

Caewern House, Neath Green Infrastructure Statement

December 2025



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



Based on the development proposals designed by Spring Design:



with ecology input by:



and drainage input by:



On behalf of:



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01 Introduction

Scope

Tir Collective is instructed by Linc Cymru to prepare this **Green Infrastructure Statement** which relates to a proposed residential development at Caewern House, Neath.

"The land extends to about 0.65ha and consists predominantly of parkland/scattered trees, amenity grassland, buildings & hard standing and cleared ground". Ref: I&G Ecological Consulting.

The proposal entails *"Demolition of Caewern House and associated structures; Construction of residential apartments together with associated road and parking, drainage, landscaping, and other infrastructure works"*. Ref: Amity Planning.

Vehicular access into the site is from the southwest from Dwr-y-Felin Road which leads onto an existing track within the site. Access into the site would still be from Dwr-y-Felin Road post development, but the existing track will be upgraded to a standard two-way road. Pedestrian access post development would be from Dwr-y-Felin Road and Heol Illtyd in the west.

The site is not located within or adjacent to any statutory designated sites. There are nearby wildlife sites/SINCs as identified in the Preliminary Ecological Report. The site is also located near a B-Line.

The Site

The site is located in the western area of Neath Port Talbot, northwest of Neath centre. Dwr-Y-Felin Road is located to the southwest, Heol Illtyd is to the west and north, and Twyn Teg is to the east. Settlement is present around the site to the north, east and west. Further south is a railway line.

Large mature trees enclose the site on all boundaries apart from a brick wall boundary associated with Caewern Lodge at the southeast. The existing building, Caewern House, will be demolished to accommodate the new residential development.

In the wider landscape, the site is located on low-lying land within the valley of the River Neath. The river is approximately 700m in the south. The site is at an elevation of approximately 35m AOD.



Figure 1: Site location (by Spring Design)

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.

PPW 12 was published in February 2024 with changes to chapter 6 to address the need to keep up momentum on fulfilling Wales' our COP15 obligations and the Biodiversity Deep Dive recommendations.

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."

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

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

1 Paragraph 6.4.39 Planning Policy Wales Edition 12, February 2024

2 Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024

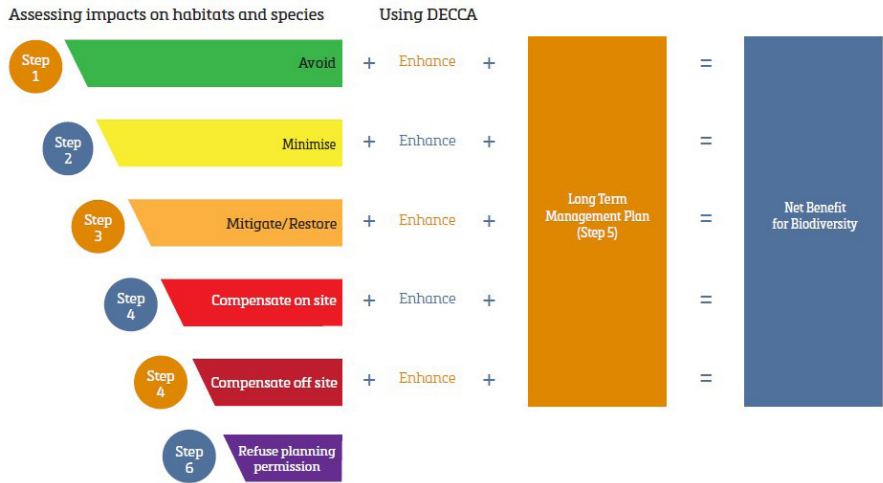
3 Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024

4 Paragraph 6.6.19 Planning Policy Wales Edition 12, February 2024

The stepwise approach to maintaining and enhancing biodiversity

The stepwise approach for this Green Infrastructure Plan/ Statement is based on the diagram provided by PPW 12 and is referred to on this drawing:

- **Step 1: Avoid** existing or potential important habitats or species and ecological connectivity corridors.
- **Step 2: Minimise** loss of any existing or potential important habitats or species, or fragmentation of ecological connectivity.
- **Step 3: Mitigate/Restore** effects on identified existing or potential important habitats or species and ecological connectivity corridors.
- **Step 4: Compensate** for any unavoidable hard or loss to important habitats or species or the fragmentation of ecological connectivity.



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

Local Planning Policy

Neath Local Development Plan 2011-2026

The Neath Local Development Plan was adopted in January 2016. In relation to **green infrastructure**, **Policy BE 1: Design** states that "Important local features (including buildings, amenity areas, green spaces and green infrastructure, biodiversity and ecological connectivity) are retained and enhanced as far as possible."

In relation to the **landscape**, **Valuing Our Environment - OB 15**: "Conserve Neath Port Talbot's important landscapes, countryside, undeveloped coast, important wildlife, habitats and geodiversity sites, ensuring that developments throughout the County Borough respect all landscapes and minimise adverse impacts".

In relation to **biodiversity**, **Policy SP 15: Biodiversity and Geodiversity** notes that "Important habitats, species and sites of geological interest will be protected, conserved, enhanced and managed through the following measures:

1. The identification of the following Internationally and Nationally designated sites within the County Borough to enable their protection: (a) Special Areas of Conservation (SACs) and Ramsar Sites; (b) Sites of Special Scientific Interest (SSSIs); (c) National Nature Reserves (NNRs).
2. The identification and protection of sites of regional and local importance;
3. The protection of important natural heritage features".

In relation to **Trees and Biodiversity**, **Policy EN 7: Important Natural Features** notes that "Development proposals that would adversely affect ecologically or visually important natural features such as trees, woodlands, hedgerows / field boundaries, watercourses or ponds will only be permitted where:

1. Full account has been taken of the relevant features in the design of the development, with measures put in place to ensure that they are retained and protected wherever possible; or
2. The biodiversity value and role of the relevant feature

has been taken into account and where removal is unavoidable, mitigation measures are agreed".

Neath Port Talbot Council Biodiversity Duty Plan 2023 – 2026

Published in December 2020, the document provides targeted actions by Neath Port Talbot to meet the requirements of the Environment (Wales) Act 2016. The focus of the Plan is to "determine how Neath Port Talbot Council will seek to maintain and enhance biodiversity" between 2023 and 2026.

Biodiversity and Geodiversity SPG May 2018.

The SPG describes **biodiversity** as per the wording provided by the UK Steering Group Report which is "... *all living things, from the tiny garden ant to the giant redwood tree. You will find biodiversity everywhere, in window boxes and wild woods, roadsides and rainforests, snowfields and sea shores*".

The SPG describes **green infrastructure** as per wording provided by the Landscape Institute which is "... *the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. 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 than 'grey' infrastructure*". Ref: An Integrated Approach to Land Use - Position Statement (2013 Landscape Institute).

Examples of **green infrastructure** are provided in the SPG: "... *parks and gardens, greenspace, allotments, cemeteries, green corridors, green/brown roofs, sustainable urban drainage schemes and trees (including individual trees, street trees, groups of trees or woodland areas)*".

Welsh Government Statutory Standards for Sustainable Drainage Systems, 2018

The Flood and Water Management Act 2010 (Schedule 3) requires new developments to include Sustainable Drainage Systems (SuDS). The SuDS approach is to mimic natural drainage, close to the surface. **SuDS can deliver**

multi-functional benefits to the local environment, including **access to green space** with **enhanced amenity areas** that also **provides habitats and wildlife corridors**.

SuDS must comply with 6 Standards. Relevant to green infrastructure and biodiversity is **Standard 4 – Amenity** to ensure SuDS provide "**high quality, attractive public spaces** which can help provide health and wellbeing benefits..."

Standard 5 – Biodiversity aims to "**create ecological rich green and blue corridors...** and enrich biodiversity value by **linking networks of habitats and ecosystems** together."

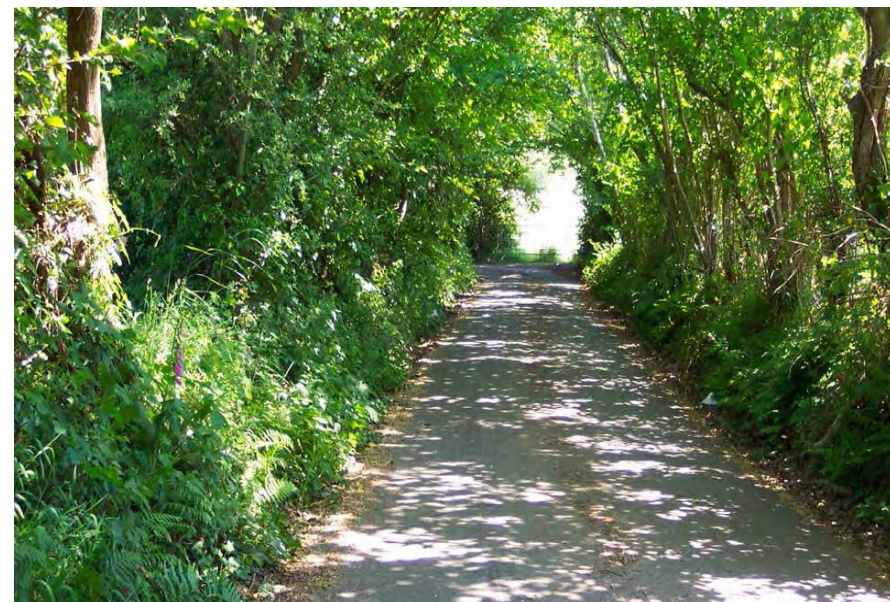


Image taken from the Biodiversity and Geodiversity SPG



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



Images taken from Building with Nature Standards Framework (BwN 2.0)

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 Open Space
- Public Rights of Way
- Residential gardens

The GI 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 summarises the Stepwise approach **Step 1: Avoid** and **Step 2: Minimise**.



Figure 2: Google Earth

Trees and vegetation

A Tree Survey was undertaken by Treescene Arboricultural Consultants in March 2024. The survey followed the methodology as set out in the British Standard 5837:2012.

The site contains 53 arboricultural elements comprising individual trees, groups of trees, and hedges.

The tree report identified the following **Category B** arboricultural features:

T1	Scots Pine (Pinus sylvestris)
T2	Norway Spruce (Picea abies)
T4	Smooth Arizona Cypress (Cupressus arizonica)
T5	Smooth Arizona Cypress (Cupressus arizonica)
T10	Monterey Pine (Pinus radiata)
T16	Oak (Quercus robur)
T31	Sycamore (Acer pseudoplatanus)
T32	Sycamore (Acer pseudoplatanus)
G36	Group of 2: Sycamore (Acer pseudoplatanus)
T48	Sycamore (Acer pseudoplatanus)
T53	Rowan (Sorbus aucuparia)

The following **Category C** arboricultural features were identified:

T3	Lawson Cypress (Chamaecyparis lawsoniana)
T8	Sycamore (Acer pseudoplatanus)
T9	Sycamore (Acer pseudoplatanus)
G13	Group of 2: Holly (Ilex aquifolium)
G14	Group of: Sycamore (Acer pseudoplatanus), Holly (Ilex aquifolium)
T15	Lawson Cypress (Chamaecyparis lawsoniana)
T17	Scots Pine (Pinus sylvestris)
T19	Highclere Holly (Ilex altaclerensis)
T20	Hazel (Corylus avellana)
T21	Sycamore (Acer pseudoplatanus)
T22	Magnolia (Magnolia spp.)
T25	Hawthorn (Crataegus monogyna)
T26	Sycamore (Acer pseudoplatanus)
T27	Hazel (Corylus avellana)
G29	Group of 2: Lawson Cypress (Chamaecyparis lawsoniana)
T30	Hazel (Corylus avellana)

T33	Sycamore (Acer pseudoplatanus)
T34	Rhododendron (Rhododendron spp.)
G35	Group of 2: Hawthorn (Crataegus monogyna)
T37	Sycamore (Acer pseudoplatanus)
T39	Apple (Malus spp.)
T41	Holly (Ilex aquifolium)
G44	Group of 2: Lawson Cypress (Chamaecyparis lawsoniana)
T46	Sycamore (Acer pseudoplatanus)
T47	Beech (Fagus sylvatica)
G49	Group of Sycamore (Acer pseudoplatanus)
G50	Group of Highclere Holly (Ilex altaclerensis), Portuguese Laurel (Prunus lusitanica)
T51	Hawthorn (Crataegus monogyna)

The following **Category U** arboricultural features were identified:

T6	Dead
T7	Lawson Cypress (Chamaecyparis lawsoniana)
T11	Goat Willow (Salix caprea)
T12	Oak (Quercus robur)
T18	Goat Willow (Salix caprea)
T23	Sawara Cypress (Chamaecyparis pisifera)
T24	Hawthorn (Crataegus monogyna)
T28	Sycamore (Acer pseudoplatanus)
G38	Group of Elm (Ulmus spp.)
G40	Group of Sycamore (Acer pseudoplatanus), Holly (Ilex aquifolium)
T42	Goat Willow (Salix caprea)
T43	Sawara Cypress (Chamaecyparis pisifera)
T45	Dead
T52	Sycamore (Acer pseudoplatanus)

Arboricultural features which **will need to be removed** to facilitate the development are:

T1	Category B
T2	Category B
T3	Category C
T4	Category B
T5	Category B
T22	Category C
G29	Category C
T30	Category C

T39	Category C
T41	Category C
G50	Category C
T51	Category C

Category U trees will need to be removed for arboricultural reasons regardless of the development.



Figure 3: Tree survey (by Treescene)

Habitat of ecological value

A Preliminary Ecological Survey Appraisal was undertaken in November 2022 by I & G Ecological Consulting.

The report provides methodology for establishing ecological baseline conditions of existing habitats on site, and methodology for a field botanical survey undertaken.

The baseline data/survey results were also described in relation to habitats for badgers, otters, dormouse, birds, bats, reptiles, amphibians, water vole, and marsh fritillary, both on site and within a search area of 2km from the site. Non-native invasive species are also described.

The report also seeks to identify any protected habitats and species within the site. This is a reflection of Stepwise Approach **Step 1** and **Step 2**.

In summary the Ecological Appraisal Report notes that "No signs of European protected species were observed within the site boundary, however the tree lines are likely to support bat foraging and commuting and the buildings have bat roost potential".

Desk study

"A data search was requested from the West Wales Biodiversity Information Centre for the planning application site and surrounding area of up to 2km. The species information was returned to I&G Ecology on 21st November 2022. A number of protected and notable species records were returned within 2km of the site centre".

Relating to **birds**, 244 entries were categorised as priority species within a search area of 2km radius from the site. 222 records were returned for **mammals**, 6 records relating to **butterfly** (invertebrates), 33 records for **priority flowering plants**, 12 records of **reptiles**, and 24 records of **amphibians**.

A search for **non-native species** returned 312 records including Himalayan honeysuckle, Wilson's honeysuckle, cherry laurel, montbretia, Himalayan balsam, Japanese knotweed and

cotoneaster (within the 2.0km radius).

No **statutory designated** sites were recorded within the 2.0km search buffer. 12 non-statutory sites were recorded, and one B-Line site.

Site appraisal

A search for habitats to support mammals, bats, birds, amphibians and invertebrates within the site was undertaken.

The appraisal was undertaken on parkland/ scattered trees, cleared ground, buildings & hardstandings, grassland, scrub, badger setts, and trees.

Findings of the appraisal describes that there are suitable habitats to support **bats**, due to the **tree lines**, and **breeding birds** due to the **woody vegetation**.

The search also confirmed that the site contains non-native invasive species.

Habitats

Relating to **parkland / scattered trees**, the Ecological Appraisal Report notes that *"The native tree and shrub species on site will provide screening, flight lines and feeding opportunities for bats, and nesting habitat for birds"*. The value of the habitat has however been assessed as: **Low Local**. In addition, its loss without mitigation is considered to be: **Minor**.

Relating to **grassland**, the report notes that it is *"...species poor and in the absence of management is becoming colonised by bramble"*. The value of the grassland has been assessed as: **Negligible**. Loss without mitigation is considered to be: **Negligible**.

Species

The report notes that *"The field survey identified the on-site habitats as having the potential to support the following species which are also listed under UK BAP: Breeding **Birds, Bats**"*.

Ecosystem Resilience

*"Area loss can cause populations of organisms to decline due to a decrease in habitat size. The area to be developed **consists mainly of amenity grassland, buildings and hard standing with little ecological interest**. The bordering woodland has **high ecological value**. If the site is cleared without any mitigation for development the impact is expected to be **Minor**, due to the **potential loss of trees**."*

Bat report

The bat survey report (scoping survey) was undertaken on 5th August 2022. A dusk survey was undertaken on 25th August 2022 between 20:05 and 22:20, and a dawn survey on 10th September 2022 between 04:40 and 06:45.

Search results in a study area of 2.3km reported 158 records of bats which comprised 8 species.

The surveys confirms the following:

*"During the scoping survey **no bats were found** but droppings were found beneath a hole in the roof on the single storey section to the north-east, **and the property was considered to have confirmed potential to support roosting bats**, and a confirmed risk of bats using the features present."*

During the activity surveys up to four Soprano pipistrelle were seen to leave/enter a hole in the roof on a single storey section, and this species as well as Common pipistrelle were detected foraging and commuting on site.

*In relation to Roost Characterisation Assessment, from the evidence gathered it is considered that **the property is being used by a small number (four confirmed) of Soprano pipistrelle bats** as a summer daytime roost and has been used by an individual Common pipistrelle bat as an occasional summer daytime roost"*.

Colour	Code	Description
	A2.1	Scrub
	A3.3	Parkland/Scattered trees mixed
	B6	Poor semi-improved grassland
	J1.4	Introduced shrub
		Cleared ground



Images by I & G Ecological Consulting

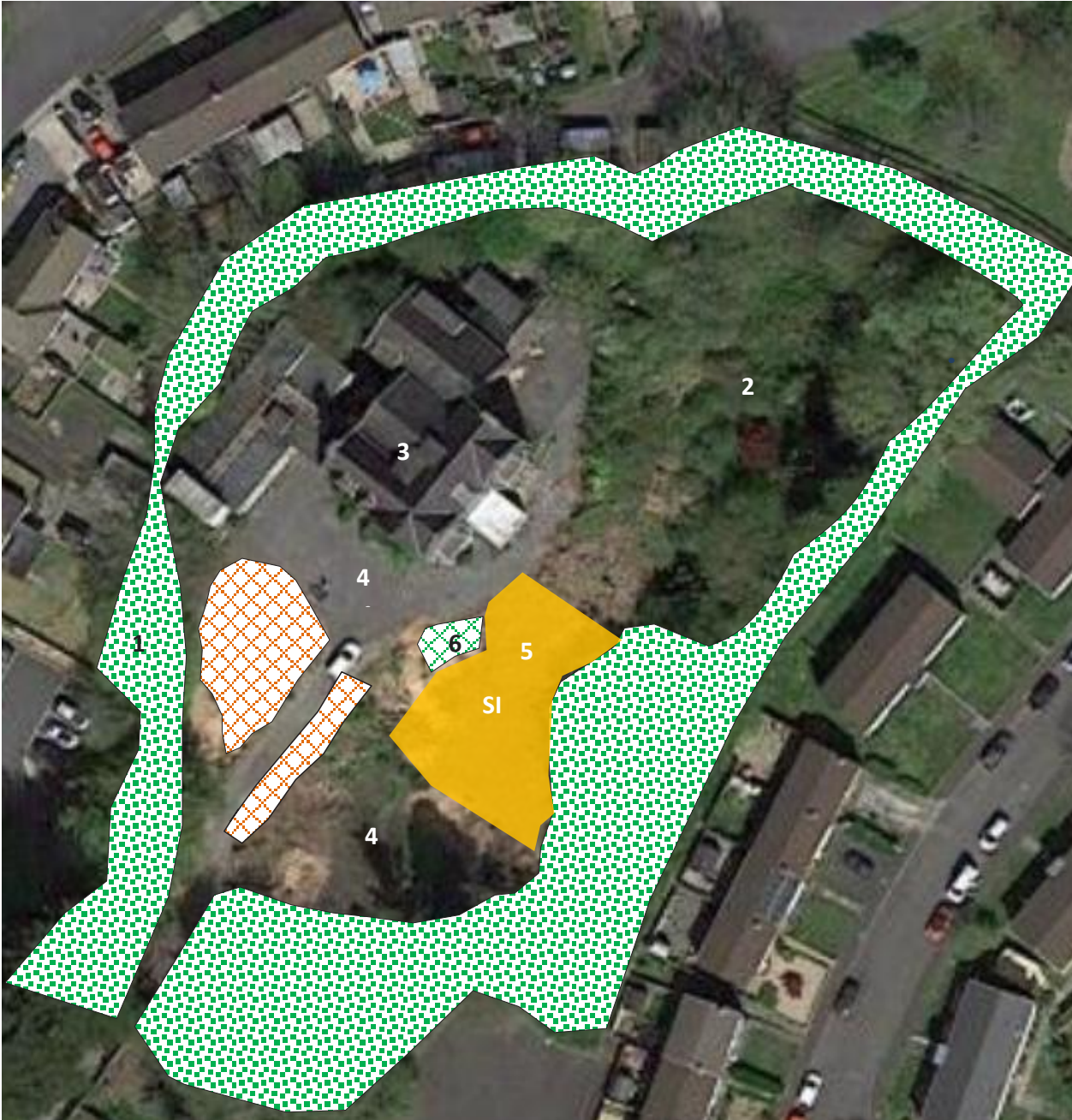


Figure 4: Phase 1 Habitat Plan (by I & G Ecological Consulting)

Public Open Space

Public open spaces, play spaces and sports pitches make an important contribution to green infrastructure in the local area.

The site is located in close proximity to public open spaces. Caewern House is currently located 160m northeast of Twyn Teg playing fields, 420m southeast of Waunceirch playing fields and 240m southwest of Pen y Wern Playing Fields. Further south beyond the railway line is a comprehensive school with associated playing fields, a running track and a 3G pitch.

Public Rights of Way (PROW)

There is a cluster of PROWs close to the site and a network of PROWs to the north within the wider landscape. The yellow dots on the adjacent Google Earth image shows the current network of PROWs close to the site.

Residential gardens

The rear gardens of properties along the residential streets 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.

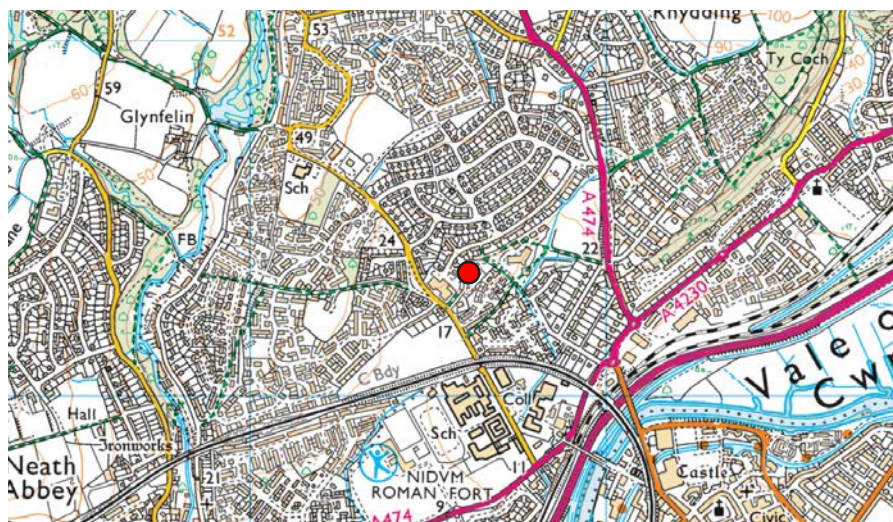


Figure 5: Streetmap.co.uk



Figure 6: Google Earth showing public open space and public rights of way

04 Design proposals



Figure 7: Landscape Strategy (by Tir Collective Limited)

Landscape Strategy

The proposed green infrastructure and landscape strategy focuses on enhancing retained vegetation with new understorey native vegetation, native hedge planting, ornamental shrub/herbaceous planting, and new tree planting. Biodiversity would be maximised and enhanced through proposing flowering shrubs and species-rich grass throughout. Communal gardens would provide opportunities for relaxation, and planting of herbaceous species and shrubs would provide texture and colour to enhance visual amenity.

New boundary tree planting would strengthen opportunities for wildlife corridors and provide connections to wider existing green infrastructure networks. Tree planting would include native species along boundaries, but ornamental species within shared communal spaces would be proposed.

3no. new trees are proposed for every 1no. tree being lost due to the development proposals. The replanting tree ratio of 3:1 would be to mitigate for existing Category A to C trees being removed. Category U trees will also be removed due to their current condition, regardless of the proposed development, which are:

- “Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)
- Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline
- Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.”

Proposed trees would mainly be planted as Semi-mature sizes on the day of implementation with some Extra Heavy and Selected Standards. Tree species would include:

Semi-mature tree planting

- Amelanchier x grandiflora 'Robin Hill'
- Acer campestre (Native)
- Betula pendula (Native)
- Pinus sylvestris (Native)
- Prunus avium (Native)
- Sorbus aria (Native)

Extra Heavy Standards tree planting

- Crataegus laevigata 'Paul's Scarlet'
- Crataegus monogyna (Native)
- Liquidambar styraciflua

Selected Standard tree planting

- Prunus sargentii 'Rancho'
- Quercus robur (Native)

A proposed rain garden located at the northeast would be seeded with species-rich grass, and SuDS planters to capture roof rain water run-off would include herbaceous plants resilient to the conditions as well as aesthetically pleasing.

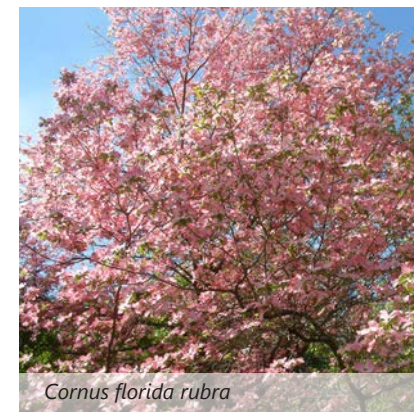
Communal Area

A proposed communal area is included in the scheme for residents. This is designed to be a welcoming green space and provide a benefit to the well-being of users. A soft pastel colour scheme (see image to right) is utilised, with pergola walkways and seating also included.

Communal Area planting palette



Amelanchier x grandiflora 'Robin Hill'



Cornus florida rubra



Crataegus laevigata 'Paul's Scarlet'



Acer campestre



Scabiosa columbaria



Amsonia tabernaemontana salicifolia



Caryopteris x clandonensis



Cistus corbariensis



Prunus laurocerasus 'Zabeliana'



Pennisetum alopecuroides 'Hameln'



Rosa 'Fru Dagmar Hastrup'



Brachyglottis 'Sunshine'

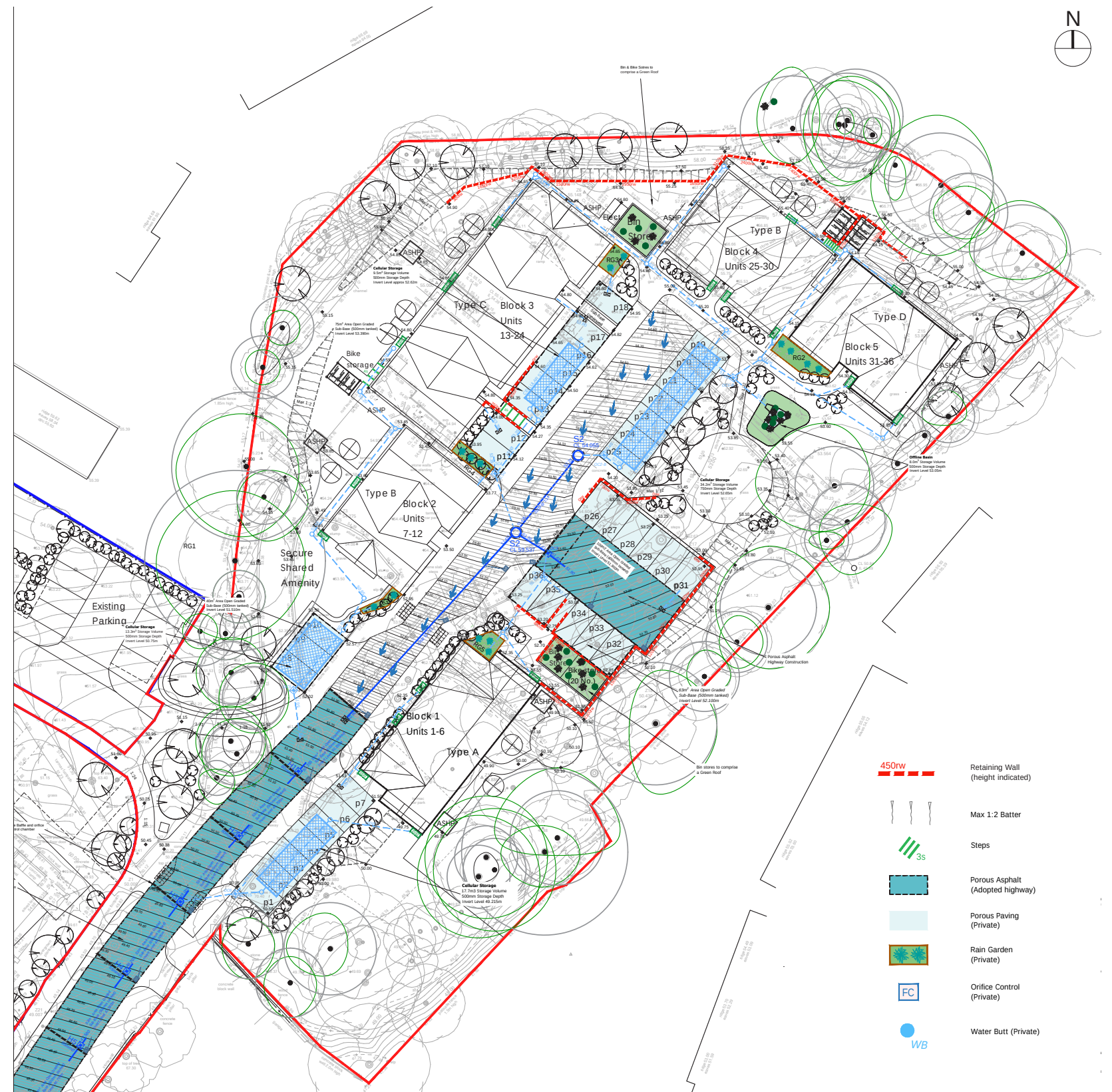
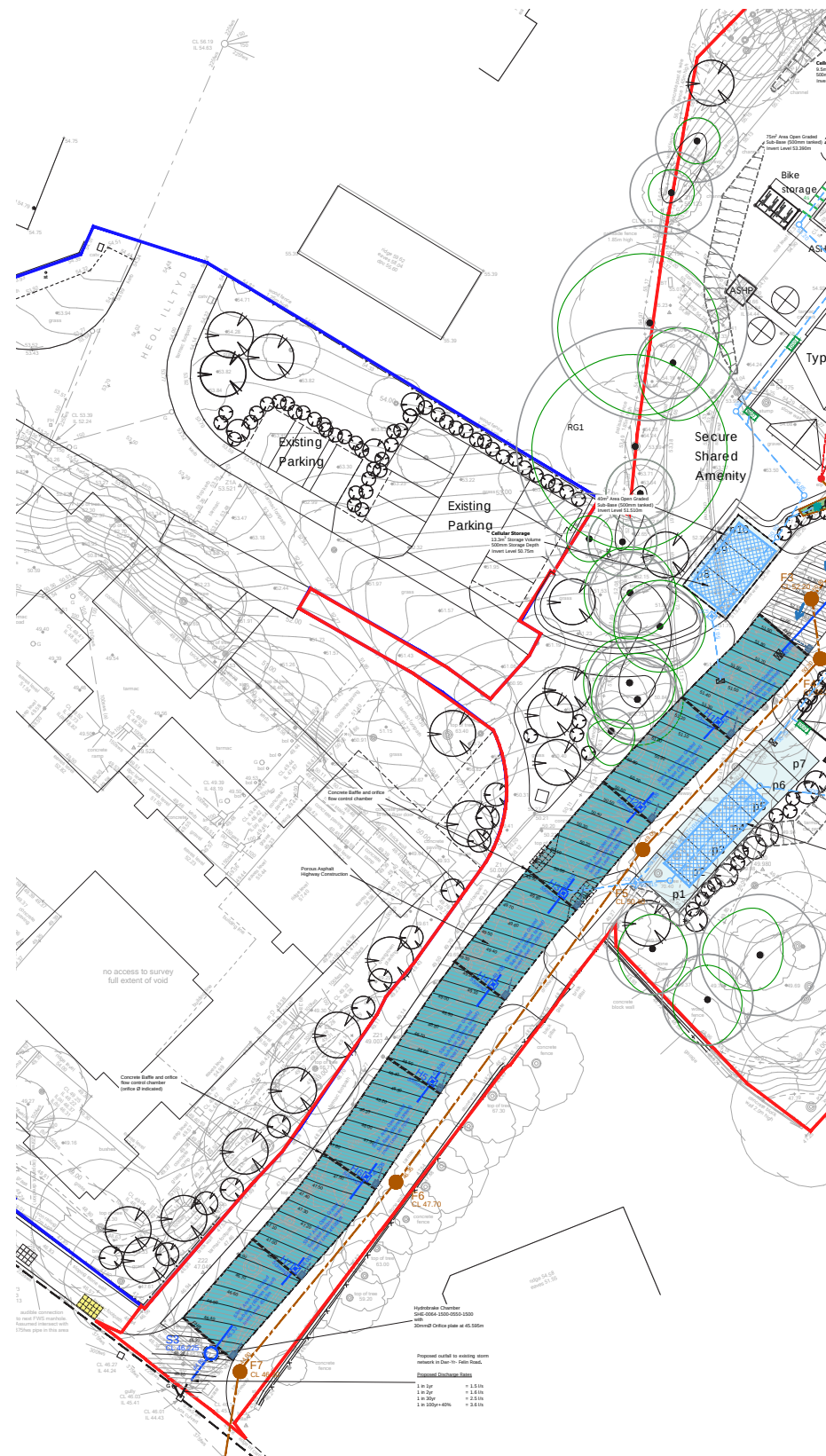


Figure 8: SuDS Strategy (by Spring Design)

05 Green Infrastructure Statement

The landscape strategy and site layout proposals identified the importance of retaining boundary vegetation where possible. Existing trees at the new access road into the site will need to be removed to accommodate the new road, and some individual trees within the core of the site will also need to be removed. New tree planting and understorey native vegetation will provide mitigation for the loss of existing trees. Species-rich grass will also be seeded across the site to further enhance the green infrastructure proposals.

A stepwise approach was utilised in the preparation of the site layout and 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**.

Trees and vegetation

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The site contains 53 arboricultural elements comprising individual trees, groups of trees, and hedges.

The tree report identified 11 **Category B** arboricultural features, 28 **Category C** arboricultural features, and 14 **Category U** arboricultural features.

Of the above, 4 Category B trees and 10 Category C trees will need to be removed to facilitate the development. A 3:1 replacement tree planting scheme has been provided to mitigate for their loss, in accordance with PPW Chapter 6. The Category U trees will need to be removed due to arboricultural reasons, regardless of the development proposals.

The mitigation tree planting followed the stepwise approach **Step 3: Mitigate/Restore**. Through providing the 3:1 ratio replacement tree planting scheme, the species diversity would be increased. The mixed understorey **native planting, native hedgerow, and grass seeding** would also **increase biodiversity and amenity value**.

Habitat of ecological value

An Ecological Appraisal Report was prepared by I & G Ecological Consulting in November 2022. In summary the report notes that *"No signs of European protected species were observed within the site boundary, however the tree lines are likely to support bat foraging and commuting and the buildings have bat roost potential"*.

A subsequent bat report *"considered that **the property is being used by a small number (four confirmed) of Soprano pipistrelle bats** as a summer daytime roost and has been used by an individual Common pipistrelle bat as an occasional summer daytime roost"*.

Recommendations for mitigation

Mitigation for the habitats and species follows the stepwise approach **Step 3: Mitigate/Restore**.

Tree line

- *"The remaining mature trees should be protected from direct impacts from the construction."*
- *"Any diseased trees that require felling should be replaced with whips of native rowan or silver birch."*
- *"These should be staked and protected and allowed to develop into standard trees."*
- *"Protection of trees through the use of Root Protection Zones and appropriate working methodology as well as proximity of development boundary must be considered"*.

Birds

- *"...vegetation clearance should be planned outside the nesting bird season"*.

Bats

- *"...Any mature trees which require felling or management in order to accommodate the development will be subject to inspection and assessment for suitability for use by bats, by a licenced bat surveyor following current guidelines (Bat Conservation Trust)"*.

Invasive Non-native species (INNS)

- *"Materials and machinery brought onto the site should be clean and free from INNS."*
- *"...INNS should be treated and disposed of in an appropriate manner, and their spread beyond the boundary of the site should be prevented"*.

Compensation

Enhancement opportunities for the habitats and species follows the stepwise approach **Step 4: Compensate on site**. Enhancement opportunities as suggested within the ecology report includes:

Bats

- *"Prior to works commencing, x 2 Improved Roost Maternity (or similar) Bat Box and 2 x Harlech Woodstone (or similar) bat boxes to be affixed to mature trees within the curtilage of the property."*
- *"Bat access is to be provided on the new buildings through 1 x Vivaro Pro Build-in (or similar) bat box installed in each gable end wall (x 12 in total) of the new buildings"*.

Birds

- *"Prior to works commencing, x 2 open-fronted and x 2 small-holed bird boxes to be affixed to mature trees within the curtilage of the property."*
- *"x 1 Sparrow terrace to be affixed to each gable end wall of Type A Block buildings (x 2 in total) and x 1 House martin nest cup to be affixed at the apex of each gable end wall of Type B Block buildings"*.

Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)

- *"New buildings should include artificial habitats such as bat bricks/boxes, bird boxes/bricks or Swift/Swallow cups; the details of which should be agreed with the LA ecologist."*
- *"At least one suitably sized gap should be made at the base of any fence through which Hedgehogs will be able to cross between gardens."*

- *Consideration should be given to the creation of species rich native hedgerows around the site, incorporating the retained trees.*
- *Landscaping should incorporate native berry bearing shrub and small tree species such as guelder rose, alder buckthorn, rowan and silver birch.*
- *Public open space should provide the opportunity to develop areas of species rich grassland to provide pollinator habitat and landscape value.*
- *SUDS should be considered to provide ditches and ponds to manage site run-off and also to provide habitat for amphibians and invertebrates such as dragonflies".*

Public Open Space

The Green Infrastructure proposals at the site include retention of existing trees, new tree planting, native hedgerow planting, shared communal spaces, shrub planting, native understorey planting and species-rich grass. The site is also in close proximity to existing public open spaces and a network of public rights of way.

The Green Infrastructure proposals will provide ecological connectivity through the site and out into the wider landscape, connecting to existing habitats. Species-rich grass, trees and retained vegetation will increase biodiversity at the site.

Public Rights of Way

An existing public right of way is present at the main entrance into the site off Dwr-y-Felin Road. Existing trees along the PROW will need to be removed to accommodate the new access road. New tree planting will be provided along the PROW and will include native species. Shrub planting will also be provided along the highway/footpath which will help increase amenity and biodiversity values. The PROWs within the wider area will not be affected by the development proposals.

Residential gardens

The property gardens in the surrounding neighbourhood would not be affected by the development. Where existing rear gardens back on to the site, tree and native hedgerow planting will help provide separation. In addition the site includes tree, native hedgerow, shrub and herbaceous planting which would add to the green infrastructure potential of residential gardens in the area.

Resilience of Ecosystems

The Environment (Wales) Act 2016 provides a duty upon public bodies 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 areas of habitat creation (wildflower lawns, tree planting, native hedgerow, native scrub planting and SuDS).

The proposed landscape planting would include a combination of native and ornamental plant species to enhance biodiversity and botanical diversity. The species selected would need to be adaptable to wet and dry conditions, including lengthy dry spells with proposed sustainable drainage features such as rain gardens.

A range of tree and plant species associated with detailed design would enhance 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 9 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 and hedgerows	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
Proposed habitat creation areas	Ecology	• Wildlife Habitat • Calming and Inspiring	• 3 - Maximises Environmental Net Gains • 11 - Delivers Wildlife Enhancement • 12 - Underpins Nature’s Recovery

Figure 9: lists the landscape assets, its green infrastructure element, and the functions of each landscape asset while signposting against the Building with Nature Standards.

06 Conclusions

The landscape scheme was based on a Stepwise Approach. Existing green infrastructure features have been retained or mitigated, and new planting throughout has enhanced the site significantly, contributing towards the overall green infrastructure.

Tree planting, understorey vegetation combined with species-rich grass, flowering shrubs, herbaceous plants and SuDS will enhance the site in terms of species-diversity, contributing towards enhancing biodiversity. Views from proposed houses within the site would capture the green infrastructure elements providing connections to nature and seasonal changes in the landscape.

Ecology mitigation and enhancements have been provided such as protection of trees, planting of new trees and native hedgerows, retention of vegetation, planting of native species and the provision of nest-boxes in existing and proposed habitats and building features.

Pedestrian routes near the site will allow the future residents to connect out into the wider landscape.

The landscape proposals make a good contribution towards enhancing biodiversity and amenity values. The strategy aims to:

- Retain existing trees wherever possible and supplement with new tree planting.
- Provide native understorey vegetation and hedgerows along the boundaries, and include species-rich grass throughout.
- Provide a combination of flowering shrub and herbaceous species.
- Prioritise tree planting Root Available Soil Volumes (RASV) within soft landscape to reduce reliance on underground crates.

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

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



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