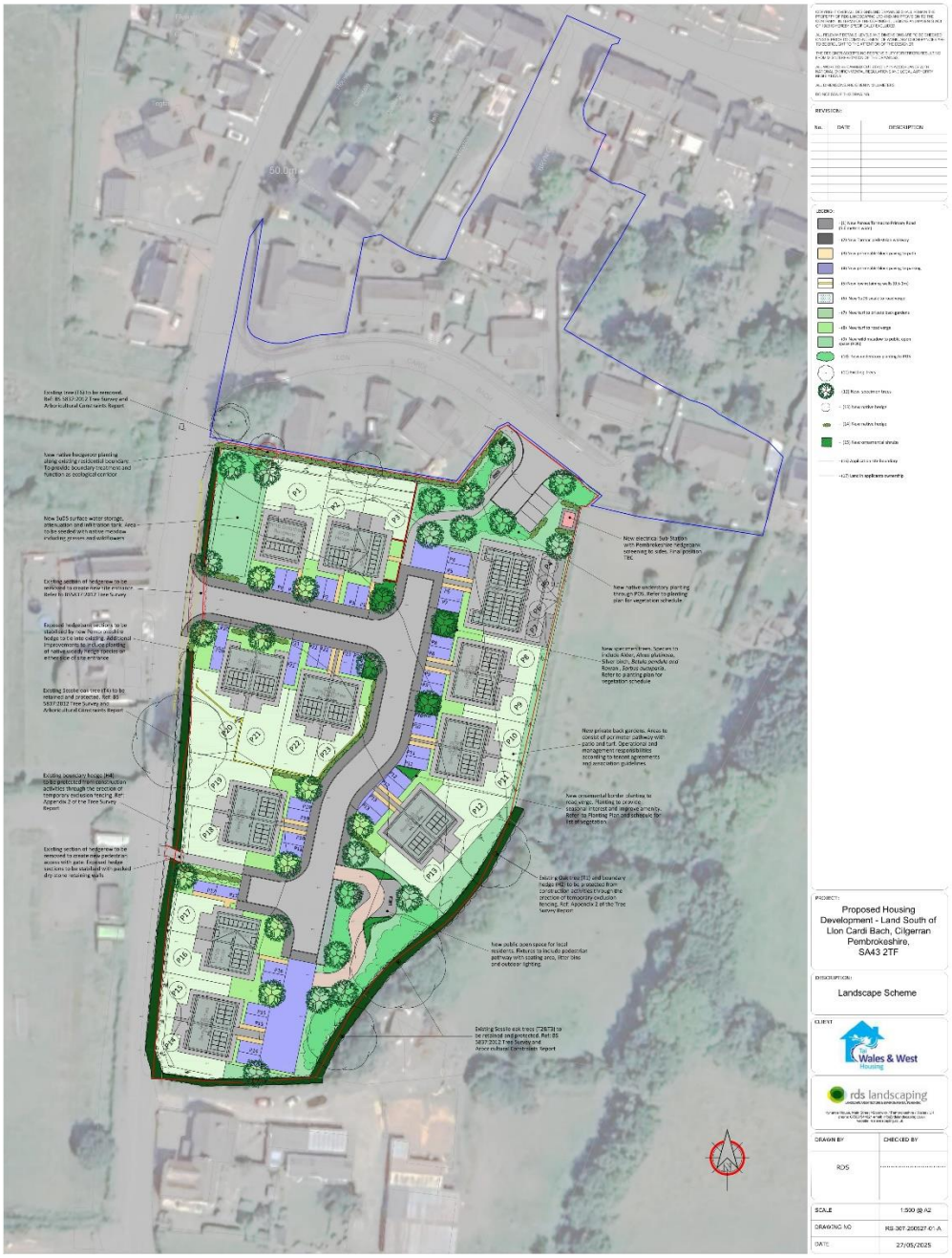
Public open spaces, green corridors and integrated biodiversity features including bird and bat boxes, hedgehog highways, and low-impact lighting help create a development that supports both people and wildlife. The design balances housing delivery with environmental responsibility, creating a well-integrated, sustainable and attractive living environment that benefits both residents and the wider ecosystem.

In summary, the development the strategy aligns with the aims of Planning Policy Wales (Edition 12), particularly Chapter 6, by supporting nature conservation, ecological connectivity and the creation of “Distinctive and Natural Places.”

8. Appendix

8.1 Landscape Scheme

Proposed Housing Development - Land South of Llon Cardi Bach, Cilgerran, Pembrokeshire SA43 2TF, Landscape Scheme



8.2 Planting Plan

Proposed Housing Development - Land South of Llon Cardi Bach, Cilgerran, Pembrokeshire SA43 2TF, Planting Plan

Proposed Soft Landscape Planting Schedule								
No	Latin Name	Common Name	Code	Sizes	Densities	No.	Local Provenance	Other Information
	Specimen Trees							
1	*Acer campestre*	Field maple	Ac	Reg.Standard, 2.5-3m height	As Shown	6	Yes	
2	*Betula pendula*	Silver Birch	Bp	Reg.Standard, 2.5-3m height	As Shown	6	Yes	
3	*Prunus padus*	Bird Cherry	Pp	Reg.Standard, 2.5-3m height	As Shown	5	Yes	Refer to planting diagram
4	*Quercus petraea*	Sessile oak	Qp	Reg.Standard, 2.5-3m height	As Shown	3	Yes	
5	*Sorbus aria*	Whitebeam	Sw	Reg.Standard, 2.5-3m height	As Shown	6	Yes	
6	*Sorbus aucuparia*	Rowan	Sa	Reg.Standard, 2.5-3m height	As Shown	6	Yes	
	Understory & Hedgerow Species							
7	*Crataegus monogyna 30%*	Common hawthorn		Open Ground, 400-600mm ht.	Drifts of 3-9	500	Yes	Plant hedgerows in mixed drifts (3-11) of offset rows 40cm apart with 15cm between rows. Stake and protect with spiral guard. Shelterbelt plant spacing at 1-1.5 plants per/m2
8	*Corylus avellana 20%*	Common hazel		Open Ground, 400-600mm ht.	Drifts of 3-7	350	Yes	
9	*Ilex aquafolium 5%*	Holly		Pot 2-3L,30-40 cm height	Drifts of 3-5	100	Yes	
10	*Prunus spinosa 30%*	Blackthorn		Open Ground, 400-600mm ht.	Drifts of 3-11	500	Yes	
11	*Sambucus nigra 5%*	Elder		Open Ground, 400-600mm ht.	Drifts of 3-5	100	Yes	
12	*Viburnum opulus 5%*	Guelder rose		Open Ground, 400-600mm ht.	Drifts of 3-5	50	Yes	
13	*Viburnum lantana 5%*	Wayfaring		Open Ground, 400-600mm ht.	Drifts of 3-5	50	Yes	
	Ornamental Planting							
14	*Brachyglottis compacta 'sunshine'*	Daisy bush	Bc	Pot 2-3L,30-40 cm height	4/m^2	32	No	
15	*Choisya ternata*	Mexican orange	Ct	Pot 2-3L,30-40 cm height	3/m^2	48	No	
16	*Escallonia rubra var.macrantha*	Red escallonia	Er	Pot 2-3L,30-40 cm height	5/m^2	135	No	
17	*Heuchera sanguinea*	Coral bells	Hs	Pot 2-3L,30-40 cm height	7/m^2	91	No	
18	*Libertia grandiflora*	Satin flower	Lg	Pot 2-3L,30-40 cm height	5/m^2	85	No	As shown on plan
19	*Liriope muscari*	Lily turf	Lm	Pot 2-3L,30-40 cm height	8/m^2	56	No	
20	*Pachysandra terminalis*	Japanese spurge	Pt	Pot 2-3L,30-40 cm height	6/m^2	96	No	
21	*Veronica 'Emerald Gem'*	Hebe Emerald Gem	He	Pot 2-3L,30-40 cm height	3/m^2	27	No	
	Meadow & Swale Planting							
22	Welsh Meadow Mix	Wildflowers & Grasses		Ratio % - Flowers 70:30 Grasses	16g/m2	16kg	Yes	britishwildflowerseeds.co.uk
23	Wetland Wildflower Seed	Wildflowers & Grasses		22 native Wildflower species	5g/m2	0.5kg	Yes	wildflower.co.uk

PROJECT:
Proposed Housing Development - Land South of Llon Cardi Bach, Cilgerran Pembrokeshire, SA43 2TF

DESCRIPTION:
Planting Plan

CLIENT:
Wales & West Housing

rds landscaping

DRAWN BY	CHECKED BY
RDS	

SCALE	1:500 @ A2
DRAWING NO	RS-337-200528-02 A
DATE	28/05/2025

8.3 Proposed Ecology Plan