PLOT 4 & 5, CENTRAL SQUARE

Cardiff, UK

421-LYR-XX-ZZ-RPT-L-0005

Green Infrastructure Statement

Prepared in support of the Design & Access Statement for Plots 4 & 5, Central Square, Cardiff.

Date: August 2025

Layer.studio

Revision: 05

Green Infrastructure Statement

Plot 4 & 5, Central Square, Cardiff

This Green Infrastructure (GI) Statement has been prepared by Layer.Studio to support the planning submission for a new residential development, pavilion and public realm scheme at Plots 4 & 5 Central Square, Cardiff.

The site is positioned in one of the city's most strategic locations, adjacent to Cardiff Central Station, the Principality Stadium, and the emerging Canal Quarter.

This project aims to establish a landscape-led, climate-responsive public realm that integrates nature, supports biodiversity, and delivers multifunctional benefits within an intensively urban setting. Through an intelligent layering of green infrastructure at ground and roof level, the scheme delivers visual, ecological, and experiential value while responding to high footfall and operational pressures.

This Statement sets out the design approach to green infrastructure in accordance with:

- Planning Policy Wales (Edition 12) which requires a proportionate GI Statement (para. 6.2.12);
- Cardiff Local Development Plan policies especially KP16 (Green Infrastructure), EN8 (Trees), and EN10 (Water Sensitive Design);
- Cardiff Council's Green Infrastructure SPG (2017) which advocates the delivery of integrated, connected and resilient GI across all development types.
- This document should be read in conjunction with the accompanying Landscape Concept Report (Ref: 421-LYR-XX-ZZ-RPT-L-0003-05), which provides detailed illustrations and rationale for the proposed landscape strategy.

Green Infrastructure Strategy

The GI strategy for Central Square is based on multifunctionality, visibility, and resilience. The following components have been embedded into the design:

Urban Tree Planting:

- A combination of clear-stem and multi-stem trees contribute to shade, microclimate, and visual softening. Trees are positioned and protected to account for heavy match-day footfall and maintenance constraints.

Rain Gardens and SuDS:

- Located along key thresholds, rain gardens deliver stormwater attenuation using climate-resilient species and engineered soils. These also enhance biodiversity and define routes within the public realm.

Biodiverse Green Roof:

- The pavilion roof has been designed as a semi-extensive green roof system with a substrate depth of 150–200mm, suitable for delivering both ecological value and functional resilience. Given its partially shaded orientation, particularly during the afternoon, the planting palette focuses on species that are shade-tolerant, drought-resilient, and able to thrive in shallow growing media with limited irrigation.

Planting Beds and Edges

- Raised planters include mixed ornamental planting selected for pollinator value, year-round seasonal interest, and robustness in a high-traffic setting. Edging and integrated seating help protect vegetation.

Nature Based Solutions

Ground-level planting uses engineered topsoil and a free-draining sub-base to support hardy perennials, grasses, and compact shrubs arranged in layered, pollinator-friendly groupings for resilience, structure, and low maintenance in a high-footfall urban setting.

Context and Connectivity

The proposal strengthens these links by introducing new tree and planting cover, improving permeability and pedestrian experience, and forming an ecological node within the city centre.

While the immediate site has limited existing green cover, it is responsive to the wider network of green infrastructure assets:

- Bute Park and River Taff Corridor to the north (a Grade I historic park);
- Callaghan Square to the south (partially greened hard public realm);
- The Hayes and Canal Quarter to the east (retail street trees and emerging greening).

Policy Compliance and Stewardship

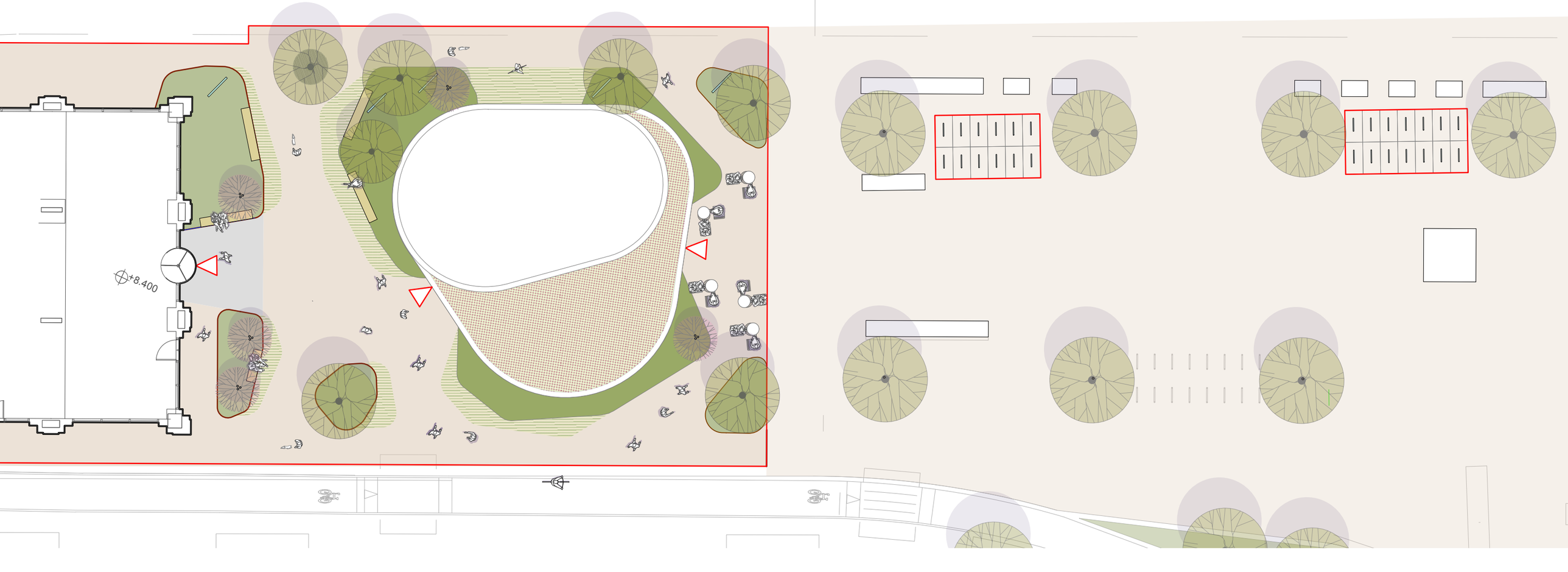
The GI proposals are aligned with key development plan policies and Welsh Government guidance:

- KP16: Green infrastructure integrated into all scales of design and delivery.
- EN8: New tree planting and protection of proposed trees.
- EN10: On-site SuDS and soft SuDS integrated within public realm.

Delivery and maintenance of all GI features will be secured through the site-wide management plan. Materials and planting have been selected for durability, visual quality and ease of establishment. Green infrastructure is not an afterthought, but a core component of the site's urban and ecological identity.

Conclusion

The proposal makes a meaningful contribution to urban greening within a constrained, high-intensity city centre setting. Through a considered mix of tree planting, SuDS, biodiverse roofing and resilient planting, the design enhances local ecological value, supports surface water management, and improves the comfort and character of the public realm. While modest in scale, the scheme aligns with Cardiff's wider ambitions for a more connected, climate-responsive and liveable city centre.



Applying the Step-Wise Approach

- **Avoid** The site comprises previously developed land with negligible ecological value. The scheme design minimises disturbance by working within an existing urban footprint, retaining existing trees and avoiding disruption to nearby green corridors.
- **Minimise** A compact building and public realm footprint preserves opportunities for green infrastructure at key edges and on the roof. Tree planting locations and pedestrian flow have been carefully coordinated to avoid conflicts with footfall and services.
- **Mitigate** The proposals incorporate climate-resilient, layered planting at ground and roof level, including pollinator-friendly perennials, rain gardens, and engineered tree pits. Plant species have been selected to thrive in constrained, low-irrigation environments.
- **Compensate** As the site offers no existing biodiversity value, no compensation is required. However, all new planting introduces functional, measurable ecological benefit over baseline conditions and will be ensured by a long term maintenance plan for the scheme.
- **Enhance & Manage** Long-term care and performance of planting will be ensured through the site-wide landscape maintenance strategy. Raised beds, protected tree zones and robust roof planting ensure ecological features are integrated, visible, and manageable.

Net Biodiversity Benefit

Together, the proposed interventions enhance the site's ecological function by introducing new habitats, supporting pollinators, and contributing to Cardiff's wider green infrastructure network. The combination of trees, biodiverse planting and SuDS features represents a clear ecological uplift in an area of limited baseline GI.

Proposed Green Infrastructure Quantities

- Trees: 12 no. total
  - 7 no. clear-stem trees (urban canopy contribution)
  - 5 no. multi-stem trees (microhabitat and seasonal structure)
- Planting total Area: approx. 360 m² of soft landscape across raised beds and rain gardens
- Green Roof: approx. 35 m² semi-extensive biodiverse roof with shade-tolerant ferns, grasses and sedums
- SuDS Features: 2 no. integrated rain garden beds for stormwater attenuation and ecological value

Full planting schedules and species lists are provided in the accompanying Landscape Concept Report (421-LYR-XX-ZZ-RPT-L-0004).

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