murray & associates
landscape architecture

GA2; Residential Development, Baldoyle, Co. Dublin

STAGE 3
LANDSCAPE ARCHITECT'S REPORT

Incorporating:
LANDSCAPE DESIGN STATEMENT
GREEN INFRASTRUCTURE REPORT
LANDSCAPE SPECIFICATIONS

Client:
LISMORE HOMES LTD.

Date:
March 2022

murray & associates
landscape architecture

16 The Seapoint Building
44-45 Clontarf Road, Dublin 3
T: 01 854 0090
mail@murray-associates.com

www.murray-associates.com

CONTROL SHEET

Project No.		**1819**		
Project Name		**Strategic Housing Development** **GA2; Residential Development, Baldoyle, Co. Dublin**		
Filename:		1819_Landscape Specification_Planning.docx		
Document Title:		**Stage 3 Landscape Architect's Report**		
Rev. No.	Issue Status	Date	Prepared By	Checked By
0	DR	07/02/22	HT	MB
1	PL	16/02/22	HT	MB

Table of Contents

GA2; Residential Development, Baldoyle, Co. Dublin

STAGE 3 LANDSCAPE ARCHITECT'S REPORT

0. Introduction & Terms of Reference

Murray & Associates were commissioned by Lismore Homes Ltd.to work with the planning and design team for the proposed residential development at Stapolin, Baldoyle with responsibility for the design of the landscape and external spaces.

The proposed development comprises of the construction of 16 no. residential buildings with 1,007 apartments, residential community rooms, and creche with car parking spaces, cycle parking, Irish Water connections and associated site development, along with the landscape and public realm proposals described herein.

The landscape architectural design proposal seeks to harmonise with existing and proposed development in neighbouring areas in an appropriate manner, which is compliant with the Baldoyle Stapolin Local Area Plan 2013 (as extended) and will create a high-quality landscape setting for the development.

This report has been prepared with the following aims:

a. To explain the landscape design rationale behind the proposals submitted with the planning application
b. To address objective GI04 of the Fingal Development Plan 2017-2023, which requires "…*all proposals for large scale development such as road or drainage schemes, wind farms, housing estates, industrial parks or shopping centres to submit a Green Infrastructure Plan as an integral part of a planning application*." This report outlines how this project address the key Green infrastructure themes within the Fingal Development Plan and the Baldoyle Stapolin Local Area Plan.
c. To provide specifications for landscape works demonstrating the commitment to quality inherent in the landscape design proposals.

In order to address the above objectives, the site and context, including both the physical context and the planning context as it relates to landscape, are analysed and explained in the first parts of the report, with specific sections addressing each of the above headings later in the document. The site and surrounding context were surveyed and assessed by this practice in October 2020.

This report should be read in conjunction with the following Murray & Associates drawings and report:

- 1819_PL_P_00 Landscape Masterplan 1:500
- 1819_PL_P_01 /_02 / _03 / _04 Landscape Plans 1:200
- 1819_PL_P_05 Landscape Plan – Existing Tree Management 1:250
- 1819_PL_P_06 Soft Landscape Plan 1:500
- 1819_PL_P_07 Boundary Treatment Plan 1:500
- 1819_PL_S_01/_02 Landscape Sections 1:200
- 1819_PL_D_01/_02 Landscape Details (Various scales)
- Arborist's Report
    - 1819_TS_P_01 Tree Inventory Plan
    - 1819_TS_P_02 Tree Impact Plan

1. Site Description and Context

1.1 Site Context

The site is located in the townland of Stapolin, 1 km northwest of the town of Baldoyle, situated in the south eastern part of Fingal County. The development is part of the proposed Coast Development within the Baldoyle Stapolin area, located on major bus line and adjacent to the Clongriffin Dart Station. The area is zoned RA for new residential developments, as are the sites to the south and west of this application. To the north and east is a large area of greenbelt, and further east is Baldoyle Bay, which is an SAC and SPA.

Site in Context (Aerial Photo) – Clongriffin to west, Baldoyle to south, Green Belt to north/east and bay to east.

The Fingal Development Plan 2017-2023 categorizes the site as an Estuary within the landscape character types. This is due to the site proximity to the Baldoyle Bay & Estuary (500m to the east). Most of the area between the bay and the site is zoned as greenbelt. A new regional park, Racecourse Park (Class 1 Open Space), is planned for this area.

1.2 Site Character

The subject site is approximately 6.1ha in area and is mainly composed of a partially cleared development site. The site is on the fringe of a recently developed (over past 15-20 years) residential development area. The site has been colonised by the flora typical of waste ground, primarily grasses, weeds and some small pioneer shrubs such as Buddleia or Willow in places. There are few mature trees on the site, and they are of moderate and low

arboricultural value. There are two groups of trees, primarily non-native and mature or early mature, the majority of which are Sycamore. (See Arborist's Report for full details.)

The Haggard to the south and green belt area to the north contain some mature trees, generally common native and naturalised trees such as Ash (*Fraxinus excelsior*), Sycamore (*Acer pseudoplatanus*), Alder (*Alnus*), Aspen (*Populus tremula*) and scrub understorey (Hawthorn, Elder, Rose, Bramble, etc.). None of the trees would be considered remarkable in visual or sylvicultural terms and they are in fair condition generally.

As the site is close to the coast, it is affected by saline wind conditions and this will impact on the type of planting which can be proposed on this site.

1.3 Landscape Planning Context

The site is within the Baldoyle Stapolin Local Area Plan 2013 (as extended) area. The overall Coast Development is divided into pre-determined sectors, in compliance with the Baldoyle Stapolin Local Area Plan objectives. This application includes Growth Area 2 – 6A/6B, 7, 8A, 8B, 8C as shown in the diagram below. Clongriffin DART station is c.300m west of the site. Growth Area 1 is to the south-west and Growth Area 3 is west of the site.

Development Sectors which are within this application. Growth Area 2 – 6A/6B, 7, 8A, 8B, 8C

The Haggard area is to be developed as a public park (Class 2 Open Space), in accordance with the LAP and planning permission granted to an adjoining landowner, Reg. Ref. F16A/0412. This park will include a play area, seating, lawn / kickabout spaces, planting, paths, etc. and will protect the existing trees on that site as a wooded space for the new park. It is anticipated that this park and adjoining developments with planning permission will be constructed prior to the proposed development.

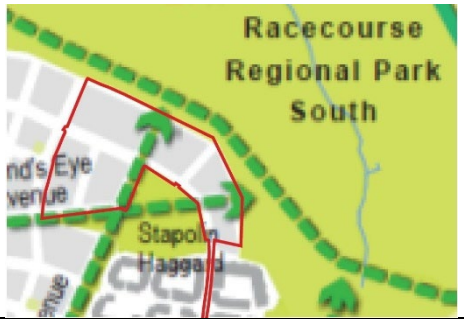
A green belt area is designated between Baldoyle and Portmarnock, now zoned for High Amenity, as described earlier. This area is centred on the Mayne River and includes Mayne Marshlands, a brackish marsh and a considerable area of wetland and grassland of local and regional importance. Baldoyle Estuary also forms part of the landscape context for the site, which is a sensitive coastal landscape with high value under international designations. A new regional park, Racecourse Park (Class 1 Open Space), is planned for this area. The site area is also designated as being on the edge of a 'Highly Sensitive Landscape' area as designated on Map Sheet 14 (Green Infrastructure) of the Fingal Co Development Plan. Most of the area designated as Highly Sensitive correlates with the areas zoned as High Amenity, with some overlap on the urban edge of Baldoyle and the area designated as part of the Baldoyle-Stapolin LAP.

1.3.1 Baldoyle-Stapolin Local Area Plan 2013 (as extended)

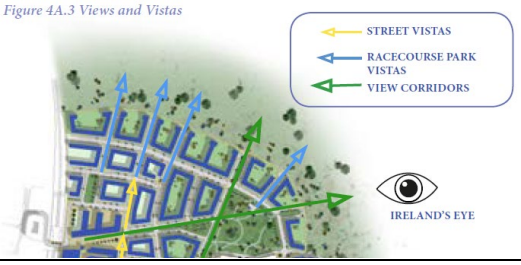
The Baldoyle-Stapolin Local Area Plan was published in May 2013 and has been extended so it remains the guiding plan for the development of this area. There are several aims and objectives within the plan that relate to landscape and green infrastructure. The plan aims for Sustainable Development: "the creation of an urban area with buildings and surrounding areas constructed to high standards of sustainable design, accessible good quality public transport, green spaces and corridors and strong inclusive communities" and High Quality Places for All: "the development of interesting, exciting and stimulating buildings and public spaces, which make the most of natural features and are well connected to surrounding areas. Objective 3 seeks to "Establish a rich tapestry of quality connected open spaces and river corridors across the LAP Lands, which provide for visual amenity and recreational use while addressing the need for nature conservation and flood risk mitigation. Objective 5 looks to "Achieve a high standard of design through development that creates a real sense of place through the juxtaposition and provision of buildings, streets, spaces, features and facilities of high quality design, layout and materials." The landscape architectural proposals for the proposed development aim to satisfy these aims and create dynamic, unique spaces that will contribute to a sense of place and quality of life for all who live here in the future.

The following table lists the specific GI objectives from section 4A - Green Infrastructure Strategy of the LAP which are relevant to and comments on how they have been addressed in the proposed landscape architectural design proposals.

Objective / Reference From LAP		*Comment re. Design Response*
4A.2 Overarching GI Objectives		
Objective GI 1	Create a high-quality, well-connected and sustainable natural environment of green spaces and watercourses that are rich in biodiversity and promote active and healthy lifestyles.	*The proposed development adheres to the layout as required in the LAP and provides several green spaces and green links between the streetscape and public realm, The Haggard C2OS and Racecourse Park C1OS.*
Objective GI 2	Require a high-quality design approach to all green infrastructure, which creates inviting, flexible, multifunctional places, protects and enhances local distinctiveness and character, incorporates existing features and important vistas.	*The proposed landscape design is considered to be high-quality in relation to all green infrastructure, and will create inviting, flexible, multifunctional places, will protect and enhance local distinctiveness and character, and incorporates existing features and important vistas. Please see the following sections of this report for more detail on the landscape design proposals.*
Objective GI 3	Maximise the opportunities for enhancing the green infrastructure resource through the provision of urban landscape features such as green corridor routes and links, swales, green roofs, trees and shrubs within the new development and public realm.	*Green corridor routes and links, integrated tree pit SuDS features, green roofs, trees and shrubs have been incorporated within the new development and public realm.*
Objective GI 4	Provide for the protection, conservation and enhancement of wildlife habitats and natural resources, including the existing watercourses on site and features such as ecologically important hedgerows and mature trees within the LAP area.	*Of these, the only direct issue for this site is retention of trees. Where feasible, trees have been retained within an area of open space.*
Objective GI 5	Develop and enhance existing green infrastructure, create new habitats where any are lost, improve physical and habitat linkages between the adjoining Baldoyle-Stapolin, Portmarnock and Clongriffin LAP lands and develop a new high quality well landscaped public realm, connecting into the wider green network.	*The green links in this proposed development will enhance the public space network and connect into the wider green network.*
Objective GI 6	Comply with all of the policies of the current Fingal Development Plan relating to open space, biodiversity, green infrastructure and open space provision.	*The relevant policies in the Fingal Development Plan have been considered and integrated into the landscape design, as described in this report.* ***Open Space:*** *See Sections 2 & 3* ***Biodiversity:*** *See Sections 2.5 and 3.1 and Ecological Consultant's Submission, EIAR, Appropriate Assessment, etc.* ***Green Infrastructure:*** *See Section 3* ***Open Space Provision:*** *See section 2.2*
Objective GI 7	Ensure that plans, designs, detailed schedules and specifications of work including management plans, where privately managed, for all public open spaces and green infrastructure are integral to all planning applications.	*Landscape plans, designs, detailed schedules and specifications of work including management plans are included in the current planning application.*
4A.3 Natural Heritage and Biodiversity - Conservation and Extension of the Biodiversity Network		
4A 3.1 Designated Sites		
Objective GI 8	Maintain or restore the favourable conservation condition of Annex I habitat(s) and/or the Annex II species for which the Baldoyle SAC has been selected: [1140] Mudflats and sandflats not covered by seawater at low tide [1310] *Salicornia* and other annuals colonising mud and sand [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1410] Mediterranean salt meadows (*Juncetalia maritimi*)	*Not directly relevant to this site.*
Objective GI 9	Maintain qualifying interest habitats and species within the Baldoyle Bay SPA and SAC at favourable conservation condition to ensure the ecological integrity of Baldoyle Bay and further ensure that the LAP lands continue to provide supporting function for the Qualifying Interest species.	*The landscape spaces have been designed to incorporate native and pollinator-friendly plant species and will thus provide supporting function for the Qualifying Interest species, indirectly.*

Objective GI 10	Ensure that sufficient information is provided as part of development, plan or project proposals to enable Appropriate Assessment screening to be undertaken and to enable a fully informed assessment of impacts on biodiversity to be made.	*Appropriate Assessment, Natura Impact Statement and EIAR have been submitted with this application.*
4A.3.2 Racecourse Park – Mitigation within the Ecological Buffer Zone		
Objective GI 11	Ensure compliance with the landscape masterplan for Racecourse Park and the Portmarnock South LAP lands contained within this LAP which incorporates mitigation measures for any loss of habitat for the conservation interests of Baldoyle Bay (Figure 4A.1).	*Following is an extract from Figure 4A.1 showing the key movement and visual axes which have been incorporated into this scheme.* 
Objective GI 12	Promote opportunities for the enhancement of local biodiversity features including the creation of new habitats through managed spaces and new water features such as pools and ponds in order to promote wildlife use associated with the existing Designated Sites. Such proposals may be subject to an Appropriate Assessment of the likely significant effects on European Sites due to the proximity of urban centres.	*Pools or ponds were not considered appropriate in the current site. Landscape planting proposals incorporate native and pollinator-friendly plant species, which will enhance local biodiversity.*
Objective GI 13	Provide appropriately designed and located combined pedestrian and cycle routes of no wider than 3m through Racecourse Park, and minimise access points to avoid disturbance to protected habitats and species within Baldoyle Bay and Racecourse Park.	*Not directly relevant to this site.* *Entrance points into the park have been provided with reference to Racecourse Park masterplan and will be subject to agreement with FCC through the normal planning processes.*
Objective GI 14	Ensure the minimisation of signage within Racecourse Park to protect the visual enjoyment of the park and the integrity of the wider natural environment.	*Not relevant to this site.*
4A 3.3 Creating a Green Network - Green Corridors, Green Links & Stepping Stones		
Objective GI 15	Create a cohesive network of green corridors, green routes/ links and stepping stones throughout the LAP lands that facilitate wildlife movement between the residential areas and the surrounding landscape as shown on Figure 4A.1 – Landscape Masterplan.	*The green links in this proposed development will enhance the public space network and connect into the wider green network.*
Objective GI 16	Create new green links to connect publicly accessible open spaces to main destination points, such as the DART station, bus stops, village centre, proposed school, health facilities and other publicly accessible open spaces including Racecourse Park.	*The proposed development adheres to the layout as required in the LAP and provides links with existing and proposed routes to these locations and Racecourse Park.*
Objective GI 17	Develop a green link along the Mayne River, where it does not conflict with the conservation objectives of the SAC, under the existing railway arches in Racecourse Park, to connect the parkland with the proposed linear park along the Mayne River within the Dublin City Council administrative area.	*Not relevant to this site.*
Objective GI 18	Ensure that the design of all green corridors, links and stepping stones takes account of the sensitivities of habitats and avoids adverse impacts resulting from noise, lighting and other types of disturbance.	*These factors have been considered in the design and any recommendations from the ecologists have been implemented.*
Objective GI 19	Improve education and awareness of the importance of green corridors, links and stepping stones and ecological	*Not relevant to this application.*

	connectivity to help ensure their retention and management for future generations.	
4A.4 Sustainable urban Drainage Systems (SuDS)		
Objective GI 20	Require that water storage areas be designed and integrated into the development with consideration to their drainage, recreation, biodiversity and amenity value.	*Water storage areas could not practicably be incorporated into the above-ground design of this site. Swales and bio-retention tree pits have been integrated into the design.*
Objective GI 21	Ensure, as far as practical, that the design of SuDS enhances the quality of open spaces and biodiversity	*SuDS measures include permeable paving, swales and bio-retention tree pits and will add to the quality of the public realm by facilitating space for planting which will add texture and visual interest as well as biodiversity gains.*
Objective GI 22	Promote open SuDS features, wetland and pond features in planned open spaces such as the pocket park, local parks and Racecourse Park subject to satisfactory resolution of management programmes, public safety, ease of cleansing and maintenance access.	*Not relevant to this site.*
Objective GI 23	Ensure that the design of swales and stormwater attenuation areas and SuDS proposals within private developments include commitments to addressing a net gain in biodiversity through the use of appropriate planting.	*Planting proposed is focussed on biodiversity, utilising native species and diverse, pollinator friendly planting throughout.*
Objective GI 24	Require that SuDS corridors alongside roads and green corridors incorporate wildlife habitat, pedestrian links and structural planting where appropriate.	*SuDS measures include swales and bio-retention tree pits and will add to the quality of the streetscapes by facilitating space for planting which will add texture and visual interest as well as biodiversity gains.*
Objective GI 25	Require that SuDS features in Racecourse Park be designed as extensive, naturalistic open features (e.g. ponds, wetlands) of value to wildlife and local amenity. Their water quality and storage objectives shall be dealt with in combination with landscape integration, visual amenity and protection/enhancement of biological diversity.	*Not relevant to this site.*
Objective GI 26	Require that where SuDS features are connected to the Mayne River best practice will apply and consultation with the relevant national bodies such as the National Parks and Wildlife Service and Inland Fisheries Ireland will take place to agree on the methodology for such works. In any event, the design of SuDS features shall not conflict with conservation management objectives of the EU Designated Sites	*Not relevant to this site.*
Objective GI 27	Ensure that green roofs are incorporated into the design of all new commercial buildings on the Plan lands.	*Green roofs have been incorporated into the residential buildings, covering c.85% of the roof area of the proposed development.*
4A.5 Landscape, Views & Vistas		
Objective GI 28	Ensure that development along the parkland edge of the residential lands is sensitively designed to reflect the 'Sensitive Landscape' designation on these lands in the current Fingal Development Plan.	*The landscape along the parkland edge has been sensitively designed, with levels generally tying into the existing levels in the park area and trees retained where feasible. The boundary edge is proposed as a diverse native hedgerow with a low 1.2m railing, and extensive native tree planting is proposed. The built edge is designed with reference to the park, creating a strong edge and passive supervision over Racecourse Park.*
Objective GI 29	Ensure that any new hedgerows and tree species within the site are planted with non-invasive species which will provide alternative habitat for displaced wildlife, be compatible with local landscape values and help maintain connectivity for species which rely on such features for movement or feeding.	*The planting proposed avoids the use of all known invasive species, with reference to the latest lists of invasive species published by the National Biodiversity Data Centre. This includes tree species such as Acer pseudoplatanus (Sycamore) which is common in Ireland and is present on the site. (Note:*

		Compensatory planting for Sycamore trees removed from the site is proposed as native Alder and Oak and non-native Field Maple and Lime, which are not considered to be invasive or of concern.) *Species also avoided include commonly planted landscape shrubs such as Buddleia, Rosa rugosa, Prunus laurocerasus, Berberis thunbergii, Cortaderia selloana, Hippophae rhamnoides, Leycesteria formosa, Lonicera japonica, Parthenocissus quinquefolia and Cotoneaster horizontalis. Trees Quercus cerris, Q. ilex and Q. rubra, Robinia pseudoacacia are also avoided.*
Objective GI 30	Maximise the potential views of the surrounding area from the development lands. In particular, the views of Ireland's Eye, the coast and the higher parklands, to the north, at Portmarnock shall be protected. *Figure 4A.3 Views and Vistas*  	*View corridors as defined in the LAP are protected, and views out to Racecourse Park are also facilitated in the design, as per figure 4A.3 below.*
4A.6 Recreation & Amenity - Open Space Hierarchy		
Objective GI 31	Manage the open space at Racecourse Park and any associated lands in accordance with the Landscape Masterplan and mitigation measures and polices included in this LAP.	*Not relevant to this site.*
Objective GI 32	Promote sustainable recreation within the LAP lands that will allow inclusive use of the open space without causing adverse effects on the physical and biological functions of the green infrastructure and/or qualifying interest species and habitats of Designated Sites.	*Sustainable recreation is achieved in the proposed design. The design as proposed will allow inclusive use of the open space without causing adverse effects on the physical and biological functions of the green infrastructure and/or qualifying interest species and habitats of Designated Sites. Please see EIAR for more details on ecological effects due to the proposed development.*
Objective GI 33	Require Appropriate Assessment (AA) Screening for any development, including changes to the landscape, within Racecourse Park. This will include any changes to existing or future layout, materials or surfaces of pitches.	*Not relevant to this site.*
Objective GI 34	Ensure the provision of adequate areas of high quality, safe and overlooked open space within residential developments, which meet the required standards for distance from homes.	*Adequate areas of high quality, safe and overlooked open space are provided in the site design, which meet the required standards for distance from homes.*
Objective GI 35	Facilitate the development of open spaces and civic spaces at suitable locations within the Plan Area and protect existing open spaces from inappropriate development, so as to maintain their attractiveness and role in enhancing the residential and ecological amenities of the area. The quantum of open space provided within the LAP lands must comply with standards set out in the Open Space Hierarchy in Table 4A.3.	*Development of open spaces and civic spaces as relevant to this site are facilitated.* *Please see Section 2.2 for full breakdown of open space provision associated with the proposed development.*
Objective GI 36	Require the provision of playing pitches in the northwestern corner of the Racecourse Park, south of Mayne Road, or alternative agreed location. Any alternative location may be subject to Appropriate Assessment.	*This development includes these lands as the class 1 open space provision. See section 2.2 of this report.* *Note that Fingal Co. Council has proposed a masterplan for Racecourse Park*
Objective GI 37	Ensure that Stapolin Square incorporates a green core which allows for the visual and physical extension of Ireland's Eye Avenue to and from the train station.	*Not relevant to this site.*

Objective GI 38	Facilitate the potential for public activities and events in Stapolin Square through the incorporation of design elements which allow for such.	*Not relevant to this site.*
Objective GI 39	Facilitate the provision of an all-weather pitch as part of the proposed pitches and active recreational hub to the northwest of the Plan lands, south of Moyne Road, subject to screening for appropriate assessment.	*This development includes these lands as the class 1 open space provision. See section 2.2 of this report.*
Objective GI 40	Ensure the timely delivery of open space having regard to the open space hierarchy, the preferred masterplan layout and the phasing requirements of this LAP.	*Open spaces within the site will be delivered in parallel with the completion of construction, or in the planting season following.*

1.3.2 Racecourse Park Development Project (Section 177AE Application to An Bord Pleanála by Fingal Co. Council)

Racecourse Park is located to the north and east of the site and shares a common boundary of some 470m in length. In the development of the design for this site, the plans as published by Fingal Co. Council and as submitted to An Bord Pleanála have been reviewed, and the interface with the proposed park has been carefully considered, to provide passive surveillance and a strong urban edge to the park.

At present, there is a partially constructed wall and railing along most of the boundary, which was built upwards of 20 years ago. This will be removed to make way for a simpler treatment, with a 1.2m Bow Top Bar Railing and native hedgerow. This treatment is continued from GA3 to the west of the site, so the boundary of the park along the urban edge will be continuous. Green links and routes to the proposed park entrances through the development are enhanced with selected paving materials and feature planting framing them. Suggested additional entrances have also been indicated, should the Council wish to create more links in the future. Parallel to the boundary, a path is proposed along the eastern part of the scheme to facilitate direct access from the units and to create a perimeter path as an optional walking route, increasing permeability and walkability.

1.4 Interaction with Adjacent Granted Development

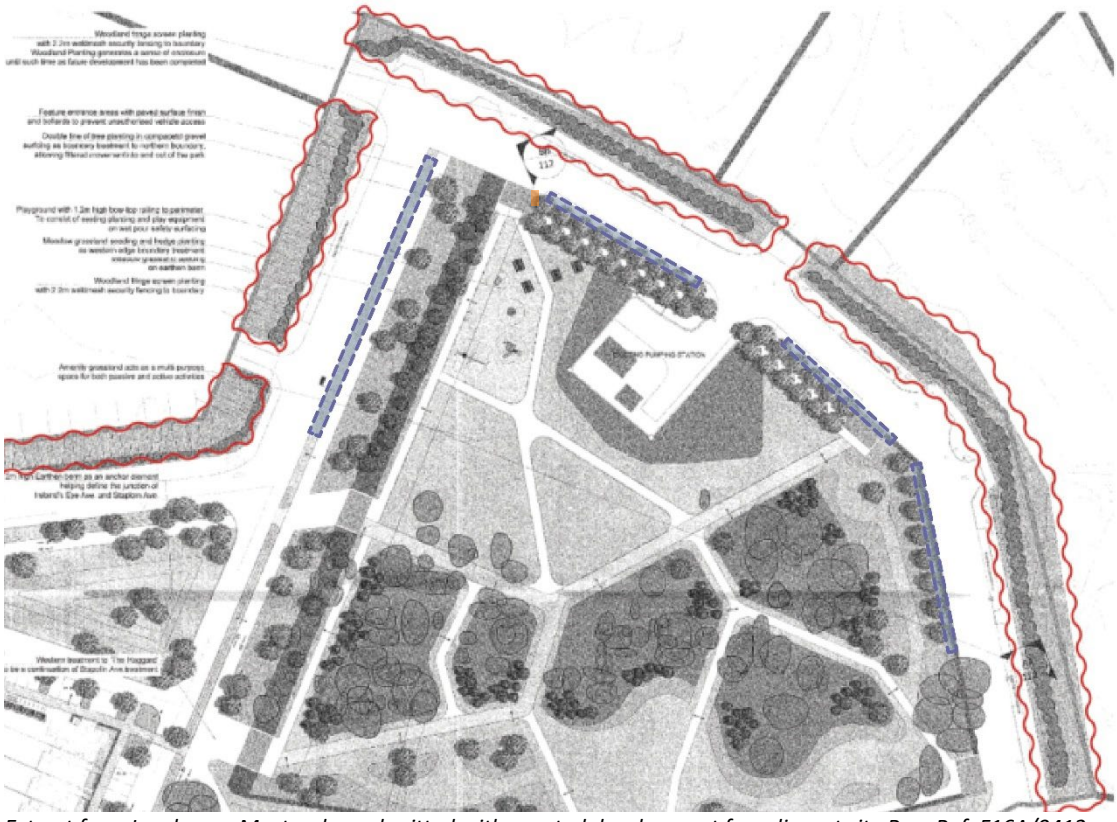
The site of the proposed development is set within a context of lands which are zoned for development, under the LAP above and there are several extant permissions in place. The immediate context of the proposed development interfaces with the development granted under planning register reference F16A/0412; and the more recent SHD applications for GA1 lands to the south (ABP ref. TA06F.310418) and GA3 lands to the west (ABP ref. TA06F.311016) of the proposed development. Where feasible, similar materials will be used between the two developments for continuity of public realm and landscape.

Figure 3 below is taken from the Reg. Ref. F16A/0412 planning application and is an extract from the Landscape Plan for the main open space, Stapolin Haggard, as designed by Mitchell + Associates, Landscape Architects. This space will be constructed as per the planning permission (with some minor alterations proposed in this application for the boundary edge for proper development and SuDS purposes, as shown on the current landscape plans). This Class 2 Open Space will add greatly to the amenity of the area.

This plan shows tree groups around the opposite sides of the road, on the interface with the current site (highlighted on the plan). These were likely intended as temporary screening or windbreak as part of a phasing strategy within the LAP area at the time of this application in 2016. They are now proposed to be omitted in the current GA2 planning application to enable construction of the proposed development.

A row of approximately 16no. trees proposed in the above design along the public footpath north of the Haggard is also to be omitted, as proposed in the current application – marked in orange on the plan extract below. The reasons for this are as follows:

- to reduce the potential for to minimise tree overhang on the roadway and potential for clashes with high vehicles
- to increase rooting space for the line of trees on the edge of the Haggard
- for symmetry with proposed trees on the other side of the street and
- to allow space for swales for sustainable drainage.



Extract from Landscape Masterplan submitted with granted development for adjacent site Reg. Ref. F16A/0412.
Red Outline – Planting omitted in current application; Blue outline – swales in current application, resulting in omission of some boundary tree planting.

With regard to GA1 and GA3 sites, this development will integrate with those developments, which are also in accordance with the LAP. Materials in the public realm will be generally replicated for continuity and consistency, with unique elements or variations to create a sense of place. The treatment of the boundary with Racecourse Park proposed in the GA3 scheme of native hedgerow and low 1.2m bow-top mild steel railing is continued on this development. Heights of the proposed buildings along the park edge and throughout the

scheme have also been coordinated to form strong enclosure within the streetscape and comprehensive passive surveillance across the public realm and Racecourse Park.

2. Landscape Design Statement

2.1 Description of the Proposed Development

This development comprises of the construction of 1,007 residential apartments in 16 no. 4 to 12 storey buildings comprising 58 no. studio units, 247 no. 1 bedroom units, 94 no. 2 bedroom 3 person units, 563 no. 2 bedroom 4 person units, and 45 no. 3 bedroom units, 6 no. communal residential community rooms, and a ground floor creche with outdoor play space. Associated site development includes 743 no. car parking spaces (605 no. spaces at basement level and 134 no. surface level spaces for visitors), along with the landscape and public realm proposals described herein, public lighting, drainage and ancillary site services and infrastructure development works. 1,754 no. bicycle parking spaces for residents and 500 no. bicycle spaces for visitors are proposed in covered and secure parking facilities at ground level throughout the scheme.

The landscape architectural design proposal seeks to harmonise with existing and proposed development in neighbouring areas in an appropriate manner by matching the architectural character and form of this neighbourhood, in a manner which is compliant with the LAP and will create a high quality landscape setting for the development.

The proposed residential development is composed of 5no. groups of residential blocks, each centred on a courtyard. The courtyards provide semi-private communal amenity space and facilitate natural light reaching the apartments.

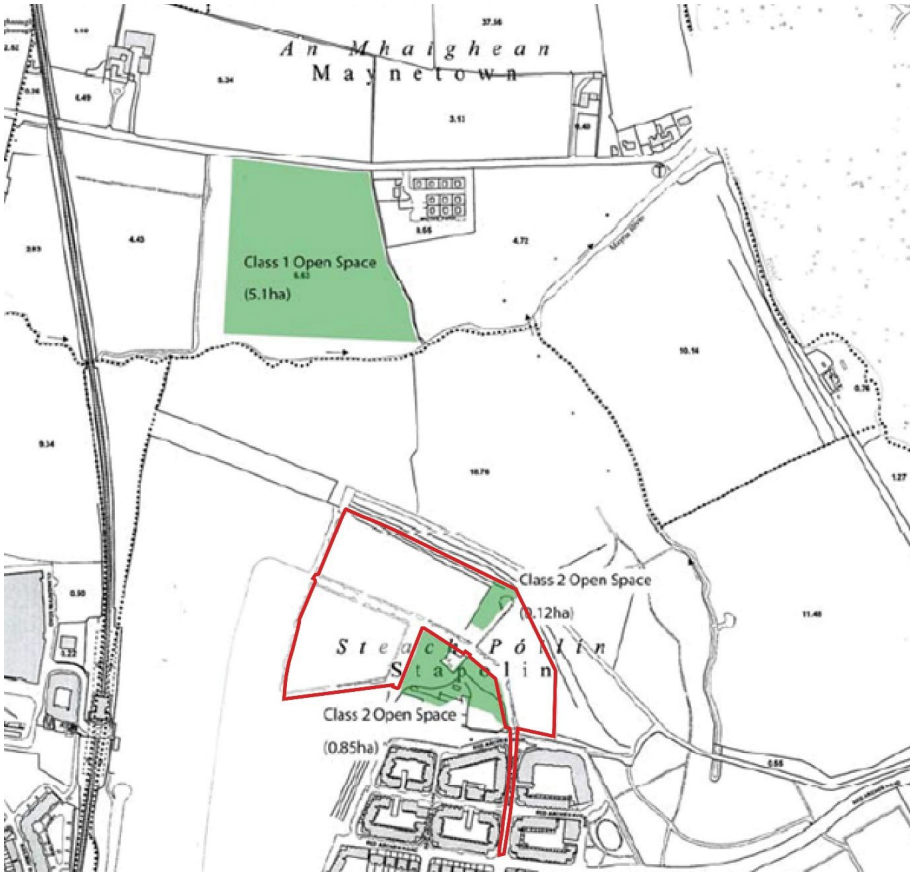
2.2 Landscape Strategy - Provision of Class 1 & 2 Open Space

In the context of this development, the Class 1 and Class 2 Open Space requirements will be met off-site, due to the agreements in place with the developers, and in accordance with the Local Area Plan. For this site, 4.00ha of Public Open Space is required, but a total of 6.07 hectares is proposed. See table below for detailed calculation of open space requirements.

Fingal County Development Plan Objective	***Design Response***
Objective DMS57: Require a minimum public open space provision of 2.5 hectares per 1000 population. For the purposes of this calculation, public open space requirements are to be based on residential units with an agreed occupancy rate of 3.5 persons in the case of dwellings with three or more bedrooms and 1.5 persons in the case of dwellings with two or fewer bedrooms.	*No. of dwellings with three or more bedrooms = 45* *No. of dwellings with two or fewer bedrooms = 962* *Population of Development:* *45no. x 3.5 persons = 157.5* *962no. x 1.5 persons = 1443* *TOTAL = 1600.5 persons* *Open Space Requirement: 1600.5 x 0.0025ha./person* ***Requirement: 4.00 ha.*** *75% Class 1 Open Space = 3.00 ha.* *25% Class 2 Open Space = 1.00 ha.* ***Provision in Scheme: 6.07 ha.*** *Class 1 Open Space Provided: 5.1 ha.* *Class 2 Open Space Provided in Scheme: 0.97 ha.* *(Excludes incidental and communal open space within the scheme.)*

Objective DMS57A: Require a minimum 10% of a proposed development site area be designated for use as public open space.	*As explained above, the majority of proposed Public Open Space is provided off-site, due to agreements with landowners and provisions of the LAP.*
Objective DMS59: Ensure every home within a new residential scheme is located within 150 metres walking distance of a pocket park, small park, local park, urban neighbourhood park or regional park.	Every home in the proposed development is within 150m of either Racecourse Park C1OS or the Haggard C2OS.

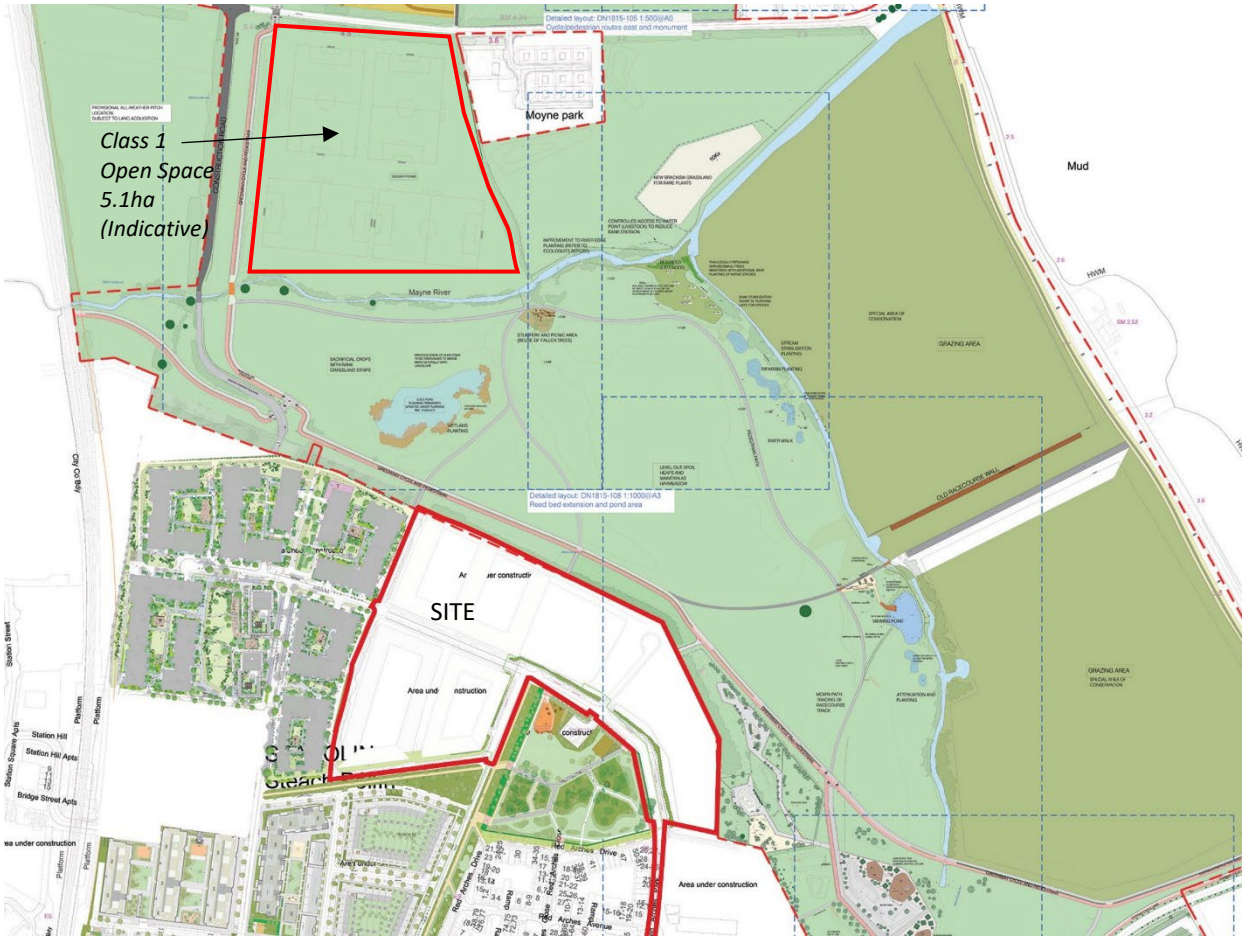
As stated in the Fingal CDP, Chapter 3, section 3.5: "In general this shall be provided at a ratio of 75% Class 1 and 25% Class 2. In order to provide existing and future communities with adequate recreational and leisure opportunities, the Council will employ a flexible approach to the delivery of public open space and more intensive recreational/amenity facilities." In this case, the total open space is 6.07ha, 84% of which is Class 1 and 16% Class 2. However, considering the open space requirement for the site is 4.00ha, the Class 2 component is 25% of this area. In any event, the development has been planned in accordance with the LAP and the open space in the wider context accords with the provision as required therein.



Location of Proposed Open Space on Ordnance Survey Map

The diagrams below detail the proposed locations of the open spaces associated with the scheme. Class 1 Open Space is located within Racecourse Park, and measures 5.1 hectares, i.e. 2 hectares more than the minimum requirement for this site of 3.0 ha of Class 1 Open Space. The Pre-Consultation Meeting Opinion issued by An Bord Pleanála requires a design for this space, but this is not considered appropriate as it has been designed as part of Racecourse Park, and the design is shown on the Council's Masterplan which was submitted to An Bord

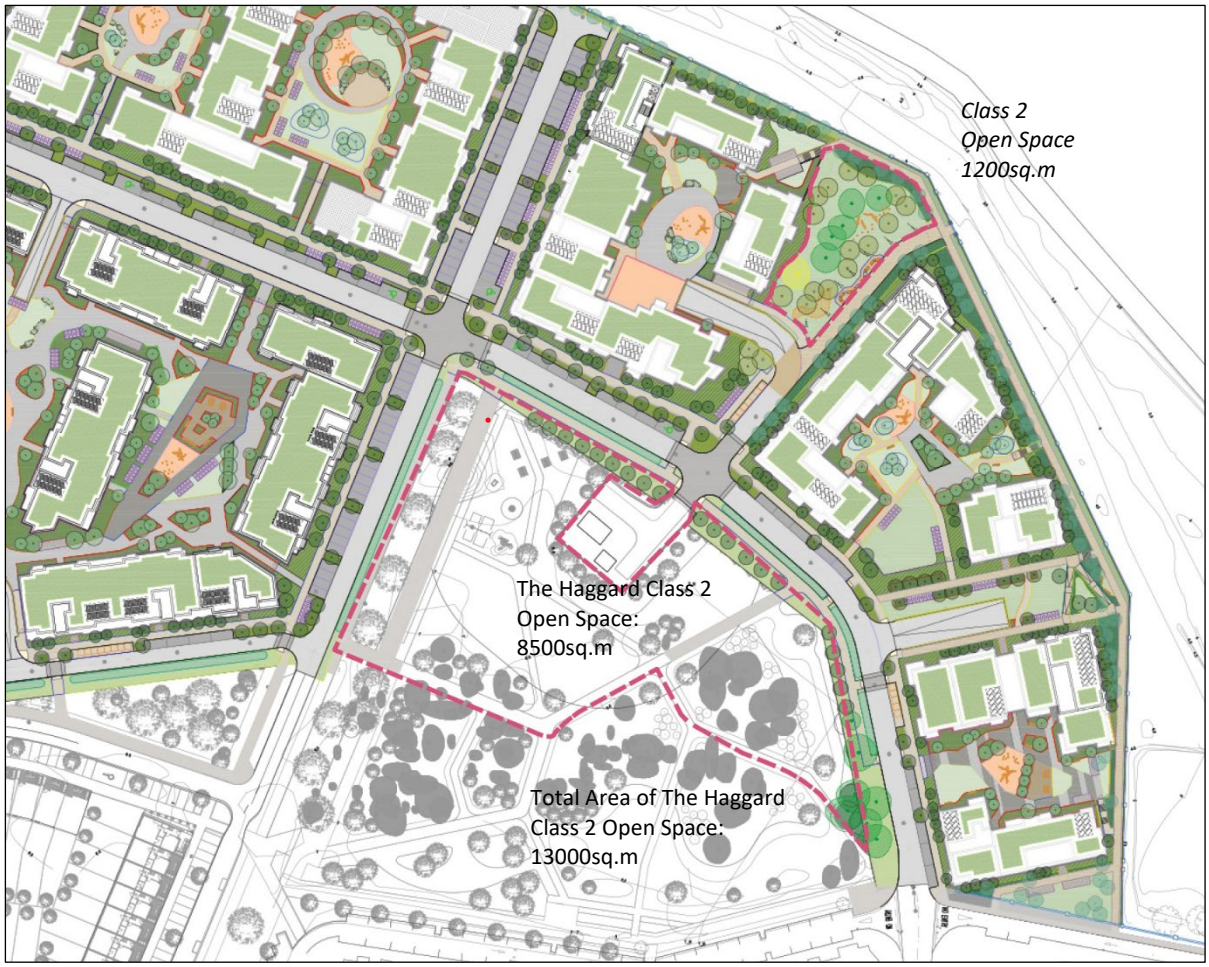
Pleanála as a Strategic Infrastructure Development in 2021. The relevant extract from the Masterplan is shown below, which indicates playing pitches in this part of the park.



Location of Proposed Open Space on Racecourse Park masterplan, indicating layout of pitches, etc. on the Class 1 Open Space.

Class 2 Open Space is located at the Haggard (granted under Reg. Ref. F16A/0412), immediately south of the proposed scheme, as discussed in section 1.4. 0.85 hectares of the Haggard is allocated to this development at GA2 under the provisions of the LAP. (Note that 0.65 hectares of the Haggard was allocated to GA3.) A second area of Class 2 Open Space of 1200sq.m is included within the scheme which is classified as a pocket park, in accordance with the criteria in Table 12.5 Open Space Hierarchy and Accessibility. This space is aligned with an entrance to Racecourse Park and provides an opportunity for recreation or an orientation and meeting point at the entrance to the park, as well as providing space for play, passive recreation, biodiverse planting and retention of existing trees. (See further detail in Section 2.3.4.)

In summary, with regard to provision of open space, the Class 2 Public Open Space associated with this scheme which includes 0.85ha of the Haggard and the 0.12ha Pocket Park add up to some 16% of the site area. Taken together with the further 5.1 hectares provided for Class 1 Open Space, the total area adds up to 6.07ha of open space delivered with this development, which is almost equal to the full site area of 6.1 hectares.



Location of Proposed Class 2 Open Space site landscape masterplan, indicating location of Pocket Park Class 2 Open Space and the portion of the Haggard Class 2 Open Space which forms part of this scheme.

2.3 Landscape Design Proposals

2.3.1 Overview

The landscape design proposals have several aims:

- To enhance the public realm of this part of the Baldoyle LAP area and connect with the existing built infrastructure and Clongriffin DART Station to the west;
- To integrate the development into the area and create new links to the High Amenity Area and parklands to the north and Baldoyle Racecourse Park to the east;
- To create a pleasant living environment for future residents;
- To enhance local biodiversity and link into green infrastructure services.

Landscape proposals are compliant with the policies and principles set out in the Fingal County Development Plan 2017-23 and the Baldoyle Stapolin Local Area Plan in relation to green infrastructure and relevant design principles, as discussed in previous sections. The proposals comply with the Fingal Co. Council development standards for taking in charge of landscape areas where relevant.

For details of landscape proposals, please refer to the landscape drawings accompanying this application, as listed in the introduction above. The proposed buildings will be framed by a landscape that responds to the geometry created by the buildings. The majority of open space is in communal open spaces such as courtyards, framed by public realm areas which form streets that connect to the adjoining approved and constructed residential developments and Clongriffin DART station to the west and new pedestrian routes linking with the parkland and High Amenity Area and Racecourse Park to the north and east.

2.3.2 Design Approach

The design intent is to create a high quality and appropriate landscape for future residents, which will meet their passive recreational needs, playful and interactive experience for children and provide an attractive visual setting and social amenity spaces. The principles of inclusivity for all age groups, universal accessibility and sustainable development are applied to ensure an inclusive and environmentally responsible design solution.

The design of the landscape and open spaces is inspired by the varying coastal landscapes in the surrounding context. This part of Dublin's coastline contains a wide variety of coastal landscape types, including estuarine, mudflats, sand spits, cliffs, intertidal zones, sand dunes and beaches. This area is very diverse in a relatively small geographical area from Howth to Portmarnock, including Baldoyle. As a result it is rich in biodiversity and landscape value. The landscape is constantly changing with the tides, revealing and concealing forms and elements in the coastal landscape. The relatively flat landscape gives a 'big sky', particularly looking towards the sea. This is also a fringe area, with the edge of the more densely populated city area interfacing with the more sensitive landscape areas of the Moyne River valley and the associated green belt, separating this area from the wider city.

The landscape design looks to capture some of this variety and diversity and to add to the richness of the landscape to the benefit of the residents and locals for whom these streets may form part of their daily commute or their leisure opportunity as the area is formed for a high quality of life, with close contact to the natural coastal and high amenity landscapes, together with the new parks that are being created at the former Baldoyle racecourse and in the Moyne valley.

Local coastal landscapes – Portmarnock Estuary, Cliffs at Howth, Mudflats at Baldoyle – aerial textures

Local coastal landscapes – Dunes at Portmarnock, Mudflats at Baldoyle – terrestrial views

These natural and local landscape forms are used as the basis for developing a series of site-specific designs to enhance the amenity value of the spaces and create a strong sense of place. Each public space and courtyard is inspired by a different landscape typology, creating a series of conceptually linked and coherent spaces, but with a variety of forms and textures, resulting in unique and different spaces for each courtyard. A degree of commonality is created by using a consistent palette of hard landscape materials, planting types and colours.

The planting palette is therefore also quite naturalistic and informal, creating tiered layers of herbaceous and evergreen groundcovers, mid-level shrub and tree canopies, reflecting the textures and seasonality of the wider landscape. Where possible, native plants are utilised in combination with suitable ornamental species.

Reference Images – Forms / materials reminiscent of coastal archetypes in designed landscape

Reference Materiality & Textures related to coastal concept

2.3.3 Play Strategy

The provision of play is an important element of any landscape for use as communal space and extends the usability of spaces and encourages their use by families. The play strategy can be distilled as a strategy to incorporate natural play opportunities and playful space within courtyards and create strong links to the surrounding parklands.

Play Strategy Map

The design of the courtyards aims to maximise play opportunities by using elements that will be integrated with the landscape design, specially within the courtyard. Such elements include modular features, functioning as

stepping stones or seats, incorporated in recreation and relaxation areas. The 'Playful Space' concept can be enhanced with additional details incorporated into the hard landscape at detailed design stage, for instance, kerbs can be oversized and/or stepped to function as a balance beam for children to encourage interaction with the built environment, and facilitate exploration and challenge on their doorsteps.

Reference Images for Natural Play

The publication 'Sustainable Urban Housing: Design Standards for New Housing - Guidelines for Planning Authorities' states the following regarding the amount of play spaces:

"- within small play spaces (about 85 – 100 sq. metres) for the specific needs of toddlers and children up to the age of six, with suitable play equipment, seating for parents/guardians, and within sight of the apartment building, in a scheme that includes 25 or more units with two or more bedrooms"

Each of the play spaces in each courtyard is a minimum of 85sq.m of dedicated, surfaced play space. They are set in courtyards which have a wealth of child-friendly playful elements, spaces to explore, mounds and low walls to climb so there are no limits to the area available for play.

2.4 Details of Landscape Proposals

The following sections set out a more detailed description of the landscape proposals for each element of the landscape of the proposed scheme.

2.4.1 Public Realm - Streetscapes

The streets which form the urban structure of the site are consistent with the LAP for the area. They run through the development, linking from Baldoyle through the site to link with the other development areas and Clongriffin DART Station and centre.

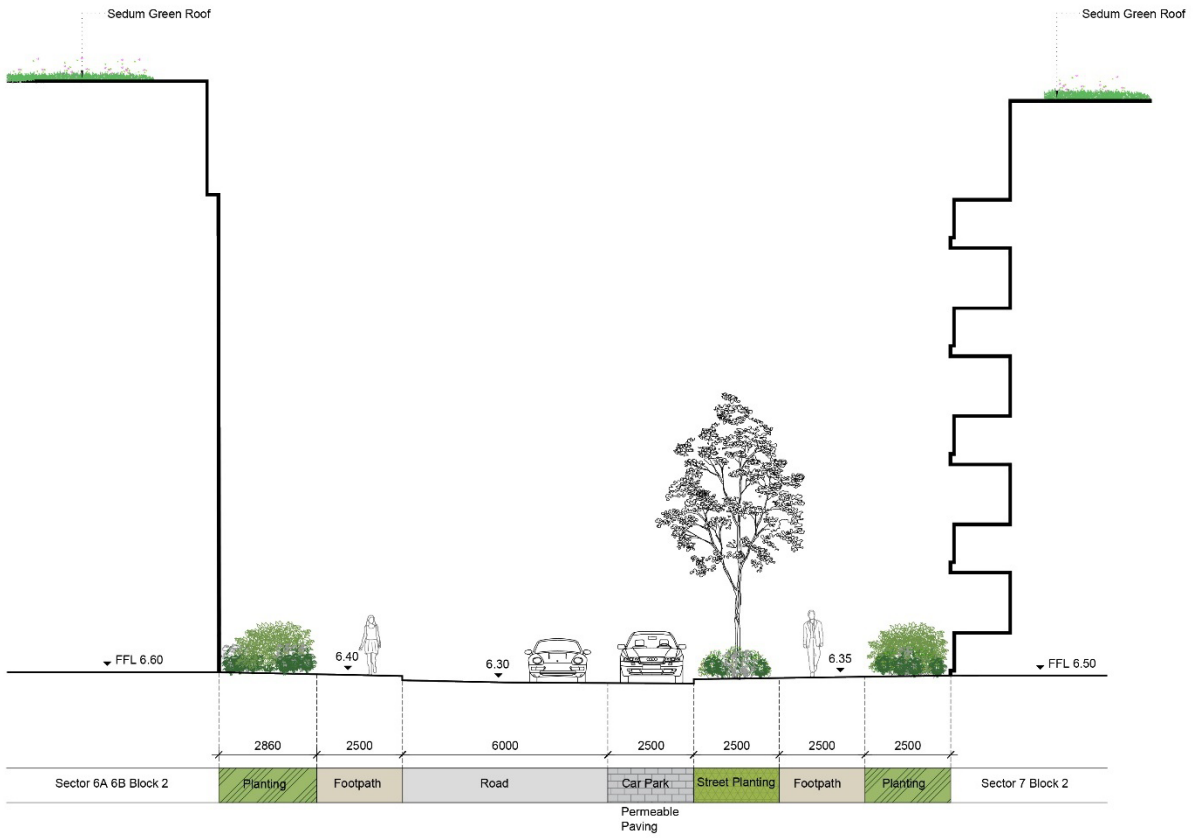
The streetscape layout continues from the existing streetscapes in adjoining permitted and existing developments to ensure visual and spatial continuity. The streets are defined with avenue tree planting, with the species coordinated with adjacent streets for continuity where feasible. Parking is integrated into the layout, with street trees and groundcover shrubs punctuating and softening the parking spaces. The car parking spaces are paved to create definition, visual interest and pattern in the streetscape. Street tree and planting pits also have a bioattenuation function, as do the bioswales which are proposed in several locations along the streets,

going above and beyond minimum standards for SuDS. The residential blocks also have green roofs over a large proportion of their area (c.85%) and will also contribute to SuDS and biodiversity.

The Haggard (Class 2 Open Space previously granted planning permission) is also accessed via these streets to the south / east of the residential areas. New routes are also proposed between the blocks leading to the public open spaces to the north of the site and to the east of the site (Baldoyle Racecourse Park), as well as providing access to the residential buildings.

Street tree planting proposed is formal, yet robust and reliable, due to the coastal location, although the proposed and existing development is expected to ameliorate the windy microclimate. The species proposed include Hornbeam, Alder and Lime.

Cycle parking is also provided in the public realm for visitors in the numbers required under the relevant guidance policies. It is concentrated where access to the parks to the north is possible to enhance access to green space and also dispersed around the entrances to the residential blocks for people visiting residents.



Typical Streetscape Section

2.4.2 Public Realm - Green Spaces and Green Routes connecting to Racecourse Park.

There are several green areas in the public realm, designed primarily to create new links to the future public park to the north from streetscape network and The Haggard Class 2 Open Space. The spaces provide additional recreational space and are provided with seating and planting, as well as pathways.

Pocket Park – Class 2 Open Space

A pocket park of 1200sq.m (Class 2 Open Space) is proposed between Sectors 8A and 8B. This provides an opportunity for a sub-space adjacent to Racecourse Park, and there will be a park entrance adjacent to this space. The existing mature Sycamore trees will be retained in this space and will bring a maturity and scenic quality. The space will contain feature seating and natural play elements, and will have views to the park and estuary beyond. The seating elements proposed will foster social activity, and will be of a quality to form a sculptural element in the space. The ground plane will be primarily wildflower, with areas of grass around the play elements. The play will be focussed on natural and coastal elements, such as tree trunks and boulders.

Examples of Sculptural Seating Elements for the Class 2 Open Space

Figure 8: Green Links to Racecourse Park

These spaces are primarily linear, intended to be passed through, as connections to the park. Personal security and safety are integral within the design. All spaces and routes are directly overlooked by the residential buildings. Planting will be designed to minimise any potential for concealment and will respect safe sightlines

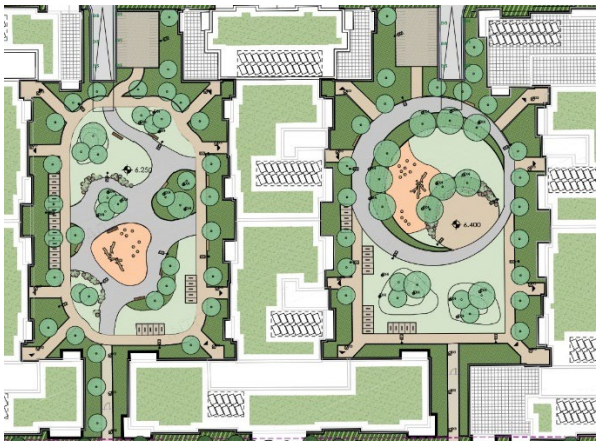
by keeping groundcover to low planting (less than 0.5m height) and having no overhanging shrubs or tree canopies. Lighting will also play a key role in personal security and will be fully coordinated with the planting design in all public realm areas.

2.4.3 Courtyards & Communal Spaces

As noted above, each courtyard is different, and the designs are inspired by the coastal landscapes around the local coastal context. The courtyards also provide functional space for the residents and recreational opportunities as communal spaces.

The courtyards will facilitate the residents to use the courtyards for personal or group recreation such as yoga, exercising, etc. They provide opportunities for both socialising and rest and relaxation in contact with natural elements and green space, and are provided with seats and tables to provide for all options for the residents. Play facilities and natural play opportunities are also provided for both structured and imaginative children's play. In short, they provide a garden space, an additional living space to enhance their quality of life.

The courtyard for Sector 6A-6B is a multifunctional courtyard landscape that incorporates the soft, flowing forms of estuarine landscape and the sharp, angular forms of cliff landscapes. The courtyard also includes natural play areas and decked communal gathering spaces with outdoor tables, as well as multifunctional recreational space, both hard and soft, for unprogrammed activities, play, meeting, socialising, etc.



Extracts from landscape Plans: Sector 6A-6B Courtyards (left); Sector 7 Courtyards (right)

The design for the Sector 7 courtyards are also inspired by estuarine landscape. The designs mimic the soft patterns of mudflats and tidal movements, and sweeping, curved beaches, as well as hinting at ripples and movement.

For Sector 8A and 8B, sand dunes and mounds emerging from the ground create additional relief in the scheme, as well as mimicking the soft, meandering shapes of the shoreline, while Sector 8C exemplifies rocky shoreline and cliff landscapes through angular forms and level changes.

As the proposed communal spaces and street are located over the basement car park, it is necessary to include vents to the underground. In order to provide a sustainable ventilation strategy, and avoid mechanical ventilation, vents have been designed into the landscape of the street, into areas of private space, or what would otherwise be inaccessible areas.

Extracts from landscape Plans: Sectors 8A, 8B, 8C Courtyards (left to right)

Examples of ventilation being incorporated into landscape design elements.

2.4.4 Management of Existing Vegetation

There are two groups of existing trees within the development site. The first is on the edge of the future Haggard Class 2 Open Space and will be retained. The second is a linear group of thirteen mature trees in the centre of the site, close to the boundary with Racecourse Park. These are primarily mature Sycamore, rated B, C and U class; and will be managed as follows:

- Five will be retained in full compliance with the requirements of BS5837 within the Pocket Park, Class 2 Open Space.
- One further tree will be retained if detailed site investigation allows. Prior to commencement of construction (if permission is granted), the precise extent of the tree roots will be determined by site investigation and the decision to remove or retain will be made by the Arborist based on the findings. Results will be disclosed to Fingal CC Parks Dept., if required.
- Two trees to be removed for safety reasons (U-Class)
- Remaining five trees to be removed due to the development.

Drawing no. 1819_PL_P_05 has been provided to illustrate the tree management requirements and to demonstrate the commitment to protecting the trees and reinstating compensatory trees that are suitable for this location and which will be sustainable and add more to the site's biodiversity in the longer term.

The ground levels around the trees within the Root Protection Zones will be maintained, although it is necessary to remove the partially constructed road. This work will be supervised by an Arborist and exposed roots, if any, will be covered up by soil as soon as possible after being exposed. Any new paths or other elements within the root protection zone will be installed in accordance with BS5837 details for "no-dig" paths in consultation with the Arborist.

The impact of removing these five trees will be more than compensated for by planting a greater number of new native parkland trees which will add to the biodiversity value and form an attractive space in their own right. The existing sparse scrub vegetation under the trees will be maintained and enhanced with new native shrub planting.

It should be noted that Sycamore (Acer pseudoplatanus) is listed as a 'Medium Impact Invasive Species' on the National Biodiversity Data Centre's Invasive Species lists, so this has not been proposed as a compensatory tree, we have instead opted for a more diverse range including native Oak and Alder and non-native (Non-invasive) Field Maple and Lime. [National Biodiversity Data Centre's Invasive Species website accessed 28/01/22 at https://species.biodiversityireland.ie/?taxonDesignationGroupId=26]

Photo of Existing Tree Group, composed mainly of Sycamore with scrub undergrowth.

Please see the Arborist's Report for further details of the existing trees. In summary, there are 13no. existing trees, 12 of which are mature Sycamore and one is a mature Alder.

It is noted that this is a negative impact to the tree resource of the area, particularly in the context of the 'Highly Sensitive Landscape' designation of this area in the county development plan. The impact of removing these

trees will be compensated for by planting a greater number of new trees which will frame a new route to the adjacent parks to the north and form an attractive space in their own right.

Please also see the Engineering submissions for details of the roads and services infrastructure.

2.4.5 Boundary Treatments

As noted earlier, the boundary with Racecourse Park along the north and east of the scheme is some 470m in length. The proposed boundary is a Bow-Top Railing 1.2m height with a native hedgerow, consisting of a hawthorn and blackthorn-dominated mix, with smaller numbers of other flowering hedgerow shrubs for diversity, as follows: Hawthorn (*Crataegus monogyna* 40%), Blackthorn (*Prunus spinosa* 30%), Hazel (*Corylus avellana* 10%), Spindle (*Euonymus europaeus* 10%), Guelder Rose (*Viburnum opulus* 5%), Burnet Rose (a native coastal rose, *Rosa pimpinellifolia* 4%) and a small amount of native climber, Honeysuckle (*Lonicera periclymenum* 1%). Trees are also proposed along this boundary for additional screening and shelter from the open areas to the north, all native on the boundary with Racecourse Park to support biodiversity and the SAC and SPA designated habitats.

Within the site, boundaries between public realm and courtyards and communal space for residents will be clearly defined with railings and gates c.2m in height (see Architect's submission for details), but in all cases, these are set back and usually with planting adjacent, so they are not dominant or visually aggressive.

Proposed Boundary Treatment Plan

Other boundaries are open and designed to connect seamlessly with existing and proposed development.

2.4.6 Microclimate

The microclimate of the site is potentially exposed to sea winds and prevailing winds and the nature of the development could result in shading of spaces. Studies were carried out to inform the site planning and design which resulted in design strategies to avoid and mitigate potential issues. The courtyards have also been designed to take advantage of the southern aspect afforded by the orientation, with seats facing south creating comfortable spaces that people can linger in for longer.

The diagrams following show the results of the daylight analysis and these are the results reported by specialist consultant BRE:

Sector Courtyard	Percentage of space able to receive at least two hours on 21st March (%)
6A/6B West side	74%
6A/6B East side	58%
7 West side	55%
7 East side	53%
8A	60%
8B	82%
8C	64%

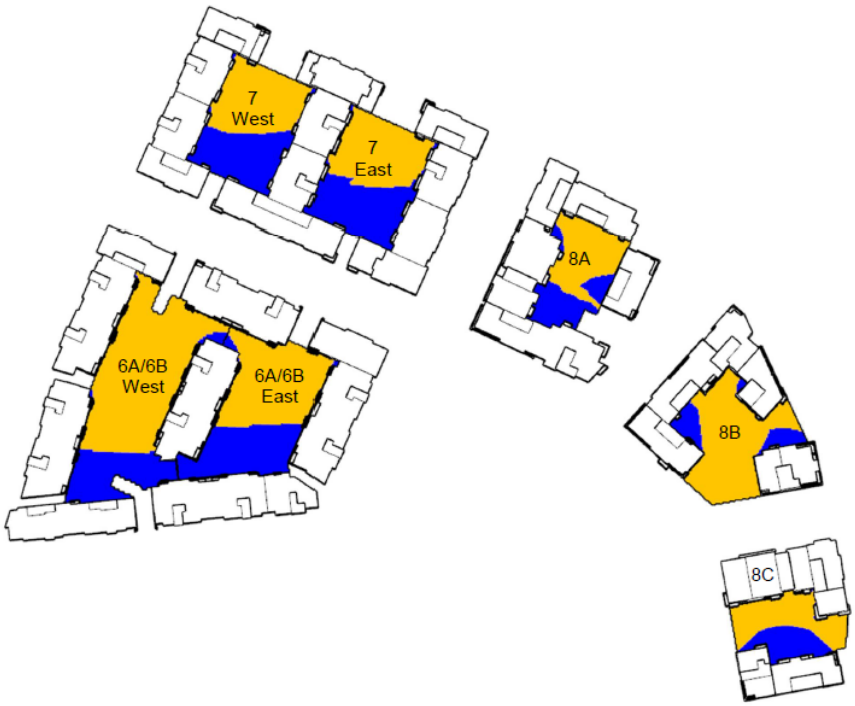


Diagram showing Results of Sunlight/Daylight Quality Analysis – Yellow areas are those with more than 2 hours of sunlight on Equinoxes.

The following diagram shows the areas which were predicted to have possibly unfavourable wind conditions. Planting and raised planters are sited to maximise wind protection and will provide shelter locally and overall.

Planting proposals have been developed with regard to the wind studies and mitigation measures recommended therein. Multi-stemmed and feathered trees (i.e. those that branch close to the ground) such as native Birch, Hazel, Strawberry Tree, Mountain Ash, Hornbeam, Alder and other selections are preferred for wind mitigation, and aesthetically (see below).

Diagram showing wind conditions expected following specialist wind analysis, prior to mitigation by landscape.

Typical multistemmed trees proposed for wind mitigation – native Strawberry Tree, Birch & Mountain Ash.

2.5 Material Palette

Material selection is an important part of placemaking. High quality and varied materials are proposed throughout the scheme.

2.5.1 Green Strategy & Planting Proposals

Planting proposals form a vital part of the strategy for the site, in accordance with County Development Plan objectives and national policy on biodiversity. Green Infrastructure is a term that is used to describe the interconnected networks of land and water that sustain environmental quality and enhance the quality of our lives. The European Union's Biodiversity Strategy recognises the application of Green Infrastructure policies as a way to maintain biodiversity and ecosystems in the wider landscape. Green Infrastructure networks operate on many scales, from the national to local, and the protection and enhancement of these networks has the ability to positively affect communities into the future, especially in terms of climate change, sustainable development and spatial planning. (See Section 3 of this report for more detail.)

In the wider landscape, there are areas of landscape, wilderness and habitat to the east and north of the site. The proposals for the site will create linkages and stepping stones for some species, notably birds and insects, including pollinators and the planting proposals are intended to benefit these species.

The planting proposals are aimed at gaining the maximum possible benefit for biodiversity and pollinators, in accordance with the All-Ireland Pollinator Plan. This means that wherever possible, native vegetation is proposed and where needed for functional or aesthetic reasons, non-native plants are specified, with due care. Any non-native plants are chosen to be non-invasive (i.e. the planting selection avoids the use of all known invasive species, with reference to the latest lists of invasive species published by the National Biodiversity Data Centre) and have value to insect and other fauna as pollinator.

Ground layers will primarily be wild grass and wildflower with amenity grass only in those areas suited to kickabout or active use. The Tree Planting Strategy is to use a wide variety of native trees and non-native flowering and fruiting varieties that will encourage bird and insect activity. Where possible, multistem and feature trees will be utilised for additional visual interest.

The coastal climate has had an influence on selection of plant materials throughout, particularly on the open boundaries, but it is noted that the proposed development will ameliorate the exposed nature of the site somewhat and the saline content in wind is likely to be low at this distance from the sea.

Additional SuDs features are used throughout the site, including structural soil in continuous tree pits for the street trees, planted infiltration areas and permeable paving in on-street parking spaces. Street trees proposed include the following species: Small Leaved Lime (*Tilia cordata*), Alder (*Alnus glutinous* 'Imperialis') and Upright Hornbeam (*Carpinus betulus* 'Fastigiata').

Plant Palettes are detailed on the Landscape plans accompanying this submission.

Sample Planting Palette – Indicative Forms and Species

2.5.2 Hard Landscape

External spaces are designed to minimise hazards or impediments to access or movement. Hard landscape surfaces are chosen for accessibility, slip resistance and to be free draining. The on-street parking will be permeable pavers which contrast with the roads (asphalt) and paths (concrete, generally). There will be a transitional zone at junctions, a tabled crossing point or similar at each junction (to be designed by the engineers).

With regard to pedestrian areas of the public realm, the footpaths will generally be brushed concrete, with small paved areas leading up to the building entrances. Resin-bound surfacing, or similar, will be used to demarcate the green routes leading to the parks, in order to give visual signals and aid in wayfinding to Racecourse Park, as well as an increased sense of amenity on the approach to the park.

Within the courtyards, the primary materials are Resin Bound Aggregate, in a variety of tones to reflect different spaces and in patterns related to the landscape design concept. Play spaces will be surfaced with wet pour rubber, or a similar safe surfacing material, compliant with EN1176/1177.

Site furniture will include timber or timber composite seats with steel frames, standard stainless steel cycle stands, cycle shelters and other street furniture as may be required for functional reasons, such as bollards.

3. Green Infrastructure – Protection & Provision

Green Infrastructure is a term that is used to describe the interconnected networks of land and water that sustain environmental quality and enhance the quality of our lives. The European Union's Biodiversity Strategy recognises the application of Green Infrastructure policies as a way to maintain biodiversity and ecosystems in the wider landscape. Green Infrastructure networks operate on many scales, from the national to local, and the protection and enhancement of these networks has the ability to positively affect communities into the future, especially in terms of climate change, sustainable development and spatial planning.

The Fingal Development Plan 2017 – 2023 (FDP) has as a stated aims of creating an integrated and coherent green infrastructure for the County which will:

> *"Create an integrated and coherent green infrastructure for the County by requiring the retention of substantial networks of green space in urban, urban fringe and adjacent countryside areas to serve the needs of communities now and in the future including the need to adapt to climate change."*

The five main themes from the FDP considering Green Infrastructure are as follows:

- Biodiversity
- Parks, Open Space and Recreation
- Sustainable Water Management
- Archaeological and Architectural Heritage
- Landscape

The proposed residential development will be in compliance with the requirements for protection and provision of Green Infrastructure as required by the FDP. Each of the above themes is addressed in the following sections, as they relate to the proposed development.

Additionally, the area is also characterized by the Baldoyle Stapolin Local Area Plan 2013 (BSLAP). The BSLAP Green Infrastructure objective expands on the FDP, with additional site-specific objectives. These objectives are addressed in section 3.6.

3.1 Biodiversity

Biodiversity refers to the variety of all life, habitats, plants and animals, where they live and the diversity of ecosystems. In any given place, the response of living organisms to the environs (geology, soils, climate and other conditions) creates an ecosystem which not only provides habitat for wildlife, but contributes to our quality of life and sense of place. Our landscapes and the biodiversity within must be protected and enhanced through sensitive and sustainable management now and in the future in the interest of preserving habitats and adapting to climate change scenarios.

The key elements of the County's strategic green infrastructure as identified in the FDP (p.307) are as follows:

- Designated Shellfish Waters
- Fingal Ecological Network including the following:
    - Core Biodiversity Conservation Areas:

      Ramsar sites, Natura 2000 sites (SACs and SPAs), NHAs, Statutory Nature Reserves, Refuges for Fauna, Annex I habitats outside designated sites, habitats of protected or rare flora
    - Ecological Buffer Zones
    - Nature Development Areas
    - River Corridors along major Rivers
- Areas within 100m of erodible coastline

The proposed site is approximately 500m from the coast, so the coastal elements, including Baldoyle Bay (SAC/SPA/pNHA/WFDRPA/Ramsar site/SNR), are not directly relevant to the proposed development. The only potential link to these sites is through a series of pathways. There are no watercourses nor major river corridors within or directly adjacent to the site area. The Moyne River is located to the north within the green belt area.

In the following table, Green Infrastructure Objectives for Local Area Plans and Development Proposals for the Biodiversity Theme (taken from Section 8.5 of the FDP) are presented, along with the measures taken in the development proposals to address same:

FDP Objective	***Measures incorporated into the proposed landscape design for protection and provision of green infrastructure***
Objective GI24: Ensure biodiversity conservation and/or enhancement measures, as appropriate, are included in all proposals for large scale development such as road or drainage schemes, wind farms, housing estates, industrial parks or shopping centres.	*Planting proposed is biodiverse in nature, and will comply with the guidance of the All-Ireland Pollinator Plan, with successional flowering plants for all seasons. Planting will include a strong proportion of native plants at all levels (ground flora, shrub and tree); planting will be managed for maximum wildlife benefit, allowing it to flower and fruit or seed to provide for pollinators, invertebrates and larger birds or mammals, as appropriate. This will allow a new ecosystem to emerge on the site and will enhance its value compared with the current site.* *As noted above, 7no. trees are to be removed due to the proposed development, 6 of which are non-native Sycamore. The National Biodiversity Date Centre describes Sycamore as "Invasive species - risk of Medium Impact." It is considered that the removal of these trees and the proposed compensatory planting of native and non-invasive parkland trees will bring medium- to long-term biodiversity benefits.*
Objective GI25: Integrate provision for biodiversity with public open space provision and sustainable water management measures (including SuDS) where possible and appropriate.	*Provision for biodiversity is integrated within the overall site design and masterplanning, with green connections between the public open spaces on adjacent site and courtyards and the green belt to the north. SuDS integration has also been considered, with swales (planted with native wild flora) and bioretention tree pits proposed.*

3.2 Parks, Open Space and Recreation

The key element of strategic green infrastructure for this theme identified in the FDP is: "Lands zoned open space and/or in use as public open space". The development includes central courtyards within each block, as

well as being located directly adjacent to Stapolin Haggard Park to the south and the Baldoyle greenbelt to the north

In the following table, the most relevant Green Infrastructure Objectives for Local Area Plans and Development Proposals for the Parks, Open Space and Recreation Theme (taken from Section 8.5 of the FDP) are presented, along with the measures taken in the development proposals to address same:

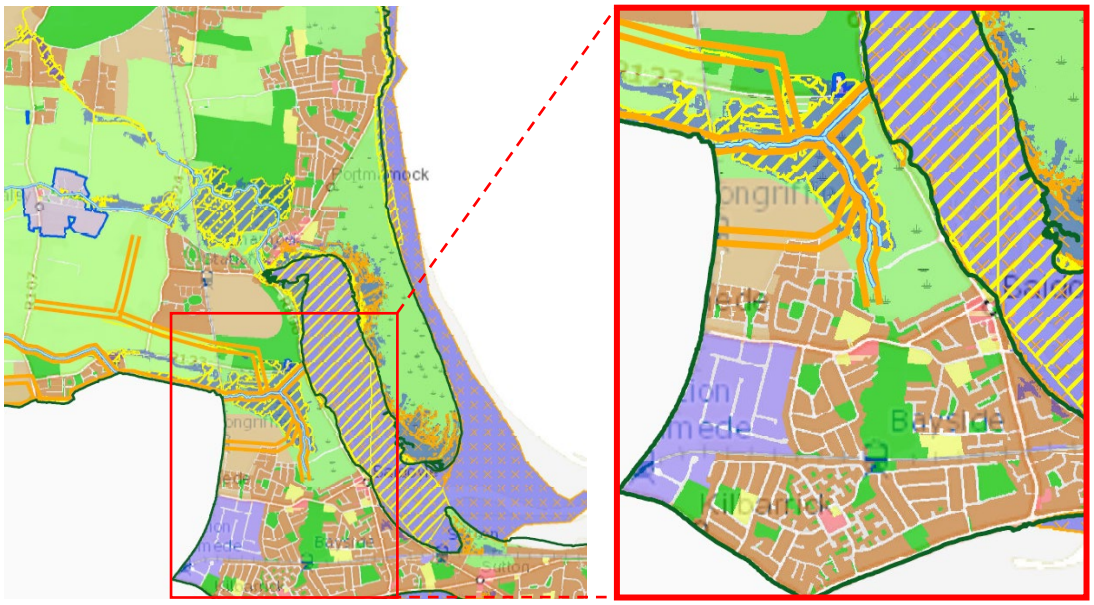
FDP Objective	*Measures incorporated into the proposed landscape design for protection and provision of green infrastructure*
Objective GI26: Maximise the use and potential of existing parks, open space and recreational provision, both passive and active, by integrating existing facilities with proposals for new development and by seeking to upgrade existing facilities where appropriate.	*The proposed development provides green links between the Staploin Haggard park and green belt open spaces.*
Objective GI27: Provide a range of accessible new parks, open spaces and recreational facilities accommodating a wide variety of uses (both passive and active), use intensities and interests.	*The open spaces, courtyards and linking spaces within this scheme are fully accessible. The spaces are designed to facilitate local recreation, play and community activities and link to the larger parks and wider open spaces in the locality.*
Objective GI28: Provide attractive and safe routes linking key green space sites, parks and open spaces and other foci such as cultural sites and heritage assets as an integral part of new green infrastructure provision, where appropriate and feasible.	*The proposed development provides green links between the Staploin Haggard park and green belt open spaces. These will also link to the coast and wider landscape.*
Objective GI29: Provide opportunities for food production through allotments, community gardens and permaculture food forests in new green infrastructure proposals where appropriate.	*Food production is not considered feasible or appropriate in the current context.*

3.3 Sustainable Water Management

The key elements of strategic green infrastructure for this theme identified in the FDP are:

- Watercourses including rivers and streams
- Riverine floodplains
- Coastal areas liable to flooding

The Moyne River is located to the north of the site, in the green belt area and the coast is some 500m to the east. There is a ditch/small connection running adjacent to the site, which eventually ties into the Moyne River. This course's EPA river water quality status is poor as a result of pollution (orange line on extract map below).



Extract from FDP Green Infrastructure Map 3 (sheet No. 16)

As previously stated, there are several SuDs measure with the development. The majority of on-street parking and external paths are permeable. Continuous bioattenuation tree pits, detailed for attenuation of water and tree health, are implemented where possible. Swales are also integrated into the open spaces where possible. Additionally, green roofs are located throughout the site, catching and slowing water at roof level. These measures and their location can be found on the submitted Landscape Plans.

In the following table, the most relevant Green Infrastructure Objectives for Local Area Plans and Development Proposals for the Sustainable Water Management Theme (taken from Section 8.5 of the FDP) are presented, along with the measures taken in the development proposals to address same:

FDP Objective	*Measures incorporated into the proposed landscape design for protection and provision of green infrastructure*
Objective GI31: Ensure the provision of new green infrastructure addresses the requirements of functional flood storage, the sustainable management of coastal erosion, and links with provision for biodiversity, Sustainable Drainage Systems (SuDS) and provision for parks and open space wherever possible and appropriate.	*SuDS measures integrated into the landscape proposals include permeable paving, continuous bioattenuation tree pits, swales and green roofs.*
Objective GI32: Seek the creation of new wetlands and/or enhancement of existing wetlands through provision for Sustainable Drainage Systems (SuDS).	*This measure has been implemented north of the site in accordance with previous grant of permission pertaining to the LAP lands and located in the green belt open space northwest of the site (Reg. Ref. F16A/0412).*
Objective GI33: Seek the provision of green roofs and green walls as an integrated part of Sustainable Drainage Systems (SuDS) and which provide benefits for biodiversity, wherever possible.	*Green roofs are included in the proposed development, covering c.85% of the roof area.*

3.4 Archaeological and Architectural Heritage

The key elements of strategic green infrastructure for this theme identified in the FDP are:

- Sites and Monuments on the Record of Monuments and Places (RMP)

- Buildings and other structures on the Record of Protected Structures (RPS)
- Architectural Conservation Areas (ACAs)
- Historic Graveyards

None of the above occurs within the site. As there are no elements of Archaeological and Architectural Heritage within the site, the objectives GI35-38 are not relevant to the consideration of green infrastructure objectives for the subject site.

3.5 Landscape

The site is located within the Estuary Landscape Character Area and the Highly Sensitive Landscape areas within the FDP. The key elements of strategic green infrastructure for this theme identified in the FDP are:

- Special Amenity Areas on Howth Head and the Liffey Valley
- High Amenity Areas
- Highly Sensitive Landscapes
- County Geological Sites
- Public Beaches

The proposed development is a continuation of the pattern of residential development within the area and the urban fabric, open space and landscape proposals all add to the distinctive sense of place.

FDP Objective	*Measures incorporated into the proposed landscape design for protection and provision of green infrastructure*
Objective GI36: Ensure green infrastructure provision responds to and reflects landscape character including historic landscape character, conserving, enhancing and augmenting the existing landscapes and townscapes of Fingal which contribute to a distinctive sense of place.	The proposed landscape scheme reflects the landscape character of the area with design references to geology and landform of the local coastal landscapes. This will contribute to the distinctive sense of place of the town.

See also Landscape & Visual Impact Assessment in the EIAR accompanying this planning application.

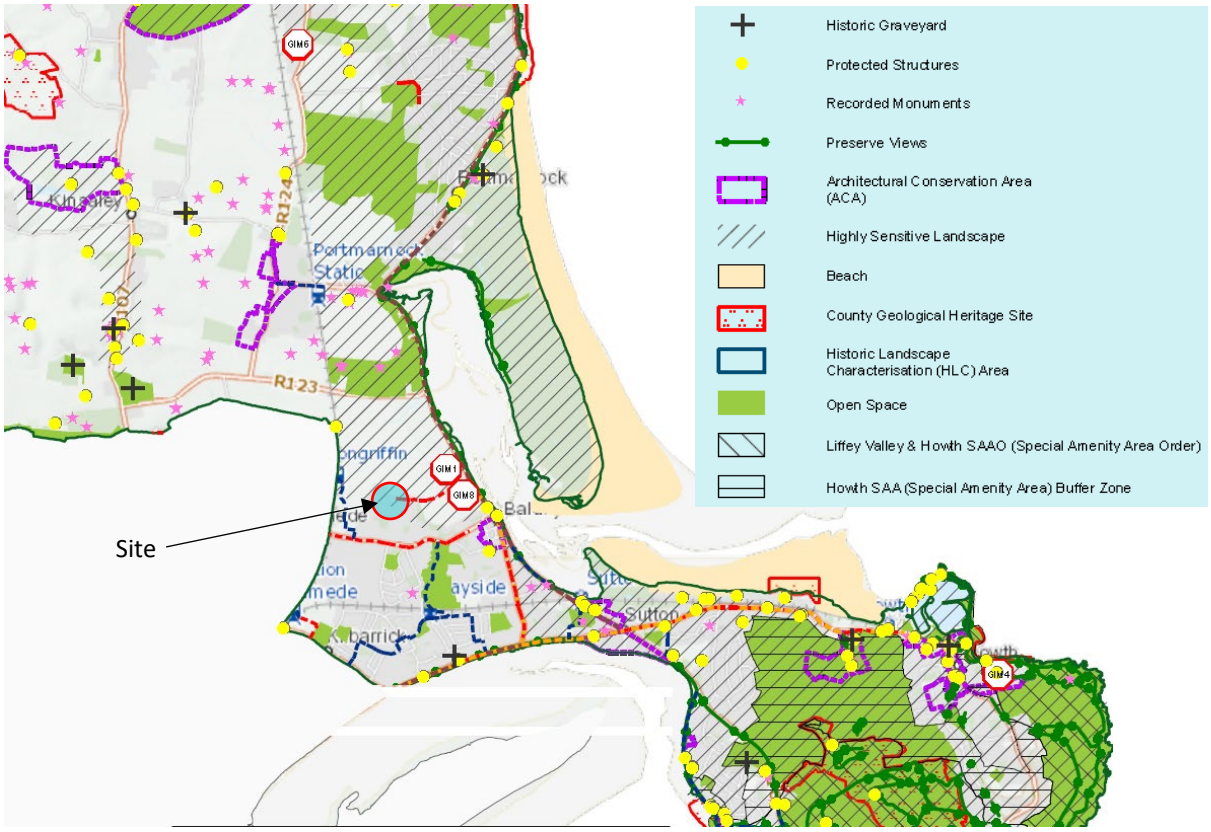


Figure 1 - Extract from FDP Green Infrastructure Map 1 (sheet No. 14)

3.6 Baldoyle Stapolin Local Area Plan Green Infrastructure

The landscape pf the site area is also characterized by the Baldoyle Stapolin Local Area Plan (BSLAP). The BSLAP Green Infrastructure objective expands on the FDP, with additional site-specific objectives. Please see section 1.3.1 of this report for full details of the LAP objectives and the landscape design response to the same.

4. Response to Pre-Application Consultation with An Bord Pleanála & Fingal Co. Council

Pursuant to the Pre-Application Consultation held with An Bord Pleanála and Fingal Co. Council on 20th May 2021, An Bord Pleanála issued their Notice of Pre-Application Consultation Opinion. In this Opinion, several matters of relevance to Landscape Architecture were raised. In this section, the relevant items will be listed *in italics* and the landscape responses to same will be fully described and elucidated, with reference to relevant drawings, etc.

ABP Item 1. Open Space

Further consideration and/or justification of the documents as they relate to the provision and delivery of Public and Communal Open Space required to serve the development having regard to, inter alia, the provisions of the Sustainable Urban Housing: Design Standards for New Apartments (2020), the Fingal County Development Plan 2017-2023 and the Baldoyle-Stapolin Local Area Plan.

This further consideration/justification should clearly indicate where the public open space is to be provided, how it is going to be delivered and when it is going to be delivered relative to the development of the proposed apartments it is to serve. Landscaping proposals for the public open space should be submitted and clarity provided around how the landscaping is to be delivered if the public open space area is not to be included within the application site boundary.

Response:

Please see section 2.2 of this report which answers this item in full.

ABP Item 10. *Response to issues raised in Appendix C of Planning Authority Report, which includes the internal reports of the Drainage Dept. relating to the SUDS hierarchy, and the Park Department relating, inter alia, design approach and protection of trees.*

Following are the items from the report of the Parks Dept, with responses following.

Please note: Items 1 & 2 of the Parks Dept Report relate to Provision of Open Space and are not replicated here.

FCC Parks Dept Item 3. Highly Sensitive Landscape – Tree Retention

The site is located within a Highly Designated Landscape on Green Infrastructure Sheet No. 14. One of the Principles of Development set in Chapter 9 for Highly Sensitive Landscapes is:

'Existing tree belts should be retained and managed and older stands of trees restocked. Roadside hedging should be retained and managed. Proposals necessitating the removal of extensive field and roadside hedgerows or trees should not be permitted. Strong planting schemes using native species, to integrate development into these open landscapes, will be required.'

i. *There are 13no. mature trees, 3no. of these are of 'U' category. The applicant proposes to remove all 13no. trees. This is not acceptable to the Parks & Green Infrastructure Division especially given the Highly Sensitive Landscape designation where such features should be incorporated into the proposed site layout such as a public open space. Also given the site's exposure to coastal winds the establishment of new large girth 'compensatory' trees can be particularly challenging, thus retention of existing is the strongly preferred option.*

Response:

The landscape and architecture proposals have been altered since the Pre-Application Consultation to respond to this item and to ensure the retention of the maximum possible number of trees, within a Class 2 Open Space area which includes seating, natural play areas and biodiverse new tree and wildflower planting. Please see Landscape Plan drawing 1819_PL_P_05, and section 2 of this report (in particular section 2.3.8) of this report which answers this item in full.

In relation to compensatory planting, the semi-mature size proposed is indicative of the commitment to quality in the scheme. If planning is granted, the precise specification and quantum of replacement trees can be agreed with Fingal Co. Council, the Arborist and Landscape Architect to ensure that the objective of compensating for the removal of these trees is met. As noted in the report, the microclimate of the site is challenging at present, but the proposed development will also provide some shelter, so planting of trees in sheltered areas will not be as constrained as those on boundaries, and the variety of planting treatments reflects this.

FCC Parks Dept Item 4. Landscape Plan

On a revised Landscape Plan show a Public Open Space equating to 10% of the site area:

- *Incorporating the existing trees.*
- *Boundary treatments including external site boundaries, communal, private and public areas.*
- *Quantify the areas of play to show compliance with the Dept's Sustainable Apt Design Guidelines. Play for younger children to be provided in communal areas but the majority of play provision should be on public open space. A mix of formal and natural play is acceptable.*
- *Provide details of the location and quantities of each tree species proposed. The use of sycamore shall be limited to the most exposed positions of the site, preferably within soft landscape locations eg grass verge, buffer areas etc. avoiding hard surface areas due to the potential volume of leaf litter.*
- *Location of wayleaves eg water or electricity infrastructure, not to be included in the public open space calculation. In addition clearly show the extent of proposed basements, note such features should not encroach into root protection areas of retained trees or into public open space.*
- *Location of SUDS – not to exceed 10% of a public open space, note tank type solutions not permitted on public open space.*
- *Areas for Taking-In-Charge showing a physical boundary eg path, fence or hedge with areas to be privately managed eg building curtilage.*

Response:

The site and landscape layout put forward is in alignment with the Baldoyle-Stapolin Local Area Plan layout. A single open space of 10% of the site area would not comply with the LAP. The Class 2 Public Open Space associated with this scheme which includes 0.85ha of the Haggard (approximately 50% of the site area) and the 0.12ha Pocket Park add up to some 16% of the site area. A further 5.1 hectares is provided for Class 1 Open Space, adding up to a total area of 6.07ha, almost equal to the full site area of 6.1 hectares.

Item from FCC Parks Report	*Response / Reference*
Incorporating the existing trees.	*Incorporated into Class 2 Open Space; see section 2.4.4 and plans / sections on drawing nos. 1819_PL_P_02 and 1819_PL_P_05*
Boundary treatments including external site boundaries, communal, private and public areas.	*Included on drawings and see section 2.4.5. See drawing nos. 1819_PL_P_07*
Quantify the areas of play to show compliance with the Dept's Sustainable Apt Design Guidelines. Play for younger children to be provided in communal areas but the majority of play provision should be on public open space. A mix of formal and natural play is acceptable.	*See section 2.3.3 for Play Strategy and quantum of play areas.* *See drawing nos. 1819_PL_P_01-06* *The Haggard is the main play area for the development and there are nearby Play Spaces in Racecourse Park.*
Provide details of the location and quantities of each tree species proposed. The use of sycamore shall be limited to the most exposed positions of the site, preferably within soft landscape locations eg grass verge, buffer areas etc. avoiding hard surface areas due to the potential volume of leaf litter.	*Location and quantities of each tree species proposed are shown on the landscape plans. Sycamore is not specified due to status on Biodiversity Ireland's 'Medium Impact Invasive Species' List. Trees have been selected where necessary for resistance to saline wind and exposed conditions.*
Location of wayleaves eg water or electricity infrastructure, not to be included in the public open space calculation. In addition clearly show the extent of proposed basements, note such features should not encroach into root protection areas of retained trees or into public open space.	*Wayleaves have not been included in the public open space calculation.* *The extent of proposed basements below ground is clearly shown on the landscape plans and do not encroach into root protection areas of retained trees or into public open space.*
Location of SUDS – not to exceed 10% of a public open space, note tank type solutions not permitted on public open space.	*Location of SuDS features are included on the landscape plans and are not included in open space areas, only along streets.*
Areas for Taking-In-Charge showing a physical boundary eg path, fence or hedge with areas to be privately managed eg building curtilage.	*Please see Map no. _____ submitted by CCH Architects.*

5. Conclusion

The proposed development comprises of 16 no. residential buildings with 1,007 apartments, in five grouped blocks each with a communal courtyard, along with residential community rooms, creche, car parking spaces, cycle parking and associated site development, as well as the landscape and public realm proposals described in this report.

The site layout and landscape architectural design proposal is structured in accordance with the Baldoyle-Stapolin Local Area Plan and honours the requirements of the LAP in all respects. Within this framework, the landscape design seeks to develop a unique setting, one which takes inspiration from and pays respect to the landscape around it, both immediately in the context by supporting Racecourse Park and Baldoyle Estuary SAC and SPA, and the wider context through emulation of the varied coastline of North Dublin in an abstracted manner in the design forms and detailing.

Class 1 and Class 2 Open Space of 6.07ha. is identified for the proposed development, well in excess of the 4.0 hectares required under the standards of the County Development Plan. This is primarily in locations off-site, in accordance with the LAP. The Class 1 Open Space is in part of the planned Racecourse Park, located north of the site and of the 0.97ha of Class 2 Open Space provided, 0.12ha is on-site in the form of a pocket park and 0.87ha is immediately adjacent in The Haggard, which was granted permission previously (under Reg. Ref. F16A/0412).

Overall, this design provides a variety of amenity spaces for the residents of this development. The proposed design will increase the biodiversity on the site, creating rich habitat and sustainable drainage systems which will reduce the impact of this development on the natural environment.

The landscape and planting scheme has been designed to enhance the setting of the buildings, creating social spaces for residents and providing access to the wider open spaces, greenways and town and village centres. The scheme provides for natural play and safe play in spaces throughout the sites. The scheme also incorporates native trees, shrubs and ferns and pollinator-friendly plants that will enhance the biodiversity of the local environment.

A comprehensive maintenance and management plan and an outline landscape specification are presented in the appendix to this report, to demonstrate the commitment to quality in the external environment.

APPENDIX

murray & associates
landscape architecture

OUTLINE SPECIFICATIONS

for

SOFT LANDSCAPE WORKS & LANDSCAPE MAINTENANCE

for

Strategic Housing Development

GA2; Residential Development, Baldoyle, Co. Dublin

March 2022

murray & associates
landscape architecture

16 The Seapoint Building
44-45 Clontarf Road, Dublin 3
Tel: 01 8540090

mail@murray-associates.com
www.murray-associates.com

Member of the Irish Landscape Institute

CONTROL SHEET

Project No.		**1819**		
Project Name		**Strategic Housing Development** **GA2; Residential Development, Baldoyle, Co. Dublin**		
Filename:		1819_Landscape Specification_Planning.docx		
Document Title:		**Outline Specifications for** **Soft Landscape Works & Landscape Maintenance**		
Rev. No.	Issue Status	Date	Prepared By	Checked By
0	PL	18/01/22	HT	MB

TABLE OF CONTENTS

This report should be read in conjunction with the following Murray & Associates drawings and report:

- 1819_PL_P_00 Landscape Masterplan 1:500
- 1819_PL_P_01 /_02 / _03 / _04 Landscape Plans 1:200
- 1819_PL_P_05 Landscape Plan – Existing Tree Management 1:250
- 1819_PL_P_06 Soft Landscape Plan 1:500
- 1819_PL_P_07 Boundary Treatment Plan 1:500
- 1819_PL_S_01/_02 Landscape Sections 1:200
- 1819_PL_D_01/_02 Landscape Details (Various scales)
- Arborist's Report
    - 1819_TS_P_01 Tree Inventory Plan
    - 1819_TS_P_02 Tree Impact Plan

1 SPECIFICATIONS FOR SUPPLY OF NURSERY STOCK

1.1 Supply of nursery stock:

The nursery stock material will be delivered following consultation between the employer's representative, landscape Contractor and the selected nursery. It is intended to serve notice of delivery by means of phased orders at least two months prior to commencement of the dormant season in November of that year. Delivery will be at all times by means of covered vehicles, and all plant material will be clearly labelled. The source of origin must be from the selected nursery, as no other additional stock from other nurseries will be permitted without prior inspection and approval

1.2 Nursery stock:

All plant material shall be good quality nursery stock, free from fungal, bacterial or viral infection, aphids, red spider or other insect pests and any physical damage. It shall comply with the requirements of B.S. 3936: Parts 1-10: 1965 Specification for Nursery Stock, where applicable.

All plants shall have been nursery grown in accordance with good practice and shall be supplied through the normal channels of the wholesale nursery trade. They shall have the habit of growth that is normal for the species. Country of origin must be shown in all cases for species grown from seed.

Unless otherwise stated, the plant materials shall be supplied in accordance with the following codes where stated:

1+0	1 Year old seedling
1+1	1 Year old seedling lined out for 1 year
1+2	1 Year old seedling lined out for 2 years
1+1+1	1 Year old seedling lined out for 1 year, lifted and lined out for one further year
2+2	2 Year old seedling lined out for 2 years
0/1	1 Year old Hardwood cutting
0/2	2 Year old Hardwood cutting
2X	Twice transplanted tree
3X	Three times transplanted tree
4X	Four times transplanted tree
P9	Containerised plant in 9cm pot
CG / c/g	Containerised plant
gt.	Girth
ht.	Height
RB / r/b	Rootball
BR / b/r	Bareroot
MS	Multi-stemmed
Ftd	Feathered trees

1.3 Species:

All plants supplied shall be exactly true to name as shown in the plant schedules. Unless stipulated, varieties with variegated and/or coloured leaves will not be accepted, and any plant found to be of this type upon leafing out shall be replaced by the contractor at his/her own expense.
Bundles of plants shall be marked in conformity with B.S. 3936: Part 1: 1965 and B.S. 3936: part 4: 1966. The nursery supplier shall replace any plants which, on leafing out, are found not to conform to the labels. Definitions of all terms used are in accordance with the following British Standards: -
B.S. No. 3936: Part 1: 1992 entitled "Nursery Stock- Trees and Shrubs"

B.S. No. 3936: Part 4: 1984 entitled "Nursery Stock- Forest Trees"
B.S. No. 3936: 1992 entitled "Specification for Nursery Stock"

1.4 Tree and Shrub Specifications:

Trees shall have a sturdy, reasonably straight stem, and a well-defined straight and upright central leader, with branches growing out of the stem with reasonable symmetry. The crown and root systems shall be well formed. Roots shall be in reasonable balance with the crown and shall be conductive to successful transplantation. All trees shall be clearly labelled.

1.4.1 Standard Root-Balled Trees

Trees shall have a clear stem from ground level to the lowest branch and a total height as appropriate to the girth size, and the minimum girth as specified shall be measured at 1.0m above ground level– all as required under BS3936: Part 1. Trees shall be well furnished with lateral fibrous roots, and shall be lifted without severance of major roots. All nursery stock trees shall have been undercut and provided with a rootball of min. diameter appropriate to girth and height. All rootballs shall be wire and hessian-wrapped.

1.4.2 Multistem Trees - Rootballed

Multistem trees shall have a minimum of 3no. stems originating from or near ground level (<0.3m) and be of reasonable bushiness and health, with a well grown root system and a total height as specified on the drawings and schedules. Trees shall be well furnished with lateral fibrous roots, and shall be lifted without severance of major roots. All rootballs shall be wire and hessian-wrapped. All multistem trees stock trees shall have been undercut a minimum of 3no. times and provided with a rootball of sufficient size and diameter to enable healthy transplanting and successful establishment and growth. All rootballs shall be wire and hessian-wrapped.

1.4.3 Container grown Shrubs, Ferns, Grasses, Perennials, Bamboo, Hedging

Containerised Shrubs and Climbers shall be of the size specified in the schedules, with several stems originating from or near ground level and of reasonable bushiness, healthy, vigorous and with a sound root system. Pots or containers shall be appropriate to the size of shrub supplied and clearly labelled. Shrubs shall not be pot bound or with girdled or restricted roots. Shoots and aerial parts shall be free of disease, and/or damaged leaves or shoots.

1.4.4 Hedging Stock – Bare-Root

Hedging stock shall be of size specified in the schedules, with several stems originating from or near ground level, with reasonable bushiness, healthy, vigorous and with a sound root system. Shoots, roots and aerial parts shall be free of disease, and/or damaged leaves or shoots. Transplants shall be not less than one year old. Trees of species not listed in B.S. 3936: Part 4: shall be sturdy, with a balanced root and shoot development. Size shall conform to the schedules. Trees shall be well furnished with lateral fibrous roots, and shall be lifted without severance of major roots. Roots shall be of the habit normal for the species, without deformation. Transplants shall be clearly labelled and wrapped in polythene from the time of lifting until planting to conserve moisture. Shoots, roots and aerial parts shall be free of disease, and/or damaged leaves or shoots.

1.4.5 Hedging Stock – Rootballed

Hedging stock shall be of size specified in the schedules, with several stems originating from or near ground level, with reasonable bushiness, healthy, vigorous and with a sound root system. Shoots, roots and aerial parts shall be free of disease, and/or damaged leaves or shoots. Such hedging shall be provided with a rootball of sufficient size and diameter to enable healthy transplanting and successful establishment and growth. Rootballs shall be hessian-wrapped only for any plant under 1m in height.

2 SPECIFICATIONS FOR CARE OF NURSERY STOCK

2.1 Protection:

The interval between the lifting of stock at the nursery and planting on site is to be kept to an absolute minimum. Plants shall be protected from drying out and from damage in transport. All stock awaiting transport shall be protected from the wind and frost and from drying out.

2.2 Damage

On completion of lifting of plants in the nursery, any broken shoots or severed roots shall be pruned, areas of damaged bark neatly pared back to sound tissue.

2.3 Inspections

The Employer's representative will inspect the hardy nursery stock during the execution of the works. **Only plants selected and approved in the landscape contractors selected nursery will be accepted on the site**.

2.4 Delivery and heeling in

All plants will be delivered on a phased basis as called up in advance in agreement with the Employer's representative and the appointed Landscape Contractor. In the event of the Employer's representative being dissatisfied with the care and attention given to the stocks, following heeling-in or arrival on site, he shall notify the Landscape Contractor who shall take steps to ensure careful heeling-in procedures. Any damaged plants must be replaced by the Landscape Contractor entirely at his own expense.

The preparation of the heeling-in area and its subsequent maintenance is the sole responsibility of the Landscape contractor. No responsibility for the maintenance of stock delivered to site will attach to the employer whilst stock is protected on site, even if the stock requires protection beyond the normal planting season.

3 SPECIFICATIONS FOR SITE OPERATIONS

Note re. Invasive Weeds:

Japanese Knotweed has been identified on this site and will be removed in accordance with the Invasive Species Management Plan prepared by the project Ecologist prior to any site clearance or construction work commencing.

3.1 Setting out:

Setting out shall be in accordance with site meetings with the Employer's Representative, and the drawings listed in the preliminaries. No planting works shall take place when the soil /fill is in a waterlogged condition or the ground is frozen. Transplants in mixtures shall be planted in staggered rows. Species shall be planted in groups, as indicated in the planting drawings. No planting shall take place until all planting holes (with ameliorants) have been inspected and approved by the Employer's Representative, or a person appointed by him as a representative, to ensure accordance with the specifications. No planting shall take place when ground conditions are frozen or waterlogged. All planting holes shall be opened and closed on the same day.

3.2 Earthworks, Soil and Grading

3.2.1 Stripping and storage of existing soil on-site

All soil removed during grading works is to be placed in storage bunds on-site. Topsoil must be stripped separately from subsoil for re-use in landscape works and must be fit for purpose. Topsoil would be defined as soil that has a high content of organic material, usually corresponding to the 'O' and/or 'A' horizon of the soil profile. Subsoil would be all mineral soils that do not have a substantial organic component. Where the difference between topsoil and subsoil is unclear, consult the Employer's Representative.

Subsoil that is excess to fill requirements is to be stored on-site in a designated location, to be agreed with the Employer's Representative. Subsoil shall be stored in stable mounds with side slopes of gradient no more than 1:2 and an overall height of no more than 2m. Mounds to be seeded with wildflower seed as per clause 3.3.3.

Topsoil shall be stripped using a tracked vehicle to avoid subsoil compaction. Avoid tracking over or compaction of the topsoil. Topsoil should be stripped and dumped to form the berms using the dump and back-actor method. Double handling of topsoil is to be avoided. Topsoil that has been compacted shall be removed off site and replaced at the contractor's expense.

Topsoil shall be stored in stockpiles of dimensions no greater than 10m long x 5m wide x 0.5m high, such that a long, narrow and low berm is created to preserve the intrinsic qualities (structure and soil life) of the topsoil whilst in storage. The topsoil shall be loose tipped to create the berm and lightly compacted with the back of a digger bucket to create a degree of compaction suitable for storage, with side slopes of gradient no more than 1:2. No machinery shall be run over the soil berm. Berms shall be seeded with grass seed as per clause 3.3.2.

3.2.2 Subsoil

(a) Supply of Subsoil

Existing subsoil shall be used for all grading works.

Imported subsoil – if required - shall be sourced from a reputable source and be free of waste, chemicals, large stones, builder's rubble and any other detritus.

(b) Formation of Slopes/Mounds

Subsoil to be used to form even slopes or mounding to contours shown on drawings. Subsoil to be formed to smooth contours to 150mm below finished levels indicated on drawings, where the area is to be grassed or 300mm.

(c) Formation of Grassed Areas

Subsoil to be graded accurately to contours / levels / falls / crossfalls shown on drawings.

3.2.3 Topsoil

(a) Supply of Topsoil

Existing topsoil may be used for all grading and planting works, if it complies with the following specification, which would also apply to imported topsoil, as required. It is expected that imported topsoil will be required for all planting areas.

Topsoil shall be sourced from a reputable source and be free of waste, chemicals, large stones, builder's rubble and any other detritus. Topsoil shall have good structure, be friable, fresh and free-draining with at least 20% organic content. Imported topsoil shall comply with BS3882: 1994, and shall be free draining

sandy loam, clay or other approved. It shall be free of stones over 40 mm diameter, and stones over 10 mm diameter shall not exceed 5% by weight. It shall be free from subsoil, sods, roots of trees and shrubs, and rubbish. Topsoil shall be from the original surface layer of grassland or cultivated land, to a maximum depth of 200 mm. Soils from woodland, heathland, bog or contaminated land will not be acceptable.

(b) Removal of topsoil:
In areas to be regraded, all topsoil should be stripped and stored as per following clauses.

(c) Weather and Soil Conditions
All work involving topsoil shall not be carried out, unless the Employer's Representative permits otherwise:
Where areas have been exposed to a cumulative rainfall exceeding 60mm over the preceding 28 days measured at a point approved by the Employer's Representative; or

- Where soil moisture content is wetter than the Plastic Limit (PL) of the soil less 3%. The PL of the soil can be assessed in the field as the minimum moisture content at which the soil can be rolled and moulded into a thin thread approximately 3mm in diameter without breaking or cracking and in a laboratory according to BS 1377:Part 2.
- When heavy rain is falling;
- During periods of severe frost when the soil is frozen. Handling frozen soil will cause damage to the soil structure.

(d) Topsoil Spreading
Topsoil shall be moved and spread only in dry weather. Before topsoiling, remove all stones, rubble and rubbish over 75mm diameter from the surface of the subsoil formation. Dig out any areas polluted by oil or chemicals and make up with clean soil. Loaders shall load from the base of the soil storage berm only. Placement of soil should be carried out using a tracked vehicle to avoid subsoil compaction. Reinstated areas of topsoil shall not to be tracked over. The topsoil shall be allowed to settle to a thickness of 300mm and the contractor shall make full allowance for such settlement in applying the topsoil. Uneven areas shall be topped up as necessary.

(e) Topsoil Depths & Provision
The following depths should be provided for topsoiled areas:

(i) Grassed Areas:	150mm
(ii) Bare-root planting:	300mm
(iii) Shrub planting:	450mm
(iv) Tree planting:	Pit to specified size, depending on size of tree (see relevant Clauses)

(f) Grading
Topsoil to be graded accurately to contours / levels / falls / crossfalls shown on drawings. Glazed / compacted areas of subsoil to be roughened or ripped as necessary. (Drainage to be installed where necessary to Engineer's specification.) Any compacted areas to be ripped after placing of soil.

(g) Compacted areas
Any areas identified as compacted following completion shall be deep ripped and re-graded or re-soiled as necessary, to ensure a free-draining soil gradient and to avoid anaerobic conditions developing in the topsoil.

3.2.4 Surface cultivation

Surface cultivation will consist of ploughing or rotovating the topsoil to a minimum depth of 450mm over shrub areas or 150mm over grass areas. Care to be taken to ensure that the subsoil is not brought to the surface. It shall then be worked to reduce the topsoil to a fine tilth. After cultivation, all debris, perennial weeds and stones over 25mm in any dimension are to be removed off site.

Final grading is to be carried out to ensure the true specified level and slope and to avoid minor ridges, dishing or other depressions where water may collect.

Unless otherwise stated, finished levels of grass and shrub planting areas will be 50mm above adjoining paving or kerbs, retaining wall copings, manhole covers etc. and levels will be arranged to give gentle falls for drainage and to avoid ponding hollows. Any area unduly compacted during the work of grading will be loosened by forking or harrowing. The use of heavy rollers to roll out mounds will not be permitted.

Unless otherwise stated, finished levels of topsoil, after settlement, to be:

1. 50mm above adjoining pavements and kerbs
2. 300mm higher for shrubs than for adjoining grass areas
3. married in with adjoining soil areas
4. all stones above 50mm diameter to be removed off site by the landscape contractor.

3.3 Seeding:

3.3.1 Amenity Grass Areas

Fine cut areas to be sown with Coburns 'Greenlawn' Grass Seed Mixture as detailed below or equal at a rate of 40g/sq.m together with fertiliser 10:10:20 at a rate of 50g/Sq.m

15% Dwarf Perennial Ryegrass
15% Dwarf Perennial Ryegrass
20% Dwarf Perennial Ryegrass
25% Strong Creeping Red Fescue
20% Chewings Fescue
5% Browntop Bentgrass

4 SPECIFICATIONS FOR PLANTING OPERATIONS

4.1 Tree Support:

All multistemmed trees shall be anchored by means of root ball guying. Rootball is anchored by a timber frame (or equivalent support system – e.g. Platipus system) located around the top surface of the rootball, which is fastened by wires (4mm galvanised cable guying wire) to 'dead man' anchors, kerbstones or timber beams located below the rootball.

4.2 Stakes:

Round stakes shall be of peeled larch, pine or Douglas fir, preserved with a water-borne copper chrome arsenic composition in accordance with I.S. 131. All trees to be double staked with crossbar 100x25mm securely attached to uprights with galvanised nails. Stakes shall be round, 1.8m long, 75mm in diameter. Stakes shall be pointed at the butt end. Set stakes vertically in the pit and drive before planting. Drive

stake with a wooden maul or cast-iron headed drive. Sledgehammer should not be used. Stakes shall be driven into the excavated planting pit to a depth of 1000mm.

4.3 Tree ties:

Tree ties shall be of rubber, PVC or proprietary fabric laminate composition and shall be strong and durable enough to hold the tree securely in all weather conditions for a period of three years. They shall be flexible enough to allow proper tightening of the tie. Ties shall be min. 25mm wide for 120cms – 150cm height trees and min. 38mm for larger sizes. They shall be fitted with a simple collar spacer to prevent chafing. Two ties per tree shall be applied to standards; for staked transplants, one tie per tree is required.

4.4 Protection:

The interval between the lifting of stock at the heeling-in area and planting on site is to be kept to an absolute minimum. Plants shall be protected from drying out and from damage in transport. All stock awaiting planting on site shall be stored in a sheltered place ***protected from the wind and frost and from drying out.***

All transplants shall be wrapped in polythene from the time of lifting to conserve moisture. Except when heeled-in, they shall be protected in polythene at all times until planted into their final position on site.

4.5 Damage:

On completion of planting any broken branches shall be pruned, areas of damaged bark neatly pared back to sound tissue.

4.6 Watering / Fertilisers:

All trees and shrubs shall be soaked in water for one hour prior to planting. Fertilisers shall conform to BS 5581: 1981. Fertiliser must be mixed through and incorporated into the base of the planting hole and covered with soil in order to avoid roots of plants coming in direct contact. Follow manufacturer's instructions for all chemical products.

4.7 Tree planting:

Trees shall be planted at the same depth as in the nursery, indicated by the soil mark on the stem of the tree. They shall be planted in the centre of the planting pit and planted upright. Stones or other rubbish over 75mm shall be removed. Supply and install the staking / guying system as per clauses 4.1-4.4. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position. Upon completion of planting, all pits shall be raked over lightly to leave an even surface and neat appearance. All stones greater than 25mm dia. to be removed. Provision should be made for the watering of root-balled trees in the first year following planting.

4.7.1 Specimen Trees

Excavate tree pits to 1200mm x 1200mm x 1000mm deep. Farmyard manure 80mm deep and 100g of 0.10.20 shall be applied to each tree pit prior to planting. Farmyard manure shall consist predominantly of faecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Install tree support system as per clause 4.1. Fill planting hole with topsoil as per clause 3.2.2, and remove all stones and debris, firming plant into position.

4.7.2 Small Trees / Large Shrubs

Excavate tree pits to 750mm x 750mm x 750mm deep. Farmyard manure 60mm deep and 100g of 0.10.20 shall be applied to each tree pit prior to planting. Farmyard manure shall consist predominantly

of faecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Install tree support system as per clause 4.1. Fill planting hole with topsoil as per clause 3.2.2, and remove all stones and debris, firming plant into position.

4.8 Container Grown Shrubs, Grasses, Ferns, Perennials P9 / 20-30 / 30-40cm

Excavate planting hole to a depth of 300mm x 300mm x 300mm deep; the base to be broken to a depth of 50mm and glazed sides roughened. Apply FYM to base of hole to a depth of 150mm and 30g of 0:10:20 per planting pit. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.9 Containerised Shrubs, 40-60cm

Excavate planting hole to a depth of 500mm x 500mm x 500mm deep; the base to be broken to a depth of 50mm and glazed sides roughened. Apply FYM to base of hole to a depth of 150mm and 50g of 0:10:20 per planting pit. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.10 Hedging 25-30cm, 40-60cm

Excavate trench to a depth of 300mm x 300mm wide; the base to be broken to a depth of 50mm and glazed sides roughened. Incorporate 200mm depth of well-rotted FYM into base and cover with 150mm soil min. Apply 100g 0:10:20 per metre into backfill. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plants into position.

4.11 Hedging 90-120cm

Excavate trench to a depth of 500mm x 500mm wide; the base to be broken to a depth of 50mm and glazed sides roughened. Incorporate 200mm depth of well-rotted FYM into base and cover with 150mm soil min. Apply 100g 0:10:20 per Sq.m into backfill. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plants into position.

4.12 Ground finish:

Upon completion of planting, all ground finish shall include for the removal of stones greater than 25mm excavated during the course of the digging for planting purposes. All soil surfaces should be even and free of mounds, rutting or hollows.

4.13 Spraying:

Following planting, weed free circles to be formed around individual plants, as directed, using an approved broad-spectrum contact herbicide, as approved by the Employer's representative, in mid-spring following planting. Herbicide to be applied using controlled drop applicator. The contractor shall be responsible for keeping the ground (1m diameter circle) around all planted material weed free by means of herbicidal application, using approved sprays, during the course of the contract. Weeds to be removed include grasses ,broad-leaved annual and perennial weeds and all noxious weeds. All pesticides to be approved by a Registered Pesticide Adviser.

4.14 Weed control fabric

The weed control fabric shall be 105gsm and shall suppress weeds whilst allowing water, air and nutrients to pass through. Mypex™, Plantex® or equal woven fabric product acceptable. Cut with a scissors or knife. All sharp objects should be removed from the surface soil prior to laying the weed suppressing geotextile. Overlap adjacent rolls by at least 10cm. Membrane to be pegged to ground using proprietary plastic pegs.

When planting into the geotextile membrane an 'X' shaped notch should be cut into the membrane for each individual plant, to allow for excavation. Planting should resume as per species specification. Excavated material should not be stored on geotextile and the membrane area should be thoroughly swept of any residual material prior to application of finished aggregate or mulch.

Membrane to be applied to all planting and gravel areas.

4.15 Bark mulch

Bark Mulch to be 'Golden Pine Bark' by Growise or equal and approved. The product shall consist of matured Conifer Bark with an even nominal particle size distribution of 5-75mm with less than 5% dust and fines and less than 15% wood content. The pH to be between 4.5 and 5.5. The product shall be pest, disease and weed free and not have been treated with Methyl Bromide or any additives. The product shall have been tested in accordance with the requirements of BS 4790:1987, for fire resistance.

The natural heat treatment maturing process shall have been sufficient to ensure that excess volatile substances are driven from the product. During the process, temperatures within the product heaps must exceed 50°C for a minimum 14 day period, followed by a further period of stabilisation.

Lay Bark Mulch to a finished depth of 75mm allowing at least 10% for settlement after 30 days. All such mulch of good quality from an approved source will be inspected by the Employer's representative prior to delivery. All product volumes to be calculated using The Bulk Density method, as set out in BS EN 12579:2000 and BS EN 12580:2000. Slow release Nitrogen fertiliser to be applies to soil prior to mulching.

4.16 Lifting and Re-Planting of Existing Trees on-site

All operations to be carried out between November and March. All trees to be lifted shall first be prepared by digging a trench around the rootball, appropriate to the size of the tree, and as advised by the Arborist or Landscape Architect. After an interval of time, the tree is to be lifted out of the ground using a tree spade or large bucket fitted to an excavator. Trees may then be potted up in large containers or planted directly into the new position. Copious watering is required following planting or potting. When trees are being planted out to their permanent positions from containers, additional and frequent watering is required, with soluble fertiliser and/or mycorrhizae solutions, as advised by a qualified professional. Trees to be monitored on a regular basis for the first three years.

5 SPECIFICATIONS FOR MAINTENANCE AND AFTERCARE

5.1 Period:

The Contractor shall be responsible for aftercare of the completed works for 1 year from the date of completion of planting. Aftercare is deemed to include adequate watering of standard trees and shrubs during dry periods of weather.

5.2 Organisation:

The aftercare program will be organised as follows:

(a) Scheduled operations, in whose timing the Contractor will be permitted some flexibility, and which will be the basis of payment to the Contractor.

(b) Performance standards, which the Contractor is required to meet at all times, and on which his performance will be assessed.

(c) Critical dates, by which time scheduled operations shall have been completed, and at which performance will be assessed.

5.3 Performance standards:

The following maintenance standards shall be upheld for the duration of the maintenance period:

5.3.1 Replacement planting under defect:

The Employer's representative shall inspect the planting in July following planting. Any tree found to have died from any cause except as provided below or the work of other contractors shall be replaced by the contractor at his own expense. Replacement planting shall conform in all aspects with this Specification, including all specified excavation, provision and incorporation of all fertilizers and ameliorants, and weed killer treatments.

Failures will not be charged to the contractor in the following cases:

(a) Damage by hares or rabbits, where protection has not been provided for in the contract.
(b) Losses due to theft, vandalism or disturbance by other contractors.
(c) Failures of whips and transplants due solely to prolonged dry weather, provided that the specified planting procedures have been employed and watering has been carried out in accordance with the contract specifications.

5.3.2 Plant Health:

(a) All plants shall show signs of healthy growth throughout the growth season after planting. E.g. bud break, leaf extension, branch extension, normal for such species.
(b) All plants shall not show signs of drought for any period exceeding five days. Such signs include change in leaf colour, withering leaves or leaves dropping.
(c) For all trees and shrubs pruning shall be carried out to ensure removal of dead or damaged branches and the retention of a healthy crown shape throughout the growing season.
(d) The trees shall not show signs of bark damage as a result of failure to loosen tree ties.

5.3.3 Invasive Weeds:

Japanese Knotweed has been identified on this site and will be removed in accordance with the Invasive Species Management Plan prepared by the project Ecologist.

Landscape maintenance contractor is charged with monitoring for any return or appearance of invasive species, including but not limited to Japanese Knotweed, Giant Hogweed, Himalayan Balsam, Rhododendron, Aemerican Skunk Cabbage and Winter Heliotrope and any other species that are considered a threat to indigenous wildlife. Appearance of any such species are

5.4 Maintenance Operations

5.4.1 Firming:

Firm any plants loosened by frost, wind, or cultivation at each maintenance visit. Plants to be re-dug where required.

5.4.2 Weed Control:

The contractor shall be responsible for keeping the ground around all planted material weed free by means of herbicidal application during the course of the contract. This shall include complete weed control in planting beds, woodland planting areas and along hedge lines as well as the maintenance of 1m diameter weed-free circles around trees in grass areas. Such routine spraying shall be carried out

during maintenance visits over the maintenance period. No spraying shall take place during adverse weather conditions or at times not recommended by the manufacturer. Operator shall wear appropriate protective gear, including mask. Weeds shall not cover more than 10% of the ground surface at any time and neither shall they exceed 100mm in height or spread. Noxious and pernicious weeds such as Dock, Thistle, Ragwort, Nettle, and Japanese Knotweed shall be killed or removed at each maintenance visit. Allow for hand weeding of shrub beds containing plants sensitive to herbicide application or where such herbicide application is not possible due to growth near ground level. Remove self-seed tree saplings from all shrub areas.

5.4.3 Watering:

The Contractor is responsible for the watering of all semi-mature and specimen trees during the maintenance period. Apply water to moisten full depth of root run. Avoid washing or compaction of the soil surface. A minimum of 9 no. waterings per year will be required. Prior notification to the Employer's representative, and a record of attendance will be requested for each visit. Spot checks will be made to ensure full compliance with this instruction. It is the Contractors responsibility to source water for this. Additional watering may be required. It is the responsibility of the Contractor to notify the Client of this requirement and agree the number of additional waterings to be undertaken at the dayworks rate provided.

5.4.4 Pests and Diseases:

The Contractor shall report to the Employer's representative any outbreak or build up of insect pest, fungus disease or disorder affecting the plants, as soon as it is noticed. The Employer's representative shall issue instructions for the treatment of the outbreak.

5.4.5 Pruning

- In early summer trim evergreen trees, shrubs and hedges to shape, removing all dead and damaged branches including trees encroaching onto footpaths back to point of branching.
- In late summer prune managed deciduous and evergreen hedgerows to shape. Trim back by av. 15-25cm of growth.
- Prune suckers from all avenue, street and specimen trees in open spaces
- Prune back tree branches overhanging footpaths, on main avenues or those interfering with car park spaces. In addition, prune back tree branches interfering with interfering with fencing. All trees to be cut back to point of branching.
- Prune back all deciduous shrubs encroaching in to fine cut grass areas. Cut 25cm back from rear edge of grass area.
- Prune back briars encroaching through fencing, or that are becoming prominent in hedgerows/ woodland areas.

5.4.6 Bark Mulch

Bark mulch should be thoroughly wetted down in warm, dry weather to avoid risk of fire or spreading fire. Mulch should be topped up to min. 50mm depth during maintenance period.

5.4.7 Grass and Lawn Areas

(i) General

At all times grass to look lush, vigorous and of fine quality with a minimum weed content, and a minimum variation in height of the sward during the growing season. Cutting should take place on a regular basis. Grass cutting areas shall be cleared of litter and rubbish prior to grass-cutting taking place.

No ruts are to be caused due to poor ground conditions. During periods of poor weather, no grass is to remain lodged following cutting. In periods of prolonged wet weather or where ground is waterlogged, consult with Property Manager prior to engaging in grass cutting operations.

Noxious and competitive weeds such as Ragwort, Gorse, Thistle, Dock, Nettle, Briar, Horsetail and Dandelion shall not be allowed to establish in any grass areas.

(ii) Amenity Lawn Areas

Criterion	Performance Standards
Aesthetic / functional requirements	Amenity lawn areas are those grass areas which will be maintained for general access and amenity purposes, to create a lawn which is neat, healthy, close-cut and with minimal weed content.
Permitted mower type	Cylinder mower, Rotary mower, ride-on mower, tractor-pulled gang mower (note: subject to ground conditions; hand-mowing required in designated areas and/or where ground is soft)
Height of Cut	Minimum 20mm; maximum permissible height 50mm. At the commencement of the contract, following flowering cycle of seasonal bulbs or if grass cutting has been forestalled due to poor ground conditions resulting in the grass growing above the maximum permissible height, it shall be cut to 50mm on the initial cut, then to 25mm on the subsequent cut. Such initial long grass shall be collected and removed off site.
Frequency	Mow weekly during spring; summer and autumn; only when necessary in winter. Mowing is not permitted when ground conditions are very soft, waterlogged or frozen, or during spells of cold, drying winds or when the grass is frosty or wet.
Finish	Even finish. Vary direction/pattern of cutting every 3 months. Grass shall be trimmed from around the bases of walls and fences, back of footpaths and kerbs, litter bins, sluice valves and hydrant markers, trees, poles, signage and public lighting columns, etc., and this interface between grass and walls, fences, etc., as noted above, kept in a neat and tidy condition. This trimming shall be deemed to be included for at every grass-cutting. The Landscape Contractor is bound to comply with this instruction and herbicide application is not permitted to achieve this.
Clippings	To be gathered at every cut and disposed of in designated area or off-site. Box to be emptied regularly during cutting to avoid clumps being left on the grass.
Fertiliser	In mid-spring (late March to April), use a proprietary lawn fertiliser at the manufacturer's recommended rates, to be approved by the ER. Apply fertilisers when the soil is moist, or when rain is expected. If grass loses vigour and freshness between late spring and late summer (often May to August), repeat the application of lawn fertiliser.
Weed Control	Minimum weed content permitted i.e.: (1) <5% of species content; (2) <10% of total grass area. When necessary and agreed with ER, use a selective herbicide, to control broad-leaved weeds in the sward. Weeds resistant to herbicide to be dug out by hand in autumn.
Scarifying	Scarifying to be carried out to keep levels of thatch (old grass stems, dead moss and other debris) at an acceptable level (i.e. less than 1cm deep). To remove thatch, rake vigorously but carefully with a power-scarifier. Recommended to be carried out in autumn only.
Aeration	Spiking with holes 10-15cm (4-6in) apart and deep to be carried out once per annum.

Rolling	Amenity grass areas should be reasonably even, with no variations greater than 25mm over a 1m straight edge. In September, to repair any uneven areas of the lawn, use an edging iron to slice through the turf and roll it back. Fork over the underlying ground and add or remove soil as needed. Replace the turf, pressing the edges together, roll with lawn roller (nominally 100kg, subject to site conditions) and water thoroughly.
Edging	Lawn to be edged by hand or edging machine regularly to leave an even, straight edge and to ensure that the grass or soil does not protrude over the edge by more than 25mm.
Over-seeding	After moss or weeds have been removed, or where grass is growing sparsely, over-seeding may be necessary. (Early autumn or mid-spring). Break up the surface with a fork and rake to leave a fine, even tilth; Sow grass seed at half the recommended rate (usually 10-15g/sq.m); lightly rake to incorporate the seed into the surface; water if weather remains dry for 2-3 days following seeding.
Watering	Watering to be carried out when required. Ensure that the water reaches a depth of 10cm (4in) after each watering. Rate: max. 20 litres per square metre.

Indicators of under-performance:
Excessive weeds or weeds such as clover or moss indicate poor sward health; bare patches may indicate scalping or lack of vigour; yellowing or browning of sward may indicate drying out, under-feeding, herbicide drift or inappropriate use of herbicide; thatch build-up greater than 1cm depth; rutting of the surface, wheel marks or poor drainage may indicate compaction of soil caused by mowing in wet weather or use of unsuitable mower type.

(iii) Rough Cut Grass Areas

Criterion	**Performance Standards**
Aesthetic / functional requirements	Rough cut grass areas are those grass areas which will not usually be accessed by users and will usually be in low priority areas, or in the background. These areas are to be maintained to create a grass area which is healthy and with minimal weed content, with grass allowed to grow relatively long between infrequent and regular cuts.
Permitted mower type	Strimmer, Rotary mower, ride-on mower, tractor-pulled gang mower (note: subject to ground conditions; strimming required in designated areas, areas of slope gradient greater than 1:3 and/or where ground is soft)
Height of Cut	Grass areas shall be cut to a height of c. 75mm
Frequency	5no. times during the growing season, at regular intervals of approximately 6 weeks
Finish	Rough cut shall mean grass of minimum height 75mm, with informal appearance
Clippings	To be gathered at every cut and disposed of in designated area or off-site.
Fertiliser	In mid-spring (late March to April), use a proprietary lawn fertiliser at the manufacturer's recommended rates, to be approved by the ER. Apply fertilisers when the soil is moist, or when rain is expected.
Weed Control	Minimum weed content permitted i.e.: (1) <5% of species content; (2) <15% of total grass area. When necessary and agreed with ER, use a selective herbicide, to control broad-leaved weeds in the sward. Noxious or invasive weeds to be spot treated with herbicide using controlled droplet applicator or glove in May, June and August and prevented from flowering.

Edging	Rough-cut grass areas to be edged by hand or edging machine regularly to leave an even, straight edge and to ensure that the grass or soil does not protrude over the edge by more than 25mm

Indicators of under-performance:
Excessive weeds or occurrence of noxious or invasive weeds unacceptable; rutting of the surface, wheel marks or poor drainage may indicate compaction of soil caused by mowing in wet weather or use of unsuitable mower type.

6 SCHEDULED MAINTENANCE OPERATIONS

6.1 Year One (After Planting)

6.1.1 By end of April (Year One)

Contact herbicide @ 5.0L/Ha to all planted areas. Protect all plants. Pull all weeds too close to nursery stock for safe treatment and remove off site.
Critical Date: 30th April (Year One)

6.1.2 By end of June (Year One)

Contact herbicide @ 5.0L/Ha to all planted areas/tree circles in grass areas where weed growth is apparent. Protect all Plants. Pull all weeds too close to nursery stock for safe treatment. Spot treat any ragworts, docks or thistles through all planting areas. All necessary cultural/husbandry methods to be completed in order to leave the site in a clean, orderly and tidy manner. Remove all waste material off – site. Watering of all standard trees.
Critical Date: 30th June (Year One)

6.1.3 July – September (Year One)

1 no. application of contact herbicide to all planted areas, followed 3 weeks later by 1 no. visit for spot application. Firm plants. Remove all waste material off-site. Watering of all standard trees. Firming.
Critical Date: 31st August (Year One)

6.1.4 October (Year One)

Remove all dead plants after Employer's representative's inspection. Remove all waste material off-site. Firming. Prunning. Replacement planting in November.
Critical Date: 31st October (Year One)

6.2 Inspections

The Employer's representative will inspect the site with the Contractor on each critical date, or as soon as possible thereafter.

6.3 Payments

The Contractor shall submit a statement of account at the critical dates. Payment will be certified with the following provisions:

If any part of the schedule aftercare is outstanding, its value will be deducted from payment.
The following will not be regarded as failures of performance:

(a) Damage by hares or rabbits, where protection has not been provided for in the contract.
(b) Losses due to theft, vandalism or disturbance by other contractors.
(c) Failures of whips and transplants due solely to prolonged dry weather, provided that the specified planting procedures have been employed and watering has been carried out in accordance with the contract specifications.

In the event of persistent failure to meet performance standards for maintenance without reasonable cause notified to the client, or in the event of failure to meet the requirements in the operations schedule,

or agreed extension to the same, the client may, at the advice of the Employer's representative, implement the following:

(a) Deduct payment for work outstanding,

(b) Withhold of retention of monies until all replacement planting is complete and has survived a full growing season (12 months),

(c) Extend the defects period for a further 12 months on replacement planting which, in the opinion of the Employer's representative, has been adversely affected by persistent failure to meet performance standards in the standard defects period,

(d) Charge the Landscape Contractor for non-completion of the scheduled maintenance work or persistent failure to uphold performance standards in accordance with the contract conditions.