Landscape Response

In respect of a Clarification of Additional Information

UNIT 1 M50 (planning ref. SD22A/0460)

By Macro Works

June 2023

macroworks
APEM Group

Introduction

This landscape response statement has been prepared in respect of a Clarification of Additional Information issued by South Dublin County Council in respect of a planning application for a development at UNIT 1, M50 Business Park. The clarification request includes items which relate to the landscape and green infrastructure, which are outlined below.

Clarification of Additional Information 1(ii) Green Space Factor

> *"The applicant is requested to engage with Laurence Colleran or Oisin Egan oegan@sdublincoco.ie in the Public Realm Section in order to discuss and agree appropriate greening and GI interventions in order to make up the shortfall and improve upon their stated GSF score of 0.34"*

Response to Clarification of Additional Information 1(ii) Green Space Factor

As per the clarification of additional information request, engagement with Oisin Egan from South Dublin County Council was undertaken in relation to the Green Space Factor score of 0.34 for the proposed development. An online meeting with members of the project design and planning team took place on the June 14th 2023. Summary points from the meeting are included below;

- Overall, Oisin understood how constrained the site was and noted that we had included numerous GI interventions. He noted that in calculating our GI score, we could overlap layers of planting in terms of canopy planting, understorey planting and ground-level planting. Some additional measures that could be added include native pollinator-friendly bulbs within the grassed areas and proposed rain gardens. He also noted that we could increase the spec of proposed planting to further enhance our score.
- Oisin was in agreement with the additional potential interventions that would be proposed as part of the clarification of additional information, which included a proposed rain garden and additional green roof space. Oisin noted that we should explore all options in terms of green infrastructure interventions.
- Oisin noted that we should explain in detail all interventions and update our current green infrastructure plan to account for the additional proposed GI measures.
- He also noted that sites such as this have unique constraints and that it's not always feasible to achieve the GI pass score. He noted that there are similar sites in the area that have been consented with a similar GI score to ours.

As per the landscape drawing J2139-MAC-22-XX-DR-L-0001, it is proposed to plant a mix of native tree and native understorey planting along the existing tree line along the north/northwest boundary of the site. All included planting is to be native species and has been selected in line with the All Ireland Pollinator Plan. The proposed tree planting will be provided in the form of Heavy Standards (12-14cm girth), whilst the native understorey planting are to be provided as feathered whips – see Table 1 below. All planting and locations of planting is to be confirmed on-site with the project landscape architect.

Table 1: Proposed Planting

Plant Name	Height	Girth	Root	Density	Flowers (All Ireland Pollinator Plan)
Trees					
Sorbus acuparia	3-4m	12-14cm	RB	1.5m centres	White flowers May-June
Betula pendula	3-4m	12-14cm	RB	1.5m centres	-
Prunus avium	3-4m	12-14cm	RB	1.5m centres	White flowers April
Understory Planting					
Corylus avellana	90-120cm	-	-	750-900mm centres	Flowers Feb-April
Ilex aquifolium	90-120cm	-	-	750-900mm centres	Flowers Sept-Nov
Crataegus monogyna	90-120cm	-	-	750-900mm centres	White flowers May-June

The landscaping proposals aim to retain as much of the existing landscape structure of the site as possible, whilst also maximising any opportunities for enhancing the local biodiversity. As part of the updated landscaping proposals, it is proposed to retain some of the existing trees along the north/north-western boundary of the site that had been previously identified as for removal. Furthermore, this area of planting, which forms part of one of the principal green corridors through the site and surrounding landscape, will be enhanced as necessary and where possible with additional native tree and understorey plantings, further bolstering the network of green infrastructure within the site and surrounding landscape (see figure 1 below). Furthermore, existing areas of shrub plantings and grassed areas will be retained along the western, southern and eastern site boundaries. It is also proposed to include drifts of pollinator friendly native wild flower seed mix throughout some of the existing grassed areas within the site.

As part of the landscaping measures, the applicants would be receptive to a condition to the effect that they are to provided additional tree planting on the roadside verge to fill any existing gaps that are present (outside of the site boundary). These could be agreed by way of condition with SDCC Parks Departments and will be chosen with regard SDCC 'Living With Trees' document.

As part of additional measures aimed at enhancing the existing green infrastructure score, all the existing and proposed grassed areas within the site will be planted with a pollinator friendly bulb mix. The mix will include bulbs that flower throughout all four seasons, providing year round pollinator friendly plantings.

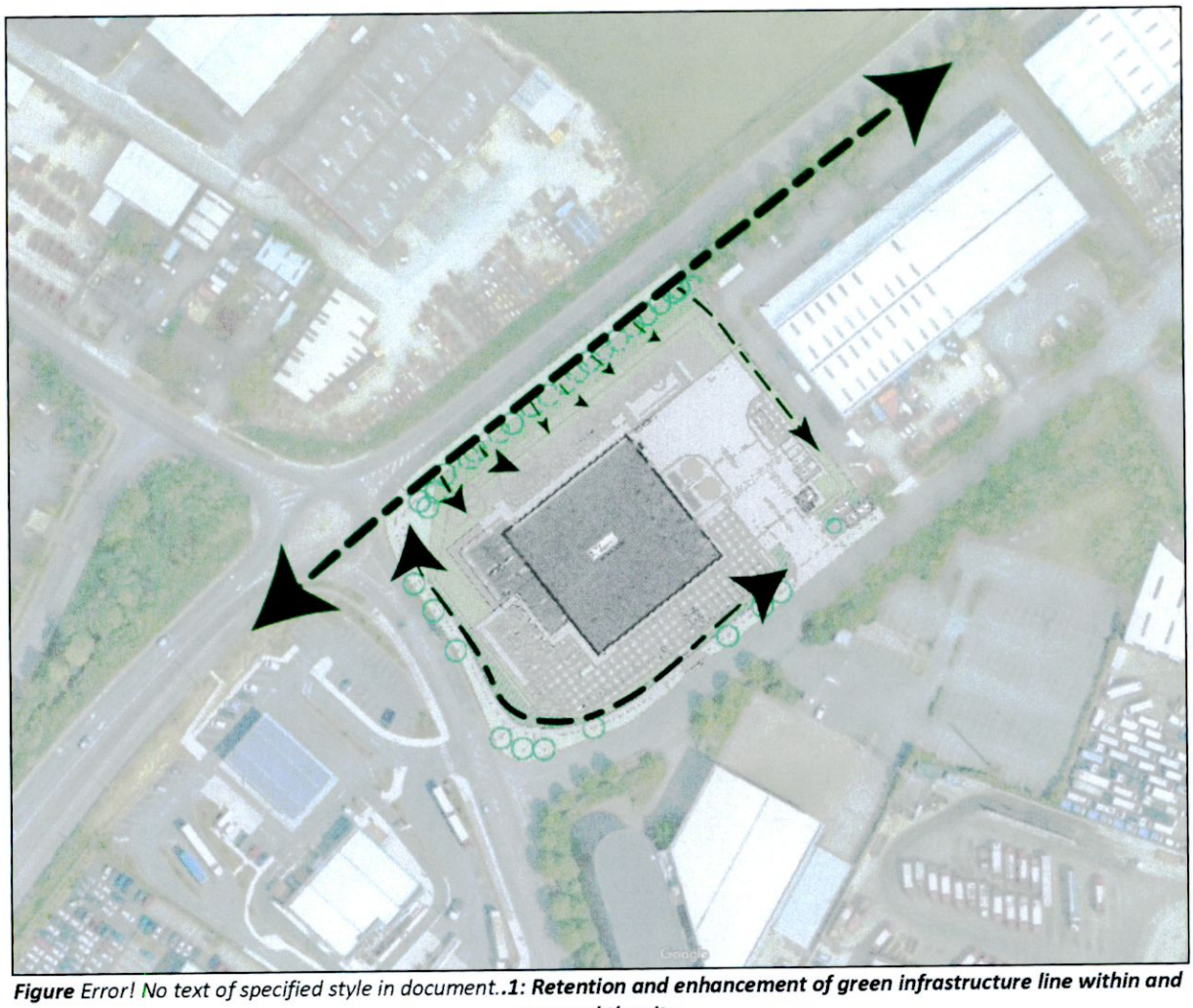

Figure** Error! No text of specified style in document..**1: Retention and enhancement of green infrastructure line within and surround the site.

As noted in the current SDCC CDP, the EU defines Green Infrastructure (GI) as:

"a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation"

In terms of green infrastructure interventions within the proposed development site, up to 43.6% of the site areas will be retained/utilised for green infrastructure measures (see figure 2 below). This can be broken down in to the following areas;

- 25.48% - Green Infrastructure Measures 1 – Retention of areas of existing vegetation, bolstering and enhancement of planted areas with additional native pollinator friendly stock, retention of grassed areas and seeding of drifts of native pollinator friendly wild grass seeding of local provenance.

- 18.14% - Green Infrastructure Measures 2 – Permeable Green Infrastructure: Permeable paving in car parking areas and at surrounding building access.

As part of the current County Development Plans Chapter 5 – Green Infrastructure, Policy GI5 Objective 4 states; *"To implement the Green Space Factor (GSF) for all qualifying development comprising 2 or more residential units and any development with a floor area in excess of 500 sq m. Developers will be required to demonstrate how they can achieve a minimum Green Space Factor (GSF) scoring requirement based on best international standards and the unique features of the County's GI network. Compliance will be demonstrated through the submission of a Green Space Factor (GSF) Worksheet (see Chapter 12: Implementation and Monitoring, Section 12.4.2)."*

In this instance, the site's zoning (EE) requires a GSF of 0.5. As part of the request for further information, the proposed development achieved a score of 0.34. Nonetheless, prior to engagement with South Dublin County Council (SDCC) on the Green Space Factor tool, an updated score of 0.44 was generated on the basis of the layering technique outlined by SDCC and the additional green infrastructure interventions that were proposed, which included pollinator friendly bulb planting, a proposed rain garden and an additional green roof system over the existing security hut (see figure 3 below).

Nevertheless, it is not considered that the EE zoning GSF is entirely appropriate for this development type, as the current green space factor guidance note refers to "New residential and commercial development". In this instance, the proposed development represents the retrofit of an existing commercial/industrial development. Indeed, as noted above, despite the slight intensification of development on this site, over 43% of the site is utilised for green infrastructure measures.

Furthermore, the highest rating factors in the GSF tool relate to enhancement of rivers and water bodies. With regard to the landscape context of the site, there are no watercourses or open bodies of water, which puts the proposed development at a major disadvantage in achieving the score outlined for the EE zoning. As a theoretical exercise, a calculation has been undertaken in which all trees within the site were retained, the remaining green areas of the site were planted with trees and underplanted with understorey species, and the areas of permeable paving were also included. This theoretical calculation achieved a final GI score of 0.47, which is still considered a 'fail' for this land use zoning. It should be noted that this theoretical example is not compatible with the existing or proposed development and would preclude the site from any useful operation. This exercise was only done to assess the feasibility of achieving a GSF of 0.5 in practice for the site. It is considered near impossible to achieve the target set out based on the current site context, which comprises an existing development. It is submitted that the updated GSF score of 0.44 is a positive result for the proposed development and every effort has been made to retain as much of the existing landscape structure of the site as possible, whilst also maximising any opportunities for enhancing the local biodiversity.

It is also worth noting that a proposed development in a similar context along Calmount Road (planning ref: SD22A/0099) failed to meet the GSF for the same land use zoning. The permitted site represented a green field site with little in the way of existing constraints (i.e. existing development), whereas the proposed development is relatively constrained in terms of space. Indeed, despite the proposed developments' site constraints, a higher GSF score was achieved for the proposed development. As noted in the landscape architect report (CFI)

for the permitted development, "a target for green cover on any site of c.30% would be a reasonable aim in line with emerging norms across Europe". It is worth reiterating that the proposed development achieves over 43% of the site utilised for green infrastructure, well above European emerging norms.

Thus, whilst the proposed development does not meet the GSF for this land use zoning, it is considered to be in line with a large majority of the most relevant GI policies and objectives outlined in the current County Development Plan.

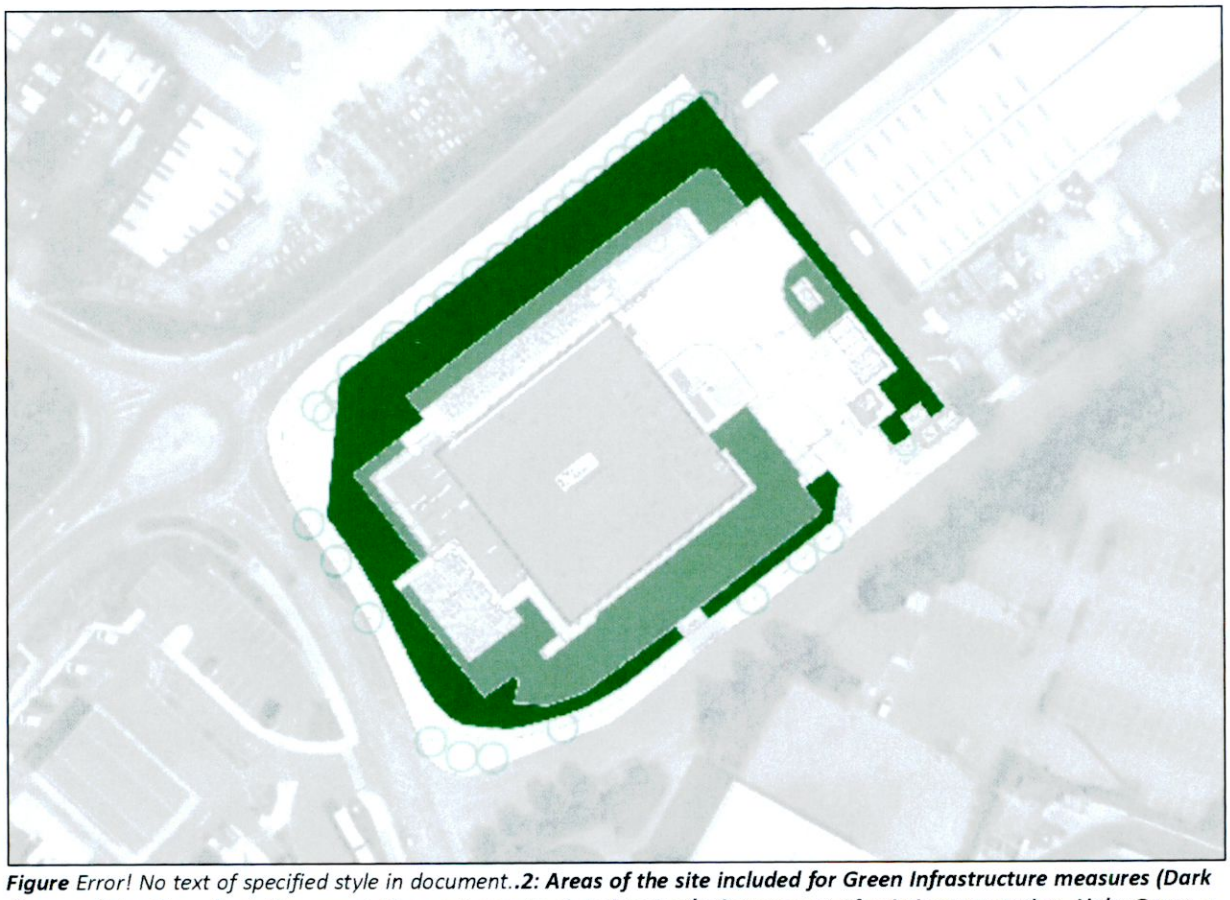

Figure** Error! No text of specified style in document..**2: Areas of the site included for Green Infrastructure measures (Dark Green = Retention of existing vegetation and grassland, bolstering/enhancement of existing vegetation, Light Green = Permeable Paving)

The table below presents the design response to relevant Green Infrastructure Policies outlined in the current South Dublin County Development Plan in Chapter 5 – Green Infrastructure.

Table 2: SDCC County Development Plan – Chapter 5 Green Infrastructure Policies and design response

South Dublin County Development Plan - Chapter 8: Green Infrastructure, Policies & Objectives	**Design Response**
GI1 Overarching: 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	The existing GI networks with and surrounding the site will be retained and enhanced as part of the landscape proposals.

streams that provide a shared space for amenity and recreation, biodiversity protection, water quality, flood management and adaptation to climate change	
GI1 Objective 1: To establish a coherent, integrated and evolving GI Network across South Dublin County with parks, open spaces, hedgerows, trees including public street trees and native mini woodlands (Miyawaki-Style), grasslands, protected areas and rivers and streams and other green and blue assets forming strategic links and to integrate and incorporate the objectives of the GI Strategy throughout all relevant land use plans and development in the County.	The updated landscaping proposal aims to further retain existing tree planting along the northern and north-western boundary of the site. This will also be enhanced with additional native pollinator friendly planting where possible. Grassed areas will also be retained and managed as per the All Ireland Pollinator Plan. Drifts of native wildflower seeding of local provenance will also be seeded in these grassed areas.
GI1 Objective 4: To require development to incorporate GI as an integral part of the design and layout concept for all development in the County including but not restricted to residential, commercial and mixed use through the explicit identification of GI as part of a landscape plan, identifying environmental assets and including proposals which protect, manage and enhance GI resources providing links to local and countywide GI networks.	As above – permeable paving will also be included as part of the proposed development.
GI1 Objective 7: To develop linked corridors of small urban 'Miyawaki' native mini-woodlands, a minimum of 100 sq m in size, to capture carbon and encourage biodiversity in suitable existing built-up areas, in low grade parkland, and other areas of zoned lands where deemed suitable and appropriate.	Whilst some tree removal is required along the existing areas of mature planting along the north/northwest boundary of the site, further retention of trees has been included as part of the updated landscaping proposals. Furthermore, it is proposed to bolster this area of woodland as per the 'Miyawaki' method with additional native tree and understorey plantings.
GI1 Objective 8: To increase over the lifetime of this plan the percentage of land in the County, including residential, managed for biodiversity including supporting the delivery of the objectives of the County Pollinator Plan and to continue to investigate the potential for the use of low-mow methods during the lifetime of the Plan.	As part of the landscape proposals in is intended to bolster the existing woodland/mature planting north of the site with additional pollinator friendly plantings. Furthermore, existing grassed areas to be retained and seeded with drifts of wildflower seeding will be managed in accordance with the All Ireland Pollinator Plan.
GI2 Objective 1: To reduce fragmentation and enhance South Dublin County's GI network by strengthening ecological links between urban areas, Natura 2000 sites, proposed Natural Heritage Areas, parks and open spaces and the wider regional network by connecting all new developments into the wider GI Network.	As per the updated landscaping proposals, it is proposed to retain all boundary vegetation that forms part of existing ecological corridors in so far as possible. Where vegetation is to be removed to facilitate the footprint of the proposed development, additional planting will be included to offset any loss. All planting proposed will be of native stock with a focus on pollinator friendly plantings.
GI2 Objective 2: To protect and enhance the biodiversity and ecological value of the existing GI network by protecting where feasible (and mitigating where removal is unavoidable) existing ecological features including tree stands, woodlands, hedgerows and watercourses in all new developments as an essential part of the	See response of GI2 Objective 1 above

design and construction process, such proactive approach to include provision to inspect development sites post construction to ensure hedgerow coverage has been protected as per the plan.	
GI2 Objective 3: To retrospectively repair habitat fragmentation and provide for regeneration of flora and fauna where weaknesses are identified in the network through the implementation of new GI interventions.	See response of GI2 Objective 1 above
GI2 Objective 4: To integrate GI, and include areas to be managed for biodiversity, as an essential component of all new developments in accordance with the requirements set out in Chapter 12: Implementation and Monitoring and the policies and objectives of this chapter.	Due to the nature of the site, which comprises an existing development, there is limited scope for any notable areas of additional plantings/areas managed for biodiversity. Nonetheless, it is proposed to retained as much existing vegetation and grassed areas in so far as possible. Furthermore, existing grassed areas north and west of the site will be retained and bolstered with drifts of native pollinator friendly wildflower seeding. All grassed/wildflower areas will be managed in line with techniques outlined in the All Ireland Pollinator Plan.
GI2 Objective 7: To enhance the biodiversity value of publicly owned hard infrastructure areas by incorporating the planting of new trees, grasses and other species, thereby integrating this infrastructure into the overall GI network.	As part of the proposed landscaping measures it is also proposed to include additional tree planting on the roadside verge to fill any existing gaps that are present. These are to be agreed with SDCC Parks Departments and will be chosen with regard SDCC 'Living With Trees' document.
GI4 Objective 1: To limit surface water run-off from new developments through the use of Sustainable Drainage Systems (SuDS) using surface water and nature-based solutions and ensure that SuDS is integrated into all new development in the County and designed in accordance with South Dublin County Council's Sustainable Drainage Explanatory Design and Evaluation Guide, 2022.	It is proposed to remove a large proportion of the existing concrete slab that surrounds the existing building and replace it with permeable paving systems. Furthermore, whilst in is not possible to integrate green roofs on the main building, it is proposed to incorporate green roof systems on the proposed bike store and bins stores.

Green Space Factor Tool
South Dublin County Council

Comhairle Contae
Átha Cliath Theas
South Dublin County Council

User input indicated by Orange fields

User Input	
Zoning lookup	Minimum GI Score
EE	0.5

1. Enter Development Site Area m² HERE▶		8640	
Surface Type (see tab for detailed descriptions)	**Factor**	**Proposed Surface Area m²**	**Factor Values**
1. Short Lawn	0.3	0	0
2. Tall Lawn (wild, not mown)	0.5	1281	640.5
Permeable Paving	0.3	1310	393
Vegetation		0	0
4a. Vegetation-Shrub below 3m	0.4	936	374.4
4b. Vegetation-Shrub / Hedgerow above 3m	0.5	0	0
4c. Vegetation-Pollinator friendly perennial planting	0.5	1281	640.5
4d. Vegetation-Preserved hedgerow	1.2	0	0
Trees		0	0
5a. New trees	0.6	8	4.8
5b. Preserved trees	1.2	705	846
7. SuDS intervention (rain garden, bioswale)	0.6	1427	856.2
Green Roof		0	0
9a. Green Roofs - Intensive green roof (substrate is 200-1200mm in depth)	0.7	0	0
9b. Green Roofs - Extensive green roof (substrate is 80-200mm in depth)	0.6	67	40.2
10. Green wall	0.4		0
11. Retained Open Water	2	0	0
12. New open water	1.5	0	0
Total Equivalent Surface Area of Greening Factors		7,015.00	

Green Factor Numerator	3795.60

Minumum Required GI score	Final GI score	Result
0.5	0.44	Fail

Figure** Error! No text of specified style in document..**3: SDCC Green Space Factor Tool and score for EE land use zoning

The table below identifies the surface types identified in the green space factor tool and their relevance to the proposed development;

Surface Type	Relevance to proposed development	Proposed surface area
Short Lawn	**Not relevant** – all grassed areas to be allowed grow wild and managed as per the All Ireland Pollinator Plan	-

Tall Lawn (Wild, not mown)	**Yes Relevant** - all grassed areas to be allowed grow wild and managed as per the All Ireland Pollinator Plan	c. 1281 sqm
Permeable Paving	**Yes Relevant** – The use of grasscrete across the has been implemented to reduce the overall hardstanding area of the site. This reduces the attenuation requirements as less water will contribute to the catchment during an extreme rainfall event as the time of concentration has improved. It is assumed that grasscrete can store marginal volumes of water (10mm depth) across the area.	c. 1466 sqm
Vegetation-Shrub below 3m	**Yes Relevant** – existing boundary planting which comprises a mix of shrubs to be retained and managed. The existing understory of the mature tree belt along the northern boundary of the site is also to be retained and bolstered with additional native understorey plantings.	c. 936 sqm
Vegetation-Shrub/Hedgerow above 3m	**Not relevant** – the proposed development is limited in terms of space of additional shrub/hedgerow plantings over 3m.	-
Vegetation-Pollinator friendly perennial planting	**Yes Relevant** – the grassed areas within the site are to be planted with a pollinator friendly bulb mix a per the All Ireland Pollinator Plan	c. 1281 sqm
Vegetation-Preserved Hedgerow	**Not relevant** – No existing hedgerows located within or around the perimeter of the site	-
New Trees	**Yes Relevant** – it is proposed to include new native tree planting to bolster the existing native mature tree belt along the northern boundary. Native tree planting will be incorporated where space allows.	c. 8sqm
Preserved Trees	**Yes Relevant** – the existing mature tree belt along the northern boundary of the site is to be retained, protected and bolstered as appropriate.	c. 705sqm
SuDS intervention	**Yes Relevant** – several SuDS interventions have been incorporated across the site, which	c. 1427sqm

	include permeable paving, a proposed rain garden to divert this rainwater away from underground attenuation and green roof systems.	
Green Roofs – Intensive green roof (substrate is 200-1200mm in depth)	**Not relevant** – Due to structural constraints, it is not possible to include intensive green roof systems on the roof of the existing building or on any surrounding structures.	-
Green Roofs – Extensive green roof (substrate is 80-200mm in depth)	**Yes Relevant** – it is proposed to include green roof systems on the proposed bikes stores and bin store, and additionally to the existing security hut.	c. 65sqm
Green Wall	**Not Relevant** – it is not possible to include a green wall system due to the location of plant adjacent to the external walls of the building.	-
Retained Open Water	**Not Relevant** – no existing watercourses within the site.	-
New Open Water	**Not Relevant** – due to the existing site constraints it is not possible to include areas of new open water	-

In terms of SUDs measures, with regard to the existing site context, much of the hard-surfaced areas of the site are contained in large concrete slabs that are impermeable. The proposed development involves the removal of large areas of this reinforced concrete slab for a permeable alternative. As per the landscape drawing J2139-MAC-22-XX-DR-L-0001, the car parking areas to the south/southeast of the main building, in addition to access laneways and other areas within the site, will be finished with grasscrete paving system, allowing the rainwater to infiltrate through the soil and reduce the rainwater run off to surrounding drains. This will result in a notable improvement in the sites drainage (refer to CSEA Consulting Engineers for technical data). Due to the existing site constraints and constraints posed by the proposed development, such as underground services and offsets from security fencing, no trees/tree pits are proposed within the main site compound. All additional planting, such as the bolstering of the existing tree line to the north of the site, will be located outside of the main site security fence in areas that do not require tree pits.

As part of the clarification of additional information and engagement with South Dublin County Council, a rain garden was proposed which totals an area of c. 60sqm and is located in the southwest extent of the site. See drawings 2139-KTA-22-XX-DR-A-2003, and 2139-KTA-22-XX-DR-A-2354. The rain garden will be fed from down pipes that drain a section of the office roof and will be planted with pollinator friendly planting that provide a year round food source for bees.

Due to structural constraints, it is not possible to include a green roof system on the roof of the existing building. Nonetheless, as part of the updated landscaping proposals, a green roof system is proposed for both the proposed Bike Store and the proposed Bin store. As part of

the clarification of additional information and additional green roof system is also proposed along the existing security hut. The proposed green roof structures will include low maintenance, drought-tolerant planting that is nectar-rich for butterflies, bees, moths and other invertebrate wildlife.

Conclusion

As part of the clarification of further information request issued by SDCC (planning ref SD22A/0099), engagement with SDCC in the form of a meeting with Oisin Egan was undertaken. Recommendations from this meeting with regard to increasing the Green Space Factor for the site included;

- Proposing additional pollinator-friendly plantings such as pollinator-friendly bulb plantings throughout the grassed areas within the site.
- Explore all options in terms of green infrastructure interventions – addition of rain gardens and additional green roof systems.
- Build on the current Green Infrastructure plan for the site.
- Use a layering technique when inputting data into the GSF tool.

As part of this engagement with SDCC, further green infrastructure interventions were included to bolster the existing GSF score for the site. These measures included additional pollinator-friendly bulb plantings throughout the site, a newly proposed rain garden that drains a portion of the office roof and comprises pollinator-friendly perennial plantings, and an additional green roof system on the existing security hut. Along with the layering technique identified by Oisin, the aforementioned green infrastructure interventions resulted in a final GSF score of 0.44 for the proposed development, which is considered an impressive score for a heavily constrained industrial brownfield site.

The updated clarification of further information response was sent to Oisin Egan in SDCC for review in late June 2023. On review of the response document, Oisin stated he was *"satisfised that you have taken our recommendations on board in terms of additional GI interventions and planting which has resulted in an improvement in your GSF Score of 0.1 (i.e. you have brought the score from 0.34 to 0.44.)."*