tir collective
LANDSCAPE ARCHITECTS

Land at Lluest y Bryn, Carmarthen
Green Infrastructure Statement

August 2024

This **Green Infrastructure Statement** has been prepared by:

Based on the development proposals designed by Roberts Limbrick:

with ecology input by Wyndrush Wild (formerly Matt Sutton Ecology):

On behalf of:

With input from:

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Contents

01 Introduction

Scope

Tir Collective is instructed by Obsidian to prepare this **Green Infrastructure Statement** which relates to a proposed residential development at Lluest Y Bryn, Carmarthen. The grid reference is SN415210 **(Figure 1)**. The site is located on the north-eastern side of Carmarthen, between Springfield Gardens, Parc-yr-Onen and Lluest-y-Bryn.

The Site

The proposed site comprises two fields on the north-eastern side of Carmarthen, sloping gently with a south-west to northerly aspect. They are surrounded by existing housing on all sides.

The southern boundary is defined by garden boundary fencing and hedging for houses along Lluest-y-Bryn and Parc-yr-Onen. The western boundary is defined by garden boundary fencing and hedging for houses along Springfield Road. At the northern boundary, a highway boundary hedge along Springfield Road defines the site boundary. The northern east boundary is defined by garden boundary fencing and hedging for houses along Llwyn Meredydd and an area of scrubby woodland in the northeast corner, see **Figure 1**.

The proposed development is in close proximity to the North Carmarthen Conservation Area. There is a public right of way running through the site linking the conservation area to the south with the public footpath network and rural area to the north.

Figure 1: The Site

Ecology

The Preliminary Ecology Assessment (PEA) prepared by Wyndrush Wild confirms that "*The application area comprises one main habitat type: poor semi-improved grassland (B4) with extensive areas of recently cleared bracken and bramble scrub. There is a small area of dense scrub (A2.1) remaining in one corner. The site is bounded by hedgerows: intact species-poor (J2.1.2) and hedge with trees (J2.3.2). There are no watercourses on or adjoining the site*".

"*Several invasive non-native species are present in small quantity..A few bushes of Himalayan cotoneaster occur alongside the footpath which bisects the site, mostly in the northern half of this. Variegated yellow archangel was found near the eastern boundary of the site. These two species are listed on Schedule 9 of the Wildlife and Countryside act, and it is illegal to plant them or otherwise cause them to grow in the wild*".

Arboriculture

The Tree Survey prepared by Treescene confirms that there are 46 individual trees, tree groups and hedgerows located around the boundary of the site. Species include a mix of native and non-native, and range from Grade A to U. The highest value trees at the site (Grade A) are Oak (Quercus robur) and Beech (Fagus sylvatica). A number of the Ash (Fraxinus excelsior) identified by the survey are "exhibiting advanced symptoms of Ash Dieback Disease".

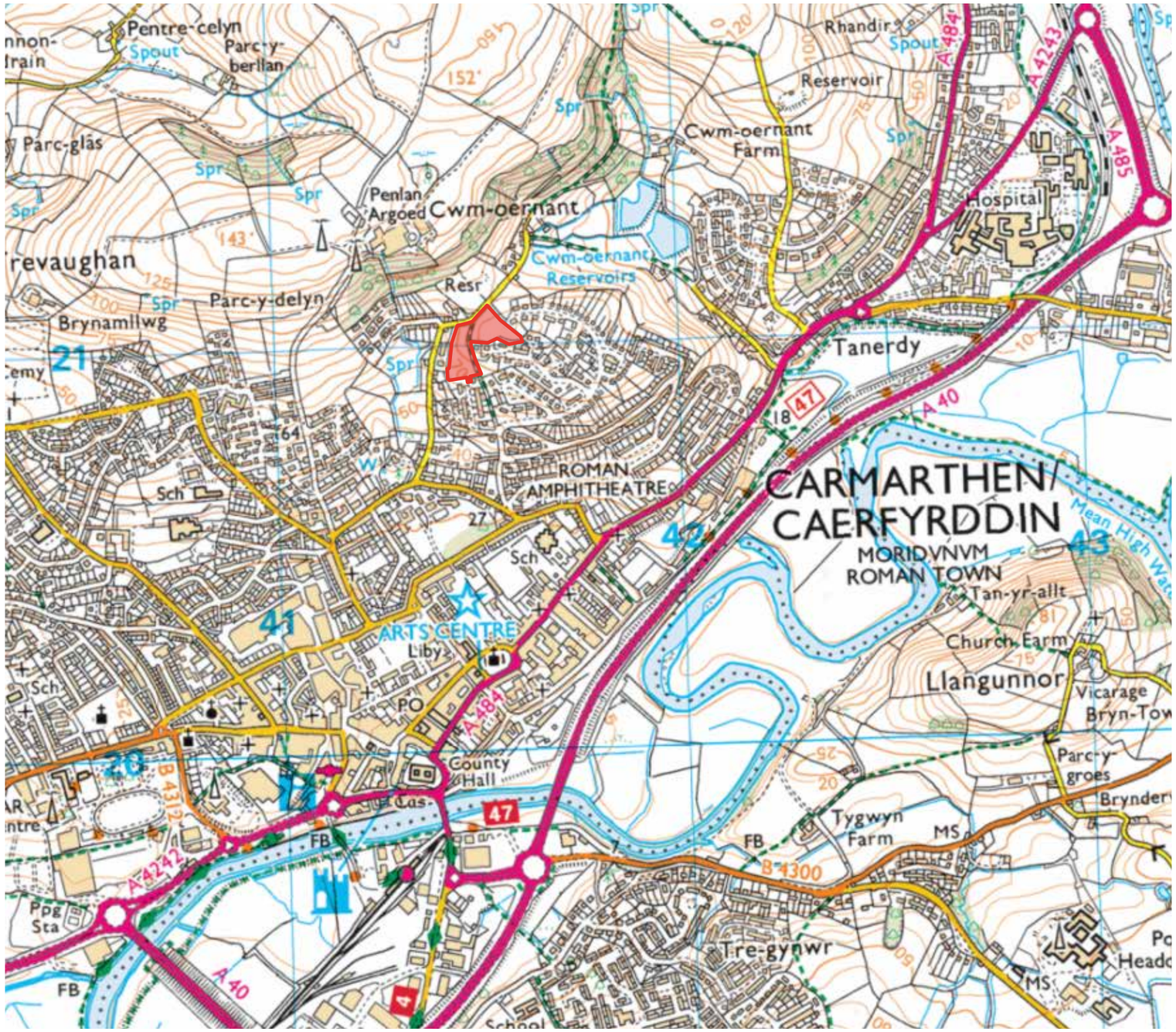


Figure 2: Site Context (OS Explorer map from Bing)

02 Policy Context

Wales Legislation

Well-being of Future Generations (Wales) Act 2015

The Act requires public bodies to carry out **sustainable development**. Sustainable development principle is "*the process of improving the economic, social, environmental and cultural well-being of Wales*." The principle is made up of five ways of working, including **looking to the long-term**; taking an **integrated approach**; involving a **diversity** of the population; **working collaboratively**; and **preventing issues**.

It sets out seven well-being goals including resilience and being globally responsible.

Environment (Wales) Act 2016

The Act is intended to work alongside the Well-being of Future Generations Act. It included a new biodiversity duty to **reverse the decline of biodiversity and to secure long-term resilience**.

Section 6 states *"A public authority **must seek to maintain and enhance biodiversity… and in so doing promote the resilience of ecosystems**". In relation to resilience of ecosystems, the following "must be taken into account:*

(a) diversity between and within ecosystems;

(b) the connections between and within ecosystems;

(c) the scale of ecosystems;

(d) the condition of ecosystems (including their structure and functioning);

(e) the adaptability of ecosystems."

The seven well-being goals from Well-being of Future Generations (Wales) Act, 2015

National Planning Policy

Future Wales: The National Plan

The plan provides a strategy for addressing key national priorities through the planning system, including achieving climate-resilience, developing strong ecosystems and improving the health and well-being of our communities. It also embeds the principles of the Well-being of Future Generations (Wales) Act 2015.

The key policy in relation biodiversity and green infrastructure is **Policy 9 – Resilient Ecological Networks and Green Infrastructure**. It states, "*action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment.*"

Planning policy Wales (PPW)

PPW aims to contribute towards the delivery of sustainable development, embedding the principles of the Well-being of Future Generations (Wales) Act 2015. PPW ingrains Placemaking Wales Charter and how sustainable development can be achieved through implementing placemaking.

Section 6.2 sets out **green infrastructure** should be given early consideration in development proposals and how it should be integrated into developments.

- **Paragraph 6.2.12** states " 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… The green infrastructure statement will be an effective way of demonstrating **positive multi-functional outcomes** which are appropriate to the site in question and must be used for demonstrating how the **step-wise approach has been applied**."

- **Paragraph 6.2.14** states “Development proposals should be informed by the priorities identified in green infrastructure assessments and locally based planning guidance. The **Building with Nature standards** represent good practice and are an effective prompt for developers to **improve the quality of their schemes and demonstrate the sustainable management of natural resources**."

Section 6.4 describes **biodiversity and ecological networks** and provides a summary of the **Step-Wise Approach** and how it should be used to "**maintain and enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity** by ensuring that any adverse environmental effects are firstly avoided, then minimised, mitigated, and as a last resort compensated for."[1] **Paragraph 6.4.12** states "providing evidence in the Green Infrastructure Statement that the step-wise approach has been followed, a scheme of enhancements must be provided to ensure a **net benefit for biodiversity**."

1 Paragraph 6.4.11, Planning Policy Wales Edition 12, February 2024

In relation to **trees, woodland and hedgerows, paragraph 6.4.37** sets out their importance for biodiversity and “connecting habitats for resilient ecological networks and make an essential wider contribution to landscape character, culture, heritage and sense of place…”

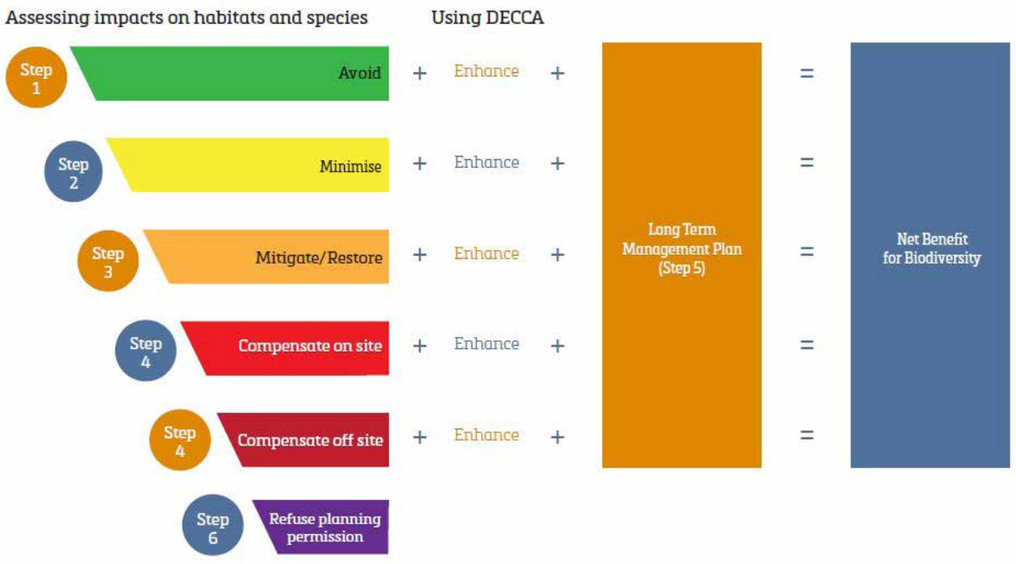
The **planting of new trees, hedgerows, groups of trees and areas of woodland** should be promoted as part of new development. Existing trees/ groups of trees, hedgerows and areas of woodland must be protected "where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial green infrastructure function.”[1]

1 Paragraph 6.4.39 Planning Policy Wales Edition 12, February 2024

In relation to the permanent removal of trees, woodland and hedgerows, it "will only be permitted where it would achieve significant and clearly defined public benefits."[2] The step-wise approach must also be followed. Where loss is unavoidable, PPW sets out the requirements of replacement planting, which "shall be at a ratio equivalent to the quality, environmental and ecological importance of the tree(s) lost and this must be preferably onsite, or immediately adjacent to the site, and at a minimum ratio of at least 3 trees of a similar type and compensatory size planted for every 1 lost.”[3]

Finally, in relation to **SuDS,** paragraph 6.6.18 states "The provision of SuDS must be considered as an **integral part of the design of new development** and considered at the earliest possible stage when formulating proposals for new development.” Paragraph 6.6.19 goes on to state “Design for multiple benefits and green infrastructure should be secured wherever possible…”[4]

2 Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024
3 Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024
4 Paragraph 6.6.19 Planning Policy Wales Edition 12, February 2024



The Step-Wise Approach from PPW Edition 12, Chapter 6

Local Planning Policy

Carmarthenshire Local Development Plan 2006 - 2021

The current Carmarthenshire County Council Local Development Plan was adopted on the 10th December 2014 and identifies where new developments such as housing, employment, community facilities, and roads, will go. It provides a framework for local decision-making and brings together both development and conservation interests to ensure that any changes in the use of land are coherent and provides maximum benefits to the community.

In relation to green infrastructure, the following policies apply:

- EQ4 Biodiversity
- EQ5 Corridors, networks and features of distinctiveness
- EP3 Sustainable drainage
- GP1 Sustainability and high quality design
- REC3 Proposed new open space
- SC1 Sustainable communities
- SP1 Sustainable places and spaces
- TR4 Cycling and walking

Carmarthenshire's Green and Blue Infrastructure Assessment (Technical Report)

The purpose of the Green and Blue Infrastructure (GBI) Assessment by Carmarthenshire County Council is to "inform the development and implementation of the 2nd Deposit revised Local Development Plan (rLDP) 2018-2033."

The document sits alongside other assessments including the Integrated Sustainability Appraisal and Public Open Space Assessment which together fosters an inclusive and transparent process when developing associated land management policies.

The GBI Assessment discusses the benefits that GBI can provide across several themes including:

Health & Well-being

"...spending time in and around nature provides protection against a range of diseases, including depression, diabetes,

obesity... other research has shown that people are more active if they live within attractive and inspiring natural environments."

Sense of Place

"GBI can make a positive contribution to improving quality and sense of place... Multifunctional GBI situated close to places where people live, socialise, and work, has been shown to be strategically important for quality of life".

Social Cohesion

"Quality greenspaces can positively impact several key social indicators... street trees and accessible greenspace have been shown to make neighbourhoods more attractive, relaxing, comfortable, and welcoming."

Economy

"Protecting and investing in GBI can support economic and sustainable growth."

Biodiversity

"One of the primary drivers of habitat and species loss is unsustainable land use...the protection of existing and provision of new or improved habitats through GBI can provide important refuges for wildlife... GBI can improve connectivity between existing areas of nature... and increase ecological resilience. SuDS can improve water quality... even small green patches have a potential to benefit movement of biodiversity."

Climate Change

"In both urban and rural areas, it is important to recognise how land can affect the rate of carbon emissions and the incidence of flooding. GBI will play an increasingly important role in increasing climate resilience within our towns and villages. Increasing the surface area of green cover can provide a number of benefits towards tackling climate change."

Guidance

Placemaking Wales Charter

The **Placemaking Wales Charter** has been developed by Welsh Government and the Design Commission for Wales in collaboration with the Placemaking Wales Partnership. The charter outlines six placemaking principles that cover the range of considerations that contribute to establishing and maintaining good places.

Landscape Institute Green Infrastructure: An integrated Approach, 2013

The document defines **Green Infrastructure** (GI) as "*the **network of natural and semi-natural features, green spaces**, rivers and lakes… It is a natural, service-providing infrastructure that is often more cost-effective, **more resilient and more capable of meeting** social, **environmental** and economic **objectives**…*"

The Landscape Institute recommends "*local authorities ensure that GI is a core requirement in their policy documents*" and "*developers be aware of an area's strategic GI goals and appreciate how those goals contribute to mitigating the environmental impacts of new development and creating beautiful places*." The **Placemaking Wales Charter** has been developed by Welsh Government and the Design Commission for Wales in collaboration with the Placemaking Wales Partnership. The charter outlines six placemaking principles that cover the range of considerations that contribute to establishing and maintaining good places.

Well designed, maintained and connected green infrastructure is an essential component of good placemaking. The design of the proposed development should focus on well connected GI with multi-functionality to maximise the benefits to residents and the environment.

Building with Nature Standards

The **Building with Nature Standards** Framework 2.0 involves twelve Standards, arranged across four groups. There are six Core Standards and three themes, Wellbeing, Water and Wildlife, containing two Standards in each.

The six Core Standards underpin the delivery of high-quality green infrastructure through design, planning and development. The Standards in the Wellbeing, Water and Wildlife themes build on this to target specific aspects:

CORE Standards

Standard 1 Optimises Multi functionality and Connectivity
Standard 2 Positively Responds to the Climate Emergency
Standard 3 Maximises Environmental Net Gains
Standard 4 Champions a Context Driven Approach
Standard 5 Creates Distinctive Places
Standard 6 Secures Effective Place-keeping

WELLBEING Standards

Standard 7 Brings Nature Closer to People
Standard 8 Supports Equitable and Inclusive Places

WATER Standards

Standard 9 Delivers Climate Resilient Water Management
Standard 10 Brings Water Closer to People

WILDLIFE Standards

Standard 11 Delivers Wildlife Enhancement
Standard 12 Underpins Nature's Recovery

03 Existing Green Infrastructure

Desktop studies and field surveys have been carried out to confirm the green infrastructure features at the site and its surrounding context. The elements that are considered to form the existing Green Infrastructure of the site and surrounding context are:

- Trees and vegetation
- Habitat of ecological value
- Public Rights of Way
- Public Open Space
- Residential gardens

The GBI elements are described in the following sections, identifying and assessing existing or potentially important habitats or species and ecological connectivity corridors. This has been informed by the desktop studies, field surveys and specialist surveys / reports. It confirms the GI elements that inform the first two stages of the Stepwise approach, which are **Step 1: Avoid** and **Step 2: Minimise.**

Figure 3: Oblique View from Google Earth

Trees and vegetation

An Arboricultural Report was undertaken by Treescene in April 2024. The surveys followed the methodology as set out in the British Standard 5837:2012.

The overall findings of the report notes that the site is bordered to the north and south by outgrown hedgerows of predominantly hawthorn (*Crataegus monogyna*) with some domestic species such as privet (*Ligustrum ovalifolium*), leylandii (X *Cupressocyparis leylandii*) and *Escallonia*. A small, wooded area to the north-east of the grazing fields has also been included in this survey. This woodland area is predominantly wych elm (*Ulmus glabra*) with a small amount of common oak (*Quercus robur*) and an understory of common hawthorn (*Crataegus monogyna*), common holly (*Ilex aquifolium*) and coppiced hazel (*Corylus avellana*).

Thirty eight individual trees, eleven hedgerows and nineteen groups of trees were recorded with species as listed in the table below:

Common Name	Botanical Name	Number of Trees
Groups	Holly/ hawthorn/ leylandii	2
Hedgerows	Mixed	3
Common Oak	Quercus robur	10
Sycamore	Acer pseudoplatanus	3
Hornbeam	Carpinus betulus	1
Cypress	Cupressus sp.	1
Leyland Cypress	X Cupressocyparis leylandii	1
Ash	Fraxinus excelsior	2
Larch	Larix sp.	1
Holly	Ilex aquifolium	1
Laburnum	Laburnum anagyroides	2
Beech	Fagus sylvatica	2

The survey identified 5 trees identified as **Category A**, which are **T29** (Beech) and **T25, T28, T33, T48** (Common Oak). There are 9 trees identified as **Category B**, which are **T4** (Hornbeam), **T10, T20** (Sycamore) and **T24, T27, T32, T35, T36** (Common Oak) and **T37** (Holly). There are 5 trees identified as **Category C,** which are **T19, T21** (Laburnum), **T20** (Sycamore), **T22** (Smooth Arizona Cypress), **T26** (Beech). There are 3 trees identified as Category U, which are **T12, T34** (Ash), **T31** (Common Oak), The remaining groups were identified as **Category B, C and U.**

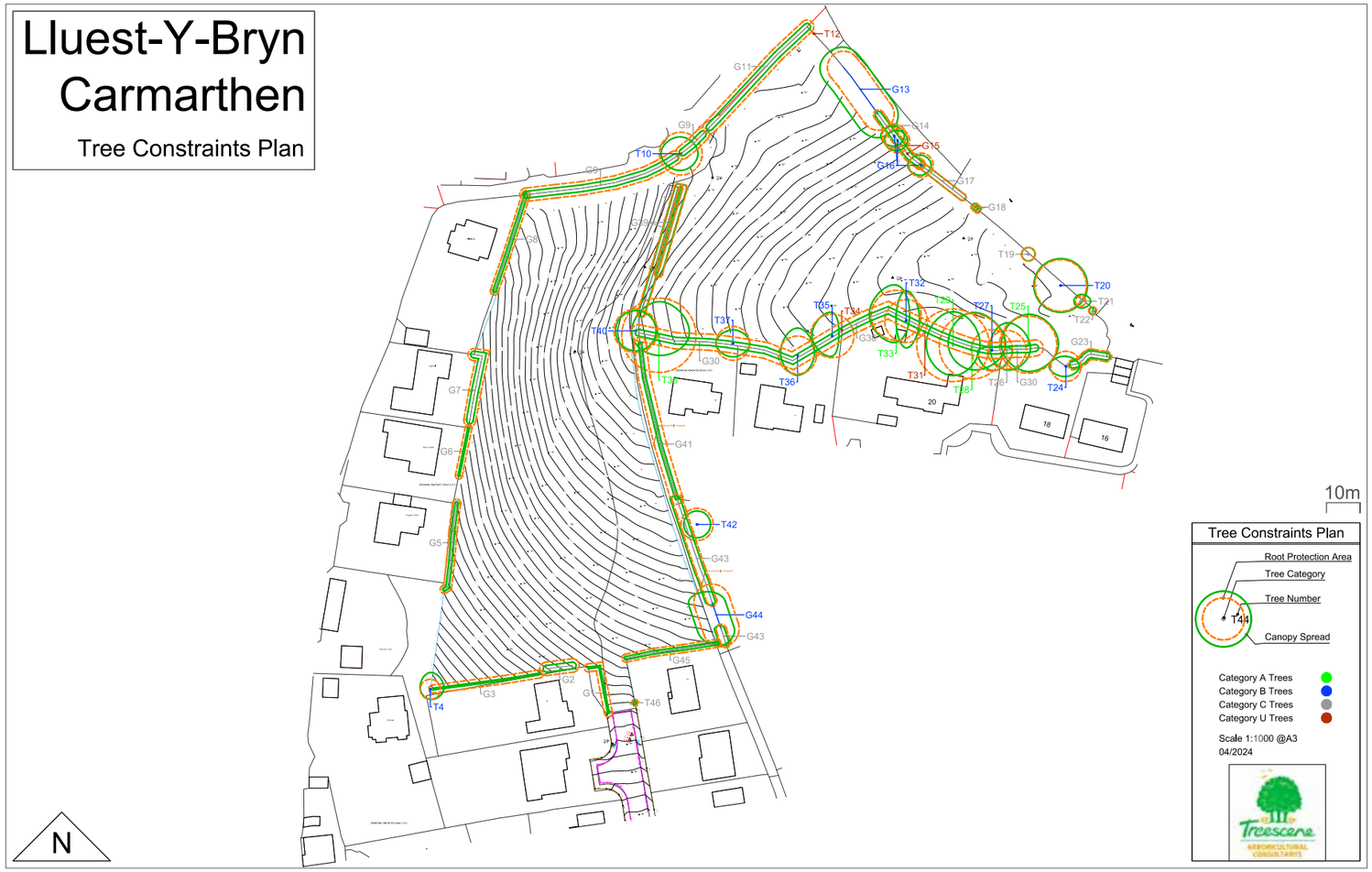


Figure 4: Tree Constraints Plan (by Treescene)

Habitat of ecological value

A Preliminary Ecological Assessment (PEA) was undertaken in November 2023 by Wyndrush Wild. The PEA provides identification of any designations within the site and its context. The PEA also seeks to identify any protected habitats and species within the site. This is a reflection of Stepwise Approach **Step 1: Avoid** and **Step 2: Minimise**.

The main habitat at the site is poor semi-improved grassland (B4) with extensive areas of bracken and bramble scrub. There is a small area of dense scrub (A2.1) remaining in one corner. The site is bounded by hedgerows: intact species-poor (J2.1.2) and hedge with trees (J2.3.2). There are no watercourses on or adjoining the site.

Both fields have areas of coarse grassland dominated by Yorkshire fog, false oat-grass and cock's-foot. Accompanying species include ribwort plantain, ragwort, hogweed, common sorrel and lesser knapweed. In the National Vegetation Classification, this corresponds to a species-poor form of Arrhenatherum elatius grassland (MG1). The rather species-poor grassland here is of only minor ecological interest, but is know to support reptile populations.

The field boundaries against gardens on the western side of the site are ornamental hedges with Leyland's cypress and garden privet the two main species. The roadside boundary to the north of both fields is a managed but bushy hedge with grey willow, hazel and sycamore the dominant species. The southern boundary of the eastern field has a line of established trees, predominantly oak, ash and holly but with some beech, sycamore, blackthorn and grey willow. The eastern side of this field is partly a low, managed beech hedge on a garden boundary, but this gives way to another mature tree line in the northern part.

The native hedges, particularly those with mature trees, are of some local ecological significance. None appear to be species-rich to the extent required to quality as important hedgerows under the Hedgerow Regulations.

While a bat survey has not was carried out. The mature trees around the boundaries were inspected visually using binoculars from ground level, to ascertain whether potential bat roost features were present. Most trees are too young to have developed cavities or dense, thick-stemmed ivy cover but a single ash tree in the south-eastern part of the site was classed as having moderate potential due to the presence of several cracks and small cavities on the dead or dying trunks. The grassland and scrub may be used by foraging bats, and the hedgerows will provide feeding and commuting corridors.

No badger setts, latrines or signs of foraging were found on the site. The development will not affect badgers.

The grassland is of little value to birds. The hedges provide potential nesting habitat and the bramble areas are likely to provide habitat for birds too.

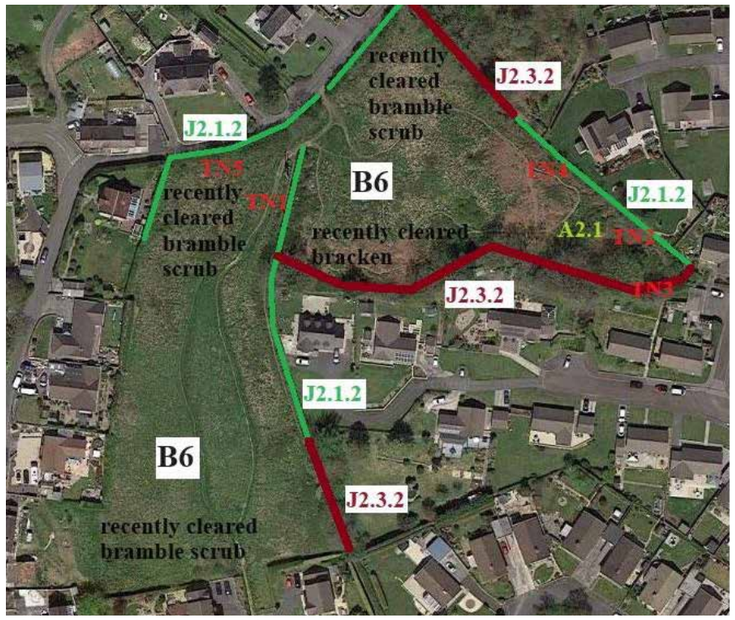


Figure 5: Phase I Habitat Map (prepared by Wyndrush Wild)

Key

- TN1: Himalayan Cotoneaster
- TN2: Giant Montbretia
- TN3: Ash tree with moderate potential for roosting bats
- TN4: Variegated Yellow Archangel
- TN5: Billard's Bridewort

The native hedgerows offer some habitat suitability for hazel dormouse, although the location of the site within a relatively urban area with associated human disturbance reduces the likelihood of their occurrence. Dormice occur 2km away to the southeast of Carmarthen, but survey work has failed to reveal populations to the north or west of the town.

Several invasive non-native species are present in small quantity, and the locations of these are indicated on **Figure 5**. A few bushes of Himalayan cotoneaster occur alongside the footpath which bisects the site, mostly in the northern half of this. Variegated yellow archangel was found near the eastern boundary of the site. These two species are listed on Schedule 9 of the Wildlife and Countryside act, and it is illegal to plant them or otherwise cause them to grow in the wild. Three other potentially invasive non-native species were recorded – a sapling of Billard's bridewort near the northern edge of the western field, a clump of giant montbretia on the eastern boundary bank and some buddleia just outside of the site to the south-west.

Recommendations for mitigation include:

- Works to hedgerows or any other movement or trimming of woody vegetation should be carried out outside the main bird breeding season (start of March to end of August).
- Any substantive work to or removal of the native hedges may require a further assessment with regards to the potential presence of hazel dormouse.
- Landscaping associated with the development should avoid introducing further invasive or potentially-invasive non-native species to the site. Sourced locally-native species should be favoured.

Enhancements for Biodiversity Net Benefit include:

- The development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.
- Native species of trees can be accommodated.
- Bat roost features, and bird nesting boxes for species such as swift could be added to buildings.

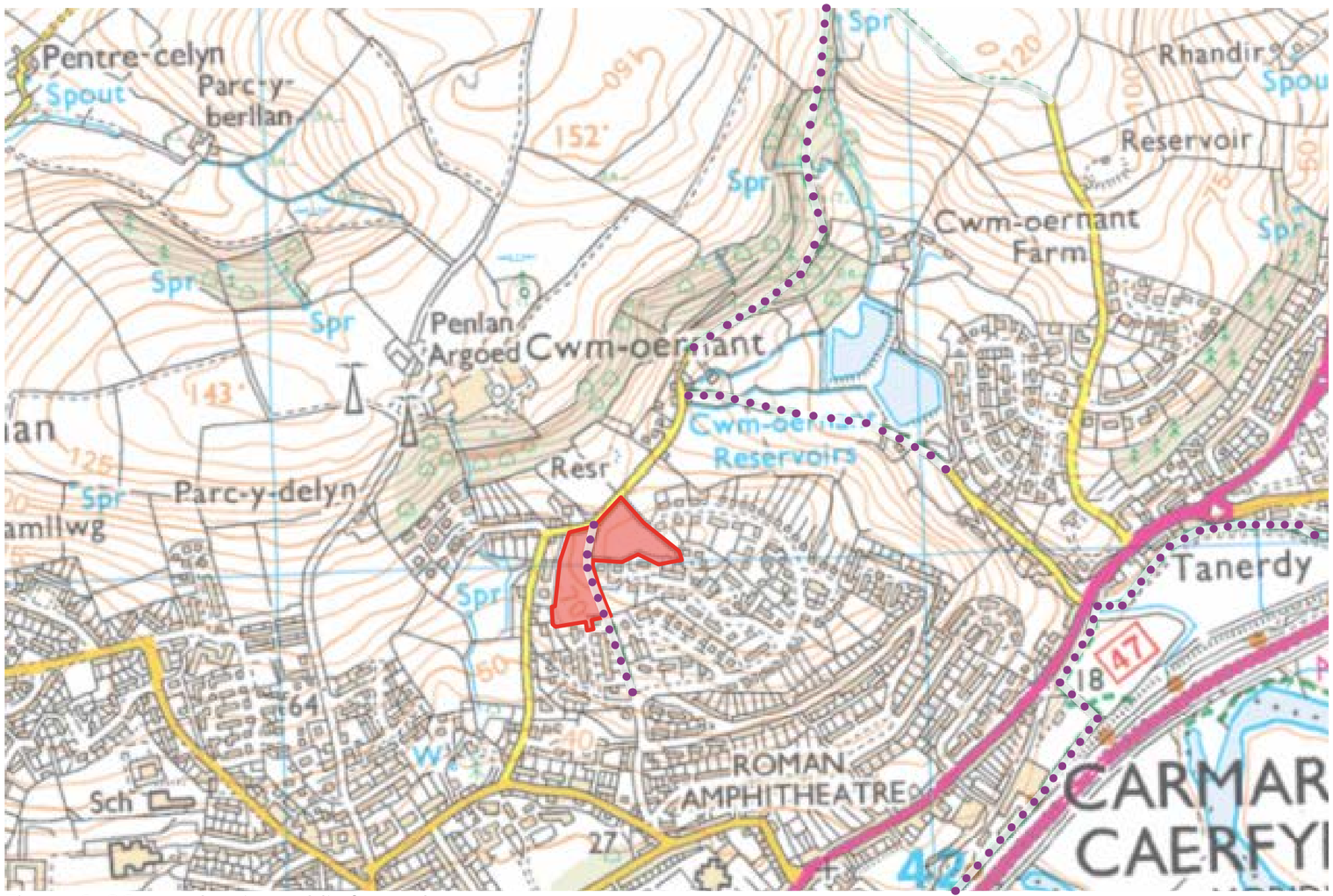


Figure 6: OS map showing public footpaths

Public Rights of Way

There is a public footpaths within the site; refer to **Figure 6**. This connects, via minor roads, to the wider network of footpaths. The network of paths facilitates access to green infrastructure and the wider countryside.

Public Open Space

Public open space makes an important contribution to green infrastructure. Within the context of the site the green spaces are typically incidental spaces along the residential streets.

Residential gardens

The southern, western and eastern boundary of the site is defined by the rear gardens of adjacent properties. It includes a mix of gappy hedgerows, scattered trees and fencing. The rear gardens surrounding the site contribute to the green infrastructure of the neighbourhood, provide some amenity grass, hedges, shrubs and trees, including occasional mature trees to the road frontages.

04 Landscape Strategy

The Landscape Concept for the proposed development is illustrated at **Figure 7**. It is guided by the following **five concept themes** which are illustrated over the following pages. These are:

- Connected Landscape
- Biodiverse Landscape
- Sustainable Landscape
- Hands on Landscape
- Active Landscape

The landscape concept themes have defined the approach to the green infrastructure and open space strategy, which follows the **six placemaking principles** from the Wales Placemaking Charter through a landscape strategy which responds to the character of the site.

Theme	Aim
Connected Landscape	• Development to be connected to existing neighbourhoods, providing opportunities for social interaction and civic participation • Strengthening routes to open space, play opportunities and other community assets • Connect networks of green and blue infrastructure
Biodiverse Landscape	• Working with nature • Landscape to create green streets and spaces that protect and enrich habitats and biodiversity • Wildlife friendly neighbourhoods • Streets should be people places, highly vegetated and attractive
Sustainable Landscape	• Resilient to a changing climate • Landscape strategy to be delivered using low-carbon materials and build methods • SuDS to be an integral part of the design • Promote walking and cycling
Hands on Landscape	• Opportunities for food growing or foraging should be explored with fruit trees planted on site. • Residents should feel valued and proud of neighbourhoods. • Support people's health and wellbeing by bringing them into contact with the natural environment.
Active Landscape	• Child friendly neighbourhoods • Provide opportunities for formal and incidental play • Support people's health and wellbeing by bringing them into contact with the natural environment

Figure 7: Landscape Concept

Multi-functionality

- Connect networks of green and blue infrastructure provide a which encourages walking (**Active Landscape**), SuDS (**Sustainable Landscape**), and improve biodiversity (**Biodiverse Landscape**)
- Improved connectivity offers opportunities for social interaction (**Hands on Landscape**)



- A nature focused landscape strategy will be easier to maintain and require less resources to do so (**Sustainable Landscape**).
- More biodiversity will improve the connection between residents and nature (**Active Landscape**), (**Hands on Landscape**)



- A nature focused landscape strategy will be easier to maintain and require less resources to do so (**Biodiverse Landscape**).
- Increasing green infrastructure will create more opportunities for nature (**Biodiverse Landscape**) and edible landscape (**Hands on Landscape**)




- Opportunities for foraging and growing food encourage movement and exercise (**Active Landscape**) while reducing food miles (**Sustainable Landscape**).
- Local involvement in conservation and landscape maintenance can provide a local focus on biodiversity (**Biodiverse Landscape**)




- Connect networks of green and blue infrastructure to provide a better setting for walking routes (**Active Landscape**), SuDS (**Sustainable Landscape**), and improve biodiversity (**Biodiverse Landscape**)
- Increasing interaction with the landscape through play/ exercise/growing food/ relaxation will foster community responsibility for the landscape (**Hands on Landscape**)



04 Landscape Strategy

Key

Planning Application boundary

Soft Landscape

Landscape planting will provide an overall positive impact on the biodiversity value of a site and the local area. Pollinator- friendly plants will be included in the landscape planting for insects.

Existing trees to be retained with Root Protection Area (RPA) shown as an orange dashed line

Existing trees to be removed

Existing vegetation to be removed

Proposed tree planting with diverse species with colourful foliage, seasonal interest, flowering and/or fruiting species

Proposed shrub and herbaceous planting comprised of native and non-native species

Raingardens planted with SuDS appropriate species

Native Structure Planting

Proposed species rich grass with reduced mowing frequency away from pedestrian routes

Proposed detention basin with species rich damp grassland

Proposed wildflower/annual grassland areas to encourage pollinators, provide biodiversity and amenity

Gravel trim around building for maintenance access

Figure 7: Landscape Proposals

Green Infrastructure Target Notes

1. Native Structure Planting to supplement existing retained hedgerows and scrub
2. Landscape planting will include native species of local provenance (zone 303 or 304) where possible to enhance the biodiversity value of a site and the local area
3. Pollinator friendly, local provenance seed mix used within SUDS areas
4. Reduced mowing frequency of grassland
5. Wildflower meadow created with local providence seed mix
6. Native shrub & tree planting to comprise holly (Ilex aquifolium), hazel (Corylus avellana), hawthorn (Cratageus monogyna), dogwood (Cornus sanguinea), elder (Sambucus nigra), guelder rose (Viburnum opulus), honeysuckle (Lonicera periclymenum) and dog rose (Rosa canina)

Scale @ A1 - 1:400

TC24234_L1-L5 v1.dwg 12 August 2024

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The planting strategy for Lluest y Bryn includes a variety of flowering and fruiting species which will provide contrast and year-round interest. Planting will include a combination of grasses, herbaceous plants and shrubs, located to define front gardens. Species-rich grass/ wildflowers will edge the green spaces for interest and to increase biodiversity. Tree planting will filter views between houses and also provide some shelter.

The incorporation of SuDS features throughout will increase the amenity and biodiversity value of the green spaces within the site. Swales and rain gardens will be planted with diverse planting.

The planting strategy includes native and ornamental species throughout. Specifically native mix are proposed for sections of hedgerows where there is sufficient space available. The native species chosen provide fruiting and flowering and also offer interest due to foliage colour.

Where plant material is used of native species, there is a preference for local provenance plants, which in this case would be seed source zone 303 or 304, as defined Forest Practice Note No. 8, titled Using Local Seed Sources for Planting Native Trees and Shrubs, Forestry Commission (1999).

Tree Planting


Whitebeam - *Sorbus aria* 'Majestica'


Hornbeam - *Caprinus betulus* 'Fastigiata'


Rowan - *Sorbus aucuparia* 'Sheerwater Seedling'


Serviceberry - *Amelanchier x grandiflora* 'Robin Hill'

Ornamental Planting Mixes

Native Structure Planting

SuDS Mix

The planting strategy for Lluest y Bryn includes a variety of flowering and fruiting species which will provide contrast and year-round interest. Planting will include a combination of grasses, herbaceous plants and shrubs, located to define front gardens and along the edge of the active travel route.

Planting will respect the variable levels of light around the site, with corresponding Sun and Shade planting mixes utilised for this purpose.

Shrubs for structure within the site will include Skimmia confusa 'Kew Green', Bupleurum fruicosum and Hypericum androsaemum. Focal plants will include Malva moschata with its bold colour and the upright form of Molinia caerulea.

Native Structure Planting is proposed for the linear spaces behind the backgardens of the proposed housing to enhance the ecological footprint of the area.

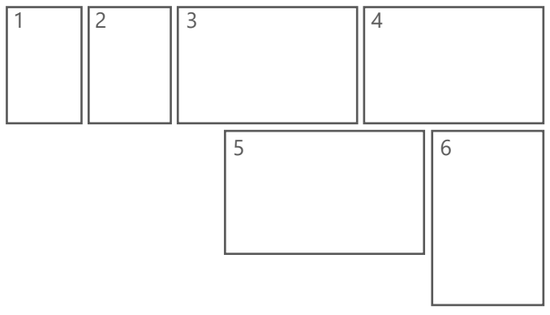
A proportion of native species such as Asplenium scolopendrium (as well as all of the left species in green) are present in all the mixes, adding to the biodiversity value of the site.

Where plant material is used of native species, there is a preference for local provenance plants, which in this case would be seed source zone 303 or 304, as defined Forest Practice Note No. 8, titled Using Local Seed Sources for Planting Native Trees and Shrubs, Forestry Commission (1999).

Within the rain gardens the plants will include species which can withstand short term inundation and long periods of drought, whilst also providing seasonal interest. Plants that fill this criteria, such as Pennisteum alopecuroides 'Hameln', are included in these areas. The detention basin will be seeded with a damp wildflower seed mix (EM8: Meadow Mixture for Wetlands (by Emorsgate).

SuDS Planting

1. SuDS features
2. Mixed perennial and ornamental grasses within rain gardens at key locations.
3. Species-rich grassland within detention basin.
4. Mixed perennial and shrub planting to create focal elements.
5. Species-rich grassland within raingardens along streets with tree root barrier to maintain separation from the filter medium.
6. Mixed perennial and shrub planting to create focal elements within residential streets.



05 Green Infrastructure Statement

The landscape strategy for the site identified the importance of retaining boundary vegetation. This vegetation is being supplemented by native and selected non-invasive ornamental planting to increase the biodiversity of the site and improve habitat connectivity.

A stepwise approach was utilised in the preparation of the masterplan and the landscape strategy. The first stage was to **Identify and Assess the value of** existing GI. The retention of existing GI was a priority wherever possible, in accordance with **Step 1: Avoid** and **Step 2: Minimise.** To address the loss of trees at the site, the green infrastructure proposals follow the Stepwise Approach set out in PPW12, namely **Step 3: Mitigate / Restore, Step 4 : Compensate** and by considering Enhancement at each stage in accordance with the **DECCA Framework**.

Trees

The proposals have retained all **Category A (T29** (Beech) and **T25, T28, T33, T48** (Common Oak) and all **Category B** trees, which are **T4** (Hornbeam), **T10, T20** (Sycamore) and **T24, T27, T32, T35, T36** (Common Oak) and **T37** (Holly). All **Category C** individual trees are retained, which are **T19, T21** (Laburnum), **T20** (Sycamore), **T22** (Smooth Arizona Cypress), **T26** (Beech). The 3 trees identified as Category U will be removed, which are **T12, T34** (Ash), **T31** (Common Oak).

There would be vegetation removal to provide pedestrian and vehicular access. The Category C hedgerow, G39 would be removed to allow access between the two field parcels within the site. A gap will be created in the hedgerow G9 to allow the realigned public footpath to connect with Springfield Road.

The tree planting strategy for the site is shown on the **Landscape Strategy Plan (L1)** prepared by Tir Collective. The proposals are for 31no trees comprising a mix of nine different species. Native species or are proposed along with cultivars of native species, fruit producing species and ornamental trees. The proposals offer betterment based on the PPW 12 ration of 3 new trees for each 1 lost.

Habitat of ecological value

A Preliminary Ecological Assessment (PEA) was undertaken in November 2023 by Wyndrush Wild. The PEA provides recommendations for mitigation and enhancement, each of which are addressed below in *Green* text:

Recommendations for mitigation include:

- Works to hedgerows or any other movement or trimming of woody vegetation should be carried out outside the main bird breeding season (start of March to end of August). *As required.*
- Any substantive work to or removal of the native hedges may require a further assessment with regards to the potential presence of hazel dormouse. *As required. Existing hedgerows along the site boundary have been retained and supplemented with native structure planting.*
- Landscaping associated with the development should avoid introducing further invasive or potentially-invasive non-native species to the site. Sourced locally-native species should be favoured. *As required. A mix of native and non-invasive, non native species are proposed. Where plant material is used of native species, there is a preference for local provenance plants, which in this case would be seed source zone 303 or 304, as defined Forest Practice Note No. 8, titled Using Local Seed Sources for Planting Native Trees and Shrubs, Forestry Commission (1999).*

Enhancements for Biodiversity Net Benefit include:

- The development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. *As required.*
- Native species of trees can be accommodated. *As required.*
- Bat roost features, and bird nesting boxes for species such as swift could be added to buildings. *As required.*

Public Open Space

The Green Infrastructure proposals at the site include the proposed green spaces, retention of existing vegetation along the site boundary, tree planting, shrubs (ornamental and native species), species-rich grass/wildflower proposals.

Green space within the site will complement the open space provision in the context of the site. It will enhance the amenity value of the site for residents, visitors and walkers along the public footpath.

Public Rights of Way

The existing public right of way through the site would be realigned through the development. It will provide direct access to the existing network of footpaths to the north for residents, visitors and walkers.

Residential gardens

The property gardens in the surrounding neighbourhood would not be affected by the development. Where rear gardens back on to the site (at the south, west and east boundary), tree and structure planting will help provide separation between existing residents and the future residents of the site. The addition of property gardens including tree, shrub and herbaceous planting within the site would add to the green infrastructure potential and biodiversity value of residential gardens in the area.

Resilience of Ecosystems

The **Environment (Wales) Act 2016** provides a duty upon public bodies such as Carmarthenshire Council to promote the resilience of ecosystems, which is reflected in planning policy.

The proposed green infrastructure strategy would comprise areas of habitat retention (existing trees and hedgerows) and areas of habitat creation (species rich grass, tree planting, native scrub planting and rain gardens).

The planting strategy includes a combination of native and ornamental plant species to enhance biodiversity and botanical diversity. The species selected would be adaptable to wet and dry conditions, including lengthy dry spells with the rain gardens.

The range of both tree and plant species proposed would enhance the biodiversity, increase species diversity, the age diversity of vegetation and improve the resilience of habitats to climate change.

The proposed green infrastructure strategy has considered the existing green infrastructure features within and beyond the site boundary, as recommended by a stepwise approach.

The proposed green infrastructure would increase the biodiversity, species diversity, and habitat structure within the site whilst contributing to the multi-functionality of the green infrastructure elements.

Multi-functionality of Green Infrastructure

This section identifies the multi-functionality of each proposed green infrastructure element: trees, native scrub planting, SuDS, wildflower lawns, and shrub planting. These elements reflect the over arching principle of **Stepwise Step 3: Mitigate / Restore, Step 4 : Compensate** and by considering **Enhancement** at each stage in accordance with the DECCA Framework, applying the principles of good placemaking and green infrastructure.

The multi-functionality of green infrastructure is described as “GI functions are the roles that assets can play if planned, designed and managed in a way that is sensitive to, and includes provision for, natural features and ecosystem services. They may have obvious primary functions, but each asset can perform different functions simultaneously”.

The Landscape Strategy aims and the GI functions and benefits of the proposals are reviewed against the list below:

- Contribution to Placemaking
- Flood Mitigation
- Cooling and Shade
- Food
- Exercise
- Health and Wellbeing
- Calming and Inspiring
- Nutrient Cycling
- Wildlife Habitat
- Wind break
- Cleaning Water and Air

Figure 8 lists the key retained and proposed landscape assets, its green infrastructure element, and the functions of each landscape asset while signposting against the Building with Nature Standards.

Landscape asset	Green infrastructure element	Functions	Building with Nature Standards
Existing and proposed trees	Trees / vegetation	• **Wildlife Habitat** • Contribution to Placemaking • Cooling and Shade • Calming and Inspiring • Health and Wellbeing • Nutrient Cycling • Wind break • Cleaning Water and Air	• 2 - Positively Responds to the Climate Emergency • 4 - Champions a Context Driven Approach • 5 - Creates Distinctive Places • 6 - Secures Effective Place-keeping • 7 - Brings Nature Closer to People
Scrub planting	Scrub	• **Wildlife Habitat** • Contribution to Placemaking • Cooling and Shade • Food • Calming and Inspiring • Health and Wellbeing • Nutrient Cycling • Wind break • Cleaning Water and Air	• 1 - Optimises Multi functionality and Connectivity • 2 - Positively Responds to the Climate Emergency • 3 - Maximises Environmental Net Gains • 5 - Creates Distinctive Places • 7 - Brings Nature Closer to People • 11 - Delivers Wildlife Enhancement • 12 - Underpins Nature's Recovery
Shrub planting within development	Trees / vegetation	• **Contribution to Placemaking** • Food • Calming and Inspiring	• 1 - Optimises Multi functionality and Connectivity • 2 - Positively Responds to the Climate Emergency • 3 - Maximises Environmental Net Gains • 7 - Brings Nature Closer to People
Proposed SuDS features	Sustainable Drainage	• **Cleaning Water and Air** • Flood Mitigation • Contribution to Placemaking • Calming and Inspiring • Nutrient Cycling	• 1 - Optimises Multi functionality and Connectivity • 2 - Positively Responds to the Climate Emergency • 5 - Creates Distinctive Places • 7 - Brings Nature Closer to People • 9 - Delivers Climate Resilient Water Management • 10 - Brings Water Closer to People
Proposed species rich grasslands	Grassland	• **Wildlife Habitat** • Calming and Inspiring • Exercise • Health and Wellbeing • Nutrient Cycling • Wildlife Habitat • Contribution to Placemaking	• 1 - Optimises Multi functionality and Connectivity • 2 - Positively Responds to the Climate Emergency • 3 - Maximises Environmental Net Gains • 5 - Creates Distinctive Places • 6 - Secures Effective Place-keeping • 7 - Brings Nature Closer to People • 11 - Delivers Wildlife Enhancement • 12 - Underpins Nature's Recovery

Figure 10: Green Infrastructure Functionality

06 Conclusions

The Environment (Wales) Act 2016 provides a duty upon public bodies such as Carmarthenshire Council to promote the **resilience of ecosystems**. The proposed green infrastructure strategy comprises a range of species, both native and non-native species to enhance biodiversity and botanical diversity.

The species selected are adaptable to wet and dry conditions, including lengthy dry spells. The range of both tree and plant species proposed would enhance the biodiversity, increase species diversity, the age diversity of vegetation and improve habitat resilience to climate change.

The proposed green infrastructure strategy has considered the existing green infrastructure features within and beyond the site boundary, as recommended by the Stepwise approach. The proposed features would increase the biodiversity, species diversity, and habitat structure on the site whilst contributing to the multi-functionality of the green infrastructure elements.

The proposals aim to create a hierarchy of spaces focused around existing and proposed green infrastructure. Naturalistic green spaces provide a setting for the development with space for play and walking within green spaces which encourage social interaction.

SuDS features are integrated into the landscape strategy, introducing flowering pollinator species to provide a source of nectar for bees and other insects.

The landscape proposals make a good contribution towards the strategy aims defined against the landscape concept themes for the project defined on Page 14. The strategy aims are:

- Retain existing trees wherever possible. Where removal is unavoidable then replacement planting would mitigate their loss based on the ratio in PPW12.
- Supplement existing planting with new native planting of Welsh provenance.
- Establish strong connectivity across the site for people and nature.
- Focus on habitat enhancements which improve species and age diversity to improve longevity and resilience to climate change.
- Planting and grasslands to be designed to work with nature, based on lower future maintenance requirements.
- Integrate SuDS features as part of landscape proposals to improve amenity value.
- Create a landscape that changes with the seasons to increase amenity and reinforce a connection with nature.

With regards to the **Placemaking Wales Charter** the landscape proposals make a good contribution towards the six placemaking principles, which cover the range of considerations that contribute to establishing and maintaining good places.

The proposals also contribute well to the **12 Standards of Building with Nature**, creating well connected, multi-functional green infrastructure.

Overall, it is considered that the proposed development would be in accordance with the Carmarthenshire Council Local Plan Policies relating to Green Infrastructure.

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LANDSCAPE ARCHITECTS

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