

Green Infrastructure Report

Site D, Liffey Valley Office Campus, Dublin 22

RFI Response – Application Reg. Ref. SD23A/0001

Rev B 17th April 2023



1.0 Introduction

The purpose of this Green Infrastructure Report is to identify and determine the potential effects on the Council's Green Infrastructure Strategy as a result of the provision of 7 storey hotel building at Site D, Liffey Valley Office Campus, Dublin 22. This Assessment has been prepared to support a Response to a Request for Further Information issued by South Dublin County Council in respect of the subject Application – Reg. Ref. SD23A/0001.

This report, alongside the associated maps, showing the development site in the context of the wider GI as shown on the Council's GI Plan for the County; indicate how the development proposals link to and enhance the wider GI Network of the County; describe the proposed GI protection, enhancement, and restoration proposals as part of the landscape plan.

This report and its associated figures should be read in conjunction with the plans and particulars that accompany and are enclosed as part of the RFI Response.

2.0 Green Infrastructure and Liffey Valley

Reflecting the five key themes set out in the South Dublin Development Plan 2022-2028, the development proposal presents green infrastructure as a means of developing a strategy in relation to the following key areas: the conservation and enhancement of biodiversity; the provision of accessible parks, open spaces and recreational facilities; the sustainable management of water and the maintenance of sensitive landscapes. Green infrastructure planning is crucial to meet the growing demands of environmental legislation and directives that relate to water quality, flooding, habitats, birds, Strategic Environmental Assessment, Appropriate Assessment and environmental liability, climate resilience.

The main challenge is to balance the development of a compact urban area with approaches which work effectively with nature. There is a strong emphasis on the provision of Green Infrastructure in the South Dublin Development Plan. This hotel development on the proposed site, based on a detailed assessment of the existing GI network in the County (**Figure A01/02**), will provide a shared space for amenity and recreation, increased biodiversity protection, water quality, flood management and adaptation to climate change. This is an amelioration of the current Green Infrastructure benefits of the site as a low diversity improved amenity grassland.

The Liffey Valley hotel development addresses Green Infrastructure (GI) under the five Green Infrastructure themes:

- Biodiversity
- Sustainable Water Management
- Climate Resilience
- Recreation and Amenity (Human Health and Wellbeing)
- Landscape, Natural, Cultural and Built Heritage

3.0 Fulfilment of Development Plan Green Infrastructure Objectives

3.1 Recreation and Amenity

GI1 Protect, enhance and further develop a multifunctional GI network, using an ecosystem services approach, protecting, enhancing and further developing the identified interconnected network of parks, open spaces, natural features, protected areas, and rivers and streams that provide a shared space for amenity and recreation, biodiversity protection, water quality, flood management and adaptation to climate change.

The Liffey Valley Hotel lands are located within Land Use Zoning Map 'Major Retail Centre and characterized by important commercial areas (**Figure B**). The site is located adjacent to Liffey Valley Shopping Centre and surrounded by some services, facilities, Lucan's Hospital, senior & junior schools, along with residential and mixed-use areas from the south.

In terms of topography the site is generally flat. No trees or any other vegetation are present on the site. Because the area for the proposed development located on intersection of M50 and Liffey Valley primary GI corridors and according to the County's Development Plant it should strengthen the existing Green Infrastructure (GI) network and ensure all new developments contribute towards GI, thus the proposed development needs to be carefully designed and provide enough greenery.

The allocation of open spaces along the north-east and south boundaries of the proposed development (**Figure C**) will provide new green spaces that can be used for recreational activities, such as walking, seating, or picnicking, and contribute to a more welcoming and attractive environment for visitors and residents. The appearance of the open space will change dramatically throughout the seasons due to the careful selection of trees. In spring and summer, the trees will provide lush foliage and shade, while in autumn, they will produce

a colourful display of changing leaves. In winter, the trees will be bare, but their unique forms and bark will still make them an interesting feature in the landscape.

The proposed greenery along the boundaries of the site will also help to mitigate the effects of urban heat islands by providing shade and cooling effects. The vegetation can also help to absorb pollutants and reduce noise levels, which can contribute to a healthier and more comfortable living environment.

3.2 Biodiversity

GI2 Strengthen the existing Green Infrastructure (GI) network and ensure all new developments contribute towards GI, in order to protect and enhance biodiversity across the County as part of South Dublin County Council's commitment to the National Biodiversity Action Plan 2021-2025 and the South Dublin County Council Biodiversity Action Plan, 2020-2026, the National Planning Framework (NPF) and the Eastern and Midlands Region Spatial and Economic Strategy (RSES).

Selected low planting mix can also provide additional habitats for wildlife, which will contribute to enhancing biodiversity in the area. For example, specially selected pollinator-friendly planting mix is designed to attract and support various species of pollinators, such as bees, butterflies, by providing them with the necessary food and shelter. While a traditional Irish wildflower meadow mix provide a habitat for a diverse range of insects, birds, and small mammals, as well as supporting the life cycle of many butterfly and moth species. By creating an environment that supports the life cycle of pollinators and native flora, the proposed development is supporting the wider ecosystem, as many other species rely on these plants for food and shelter. In addition to providing a habitat for wildlife, these mixes contribute to the aesthetic appeal of the area, creating a sense of natural beauty that is both beneficial for humans and the environment.

3.3 Sustainable Drainage Systems (SuDS)

GI3 Protect and enhance the natural, historical, amenity and biodiversity value of the County's watercourses. Require the long-term management and protection of these watercourses as significant elements of the County's and Region's Green Infrastructure Network and liaise with relevant Prescribed Bodies where appropriate.

Accommodate flood waters as far as possible during extreme flooding events and enhance biodiversity and amenity through the designation of riparian corridors and the application of appropriate restrictions to development within these corridors.

GI4 Require the provision of Sustainable Drainage Systems (SuDS) in the County and maximise the amenity and biodiversity value of these systems.

GI5 Strengthen the County's GI in both urban and rural areas to improve resilience against future shocks and disruptions arising from a changing climate.

While trees and plants perform a vital role by capturing and storing carbon, open spaces provide opportunities for sustainable drainage, such as using permeable surfaces, stormwater runoff managing system techniques. This can help to reduce flood risk and enhance the quality and quantity of the area's water resources, which are critical for maintaining ecological health and promoting sustainable development.

Sustainable urban drainage systems (**Figure D**) are designed to manage the flow of surface water runoff in urban areas by mimicking natural drainage processes. This helps to reduce the risk of flooding, improve water quality, and enhance the local environment. Trees and plants play a vital role in SUDS by providing opportunities for sustainable drainage through various technologies such as permeable surfaces, bio-retention areas, and arboretum urban planting.

Permeable surfaces are designed to allow water to infiltrate into the ground, rather than running off into stormwater drains. This can be achieved through the use of porous pavements, gravel driveways, or permeable pavers. By allowing water to infiltrate into the ground, permeable surfaces help to recharge groundwater supplies, reduce the risk of flooding, and improve water quality by filtering out pollutants.

Bio-retention areas are designed to capture and treat stormwater runoff by allowing it to infiltrate into the ground, where it is filtered through vegetation and soil. This can be achieved through the use of rain gardens, swales, or constructed wetlands. By providing a habitat for plants and other wildlife, bio-retention areas can also contribute to enhancing biodiversity in the area.

Arboretum urban planting involves the strategic planting of trees and other vegetation in urban areas to improve the management of stormwater runoff. Trees help to reduce runoff by

intercepting rainfall, enhancing infiltration, and reducing evaporation. Trees also help to filter pollutants out of stormwater runoff, improving water quality. In addition to their role in SUDS, trees also provide a range of other benefits, including reducing urban heat island effects, improving air quality, and enhancing the aesthetic value of urban areas.

Overall, by incorporating permeable surfaces, bio-retention areas, and arboretum urban planting into SUDS, urban areas can improve their resilience to climate change, reduce the risk of flooding, and enhance the local environment. These technologies also contribute to the broader goal of achieving sustainable development by promoting the efficient use of natural resources and reducing the impact of urbanisation on the environment.

3.4 Human Health and Wellbeing

GI6 Improve the accessibility and recreational amenity of the County's GI in order to enhance human health and wellbeing while protecting the natural environment within which the recreation occurs.

Furthermore, the open spaces and greenery in the proposed development can provide numerous social and economic benefits. Green spaces are essential for providing opportunities for physical activity, promoting mental health and well-being, and providing a sense of community and social cohesion. The proposed development's incorporation of greenery and open spaces can also create economic opportunities, such as attracting tourism and providing a unique selling point for the development.

3.5 Landscape, Natural, Cultural and Built Heritage

GI7 Protect, conserve and enhance landscape, natural, cultural and built heritage features, and support the objectives and actions of the County Heritage Plan.

The proposed development will have a significant contribution to natural heritage by enhancing natural features, restoring degraded ecosystems, and creating new habitats for wildlife. Incorporation of green roofs also will enhance the biodiversity, and mitigate the impacts of urbanization on the natural environment.

At present time, according to the National Parks & Wildlife Service, the site does not belong to any Special Area of Conservation neither to Natural Heritage Area. In other words, site has no historical or cultural value. However, the proposed development could contribute to cultural heritage by the integration of public art installations that celebrate the local history and cultural identity of the area. The proposed public art could also become a landmark destination for the community that at the same time will contribute to the built heritage.

3.0 Conclusion

In conclusion it is considered that the proposed development coupled with the considered landscape design will have a net positive contribution to the wider green infrastructure network within the context of the Liffey Valley Green Infrastructure Corridor. The site will be a vast improvement as a green infrastructure resource from the existing ecological arid monocultural intensely maintained grass to a diverse landscape with a range of habitats offering a wide resource to the local fauna, human health, cultural heritage and sustainable urban drainage. The below table indicates the vast improvement in green infrastructure as a result of the proposed landscape scheme.

Green Infrastructure Element	Existing Site	Proposed Development
Grass	5,641 sq.m	380 sq.m
Wildflower Meadow	0	760 sq.m
Trees	0	79 no.
Rain Gardens	0	191 sq.m
Pollinator Friendly Planting	0	166 sq.m

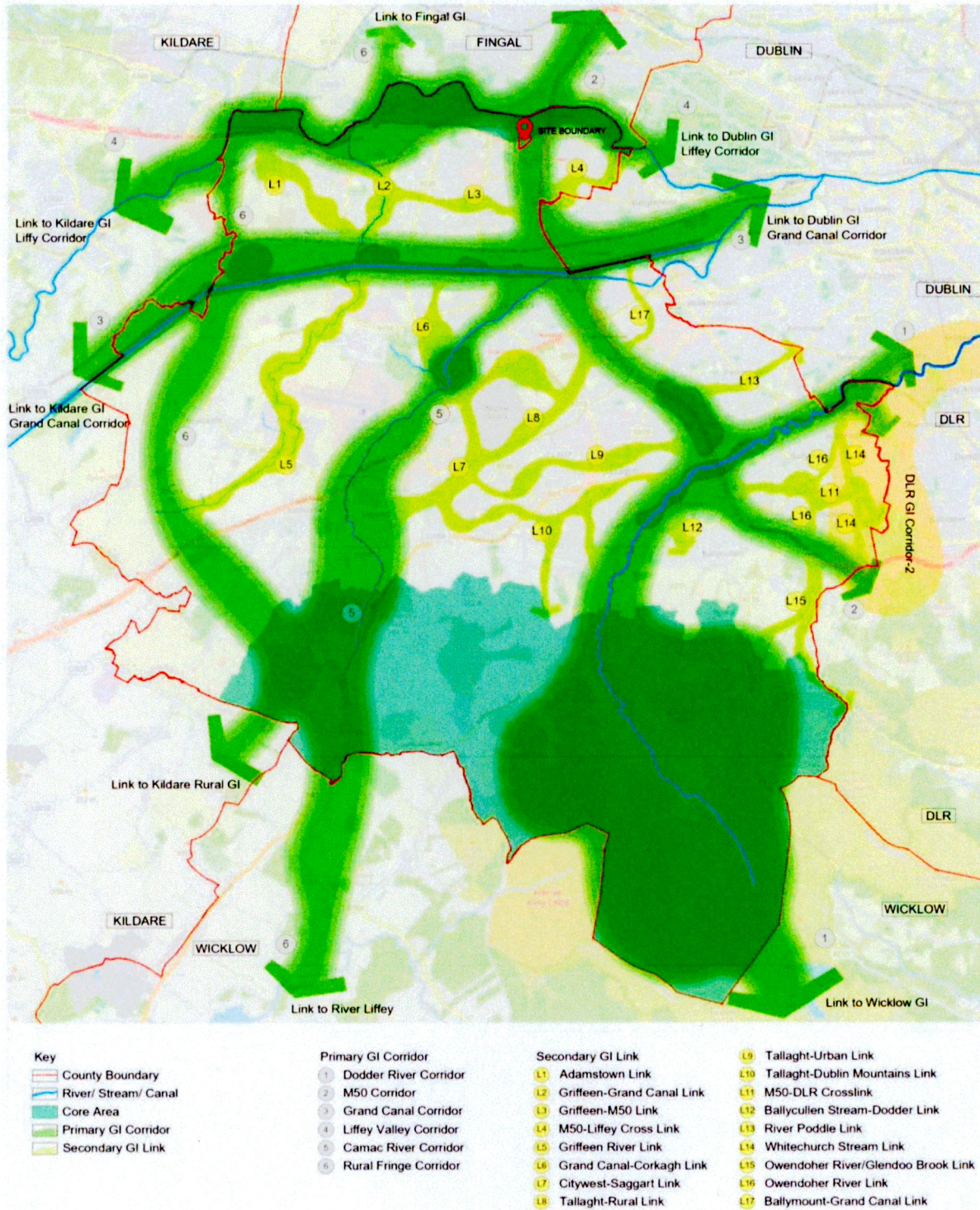


Figure A01. Green Infrastructure Strategy Map
 (source: SDCC Development Plan 2022-2028)

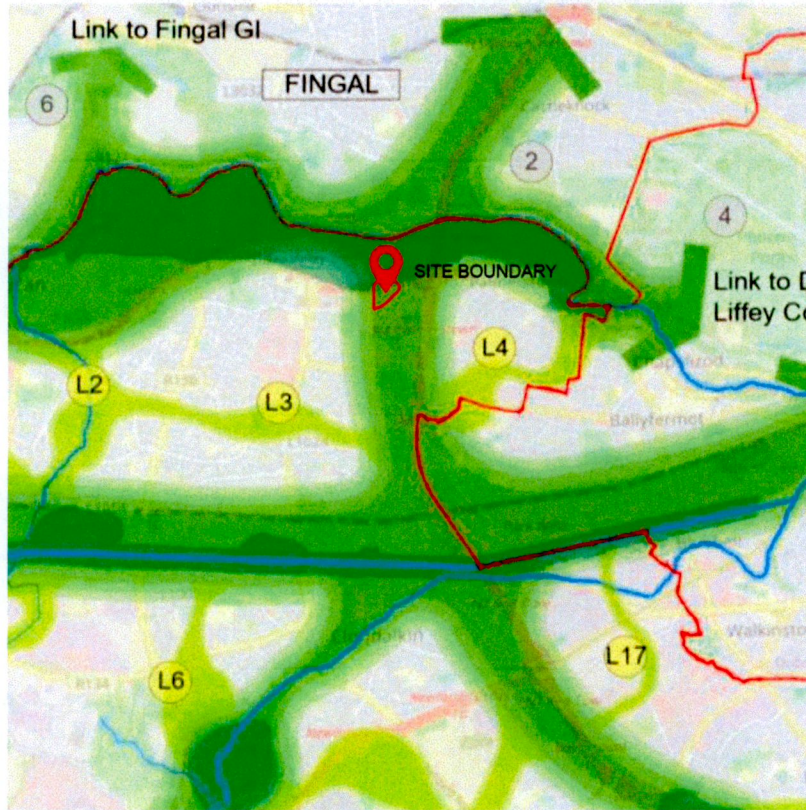


Figure A02. GI Strategy Map

(source: SDCC Development Plan 2022-2028)

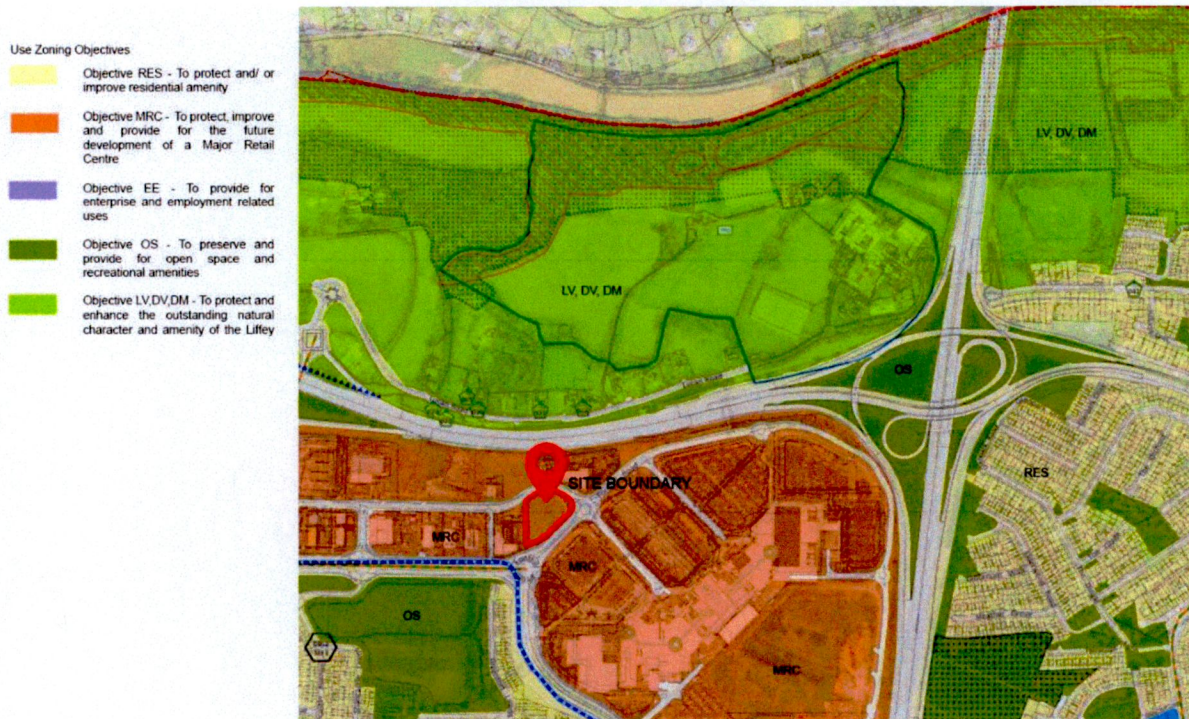


Figure B. Land Use Zoning Map

(source: SDCC Development Plan 2022-2028)

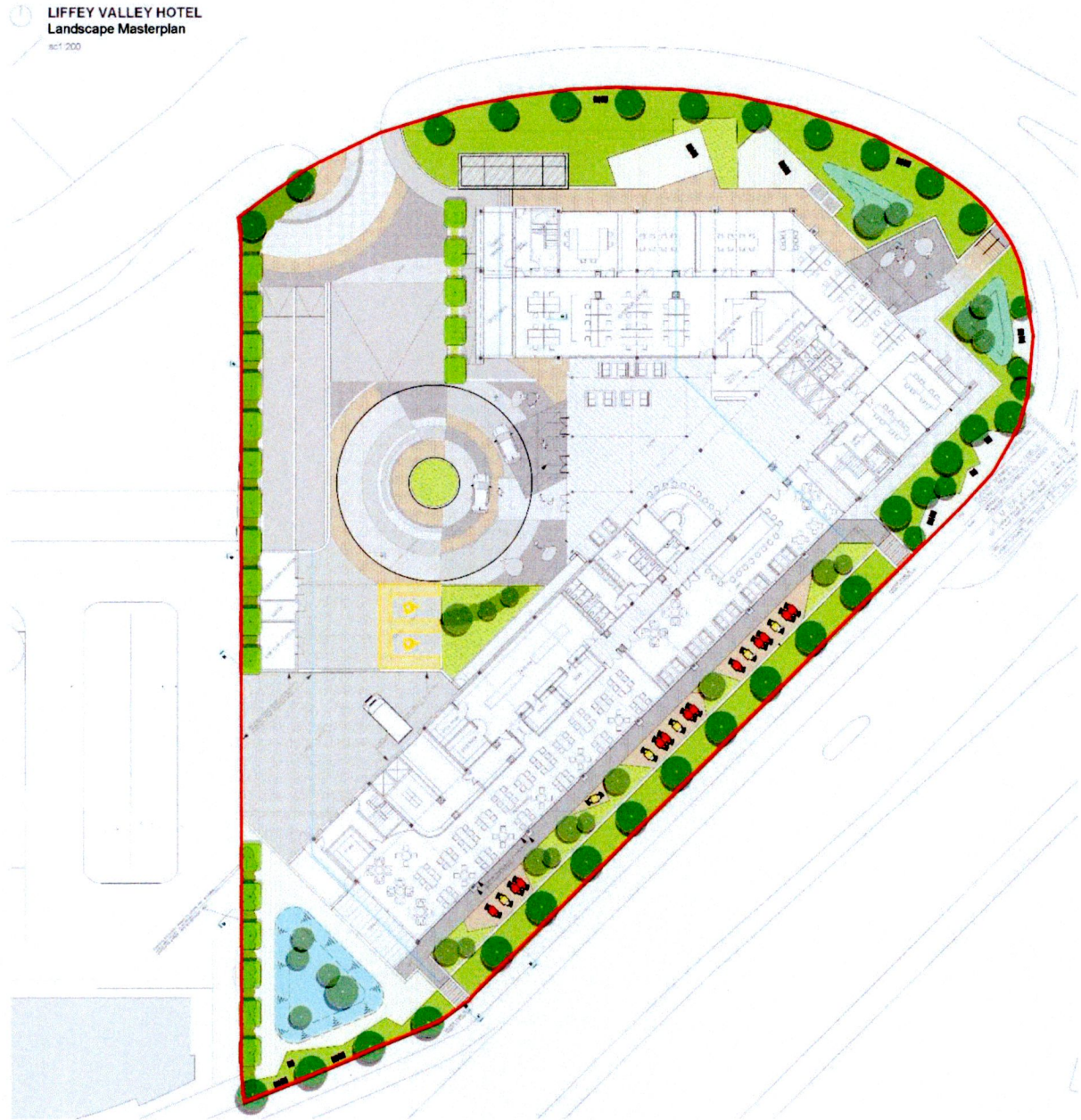


Figure C. Landscape Masterplan

(see 22193_LiffeyValley_PA_C_LM drawing produced by Gannon & Associates Landscape Architecture Ltd)

LIFFEY VALLEY HOTEL
 Sustainable Urban Drainage Systems Plan
 sc1/200



Figure D. Sustainable Urban Drainage Systems

(see 22193_LiffeyValley_FI_C_SUDs & 22193_LiffeyValley_FI_C_SUDsD drawings produced by Gannon & Associates Landscape Architecture Ltd)



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