tir collective
LANDSCAPE ARCHITECTS

Land north of Dinas Powys, access off Cardiff Road
Green Infrastructure Strategy

October 2024 (version 2)

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

tir collective
LANDSCAPE ARCHITECTS

Based on the **Visioning Document** prepared by:

Roberts Limbrick

On behalf of:

Persimmon
Together, we make your home

With input from:

Boyer Planning

Boyer

JBA consulting

vectos. PART OF SLR

BSG ecology

Document Control:

Client:	Persimmon Homes
Project:	Land north of Dinas Powys
Job number:	TC22046
Document title:	Green Infrastructure Statement

Revision:	01	Status:	Draft
Date:	September 2024		
Prepared by:	Emma Hayes CMLI		
Checked by:	Lee Morris CMLI		

Revision:	02	Status:	Final
Date:	October 2024		
Prepared by:	Emma Hayes CMLI		
Checked by:	Lee Morris CMLI		

01 Introduction

Tir Collective is instructed by Persimmon Homes East Wales to prepare this **Green Infrastructure Statement**, which relates to the promotion of housing development on Land north of Dinas Powys, access off Cardiff Road. The redline boundary of the site is shown on **Figure 1**.

This Green Infrastructure Statement has been prepared by Chartered Landscape Architects at **Tir Collective**. It is in response to the Vale of Glamorgan Replacement Local Development Plan: Green Infrastructure Statement for Proposed Key Sites, which states "*In support of the promotion of your site it is envisaged that a Green Infrastructure Statement, similar to those prepared for planning applications in response to paragraph 6.2.12 of PPW (Edition 12), will be submitted*."

Background

Tir Collective were first appointed on this project in March 2022 to produce a Landscape Study that reviewed the potential for the site to be developed for housing and whether additional areas around the site would also be suitable for development. The Landscape Study process comprised high-level desk studies and field surveys to identify landscape and visual constraints and opportunities for a housing development.

The methodology used for reviewing the landscape character and visual amenity of the site and surrounding area was based on the recommendations in Guidelines for Landscape and Visual Impact Assessment 3rd Edition, published by The Landscape Institute and the Institute of Environmental Management & Assessment in 2013 (GLVIA3).

The Landscape Study identified areas of the site that were 'least sensitivity to housing development' to areas that were 'most sensitive to housing development'.

Following the completion of the Landscape Study, in August 2023 Roberts Limbrick produced a Framework Masterplan that responded to the findings of the Landscape Study and other surveys. Tir Collective produced a Green Infrastructure Strategy for the site that set out the key areas of retained and proposed green infrastructure.

Figure 1: Site location

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), Edition 12, February 2024

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.***"

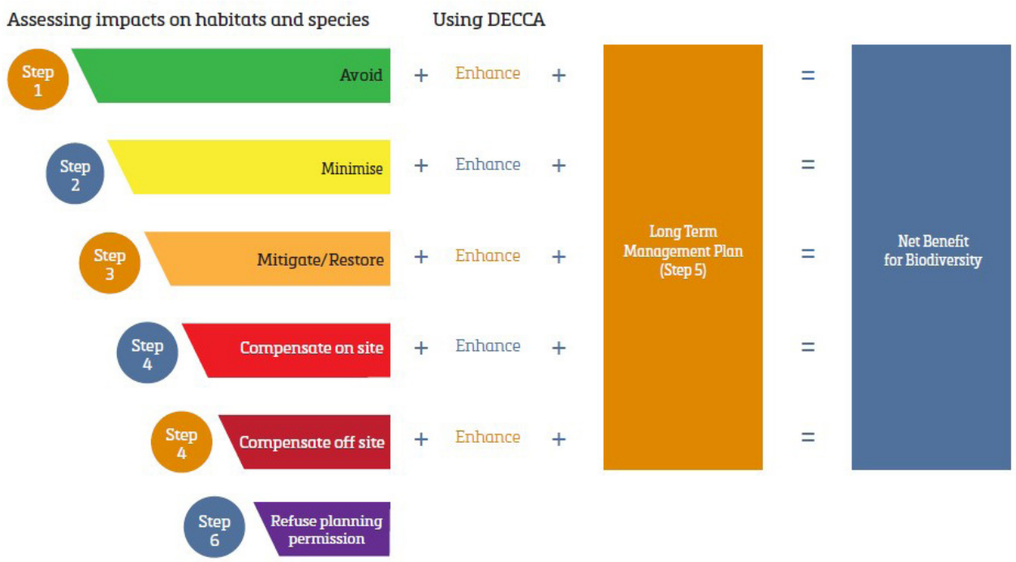
In relation to **trees, woodland and hedgerows, paragraph 6.4.37** sets out their importance for biodiversity and "*connecting habitats for resilient ecological networks and make an essential wider contribution to landscape character, culture, heritage and sense of place…*"

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

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.*"[2]

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.*"[3] 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 on site, 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.*"[4]

2 Paragraph 6.4.39 Planning Policy Wales Edition 12, February 2024
3 Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024
4 Paragraph 6.4.42 Planning Policy Wales Edition 12, February 2024



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

Local Planning Policy

Vale of Glamorgan Local Development Plan 2011 - 2026

The site is located within the Vale of Glamorgan. Relevant LDP policies in relation to green infrastructure and biodiversity include:

Policy SP10 Built and Natural Environment, which states "*Development proposals must* ***preserve*** *and where appropriate* ***enhance the rich and diverse... natural environment...***"

Policy MD9 Promoting Biodiversity states "*New development proposals will be required to* ***conserve and where appropriate enhance biodiversity interests***..."

Vale of Glamorgan Biodiversity and Development Supplementary Planning Guidance (SPG) April 2018

Section 8 Assessing the Impact of Development "*provides guidance on how best to conserve and where appropriate enhance biodiversity throughout the development process.*" The section goes onto to state "*An assessment of the likely impact of the development must be made by the developer, working with their ecologist adviser and designers to enable appropriate and effective* ***avoidance, mitigation or compensation*** *measures to be considered,* ***designed and incorporated into the development proposals.***"

Section 10 Minimising Development Impact describes the design stage of development proposals and that the opportunities and constraints of the site should enable the design to **avoid, mitigate, compensate, enhance, manage, and monitor impacts on biodiversity**.

In relation to **'Avoid'** the SPG states "*The primary objective of any development proposal should be the* ***avoidance of any adverse impacts on habitats and/or species*** *as a direct or indirect result of the development.*" For **'Mitigate'**, the design should aim "*to* ***mitigate any negative impacts far as is practically possible*** *the severity of the impacts upon the wildlife feature(s) located at the site.*" **'Compensate'** involves "*the* ***provision of alternative habitat*** *or other resources required for the continuation of a species or habitat.*" **'Enhance'** is a requirement under the Environment (Wales) Act and PPW. Enhancement could be achieved through a variety of proposals include the installation of bird/bat boxes, provision of wildlife corridors, the removal of invasive non-native species etc. **'Manage'** requires ongoing **management regimes** to ensure **long-lasting benefits** of retained and proposed wildlife features and habitats. Finally, "***monitoring*** *should be included to* ***measure success*** *(and where appropriate, to* ***trigger remedial actions****)...*"

02 Policy Context

Vale of Glamorgan Biodiversity and Development Supplementary Planning Guidance (SPG) April 2018

Section 8 Assessing the Impact of Development *"provides guidance on how best to conserve and where appropriate enhance biodiversity throughout the development process."* The section goes onto to state *"An assessment of the likely impact of the development must be made by the developer, working with their ecologist adviser and designers to enable appropriate and effective* ***avoidance, mitigation or compensation*** *measures to be considered,* ***designed and incorporated into the development proposals."***

Section 10 Minimising Development Impact describes the design stage of development proposals and that the opportunities and constraints of the site should enable the design to **avoid, mitigate, compensate, enhance, manage, and monitor impacts on biodiversity**.

In relation to **'Avoid'** the SPG states *"The primary objective of any development proposal should be the* ***avoidance of any adverse impacts on habitats and/or species*** *as a direct or indirect result of the development."* For **'Mitigate'**, the design should aim *"to* ***mitigate any negative impacts far as is practically possible*** *the severity of the impacts upon the wildlife feature(s) located at the site."* **'Compensate'** involves *"the* ***provision of alternative habitat*** *or other resources required for the continuation of a species or habitat."* **'Enhance'** is a requirement under the Environment (Wales) Act and PPW. Enhancement could be achieved through a variety of proposals include the installation of bird/bat boxes, provision of wildlife corridors, the removal of invasive non-native species etc. **'Manage'** requires ongoing **management regimes** to ensure **long-lasting benefits** of retained and proposed wildlife features and habitats. Finally, *"****monitoring*** *should be included to* ***measure success*** *(and where appropriate, to* ***trigger remedial actions****)..."*

Vale of Glamorgan Green Infrastructure Strategy, December 2023

The Green Infrastructure Strategy provides "a strategic framework for the planning, design and management of GI across the Vale of Glamorgan (the Vale), and to increase understanding of what GI is in the context of the Vale, by:

- **Understanding the current provision of GI assets across the Vale**, in particular Council owned assets, and **identifying needs and opportunities for enhancement, connection or expansion.**
- Ensuring that GI delivery supports the Vale of Glamorgan Well-being Plan 2023-28, Climate Change Challenge Plan 2021-2030 and the 2019 Biodiversity Forward Plan.
- **Helping to embed GI into the emerging Replacement Local Development Plan** (RLDP) to support growth and sustainable development in the Vale.
- **Protecting, enhancing and increasing the provision of GI** across the Vale through good design standards, governance and asset management/community stewardship.
- Supporting funding applications for GI projects and corporate decision making on investments.

Section 3 sets out the need for Green Infrastructure Assessments in relation to PPW. **Green Infrastructure Assets** in the Vale have been identified and mapped, in accordance with NRW's Green Infrastructure Assessment Guidance Note 42, 2023. The GI assets are categorised into the following **typologies**: Green and Blue Spaces; Green Connections; Trees; and Productive Landscape with some typologies further sub-categorised.

Section 4 identifies the proposed **strategic GI network** for the Vale and strategic GI corridors. The objective of the strategic GI network are as follows:

"1. **Improve Health & Well-being**: create a GI network that supports healthy communities and encourages active lifestyles, bringing nature closer to people.

2. **Enhance Biodiversity & Increase Ecosystem Resilience**: develop a resilient and better-connected ecological network that supports net biodiversity gains to underpin nature recovery.

3. **Increase Climate Change Mitigation & Resilience**: maximise nature-based solutions to help mitigate and adapt to the impacts of climate change.

4. **Improve Social Cohesion**: maximise opportunities for GI to support social initiatives and bring communities together

5. Support Sustainable Economic Development: integrate GI as a key component of the local economy, tourism and regeneration.

6. **Strengthen Sense of Place**: utilise GI to enhance landscape character and the built environment."

Paragraph 4.3.2 goes on to state " The proposed vision and strategic objectives for implementing the GI Strategy are reflective of the GI quality standards for place-making and place-keeping provided by the **Building with Nature Standards**, which provide a benchmark of good practice for integrating GI and development."

Section 5 sets out the delivery plan, paragraph 5.1.2 states "The GI Strategy **promotes an integrated and joined up approach to delivering GI** that takes into account the needs of the Vale's communities, environment and economy. An important overarching principle underpinning the GI Strategy is the need to recognise the **multi-functionality of GI assets** and to maximise the benefits different assets can deliver through an integrated approach."

Vale of Glamorgan: Replacement Local Development Plan: Green Infrastructure Statements for Proposed Key Sites

A note has been prepared in relation to the preparation of Green Infrastructure Statements for the promotion of residential sites in the Replacement Local Development Plan. The note refers to **NRW's Guidance Note 042 Green Infrastructure Assessments**.

It states "It is expected that green infrastructure statements will include GIS mapping".

The GI Statement should identify the **important GI assets** that can be found on site; identify the **main threats and challenges** this GI is exposed to; and what **opportunities** there are to **maintain and improve GI** as part of the proposed development.

The note goes on to state "In line with PPW, the first priority for creating a **resilient** green infrastructure network is to **avoid causing damage** to those green infrastructure assets that already exist on the site."

In relation to opportunities, the GI Statement could consider if there are opportunities to **improve the condition** of existing GI, improve the **extent or connectivity** of GI, consider **how long** it likely before **net benefit for biodiversity** can be achieved, any **mitigation** measures, and are there any other benefits that could be achieved.

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.

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.

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*."

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

The site comprises several small pasture fields immediately to the north of Dinas Powys and to the west of Cardiff Road. The following paragraphs provides an overview of the site and surrounding context in relation to GI.

Designations: Landscape

Special Landscape Area

The site is located in the locally designated **Special Landscape Area**: Cwrt-yr-Ala Basin, see Figure 2. The primary landscape qualities and features are described as:

"*The majority of the SLA area landscape is focused on the Cwrt-yr-ala valley, forming the headwaters of the Cadoxton Valley. There is a strong sense of place with* ***streams, dammed ponds, wooded valley sides*** *and pleasant settlement in the valley bottom. The farmland is generally well maintained but there are* ***signs of urban fringe pressure on lanes****. The enclosed topography in association with woodland creates a sense of enclosure and the steep sided valleys dominate the character of the landscape and habitats.* **Woodland is semi-natural and planted broadleaf and includes a SSSI**. *There is potential to sympathetically manage and thus improve the quality of this mixed woodland resource.*"

Ancient Woodland

Adjacent to the northwest boundary is a small square block of **Restored Ancient Woodland Site**, see Figure 2. Immediately to the southwest of the site is a small rectangular block of **Ancient Semi Natural Woodland**.

Beyond the immediate context of the site, the wider area contains some ancient woodland, particularly to the west where parts of Case Hill Wood and Park Wood are designated as ancient woodland.

Tree Preservation Orders (TPO)

The blocks of woodland immediately to the northwest and west of the site that are designated as ancient woodland are also covered by TPOs. There is also a TPO group around the northeast of Mill Farm, adjacent to the northwest corner of the site, see Figure 2.

TPO groups are also located to the west of the site, associated with the linear development along Pen-Y-Turnpike Road.

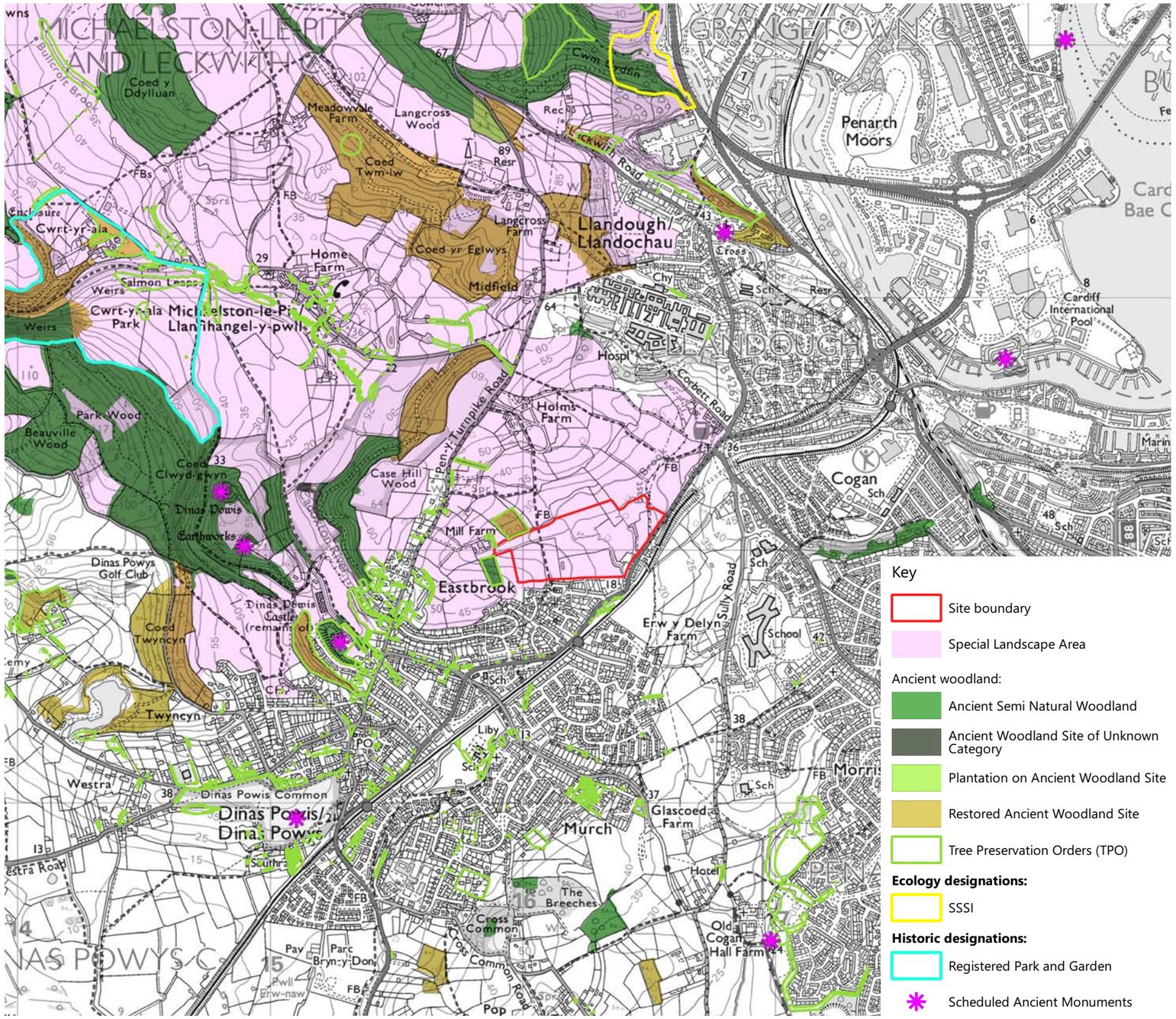


Figure 2: Designations

Designations: Ecology

Sites of Special Scientific Interest (SSSI)

The nearest SSSI to the site is **Cwm Cydfin, Leckwith**, which circa 1.6km to the north of the site at its nearest point, see Figure 2.

Sites of Importance for Nature Conservation (SINC)

Some surrounding woodland blocks, mainly to the northwest of the site, are designated as SINCs. The nearest SINC to the site is **Case Hill Wood**.

Designations: Historic

Registered Parks and Gardens

Cwrt-yr-ala is Grade II listed and is located approximately 1.2km to the northwest of the site at its nearest point, see Figure 2. It contains a **small park, ponds, a formal garden with terraces and a walled kitchen garden**.

Scheduled Ancient Monuments

Dinas Powys Castle is the nearest scheduled monument to the site, located circa 0.7km to the southwest of the site, see Figure 2. It comprises the remains of a medieval castle, which is **set within an area of woodland**.

LANDMAP

LANDMAP is an approach that defines aspects of the landscape into five categories. Whilst it is primarily used for landscape character assessments, it is a useful tool to provide an indication of green infrastructure of an area. The below paragraphs provide a summary of key characteristics in relation to green infrastructure.

Landscape Habitats

The site is located in the south of the extensive area **Leckwith-Dinas Powys Woodlands** (VLFGLLH988), which is classified as Mosaic (Level 3). The key features that define the biodiversity character (question LH24) includes a "*Landscape of **steep wooded slopes** interspersed by **improved agricultural grasslands** on flatter ground between. The base-rich Ash woodlands often support a diverse ground flora.*"[1]

1 https://landmap-portal.naturalresources.wales/view_survey.php?survey_id=10678

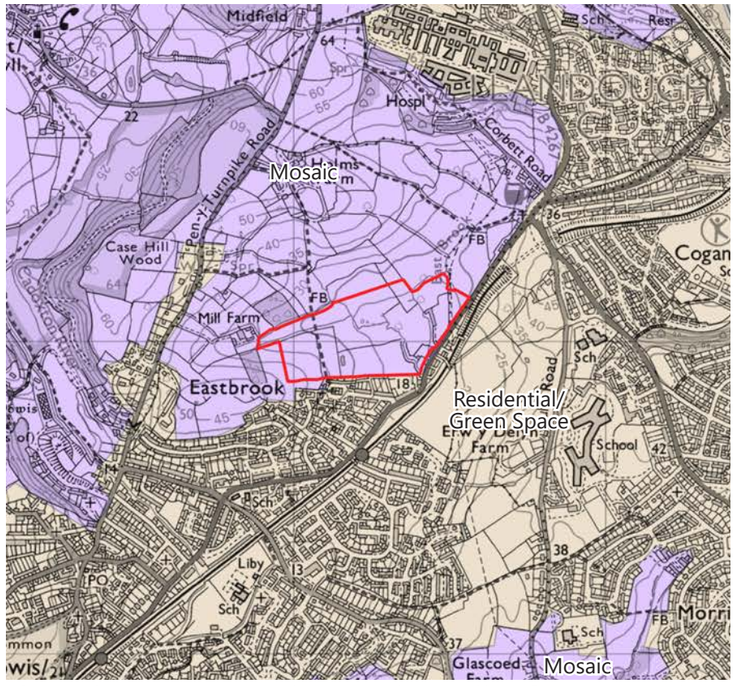


Figure 3: LANDMAP Landscape Habitats: Classifications (Level 3)

Visual and Sensory

The site is located within aspect area **Penarth and Dinas Powys Urban Fringe** (VLFGLVS473), which is classified as Mosaic Rolling Lowland (Level 3). The aspect area is described as (question VS3) lying "*A **rolling/undulating lowland landscape** rising to approximately 60m AOD in the north from approximately 10m AOD in the south. The area forms **a green buffer between Penarth to the east and Dinas Powys** in the west. The landcover is predominantly **pastoral fields with many overgrown hedgerows containing trees**. There are some wooded areas to the south mostly around Pop Hill. Farms are scattered across the area and discontinuous ribbon development has occurred along the narrow lanes over time...**Many fields appear overgrown whilst others appear overgrazed**. Some are used for equestrian uses...*"[2]

2 https://landmap-portal.naturalresources.wales/view_survey.php?survey_id=2805

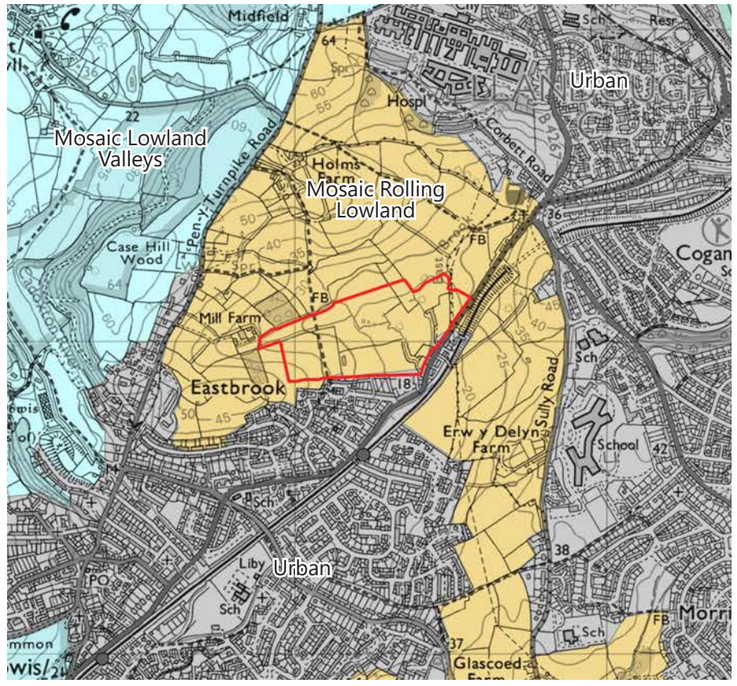


Figure 4: LANDMAP Visual and Sensory: Classifications (Level 3)

03 Existing Green Infrastructure

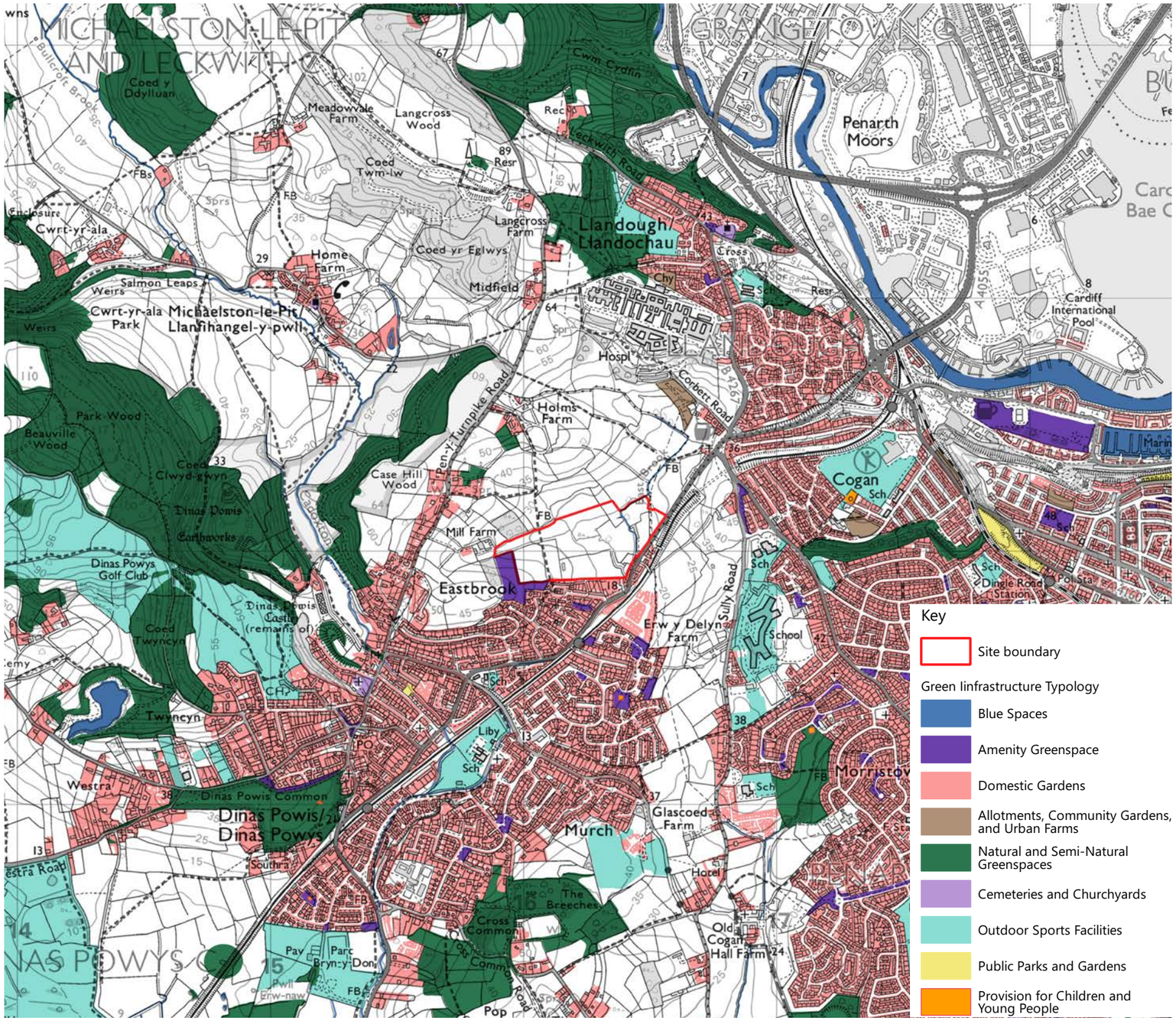


Figure 5: VoG GI Typology: Green & Blue Spaces

Vale of Glamorgan Green Infrastructure Assets

The following paragraphs describe the GI Assets within the site and its context, as defined by the Vale of Glamorgan Green Infrastructure Strategy. ...

GI Typology: Green & Blue Spaces

The only Green & Blue Space within the site is East Brook watercourse **Blue Space**, which meanders through the east.

Adjacent to the southwest of the site is an 'L' shaped area of **Amenity Greenspace** that comprises woodland, amenity grass for kick about space, and a fenced equipped play area. Smaller amenity greenspaces are scattered to the south of the site within residential areas.

Domestic Gardens are adjacent to the southern boundary of the site and extend southwards covering the settled areas within the context of the site. This GI typology is the primary GI asset surrounding the site.

Beyond the site, to the northeast is an **Allotment, Community Gardens, and Urban Farm**. Another is located in Cogan, to the east of the site and railway line.

Natural and Semi-Natural Greenspaces are located on the fridges of settlement areas within the context of the site. The nearest areas is to the northwest of the site, on the east side of Pen-y-Turnpike Road with a larger area within Case Hill Wood further to the west.

The remaining Green & Blue Space typologies are scattered within Dinas Powys and Penarth.

GI Typology: Green Connections

Within the west of the site a **Public Right of Way** transects the site in a north to south direction, connecting the northern edge of Dinas Powys to Pen-y-Turnpike Road. Further to the north, a public footpath crosses the valley from Pen-y-Turnpike Road to the A4055.

Adjacent to the eastern boundary of the site a **Cycle Network** route follows the A4055 Cardiff Road, connecting Dinas Powys to Cogan.

Beyond the immediate context of the site, there are some **Cycle Network - Active Travel** routes within Dinas Powys, Cogan, and Penarth.

In addition, to the northwest of the site is Cwm George and Case Hill Woods, a Woodland Trust site, on the northwest side of Pen-Y-Turnpike Road. The site is publicly accessible and contains several permissive footpaths and bridleways.

Dinas Powys Common is also located on the southwest edge of the settlement, circa 1km to the southwest of the site.

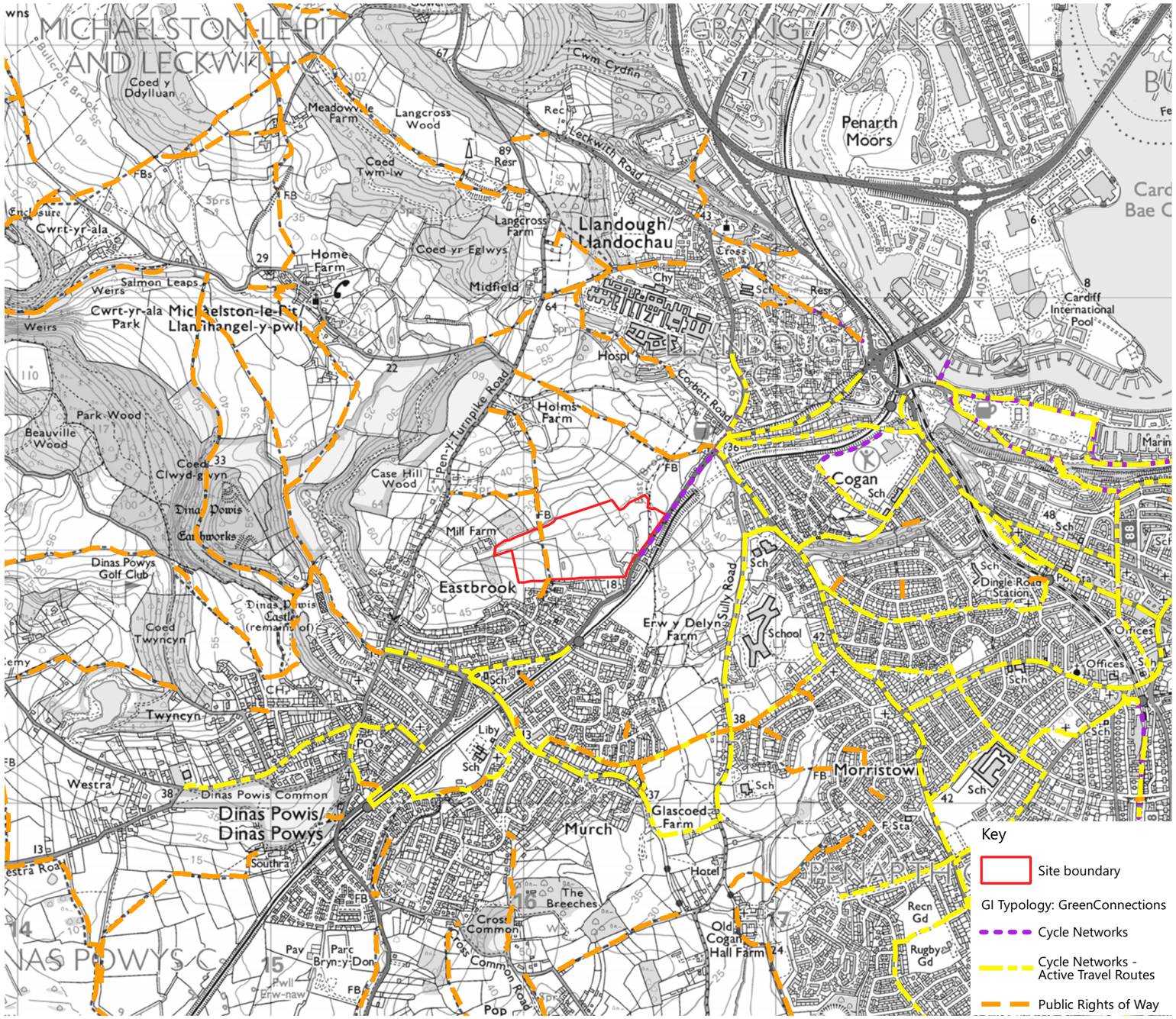


Figure 6: VoG GI Typology: Green Connections

03 Existing Green Infrastructure

GI Typology: Trees

As previously identified, small areas of **Woodland** are located adjacent to the west and northwest boundary of the site. Other areas of woodland are mainly scattered further to the west.

There are some small groups of **Urban Trees** in the southeast corner of the site with other small scattered groups within the adjacent settlement area to the south.

GI Typology: Productive Landscapes

The majority of the site is defined as a **Productive Landscapes** (agricultural pasture fields). Productive Landscape extends to the north, west and east of the site, surrounding settlement areas.

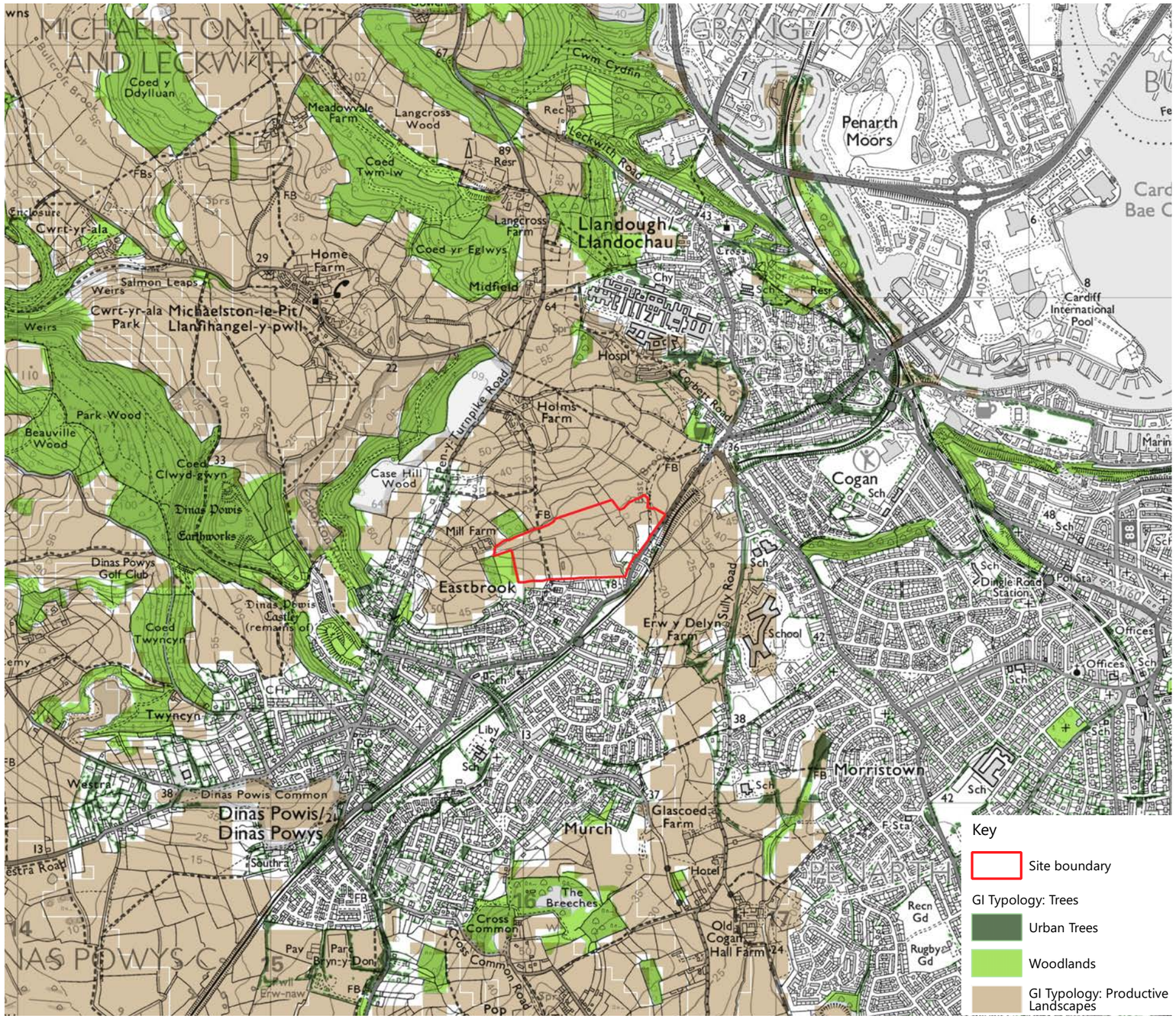


Figure 7: VoG GI Typologies: Trees and Productive Landscapes

04 The Site

The site mainly consists of pasture fields for horse grazing that are bounded by **overgrown hedgerows and treelines**, which form an important GI asset to the site and its context. The **main threat** to this GI asset are the paddocks for horse grazing in the east of the site and nearby fields. There are signs of field boundary decline due to poor maintenance and the introduction of materials such as Heras fencing and structures.

The **opportunity** for the site is to remove these structures associated and infill with new native trees and/or hedgerow to fill in gaps that would reconnect gappy sections with the wider vegetation pattern. Grassland areas on the site could also be enhanced with the planting of species-rich grassland/ wildflower meadow.

A **public footpath** transects the west of the site. A **threat** to the route is waterlogging due to the grazing of animals over winter. There is an **opportunity** to improve the footpath for users and encourage active travel. Additional routes and cycle paths within the site could be created, that connect to the existing footpath, green spaces, and nearby cycle routes.

In the east of the site is **East Brook watercourse.** A **threat** to the watercourse is horse grazing that leaves exposed areas of ground. An **opportunity** for the site is to enhance the watercourse and create a buffer and strategically connect new SuDS features, grassland and trees/ vegetation to enhance the riparian character and habitat of the watercourse.

Adjacent to the northwest and west of the site are blocks of **woodland**, which are mostly designated as ancient woodland. The **main threat** to the woodland blocks is their setting to suburban development. An **opportunity** for the woodland blocks is to ensure their setting is enhanced. Suitable buffers around the woodland could be created with ecotones of native scrub and species-rich grassland. New habitats and connections could also be created.

04 The Site

The following site photographs illustrate the features of the site and its context:

1. View north from Clos y Glascoed
2. View from Turnpike Road
3. View from A4055
4. View towards Mill Farm from the public footpath
5. Overgrown hedges / mature trees lines
6. Existing LEAP at Seel Park
7. View northeast across valley towards University Hospital Llandough
8. View south from public footpath towards houses on Highfield Close
9. View northwest across western part of the site towards houses along Pen-y-Turnpike Road

05 Framework Masterplan

Figure 8: Framework masterplan by Roberts Limbrick

Framework masterplan

Roberts Limbrick Architects have produced a Framework Masterplan with input from the project team of specialists in planning, ecology, transport and landscape architecture.

Vision

The vision for the proposed development focuses on a green and sustainable development. With a landscape led scheme, the concept has developed around the desire for well **connected green corridors** running through the centre of the scheme. A network of **active travel routes** would benefit from the **green corridors**, fostering community cohesion and encourage active travel, landscape based exercise and play. The green wildlife corridors offer opportunity for enhancement to biodiversity to encourage natural flora and fauna.

Ancient woodland adjacent to the site would be maintained and additional parkland will be created and enhanced to provide amenity space for future residents and existing residents of the adjacent neighbourhood. The parkland also provides a transition from the approach onto Cardiff Road.

At the heart of the framework plan for the site is a liner area of **public open space** that would incorporate areas of informal play. It would form part of the green corridor through the site and connect to existing public rights of way, and trees and ancient woodland. The central valley is also the focus for active travel and the Sustainable Drainage strategy for the site (SuDS).

The Landscape Strategy has been guided by five themes as shown at Figure 9. These are:

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

06 Landscape Concept

Figure 9: Green Infrastructure Concept

Theme	Aim	Multi-functionality
	• 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 infrastructure	• Connect networks of green infrastructure, including ancient woodland to provide a better setting for active travel routes (**Active Landscape**), SuDS (**Sustainable Landscape**), and improve biodiversity (**Biodiverse Landscape**) • Improved connectivity offers opportunities for social interaction (**Hands on 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	• 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**)
	• Resilient to a changing climate • Landscape strategy to be delivered using low-carbon materials and build methods • SuDS an integral part of the design • Promote active travel - walking and cycling	• 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 food growing 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.	• 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**)
	• Promote walking and cycling • Opportunities for food growing should be explored with fruit trees planted • 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	• Connect networks of green infrastructure to provide a better setting for active travel 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**)

07 Landscape Strategy

Figure 10: Landscape Strategy

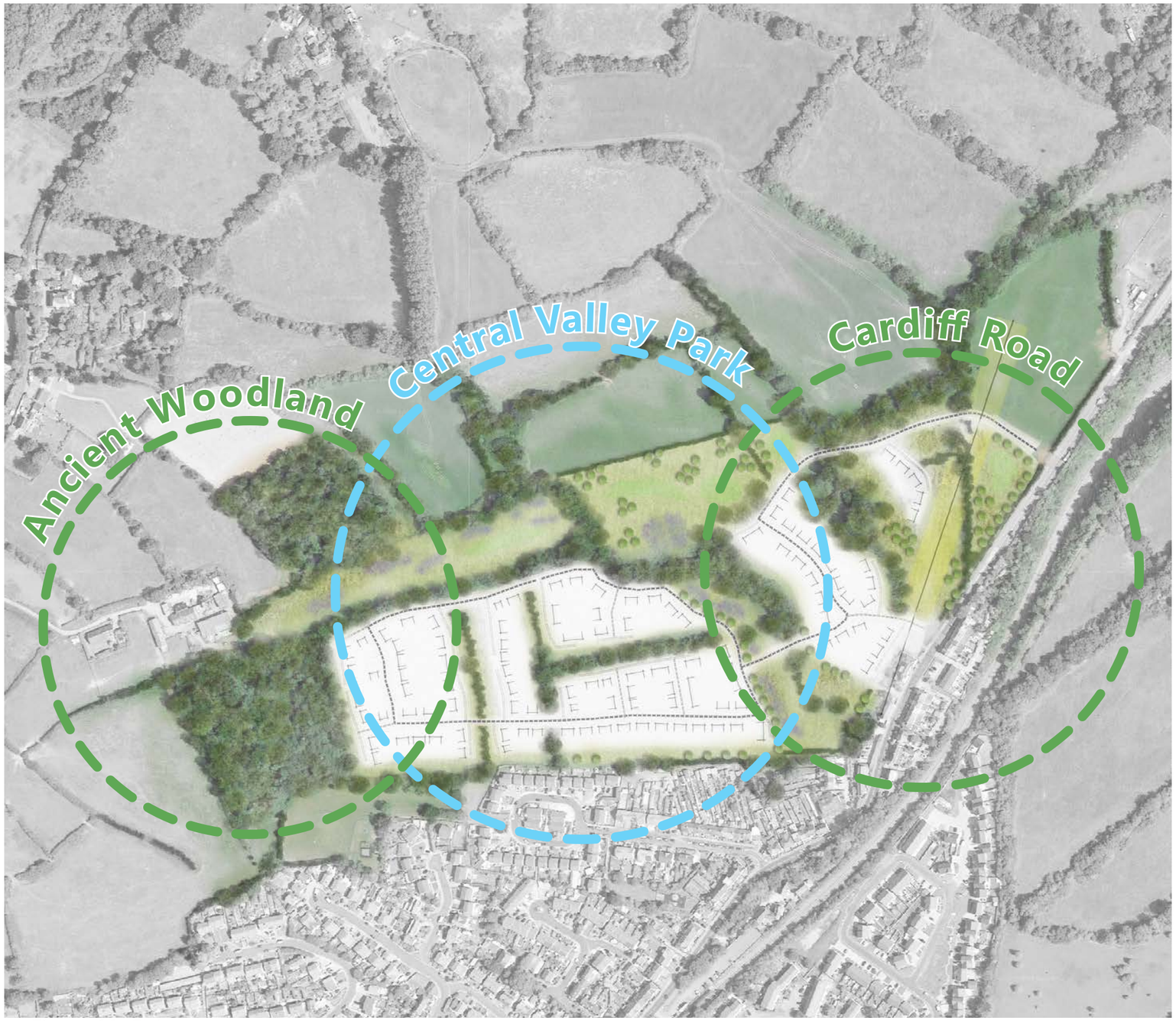


Figure 11: GI Areas

Areas of green infrastructure

Central Valley Park: a grassland landscape within the setting of ancient woodland and **retained treelines / hedgerows**. Existing hedges would be retained and supplemented with native species where required.

This space would fully realise the amenity and biodiversity potential of **Integrated Sustainable Drainage** features to improve the diversity of the green infrastructure with multiple benefits - biodiversity, amenity, a setting for active travel and landscape based play. The design would create good **Direct, Safe and Attractive routes** to contribute to active and healthy lifestyles.

Landscape based play would include a LEAP and LAPs. There is potential for a green gym and walking/running trails. The design would create good **Direct, Safe and Attractive routes** to contribute to active and healthy lifestyles.

Cardiff Road: this is an arrival space from the east and also provides a buffer to Cardiff Road. It provides separation between the development and the road and railway line. The **retention of existing treelines and grassland areas** helps to maintain the character of Cardiff Road and physical separation between existing settlements.

The landscape incorporates a range of features to improve **biodiversity** as a key part of the design including the use of native species, biodiverse habitats and **SuDS**.

The design would create good **Direct, Safe and Attractive routes** to contribute to active and healthy lifestyles. Indirect routes through the landscape would be created as part of a green gym and walking/running trails.

Ancient Woodland: this would be **retained and protected** and **ecotone buffers** from the woodland would be created. Existing and proposed green infrastructure elements would **connect** to the woodland blocks. The reinforcement of vegetation pattern is important to landscape character.

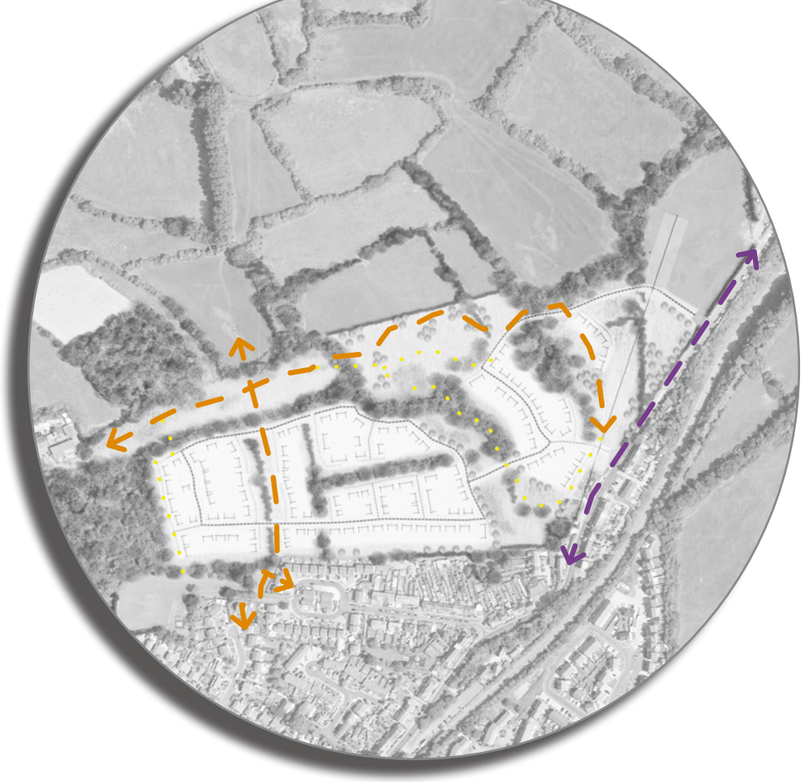
07 Landscape Strategy

Central Valley Park

Ancient Woodland

Cardiff Road

Active Travel



08 Green Infrastructure

The following paragraphs describe the landscape strategy in relation to the retained and proposed GI Assets and how the framework masterplan has responded to the opportunities and threats to green infrastructure on the site and its context.

The landscape strategy has also reflected stepwise approach by **Identifying and assessing** existing features, that reference the Vale of Glamorgan Green Infrastructure Strategy, to ensure the retention of existing GI was a priority wherever possible to **avoid** and **respond and design**. This statement provides a high-level description of the effects of mitigation of the individual GI Assets, which forms the **mitigation** with a view to minimising any negative impacts on biodiversity as far as possible. The proposals seek to deliver enhancements over and mitigation for loss.

GI Typology: Green & Blue Spaces

East Brook watercourse **Blue Space** is the only existing Green & Blue Space within the site. It is currently threatened by horse grazing, leaving exposed areas of ground. The proposals for the site would **enhance** the riparian character and habitats along the watercourse. A buffer would be created from the retained watercourse with opportunities to create new connecting SuDS features along the corridor to enhance the diversity of the Blue Space.

The existing **Amenity Greenspace** to the west of the site would be retained. Throughout the site, new Amenity Greenspaces would be created. Within the centre of the site a LEAP within green infrastructure is proposed and would include a 20m buffer to dwellings. LAPs are also proposed around the site. New Amenity greenspaces would also provide informal play, which would also be incorporated in SuDS features such as swales and attenuation basins. Boulders, logs and beams will encourage imaginative play within the landscape for all age groups.

There are also opportunities for a **Allotment, Community Gardens, and Urban Farm** space. A communal garden space will be considered due to the potential wider benefits for health and well-being, social interaction, cohesion and education. The space would provide communal growing space and areas for seating and social interaction.

The proposed development would contribute to the **Domestic Gardens** GI Asset.

The proposed green corridors within the site provide an opportunity to create **Natural and Semi-Natural Greenspaces.** The proposed ecotones along ancient woodland edges will primarily create a buffer to the woodland. It will typically be 15m in width and may potentially incorporate informal play or access paths.

Proposed grassland areas within the scheme are to be sown with a diverse native wildflower seed mix, which would provide a foraging resource for a range of species including invertebrates and birds. This may encourage interaction with nature and some educational opportunities.

GI Typology: Green Connections

The **Public Right of Way** within the west of the site is currently threatened by horse grazing that has caused water logging.

Proposals for the site would seek to retain and enhance this route and connect it to the wider public rights of way, **Cycle Network** and areas of public access via new routes within the site. There are opportunities to enhance active travel through the site and encourage interaction with nature along the new green corridors.

GI Typology: Trees

Small **Woodland** blocks, which are mainly designated as ancient woodland, are located adjacent to the west and northwest boundary of the site. The woodland blocks would be maintained with new ecotone buffers around the woodland created to ensure they are protect and to create new habitats. Improved management and the ecotone would also help to increase the resilience of the woodland to climate change.

The retained treelines and proposed trees within the site would contribute to the **Urban Trees** GI Asset. Proposed street trees would be situated in widened verges, where possible, at a minimum of 3m in width to avoid the need for underground root cells. New tree planting would help to frame views and define spaces, and will include native, fruiting and flowering species.

New tree and hedgerow planting would enhance the connectivity of GI Assets within the site, also linking to GI Assets beyond the site boundary. Woodland and trees within and adjacent to the site, with enhanced buffers, would create new habitats, increase resilience of ecosystems, enhance connectivity and the multi-fuctionality of the GI assets on the site.

GI Typology: Productive Landscapes

The site would change from a **Productive Landscape** (agricultural pasture fields) to a residential development. However, there are may opportunities to avoid, minimise and enhance impacts to the overall green infrastructure, as described in the previous paragraphs.

08 Green Infrastructure

Multi-functionality of Green Infrastructure

This section identifies the multi-functionality of each GI Asset: Green and Blue Spaces; Green Connections; and Trees. These elements reflect the overarching principle of **enhance** by 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 sets outs the GI Assets, the benefits of the proposals are tabulated 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

GI Typology	Functions	Building with Nature Standards
Green and Blue Spaces: Blue Space - Retained East Brook watercourse. Proposed SuDS features	• Contribution to Placemaking • Flood Mitigation • Food • Exercise • Health and Wellbeing • Calming and Inspiring • Nutrient Cycling • Wildlife Habitat • Cleaning Water and Air	1 - Optimises Multi functionality and Connectivity 2 - Positively Responds to the Climate Emergency 3 - Maximises Environmental Net Gains 4 - Champions a Context Driven Approach 5 - Creates Distinctive Places 6 - Secures Effective Place-keeping 7 - Brings Nature Closer to People 9 - Delivers Climate Resilient Water Management 10 - Brings Water Closer to People 11 - Delivers Wildlife Enhancement 12 - Underpins Nature's Recovery
Green and Blue Spaces: Amenity Greenspace - Proposed play areas, informal play area, public open space/ amenity spaces throughout the site	• Contribution to Placemaking • Exercise • Health and Wellbeing • Calming and Inspiring	1 - Optimises Multi functionality and Connectivity 4 - Champions a Context Driven Approach 6 - Secures Effective Place-keeping 7 - Brings Nature Closer to People 8 - Supports Equitable and Inclusive Places
Green and Blue Spaces: Allotment, Community Garden, Urban Farm. Domestic Gardens - proposed allotments/ community garden spaces and proposed domestic gardens.	• Food • Exercise • Health and Wellbeing	7 - Brings Nature Closer to People 8 - Supports Equitable and Inclusive Places
Green and Blue Spaces: Natural and Semi-Natural Greenspaces - Proposed ecotones, species-rich grassland and wildflower meadows, native hedgerows, buffers of other GI Assets	• Contribution to Placemaking • Cooling and Shade • Health and Wellbeing • Calming and Inspiring • Nutrient Cycling • Wildlife Habitat • Wind break • Cleaning Water and Air	1 - Optimises Multi functionality and Connectivity 2 - Positively Responds to the Climate Emergency 3 - Maximises Environmental Net Gains 4 - Champions a Context Driven Approach 5 - Creates Distinctive Places 6 - Secures Effective Place-keeping 7 - Brings Nature Closer to People 11 - Delivers Wildlife Enhancement 12 - Underpins Nature's Recovery
Green Connections: Retained public rights of way and cycle network. Proposed new access routes	• Contribution to Placemaking • Exercise • Health and Wellbeing • Calming and Inspiring • Wildlife Habitat	1 - Optimises Multi functionality and Connectivity 4 - Champions a Context Driven Approach 5 - Creates Distinctive Places 7 - Brings Nature Closer to People 8 - Supports Equitable and Inclusive Places
Trees: Retained woodland, trees and hedgerows. New tree and hedgerow planting	• Contribution to Placemaking • Cooling and Shade • Health and Wellbeing • Calming and Inspiring • Nutrient Cycling • Wildlife Habitat • Wind break • Cleaning Water and Air	1 - Optimises Multi functionality and Connectivity 2 - Positively Responds to the Climate Emergency 3 - Maximises Environmental Net Gains 4 - Champions a Context Driven Approach 5 - Creates Distinctive Places 6 - Secures Effective Place-keeping 7 - Brings Nature Closer to People 11 - Delivers Wildlife Enhancement 12 - Underpins Nature's Recovery

08 Conclusions

This Green Infrastructure Statement has identified the existing green infrastructure assets on the site and has set out their typologies in accordance with the Vale of Glamorgan Green Infrastructure Strategy. It has identified that the majority of the site is defined as 'Productive Landscape' consisting of pasture fields that are mainly used for horse grazing with some overgrown hedgerows and trees lines. The site also contains liner 'Blue Space' associated with East Brook watercourse, and a public right of way.

Adjacent to the site, GI typologies include blocks of 'Woodland' (some designated as Ancient Woodland), 'Amenity Greenspace', and 'Domestic Gardens'.

Threats to the existing GI assets are mostly associated with horse grazing such as waterlogging of the footpath and exposed areas alongside the East Brook watercourse. There are also signs of field boundary decline due to poor maintenance and the introduction of materials such as Heras fencing and structures.

The potential for the site to be developed to a residential development provides the opportunity to enhance green infrastructure on the site and provide connections to adjacent and nearby GI assets. Existing GI assets could be enhanced with the removal of fencing materials and the planting of new hedgerow and trees to fill existing gaps. The existing footpath could also be improved for the benefit of users to encourage active travel.

There would also be opportunities to create new green infrastructure and habits that are multi-functional. New buffers would be created along the East Brook watercourse and adjacent woodland edges. These assets could be strategically connected to the wider GI network with the planting of new trees and hedgerows and strengthened by the provision of new grassland areas.

There are opportunities for new SuDS features throughout the site, which would also be integrated into residential streets to enhance well-being and provide opportunities for people to connect with nature. New tree and hedgerow planting would also be provided throughout the site, connecting existing GI assets. Active travel would also be encouraged with new pedestrian and cycle routes that connect to the surrounding area.

The provision of new public open spaces would also include areas for play as well as informal play areas throughout the site.

New domestic gardens would also contribute to the GI of the site. Front gardens would be planted with a range of shrubs that provide seasonal and biodiversity interest. Rear gardens could include fruit trees and species-rich grassland mixed, which would be sourced from local area.

Overall, the principles of the landscape strategy have been developed in accordance with Section 6.4 of PPW12 and demonstrate that the proposed scheme has been designed in response to the Welsh Government's stepwise approach. Existing green infrastructure assets have been identified and are to be retained, where possible. There are also opportunities for these retained features to be enhanced in the interest of delivering biodiversity benefits.

Next steps

Further survey work will be needed as the site proposals evolve. This includes ecology surveys and tree surveys to ensure existing habitats and GI assets are retained and protected, where possible. These surveys would also inform the landscape design of the site and its coordinated approach to ensure the GI of the site can be enhanced.

tir collective
LANDSCAPE ARCHITECTS

Floor 7, Brunel House,
2 Fitzalan Road,
Cardiff,
CF24 0EB