



2187 Gnoll Park Green Infrastructure Statement

2187.RPT.V1

July 2024



DAVIESLANDSCAPE
ARCHITECTS

Contents

01

Introduction

02

Site Context

09

Conclusions

03

GI Policy Context

05

Existing Site

06

Landscape Strategy

08

Demonstrating Net Benefits
for Biodiversity [NBB]



Introduction

Davies Landscape Architects (DLA) have been commissioned by Andrew Scott Ltd to provide a Green Infrastructure Statement (GIS) to support the proposed developments at The Gnoll Estate Country Park, Neath. An assessment of the existing landscape and surrounding context was undertaken on 20 June 2024 by James Watt BA (hons) DipLA CMLI. This report sets out to provide an appraisal of the current site condition in respect to GI, opportunities and constraints relating to onsite GI and potential wider GI connections and recommendations for maximizing GI benefits of the proposed scheme through the design of the 8 individual schemes.

This GIS covers 7 separate zones within the park. Whilst each zone is subject to a separate planning application, the aim of this report is to examine the Green Infrastructure [GI] of the park in a holistic manner to avoid unnecessary repetition and then cover each site in more detail under separate sections. The 7 zones are referred to as:

1. Gnoll Ruins
2. Visitor Centre
3. Pond Cottage
4. Main Car Park
5. Main Car Park – Service Yard
6. Bridge to Woodland Trust
7. Woodland Play Area



Location of 7 zones covered in this report

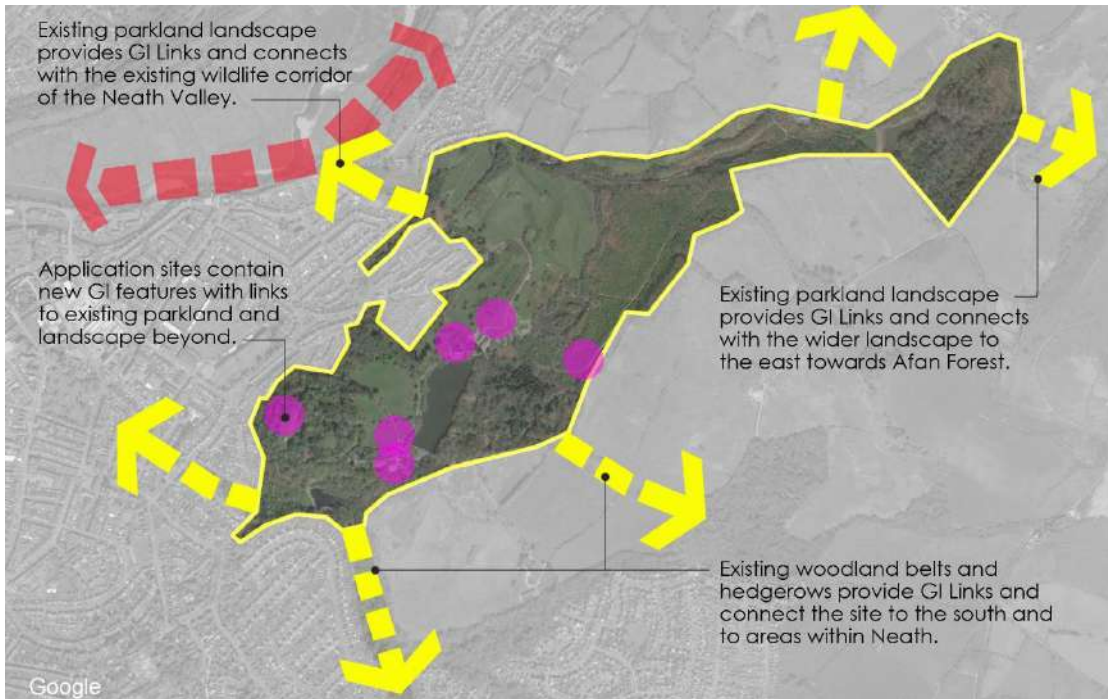


Figure 02 - Site Context

Site Context

Gnoll Estate Country Park is a Grade 2* park which is located to the east of Neath and extends in a northeasterly direction away from the town. The western edges of the park are bounded by the town of Neath whilst the eastern parts of the park naturally blend in with the surrounding countryside.

There are a broad range of existing landscape and GI features of note within the largely 18th Century park. These include open grassed areas, ornamental and native planting, areas of woodland and wetland habitats.

The parkland setting and its components, whilst not a completely natural landscape, nevertheless play an important role in connecting the site to the wider ecological networks around Neath. This includes the existing wildlife corridor of the Neath Valley, woodland belts and ribbons of Green Infrastructure that penetrate the town and much wider connections east towards open countryside and forests.

The existing Green Infrastructure is fundamental to the development of the park and will be retained where possible and enhanced by the introduction of new native tree planting throughout the site as well as new hedges, shrubs, plants known for wildlife value, wetland plant mixes, wildflower meadow areas and other habitat types.

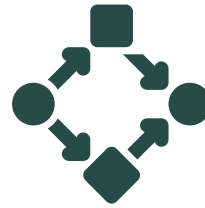
GI - Policy Context

Planning Policy Wales defines Green infrastructure as the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places. Component elements of green infrastructure can function at different scales and some components, such as trees and woodland, are often universally present and function at all levels.

The Environment (Wales) Act 2016, provides a context for the delivery of multi-functional green infrastructure. Its protection and provision can make a significant contribution to the sustainable management of natural resources, and in particular to protecting, maintaining and enhancing biodiversity and the resilience of ecosystems in terms of the diversity within and connections between ecosystems and the extent and condition of these ecosystems, so that they are better able to resist, recover from and adapt to pressures.

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, informed by an appropriate level of assessment, green infrastructure can embed the benefits of biodiversity and ecosystem services into new development and places, help to overcome the potential for conflicting objectives, and contribute to health and well-being outcomes.

The strategy has been developed to encompass the following five principles of GI to ensure the landscape maximises the benefits to people and wildlife:



Be Multi-functional



**Adapted for
Climate Change**



Healthy



Biodiversity



**Smart and
Sustainable**





Multi-functional:

The landscape design for each zone includes a range of GI features for the benefit of people and wildlife. These include native tree planting to improve amenity as well as providing summer shade and a food source for wildlife.

The planting designs include native hedges, formal hedges, ornamental shrubs and those that are known to support wildlife. This will improve amenity and tie in visually with the adjoining landscape. This planting also provides safe routes through the sites for mammals and foraging opportunities for local fauna.

Areas of wildflower meadow are also proposed to the edges of sites and as a ground cover to scrub and woodland planting. Proposed seed mix contains a range of flowering species which will add to the amenity and support endangered species such as bees and butterflies. The combination of the measures will enhance biodiversity across the site and demonstrate every effort is being made to create a multi-functional landscape integrated within the wider GI context.



Adapted for Climate Change:

The drainage design includes a Sustainable Urban Drainage System. [SUDS] and this design

comprises a series of rain gardens associated with the Visitor Centre.

This provides an excellent opportunity at surface level to create a rich mixed wetland habitat capable of holding water on site. This will improve and manage water quality, enhance biodiversity as well as providing amenity for the people using the site.



Healthy:

The underlying principles of the landscape design for the site are to create an attractive setting for each zone, appropriate for the surrounding context and for the benefit of all users. This will be achieved by retaining and enhancing existing landscape features where possible and introducing new native tree and shrub planting as well as native hedges and areas of wildflower meadow as described earlier.

The combination of the above GI features will contribute positively to the amenity of the park and to the wellbeing of those who work there and / or visit.



Biodiverse:

The planting scheme includes a large number of native species and species noted for wildlife value. These features include trees, hedges, shrubs, wildflowers and wetland habitats across the site.

The existing planting infrastructure will be retained where possible and enhanced. It will also be maintained to ensure a healthy biodiverse site in the long term, which in turn will benefit local ecosystems and the wellbeing of people.

Green roofs are also proposed on parts of the Visitor Centre building. This adds an additional layer of biodiversity to the park.

In addition to the habitats created through the planting design, the site will also include other ecological measures. Bat and bird boxes will be installed on the walls of the Ruins and the new Visitor Centre building.



Smart & Sustainable:

The planting design for the development has been carefully considered to ensure that it is not reliant on artificial irrigation.

The only exception to this could be during the establishment period, where, during periods of prolonged dry weather, the young plants may require some watering to prevent loss and to aid their successful establishment. In these circumstances, the watering should be carried out using harvested rainwater where possible.

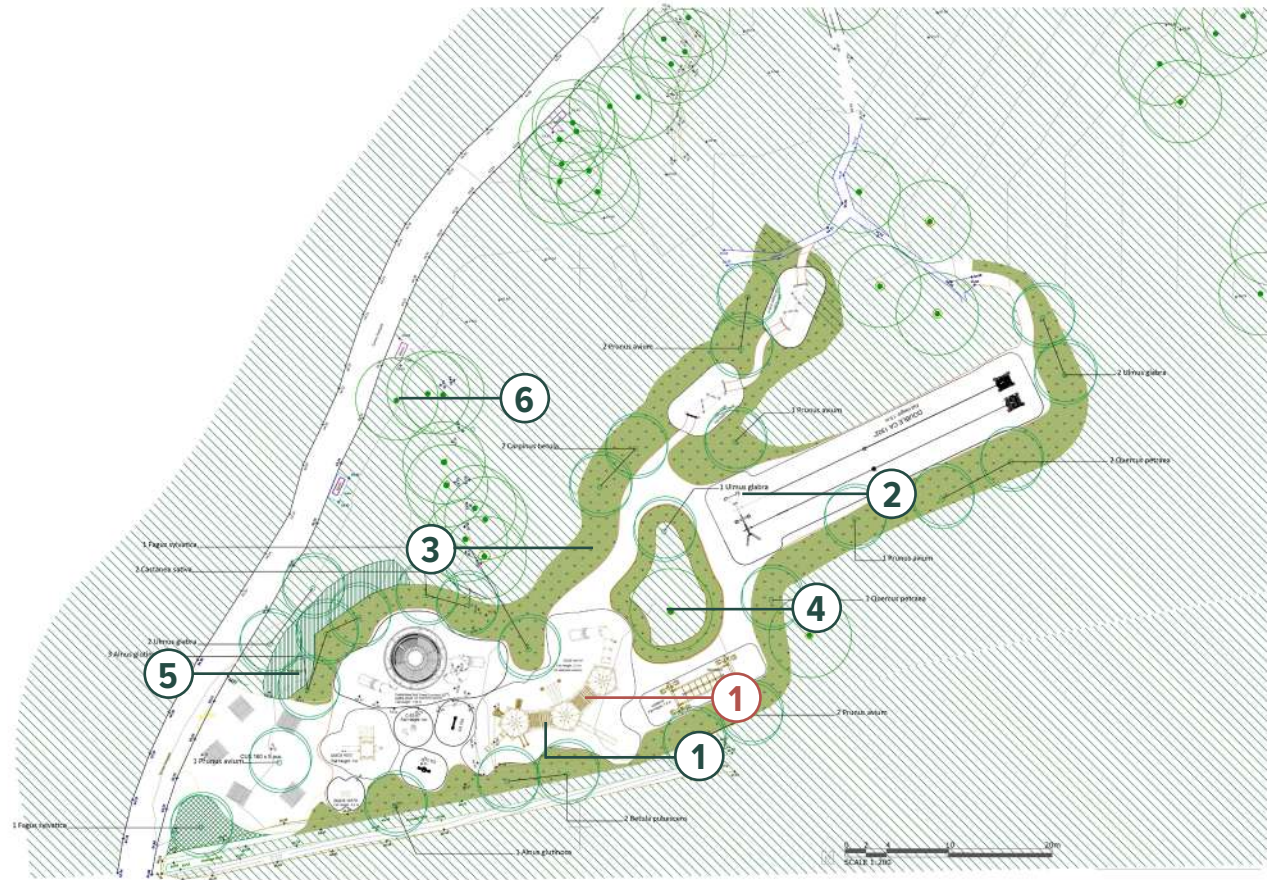
Opportunities and constraints

The following sections of this report now focus on each individual zone and addresses the GI issues specific to each application site as a series of sketches indicating GI Opportunities and Constraints.

Zone 7: Woodland Area

Opportunities

1. Removal of non-native invasive species such as Montbretia and Himalayan Balsam.
2. Removal of non-native forestry trees such as Norway Spruce and replacement with a mix of native trees,
3. Management of the woodland surrounding the adventure playground will also be implemented as it is currently unmanaged, and the woodland is stuck at an immature stage due to the amount of trees present and competing for resources. Thinning out of some of the trees will allow the remaining trees to mature.
4. Retaining existing mature trees where possible.
5. Planting / infilling native scrub understorey where possible.
6. Introduction of bat and bird boxes to further enhance site biodiversity.
7. Introducing 607m² of woodland wild flora and grass mix - Emorsgate EW1



Constraints

1. Removal of 1400m² of understorey scrub and tree saplings as noted in areas A1 and A5 in the arboriculturally report.

The DECCA Framework and Net Benefits for Biodiversity

The DECCA framework is used for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act.

Diversity

Maintaining and enhancing diversity at every scale, including genetic, structural, habitat and between habitat levels. This supports the complexity of ecosystem functions and interactions that deliver services and benefits.

Extent

Incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats. In general, smaller ecosystems have reduced capacity to adapt, recover or resist disturbance.

Condition

The condition of an ecosystem is affected by multiple and complex pressures acting both as short term and longer term types of disturbance. Both direct and wider impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc.

Connectivity

This refers to the links between and within habitats, which may take the form of physical corridors, stepping stones in the landscape, or patches of the same or related vegetation types that together create a network that enables the flow or movement of genes, species and natural resources.

Developments should take opportunities to develop functional habitat and ecological networks within and between ecosystems, building on existing connectivity.

Aspects of Ecosystem Resilience

(Adaptability, recovery and resistance) Ecosystem resilience is a product of the above four attributes. Adaptability, recovery and resistance to/from a disturbance are defining features of ecosystem resilience.

These are: Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience.

A summary of the definitions is described below:

The landscape proposals seek to maintain and enhance diversity where possible by introducing new and varied habitats. The extent of habitats have been increased by introducing new



hedges, areas of native scrub, trees, shrub planting, wildflower meadow and rain gardens.

The application sites involve the removal of non-native species and the better management of existing habitats, thereby improving the condition of the existing ecosystems. The new landscape proposals improve the existing connectivity between habitats and also create important links and stepping stones throughout the park using tree planting, new hedges and green roof.

The variation in species used in the proposed tree and shrub planting, the areas of scrub and new wildflower meadows all contribute positively to the long term resilience of the park's ecosystems.

Demonstrating Net Benefits for Biodiversity [NBB]

The landscape proposals for the site demonstrate that they can both maintain and enhance biodiversity and built resilient ecological networks. The biodiversity enhancements described above, achieve NBB by following the Step-Wise Approach of firstly avoiding, then minimising, mitigating and as a last resort compensating for, adverse impacts on the environment in a development.

The examples of using the Step-Wise Approach are evident within the design for the site.

Where removal of existing vegetation has been unavoidable, either due to the development this has been minimised and then mitigated with new planting and ecological measures to ensure the appropriate restoration of habitats.

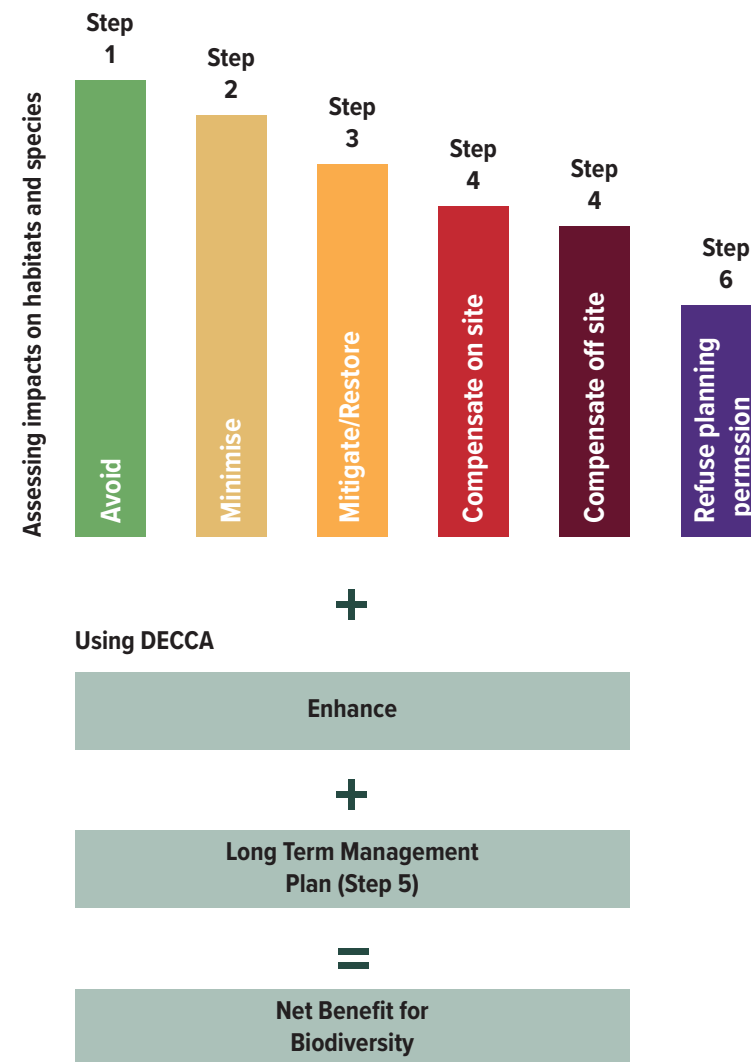
Care has been taken to avoid detrimental impacts on adjacent established GI elements such as the River Neath corridor.

Finally, all the mitigation measures have been included within the site and these are listed on the masterplan, demonstrating that all attempts have been made to compensate on site.

The NBB's for the site have been achieved through a range of actions, ranging from installation of

Information on Summary of the Step-Wise Approach taken from Planning Policy Wales.
Examples of using the Step-Wise Approach are evident within the design for the site.

Summary of the Step-Wise Approach



Conclusion

The existing landscape has been assessed and important existing features have been identified. These will be retained and enhanced where possible and as appropriate, as part of the new landscape proposals for the sites.

The impact of the new developments will be mitigated by creating new planting zones, wildflower meadows and other landscape features which will improve biodiversity, provide important ecological habitats and enhance the amenity value of the sites.

The successful establishment of the landscape design for each of the sites will provide a network of healthy, multi-functional and biodiverse green spaces, capable of delivering a wide range of environmental and quality of life benefits for people and wildlife



