



LANDSCAPE REPORT

STRATEGIC HOUSING DEVELOPMENT AT ST JOSEPH'S HOUSE AND ADJOINING PROPERTIES

MITCHELL + ASSOCIATES LANDSCAPE ARCHITECTS

PLANNING SUBMISSION TO ABP

REPORT

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STATUTORY REVIEW



REVIEW

1.0 STATUTORY REVIEW

National, Regional and Local Guidance

1.1 OVERVIEW

The proposed landscape scheme has been developed having regard to the following policy documents:

- » Project Ireland 2040 - National Planning Framework
- » Dún Laoghaire-Rathdown County Development Plan 2016 – 2022
- » Sustainable Urban Housing: Design Standards for New Apartments
- » Design Manual for Urban Roads and Streets (DMURS)
- » National Children’s Play Policy ‘Ready Steady Play’

1.2 Project Ireland 2040 - National Planning Framework

NPO35; Increase residential density in settlements, through a range of measures including reductions in vacancy, re-use of existing buildings, infill development schemes, area or site-based regeneration and increased building heights.

1.3 DLR COUNTY DEVELOPMENT PLAN 2016-2022

The over-riding Vision for the County as set out in the Development Plan is: “To continue to facilitate appropriate levels of sustainable development predicated on the delivery of high quality community, employment and recreational environments - allied to the promotion of sustainable transportation and travel patterns - but all the while protecting Dun Laoghaire -Rathdown’s unique landscape, natural heritage and physical fabric, to ensure the needs of those living and working in the County can thrive in a socially, economically, environmentally sustainable and equitable manner.”

The vision is expressed in a strategy that seeks to facilitate the sustainable development of the County as a vibrant and vital place in which to live, work and visit.

1.3.1 Land -Use Zoning

The subject site is zoned objective ‘A’, which is “to protect and/or improve residential amenity”.

Objectives

To protect and preserve Trees and Woodlands, as denoted by the tree symbol on Map 10.

CPD 2016-22 Section 8.2.8.1 Landscape Plans

“Planning applications for both residential (30+ units or as required by the

Planning Authority) and commercial (1,000 sq.m. or as required by the Planning Authority), including leisure and recreational facilities, should submit a landscape design rationale prepared by a qualified Landscape Architect or other suitably competent landscape professional (as deemed appropriate by the Planning Authority), for the consideration of the Parks and Landscape Services Department. Smaller schemes may also require a landscape plan to be submitted. All such requirements should be ascertained at pre-planning stage.

Such proposals shall include a scaled landscape plan(s) - with cross-sections, where applicable - showing the layout and hard and soft treatment of all boundaries, features, external areas and green spaces. The proposals shall be accompanied by specifications for materials, workmanship and maintenance, together with proposed design details.

Hard landscape details are to include - where applicable - any proposed lighting, seating, kerbing, boundaries, edging, surfacing and water features.

Soft landscape details are to include detailed planting plans and planting schedules, stating species/varieties, quantities, sizes, rootball presentation and spacings.

The landscape plan shall be accompanied by a timescale for its implementation, including a minimum 18-month landscape maintenance period and a defects liability clause.”

“Public Open Space generally derives from a development that is defined as being generally freely available and accessible to the public and has, or is intended to be, ‘taken-in-charge’ by the Local Authority. In most new residential development schemes, there should be some appropriate provision made for public open space within the site (Refer to Sections 8.2.8.2, 8.2.8.3 and Appendix 14). • Communal Open Space is intended to be made available to a set group of residents only and would ordinarily be maintained by a Management Company. This would be typical of apartment - type residential developments. 204 8 dlrcoco | County Development Plan 2016 - 2022 | 8.2 Development Management • Private Open Space normally refers to balconies and/or private gardens, which are the responsibility of, and only accessible to, the individual resident. “

CPD 2016-22 Section 8.2.8.5 Apartments – Play Facilities

In terms of play facilities for children regard shall be had to the ‘Sustainable Urban Housing: DesignStandards for New Apartments’ (2007) (refer to 1.4)

CPD 2016-22 Section 8.2.8.6 Trees and Hedgerows

New developments shall be designed to incorporate, as far as practicable, the amenities offered by existing trees and hedgerow and new developments shall have regard to objectives to protect and preserve trees and woodlands as identified County Development Plan Maps.

Policy OSR7: Trees and Woodland*

It is Council policy to implement the objectives and policies of the Tree Strategy for the County – ‘dlr TREES 2011-2015’ - to ensure that the tree cover in the County is managed and developed to optimise the environmental, climatic and educational benefits which derive from an ‘urban forest’

Policy LHB14: Public Rights-of-Way

It is Council policy to:

- » Preserve, protect, promote and improve for the common good all existing public rights-of-way which contribute to general amenity.
- » Consider favourably planning applications which include proposals to improve the condition and appearance of existing rights-of-way.

Policy LHB14: Protection of Natural Heritage and the Environment

Policy UD5: Shared Space Layouts

It is Council policy to promote safer and more attractive streets and public realm for all road users throughout the County by pro-actively engaging with, and adhering to, the ‘shared space’ concept and guidance set out in the ‘Design Manual for Urban Roads and Streets’ (2013).

Policy OSR1: Green Infrastructure Strategy

Policy OSR3: Hierachy of Parks and Open Space

Policy OSR14: Play Facilities

REVIEW

1.0 STATUTORY REVIEW

National, Regional and Local Guidance

1.3 SUSTAINABLE URBAN HOUSING: DESIGN STANDARDS FOR NEW APARTMENTS

Section 4.13 Children's Play

The recreational needs of children must be considered as part of communal amenity space within apartment schemes. Experience in Ireland and elsewhere has shown that children will play everywhere. Therefore, as far as possible, their safety needs to be taken into consideration and protected throughout the entire site, particularly in terms of safe access to larger communal play spaces. Children's play needs around the apartment building should be catered for:

- » within the private open space associated with individual apartments
- » within small play spaces (about 85 – 100 sq. meters) 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; and
- » within play areas (200–400 sq. meters) for older children and young teenagers, in a scheme that includes 100 or more apartments with two or more bedrooms

1.4 DESIGN MANUAL FOR URBAN ROADS AND STREETS (DMURS)

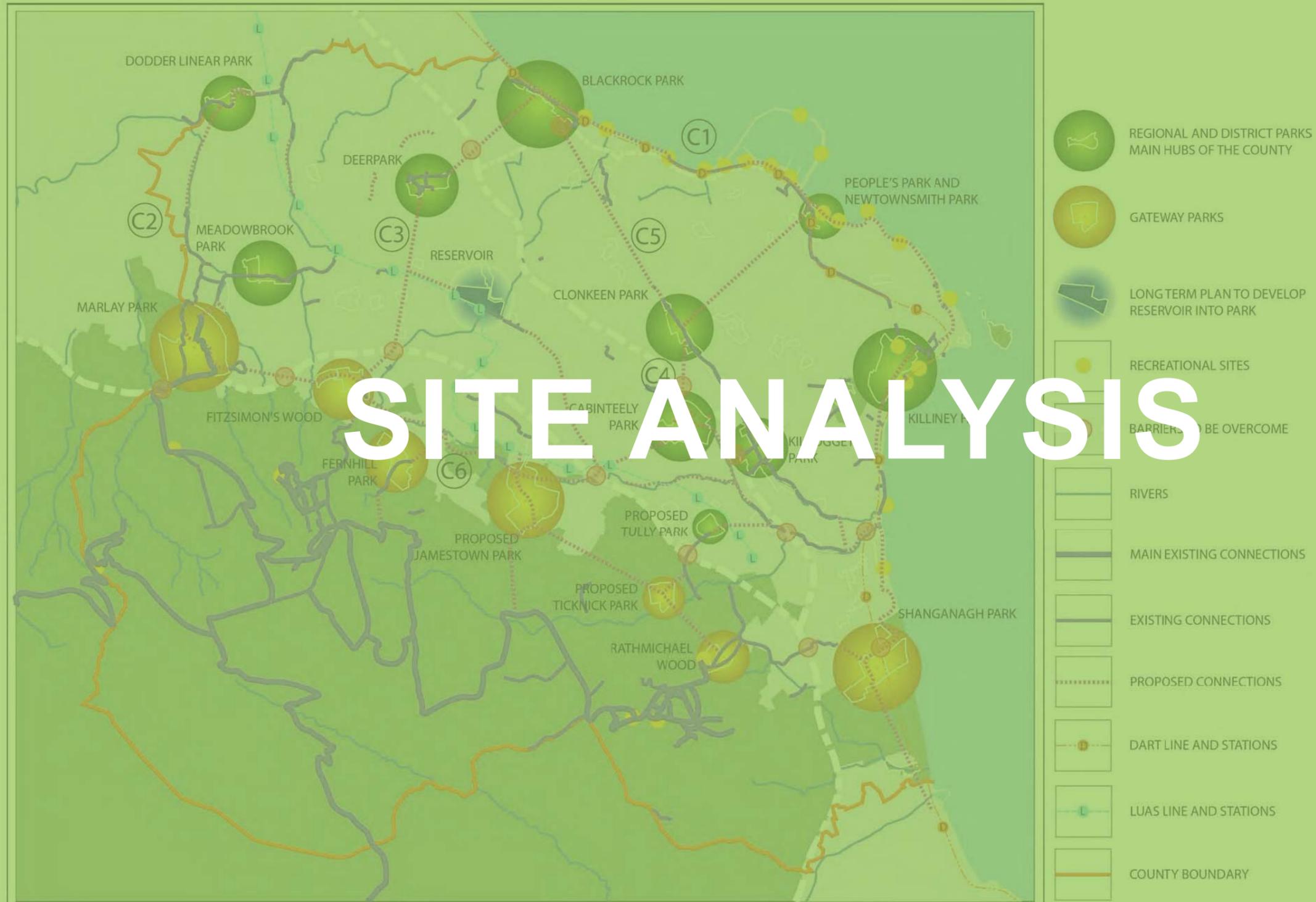
The Design Manual for Urban Roads and Streets (DMURS) sets out design guidance and standards for constructing new and reconfigured existing urban roads and streets. It also sets out practical design measures to encourage more sustainable travel patterns in urban areas. The statement prepared by CS Consulting Engineers submitted with this application provides further detail in respect of the compliance of the proposed development with the provisions of DMURS.

1.5 NATIONAL CHILDREN'S PLAY POLICY 'READY STEADY PLAY'

The National Children's Play Policy 'Ready Steady Play', sets out guidance for the provision of suitable play opportunities for the future child population within a new development. Opportunities need not always include formal 'equipped' provision (i.e. standard, generic off-the-shelf equipment and facility/-ies), but solutions should focus on using the 'genus loci' of the site (e.g. existing and planned landform, character etc.) to provide informal, impromptu and spontaneous play activities.



Extract of Map 6 Dun Laoghaire Rathdown County Development Plan 2016-2022



Map 16: Detailed Spatial Framework Strategy.



SITE ANALYSIS

2.0 ANALYSIS

Desktop and field analysis of the existing site

2.1 SITE LOCATION

The site is bounded by 2 access roads. The N31 Brewery Road to the North currently serves as the principle access to St. Joseph's house through the Silverpines residential neighbourhood. The R113 Leopardstown Road to the South serves Annaghkeen, Dalwhinnie, Marian Villa, Woodleigh, Cloonagh, Souk El Raab, Welbrook, Calador, Alhambra and The Crossing houses and also a gated laneway access which was originally the main tree lined avenue approach to St. Joseph house which is a protected structure. Immediately adjacent to the north of the site is Leopardstown Park playing pitches and a Greenway link. The Luas station is 550m away.

A number of neighbourhood amenities and facilities are located within close proximity of the site. There are pedestrian and cyclist links to the nearby (900m distance) public open space of Clonmore Park which contains a Childrens Playground, fitness equipment, walking trails and kickabout areas.

2.2 SITE DESCRIPTION

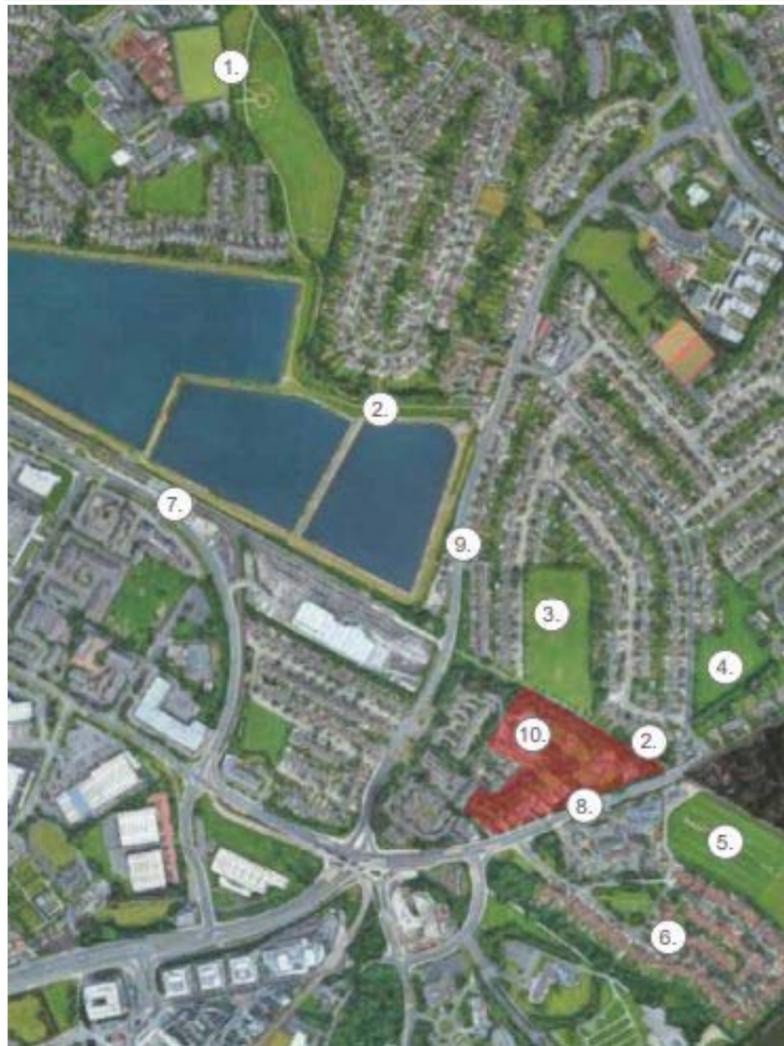
The site is relatively level with a slight fall from Leopardstown Road.

The site consists of (1) 'Saint Joseph's House', Brewery Road, Stillorgan, Co. Dublin (A94 Y7F4); (2) 'Madona House', Silverpines, Stillorgan, Blackrock, Co. Dublin (A94 Y230); and (3) Properties at 'Woodleigh' (D18 F3F4), 'Cloonagh' (D18 P5P9), 'Souk El Raab' (D18 Y6C5), 'Wellbrook' (D18 H0C6), 'Calador' (D18 W1Y2), 'Alhambra' (D18 E3C4), 'Dalwhinnie' (D18 P2P4), 'Annaghkeen' (D18 Y2W1) and 'The Crossing' (D18 W8 W2); all located at Leopardstown Road, Dublin 18.

The most significant building is St. Joseph's house, its garden and its out-buildings. Associated with St. Joseph's house are significant stands of existing "Austrian Pine" trees, as well as mature deciduous tree species on the boundary of Sweet Chestnut, Sycamore and Oak. The "Austrian Pines" create a distinctive landscape setting. Formal garden spaces and open lawns surround the buildings. The site has an enclosed character due to the boundary planting and boundary stone walls to Leopardstown Road. The six existing houses have separate rear and front gardens with vehicular access onto Leopardstown Road.

KEY:

1. Clonmore District Park: Childrens Playground, Fitness Equipment, Kick about Area
2. Greenlink pedestrian and cycle route
3. Leopardstown Park Playing Pitches
4. Leopardstown Avenue Local Park
5. Silver Park GAA Grounds
6. Tudor Lawns Amenity Open Space
7. LUAS stop Sandyford
8. Leopardstown Road
9. Brewery Road
10. St Joesphs House



Google Aerial Image highlighting Application boundary (red) . For illustrative purposes only.

SITE ANALYSIS

2.2 SITE PHOTOS

Desktop and field analysis of the existing site



GARDEN 1 Woodleigh



GARDEN 2 Cloonagh



GARDEN 3 Souk El Raab



SITE ANALYSIS

2.2 SITE PHOTOS

Desktop and field analysis of the existing site



GARDEN 4 Wellbrook



GARDEN 5 Calador



GARDEN 6 Alhambra

SITE ANALYSIS

2.2 SITE PHOTOS

Desktop and field analysis of the existing site

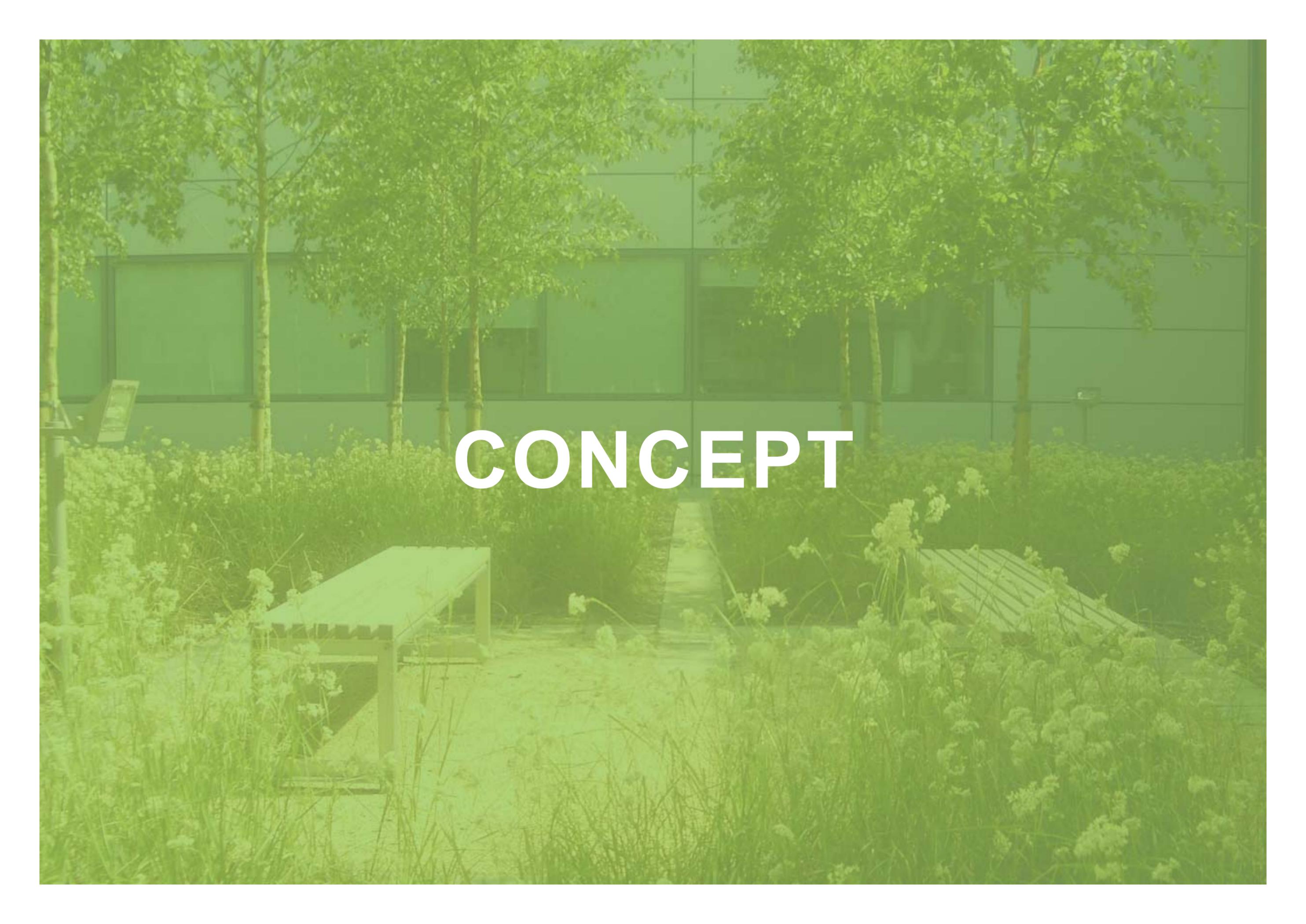


View to Dalwhinnie



The Crossing Garden





CONCEPT

CONCEPT

3.0 LANDSCAPE SKETCH PLAN DESIGN DEVELOPMENT

1:500 @ A3

LEGEND:

1 - ENTRANCE HOMEZONE

- » "Welcoming Mat" for the development
- » Feature tree planting
- » Drop off area and scheme signage

2 - CENTRAL SPINE WALK

- » 3m wide minimum central route through open space pocket parks, linking Leopardstown Road through to the adjacent Public Park and Green Route.

3 - CENTRAL LAWN PANELS

- » Gentle undulating mounds integrated into raised planting areas as areas for social interaction and sun bathing during good weather
- » Positioned against sunny side of courtyard

4 - PEDESTRIAN CONNECTIONS TO LEOPARDSTOWN RD

- » Level access with new low stone wall and signage
- » Paths to access through Coutyard Gardens planted with tree groves and woodland understorey planting with decorative shrub planting to provide privacy to ground floor apartments
- » Improved Cycle and Pedestrian environment along Leopardstown Road with widened paths provided

5 - FEATURE PAVING

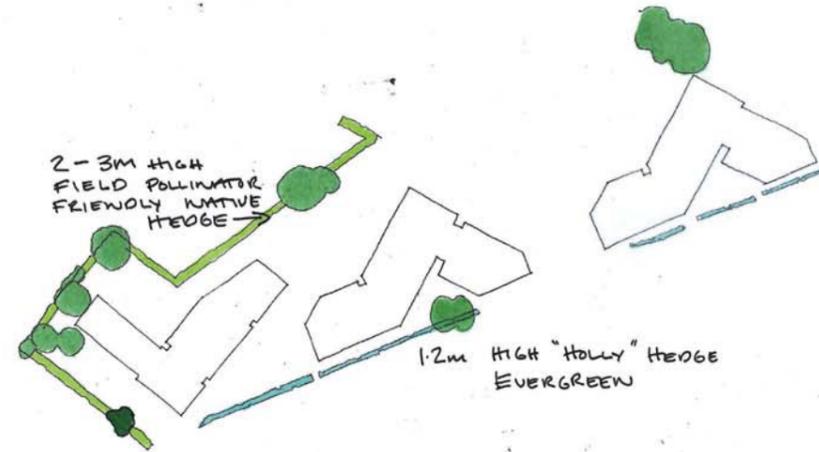
- » Unifying element for the scheme
- » Permeable
- » High quality flag paving to mark entrance areas
- » Simple materials deployed in a sophisticated manner

6 - SEATING CLUSTERS and PLAY AREAS

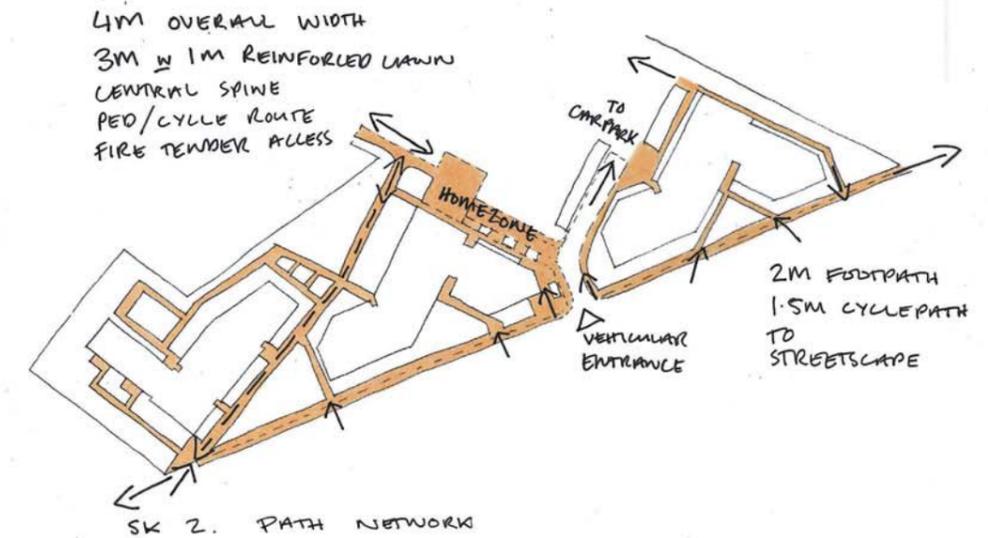
- » Bespoke Benches
- » Seating edges to Raised Planters
- » Communal Picnic Table seating
- » Incidental Play Opportunities/ All ages play/Playgrounds

7 - PLANTING STRUCTURE

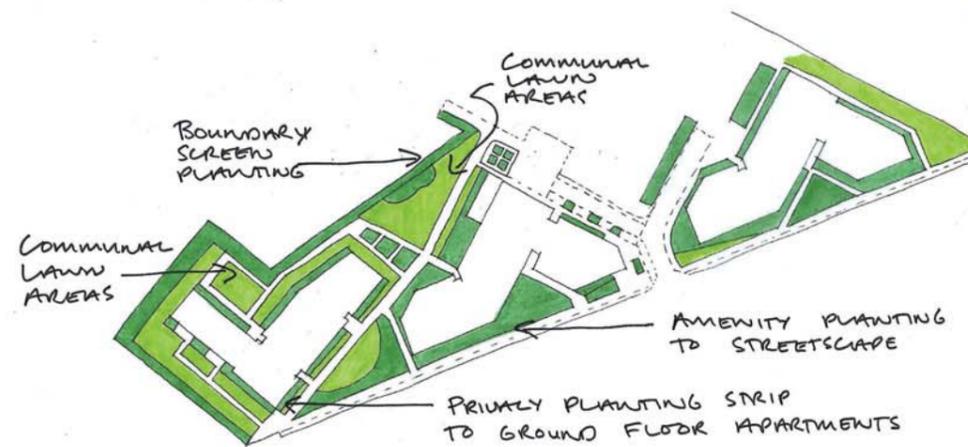
- » Retention of existing trees where possible
- » Low maintenance with year round Interest
- » Privacy Strip Planting to ground floor apartments
- » Boundary Screen Planting Reinforced, pollinator friendly hedge and tree lines
- » Specimen Feature Tree Planting
- » Semi-mature Streetscape Tree Planting 30-35cmg



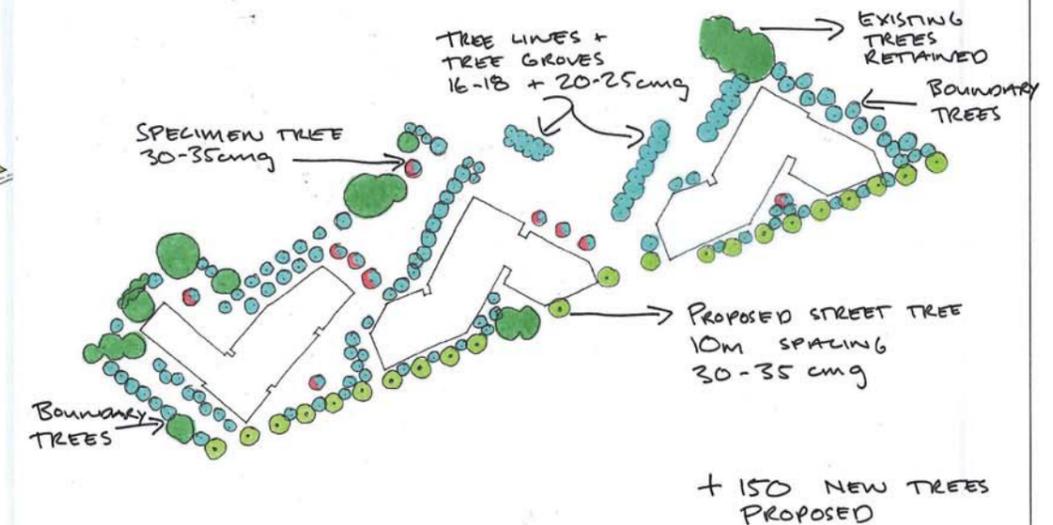
SK 1. BOUNDARY HEDGE PLANTING + TREES RETAINED



SK 2. PATH NETWORK



SK 3. UNDERSTOREY PLANTING STRUCTURE



SK 4. TREE PLANTING STRUCTURE

CONCEPT

3.0 PRECEDENT IMAGES

CENTRAL COURTYARD SPACES, ENTRANCE SHARED SURFACE, SOCIAL SEATING AREAS, PRIVACY STRIP PLANTING, PLAY AREAS 0-6 years



CONCEPT

3.0 PRECEDENT IMAGES CENTRAL PLAZA AMENITY SPACE

CIRCULATION ROUTES THROUGH RAISED PLANTERS WITH
INTEGRATED SEATING and SEASONAL DECORATIVE PLANTING

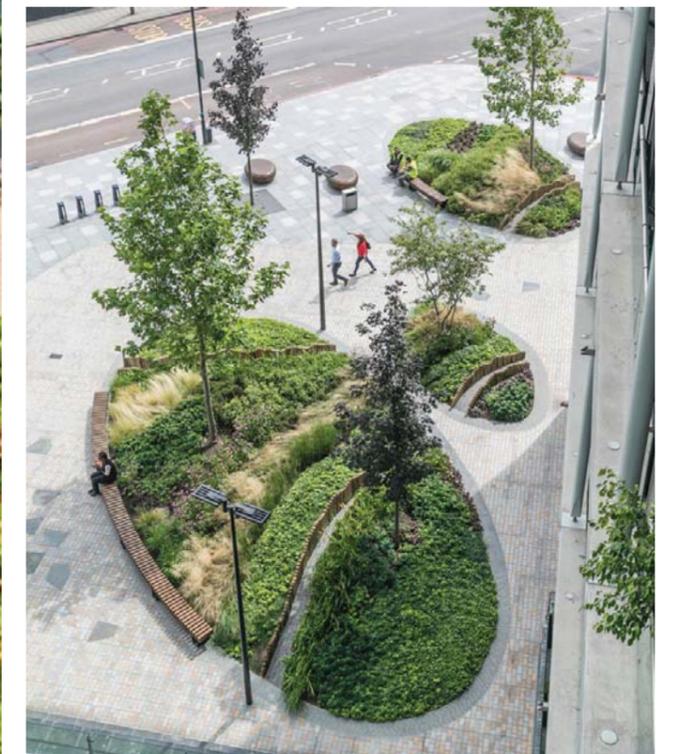
ROOF GARDEN TERRACE AMENITY SPACE



RAISED PLANTERS WITH INTEGRATED SEATING



ROOF GARDEN TERRACE AMENITY SPACE



CONCEPT

3.0 PRECEDENT IMAGES

WIDE PATHS LINK OPEN PARKLAND LAWN SPACES WITH PERIPHERAL GARDEN AREAS
VARIETY OF SEATING OPPORTUNITIES, SOCIAL SPACES, REFLECTIVE/CALM GARDEN SPACES
EXISTING RETAINED TREES CREATE A MATURE GARDEN SETTING WITH NEW PLANTING TO REINFORCE THE PLANTING STRUCTURE



CONCEPT

3.0 PRECEDENT IMAGES

PLAY STRATEGY: Incidental play items, natural play opportunities, play equipment pieces, all ages play, open lawn areas for running about and kicking a ball, outdoor exercise equipment pieces, adjacent seating for supervising play or having a snack break, educational biodiversity elements, bird boxes/insect hotels



PROPOSAL

PLANTING SPECIES LIST	BOTANIC NAME	COMMON NAME	SIZE	NUMBER
SPECIMEN TREES				
Fs	Fagus sylvatica	"Beech"	30-35cm db	1No.
Ga	Gingko biloba	"Maecidian"	30-35cm db	3No.
Pn	Pinus nigra	"Austrian Pine"	+3.5m height	13No.
Qau	Quercus palustris	"Red Oak"	30-35cm db	3No.
Qwa	Quercus petraea	"Oak"	30-35cm db	4No.
PARKLAND AND BOUNDARY TREES				
Ac	Acer campestre	"Field Maple"	16-18cm db	5No.
Al	Alnus spaealis	"Alder"	16-18cm db	7No.
Am	Amelanchier lamarckii	"Snowy Mesquite"	multi-trunk +3.5m	33No.
Bp	Betula pendula	"Birch"	16-18cm db	20No.
BuJ	Betula utilis 'Jaquemetii'	(Multistem) 'Himalayan Birch'	16-18cm db	4No.
BuH	Betula nigra 'Heritage'	(Multistem) 'River Birch'	16-18cm db	11No.
Cc	Corylus colurna	"Turkish Hazel"	16-18cm db	14No.
Cec	Cercis siliquastrum (Multistem)	"Woodland Pansy"	14-16cm db	2No.
Cec	Cercis siliquastrum (Multistem)	"Woodland Pansy"	20-25cm db	3No.
GIS	Gleditsia thornthwaitei 'Surburtt'	"Honey Locust"	16-18cm db	8No.
Hk	Hamelia intermedia 'Palisade'	"Witch Hazel"	14-16cm db	14No.
Ls	Liquidambar styraciflua	"Liquidamber"	16-18cm db	1No.
Pn	Pinus nigra	"Austrian Pine"	+2.5m height	7No.
Pn	Pinus sylvestris	"Scots Pine"	+2.5m height	8No.
SCR	Sorbus 'Cardinal Royal'	"Rowan"	16-18cm db	18No.
STREET TREE				
PoC	Palms orientalis 'Cuneata'	"Oriental Palm"	30-35cm db	18No.
Cc	Corylus colurna	"Turkish Hazel"	16-18cm db	4No.
SdR	Sorbus 'Cardinal Royal'	"Rowan"	16-18cm db	8No.
NEW TREES 200No.				
HEDGES				
As per "All Ireland Pollinator Plan 2021-2025 Council Guide"				
75% Hawthorn and 25% 4 other species				
double staggered row, 6 plants per firm, well feathered whip, bare root				
Corylus avellana	"Hazel"	900-1200mm	10%	
Alnus glutinosa	"Alder"	900-1200mm	2.5%	
Crataegus monogyna	"Hawthorn"	900-1200mm	75%	
Prunus spinosa	"Blackthorn"	900-1200mm	2.5%	
Rosa canina	"Dogrose"	900-1200mm	2.5%	
Ilex aquifolium 'Atlantica'	"holly"	1.2m high		
Lonicera periclymenum	"honeysuckle"	3L		
Ecology Report recommends "include species such as hawthorn, guelder rose, honeysuckle, oak, alder etc. Native shrubs and trees must be used within the new developments. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan"				
SHRUBS AND GROUNDCOVERS 75% Pollinator Friendly, inclusive of shade tolerant species				
Acaenhus mollis				
Actinidia 'Moonshine'	"Japanese Anemone"	1.5L	4 per sqm	
Anemone 'Honorine Jobart'	"Ladys Mantle"	2L	4 per sqm	
Alchemilla mollis	"Ladys Mantle"	3L	4 per sqm	
Calamagrostis x acutiflora	"Mexican Orange Blossom"	2L	3 per sqm	
Choiya ternata Sundance	"Sun Rose"	3L	4 per sqm	
Cistus corbariensis	"Creeping Dogwood"	2L	5 per sqm	
Cornus canadensis	"Crocosmia"	2L	4 per sqm	
Crocosmia 'Lucifer'	"Mole Fern"	2L	4 per sqm	
Dryopteris felix mas	"Echinacea"	2L	4 per sqm	
Echinacea 'Hot Summer'	"Mexican Fleabeen"	2L	4 per sqm	
Erigeron karvinianus	"Butterfly"	2L	4 per sqm	
Gaura lincolniensis	"Geranium"	3L	4 per sqm	
Geranium 'Johnston's Blue'	"Hebe"	2L	4 per sqm	
Hebe rakienis	"Holly"	3L	1 per sqm	
Hydrangea quercifolia 'Snow Queen'	"Lavender"	2L	4 per sqm	
Ilex aquifolium	"Liberia"	3L	3 per sqm	
Lavandula stoechas	"Luzula muscari"	2L	6 per sqm	
Libertia grandiflora	"Luzula sylvatica"	2L	5 per sqm	
Lilippe muscari	"Luzula sylvatica"	2L	5 per sqm	
Luzula sylvatica	"Rosemary"	3L	3 per sqm	
Luzula sylvatica	"Dog Rose"	60-90mm	1 per sqm	
Rosa canina	"Elder"	60-90mm	1 per sqm	
Sambucus nigra	"Christmas Box"	3L	4 per sqm	
Sarcococcos humilis	"Ice Plant"	2L	6 per sqm	
Sedum spectabile 'Stardust'	"Feather Grass"	2L	4 per sqm	
Stipa tenuissima lamifolia	"Verbena"	2L	4 per sqm	
Verbena bonariensis				
WOODLAND UNDERSTOREY				
Andropogon sylvaticus	"Cow Parsley"	p9	4 per sqm	
Dryopteris Felix Mas	"Mole Fern"	2L	4 per sqm	
Fragaria vesca	"Woodland Strawberry"	9cm pot	6 per sqm	
Hedera helix 'Hibernica'	"ivy"	1.5L	6 per sqm	
Lonicera periclymenum	"honeysuckle"	1.5L	6 per sqm	
Luzula sylvatica	"Snowy Woodrush"	3L	6 per sqm	
Viburnum opulus	"Guelder Rose"	60-90mm	1 per sqm	
SPRING BULBS				
Anemone nemorosa	topsize	20 per sqm		
Narcissus 'February Silver'	"Daffodi"	topsize	20 per sqm	
Narcissus 'February Gold'	"Daffodi"	topsize	20 per sqm	
Note: Extensive Green Roof - Sedum blanket				



KEY

- Road Building refer to Engineers Documentation
- PCC Modular Permeable Paving 80mm deep Shared Surface refer to Engineers Documentation
- High Quality Stone Aggregate PCC Terrace Paving Flag 50mm deep
- Insitu Concrete Footpath refer to Engineers Documentation
- Gravel Edge to Building
- Buff Coloured Tactile Paving Pedestrian Crossing refer to Engineers Documentation
- Compacted Ballylusk Gravel with geogrid/geocell reinforcement with timber edge
- Creche Play/ Podium Play Area Wetpour Safety Surfacing
- GREEN ROOF INTENSIVE PLANTING 300-600mm deep lightweight topsoil on drainage fleece on podium roof buildup to architects detail
- Play Area Rubber Mat/Grass Safety Surfacing
- Decorative Shrub Planting 75% pollinator friendly mix 450mm topsoil depth
- Woodland Understorey 450mm deep topsoil to BS 3882:2015 on free draining subgrade
- Grass seeding 300mm topsoil to BS 3882:2015 on free draining subgrade
- Proposed Native Hedge Pollinator friendly 600mm deep topsoil to BS 3882:2015 on free draining subgrade
- New Trees 5m dia 20-25cm 3m dia 16-18cm
- Multistem Tree +3.5m
- Existing Tree/Hedgerow retained and protected refer to Arborist documentation
- Pergola
- Seating and Picnic Table
- Seat with back and armrests
- BBQ Facilities
- Lounge Social Seating
- Visitor Sheffield S/S Bicycle Parking
- External Lighting Column refer to detail M+E documentation
- Ventilation Grille
- REMOVABLE BOLLARD with reflective bands and socket box
- ECOLOGY MITIGATION Five 2F and four 1FF Schwegler bat boxes with built-in timber panel bat boxes must be put in place. These should be placed on trees or posts, at least 3m high, with a clear drop below in Dark Sky Area as per Ecology Report

MITCHELL + ASSOCIATES
Landscape Architecture Urban Design

CLIENT: HOMELAND SILVER PINES LIMITED
PROJECT: Strategic Housing Development at St Joseph's House and Adjoining Properties
JOB NO.: LBER001

DRAWING: LANDSCAPE MASTERPLAN
DATE: 2020.09.09
SCALE: 1:500@A1
DRAWING NO.: 100

DRAWN BY: CELIA HARRIS
STATUS: PLANNING SUBMISSION

NOTES: Do Not Scale. Use Figure Dimensions Only. Not for Construction Purpose unless Specifically Marked. THIS DRAWING IS COPYRIGHT OF MITCHELL + ASSOCIATES

PROPOSAL

4.1 OVERVIEW

The overall aim of the landscape design is to create a high quality attractive environment with amenity facilities for the surrounding proposed residences and users of the park spaces /green links, taking into account the landscape objectives within the DLRCoCo Development Plan and National Guidelines to ensure a strong sense of place for the proposed development appropriate within the surrounding landscape context.

The primary landscape design objectives are as follows:

- » To create a high quality attractive environment with amenity facilities for the proposed residences that is robust, accessible, useable, connected and supervised. The open spaces are multifunctional, catering for amenity uses both active and passive but also fulfilling objectives of movement and access, conservation and biodiversity, microclimate/shelter and SUDS requirements.
- »
- » The external semi-private open space arrangement has been designed to allow for flexibility in recreation activity. They allow for social interaction, for active play but also for spaces that are quiet and calming. All spaces are accessible and inclusive for all ages and abilities and are interconnected via the pedestrian/cycle routes and shared surface spaces. The variety of spaces include the protected structure forecourt and setting, the central courtyard lawn, the central spine parkland lawn, the entrance plaza, peripheral garden spaces, the tree lined walk, the formal community garden space, the shared surface zones, the all ages play elements and the playgrounds for 0-6year olds, located centrally for passive surveillance.
- »
- » Useable private open space is provided by gardens and private terraces.
- »
- » To retain existing tree lines and hedgerows where possible and managed in accordance with the recommendations of the Arboricultural Tree Report so that the scheme has an appropriate degree of maturity from the outset. The maturity of the existing tree planting structure is an asset to the site and has been incorporated into the open space network. We have worked closely with the design team to ensure that existing trees are retained where possible, that the landscape setting of the protected structure is respected and a high quality attractive environment with space for additional planting structure has been included.
- »
- » The existing trees provide a defined boundary between the setting of St Joseph's House and the proposed development filtering views and creating a sheltered shared garden space.

- » The maturity of the boundary trees is an amenity that can be enjoyed by residences and contains a strategically located tree walk trail and natural play elements.
- »
- » In addition the new planting tree structure of semi-mature trees will reinforce the existing trees, creating an immediate strong planted structure for the new development and providing a further layer of maturing trees for the future. The planting pallet has been selected for the creation of a high visual amenity environment. A varied selection of native and non-native species are used to achieve the objectives of biodiversity, visual amenity, and maintenance requirements. Variety in planted species minimises risk to the planted structure due to plant pests, diseases and climate change and creates a resilient landscape structure. Planting will also have seasonal interest and create a sheltered microclimate. The planting pallet will be selected with regard to the Councils Actions to Help Pollinators: All Ireland Pollinator Plan 2015-2020. Recommendations in the Ecology Report have been included in the landscape structure proposals.
- »
- » To Integrate with the existing and future surrounding context with new physical and visual connections through the public open space. There are open views to St Joseph's House from the adjacent open space and circulation route. The shared surface forecourt and parkland of lawn and trees creates a visually uncluttered setting.
- »
- » Connections: The network of open space is designed to connect with the existing surrounding movement/open space networks to access a number of adjacent neighbourhood amenities and facilities.
- »
- » The site benefits from proximity to the playing fields, playground, fitness equipment and amenities of Clonmore Park to the north west of the site, the playing fields of Leopardstown Park which are adjacent to the north of the site.
- »
- » Interlinked pedestrian and cycle facilities to the green link to the north maximise safe connectivity and permeability within the area and to public transport facilities. Provision of a shared surface route (3.0m wide minimum adjacent to existing trees and the protected structure widens to 4.0m minimum through the central parkland open space and plaza space accessed off Leopardstown Road.
- »
- » To undertake a fully coordinated approach to site services, in particular to SUDS
- »

- » To create a network of external spaces that allows for flexibility in recreation activity, for social interaction and active play as well as spaces that are quiet and calming, spaces which allow a connection to different habitats and enable a tree and hedgerow planting structure to be established across the site. Moreover, the new tree structure is designed to grow and mature within the context of the proposed development ensuring the creation of a sylvan character for the site into the future.
- »
- » To develop a suite of boundary treatments that respond to the varying site conditions, the proposed surrounding context and the local vernacular. The boundaries have been kept as visually permeable to allow for connections to adjacent open space and to protect existing tree roots. Vernacular local stone materials have been selected for the public frontage to Leopardstown Road. Secure rendered walls/ Timber panel fences 2m high adjacent to existing residences with boundary tree planting of an initial planted height of 5m. Existing boundary have been retained where possible to reduce disturbance to existing trees on the boundary
- »
- » To create a 'free play' strategy for the site that takes cognisance of local and regional play facilities under the guidance of Dun Laoghaire County Council. To provide opportunities for children of all ages and backgrounds to structured and unstructured play facilities in an accessible and safe manner.
- »
- » To create a streetscape structure which follows best practice guidelines in Design Manual for Urban Roads and Streets. The building line to Leopardstown Road Streetscape has been setback to accommodate widened footpaths, dedicated cycle tracks, a green planted buffer with space for large scale tree planting to mature.
- »
- » Roads and parking are designed to be integrated into the public realm. Surface parking has been kept to a minimum thereby reducing its visual impact. Where it has been provided the surface of the parking bays will be paved.
- »
- » To follow the guidelines in Design Standards for New Apartments including provision of privacy strip planting to groundfloor apartments and play facilities.
- »
- » To develop a palette of hard and soft landscape materials that will be deployed in a hierachical manner. The materials will have a bespoke quality (in certain instances), be durable, and respond to budget allocation.

PROPOSAL

4.2 KEY EXTERNAL AREAS

For the purposes of this report, the landscape strategy for the development can be broken down into the following key external areas:

1. THE PROTECTED STRUCTURE FORECOURT

page 23 refer to materials page

a visually uncluttered space with a compacted gravel forecourt shared surface for open views to the protected structure framed by the retained Austrian Pines.

2. CENTRAL COURTYARDS

a variety of seating areas with visual amenity planting, provision for play and visitor cycle stands, page 23 refer to materials page

3. CENTRAL SHARED SURFACE

page 23 refer to materials page

4. CENTRAL OPEN SPACE

The main Public Open Space within the development. Inclusive of a route from Leopardstown Road between Block D and F through to the forecourt at St Joesephs House and linking back to the Greenway and Public Park beyond to the north page 23 refer to materials page

5. COMMUNAL ROOF TERRACES

for extensive and intensive green roof extents please refer to Architects Roof Plan drawing.

6. PLANTING STRUCTURE refer to planting page 24

7. LEOPARDSTOWN ROAD STREETSCAPE

The building line to Leopardstown Road Streetscape has been set-back to accomodate 2.5m widened footpath, 2.0m dedicated cycle tracks, a green planted buffer with space for large scale "Avenue" tree planting to mature 30-35cmg and 16-18cmg with visual amenity privacy strip planting to ground floor units.

8. PLAY STRATEGY

page 20 refer to play strategy text and images

natural play provision within the Austrian Pines of fallen logs and stepping logs, playgrounds for 0-6 years, all ages play and fitness equipment, flexible lawn spaces and connections to adjacent playing fields.

9. COMMUNITY GARDEN AREA

raised planters with integrated seating edges and adjacent seats with back and arm rests, planting within raised planters is focused on colour and sensory qualities. A quiet and calming space.



PROPOSAL

PERMEABILITY PLAN

-  VEHICULAR ROUTE
-  SHARED SURFACE CYCLE / PEDESTRIAN ROUTE
-  CYCLE ROUTE
-  PEDESTRIAN PATH
-  GREENLINK CYCLE/PEDESTRIAN PATH
-  MAIN CONNECTION POINTS TO SCHEME
-  CORE ENTRANCE
-  COURTYARD CORE ENTRANCE
-  BASEMENT ENTRANCE



4.3 PLAY STRATEGY

Provision for play for children is being made in the proposed development. It is informed by the National Children’s Play Policy ‘Ready Steady Play’ and seeks to utilise existing features of the site to create a natural, “free” playground across the site. Incidental play sculptures shall be located throughout the site.

There are a number of trees existing on site that will be removed as part of this development. It is proposed to utilise the felled trees by transforming (where possible) the tree trunks and larger limbs into a suite of natural play equipment that will cater for children of all age groups.

The tree trunks and stepping logs are arranged within the stand of existing pines trees to the north of St Joesephs house as an obstacle course with smaller timber animal sculptures catering for toddler play. It is proposed to allow the grass surface to continue around the play elements to integrate play into the wider public open space.

There are flexible lawn spaces proposed within the communal amenity areas which can be utilised for a variety of play opportunities. These are inclusive spaces enabling informal play for all age groups with adjacent seating and picnic areas.

Within the ‘Design Standards for New Apartments - Guidelines for Planning Authorities (Updated 2018) it is a requirement for Apartments development of 25 or more units to provide a 85-100sqm playground for 0-6 year olds and in developments over 100 units to provide a 200-400 sqm playground for older children. According to research in Amsterdam, an optimum distance for a child up to five years old to be taken to play in a residential area is 150m. For an older child this is 300m. The dedicated 0-6 years old play zones are within 150m of the entire proposed development and the older child playspace is within 300m.

The playground areas are located centrally within the apartment development in an area that is overlooked and passively supervised by the adjacent apartments and footpath.

The chosen play equipment enables individual play, group play, and social interaction, imaginative play, climbing, spinning and sliding movement. There is adjacent sculptural seating for supervising adults as well picnic tables for social interaction.

Existing tree lines that are retained shall integrate natural play elements.

There is a dedicated external play space attached to the creche.



SWING A DOUBLE 2XST-SS
PRODUCT NUMBER: KSW90011-0906
with 1 cradle swing seat H:2.0 SW990025
and 1 number Swing Seat Standard H:2.0
SS Chains SW990010-00
ST-SUSP H:2.0



SUPERNOVA - NIGHT SKY BLUE SURFACE (EN1176)
PRODUCT NUMBER: GXY916000-5017

BUTTERFLY SEESAW
PRODUCT NUMBER NRO108

SPRINGER
AGE 3-8

MINI CAR EXPB
PRODUCT NUMBER: M53170-5013P

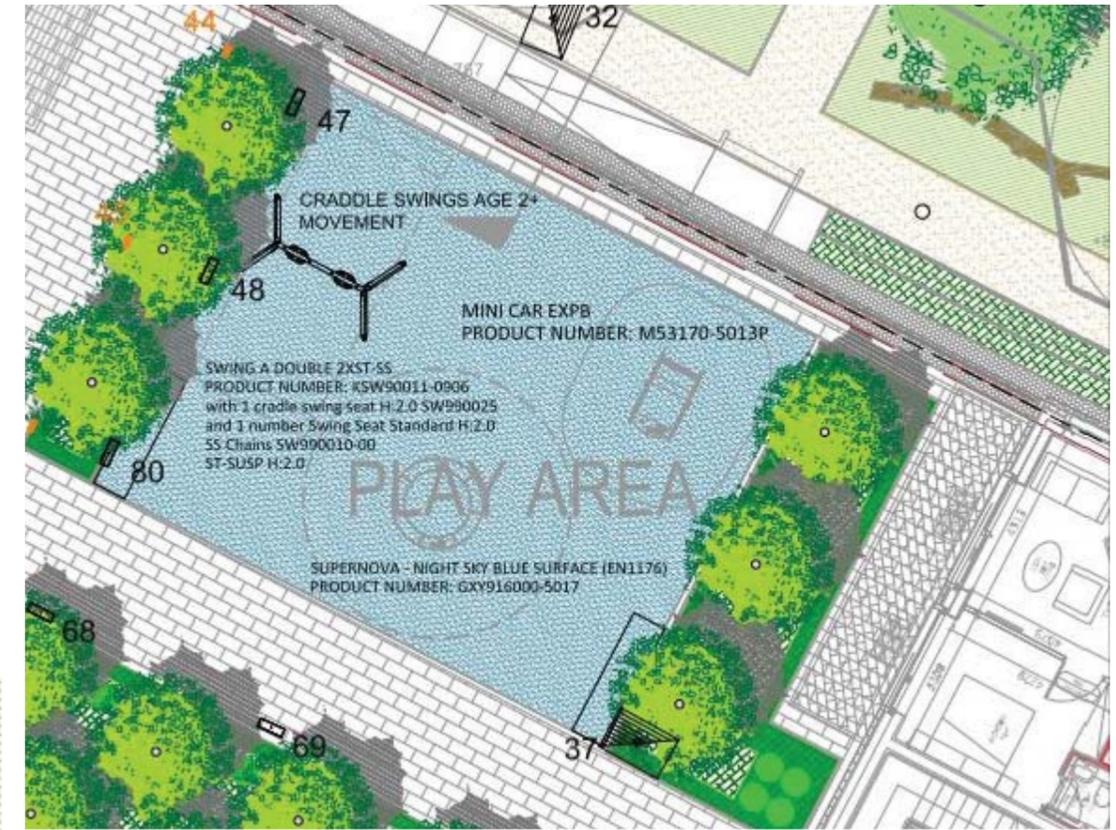
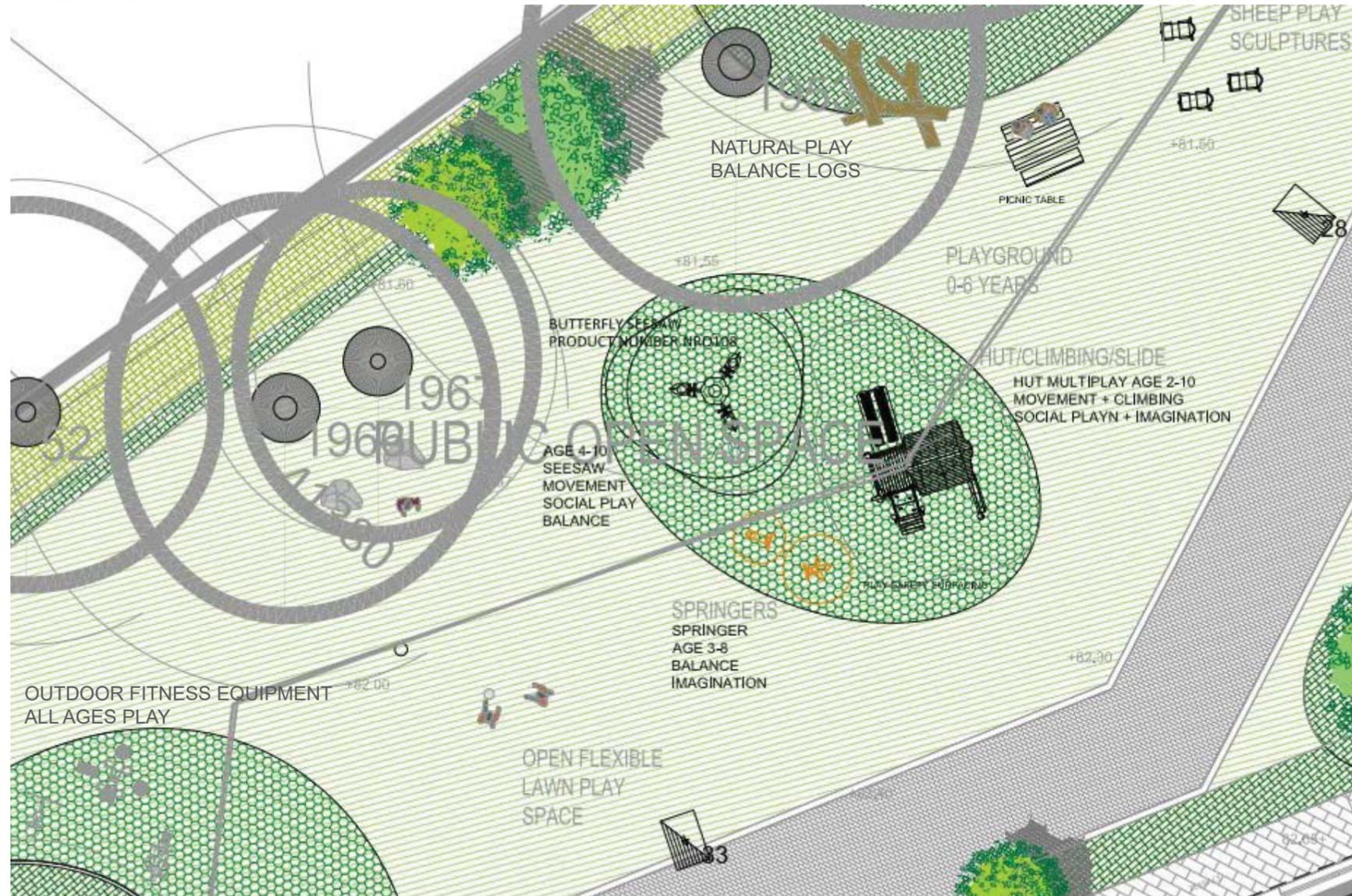


LEOPARDSTOWN PARK DIRECTLY ADJACENT ACTIVE PLAY SPACE TO BERWICK PINES
pedestrian and cycle connections to site enabled

image source GOOGLE

CENTRAL SPINE PUBLIC OPEN SPACE

0-6 YEARS PLAYGROUND +100SQM - OUTDOOR FITNESS EQUIPMENT ALL AGES PLAY - PLAY SCULPTURES - NATURAL PLAY - OPEN LAWN



CENTRAL COURTYARD COMMUNAL AREA
0-6 YEARS PLAYGROUND +100SQM

EXISTING PINE TREE STAND
PROPOSED NATURAL PLAY AREA with balance and stepping logs trail



DEVELOPMENT DESCRIPTION EXTRACT

The extent of works proposed to Saint Joseph's House (a Protected Structure) include: The Relocation of external granite steps and the provision of a new raised entrance terrace, concrete steps and ramp areas;

Each new build residential unit (in Blocks A, B, C, D and F) has an associated area of private open space in the form of a terrace/balcony. Open Space proposals for Saint Joseph's House (Block E) include a mixture of private terrace/balcony areas and communal open space areas.

Open Space (approx. 9,885 sq m) is proposed in the form of (a) public open space areas (approx. 6,680 sq m) which include a public plaza/court area, a main area of public open space (including a play area and outdoor gym area) and woodland trail; and (b) all communal open space areas (approx. 3,205 sq m) which include areas adjacent to Saint Joseph's House (Block E), Block D and Block F, a courtyard and play area located between Blocks A and B and roof terraces at fifth floor level of Blocks C and D. Visual amenity open space areas (approx. 1,000 sq m) are also proposed at various locations throughout the development.

Basement Level (approx. 9,445 sq m) is proposed with residential access from Blocks A, B, C, D and F. Bin storage areas, water storage areas, and part attenuation are located at this level. 2 no. ESB Substations, 1 no. ESB Kiosk, 2 no. Switch Rooms, waste storage areas for Block E (Saint Joseph's House) and bicycle storage areas are proposed at surface level.

A total of 259 no. car parking spaces (232 no. at basement level and 27 no. at surface level) are proposed. At basement level, a total of 30 no. electric vehicles and 202 no. standard parking spaces are provided for. A total of 968 no. bicycle spaces (816 no. at basement level and 152 no. at surface level), dedicated cycle lift and 10 no. motorcycle spaces (all at basement level) are also proposed.

Proposals for vehicular access comprise 1 no. existing vehicular access point via Silver Pines (an existing all movement junction onto Brewery Road) and 1 no. new vehicular access point at the general location of 'Annaghkeen' at Leopardstown Road (a new Left In / Left Out junction arrangement). The new access point along Leopardstown Road will replace 9 no. existing access points at 'Woodleigh', 'Cloonagh', 'Souk El Raab', 'Wellbrook', 'Calador', 'Alhambra', 'Dalwhinnie', 'Annaghkeen' and 'The Crossing'. The internal permeability proposed will provide linkages for pedestrians and cyclists to Leopardstown Road and adjoining Greenway. Proposals also provide for the relocation of an existing bus stop along Leopardstown Road.

The associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; waste water pumping station; attenuation proposals; permeable paving; all landscaping works including tree protection, tree removal and new tree planting; green roofs; boundary treatment; internal roads and footpaths; and electrical services.



A green-tinted photograph of a campus scene. In the background, a multi-story building with a sign on top is visible through trees. In the foreground, there is a grassy area and a pond. The word "MATERIALS" is overlaid in white text.

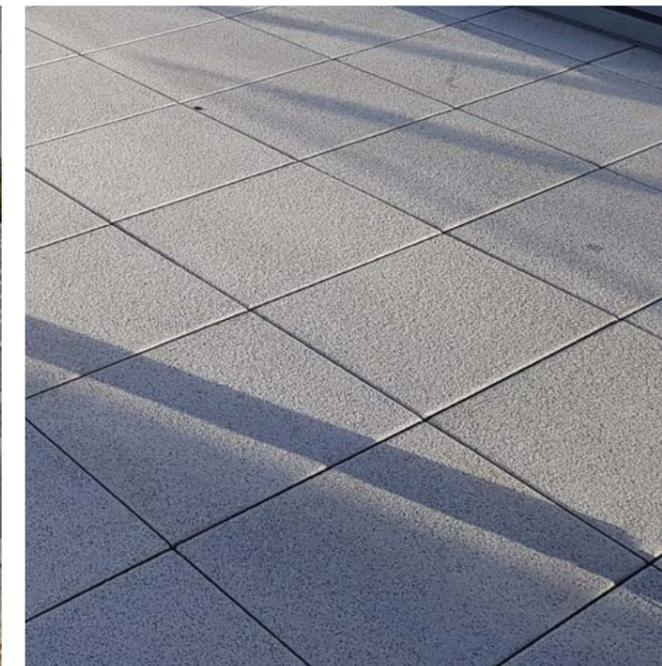
MATERIALS

MATERIALS

8.1 HARDWORKS MATERIALS & STREET FURNITURE

Hardworks materials and site furniture have been carefully selected to both be in sympathy with the architectural building proposals, whilst also sensitively integrating the building within its receiving environment. Materials have been selected with the aims of sustainability, durability and life cycle costing paramount.

5.1 SURFACES AND STREET FURNITURE



COMPACTED BALLYLUSK GRAVEL TREATED SOFTWOOD TIMBER EDGE REINFORCED BALLYLUSK GRAVEL FORECOURT PCC MODULAR PAVING PERMEABLE 80mm deep PCC GRANITE AGGREGATE FLAG 600x300x80mm



BENCH SEATING WITH ANTI-SKATE FINS

SEAT WITH BACK AND ARM RESTS

PICNIC TABLE SET

BESPOKE PERGOLA

ST JOSEPHS FORECOURT AND TREE TRAIL

- » Ballylusk gravel reinforced with cellular plastic honeycomb paving,
- » no dig construction method within Root Protection Area
- » PCC permeable paving to perimeter path network with granite aggregate finish
- » Natural stone flags to private terraces and entrance steps

CENTRAL COURTYARD

- » PCC flags with granite aggregate finish
- » Bespoke Pergola with hardwood frame and interconnecting stainless steel tensile wires
- » Bench seating, Picnic Table Seating
- » Raised Aluminium planters

SHARED SURFACE and CENTRAL SPINE

- » PCC permeable paving to perimeter path network with granite aggregate finish
- » Stainless steel street furniture elements, bollards and sheffield visitor cycle stands
- » Raised Aluminium planters

COMMUNAL GARDEN

- » Ballylusk Gravel surface finish compacted
- » Raised Timber Sleeper Planters
- » Timber Seat with Back and Armrests



REMOVEABLE BOLLARD S/S WITH CONTRASTING COLOUR BAND

S/S SHEFFIELD CYCLE STAND

RAISED POWDER COATED ALUMINIUM PLANTER EDGE WITH INTEGRATED SEATING EDGE

MATERIALS

5.2 PLANTING

PLANTING STRATEGY

The palette of plants has been chosen to integrate the scheme with the surrounding area and to provide shelter and amenity value within the site. Dominant tree species reflect the planting palette of the local area and suitable local species have been utilised as well as feature species for seasonal interest. The palette of plant species used is based on a range of hardy species which will reduce maintenance over-time and contribute to the early and rapid development of the planted installation.

The new tree planting is part of the planting structure proposals to reinforce and renew the existing planting structure across the site. Robust planting proposals will secure the planted structure on the site, creating an immediate strong planted structure for the new development and providing a further layer of maturing trees for the future.

The planting pallet has been selected with regard to the 'Councils Actions to Help Pollinators: All Ireland Pollinator Plan 2015-2020'. The planting strategy contains areas of pollinator friendly mowing regime, hedgerow planting with the recommended 75% hawthorn plus 25% of four other native species,.

75% pollinator friendly species within the shrubs and groundcover mix and inclusion of pollinator friendly street trees. The selected planting mix includes shade friendly species as well as being robust and low maintenance.

The majority of the species used will be native and of local origin. Additional planting is recommended to strengthen areas within the site for wildlife and biodiversity and to reinstate green infrastructure across the site where feasible. In keeping with the recommendations of the All Ireland Pollinator plan it is proposed to plant boundary hedgerows with native Irish hedgerow species with 75% "Hawthorn" and 25% of four other native species, we are proposing 10% "Hazel", 10% "Field Maple", 2.5% "Blackthorn" and 2.5% "Dogrose".

The Ecology Report recommends "include species such as hawthorn, guelder rose, honeysuckle, oak, elder etc...Native shrubs and trees must be used within the new development. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan"

Street trees adjacent to hard paved footpaths and car parking spaces shall be planted into a constructed tree pit with structural root soil please refer to the Planting Detail Drawing. Street tree locations have been coordinated with proposed lighting column locations.

Privacy planting strips 1.5m wide are provided at ground floor apartments as per best practice guidelines in Design Standards for New Apartments.

PLANTING SPECIES LIST

BOTANIC NAME	COMMON NAME	SIZE	NUMBER
SPECIMEN TREES			
Fs	Fagus sylvatica	"Beech"	30-35cmg rb 1No.
Gb	Gingko biloba	"Maidenhair"	30-35cmg rb 5No.
Pn	Pinus nigra	"Austrian Pine"	+3.5m height 13No.
Qpu	Quercus palustris	"Red Oak"	30-35cmg rb 3No.
Qpet	Quercus petraea	"Oak"	30-35 cmg rb 4No.

PARKLAND AND BOUNDARY TREES

Ac	Acer campestre	"Field Maple"	16-18cmg rb 5No.
As	Alnus spaetheii	"Alder"	16-18cmg rb 7No.
Aml	Amelanchier lamarckii	"Snowy Mespilis"	multistem +3.5m 33No.
Bp	Betula pendula	"Birch"	16-18cmg rb 20No.
BuJ	Betula utilis 'Jaquemontii'	(Multistem)"Himalayan Birch"	16-18cmg rb 4No.
BnH	Betula nigra 'Heritage'	(Multistem)"River Birch"	16-18cmg rb 11No.
Cc	Corylus columna	"Turkish Hazel"	16-18cmg rb 14No.
Cec	Cercis siliquastrum(Multistem)	"Woodland Pansy"	14-16cmg rb 2No.
Cec	Cercis siliquastrum(Multistem)	"Woodland Pansy"	20-25cmg rb 3No.
GtS	Gleditsia tricanthos 'Sunburst'	"Honey Locust"	16-18cmg rb 8No.
Hix	Hamamelis intermedia 'Pallida'	"Witch Hazel"	14-16cmg rb 3No.
Ls	Liquidamber styraciflua	"Liquidamber"	16-18cmg rb 1No.
Pn	Pinus nigra	"Austrian Pine"	+2.5m height 7No.
Ps	Pinus sylvestris	"Scots Pine"	+2.5m height 8No.
SCR	Sorbus 'Cardinal Royal'	"Rowan"	16-18cmg rb 18No.

STREET TREE

PoC	Platanus orientalis 'Cuneata'	"Oriental Plane"	30-35cmg rb 18No.
Cc	Corylus columna	"Turkish Hazel"	16-18cmg rb 4No.
ScR	Sorbus 'Cardinal Royal'	"Rowan"	16-18cmg rb 8No.
		New Trees	200No.

HEDGES

(as per "All Ireland Pollinator Plan 2015-2020 Council Guide"

75% Hawthorn and 25% 4 other species)

double staggered row, 6 plants per linm, well feathered whips, bare root

Corylus avellana	"Hazel"	900-1200mm	10%
Alnus glutinosa	"Alder"	900-1200mm	2.5%
Crataegus monogyna	"Hawthorn"	900-1200mm	75%
Prunus spinosa	"Blackthorn"	900-1200mm	2.5%
Rosa canina	"Dogrose"	900-1200mm	2.5%
Ilex aquifolium 'Atlantica'	"Holly"	1.2m high	
Lonicera periclymenum	"Honeysuckle"	3Lt	

SHRUBS AND GROUNDCOVERS 75% Pollinator Friendly, inclusive of shade tolerant species

Acanthus mollis			
Achillea 'Moonshine'			
Anemone 'Honorine Jobert'	"Japanese Anemone"	1.5LT	4per sqm
Alchemilla mollis	"Ladys Mantle"	2Lt	4 per sqm
Calamagrostis x acutiflora		3Lt	4 per sqm
Choisya ternata Sundance	"Mexican Orange Blossom"	2Lt	3 per sqm
Cistus corbariensis	"Sun Rose"	3Lt	4 per sqm
Cornus canadensis	"Creeping Dogwood"	2Lt	5 per sqm
Crocsmia 'Lucifer'	"Crocsmia"	2Lt	4 per sqm
Dryopteris felis mas	"Male Fern"	2Lt	4 per sqm
Echinacea 'Hot Summer'	"Echinacea"	2Lt	4 per sqm
Erigeron karvinskianus	"Mexican Fleabean"	2Lt	4 per sqm
Gaura linheimeri	"Butterfly"	2Lt	4 per sqm
Geranium 'Johnstons Blue'	"Geranium"	3Lt	4 per sqm
Hebe rakiensis	"Hebe"	2Lt	4 per sqm
Hydrangea quercifolia 'Snow Queen'		5Lt	1 per sqm
Ilex aquifolium	"Holly"	3Lt+ cg	1 per sqm
Lavandula stoechas	"Lavander"	2Lt	4 per sqm
Libertia grandiflora	"Libertia"	3Lt	3 per sqm
Liriope muscari		2Lt	6 per sqm
Luzula sylvatica	"Snowy Woodrush"	2Lt	5 per sqm
Luzula nivea	"Snowy Woodrush"	2Lt	5 per sqm
Rosmarinus officianalis	"Rosemary"	3Lt	3 per sqm
Rosa canina	"Dog Rose"	60-90mm1	per sqm
Sambucus nigra	"Elder"	60-900mm	1 per sqm
Sarcococca humilis	"Christmas Box"	3Lt	4 per sqm
Sedum spectabile 'Stardust'	"Ice Plant"	2Lt cg	6 per sqm
Stipa tenuissima tenuifolia	"Feather Grass"	2Lt	4 per sqm
Verbena bonariensis	Verbena	2Lt	4 per sqm

WOODLAND UNDERSTOREY

Anthriscus sylvestris	"Cow Parsley"	p9	4 per sqm
Dryopterix Felix Mas	"Male Fern"	2Lt	4 per sqm
Fragaria vesca	"Woodland Strawberry"	9cm pot	6 per sqm
Hedera helix 'Hibernica'	"Ivy"	1.5Lt cg	6 per sqm
Lonicera periclymenum	"Honeysuckle"	1.5Lt cg	1 per sqm
Luzula sylvatica	"Snowy Woodrush"	3Lt	5 per sqm
Viburnum opulus	"Guelder Rose"	60-90mm1	per sqm

SPRING BULBS

Anemone nemerosa		topsize	20 per sqm
Narcissus 'February Silver'	"Daffodil"	topsize	20 per sqm
Narcissus 'February Gold'	"Daffodil"	topsize	20 per sqm

Note: Extensive Green Roof - Sedum blanket

MATERIALS PLANTING PROPOSED TREES

SPECIMEN TREES
Fagus sylvatica



Ginkgo biloba



Pinus nigra



Quercus palustris



Quercus petraea



STREET TREES LEOPARDSTOWN ROAD
Platanus orientalis 'Cuneata'



Corylus colurna

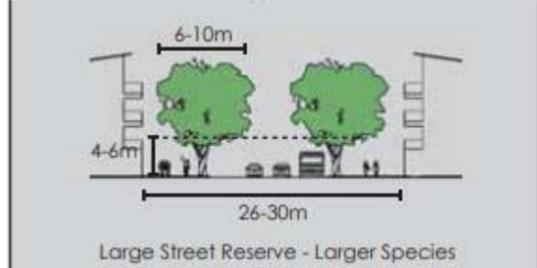


Sorbus 'Cardinal Royal'



DMURS 4.2.2 STREET TREES
"The planting of trees should be considered as an integral part of street design. In general, the size of the species selected should be proportionate to the width of the street reserve. For example (see Figure 4.10):

- Larger species, with a canopy spread greater than 6m will be best suited to wider streets, such as Arterial and Link streets."



The planting design for Leopardstown Road streetscape aims to retain existing mature trees where possible. A new robust and appropriately scaled planting strategy of Platanus orientalis 'Cuneata' (30-35cmg, initial height 5-7m, clear stem 2.1m at 10m centres) interplanted with smaller upright canopy tree species of Corylus colurna and Sorbus Cordinal Roayl for seasonal interest and to "contribute to the sense of enclosure, act as a buffer to traffic noise/pollution and enhance place"

MATERIALS PLANTING PROPOSED TREES

PARKLAND AND BOUNDARY TREES

Acer campestre



Alnus spaetheii



Amelanchier lamarckii



Betula pendula



Betula utilis 'Jaquemontii'



Betula nigra 'Heritage'



Corylus columna



Cercis siliquastrum



Gleditsia tricanthos 'Sunburst'



Hamamelis intermedia 'Pallida'



Liquidamber styraciflua



Pinus nigra



Pinus sylvestris



Sorbus 'Cardinal Royal'



TREE PLANTING DESIGN INTENT: REINFORCE AND RENEW

The new tree planting is part of the planting proposals to reinforce and renew the existing planted structure across the site.

Robust planting proposals will secure the planted structure on the site, creating an immediate strong planted structure for the new development and providing a further layer of maturing trees for the future.

Tree species shown include for design characteristics of:
 Large scale specimen parkland trees, with deciduous trees to let in winter light and for seasonal interest and evergreen Pine tree species in keeping with the site character.
 Smaller scale decorative trees within courtyard areas and for privacy screening to ground floor units, both clear stem and multistem forms with seasonal interest.

ABP OPINION ITEM 8
APPENDIX C RESPONSE

Appendix A : ABP Opinion Item 8 Response

'Response to issue raised in Appendix C of Planning Authority Report, receive 14th of August 2020, which includes the internal reports of the Transportation Planning Dept. relating to the design of the vehicular access from the Leopardstown Road, the report of the Drainage Dept. relating, inter alia, surface water design and the Park Department relating, inter alia, landscaping and protection of trees'

DLRCoCo Parks Department items:

• ***"The Applicants Tree report has stated a substantial amount of the sites available space shall be disturbed that is contrary to sustainable Tree retention. It is not sustainable to retain the proposed Trees for this type of development as it will lead to accelerated rates of mechanical failure of these mature existing Trees. "***

Please refer to Arboricultural Report.

• ***"No detailed safety risk analysis provided for the retained trees in collaboration with other consultants (Arborist, Landscape Architect, ecologist Hydrogeologist) the Impacts of the construction phase of works on retained Trees of this site. The arborist report has indicated the implications of these proposed works are based on assumptions and estimates only. "***

Please refer to Arboricultural Report which deals specifically with construction implications and impacts.

• ***"Compacted bearing ratios of constructed ground will unavoidably lead to mature Tree lossage and a severe reduction on Tree lifespan. It is not realistic to believe Tree conservation and the proposed engineered developments are compatible. See Arb. report pg 9 &10 'Construction Works and Trees'. Proposal unavoidably will have long-term impacts on existing Trees due to the proximity of intruding engineered impacts e.g. dwelling and services from below ground level excavation works on existing Trees. "***

The "Tree Protection Plan" (see below) excludes the creation of Compacted bearing ratios in tree protection areas. Cross discipline corroboration of footpath formation will occur within tree protection areas.

• ***"Given the scale, age and nature of the sites existing Trees, the intrusion of these proposed works to the underlying soil capillary fringe (see example below) for long-term Tree survival has not been provided. "***

BS5857-2012 identifies an area (m²) to be protected. This has been used to define those trees to be removed or retained. Protecting this area is deemed by the standard to provide the best guarantee of sustainability. Notwithstanding effects outside of this area, it is expected that the soil will reach a natural equilibrium post development

• ***"Application is absent of any 3D visual analysis (source-pathway-receptor) to demonstrate the impacts on existing Trees and vulnerability of rising groundwater onto proposed Landscape plan post development. Page 47 of 59 Image to demo effects sub ground level construction on existing environment Recommendations for a new application"***

Ground levels run north easterly, the design does not assume any particular direction of groundwater flow; rather, it provides for sub-basement connectivity to ensure the primary subterranean water bearing stratum (the weathered Granite) is connected across the new development, allowing water to continue flowing in it's natural direction. Based on the wider geological context, this is most likely to be north and north eastward. See drawing C1007 for visual, to be included in final planning pack. Soakaway Flow Routing Plan.

• ***"A fresh review and look at providing a redesign that considers Section 8.2.3.2 of CDP (County Development Plan) the quantitative standards to design for lower densities to protect existing mature Tree retention for this site is paramount. To confirm areas for Tree retention***

shall have zero ground disturbance and conserve existing ground conditions. Applicant to retain services of the Arborist throughout the entire project on a minimum of a weekly basis."

• ***"The applicant is advised to ensure their application from all of their consultant experts provides an impartial assessment of the development implications for construction phase and not simply an exercise to satisfy planning requirements only."***

• ***"Within the Landscape plan to provide more playable options for all age groups e.g 'kickabout' areas "***

The permeability plan notes access to the playing fields directly adjacent to the site where this activity can occur. There is space allocated within the main public open space for informal kick about.

• ***"As advised in preplanning a thorough collaborative singular integrated report signed off from each qualified consultant disciplines (Arborist, Landscape Architect, Hydrologist/Geo tech engineer, Ecologist and Structural engineer) as a team to ensure all significant impacts are assessed cumulatively and the best mitigated design solutions are provided for"***

Through the design collaboration the engineers have moved pipelines as much as practically possible based on the Arborists and Landscape Architects requests and other constraints.

• ***"Application shall visually demonstrate the impacts of engineered structures and services post development may or may not have on existing Trees above and below ground level."***

Please refer to the Arboricultural Report.

• ***"Provide visual description Hydrological/groundwater pathway changes to verify clearly beyond all doubts rather than text. Whilst surface levels are indicated to run south easterly the applicant should evaluate and verify the below ground topographic levels follow similar using 'Source – Page 48 of 59 Pathway – Receptor model as groundwater flow patterns (maybe pressurized unknowingly) and does not always flow in a similar pattern as surface water movement. "***

Ground levels run north easterly, the design does not assume any particular direction of groundwater flow; rather, it provides for sub-basement connectivity to ensure the primary subterranean water bearing stratum (the weathered Granite) is connected across the new development, allowing water to continue flowing in it's natural direction. Based on the wider geological context, this is most likely to be north and north eastward. See drawing C1007 for visual, to be included in final planning pack. Soakaway Flow Routing Plan.

• ***"Tree Protection Plan reviewed following a design review: a scaled site plan of the proposed development, clearly showing those trees to be retained and those to be removed (distinguished by colour code); alignments of Tree Protection Fencing and areas to be excluded from construction activities, compound(s), site office(s), plant, equipment and materials storage. The Plan shall also show the proposed locations and alignment for all overhead and underground engineering services and utilities, on both landscape and engineering drawings."***

The Arboricultural Documentation set includes a full and specific "Tree Protection Plan"

• ***"Arboricultural Method Statement: clear and practically-achievable measures to be used during the construction period, for the protection and management of all trees and hedges that are to be retained."***

The Arboricultural Report includes a full Arb Method Statement

• ***"Ecological Impacts The applicant shall demonstrate and clearly highlight onto their Arborist and Landscape Architect drawings all wildlife corridor links, all protected and mitigating measures and into their construction and environment management plan."***

Please refer to CEMP produced by AWN Consultants.

Tree Bond and Arboricultural Agreement

• **“Prior to the commencement of development and related tree felling and construction activities, the applicant advised with the applicants arborist shall lodge a Tree Bond with the Planning Authority of 100,000 euros for five years beginning only when works are fully completed. as security for tree protection and a deterrent to willful or accidental damages during construction. The Bond shall be based on a notional estimate of the combined value - amenity and ecosystems services - of retained trees; and taking account of the percentage tree loss(-es) due to direct impacts on healthy trees.”**

Noted

• **“Lodgment of the Bond shall be part of an Arboricultural Agreement signed by the developer, empowering the planning authority to apply the Tree Bond, or part thereof, for satisfactory protection of all retained trees on and immediately-adjoining the subject site, or the appropriate and adequate replacement of any such trees which die, are removed or become seriously damaged or diseased within a period of 5-years from the substantial Practical Completion of the development. Sequestration of all or part of the bond shall be based on an estimate of the total costs of appropriate, compensatory tree planting at semi-mature sizes. Replacement planting shall be of the same or similar species/varieties as those lost, or as may be specified by Dlr Parks & Landscape Services.”**

Noted

• **“Bond Release: 60 months – inclusive of at least two growing seasons (May – Sept.) - after Practical Completion of the permitted development, the developer shall submit to Dlr Parks and Landscape Services, an Arboricultural Assessment Report prepared by a qualified arborist. Any remedial surgery or other tree works recommended in that Report shall be undertaken by the developer at his/her expense, under the supervision of a qualified arborist. The Tree Bond shall not be released unless and until an Arboricultural Certificate - signed by a qualified arborist, stating that all tree works have been fully undertaken - has been submitted to and agreed with Dlr Parks+Landscape Services. Reason: to provide security for the protection and long-term viability of trees to be retained on the site and give practical effect to the retention, protection and sustainability of trees during and after construction of the permitted development. Page 49 of 59 Reason: to ensure the application complies with the CDP 2016-2022 development standards (Section 8.2.8.6 Trees and Hedgerows) in respect of tree preservation and protection, and to meet the objectives of the ‘Dlr TREES- Strategy 2011-2015’. Reason To ensure and give practical effect to the retention, protection and sustainability during and after construction of the permitted development, and to verify that protection measures are in place. to ensure the application complies with the CDP 2016-2022 development standards (Section 8.2.8 and 8:2:9 environmental impacts)”**

Noted

Ecology

• **“The applicant shall appoint and retain the services of a qualified ecological consultant for the duration of the development. The consultant shall ensure that the mitigation measures recommended in the Ecological Impact Assessment Report are implemented in full. In particular the applicant shall provide a detailed verifiable programme that is agreeable with DLR parks department. “**

Noted

• **“To provide a detailed construction environment management plan that incorporates all the agreed measures as set out in the protection of Trees, Landscape and open space management as well as the management of the ecological impacts. “**

Reason To ensure and give practical effect to the retention, protection and sustainability during and after construction of the permitted development, and to verify that protection

measures are in place. to ensure the application complies with the CDP 2016-2022 development standards (Section 8.2.8 and 8:2:9 environmental impacts)”

Noted

Landscape Plan

• **“The applicant shall ensure consistency between the Landscape drawings (fig 4 pg 10) and the Arborist drawings ‘Tree Impacts plan’ “**

Noted, the drawings have been coordinated.

• **“The applicant must demonstrate on their landscape drawings clearly the cross section landscape specification in proximity of any or all services.”**

“Clearly show all connections and permeability links through the site. “

Please refer to Landscape Report Permeability Plan.

• **“The applicant shall provide and demonstrate visually the soft works specifications cross section and also highlight all areas where all engineered services interact onto the Landscape plan and Arborist drawings. Details of Soft Landscape Design to include detailed Planting Plan(s) and Planting Schedule - as appropriate - stating species/varieties, indicative quantities, sizes, rootball presentation and spacings. Planting mixes should specify a diverse range of species/varieties/cultivars and a diversity of forms and plant sizes (multi-stems, feathered, semi-matures, etc.); using both native and exotic species and pollinator-friendly native species (in accordance with the All-Ireland Pollinator Plan 2015-2020), all designed to provide vegetation that is visually-appealing, bio-diverse, and easily managed. Page 50 of 59 “**

Please refer to Drawings Landscape Masterplan 100 LBER001 and Typical Planting Details 105 LBER001 and Landscape Report: Materials Planting Strategy

• **“Details of Hard Landscape Design for (where applicable) boundary treatments, (materials, sections, dimensions etc.), lighting, seating, kerbs, edges, surfaces, water features; all related civil engineering elements (retaining structures, attenuation tanks, and showing existing and proposed utilities, services, drainage and ancillary infrastructure as it relates to landscape)”**

Please refer to Drawings Landscape Masterplan 100 LBER001, Boundary Details 102 LBER001 and Landscape Section 104 LBER001.

• **“The Landscape architect shall verify their design fits in uncompromised beyond all doubts and clearly demonstrate any geotechnical hydrological implications on the sites soil and groundwater by their proposed design and layout as below ground level excavation depths and topographic levels below ground may not follow consistently surface topographic levels. This should demonstrate the post development impacts and NOT merely assume the existing current site conditions pre development.”**

Ground levels run north easterly, the design does not assume any particular direction of groundwater flow; rather, it provides for sub-basement connectivity to ensure the primary subterranean water bearing stratum (the weathered Granite) is connected across the new development, allowing water to continue flowing in it's natural direction. Based on the wider geological context, this is most likely to be north and north eastward. See drawing C1007 for visual, to be included in final planning pack. Soakaway Flow Routing Plan.

• **“All existing and proposed topographical levels shall be included in all Landscape and Arborist drawings.”**

Please refer to Drawings Landscape Masterplan 100 LBER001 which includes the proposed levels.

- **“All open space grassed areas shall have a depth of 300mm of soil plus depth of porous pipe drainage underneath. The landscape drawings are required to clearly demonstrate this in cross section and topographical drawings showing invert levels of the proposed drainage.”**

Please refer to Drawings Typical Planting Details 105 LBER001, 300mm growing medium is provided over a drainage board on podium grass planted areas, existing ground level is retained with root protection areas, 300mm topsoil is provided within general grass areas outside of RPA's.

- **“Any water features to include a detailed costed annual maintenance plan which shall also include measures to avoid neglect and encroachment of vermin habitats.”**

Note: No water features proposed.

- **“The applicant shall provide detailed proposals on how the quality of works proposed by the Landscape Architect are ensured for the full duration of the development works; and shall notify, in writing, the planning authority of that appointment of a Landscape consultant, including the agreed consultant's brief, prior to commencement. That brief shall engage the Landscape Consultant to procure, oversee and supervise the Landscape Contract for the implementation of the permitted landscape proposals.”**

Noted: A landscape maintenance contract will be put in place to cover the 18 months defects liability period for the landscape installation after which time the management company for the development will implement a landscape maintenance contract.

- **“When all landscape works are inspected and fully completed to the satisfaction of the Landscape Consultant, he/she shall sign and submit a Practical Completion Certificate to Dir Parks and Landscape Services, as verification that all specified landscape works have been fully implemented, including resolution of any snags.”**

Noted.

“Reason: To ensure full and verifiable implementation of the approved landscape design proposals for the permitted development, to the approved standards and specification. To ensure and give practical effect to the retention, protection and sustainability during and after construction of the permitted development, and to verify that protection measures are in place to ensure the application complies with the CDP 2016-2022 development standards (Section 8.2.8 and 8:2:9 environmental impacts)”

Open Space Layout Plan

- **“The applicant shall also clearly highlight onto their landscape drawings exact measured areas for Public open space, Communal open space, useable space for play provision indicating clearly the area size dimensions onto the landscape drawings. This shall not include fragmented open spaces for the calculation of open space requirements as they are necessary for the protection of existing Trees CDP 2016-2022 development standards (Section 8.2.8.3 and 8.2.8.6)”**

Please refer to Architectural Drawings.

- **“The applicant shall in view of a redesign where the provision of public open space does not the minimum requirements shall make a payment of €2,000 per dwelling unit, as a Special Levy (in accordance with Section 8.2.8.2 (iii) of CDP 2016-2022), in addition to the Development Levy Page 51 of 59 Contribution as a special contribution, as per Section 48.2(c) of the Planning & Development Act, 2000. The Special Levy shall be lieu of the provision of public open space and shall not include the area of fragmented space for the protection of existing Trees.”**

Noted

- **“The applicant shall design all public open space areas to ensure they are useable all year round. All areas both natural grass and engineered play areas must ensure they are playable**

all year round. Topsoiling should be to a minimum depth of 300mm overlying porous piped drainage. The Landscape specification shall include organic maintenance plans in the use of organic fertilisers and a zero tolerance approach to the use of pesticide herbicides.”

Noted: Refer to Landscape Report, Outline Landscape Maintenance Specification.

- **“The applicant must demonstrate on their landscape drawings clearly the cross section landscape specification in proximity of any or all services”**

Noted: Coordination of underground services, existing trees to be retained and the proposed landscape planted structure has occurred.

- **“Open space areas should be clearly marked out on the drawings stating the area of space that is usable for play (excluding paved areas and usable surfaces for play), the area that is usable communal space and the area that is usable for public open space.”**

Please refer to Drawings Landscape Masterplan 100 LBER001 and Play Plan 103 LBER001

Open Space Rationale

- **“Open space opportunities shall be informed by the National Children's Play Policy 'Ready Steady Play' (2004) and 'Teenspace', National Recreation Policy for Young People (2007), and in accordance with departmental and local standards (Dir CDP 2016-22 Section 8.2.8.5) , as appropriate.”**

Please refer to Drawings Landscape Masterplan 100 LBER001 and Play Plan 103 LBER001

- **“Proposals shall be submitted in the form of a Proposed Play Rationale and Layout Plan (separate to, but related to the Landscape Masterplan), using Nature-based Solutions, informed by the 'genus loci' of the site (e.g. existing and planned landform, character etc.), to provide informal, impromptu and spontaneous play opportunities, 'kick about' areas for five a side football, along with structure, equipped play, as appropriate; for agreement with Dir Parks+Landscape Services. The Layout Plan shall comprise the following:- “**

Please refer to Drawing Play Plan 103 LBER001 and Landscape Report LBER001

- **“showing types of play and play area(s), target age groups, landform (included levels and contours) and boundaries, gates and planting,”**

Please refer to Drawing Play Plan 103 LBER001 and Landscape Report LBER001

- **“design and construction details of play opportunities and facilities in respect of landform, planting, boundaries, equipment and safety surface.”**

Please refer to Drawing Play Plan 103 LBER001 and Landscape Report LBER001

- **“All play equipment, ancillaries and post installation standards (tested independently from installer) shall conform to European Standards EN 1176-1-11 and EN 1177 Playground equipment and surfacing, and to BS/EN standards 2017/18 for Playground Installations for HIC (Head Injury Criterion) and CFH (Critical Fall Height). “**

Please refer to Drawing Play Plan 103 LBER001 and Landscape Report LBER001

Reason: in the interest of ensuring safe, quality play provision and the proper, sustainable development in compliance with national policy, and best practice guidance.

- **“At Practical Completion, the developer shall submit to Dir Parks and Landscape Services, a postinstallation surface testing and equipment testing Practical Completion Certificate, in accordance Page 52 of 59 with the requirements and guidelines of the Royal Society for the Prevention of Accidents (RoSPA). The Certificate shall be prepared and signed by a suitably qualified (RoSPA-approved), technical professional with expertise and experience in playground design and playground health and safety.”**

Noted

Reason: *“so that the development is in accordance with Section 8.2.8.5 of Dir’s CDP 2016-22, and to ensure the provision and construction of safe, quality play provision in compliance with best practice”*

OUTLINE PRELIMINARIES

Description of Work

The work consists of general works, site preparation, soil preparation, grass seeding, bulb/corm planting, shrub/groundcover planting, and tree planting

Exact dates for completion of works will be finalised after the award of the contract.

Standards of Workmanship and Materials

The Landscape Contractor shall satisfy the Landscape Architect that all works have been carried out to comply with BS 4428 (General Landscape Operations), BS 3936 (Nursery Stock), and BS 3882 (Topsoil). -BS 8545:2014 Trees from Nursery to Independence in the Landscape;

It is essential that the site is tidy at all times, and that the planting appears healthy. The Landscape Contractor should be prepared, at all times, to ensure that such conditions are met and should include for this in his rates.

Any materials not meeting the specifications or qualifying for the approval of the Landscape Architect, for whatever cause, shall be rejected.

The Landscape Contractor shall familiarise himself/herself with the layout of services and the positions of all structures on the site and shall be liable for any damage to the above.

No existing plants shall be removed or damaged, other than those specified by the Landscape Architect

Notice of Intentions and Recording Actions

The Landscape Contractor shall give 48 hours notice of his intention to commence setting out, planting and maintenance visits.

The Landscape Contractor shall return a weekly record of all site actions.

Leaving the Site Tidy

The site shall be left in a neat and orderly condition at the end of each day's work.

Season

Landscape work shall take place in the appropriate season and only when the conditions are suitable, i.e. it is dull, moist and mild, without undue risk of frost or drying winds.

There shall be no cultivation or planting when the soil is frozen or

waterlogged.

If exceptional weather conditions occur after planting, e.g. heavy frosts, measures shall be taken as approved by the Landscape Architect.

Replacement

The sub-contractor shall make good at his own expense any losses of trees and plants which die or appear unhealthy at any time up to practical completion and in the 18 months after planting.

The sub-contractor shall make good at his own expense any losses of trees and plants which die or appear unhealthy at any time prior to hand over.

Plant failures will not be charged to the Landscape Contractor if the failure is due to; damage by hares, rabbits, deer, livestock where not protected by guards or fencing, damage/ losses due to theft, vandalism or disturbance by other contractors.

Persistence of weed in planted areas will be regarded as a contributory cause of failure due to drought. Prolonged dry weather will not exonerate the landscape Contractor if the scheduled maintenance operations have not been carried out as programmed.

Damage

All trees and plants are to be adequately and carefully packed and protected to survive transport, whatever means, to the site, during loading, transit or unloading.

If in spite of these precautions roots, branches, or shoots suffer slight damage, they are to be carefully pruned.

If major damage has occurred, the plant or tree shall be rejected and replaced at the Landscape Contractor's own expense.

Defects Liability Period

The Landscape Contractor shall be responsible for any plants that fail to take during the first full growing season (18 months) from date of completion.

Protection

The Landscape Contractor shall provide adequate temporary

protection to the whole of his work and shall include temporary coverings, planked barrow runs and all other measures for protecting the work from damage.

The Landscape Contractor shall also protect from damage all existing roadways, kerbs, services and other completed works on site.

Any work damaged or soiled by weather, traffic or other causes due to inadequate temporary protection shall be removed and made good at the cost of the Landscape Contractor. The form of protection is left to the discretion of the Landscape Contractor.

Programme of Operation

The Landscape Contractor shall execute his works in conformity with a programme to be agreed with the Landscape Architect and shall include in his estimate for working within an agreed time limit.

No individual areas will be handed over unless there is an agreed sectional completion. The Landscape Contractor shall allow for keeping individual areas adequately maintained until the whole has been completed.

Site Inspection

Prior to the submission of tenders to the Landscape Architects, the Landscape Contractor is expected to visit the site and familiarise himself with the nature of the existing roads and pathways, the soil conditions, slope gradients, any hazards and other matters affecting the works. No extra charges will be made for any misunderstandings, or incorrect information or any of these points, or on grounds of insufficient description or lack of information will be allowed.

Setting Out

The Landscape Contractor will be responsible for checking all schedules and drawings by the Landscape Architect. In the event of any discrepancies being found between such schedules and drawings, or if the Landscape Contractor considers that additional detail drawings are required, the Landscape Contractor shall report such discrepancy in writing at least ten days before the works are to be executed.

The right is reserved to adjust the exact position of trees and specimen shrubs after they have been set out on site.

Any trees which are planted without approval of the setting out may be required to be re planted at the Landscape Contractor's expense.

OUTLINE PRELIMINARIES

Supervision and Contractor's Staff

The Landscape Contractor shall ensure full and adequate supervision of the site during the duration of the works.

The Landscape Contractor shall at all times during the Contract period employ sufficient persons of appropriate abilities, skills, care, and experience as are required for the proper performance of the Services in accordance with the Contract and shall ensure that a sufficient reserve of persons is available to provide the Services during holiday periods, absences due to sickness and special events/emergencies.

The Landscape Contractor will appoint a Contract Manager to supervise those persons employed to perform the Services in accordance with the Contract. The Contract Manager must be available and present in the Contract Area at all times that the Services are being carried out. The Landscape Contractor shall notify the Supervising Officer of the name, address and telephone number of the appointed Contract Manager who will be responsible for receiving notification from the Employer of complaints and instructions under the Contract. The Employer shall be entitled to notify the Landscape Contractor by notice in writing to remove from the Contract or discipline any employee of the Landscape Contractor (which for avoidance of doubt shall include the Contract Manager or his deputy) who, in the reasonable opinion of the Supervising Officer, has shown himself to be unsuitable to perform his duties under the Contract. The Employer shall in no circumstances be liable either to the Landscape Contractor or to the employee in respect of any liability, loss or damage occasioned by such removal or disciplinary action and the Landscape Contractor shall fully and promptly indemnify the Employer against any claim made by such employee.

The Landscape Contractor shall ensure that every person employed by the Landscape Contractor in and about the provision of the Services is at all times properly and sufficiently trained and instructed with regard to: the task the person has to perform; any relevant provisions of the Contract; relevant rules, procedures and standards of the Employer; all relevant rules, procedures and statutory requirements concerning Health and Safety at work; fire risks and fire precautions; and the necessity to observe the highest standards of courtesy and consideration to the public to promote and enhance the Employer's image and reputation.

Sequence of Operations

The sequence of operations shall be as described unless written authority to vary is obtained from the Landscape Architect.

Insurance, Indemnities, etc.

The Landscape Contractor shall indemnify, and keep indemnified the Employer against all actions, suits, claims, demands, costs and expenses whatsoever, by reason of, or arising out of the execution of the Contract Works, or any of the matters connected therewith, whether such claim or proceedings be brought or costs or expenses incurred under or virtue of Workmen's Compensation Act, Employer's Liability Act, or any other statute or at Common Law, or otherwise howsoever.

The Landscape Contractor shall indemnify the Employer in respect of accidental injury, loss or damage caused by, through or in connection with his work. The Landscape Contractor shall arrange insurance to cover the risk of such accidental injury, loss or damage and shall have the Employer indemnified by such insurance policies with approved insurance companies as detailed hereunder and shall take all necessary steps to keep such policies validly in force during the period of Contract work. The Landscape Contractor shall produce such insurances when requested by the Employer.

Employer's Liability Policy

This policy should provide for indemnification of the Employer in respect of claims which could be made against it as principal by employees of the Landscape Contractor.

Public Liability Policy

This policy should provide for the following:
Indemnification of the Employer as principal.
Unlimited cover generally and a limit not less than €1,000,000.00 in respect of any one accident.

Full Motor Insurance Policy

This should provide for the following in respect of vehicles and plant governed by the Roads Traffic Act:
Indemnification of the Employer as principal.
Names and addresses of drivers where limited cover only is provided.
Passenger cover in relation to seating capacity of cab.
Cover for towing including trailers where applicable.
Loading and unloading risks both on and beyond public thoroughfares.

Health and Safety

The Landscape Contractors shall at their own cost arrange for the safe keeping during and after delivery to works of all manures, plants and equipment necessary to complete the job in hand. All oil and petrol containers must be kept in suitable sheds and the Landscape Contractor shall observe all regulation regarding the storage of poisonous and/or inflammable liquids.

The Landscape Contractor shall in performing the Services adopt safe methods of work in order to protect the health and safety of his own employees, the employees of the Employer and of all other persons, including members of the public and shall comply with the requirements of the Health and Safety at Work Act 1974, The Management of Health and Safety Regulations 1992, Control Of Substances Hazardous to Health (COSHH) Regulations 1988 and 1994, and of the Road Traffic Act 1988 and of any other Acts, Regulations, Orders or any European Directive pertaining to the health and safety of employed persons.

The Landscape Contractor shall at the time of submitting his Tender provide to the Employer a written copy of his health and safety working procedures relating to the performance of the Contract.

The Landscape Contractor shall review his Health and Safety policy and safe working procedures as often as may be necessary and in the light of changing legislation or working practices or the introduction of new Work Equipment and shall notify the Supervising Officer in writing of any such revisions. The Supervising Officer may require the Landscape Contractor to amend its health and safety policy and safe working procedures to comply with any change in legislation or working practices or required as a result of the introduction of new Work Equipment.

Equal Opportunities Policy

The Landscape Contractor shall keep his equal opportunities policy in force for the duration of the Contract to comply with statutory obligations. Any findings of unlawful discrimination against the Landscape Contractor during the three years prior to the commencement of the Contract shall be reported to the Employer, together with details of the steps taken to avoid repetition.

Waiver

Failure by the Employer at any time to enforce the provisions of the Contract or to require performance by the Landscape Contractor of any of the provisions of the Contract shall not be construed as a waiver of

OUTLINE PRELIMINARIES

any such provision and shall not affect the validity of the Contract or any part thereof or the right of the Employer to enforce any provision in accordance with its terms.

Acceptance

Payment will be made to the Landscape Contractor following certification of completed works by the Landscape Architect. There shall be no sectional handover unless previously agreed. In appropriate circumstances and where the contract involves the application of a defects liability period following practical completion of landscape works, there shall be a retention amounting to 5% of the total contract price, which shall be released when defects have been made good at the end of the defects liability period.

Default in provision of the service

Without prejudice to any other powers of the Employer, if the Landscape Contractor, for whatever reason fails to provide or perform the Services in whole or in part completely in accordance with the terms of the Contract then without prejudice to any remedy contained herein the Employer may by his own or other workmen provide and perform such Services or part thereof in which the Landscape Contractor has made default. The costs and charges incurred by the Employer in so doing shall be paid by the Landscape Contractor to the Employer on demand or may be deducted by the Employer from any moneys due or which may become due to the Landscape Contractor. In the event of non-completion of specified works, non-compliance with specification, faulty workmanship or use of defective materials, the Landscape Contractor will be deemed to be in breach of contract and payment may be withheld in full or in part pending completion or execution of remedial works.

OUTLINE SPECIFICATION

EARTHWORKS

Method of work

No works in relation to grading and topsoiling to be carried out in conditions where materials are wet.

Provide catchment drains or ditches to collect excess run-off and prevent water entering from adjacent land. Remove scrub as well as top growth by cutting and burning. Flail or swipe mowers can be used. Where turf is excessively thick, plough, disc harrow, and reduce vegetative content by weathering and cultivations.

In late April - early May, apply 'Roundup' at 5 litres per hectare, diluted in water at 200 litres per hectare, at a pressure not exceeding 30 p.s.i. Apply evenly over full area of soil to be stripped. Apply when weather is mild and grass is growing. Do not apply when rain or showers are forecast within six hours or when wind may cause drift (over 24kph/15mph). If rain falls within the minimum period, retreat. After application, leave the soil surface undisturbed for a minimum period of 15 days, to allow foliage symptoms to develop. If possible, leave undisturbed for two months.

Strip topsoil from all areas liable to disturbance of any kind, including building works, roads, underground services, all temporary access routes, compounds and storage areas. Strip the full designated working area, and any other areas liable to encroachment and traffic.

Do not run machinery over ground before stripping.
Strip the full depth of sod and topsoil. Avoid stripping into the subsoil layers.

Where a hedgerow is to be maintained, do not strip within 4 metres of it. Soil must not be stripped from any part of the area under the canopy of an tree which is to be retained.

Stockpiles

When soil is in a condition for stacking, remove all topsoil to its full depth and place it in heaps either off site in a convenient position, or on the neutral line of cut and fill. Strict precautions are essential to prevent loss or admixture with subsoil.

Soil heaps should be formed in positions which facilitate eventual respreading, reduce travel to a minimum and will not result in interference with subsequent major levelling and/or grading operations. Stockpiles shall be located on dry, free draining ground, not subject to standing water. If water ponds against the stockpile, temporary drains shall be cut to relieve it. Avoid running machinery over stockpiles.

Stockpile heaps should not exceed 1.5m in height to avoid compaction.

While topsoil is stacked, measures should be taken to ensure that weed control by spraying with total or appropriate selective weedkillers is carried out during the growing season to prevent weeds seeding.

Topsoil stockpiles shall not be covered by subsoil, rock, rubble, site debris, fuel or chemical pollution. Where there is a danger of contamination or topsoil and subsoil stockpiles intermingling the topsoil stockpile shall be fenced off. Temporary yards, storage areas or hardstanding areas shall not drain towards topsoil stockpiles.

Topsoil is the property of the Employer, and shall not be removed from site without consent given from Employer or Landscape Architect.

Subsoil cultivations

Subsoil should be placed in layers not exceeding 150mm thick; consolidation of fill may be accomplished by the use of special compacting machinery or by running over it with the next load; filling by tipping over an exposed face is not recommended because of the difficulty of consolidation.

After completion of subsoil moving, the formation level should be graded with the box scraper to even, running contours and then, depending on the soil texture and degree of compaction, loosened with a subsoiler or ripper.

Subsoil levels

Subsoil levels shall be 200mm below the finished ground levels in all areas for grass seeding to allow for 250mm of topsoil to be placed so that 50mm of topsoil stands proud of all kerbs, paths, etc.

Subsoil levels shall be 400mm below the finished ground levels in all areas for shrub planting to allow for 450mm of topsoil to be placed so that 50mm of topsoil stands proud of all kerbs, paths, etc.

Subsoil levels shall be 550mm below the finished ground levels in all areas for shrub planting to allow for 600mm of topsoil to be placed so that 50mm of topsoil stands proud of all kerbs, paths, etc.

Subsoil levels in all areas for tree planting shall be 900mm below the finished ground levels to allow for 900mm of topsoil to be placed.

Topsoil

Topsoil shall be native topsoil as removed and stored. All imported topsoil to be of medium texture, pH matching that of the native topsoil, stone content 10mm in size not greater than 5% by weight, and no stones greater than 40mm in any dimension, and shall conform to BS 3882:1965. Topsoil shall be a free draining sandy loam. Depth of topsoil to be as specified.

Topsoil shall be free of perennial weed roots, i.e. couch grass, sticks, sub soil or any waste, toxic, putrescent or foreign matter. After spreading, the soil should be cultivated to crumb size to a condition suitable for blade grading. Large stones and unwanted material 75mm and over should be picked off and carted away. Areas should then be blade graded to true flowing contours. As topsoiling proceeds all consolidated wheel tracks shall be forked over.

Final grading of the top 150mm is to be carried out to ensure a true specified level and slope to avoid dishing or other depressions where water may collect. The use of a heavy roller to roll out humps will not be permitted and any area that becomes unduly compacted during the grading operation shall be loosened by forking or harrowing.

Topsoil levels

All topsoil shall be placed and graded by the Main Contractor to the following levels:

grass seeding	300mm
shrub / groundcover planting	450mm
hedge planting	600mm
tree planting	1000mm x 1000mm x 900mm
pit	

OUTLINE SPECIFICATION

Maintenance of topsoil stockpiles

Stockpiles of 1 year duration or less: keep weed free with agreed methods. Any use of chemicals shall be in accordance with the current Sustainable Use of Pesticides Directive guidelines and Plant Protection Product List which is issued and updated every year by Pesticide Control Division, Department of Agriculture, Food and The Marine.

Stockpiles of up to 2 year's duration: roughly grade top and slopes of topsoil. Sow Italian Ryegrass at 50kg per hectare as a temporary grass cover. Control noxious weeds.

Tree Planting

Planting pits for trees in undisturbed ground will be backfilled with excavated material. Tree pits in mounds or other made up ground shall be backfilled with topsoil.

All tree pits for all trees other than semimature trees shall be excavated 200mm wider in all directions than the natural root spread, or rootball, and the base forked to improve drainage. Stakes shall be positioned before backfilling.

Topsoil backfill shall be mixed with peat substitute in the ratio of 4:1. 60g Enmag or similar approved slow release fertiliser shall be incorporated.

The backfill shall be settled and well firmed around the roots avoiding air pockets.

All semimature tree pits shall be excavated 500mm wider than the natural root rootball, and 150mm deeper to allow for 250mm of backfill mix, tamped firm to 150mm. In all semimature tree pits an additional depth of 150mm should be dug to allow for a 150mm gravel layer at the bottom of the pit to aid in drainage.

Sides of tree pit shall be ripped and loosened to ensure a good bond with the backfill and to avoid root girdling.

All semimature tree pits shall be backfilled with mix consisting of: 10 parts native topsoil and 5 parts sharp sand. 60g Enmag or similar approved slow release fertiliser shall be incorporated.

Plants Generally

All plants shall conform fully to the specification in respect of species, size and quality.

The Landscape Contractor shall investigate the sources of supply and satisfy himself that he can supply all of the plants specified on the planting schedule in the size, variety and quality before submitting a bid. Substitutions will not be permitted. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of nearest equivalent size or variety, with an equitable adjustment of contract price.

All plants shall be well grown, sturdy and bushy, according to type, and free from all disease and defects.

The Landscape Architect reserves the right to reject any plant material before or after planting if it does not conform with the specification.

All plants shall be adequately hardened off prior to planting, where frost or cold winds may be a problem. All plants shall be supplied with temporary labels with the full botanical name, on each bundle or batch of plants.

The Landscape Contractor should indicate in their tender source of material to be used and where it can be inspected prior to award of contract.

All plants that do not conform to the specification will be automatically rejected and must be removed from site and replaced at the Landscape

contractor's expense.

All plant stock, plant handling and planting to be undertaken in accordance with the following British Standard Specifications and Code of Practice:

-BS 3936:1992 Part 1 Nursery Stock :Specification for trees and shrubs;
-BS 3936:1981 Part 10 Nursery Stock : Specification for ground cover plants;

-BS 4428:1989 : Code of Practice for General Landscaping Operations (excluding hard surfaces);

-BS 8545:2014 Trees from Nursery to Independence in the Landscape;
-The Code of Practice for Plant Handling 2002 (Horticultural Trades Association).

Time of Lifting

Bare root plants must only be lifted when the ground is moist and the plant is dormant between November and end March of the current year. Lifting must never take place when there is a severe ground frost. Particular attention must always be paid to the protection of the roots on lifting when there is a strong drying wind or sun.

Protection

Care must be taken to ensure that bare roots are protected from physical damage and desiccation at all times. All bare roots must be covered within two hours of lifting.

Bundling

Whip planting must be in bundles of the same species and size, all shoots must face in the same direction so that roots and shoots are not in contact, and must be of equal numbers. Bundles are to be securely tied with supple material which will not, by its nature or tension, cause damage to the plants.

Labelling

Each individual plant, bundle, bag, or lot of one species shall be labelled with a securely attached label, clearly indicating the plant name, grade and quantity.

Grass Seed

Grass seed shall conform to the requirements of British Standard

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4428:1969 and subsequent amendments, and to the European communities (seed and fodder plants) regulations 1976.

The Landscape Contractor shall supply, with each seed mixture, a certificate stating the composition, purity, germination, year of collection and country of origin.

The germination capacity of each constituent of the mixture should be not less than 80%, and the purity of the mixture not less than 90%.

Total weed seed content should not be more than 0.5% and the total content of other crop seeds should not be more than 1%. These minimum figures shall be for the current 14 month period of annual tests.

The seed is to be thoroughly re-mixed before sowing to avoid patchiness on the ground and is to be 'Coburns Urban Parks mix' or similar approved, sown at a rate of 35 - 50g per square metre. (James Coburn + Sons Ltd., 32 Scarva Street, Banbridge, Co. Down BT32 3DD Telephone: 08 - 018206 - 62207 Fax: 08 - 018206 - 27250)

Container grown Shrubs, Groundcovers, Climbers and Herbaceous Plants

Shrubs shall be bushy, well established nursery stock with a good fibrous root system. They shall be container grown, true to size, name and description as scheduled. Shrubs shall conform to the appropriate British Standards.

Plants shall not be pot bound, nor with roots deformed or restricted.

Bare root material will only be accepted where specified.

Herbaceous plants shall be supplied as well rooted clumps, showing several healthy buds, and grown in pots. Pots shall be appropriate to the size of the plant supplied, minimum size 0.5litres (80mm square or 90mm diameter).

Whips and Transplants

All plant material must comply in all respects with the current edition of BS 3936 Parts 1, 4, and 5.

Transplants shall not be less than 3 years old and have been transplanted at least once. Trees shall be sturdy, with a balanced root and shoot development, sizes shall conform to schedule.

Willows shall have been stumped and transplanted at the end of the first year in the nursery.

Trees

Trees shall conform to the appropriate British Standards.

All trees should be full and well shaped, bark unmarked and have healthy root systems.

The Landscape Architect must inspect and approve all trees prior to lifting or planting. Trees must all be of identical size and shape and should originate from the same stock nursery and stand.

Rootballed trees shall be rootballed immediately when lifted at the nursery.

The rootball shall be suitable for the size of crown and the rootball shall be flat bottomed.

The rootball shall be formed through regular transplanting; every 2-3 years minimum. The rootball shall be wrapped in hessian and steel wire netting or other suitable and approved decomposable material.

Standard pleached trees shall have a clear stem 1.7m to 1.85m in height from ground level to the lowest branch, a minimum girth of 8cm at 1m from ground level and a total height of 2.75m to 3m.

They shall have a well defined, straight and upright central leader, with branches growing out of the stem with reasonable symmetry. The crown shall be well shaped, balanced, of a form and habit natural for the species.

All advanced nursery trees shall comply with BS 5236: 1975. They shall have a well defined, straight and upright central leader, with branches growing out of the stem with reasonable symmetry. The crown shall be well shaped, balanced, of a form and habit natural for the species. Trees shall have a sturdy, reasonably straight stem not less than 1.8m from ground level to the lowest branch.

All advanced nursery stock trees shall be supplied with roots balled.

All coniferous trees shall be supplied rootballed or container grown, with a good fibrous root system. Trees shall conform to specified height with well developed, uniform branching systems.

Shrub/Groundcover Sizes

All shrubs and groundcovers shall be supplied as sizes indicated in the

Bill of Quantities and Contract drawings.

Whip Sizes

Unless otherwise specified, all trees shall be as follows:- Whips, 600 - 1200mm high, 150 x 150 x 150mm minimum root dimension. To have a sound central leader and well formed branches.

Tree Sizes

Unless otherwise specified, all trees shall be as follows:-

Type	Girth	Height
Whip planting	-	600-1200mm
Half Standard Tree	4-6cm	1.8-2.1m
Light Standard Tree	6-8 cm	2.25-2.5m
Standard Tree	8-10 cm	2.75-3m
Selected Standard Tree	10-12 cm	3-3.5m
Heavy Standard Tree	12-14 cm	3.5-4m
Extra Heavy Standard Tree	14-16 cm	4-4.5m
Advanced Extra Heavy Standard Tree	16-18 cm	5m
Semimature Tree	20-22 cm +	6.5-7m +

Tree Anchors, Stakes, Guys, etc.

All trees other than semimature trees and whips trees shall be supplied and fitted with one tree stake per tree.

Tree stakes shall be peeled poles of oak, sweet chestnut, pine or douglas fir, or tanalised larch. All stakes shall be preserved with water borne copper chrome arsenic to IS 131, to a net dry salt retention of 5.3kg per cubic metre of timber.

Stakes shall be supplied as sizes specified.

They shall be at least 1.8 metres long unless otherwise specified, with a minimum diameter of 75 mm at both butts.

Stakes shall be driven prior to planting with a drive all, wooden maul or cast iron mell, not with a sledge hammer.

Trees shall be tied to each stake with a purpose made tie and spacer, the tie to be overlapped and thrice nailed to the stake. Tree ties shall be

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rubber or PVC or proprietary fabric laminate composition, and shall be durable enough to hold the tree secure in all weather conditions for a period of three years.

They shall be flexible enough to allow for proper tightening of the tie.

Tree ties shall be 25mm -40mm wide depending on tree size. They shall be fitted with a simple collar spacer to prevent charring, and with a buckle for adjustment.

All Semimature trees shall be supplied and fitted with anchoring system: "Platipus root anchoring system kit" (as by Duckbill Anchors Ltd., Perrywood Business Park, Honeycrock Lane, Salfords, Nr. Redhill, Surrey, England, RH1 5DZ Tel: 01737 762300).

Mulch

Mulch shall be graded bark chippings from coniferous trees, particles 25 - 75mm, free of fine material, dust or wood.

Mulch will be rejected if in the Landscape Architect's opinion it is likely to be wind blown.

The Contractor should arrange to have an on site sample (or samples) inspected by the Landscape Architect prior to spreading. Spreading without the approval of sample is at the Contractor's own risk.

Approved chemicals

Any use of chemicals shall be in accordance with the current Sustainable Use of Pesticides Directive guidelines and Plant Protection Product List which is issued and updated every year by Pesticide Control Division, Department of Agriculture, Food and The Marine.

All weed killer and fertiliser shall be applied with properly designed equipment, maintained in good order and calibrated to deliver the specified volume, evenly and without localised overdosing. All quantities shall be accurately measured.

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WORKMANSHIP

Site Clearance

Remove and dispose of off-site any rubbish still occurring in topsoiled areas, including weeds, old masonry and rubble, metal, wood, and stones, excavating as necessary to permit the specified depth of final cultivations.

All scrub areas shall be grubbed and all existing plants of same shall be removed and disposed of including all root systems unless otherwise specified.

Before topsoiling, remove all stones over 75mm in diameter. Dig out any areas polluted by oil or chemicals and make up with clean soil. Break up the formation under any areas liable to ponding of rainwater, so that they drain.

Topsoil shall be moved and spread only in dry weather. No work to topsoil shall be carried out when it is waterlogged, or if it's moisture content is conducive to structural deterioration. Minimise compaction of topsoil and subsoil when spreading, running machinery over the surface as little as possible.

Cultivation Generally

The aim of cultivation is to produce a well-drained and textured soil suitable for plant growth.

All areas to be planted, or seeded shall be cultivated to a minimum depth of 450mm or deeper if specified. Areas where obvious compaction has occurred shall be ripped.

Stones above 75mm longest dimension shall be removed from the top 100mm layer of shrub planting areas.

Final preparation - Seeding Areas

One week before seeding, Fisons PS5 or similar approved pre-seeding fertiliser shall be spread at a rate of 70g per square metre and incorporated in the surface layer. The soil shall be firmed and raked to a fine tilth suitable for seeding.

Final Preparation - Shrub planting areas

Coarse clean moist compost or approved peat substitute shall be forked in at a rate of 5kg per square metre and incorporated to a depth of

200mm.

Controlled release fertiliser N:P:K 15:9:11 plus trace elements - Osmocote plus or similar approved shall be applied at specified rates and raked into the top 50mm layer.

The surface shall be raked to a tilth suitable for planting.

Final Preparation Whip planting areas

Coarse clean moist compost or approved peat substitute shall be forked in at a rate of 5kg per square metre and incorporated to a depth of 200mm.

An approved fertiliser shall be spread at a rate of 70g per square metre and raked into the top 50mm layer.

The surface shall be raked to a tilth suitable for planting.

Planting Season

Forestry transplants and feathered trees other than evergreens will be planted between November and March inclusive. Evergreens will be planted in October or in April/May.

Planting shall normally be carried out during the period 1st October to 31 March in suitable weather.

Containerised plants may be planted throughout the year provided the weather is suitable, the soil is sufficiently moist and each planted is watered following planting.

Planting out with the specified planting period will only be permitted in exceptional circumstances at the discretion of the Landscape Architect; such exceptional circumstance shall include unsuitable weather and no penalty shall be incurred under provided that any delay is formally accepted by the Landscape Architect as attributed to this cause. In the event that works are delayed by inclement weather, the Landscape Contractor shall complete them at the earliest opportunity afforded by suitable weather.

Planting Generally

All planting operations shall be carried out in accordance with BS 4428 and good horticultural practice.

The Landscape Contractor shall provide the Landscape Architect with the species and quantities reserved from each named nursery, and the Landscape Architect shall have the right to inspect such nursery stock as deemed necessary, prior to its purchase by the contractor.

All plant labels are to be kept on their respective plants by the Landscape Contractor until the final inspection has been carried out. Only on approval from the Landscape Architect may such labels be removed by the Landscape Contractor.

Bare root stock shall be delivered to the site on the day of planting.

If under exceptional circumstances planting cannot take place within 12 hours of delivery, stock shall be healed in or their roots shall be adequately covered with moist hessian or good quality topsoil for a maximum period of ten days. The roots are to be kept moist throughout this time by adequate watering. Waterlogging shall be prevented. Any plants which fail due to inadequate protection prior to planting shall be rejected and replaced at the Landscape contractor's own expense.

Any plants stored temporarily on site shall be protected from adverse weather conditions. Plants with damaged root systems shall not be accepted.

After planting, any minor damage shall be rectified by pruning.

Plants which, in the opinion of the Landscape Architect, have been seriously damaged during planting shall be rejected and replaced at the Landscape Contractor's expense.

All planting shall be firmed up if loosened by frost or wind.

Prior to planting all bare rooted plants shall be completely immersed in a container of Alignure Root Dip (1:99) solution and container grown plants shall be sprayed with the solution according to manufacturers instructions.

Seeding and Establishment

Grass seeding rate shall be: 25-35gm per square metre.

Wildflower seeding rate shall be: 5gm per square metre.

Seeding shall only be carried out at the correct season and in suitably calm but moist weather conditions.

Seed shall be cross sown in two directions at right angles to each other (half the seed to be used in each direction) to prevent striping.

After sowing, all areas shall be lightly raked with a chain harrow or by hand.

About 48 hours before first cut, large stones (more than 40 mm in any dimension), should be removed and all areas rolled with a light roller to

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firm grass and press in all remaining stones.

When the grass is established and from 40 mm to 75 mm high, according to the seed mixture, it should be topped with a roto-scythe so as to leave from 25 mm to 50 mm of growth, to cut weeds, to control the growth of coarser grass and to encourage tillering.

Grass areas shall only be accepted as reaching practical completion when germination has proved satisfactory and all weeds have been removed.

No payment for re-seeding shall be made to the landscaping Sub-Contractor if the seed fails due to any cause whatsoever. He shall be required to make good the soiling and repeat the seeding until a good sward is obtained.

Shrubs

All shrubs shall be pit planted in precise locations as shown in plans. Pits shall be excavated 150mm wider in all directions than the natural root spread of the plant, and the bottom of the pit must be well forked to improve drainage.

Back filling of all pits shall be with soil and compost or an approved peat substitute in the ratio of 4:1.

All plastic and non-degradable wrappings and containers shall be removed before planting. Make four vertical cuts with a sharp knife on the quadrants through the edge of container grown rootballs to sever girdling roots.

Whip Planting

All whips shall be notch planted in staggered pattern. Whip trees shall be planted randomly with no more than 5 plants of the same species planted in groups. Blocks of similar species are not to be planted. Pits shall be excavated 150mm wider in all directions than the natural root spread of the plant.

Tree Planting

Planting pits for trees in undisturbed ground will be backfilled with excavated material. Tree pits in mounds or other made up ground shall be backfilled with topsoil.

All tree pits for all trees other than semimature trees shall be excavated 200mm wider in all directions than the natural root spread, or rootball, and the base forked to improve drainage. Stakes shall be positioned

before backfilling.

Topsoil backfill shall be mixed with peat substitute in the ratio of 4:1.

60g Enmag or similar approved slow release fertiliser shall be incorporated.

The backfill shall be settled and well firmed around the roots avoiding air pockets.

All semimature tree pits shall be excavated 500mm wider than the natural root rootball, and 150mm deeper to allow for 250mm of backfill mix, tamped firm to 150mm. In all semimature tree pits an additional depth of 150mm should be dug to allow for a 150mm gravel layer at the bottom of the pit to aid in drainage.

Sides of tree pit shall be ripped and loosened to ensure a good bond with the backfill and to avoid root girdling.

All semimature tree pits shall be backfilled with mix consisting of: 10 parts native topsoil and 5 parts sharp sand. 60g Enmag or similar approved slow release fertiliser shall be incorporated.

Backfilling shall be firmly tamped every 150-200mm and when pit is half full the backfill shall be flooded for further settlement. After excess water has drained further soil shall be added, tamped, and a final watering shall be given just before the final 75mm of backfill added.

The backfill shall be settled and well firmed around the roots avoiding air pockets.

All trees shall be well watered after planting.

All semimature trees shall be transported to the site of planting one tree at a time, and only when the pit has been dug and the backfill mixed on site.

All semimature trees shall be supported on transit by the rootball only. Manhandling of the rootball will not be permitted. The stem shall not be supported. The crown may be supported by hand only if the Landscape Contractor deems it necessary.

No tyred machinery except approved balloon-tyred machinery shall be used in the excavations of the tree pits. While excavating, tracked or balloon wheeled machinery shall operate on protective mats or wooden sheets to prevent compaction.

All semimature trees shall be secured with a Platipus rootball fixing kit as per manufacturer's instructions. See schedule for rootball fixing in Bill of Quantities.

All timber frames to be used with the Platipus rootball fixing system

shall be fixed with nail plates at each junction so that the individual members of the finished frame shall be flush with each other and of one level. Where possible the timber frames shall be constructed so that an optimum condition is achieved between preventing the timber frame from appearing above finished ground levels, and also ensuring that an uncompromised frame for anchorage exists (i.e. the frame shall be made as large as possible so that it can sit on the lowest part of the top rootball).

All ratchet tensioning systems shall be nailed to the timber frame so that the ratchet shall remain upright and in the position intended when installed.

All timber frames of the rootball fixing system shall be installed to ensure that when the tree pit is backfilled the frame shall be covered by a minimum of 50mm of mulch.

All rootballs of semimature trees are to be surrounded with a 4 inch perforated land drain pipe to aid in future waterings.

Mulch

On completion of planting, the total area of the disturbed soil is to be mulched to a depth of 50mm. The soil and the mulch shall be thoroughly wetted prior to application, and also prior to application a complete clearing through and weeding of the area shall be carried out, leaving the soil weed free, smooth and conforming to acceptable finished levels.

Watering

During dry periods at any other times deemed necessary prior to practical Completion, the Landscape Contractor shall water all plant areas.

The Landscape Contractor must give notice to the local water Authority that a supply of water will be required for the execution of the works. The Landscape Contractor is to ensure that he is aware of any restrictions on the use of water and hose pipes which may be applied by the water Authority and is to comply with any such restrictions.

Any water carried out shall take care to avoid soilwash off the shrub area and disturbance of the peat mulch.

Any damage caused by soil-wash shall be immediately rectified by the Landscape Contractor at his own expense, to the approval of the Landscape Architect.

Watering shall be carried out to add moisture to the full planting depth. No minor surface watering shall be carried out.

The Landscape contractor shall allow for watering of all plants to field

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capacity as and when necessary, until practical completion is achieved.

Weeding

All planting areas are to be kept free of weeds and rubbish prior to Practical Completion. All planting areas are to be hoed, forked or hand weeded. The use of chemicals shall be only be upon approval from Landscape Architects.

MAINTENANCE WORKS

MAINTENANCE OF TREE PLANTING

Maintenance period

The Landscape Contractor shall be responsible for the aftercare and maintenance of the completed works for 18 months from the date of practical completion.

Weed control

Weeding may only be done by hand, except in exceptional circumstances where persistent perennial weeds may be treated chemically. The use of chemicals shall only be upon approval from the Landscape Architect.

Noxious weeds (dock, thistle, ragwort) shall not be allowed to establish. All soil surfaces shall be generally free of weeds at all times and shall be entirely free of weeds after each maintenance visit. No grass shall be allowed to encroach into soil areas.

Weed free circles around trees shall be 1000mm diameter in grassed areas. Weeds shall not cover 10% of circle at any time during maintenance period.

Watering

Careful attention to water is essential during dry spells and may be critical in the case trees. Trees shall be watered as necessary and to their full planting depths. Water trees as required after any period of 4 weeks without significant rainfall (less than 5mm).

Fertilizer

Apply top-dressings of organic matter such as cow, horse or sheep manure or proprietary materials to trees and shrubs once in spring, twice during the summer and once again in winter.

This treatment is to be carried out for the duration of the maintenance contract.

Alternatively, if so wished, inorganic fertilizer can be applied as 'Osmocote' 18:11:10, @ 50g / square metre in spring and late summer.

Pruning / trimming

Any pruning should involve removal of dead, diseased or badly crossing branches or shoots. Dead heading reduces competition for nutrients between the developing seeds and the rest of the plants so that further growth and flowering is often stimulated.

Wind firmness, stakes and tree ties

All plants shall be regularly inspected for wind firmness and firmed as necessary at the same time. Stakes shall likewise be checked for firmness and all tree ties inspected and made good as required.

MAINTENANCE OF SHRUB PLANTING

Maintenance period

The Landscape Contractor shall be responsible for the aftercare and maintenance of the completed works for 18 months from the date of practical completion.

Weed control

Weeding may only be done by hand, except in exceptional circumstances where persistent perennial weeds may be treated chemically. The use of chemicals shall only be upon approval from the Landscape Architect.

Noxious weeds (dock, thistle, ragwort) shall not be allowed to establish. All soil surfaces shall be generally free of weeds at all times and shall be entirely free of weeds after each maintenance visit. No grass shall be allowed to encroach into soil areas.

circumstances where persistent perennial weeds may be treated chemically. The use of chemicals shall only be upon approval from the Landscape Architect.

Weed free bands along hedges shall be 750mm wide. Weeds shall not cover 10% of circle at any time during maintenance period.

Watering

Careful attention to water is essential during dry spells and may be critical in the case large shrubs. Shrubs shall be watered as necessary and to their full planting depths.

Fertilizer

Apply top-dressings of organic matter such as cow, horse or sheep manure or proprietary materials to trees and shrubs once in spring, twice during the summer and once again in winter.

This treatment is to be carried out for the duration of the maintenance contract.

MAINTENANCE WORKS

Alternatively, if so wished, inorganic fertilizer can be applied as 'Osmocote' 18:11:10, @ 50g / square metre in spring and late summer.

Hypericum Rust

All Hypericum spp. plants shall be treated with 'Bayleton 5' for rust, according to manufacturers' instructions.

Pruning / trimming

Any pruning should involve removal of dead, diseased or badly crossing branches or shoots. Dead heading reduces competition for nutrients between the developing seeds and the rest of the plants so that further growth and flowering is often stimulated.

Deciduous shrubs are best pruned in winter when new and old growth can be easily distinguished.

Allow shrubs which flower on the current season's growth to be pruned back to older wood soon after flowering.

Any pruning should involve removal of dead, diseased or badly crossing branches or shoots.

Dead heading reduces competition for nutrients between the developing seeds and the rest of the plants so that further growth and flowering is often stimulated. All hedges shall be clipped to maintain uniform and tidy appearance.

Wind firmness

All plants shall be regularly inspected for wind firmness and firmed as necessary at the same time.

MAINTENANCE OF GRASS SEEDED AREAS

Maintenance period

The Landscape Contractor shall be responsible for the aftercare and maintenance of the completed works for 18 months from the date of practical completion.

First roll and cut

When grass has grown to 38mm it shall be lightly rolled and two days later mowed with an approved mower having no roller and sufficiently sharp to avoid root pulling. Mowing shall be carried out under dry

weather conditions.

Further cuttings

Thereafter grass shall be cut regularly (a total of 32 times during each growing season) to a length consistent with the season and quality of growth, and rolled as necessary.

Cuttings shall not normally be removed unless otherwise directed.

Cuttings shall be spread evenly on grassed areas. All grass cuttings shall be swept and removed from hard standing areas.

Note: Grass shall be established with a height of cut at about 20mm.

Pollinator Friendly Mowing Regime

Grass shall not be mown until the 15th of April. Thereafter grass shall be cut on a six weekly rotation (5 cut and lifts per year). Second cut at the end of May, third cut in mid-late July to maximise growth of Clovers and other wildflowers, fourth cut at the end of August and the fifth cut after mid-October. Remove cutting arisings to off site compost facility.

Mowing shall be carried out under dry weather conditions.

Prior to mowing all litter shall be removed from grass areas.

Grass cutting in areas of bulbs/corms shall not be undertaken until June or until such time as dieback has occurred.

Fertilizing

The sward shall be given one application of an approved top dressing 10:10:20 applied in two equal passes in transverse directions at a combined rate of 17 g/ square metre, also avoid any banding.

Weed control

Weed control

Weeding may only be done by hand, except in exceptional circumstances where persistent perennial weeds may be treated chemically. The use of chemicals shall only be upon approval from the Landscape Architect.

Settlement

Any settlements or local depressions shall be made up by the Landscape Contractor at his own expense.

The whole new grass areas shall be handed over as complete well established sward at the end of the maintenance period and all

necessary work (whether specifically mentioned or not) shall be carried out to secure this end.

Trimming

The edges of seeded areas adjoining beds and margins where board edgings or mowing margins have not been constructed are to be carefully trimmed square and true to line.

Acceptance

Unless otherwise stated in the programme of completion, individual areas will not be accepted until the whole of the works have been completed. The Landscape Contractor shall include for keeping such areas correctly maintained and protected until handed over.

GENERAL

Debris removal

All paper and trash in the planted areas shall be removed on a monthly basis. All paper and trash shall be disposed of by the contractor outside of the Client's facilities.

Remove excessive amounts of leaf and litter (dead twigs, branches, leaves, bark, etc.) as it accumulates in maintained areas. Leaves and other organic material useful as a mulch may be left in place upon approval of the Client. Additional visits will be facilitated as requested by Client.

Stone or debris over 50mm diameter shall be removed or buried after each maintenance visit.

Monthly Maintenance - Maintenance Certificate

Throughout the 18 month maintenance period following completion of planting, the Contractor shall maintain the site in a weed free, tidy and tended condition. He shall include in the Schedule of Rates a realistic amount to cover the cost of such maintenance for the full maintenance period.

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