

# **Green Infrastructure Statement**

**Development at Cardiff Gate**

**November 2021**

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## 1. Introduction

This document has been prepared to support an outline planning application at Cardiff Gate International Business Park for Barton Willmore. The development comprises a mixed use development, residential development, and sustainable transport link to the strategic site to the west and a link through Becks Court to St Mellons Road in the south east. The objectives are to maintain and develop a network of green corridors and infrastructure to support biodiversity and ensure they link in with the wider ecosystem. This statement has been written in accordance with the Cardiff Green Infrastructure SPG.

## 2. Green Infrastructure Definition and Terminology

Green Infrastructure has been defined by the Landscape Institute in their publication, Green Infrastructure: An integrated approach to land use (2013), as

*“the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. Individually, these elements are GI assets, and the roles that these assets play are GI functions. When appropriately planned, designed and managed, the assets and functions have the potential to deliver a wide range of benefits – from providing sustainable transport links to mitigating and adapting the effects of climate change.”*

Natural Resource Wales (NRW) defines Green Infrastructure as

*“a term that’s sometimes used to describe a wide range of natural and semi-natural features, spaces, rivers and lakes including parks, fields, allotments, hedgerows, roadside verges and gardens, not to mention entire ecosystems such as wetlands, waterways and mountain ranges.”*

The Cardiff Green Infrastructure SPG defines Green Infrastructure as

*“Green infrastructure is a network of multi-functional, connected green spaces that make the best use of land and provide green open space for all, helping wildlife to flourish, and delivering a wide range of economic, health and community benefits.”*

The Cardiff Green Infrastructure Plan explains that:

*“Green infrastructure is about multi-functional, connected green spaces that make the best use of land - at the same time providing green open space for all, helping wildlife to flourish, and delivering a wide range of economic, health and community benefits. This is as important to the city as its ‘grey’ infrastructure of roads, buildings and power lines(CABE 2009), and helps to address many of the social and environmental issues linked to urban life (Wildlife Trust Wales 2016).*

*Green infrastructure is broadly analogous to ‘Natural Capital’, which can be defined as ‘...the elements of nature that produce value (directly and indirectly) to people, such as the stock of forests, rivers, land, minerals and oceans. It includes the living aspects of nature (such as fish stocks) as well as the non-living aspects (such as minerals and energy resources). Natural capital underpins all other types of capital... and is the foundation on which our economy,society and prosperity is built.’ (The Natural Capital Committee 2017).”*

The Landscape Institute position statement “*Green infrastructure: connected and multifunctional landscapes*” provides the following definitions for Green Infrastructure terminology:

### ***“GI assets***

*GI assets include the natural elements which provide social, environmental or economic benefit. They can be specific sites or broader environmental features within and between rural and urban areas. A useful approach to outlining the different types of GI asset is to classify them according to the spatial scale at which each would typically be found.*

### ***Connectivity***

*Connectivity between different GI assets will help maximise the benefits that they generate. This connectivity can be visual or notional; however physical connections make the most impact. This connectivity can enhance public engagement with the natural environment, improve opportunities for biodiversity migration and assist in encouraging sustainable forms of travel.*

### ***GI functions***

*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 systems. Each asset can perform different functions, a concept known as multifunctionality.*

### ***Multifunctionality***

*Understanding multifunctionality is central to the GI approach to land use planning. Where land performs a range of functions it affords a far greater range of social, environmental and economic benefits than might otherwise be delivered.*

*Ecosystem services Underpinning the multiple functions that GI assets perform is the concept of ecosystem services. Health and wellbeing depends on the range of services provided by*

*ecosystems and their constituent parts: water, soils, nutrients and organisms. These services include:*

*support: necessary for all other ecosystem services, e.g. soil formation and photosynthesis; —  
provision: food, fibre, fuel;*

*regulation: air quality, climate control, erosion control; and*

*culture: non-material benefits for people, including aesthetic qualities and recreational experiences.*

### ***GI approach***

*GI approaches to land-use planning promote the widest range of functions which can be performed by the same asset, unlocking the greatest number of benefits. Such an approach enables us to demand more from the land in a sustainable way; by helping to identify when it can provide multiple benefits and to manage the many, often conflicting, pressures for housing, industry, transport, energy, agriculture, nature conservation, recreation and aesthetics. It also highlights where it is important to retain single or limited land use functions.”*

### 3. National Planning Policy

#### Future Wales - The National Plan 2040 (Welsh Government 2021)

Policy 9 Resilient Ecological Networks and Green Infrastructure of the Future Wales - The National Plan 2040 states the following with regard to green infrastructure:

*“To ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure, the Welsh Government will work with key partners to:*

- identify areas which should be safeguarded and created as ecological networks for their importance for adaptation to climate change, for habitat protection, restoration or creation, to protect species, or which provide key ecosystems services, to ensure they are not unduly compromised by future development; and*
- identify opportunities where existing and potential green infrastructure could be maximised as part of placemaking, requiring the use of nature-based solutions as a key mechanism for securing sustainable growth, ecological connectivity, social equality and well-being.*

*Planning Policy Wales sets out a range of policies to maintain and enhance biodiversity, promote the resilience of ecosystems, including the stepwise approach, and to maximise the provision of green infrastructure. The strategic focus of Future Wales on urban growth requires an increased emphasis on biodiversity enhancement (net benefit) in order to ensure that growth is sustainable.*

*As the population of Wales becomes increasingly urban, the opportunity to optimise well-being benefits from green infrastructure will be greatest in and around these areas. Innovative use of nature-based solutions and integrating green infrastructure in and around urban areas can help restore natural features and processes into cities and landscapes. Providing locally accessible, high quality green spaces and corridors helps to maintain and enhance the strategic functioning of*

*our natural resources and ecological networks and address physical and mental well-being. Local green infrastructure assets such as public rights of way, common land, parks, village greens and allotments can all make a cumulative contribution towards wider national scale ecological connectivity. The real-life importance of urban green spaces was demonstrated when people were restricted to taking exercise in immediately local green spaces during the COVID-19 lockdown.”*

### **Planning Policy Wales - Edition 11 (Welsh Government 2021)**

Planning Policy Wales - Edition 11 states the following with regard to green infrastructure

*“Integrating Green Infrastructure and Development: Green infrastructure plays a fundamental role in shaping places and our sense of well-being, and are intrinsic to the quality of the spaces we live, work and play in. The planning system should protect and enhance green infrastructure assets and networks because of these multi-functional roles. The protection and enhancement of biodiversity must be carefully considered as part of green infrastructure provision alongside the need to meet society’s wider social and economic objectives and the needs of local communities. The multiple benefits that resilient ecosystems and green infrastructure offer to society, including the economic and social contribution they make to local areas, should be taken into account when balancing and improving these needs.*

*The quality of the built environment should be enhanced by integrating green infrastructure into development through appropriate site selection and use of creative design. With careful planning and design, green infrastructure can embed the benefits of biodiversity and ecosystem services into new development and places, helping to overcome the potential for conflicting objectives, and contributing towards health and well-being outcomes. There are multiple ways of incorporating green infrastructure, dependent on the needs and opportunities a site presents. Landscaping, green roofs, grass verges, sustainable urban drainage and gardens are examples of individual measures that can have wider cumulative benefits, particularly in relation to biodiversity and the resilience of ecosystems as well as in securing the other desired environmental qualities of places.”*



## **Building Better Places, The Planning System Delivering Resilient and Brighter Futures Placemaking and the Covid-19 recovery (Welsh Government 2020)**

Within the above document under ‘Green infrastructure, health and well-being and ecological resilience’ it states the following regarding green infrastructure

*“Resilient ecological networks, whilst vital for nature recovery, are also integral to our health and well-being and form part of our response to climate change. The crisis has highlighted the importance of access to green spaces and opportunities to connect with the natural and historic environment. It has highlighted that easy access and proximity to quality greenspace is severely lacking in some areas and to some sections of our communities and actions to reduce such inequalities should be prioritised as part of wider regeneration and improvement activities as a matter of social and environmental justice. At the same time it is notable how, with the advent of fewer unnecessary journeys and increased walking and cycling, biodiversity has the opportunity to thrive.*

*We must reverse biodiversity decline and enhance the resilience of ecosystems, as well as enable opportunities for social and economic activity based on valuing and enabling access to the natural and historic environment. The planning system has a key responsibility in securing green infrastructure, which plays a fundamental role in shaping places and our sense of well-being and is intrinsic to the quality of spaces in which we live, work and play”*

### **Active Travel (Wales) Act (2015)**

The Active Travel (Wales) Act (2015) set out that Welsh ministers must publish annual reports on the amount of active travel journeys made in Wales. There is also a requirement for Local Authorities to identify and plan for active travel routes and increase the provision for walking and cycling, and encourage users to rely less on cars. Local highway authorities are required to give greater consideration to the requirements of walkers and cyclists and provide greater

infrastructure provision to them. The act also highlights the need to build connections between key sites such as workplaces, hospitals, schools and shopping areas with active travel routes.

### **The Well-being of Future Generations Act (2015)**

The Well-being of Future Generations Act requires public bodies in Wales to consider the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change.

The Planning Act (Wales) 2015 states that Local Planning Authorities must exercise their function in relation to the determination of planning applications “...as part of carrying out sustainable development in accordance with the Well-being of Future Generations (Wales) Act 2015 (annex 2), for the purpose of ensuring that the development and use of land contribute to improving the economic, social, environmental and cultural well-being of Wales.” (PA(W), Sec.2(2)).

## Technical Advice Notes (TANs)

Technical Advice Notes should be read in conjunction with Planning Policy Wales (PPW). TANs should be taken into account by the local planning authorities in the preparation of Development Plans. They may be material to decisions on individual planning applications and will be taken into account by inspectors and the Welsh Government in the determination of appeals and called-in planning applications. The following TANs are relevant to green infrastructure:

### TAN 5: Nature Conservation and Planning (2009)

This Technical Advice Note provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. It brings together advice on sources of legislation relevant to various nature conservation topics which may be encountered by local planning authorities. The key principles of planning for nature conservation are set out followed by advice about the preparation and review of development plans, including the relevant statutory requirements.

### TAN 12: Design (2016)

The revised Technical Advice Notes (TAN) aims to equip all those that are involved in the design of development with advice on how sustainability, through good design, may be facilitated through the planning system. It sets out the core design principles that any development proposal must follow to help create a sustainable environment and exhibit a high level of design quality. These are structured via five the following key objectives of good design:

- Access - Ensuring ease of access for all;
- Character - Sustaining of enhancing local character; promoting legible development; promoting a successful relationship between public and private space; promoting quality, choice and variety; and promoting innovative design;
- Community Safety - Ensuring attractive, safe public spaces and security through natural surveillance;

- Environmental Sustainability - Achieving efficient use and protection of natural resources and enhancing biodiversity; and,
- Movement - Promoting sustainable means of travel.

Figure 1: Objectives of Good Design



TAN 16: Sport, Recreation and Open Space (2009)

This Technical Advice Note provides advice on the role of the planning system in making provision for sport and recreational facilities and informal open spaces, as well as protecting existing facilities and open spaces in urban and rural areas in Wales. The guidance includes advice on Open Space Strategies and Open Space Assessments, and outlines the need to consider green corridors and natural and semi-natural greenspaces when forming development proposals.

## 4. Cardiff Planning Policy

### Cardiff Local Development Plan 2006 - 2026

#### KP16: Green Infrastructure

The policy aims to ensure that Cardiff's green infrastructure assets are strategically planned and delivered through a green infrastructure network.

Policy KP16 of the Cardiff Local Development Plan (June 2008) states the following with regard to Green Infrastructure

Cardiff's distinctive natural heritage provides a network of green infrastructure which will be protected, enhanced and managed to ensure the integrity and connectivity of this multi-functional green resource is maintained. Protection and conservation of the natural heritage network needs to be reconciled with the benefits of development. Proposed development should therefore demonstrate how green infrastructure has been considered and integrated into the proposals. If development results in overall loss of green infrastructure, appropriate compensation will be required. Natural heritage assets are key to Cardiff's character, value, distinctiveness and sense of place.

The green infrastructure network is important for its own sake and for its contribution to the wider quality of life, including the value that people attach to it. It provides a range of economic, social and environmental benefits including reducing impacts of climate change (KP15), enhanced biodiversity habitat and species connectivity (EN5, EN6 and EN7), providing greater opportunities for sports and recreation (C4), contributing to the communities' health and wellbeing (C6) and providing visual benefits for all (KP5).

New developments should incorporate new and / or enhanced green infrastructure of an appropriate size, type and standard to ensure no fragmentation or loss of connectivity. Where the

benefits of development outweigh the conservation interest, mitigation and/or compensation measures will be required to offset adverse effects and appropriate planning obligations sought.

#### KP5: Good Quality and Sustainable Design

The aim of this policy is to ensure that all proposed development is of high quality and sustainable design. New development should make a positive contribution to the creation of distinctive communities, places and spaces. In order to achieve this development must: respond to the local character and context of the built and natural setting; be legible, accessible and safe; maximising renewable energy solutions etc.

#### KP15: Climate Change

This policy sets out the key considerations to be made in order for development to mitigate against the effects of climate change and adapt to its impacts. Factors to be considered include: reducing carbon emissions; protecting and increasing carbon sinks; adapting to the impacts of climate change; promoting energy efficiency and renewable energy; preventing development that increases flood risk; and, avoiding developing in areas susceptible to flood risk.

#### KP17: Built Heritage

As required by legislation and PPW, this policy affords strategic protection for Cardiff's historic environment. Under this policy heritage assets will be protected, managed and enhanced.

#### C6: Health

This policy states that the priority in new developments will be given to reducing health inequalities and encouraging healthy lifestyles through: identifying sites for new health facilities, reflecting the spatial distribution of need, ensuring they are accessible and have the potential to be shared by different service providers; and ensuring that they provide a physical and built environment that supports interconnectivity, active travel choices, promotes healthy lifestyles and enhances road safety.

### **Green Infrastructure SPG, November 2017**

This guidance sets out the principles of green infrastructure, what information is required from developers, and the interaction between different elements e.g. open space and ecology. Separately, it also includes several individual Technical Guidance Notes (TGNs) which provide a greater depth of planning and design information on Ecology & Biodiversity and Trees And Development.

The SPG states that in order to achieve the green infrastructure aims of Cardiff Council:

- Surveys may be required to establish the existing green infrastructure resource;
- Assessments may be required to establish the impact of the proposed scheme upon that resource;
- Conditions or planning obligations will be used to protect and enhance green infrastructure;
- Compensation will be required for the loss of green infrastructure where the benefits of development outweigh the retention and / or enhancement of existing green infrastructure; and
- Management arrangements for green infrastructure must be in place before development commences.

The SPG is supported by various Technical Guidance Notes:

- Ecology and Biodiversity TGN
- Protection and Provision of Open Space TGN
- Public Rights of Way and Development TGN
- River Corridors TGN
- Soils and Development TGN
- Trees and Development TGN

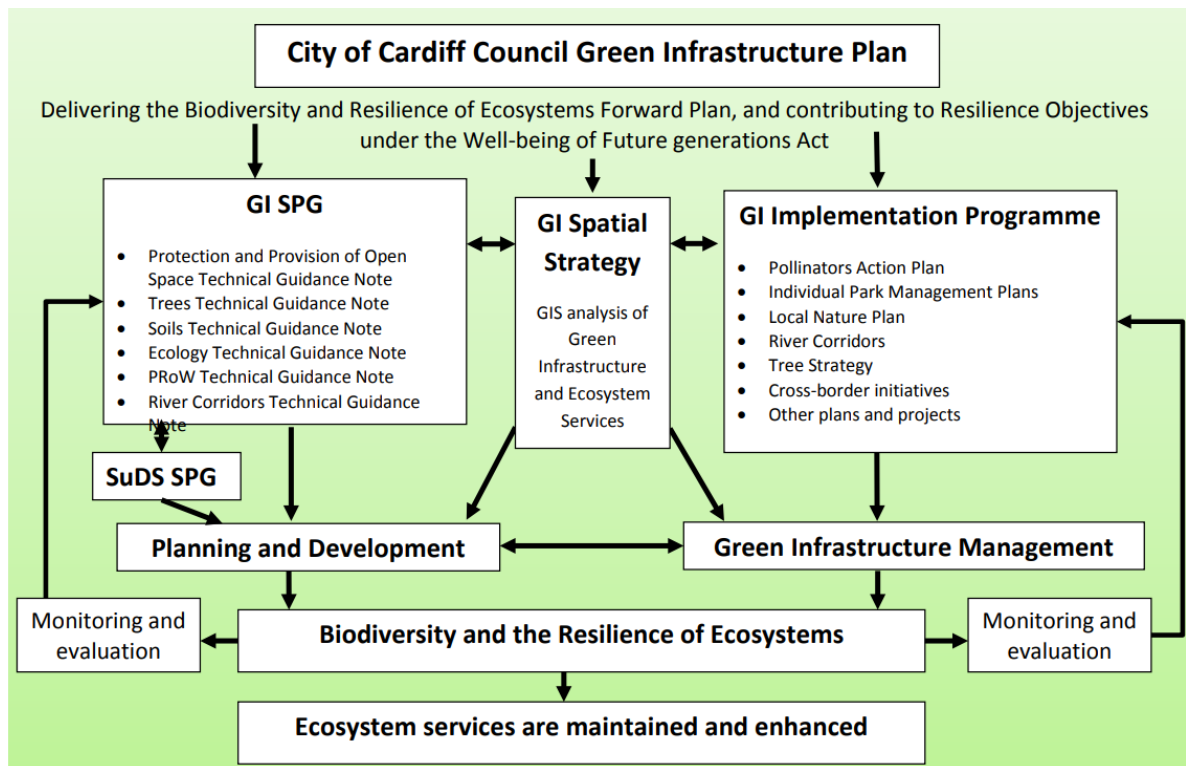
## Green Infrastructure General Principles

The SPG set out several general principles relevant to this development:

- The components of what makes up green infrastructure are set out in section 1.2 of the Green Infrastructure Plan. Depending upon the context of the site, a range of these features, and the interactions between them, may be relevant, and must be considered in relation to new developments;
- New major developments must include a Green Infrastructure Statement which should be appropriate to the scale of the development;
- All elements of green infrastructure referred to in the text of policy KP16 must be considered in a holistic, integrated way;
- For all new major developments, identification of the blue-green corridor (hydrological impact assessment) to determine flood risk and hydrological restrictions must be undertaken first;
- Any masterplan for new major development must take into account the six strategic objectives of the Green Infrastructure Plan;
- Potential trade-offs between different elements of green infrastructure must be addressed according to the criteria in Section 3 of the SPG; and
- Green infrastructure policies will apply to both brownfield and greenfield developments.



Figure 2: Cardiff Council Green Infrastructure Process (taken from the SPG)



### Cardiff Biodiversity and Resilience of Ecosystems Duty Forward Plan (Cardiff Council 2019)

Cardiff Council's Green Infrastructure SPG should be read in conjunction with the Cardiff Biodiversity and Resilience of Ecosystems Duty Forward Plan (Cardiff Council 2019). The 2019 document sets out the Green Infrastructure Plan and the Biodiversity and Resilience of Ecosystems Duty (BRED) Action Plan for the local authority area.

The Green Infrastructure Plan includes the following:

- A Vision for green infrastructure in Cardiff;
- An explanation of what we mean by green infrastructure, and why a green infrastructure approach is beneficial;
- The policy and legislation background supporting a green infrastructure approach; and

- Six strategic objectives for the green infrastructure approach in Cardiff, which maximise the benefits that the green infrastructure approach can make to ecology and biodiversity, climate change mitigation and adaptation, Cardiff's economy, public physical and mental health, learning, volunteering and social inclusion, and Cardiff's sense of place.

The six strategic objectives are:

- To protect and enhance Cardiff's ecosystems to ensure that they continue to support diverse habitats and species, allowing them to adapt to change;
- To ensure that Cardiff's green infrastructure is enhanced and managed in a way that increases resilience to the changing climate and provides protection for people and places.
- To maximise the contribution that green infrastructure makes to Cardiff's economy by enhancing the city's attractiveness for business, tourism and living;
- To increase the potential physical and mental health benefits from a good quality, natural environment by improving, promoting and creating connected, multi-functional green infrastructure in Cardiff;
- To use Cardiff's green infrastructure to provide opportunities for people to access the outdoor environment and to participate in learning, training and volunteering to foster social inclusion and equality and improve life chances; and
- To build upon Cardiff's reputation as a vibrant, green and attractive city by continuing to enhance and sustain the green infrastructure that underpins the city's unique qualities and sense of place.

These principles are referenced in the Green Infrastructure SPG.

Section 1.2 of the Green Infrastructure Plan states that Green infrastructure can include:

- Parks and Gardens;
- Allotments and orchards;
- Open countryside;
- Rivers, lakes, ponds and streams;
- Woodland, hedgerows and scrub;
- Roadside verges and street trees;
- Green roofs and walls;
- School and hospital grounds;
- Cemeteries and churchyards;
- Golf courses;
- Sustainable Drainage Systems (SuDS);
- Railway embankments;
- Footpaths and bridleways;
- Open mosaic habitat on previously developed land (Brownfield sites);
- Headlands and set-aside areas around agricultural fields.

## 5. Assessment of Existing Green Infrastructure

The Green Infrastructure SPG states that:

*“For all major developments, the existing green infrastructure resource in and around the site, based on the list of features in section 1.2 of the Green Infrastructure Plan, must be described and assessed. A thorough contextual analysis of the role of existing green infrastructure in and around the site (e.g. hydrology, habitats, public rights of way and parks) should be provided, appropriate to the scale of the proposed development. This should include a large scale map identifying the role of existing green infrastructure in the connecting wider city and neighbourhood context.*

*Evidence used to describe this resource can include novel approaches such as mapping of ecosystems and ecosystem services, and GIS network and opportunity analysis, as these and other resources become available.”*

An Ecological Assessment was carried out by David Clements Ecology Ltd. The Ecological Assessment identified several existing Green Infrastructure features on the site that are mentioned in section 1.2 of the Green Infrastructure Plan:

- Streams;
- Woodland, hedgerows and scrub;
- Roadside verges and street trees;
- Footpaths; and
- Open mosaic habitat on previously developed land (Brownfield sites).

The Ecological Assessment provides the following summary of the site:

*“The site, which is referred to as ‘Plots 12 & 14’, measures approximately 5.5ha in extent and comprises mainly bare ground and hardstanding together with some areas of scrub, grassland, hedgerow and some large brush-piles. A section of wooded watercourse bounds part of the site. Office blocks, with associated car-parking, lie immediately adjacent to the western and eastern site boundaries and an area of ancient semi-natural woodland also lies immediately adjacent to the eastern boundary of Plot 12, being separated from it by a small stream. Residential areas lie to the south, and open agricultural land lies to the north.*

*In the wider surroundings south of the site there are extensive residential and commercial developments which form the northern reaches of Cardiff city. To the north there is an extensive area of rural landscape, including agricultural and pasture fields delineated by hedgerows and extensive blocks of woodland. The corridor of the M4 motorway lies to the north of the site. The site is identified for business park development at some point in the future, but detailed development proposals for the site are not available at the time of writing.*

*The site does not contain or lie immediately adjacent to any statutory or non-statutory sites of nature conservation interest. About 17 non-statutory SINC’s lie within 2km of the site, however.*

*The hedgerows and scrub habitats of the site support dormouse, a European Protected Species which is known to occur in the surrounding area. These features are therefore assessed as being of District value since they form part of a larger complex of interconnected habitats which are used by this rare and declining species.”*

The Ecological Assessment includes a diagram outlining the various habitats and vegetation types across the site (see Figure 3 below). The vast majority of the site is disturbed bare ground with very little vegetation. The existing green infrastructure of value is found on the boundaries of the site and there is little connectivity across the site.

Figure 3: Habitats & Vegetation plan taken from David Clements Ecology Ltd Ecological Assessment



The hedgerows, scrub, and neutral grassland along the north-west, south-west, and east boundary of the site will provide wildlife corridors between areas of habitat adjacent to the site and will provide a buffer between the site and adjacent commercial uses. The large area of scrub and neutral grassland on the north-west boundary adjacent to Parkwall Road will provide a large, unfragmented area of habitat for various species and a wide wildlife corridor. The hedgerow on the south-west boundary, similarly, will provide a route for animals to travel down and provides a visual break between the site and the adjacent road. Separately, the neutral grassland on the east boundary provides a buffer to the stream on the east side of the site.

On the east side of the site, a public right of way (footpath Llanedeyrn No 14) provides a connection between Malthouse Avenue and the B4562 St Mellons Road. The public right of way runs parallel to the riparian habitat that forms the eastern boundary of the site, and provides a pedestrian connection to the X59 bus stop on Malthouse Avenue.

## 6. Assessment of the Proposed Green Infrastructure Strategy

The Green Infrastructure SPG states:

*“The likely impact of the proposals upon green infrastructure features must be assessed. This should include a holistic assessment of all of the elements of green infrastructure, including the synergies and trade-offs between them. The assessment should also consider the impact not only upon the green infrastructure within the development site, but also upon the surrounding green infrastructure context. Subsequently the needs for development must be reconciled with the need to maintain and enhance green infrastructure. This assessment of impact should be undertaken by a landscape architect, ecologist or similarly qualified professional.”* and

A Green Infrastructure Strategy (see Figure 4 on the following page) has been produced showing:

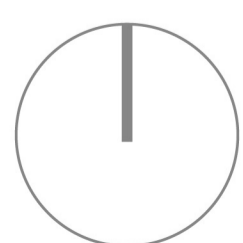
- The residential and commercial development areas;
- A breakdown of all existing and proposed green infrastructure elements;
- Associated access and transport links;
- Drainage / SuDS features / multi-functional components
- Greenways & enhancement of existing and proposed GI frameworks
- Open space and play provision

All the existing areas of Green Infrastructure along the boundaries are to be retained and additional areas of greenspace and tree planting are proposed. Overall, there will be a considerable ecological enhancement/ biodiversity net gain as a result of areas of new high-quality greenspace and the enhancement of existing greenspace.



Legend

- Proposed Hillside Park
- Ecotone Planting
- Existing Green Infrastructure
- Proposed Amenity Grass
- Proposed Hedgerow Buffer
- Strategic Avenue/Townscape Trees
- Proposed Formal Play
- Public Right of Way
- Existing Tree Avenue
- Primary Route with Bio-retention
- Secondary Route with Bio-retention
- Potential Location of Attenuation Pond
- Existing Watercourse
- Culverted Watercourse Opened Up
- Proposed Swale/Rain Garden
- Proposed Green Wall Solution



Drawing Title: - Green Infrastructure Strategy  
 Drawing Number: - 1935-URB-LA-SK-90-01  
 Project: - Cardiff Gate Development

Revision: B  
 Scale: NTS  
 Date: 11.11.21



### **New public open space on the east boundary**

The existing public right of way along the east side of the site (footpath Llanedeyrn No 14) will be enhanced by a wider area of wildflower grassland, amenity grassland, and tree planting. This wider landscape buffer along the east side of the site will provide recreational space and improve the quality of the pedestrian route, as well providing a buffer between the protected woodland and the stream to the east of the site. The woodland and stream to the east of the site is likely to accommodate a significant amount of wildlife, so enhancing the edge will provide resilience to this adjacent area of habitat and help protect it from the impacts of the proposed development. This approach will accord with the principle outlined in Future Wales 2040:

*“identify areas which should be safeguarded and created as ecological networks for their importance for adaptation to climate change, for habitat protection, restoration or creation, to protect species, or which provide key ecosystems services, to ensure they are not unduly compromised by future development”*

This area will provide playspace, well connected to the wider public rights of way network, and a natural setting around the proposed attenuation pond. The pond will be incorporated as a feature in the public open space and will provide a stepping stone for wildlife travelling along the stream that runs along the eastern side of the site.

Due to the likelihood of bats in the adjacent woodland and the potential impact from artificial lighting, the area to the west of the attenuation pond will be planted with a native hedgerow. This area of hedgerow will help limit light and noise spill from the developed area to the west and improve the quality of this space for recreational users and wildlife.

The mixture of amenity grassland, wildflower planting, and tree and hedgerow planting will result in a greater amount of edges and habitats for wildlife and improve the quality of this area of public open space. The connectivity to the residential areas to the south of the site will allow existing residents to utilise this area of public open space and improve the recreational facilities within the wider area.

### **Enhancement of the west and north-west boundaries**

The existing west and north-west boundaries provide wildlife corridors and small areas of habitat. The proposed Green Infrastructure Strategy shows how these areas will be widened and planted with hedgerows and wildflower planting. This will improve the resilience of the habitat within these areas and provide them protection from fragmentation and further damage. The wildlife strips also provide additional opportunities for informal pedestrian and bicycle routes, thereby improving accessibility across the site. It is likely that the existing hedgerow along the west boundary of the site provides routes for bats and other light-sensitive wildlife, so the additional area of buffer planting will help limit the impact of the development on these species.

### **Integration of blue and green infrastructure**

The proposal includes integration between blue and green infrastructure, allowing for maximisation of the proposed greenspace. It is proposed that drainage features within proposed green open spaces are to be natural in their character and therefore planted with an appropriate planting mixture. More urban drainage features included within the proposed streetscape will be less naturalistic in their appearance but still feature planting appropriate to their use and setting.

### **Hillside Park**

There is an aspiration to create a Hillside Park in the north-eastern corner of the site adjacent to Woodsy Close. The space will be more formal in its character and act as managed open amenity space to provide an attractive and usable edge to the proposed development. Maintaining this space an open landscaped area will ensure that important ecological connections are maintained north-south through the site.

### Connectivity through the site

The proposed wildlife area along the southern boundary of the site, and the alignment of the tree-lined internal roads in the southern part of the site, allows easy connectivity to the area of public open space adjacent to the east boundary of the site and provide east-west stepping stones for animal species to travel along. The improved connectivity across the site will reduce habitat fragmentation and isolation of animal species. The integrated areas of habitat will also provide greater connectivity for pedestrian and bicycle users moving north-west to south-east.

## 7. Conclusion

The proposed Green Infrastructure Strategy will accord with the six principles of the Cardiff Green Infrastructure Plan:

- It will protect and enhance the ecosystems within and adjacent to the site, ensuring that they continue to support diverse habitats and species, allowing them to adapt to change;
- It will enhance the green infrastructure on the site in a way that increases resilience to the changing climate and provides protection for people and places;
- It will maximise the contribution that green infrastructure makes to Cardiff's economy by enhancing the city's attractiveness for business and living;
- It will provide physical and mental health benefits as a result of improving, promoting and creating connected, multi-functional green infrastructure on the site;
- It will improve access to the outdoor environment; and
- It will enhance and sustain the green infrastructure that underpins the city's unique qualities and sense of place.

The proposal will accord with the principles set out in the Green Infrastructure SPG, the Cardiff Biodiversity and Resilience of Ecosystems Duty Forward Plan, the Local Development Plan policies, Future Wales 2040, Planning Policy Wales, Building Better Places, the Active Travel Act, and The Well-being of Future Generations Act.