

BRYNCAERAU - TENBY ROAD, ST CLEARS

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DRAYCOTT GROUP



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Introduction

Introduction

This document supports the application for the development of 115 residential unit development at Bryncaerau, St Clears and provide a landscape scheme as required by the PAC process.

The following Carmarthenshire CC Supplementary Planning Guidance (SPG) documents were consulted:

'Placemaking and Design' (2016)

'Nature Conservation & Biodiversity' and

'Leisure & Open Space Requirements for New Developments' (in particular Para 3.4.9 which talks about a Green Infrastructure Approach).

These references have influenced the GI strategy for the site

Landscape Context

The design of the landscape of the site is influenced by the layout of the housing development but also by its particular baseline characteristics and its landscape context. The site lies within NRW Landscape Character Area (LCA) 44 'Taf & Cleddau Vales', which is summarised as follows:

This large predominantly rural area straddling the modern counties of Pembrokeshire and Carmarthenshire forms the framework for a series of major river valleys associated with the Taff and Eastern and Western Cleddau. Small blocks of broadleaved woodland, coniferous and mixed plantations occupy many of the slopes and valley sides across the area. The main river valleys are fringed in swathes of semi-natural woodland that bestow an intimate, enclosed character to the valleys, which is compounded by the secluded nature of the rivers that preclude long distance views. Within the wider landscape, land use is mixed, with a patchwork of medium sized fields given over to pasture, hay meadow and arable crops. These are enclosed by hedgerows, hedgerow trees and hedgebanks.....There is a strong sense of time depth in the landscape, in which the dispersed settlement pattern of historic villages and hamlets, and the lack of large urban centres, afford high levels of tranquillity. The minor roads that criss-cross the landscape are quiet and often traffic free, save for local farm vehicles. The main A40 and A477 trunk roads and sections of other A roads cross the area, but their visual and aural impact is confined to their relatively narrow corridors compared to the remainder of this overwhelmingly peaceful landscape.

Field observations confirm that although the site is characterised by the traditional hedgebanks that support many established trees, the context of the site is heavily influenced by the adjacent A40 and its busy junction with the A477. This is compounded by the traffic accessing the adjacent filling station and fast food outlets, which is close to the junction.

The Site

The site comprises two separate improved pastures that slope gently down towards Tenby Road. Traditional hedgebanks contain the southern field and these include many large trees. The northern field is contained by a less substantial boundary hedge to the north and west. The minor road that links St Clears with the nearby settlement of Pwll-trap is one field away to the north.

The adjacent development of a service station and food outlets is close enough to influence the character of the proposal site, as does the nearby busy road junction and hotel. The landscape associated with the service area also includes retained agricultural hedgebanks with mature trees and this character is perpetuated in the recently established structural landscape.

The SAB regulations require the establishment of a new 'water influenced' landscape within the established agricultural structure. This includes rain gardens close to the houses and larger swales in the wider area, along the eastern edge of the site. This arrangement is as a result of topography, yet within the site layout, it provides coherent amenity areas of a reasonable scale within the enclosure provided by the retained hedgerow structure.

is sustainable



Recently constructed and planted hedgebank at Heol Waun Saggard

G I Strategy

The GI strategy for the site follows the Stepwise Approach and DECCA as set out in Appendix A. This is in accordance with PPW6

The value of the established landscape structure is acknowledged and respected. The hedgebanks and trees will be retained and reinforced as appropriate.

The management proposals will combine the existing and proposed landscapes to achieve a valuable mosaic of complementary habitats that

02 Landscape Design

Landscape Design

The proposed layout creates a series of residential roads (cul de sacs) each accessed from a central road that links to Tenby Road via the existing road that serves the service station and fast food outlets to the south (Heol Waun Saggard). The existing hedgebanks, together with the established trees and hedges that contain and define the site will be retained except for a short length of hedge where the main spine road will connect the two fields and part of the hedgerow to the east of this point.

The housing proposed comprises 115 units within 71 buildings, a combination of detached and semi-detached houses and a small number of terraces of 3. All of the houses will have fenced rear gardens, the front gardens being a more 'open' arrangement, comprising parking bays, extensive attenuation 'rain' gardens, lawns, and small areas of amenity planting and street trees where drainage arrangements allow. Knee rails will prevent pedestrian access to the rain gardens and where appropriate, ball topped railings and some timber fencing will provide containment and privacy.

Where the fenced rear gardens extend towards the hedgerows and hedgebanks, access will be retained via narrow maintenance corridors. Management of the hedgerows will comprise trimming and some coppicing. Succession planting will ensure a sustainable future for these important features.

There will be amenity areas around the site, including two Local Areas for Play (LAP). More typically, the amenity space will be remnants of the agricultural fields at the edges of the access roads, seen against the backdrop of the retained boundary hedgerows. These areas are most extensive along the eastern edge of the development, where three attenuation basins are proposed, two in the northern field and a single large feature in the southern field. The area around these basins constitutes a significant green infrastructure asset in this part of the site. Oak dominated tree planting is proposed around the attenuation ponds and differential mowing of the grassland will provide informal recreation access routes for residents and generate biodiversity benefit, particularly at the interface between the 'rougher' grassland and the attenuation basins and along the hedgerows. Small community orchards are proposed. These will provide blossom and fruit and will encourage community interaction with the environment.



Drainage and Rain Gardens 03

Drainage and rain gardens

The SAB regulations require that large parts of the site are given over to wetland areas and rain gardens in order that runoff from the development is retained on site. This will generate a wide range of habitats that will help define the character of the new landscape, including the appearance and setting of the houses and in the amenity areas, particularly in the east as described above. This will increase the biodiversity of the site, allowing wildlife to colonise what is currently relatively denuded semi-improved pasture.

The rain gardens occupy much of the area between the roads and the fronts of the houses. Street trees will therefore often be situated within these features. These areas will also support low-growing damp-tolerant species that will attract wildlife. Away from the houses, the attenuation swales can accommodate trees and this provides opportunities to develop a more diverse landscape structure that will complement the retained hedgerows and wider landscape structure.

The planting of the Swale/Rain Garden areas will aim to maximise biodiversity offering a protective habitat for birds and small mammals, nectar for insects and bees, and food plants for moths and butterflies and will comprise mainly grasses and perennials.

The swales will form attractive features with a naturalistic profile and a grassy 'wetland' seed mix to the base. Some small shrubs on the upper slopes will add height, structure and visual interest and provide a transition into the more enclosed surrounding landscape.

Proposed species include;

- Cornus alba 'Siberica', (1+1 Bare root)
- Cornus 'Midwinter Fire' (1+1 Bare root)
- Viburnum opulus

Areas of native marginal species to include moisture tolerant ferns, grasses and herbaceous plants (container grown) to include:

- Filipendula ulmaria (meadowsweet),
- Athyrium filix femina,
- Caltha pulastris,
- Carex pendula,
- Carex riparia,
- Dryopteris filix mas,
- Lythrum salicaria,
- Lysimachia vulgaris,
- Iris pseudocorus,
- Osmunda regalis,
- Primula veris,
- Dryopteris dilatata







Attenuation basin

04 Tree Planting

Tree planting

Trees will provide structure within the space, screening and containing built elements and reducing the impression of the extent of the development. All the tree species proposed will provide visual interest, shade and will contribute to biodiversity and Green Infrastructure.

The species proposed can be split into three groups;

Tree type 1 - Proposed native woodland trees

Native species primarily intended to reinforce and enrich the established landscape structure and provide habitat for wildlife. Proposed trees to be 14-16cm girth, species to include:

- Acer campestre
- Alnus glutinosa
- Betula pendula
- Betula pubescens
- Quercus robur

Tree type 2 - Proposed street trees

Distinctive specimens, known for their appearance, primarily intended to provide structure, and amenity (decorative trees) to streets. Proposed trees to be 16-18cm girth, species to include:

- Acer platanoides
- Prunus avium 'Plena'
- Pyrus 'Chanticleer'
- Quercus robur
- Sorbus aucuparia

Tree type 3 - Community orchard trees

Decorative, small-growing fruiting species planted in community orchards. Proposed trees to be 14-16cm girth, species to include:

- Malus domestica Discovery
- Prunus domestica 'Victoria' -
- Pyrus communis 'Conference'











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Acer platanoides

Acer campestre

Alnus glutinosa Betula pendula

Key

Betula pubescens Malus domestica

Existing tree/hedgerow

Discovery

Prunus avium 'Plena'

Pyrus 'Chanticleer' Quercus robur







Pyrus communis 'Conference'



Prunus domestica 'Victoria'

Front Gardens 05

Front gardens

Front gardens are proposed through much of the site, providing residents with some private space between the streetscape and dwellings. This space will often be a narrow strip of 'private' space between the parking bays and the houses, much of the space being given over to rain gardens, which will be very influential in setting the visual character of the development.

The front gardens will consist of:

Hedge planting

Some short lengths of 'native' hedgerow are proposed. These will create a separation between some of the properties and define boundaries where appropriate. These hedges will comprise of (non-thorny) native species and will contribute to the Green Infrastructure of the site and wider area by making or repairing connections.

Areas of lawn

Larger plots with more generous front gardens will have small areas of mown grass.

Ornamental planting

A modest amount of ornamental planting and groundcover is proposed in small areas at the margins of pavements, houses and parking areas. These areas will require limited maintenance but will provide a range of heights and textures and will include flowering and berry-bearing species. The food source and structure provided by these features will support birdlife.

Proposed front garden









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Acer campestre

Corylus avellana

Crataegus monogyna

Euonymus europeus lex aquifolium











Viburnum opulus

Ornamental planting

Ornamental planting (including larger specimens at prime locations) to be container grown, planted into soil with complete mulch cover, 75mm deep to include:

Dryopteris filix-mas Ceanothus thyrsiflorus repens Cornus 'Midwinter Fire' Lavandula angustifolia Hebe rakiensis Bergenia 'Silberlicht' Hydrangea paniculata Stipa tenuissima Echinacea purpurea 'White Swan' Rosa pimpenellifolia Pachysandra terminalis Skimmia japonica 'Rubella'



Dryopteris filix-mas



Cornus 'Midwinter Fire'



Hebe rakiensis



Bergenia 'Silberlicht'



Hydrangea paniculata



Echinacea purpurea 'White Swan'



Rosa pimpinellifolia



Pachysandra terminalis







Lavandula angustifolia



Stipa tenuissima



Skimmia japonica rubella

06 Marginal Areas and Biodiversity

Landscape Management

The proposals for the site include the establishment and development through management of more biodiverse landscapes than can be found in the existing improved pasture. The appropriate management of the new drainage and amenity areas together with care of the existing retained features will ensure that this increased biodiversity is linked to the wider landscape.

Grassland habitats

Close mown amenity grass areas are generally limited to path and road edges and to the amenity area in the east of the site, with paths mown around the attenuation basins for informal recreational access.

The remaining grassland areas, around the attenuation basins and against the existing 'internal' hedgerow and those around the site boundary will be managed as a traditional hay meadow (constantly reducing fertility levels) to maximise floristic diversity over time.

Existing hedges and linear woodlands

The existing site perimeter hedges and hedgebanks and the 'internal' hedge that separates the two parts of the site will require considered management. Access is provided within the layout of the scheme, and this will allow annual trimming or periodic coppicing as appropriate.

Consideration must be given to succession planting if the hedgerow features are to maintain their important contribution to amenity and biodiversity and to the setting of the residential development. Some tree planting will be included in the initial scheme and the need for replacement or reinforcement planting should be reviewed regularly.



Existing trees/hedges

Wildflower meadow

Close mown amenity grass

Attenuation basin

- 1. Prune/manage trees in hedge bank.
- 2. Existing boundary and central hedges to be trimmed
- 3. Areas managed as additional hay meadows.
- 4. Close mown grass area
- 5. Proposed hedge









Coppicing

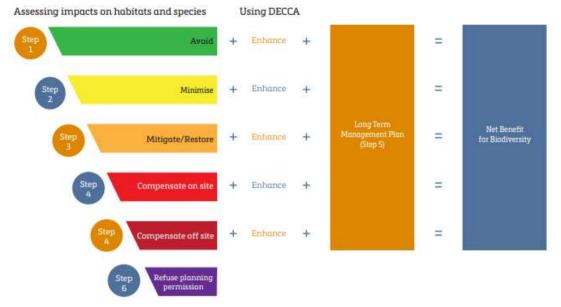
Grass mowing

Hedge trimming

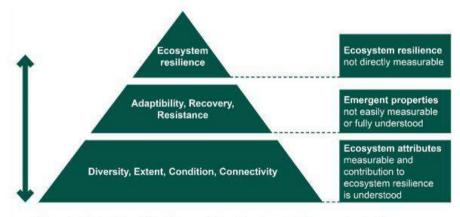
Grass areas will be managed as traditional hay meadows

Appendix 1: Stepwise Approach and DECCA

In accordance with the latest updated PPW Chapter 6, the stepwise approach has been followed in developing the GI Strategy and this is reflected in the GI Strategy.



Planning authorities must follow a **step-wise approach** to maintain and enhance biodiversity - adverse effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for – and secure the maintenance and enhancement of ecosystem resilience and resilient ecological networks by improving diversity, extent, condition, and connectivity i.e. the DECCA Framework.



Diversity, Extent, Condition, Connectivity, other Aspects of ecosystem resilience

Figure 1 DECCA framework showing the relationship between the attributes and the emergent properties of resilience (NRW).

Diversity attribute

Diversity matters at every level and scale, from genes to species, and from habitats to landscapes. It supports the complexity of ecosystem functions and the cascade of interactions that deliver services and benefits, so diversity is important for enhancing the capacity of the whole system to adapt to future change. There are three measurable components of diversity: genetic characteristics, species and habitats. These diversity assessments draw on species and habitat data because NRW does not routinely collect genetic evidence.

Extent attribute

The size of an ecosystem will affect its capacity to adapt, recover or resist disturbance. Fewer species can survive in a smaller patch, and the demography of species is altered when habitat is lost, leading to species loss and ecosystem decay. Size also determines resilience in the face of extreme events. Smaller units are at higher risk of random extinction due to catastrophic events, for example, extreme drought, storm, major pollution incident, fire, disease outbreak.

Condition attribute

The condition of an ecosystem is investigated by collating evidence about both the biotic (biological) and abiotic (environmental) factors associated with a habitat or species. For example, biotic data could be collected about the presence, abundance, structure, function and range of habitats and species. Abiotic data relating to the status of environmental conditions relevant to the habitat or species could also be sampled, for example, water, soil and air quality. The condition of habitats is affected by multiple and complex pressures acting both as short term "pulse" and longer term "press" types of disturbance that affect the resilience of ecological communities and their capacity to resist, persist or recover.

Connectivity attribute

Connectivity refers to the links between and within habitats, which may take the form of corridors, stepping stones or patches of the same or related vegetation types. Environmental factors such as geology, soil type or hydrological links affect sea / landscape connectivity. For any given species, connectivity is related to the relative distance that species can move to feed, breed and complete lifecycles that may need different environments. Connectivity is a major driver for spatial variation which affects diversity and the abundance of living organisms.

Adaptability, recovery and resistance to change are aspects of resilience Ecosystem resilience is thought to be an emergent property of these four attributes, and may appear in three different ways, or aspects: adaptability, resistance, or recovery to/from disturbance. Adaptability was previously (e.g. in SoNaRR2016) listed as an attribute of resilience, but recent work has clarified the relationships of these terms, as shown in Figure 1.

Summarised as follows

- **D** Diversity between and within ecosystems
- E Extent and scale of ecosystems
- **C** Connectivity between and within ecosystems
- **C** Condition of ecosystems including their structure and functioning; and
- **A** Adaptability to change of ecosystems

DECCA, or Diversity, Extent, Condition, Connectivity and other Aspect of ecosystem resilience, is used as an acronym to refer to this framework of ecosystem resilience. DECCA can be applied to environmental processes at different scales, habitats and land uses. This recognition of interconnectivity makes an approach based on resilience different to the traditional, more reactive responses in the management of natural resources. These attributes have been used for decades to guide the design of networks of marine protected areas in order to contribute to the overall health and resilience of the marine environment.



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