Former Fairwater Social Club

Green Infrastructure Statement

Revision A
PAC Submission
04/11/2024

Overview

As part of the development process, the existing Green Infrastructure (GI) asset has been assessed through landscape desktop survey, and the context of the site, in its wider GI network, and within the policy framework updated Chapter 6 of PPW 12, (Feb 2024). The following statement reports on the iterative GI process and how it has influenced the design approach based on national and local policy, focusing on the appropriate and proportionate GI benefits that development of the site can contribute, with regard to, and taking all reasonable steps, to enhance the most valuable GI assets.

Chapter 6 of PPW states at that *'all reasonable steps must be taken to maintain and enhance biodiversity and promote the resilience of ecosystems and these should be balanced with the wider economic and social needs of business and local communities"*

Introduction

Definition of Green Infrastructure.

The term *'Green Infrastructure'* first came to prominence in the early 2000's most notably in the Landscape Institute Position Statement *'Green Infrastructure An integrated approach to land use' (2009).* This document defined Green Infrastructure as;

> *'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.'*
>
> GI Functions are described as 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 ecosystems services. They may have obvious primary functions, but each asset can perform different functions simultaneously – 'multifunctionality.'*

The natural environment between and within towns and cities, including greenspace, vegetation and water. Provision of GI offers a multitude of ecosystem services (i.e. the benefits that people derive from nature) and forms part of a sustainable approach to the

management of natural resources. New infrastructure should seek to strengthen and reinforce existing assets within a site and it should be planned and designed to be beneficially multi-functional.

Principal Targets of GI.

The principal multifunctional targeted benefits of GI are to:

1. Protect and enhance biodiversity and the resilience of ecosystems and their connectivity;
2. Consider Opportunities for habitat protection, restoration, creation and management in the provision of GI;
3. Contribute to improved mental health with more direct contact with nature, the seasons and natural processes;
4. Identify opportunities where existing and potential green infrastructure could be improved and enhanced as part of placemaking;
5. Provide opportunities for improved physical health and wellbeing through recreational access, community permeability and connectivity;
6. Enhance place-making, identity and sense of community ownership;
7. Improve townscape and landscape quality and visual amenity;
8. Integrate play and recreation in GI networks;
9. Improve micro-climate (summer cooling/winter shelter);
10. Mitigate and adapt to the impacts of climate changes improving of;
    - Oxygen production.
    - Carbon sequestration (locking carbon in vegetation and soils).
    - Water sequestration (vegetation evapotranspiration and formal attenuations).
    - Improve air and water quality.
    - Reduce flood risk.
    - Provide alternative transportation opportunities (cycling/walking/public transport links).

Policy & Guidance

Planning Policy Wales 2024 (12th Edition)

<u>6.2 Green Infrastructure</u>

“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."

Future Wales: The National Plan 2040

Policy 9 – Resilient Ecological Networks and 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 authorities should include these areas and/or opportunities in their development plan strategies and policies in order to promote and safeguard the functions and opportunities they provide. In all cases, 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."

> "As part of a green infrastructure assessment, broad opportunities for habitat protection, restoration or creation and the provision of green infrastructure may be specified as part of identifying areas to be safeguarded or may take the form of more specific allocations. This may be achieved, for example, through the provision of

buffer areas around protected sites or stepping stones connecting habitats or through the identification of green infrastructure in and around urban areas."

Cardiff Green Infrastructure SPG November 2017

It provides further guidance to Policy KP16: Green Infrastructure set out in the Cardiff Local Development Plan 2006 – 2026 and will assist in securing the provision of sustainable development across the City

The Green Infrastructure Plan sets out six objectives upon which that plan is based:-

1. To protect and enhance Cardiff's ecosystems to ensure that they continue to support diverse habitats and species, allowing them to adapt to change.
2. 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.
3. To maximise the contribution that green infrastructure makes to Cardiff's economy by enhancing the city's attractiveness for business, tourism and living.
4. 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.
5. 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.
6. 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.

Development GI Process

As part of the development process, the existing Green Infrastructure (GI) asset has been assessed through Landscape desktop survey including the context of the site, Ecological and Arboricultural survey. These assessments are illustrated in the submitted ecology, Arboricultural and Landscape plans and reports supporting the developments planning application.

The stepwise approach (PPW 12, Feb 2024, page 148 figure 12) has been implemented. A summary of the stepwise approach;

1. **Avoid**
   To avoid damage to biodiversity and ecosystem functioning.

2. **Minimise**
   Alternative sites that would result in less harm, no harm or gain are to be fully considered to minimise the any harmful environment effects.

3. **Mitigate/Restore**
   '…ensure that features and elements of biodiversity or green infrastructure value are retained on site, and enhanced or created where ever possible.'

4. **Compensate on site**
   Onsite compensation must be sought when all other options have been exhausted.

5. **Compensate off site**
   Offsite compensation must be sought when all other options have been exhausted.

6. **Long Term Management**
   Long Term Management of retained and new GI assets to secure enhancement.

As part of a GI led masterplanning process, the GI Opportunities & Constraints identified the following aims;

- Enhance existing vegetation buffers on the periphery of the site, particularly where the site links with the mature vegetation of Fairwater Park.
- Replacing poor-quality trees within the site.
- Retain visual screening of neighbouring properties provided by mature trees.

Summary of Effects, Mitigation & Enhancement

The submitted package of drawing information contains landscape proposals responding to the proposed development.

The Preliminary Ecological Assessment Report, (Wardell Armstrong) CA11839-002 (May 2021) includes an assessment of habitats and protected species relevant to the site.

Green Infrastructure Constraints and Opportunities Plan (2284504/DR/L/003) & Green Infrastructure Context Plan (2284504-SBC-XX-ZZ-DR-L-0001) illustrates the GI context, key

designated habitats and GI connectivity. The masterplanning approach for the site and landscape strategy plan have been informed by the GI context and analysis through retention and enhancement of landscape habitats and connectivity, following the stepwise approach.

The following figures of existing, GI habitats are based on the Habitat Plan on page 63 of Wardell Armstrong's Preliminary Ecological Assessment Report. The habitat area measurements identified below are an estimate based on a PDF overlaid onto the topographical survey.

The revised Landscape drawing package identifies the following existing, removed, retained, and proposed habitats:

Existing Habitat	**Area (sq m)**
Poor semi-improved grassland	1457
Broadleaved woodland	535
Scrub – dense/continuous	482
Scrub - scattered	266
Bare ground	116
Total Existing Habitats	**2856**
Removed Habitat	**Area (sq m)**
Poor semi-improved grassland	1257
Broadleaved woodland	264
Scrub – dense/continuous	398
Scrub - scattered	141
Trees removed (Category U trees discounted within tree loss mitigation calculation)	11 (Cat B=3, Cat C=6, Cat U=2)
Bare ground	116
Total Removed Habitats	**2176**
Proposed Habitat	**Area (sq m)**
Proposed grassland	860
Hedge/scrub planting	152
SUDs landscape treatment	163
Shrub planting	187
Trees	12 semi-mature standards
Re-wilding	155
Bulb plantings	25
Total Proposed Habitats	**1541**
Retained Habitats	**Area (sq m)**
Broadleaved woodland	340
Retained grassland	598
Total Retained Habitats	**938**
Total Proposed and Retained Habitats	**2479 sq m**

In response to the StepWise approach, we summarise the response to the stepwise approach below:

Step 1: **Avoid**

Ecology, Landscape and Arboricultural surveys have identified the GI assets of greatest value to contribute to the development decision making. Overall, there has been unavoidable loss to some existing broadleaved woodland and grassland resulting from proposed development needs. A large portion of the existing woodland will be retained, which is one of the most significant ecological features of the site. Where areas of scrub have had to be removed, the landscape design approach aims to replace some of the losses as a linear scrub/hedge feature along the southern boundary.

Step 2 **Minimise**

The master planning approach will notably deliver external connecting GI corridors of retained and newly created habitats, minimising truncation of connections and maintaining wider GI connectivity offsite and around and linking through the main development. The development approach and notably the landscape design approach, have been reviewed to minimise the impact on existing habitats outside the development footprint.

Particular focus has been placed on reducing the impacts on key areas of existing vegetation, particularly trees and scrub along the southern boundary of the site and the mature trees along the western boundary. Grassland vegetation within the root protection zones of existing trees will be retained.

The physical constraints of the site alongside creating a viable development have dictated the layout, with an emphasis on minimising disturbance to existing mature vegetation as far as possible.

Step 3: **Mitigate/Restore**

2479.sq m of retained and proposed new landscape GI is identified within the landscape strategy, focusing on a mixture of more formal shrub planting/grass seeding and more informal native hedge/scrub planting with areas for re-wilding. Collectively the proposed landscape delivers a more diverse and multi-functional landscape with enhanced climate change resilience and biosecurity in the greater diversity of habitats and species. The increased diversity of and multifunctionality of GI will also have the benefit of improved visual amenity and a better environment for future residents of the social housing.

Mitigation/restoration of habitats within the design are focused along the west, south, and east site boundaries which represent important ecological corridors.

Enhancing the east-west green corridor is a core part of the green infrastructure strategy: Category U valued vegetation will be replaced with native hedgerow/scrub with two semi-

mature trees to reinforce the link from the green space around Fairwater FC to Fairwater Park.

The eastern edge of the development will be allowed to self-seed naturally; acting as an extension of adjacent Fairwater Park. The proposed levels in this corridor would be too steep to maintain regularly – re-wilding the strip will create a biodiverse mix of local species which can be managed periodically to maintain a natural balance.

Areas of existing grassland within the root protection areas of retained trees will be allowed to grow long and be managed as a meadow to provide additional diversification as an ecological resource within the site. For the western boundary where there are a number of retained mature trees and the area will be closed off from the public, the meadow areas will be allowed to develop with less disturbance.

Step 4: **Compensate (onsite)**

All compensation available within the site has been considered. The mix of new landscape types have been informed by Ecological and Arboricultural surveys, as well as SUDs drainage design and GI considerations to enhance the mix of habitat types and the targeted value, appropriate to the site context.

12 trees have been proposed as part of the development at a size of semi-mature. The proposed site levels/earthworks required to make the scheme viable would result in several areas of 1:2 gradients (which cannot practically accommodate standard tree planting); additional retaining structures to reduce these to gradients that would enable greater tree planting are not viable. Discussions with National Grid regarding planting adjacent to the existing substation have led to the approach of minimal planting next to the fencing. The proposed number of trees is commensurate with the site gradients and other physical constraints of the site.

The shrub and rain garden planting have been designed to feature species that provide both visual amenity for future residents, provide additional ecological resources for local wildlife, and better climate change resilience. This planting is key to creating a multifunctional GI landscape for the benefit of the site as a whole.

Step 5: **Compensate (offsite)**

Although, at this point in time, there is no intention to offer off-site compensation and the proposed tree specifications have been increased to compensate the scheme not meeting 3:1 tree loss mitigation.

Step 6: **Long Term Management**

The greatest benefit resulting from the proposed development would be the opportunity for the long-term management of retained and new GI assets to secure the range of enhancements and their multi-functional value and longevity, where no little active

management is currently in place. Maintaining existing areas of grassland within the root protection areas of retained existing trees as meadow will create a long-term ecological resource. Managing the balance of species within the re-wilding area and proposed hedge/scrub will create a diverse mix of species that will reinforce the existing green corridors.

Although the woodland and grassland are on the whole self-managing, any invasive species management (if required) will secure this habitat and the other range of GI landscape types will benefit from active management. Long term management of these components could secure meaningful enhancement of these major GI components.

GI Conclusion

The above stepwise GI assessment demonstrates that negative impacts have been minimised where possible, through the assessment and design process, whilst achieving the necessary development outcomes. The proposed landscape/GI approach strengthens the current GI network connections and provides the opportunity to secure beneficial long-term management, enhancing the retained and proposed GI components to create a multifunctional and climate-resilient landscape for residents and the local ecosystem.