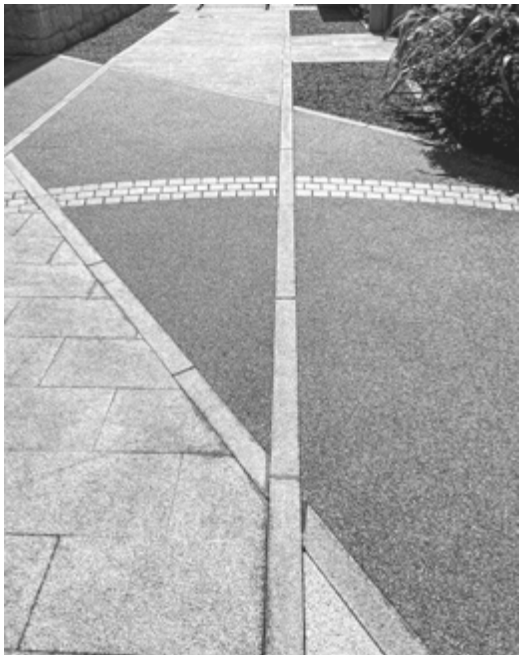
MARCH 2022

Dundrum Village SHD



Landscape Design Statement

Main Street, Dundrum, Dublin 14

Applicant:
Dundrum Retail GP DAC
(Acting for and on behalf of Dundrum Retail Limited Partnership)

NMP LANDSCAPE ARCHITECTURE GRID architects

CONTENTS

Main Street, Dundrum Village, May 2021

Niall Montgomery + Partners Landscape Architects have been engaged by the applicant to collaborate with Grid Architects to develop lands at Dundrum Village.

The development comprises 11no. urban blocks arranged around the central pedestrian spine and a series of 4 courtyards corresponding to 4 separate "zones" or character areas.

The buildings range in height from 4-5 storeys on Main Street to 9-16 storeys to the Dundrum Bypass.

The development will consist of c. 881no. residential units. This development also includes a food store, retail, café/restaurant and a crèche are at ground floor level, fronting Main Street, as detailed in the Schedule of Accommodation included with this submission.

The development will include the demolition of all existing structures on the site with the exception of No.'s 1-3 Glenville Terrace which will be refurbished. Vehicular and cycle parking is provided below podium with visitor cycle parking spaces in the public realm. Vehicular access to serve the proposed development will be provided via Dundrum Bypass. The existing vehicular entrance on Main Street will be closed.

Pedestrian connections and linkages are proposed through the site, forming connections that are not currently possible from within the site to Main Street; to the south via Church Square and Dom Marmion Bridge; and west via the proposed new Sweetmount Bridge connecting Main Street to the residential communities west of the Bypass.

INTRODUCTION 0.0

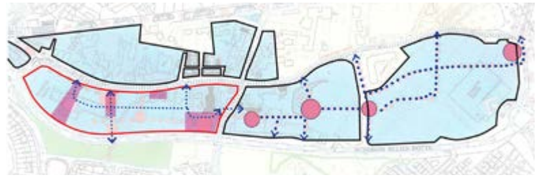
0.1 Response to queries from DLRCC

Comment

2.2.6 (P18)
Public Realm - Justification of north-south route


The Mill Pond


Pembroke Square


Urban Structure Plan RefDLR drg. PL-00-040

2.2.7 (P19)
Open Space Provision - Quantum


L1-100 Open Space Calculations.

Response

• The north south route is rooted in Phase 1, Mill Pond and Pembroke Sq which sets up the meandering route and necklace of spaces, linking squares of similar scale and quality as referenced by DLR's urban design intent (ref section 3.3) and creating a variety of spatial experiences.

• It is not anticipated that the north south route will reduce footfall for or compete with the main street, in fact it is to the contrary. It is deliberately designed without commercial/retail activation so as not to detract footfall and shoppers from the existing and proposed new businesses on Main St.

• The north south route has little or no retail to activate it or attract would be shoppers. It is activated by ground floor access to the blocks at concierge, cores, GF apartments, bike stores etc.

• This route is designed as a secondary route not to compete with main street but in the first instance create an accessible link through the development for residents, public and visitors.

• It is designed to bellow and meander as a path in village park might, it narrows down to a 3m width in portions and opens up at public spaces, creating a human scale against the backdrop of high density residential blocks and providing a variety of spatial experiences.

• The edge condition between public and communal spaces is well defined and dynamic in its nature allowing fro visual permeability and 'borrowed landscape'. The route allows both realms to utilise space.

• Bike Stores have now been located on the corners of blocks in order to discourage conflicting movements with pedestrians.

Refer to report section 3.0 and landscape planning drawings for levels, access and measurable dimensions.

• Open space quantums are derived from the Design Standards for Apartments for communal open space and the and current development plans in respect of public open space.
Refer to planning drawings L1-100 for quantums and design report section 3 for rationale.

0.1 Response to queries from DLRCC

Comment

2.2.7 (P20)
Open Space Provision - Quality
• Justify usability of Glenville Terrace Square

• Clarity in respect to opening hours of north south route

• Justify Design, Programme + Location of Church Square


Proposed Church Square

Response

• Usability of Glenville Terrace Square considered transnational space – however, terrace seating and lawn designed as a park type space to encourage dwelling, social interactions and gatherings. The space is flexible in nature and has a soft landscape design approach. The terrace on main street has now also been made a public space as opposed to private communal space to facilitate outdoor eating. A reference to the precedent of Ashgrove Terrace also on Main Street is a treatment previously acceptable to DLR.

• The public route will be open 24 /7

• The location of Church Square acts as a transition between Dundrum Town Centre and the proposed residential development.

• Church Square is located on the north south root and is part of a sequence of spaces which link with Phase 1, Mill Pond and Pembroke Sq as referenced by DLR's urban design intent (ref section 3.3) creating a variety of spatial experiences.

• The Church and its various communal facilities can take advantage of the proposed space, further more it address the rear of these church facilitates it a much more positive way.

• The retail spaces and apartments which face onto the space from Block A4, coupled with the church buildings and elevation of the adjacent road and nature of the active route crossing the space are deemed adequate in the applicants view to provide active and passive surveillance and deter anti-social behaviour by design in addition to the applicants management strategy. Moreover, the space is programmed with children's play, fitness equipment and seating. Such programming is widely considered to encourage ownership over a space and consequently, by design, deter anti-social behaviour, particularly in such an established and vibrant Town Centre.

• The park is designed to incorporate play, fitness equipment, seating and provides for events with flexible space for a skate rink, market (inc. power). It is located on an active route to connect with the town centre, has a flexible lawn space, seating and an abundance of native tree planting to bound the site and increase its biodiverse credentials including suds features also to be utilised as a learning opportunity.

• The 3.5m level difference to Ballinteer Road cannot be overcome without the use of a stair case and lift in order to meet Part M requirements. It is acknowledged that this condition is not ideal.

0.1 Response to queries from DLRCC

• Planting depth for trees on podium	• 1100mm to 900mm planting depth will be provided for deeper rooting trees on podium. These trees will not meet the heights they typically would in a natural environment, however they will provide the desired effect and create much needed habitat.
2.2.11 (P27) • Clarity in respect to pedestrian and cycle users of the proposed Sweetmount Bridge	• The proposed Sweetmount Bridge provides for a shared surface to serve both pedestrian and cycle movements. The handrails are of sufficient height to cater for cyclists who choose to cycle across the bridge.
• Main Street footpath pinch points	• 3m path width is now clearly shown on the drawings to demonstrate adequate width – dimensions also indicated, clearly. Please refer to engineers drawings.

0.2 Response to queries from ABP

Comment	Response
3. Landscaping, Materials and Character: Further consideration/justification of the documents as they relate to the visual impact, materials and finishes to the proposed buildings and hard & soft landscaping. The further consideration / justification should address the character and identity and creation of inclusive people friendly neighbourhood, regard being had, inter alia, to the architectural treatment, landscaping, quality public and communal open spaces, pedestrian way finding and connectivity. The further consideration of these issues may require an amendment to the documents and/or design proposals submitted.	• Please refer to planing drawings L1-1, L1-5, L1-7, L-8 and L1-9 in conjunction with Landscape Design Statement for further detail on hard and soft landscape finishes. In respect to justification quality and quantum of communal and public open space and connectivity please refer to sections 3 and 4 of the Landscape Design Statement.
15. Detailed landscape drawings that illustrate hard and soft landscaping, useable communal open space, meaningful public open space, quality audit and way finding. The public open space shall be usable space, accessible and overlooked to provide a degree of natural supervision. Details of play equipment, street furniture including public lighting and boundary treatments should be submitted.	• Please refer to planning drawings L1-1, L1-5, L1-7, L-8 and L1-9 in conjunction with Landscape Design Statement for further detail. please refer to Public Lighting Design Report and Drawings submitted for details on public lighting design.

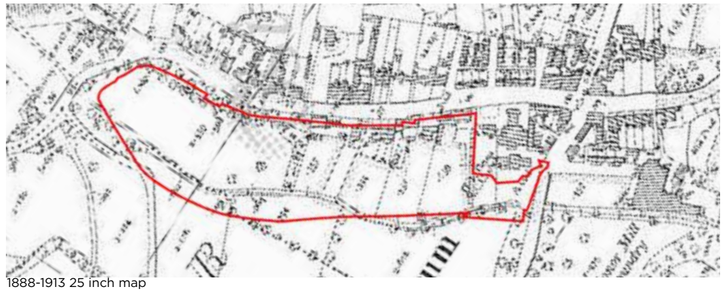
CONTEXT ANALYSIS 1.0

1.1 Historical Context

Dundrum main street is one of the oldest streets in the area and its character has remained largely unchanged from the 19th century. The surrounds to the West were open space until the 20th century serving as the grounds to large detached residences. The boundaries of the current site were defined by Main Street on the East and a small stream to the West which became the approximate location of the Dundrum Bypass. Drundrum remained a small village for a large majority of its history and garnered a reputation of a health resort similar to that of Carrickmines in the early 19th century. Some of the most important historical landmarks around the site are the likes of Dundrum Castle and Holy Cross Church; which is located on the eastern most boundary of the site.

1829-1842

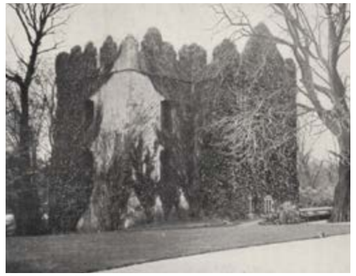
1837-1842 6 inch map



1888-1913 25 inch map

Holy Cross Church

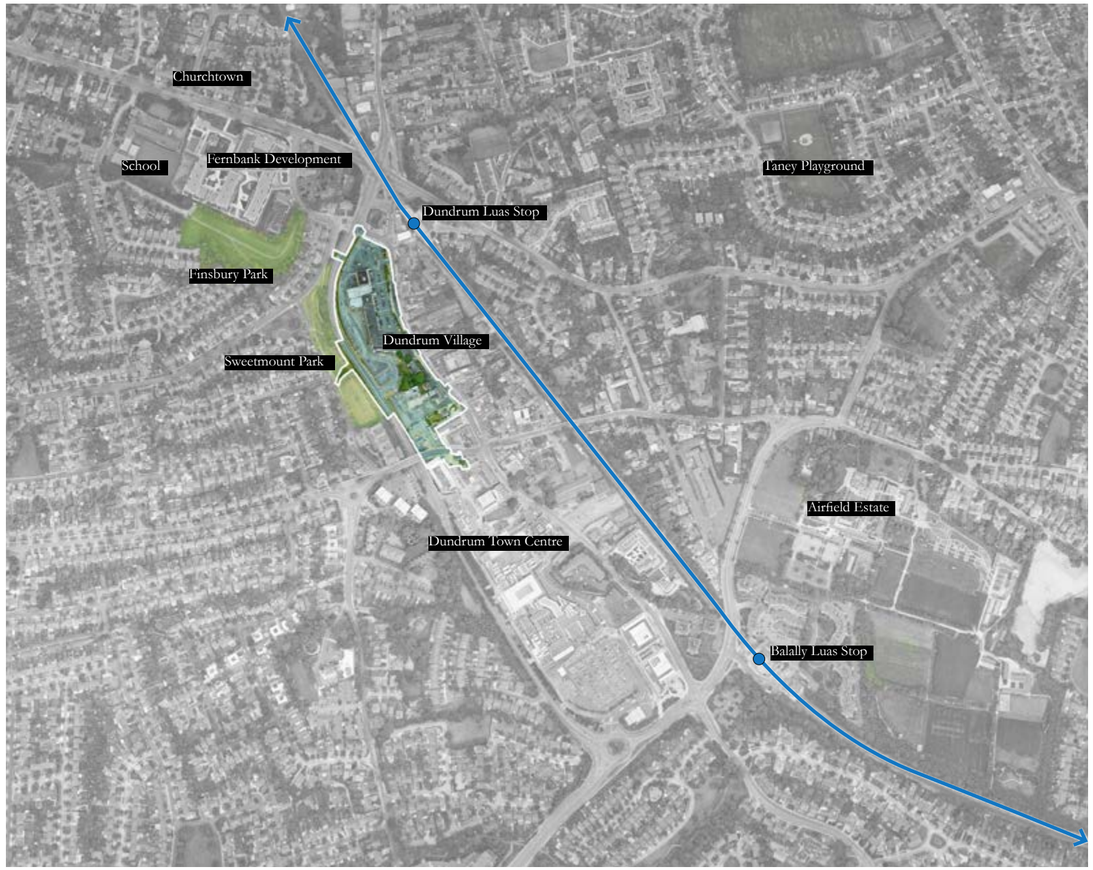
Dundrum Mainstreet



Dundrum Castle

1.2 Local Context

The site is located in Dundrum, a prosperous residential suburb of Dublin. The city centre is a 20 minute LUAS ride from Dundrum. The LUAS also connects Dundrum with the Sandyford/Leopardstown and Cherrywood employment hubs. There are also multiple bus routes which pass by the area. The site forms the western and northern boundary of Main Street and includes land bounded by Dundrum By-pass to the west and Ballinteer Road and Dundrum Town Centre to the south. The old Dundrum Shopping Centre (anchored by Lidl) and the surrounding surface car parking makes up the majority of the site. Dundrum Town Centre (2005) to the south of the site across Ballinteer Road, is Ireland's largest shopping centre, attracting footfall of 18 million people annually. It provides headquarters office buildings alongside suburban office suites, a mix of enclosed and outward facing retail, leisure and food and beverage accommodation together with significant public realm. The development is situated close to both Sweetmount and Finsbury Parks.



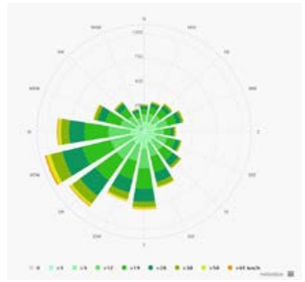
Luas Line ⟷ Luas Stop ●

Microclimate

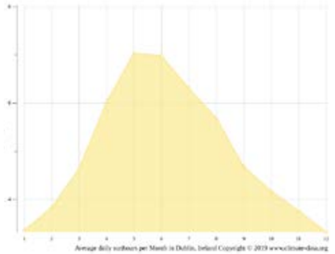
The site has minimal overshadowing from neighbouring buildings due to their low height.

Existing trees in Sweetmount Park on the Western side of the Bypass provide an element of shelter to the prevailing South Westerly winds.

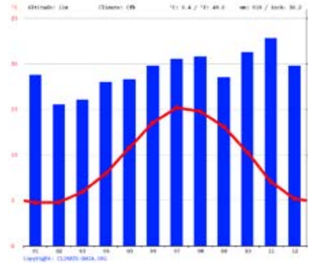
Microclimate Diagram showing sun path + prevailing SW winds.



Wind Rose for Dublin - Avg. direction + speed



Avg. Daily sunshine hours per month - Dublin



Avg. Climate for Dublin - rainfall vs. temperature

Access + Connections

Parking is accessed from the Bypass to the west of the site. The entry point on Main Street is the primary access to the Village Centre and Supermarket. The road beside the Parochial House provides secondary access from Main Street to the site via a steep ramp. There is pedestrian access from main street to the shopping centre. The all movements junction on the Dundrum Bypass provides access to the rear of the Village Centre for customers and all delivery vehicles. Additional pavement widths and cycle routes have been provided along Main Street. This creates a one-way system northbound with two-way access to the Village Centre from the Bypass only.

Vehicular Road
Pedestrian Connection
Vehicular Access
Pedestrian Access

Access from Main St. to Bypass

View from Main St. towards Luas bridge

View along Dundrum Bypass

Existing Levels

The site steps down by over a storey between Main Street and the Bypass. The site sits on the Eastern slopes of the valley of the River Slang, which broadly follows the line of the Bypass on the Western side of the site. The site is relatively flat along the Western edge along the Bypass but rises significantly from around +45m at the Northwest corner to +54m at the Southeast corner. There are retaining walls across the site creating a series of steps in the ground levels. The land rises to Sweetmount Park on the western side of the Bypass.

Diagram showing existing levels

Publicly accessible Ramp main street to bypass

Level difference from car park to bypass

View from Main St. towards Sweetmount Park

Boundaries + Edges

The existing site boundary along the Bypass consists of a low brick wall with a low railing on top. This continues around the Northern tip of the site. On main street there is a low brick wall with planting between the shopping centre car park and the footpath. Existing buildings for the boundary to Main Street from the shopping centre to the Church. A high wall forms the boundary between the site and the parochial house and Holy Cross Chruch to the rear. To the South of the site, the bridge at Balinteer Road forms one edge of the site and there are large retaining walls to deal with the level change, some of which have railings on top. Within the site, there are railings and blockwork walls which define car parks.

Diagram showing existing boundary conditions

Low Stone Wall + Railing
Hedge Planting Edge
Low Brick Wall
Building Edge to Main Street
Parochial House Wall
Bridge Edge
Railings
Block Wall
High Stone Wall
Retaining Wall + Railing

Retaining wall with railings on top

Retaining wall with railings on top

Boundary to bypass from shopping centre car park

1.3 Existing Site Conditions

The Holy Cross Church is an attractive buildings with protected structure status and which positively contribute towards the character of the area. 1-3 Glenville Terrace is a run of three terraced houses halfway along Main Street and makes a positive contribution to the street scape.

The bypass side of the site presents an unattractive back land area dominated by car parking.
This currently presents an uninviting entry point to Dundrum.

Materiality on site.

The village life, and every care that reigns
O'er youthful peasants and declining swains;
What labour yields, and what, that labour past,
Age, in its hour of languor, finds at last;
What forms the real picture of the poor,
Demands a song—the Muse can give no more.
Fled are those times, if e'er such times were seen,
When rustic poets praised their native green …
sympathetic descriptions of rural village life.

George Crabbe, 'The Village'.

LANDSCAPE VISION 2.0

2.0 Landscape Vision

Re-imagining the Village

Deeply embedded in the culture of village life, the landscape design proposals for Dundrum Town Centre Phase 2 will sensitively raise the past to merge with the innovative future living and in doing so harbour a sense of community which defined the Irish villages of old. The rich tapestry of street life which adorns Dundrum main street, its historical façades and varied textures have informed an eclectic design approach, one full of ambition, to awaken the sense and involve its everyday residents, staff and visitors residence. The proposals will compliment phase 1 and not compete but provide a new offering in revitalising what is a hub in suburban Dublin.

Authenticity, Scale, Identity

The site benefits from rich architectural surroundings, which have inspired the development's design. In pursuit for authenticity, careful attention has been paid to the selection of the same or similar materials and patterns to assimilate the new space to its historic context and ensure the design concept tells the story of the site's history and subsequent harmonious evolution.

The landscape design will enforce a human scale through tree planting, a variety of spatial typologies and creation of safe, comfortable open spaces for users to explore. The landscape over time will mature, and so the spaces will be dynamic, opening and closing to reveal secrets and celebrate place.

Informing identity is not only the scale of spaces, the variety and the typology but also the careful selection of material, its relationship with the existing built fabric and the juxtaposition of scale of textures against one another. These material elements enhance a sense of place, not in isolation but in combination with the spatial hierarchy.

Design Principles




The use of native tree and shrub planting and wildflower meadow grass areas to respond to, support and promote the national pollination plan will have a positive net gain for bio-diversity. This will enhance the existing ecological system, creating more habitat and diversity.
Additional tree planting to promote Carbon Sequestration as well as a varied habitat, roosting for bird life and screening the development. The sites character is very much in tune with tree planting and this is a unique selling point for it.

Engaging Community



Dundrum Village offers an opportunity to curate community. The masterplan has been crafted in such a way so as to promote placemaking, creating opportunity for interactions on a social level and generating a sense of neighbourhood and connection. The simplest of interventions such as a bench on the corner of an intersecting path can create friendships in a time of social isolation.

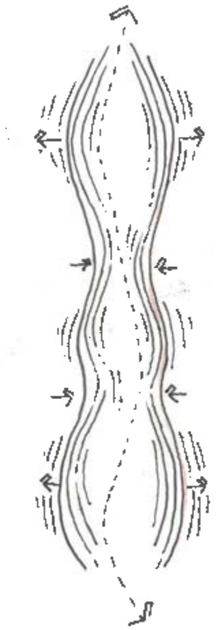
“BEAUTY IS THE MOMENT OF TRANSITION...”

- Ralph Waldo Emerson

LANDSCAPE DESIGN STRATEGIES

3.0

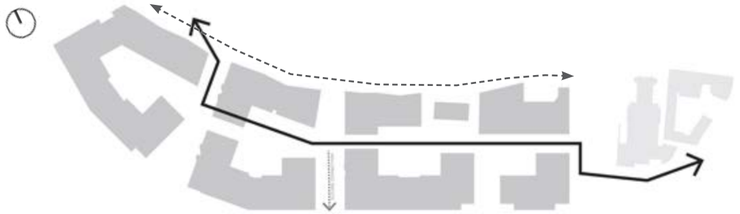
3.0 Landscape Strategies: Design Principles

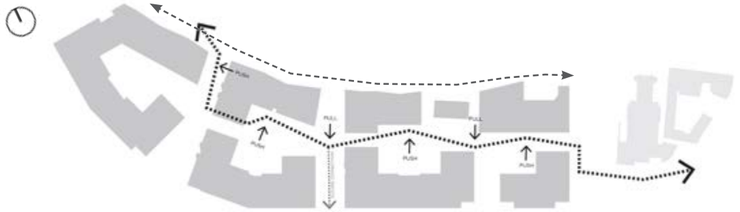


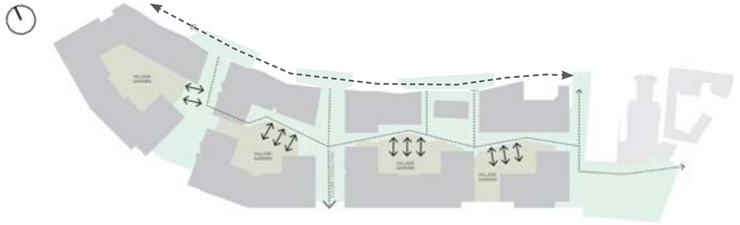
ROBERTO BURLE MARX

Like branches of a tree the site has been master planned to be inviting and permeable in nature - responding to context and community. Spaces have emerged as routes traverse and open them up.

In contrast the influence of the village green, at least conceptually, has informed a softening of the design language, organically wrapping its way around the architecture to reveal spaces in celebrating movement and moments for pause.







Public Route

A direct route through the site from the Luas to The Shopping Centre provides clear access for the public but lacks in focal points, variation and creates an impression of foreshortening. There is a lack of edge to create interest in the landscape and spatial definition can be difficult to achieve.

Manipulating The Line

In manipulating the route by pushing and pulling it the spatial sequence can be enhanced and greater variety in scale begins to emerge. In addition, the relationship to points of interest and intuitive wayfinding can be further strengthened.

Interfaces

The interface between public and private influences one another in how the spaces bellow and narrow to allow more programme for one or other of the spatial types both of which utilise the traditional landscape architecture concepts of borrowed landscape at the edge of meeting point of the respective boundaries. The public spaces are open and welcoming onto the Main Street and from the Main Street into the development.

3.1 Landscape Strategies: Public + Communal Open Space

Pubic Open Space: The proposals for the public realm and outdoor spaces (public open space, communal amenity space) are detailed in the Landscape Design Statement, (NMP Landscape Architecture)
As a "Major Town Centre" site it is considered that Public Open Space should respect the high density nature and town centre character of the area and, as such, it is not appropriate to set aside large areas of the site for open space. The strategy therefore builds on the character of the phase 1 Dundrum Town Centre development by proposing a series of street and urban spaces that will complete the public realm for the town centre and integrate with the existing Main Street.

Following the principles of the previous Urban Structure Plan (1998), the principles of which have been carried forward in successive Development Plans, the public realm strategy for the site involves creation of a strong north south spine stretching from Pembroke District behind Holy Cross Church and up through the centre of the site and with connections back to the existing Main Street. The central north-south spine meets the new east-west street that links Main Street to the new Sweetmount Bridge which links the site to the existing public open space at Sweetmount Park and Finsbury Park beyond.

The core usable public open spaces focus on 4no. key nodes:
1. Usher Place,
2. Sweetmount Place,
3. Glenville Terrace Square and
4. Church Square.

These spaces and are further described in terms of use and character in the following chapters.

The positioning of these spaces occurs on key intersections where north south and east west routes meet, adjacent ground floor building programme is activated with a variety of access points or retail or food and beverage opportunities, encouraging users to pause and utilise them for active or passive recreation creating further activation.

The location of the core spaces form a part of wider narrative in terms of a sequence of space in the wider Dundrum Town Centre area as described in the Design Statement (Grid).

The spaces offer an alternative use and character to those already provided for in Dundrum, creating choice and variety in spatial typology, varying character in terms of defining identity and a unique sense of place.

The assessment of public open space provision for this development should also take into consideration the planning gain associated with the provision of a direct pedestrian bridge connection to the underutilised Sweetmount Park which is located immediately adjacent to the subject site and which will be a significant amenity for the residents of the proposed development. Another public park area – Finsbury Park – is also located nearby.

The frontage of the proposed development along Main Street will complement the Dún Laoghaire-Rathdown County Council upgrade of Main Street. The proposed development will facilitate the widening and upgrading of the footpath on the eastern side of Main Street adjacent to the current application site.

The Dundrum By-pass verge will also be landscaped to soften the edge and this treatment will be consistent with the approach already taken to the Dundrum Town Centre (Phase 1) development further south along the bypass. Pedestrian and cycle connections along the Dundrum Bypass will be improved and upgraded as part of the development and the environment will be generally improved through landscaping and passive surveillance.
The public open space provision is detailed in the table below which include the 4 main spaces referred to above but also other areas of "transitional space" comprising public paths and routes linking core public open spaces to one another. While they can be discounted for open space calculation purposes, the transitional spaces provide a functioning part of public realm with the provision of incidental seating, opportunities to promote social interactions whilst walking / exercising and offer enhanced landscaped routes which are well planted and have a positive impact on users. In addition, defensible space, a 1.5m offset zone adjacent to ground floor private amenity space associated with ground floor apartments, has been excluded.

The overall quantum of public open space is c.15% of the gross site area of 3.53 ha. Based on the net site area of c.3ha (ie. excluding the areas of public roads on Main Street, Dundrum Bypass and Ballinteer Road) then the 4 public open space areas illustrated on the diagram and listed above amount to 18% of the site. If the areas of transitional space were factored in then the percentage increases to 22%.

Development Plan Standards
The ABP Opinion seeks confirmation on compliance with Development Plan standard for public open space (Ref. Specific Information Item 14).
The DLR County Development Plan Section 8.2.8.2 which requires that a minimum of 10% of the site area is dedicated to public open space with flexibility provided for lower levels of provision in certain circumstances. The proposals above exceed this quantitative measure and, as detailed in this report, are of a very high quality and designed to response to their Town Centre location.

The Draft Development Plan (Ref. Section 12.8.3.1/ Table 12.8) includes a figure of 15% of site area with allowances for lower level of provision in high density urban schemes and / or smaller infill sites. In any event, the proposed development is deemed to meet the Draft Development Plan requirements in relation to public open space. Refer to table below.

Communal Open Space is provided in accordance with the requirements of the Design Standards for New Apartments – Guidelines for Planning Authorities, 2020 (Ref. section 4.10 and 4.11.).

Please refer to Housing Quality Assessment (HQA) by Grid Architects for calculations which are summarised in the Table below.

The provision of communal open space is proposed to be delivered in the form of courtyard space and roof terraces across the 4 zones. The total requirement of 5574sqm set by the Guidelines is satisfied.

The courtyard spaces have been measured to exclude a 1.5m defensible zone offset to ground floor apartments private amenity space. In addition the figure does not include ventilation openings to basement car parking.
In respect to program and layout, the design responds to the function of the buildings ground floor.

Communal gathering spaces have been located close to core entrances and internal amenity space in order to compliment activities and create opportunities for interactions and spill out. These spaces are designed as terraces with integrated seating , BBQ's and power supplies etc. to accommodate community events. Space has been allocated to children's play, whilst it is envisaged and encouraged that the entire courtyard will be 'playable', provision for specific tot play has been incorporated.

In addition, outdoor exercise has been proposed with callisthenics. The public private boundary has been made to ensure the safety of children utilizing a low railing (1.1m in height, screened with a 1.1m hedge). This approach creates visual permeability, leaning on design techniques to 'borrow landscape', whilst providing for passive surveillance.

All communal spaces receive the minimal required sunlight and programme of these spaces respond to the location of sunlight, specifically children's play. Refer to Daylight and Shadow Impact Assessment (BDP) for further detail.

PUBLIC OPEN SPACE

TOTAL SITE AREA	35300 M²
USEABLE SPACE	5326 M2 (15%)
TRANSITIONAL SPACE	1262 M2 (3,6%)
TOTAL PUBLIC SPACE	6588 M2 (18,6%)
REQUIRED (10% OF THE SITE)	3530 M² (10%)
DIFFERENCE	**+ 3058 M2 (8,6%)**

PUBLIC USABLE SPACE: 5326 M² (15%)

PUBLIC TRANSITIONAL SPACE: 1262 M² (3,6%)

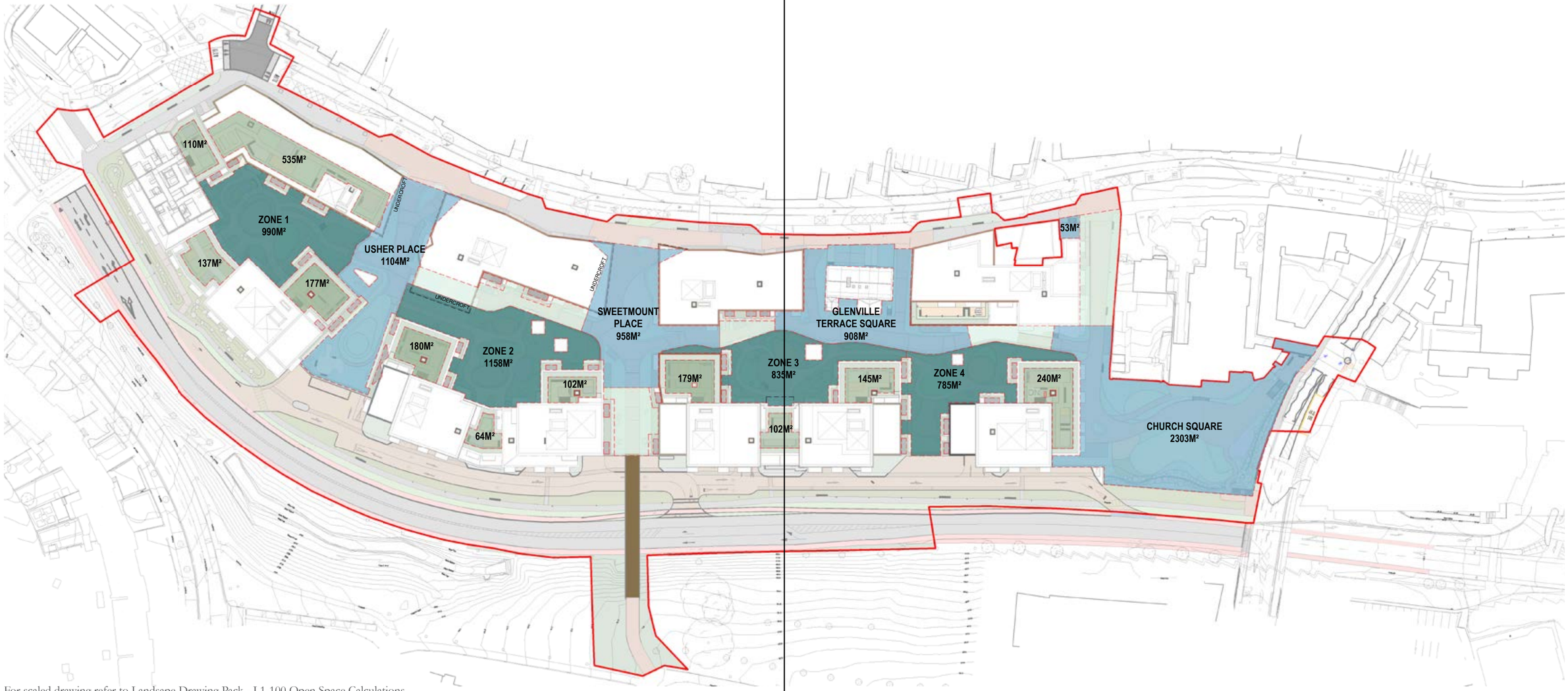
COMMUNAL AMENITY SPACE

AREA PROVIDED	COURTYARD	ROOF TERRACE	TOTAL	REQUIRED	DIFFERENCE
ZONE 1	990 M²	959 M²	1949 M²	1838 M²	+ 111 M²
ZONE 2	1095 M²	346 M²	1441 M²	1513 M²	-72 M²
ZONE 3 + 4	1518 M²	666 M²	2184 M²	2223 M²	-39 M²
TOTAL	**3603 M² (65%)**	**1971 M² (35%)**	**5574 M²**	**5574 M²**	**0 M²**

COMMUNAL AMENITY SPACE COURTYARD: 3603 M²

COMMUNAL AMENITY SPACE ROOF TERRACE: 1971 M²

3.1 Landscape Strategies: Public + Communal Open Space



For scaled drawing refer to Landsape Drawing Pack - L1-100 Open Space Calculations.

3.2 Landscape Strategies: Open Space Typologies

As per Section 8.2.8.3 Public/Communal Open Space Quality - DLR County Development Plan 2016-2022

Communal Open Space (Courtyard)

Play

BBQ

Public Open Space (Primary)

Picnic

Kick About

Relax

Public Open Space (Secondary)

Seating

Spill Out

Communal Open Space (Roof Terrace)

Social

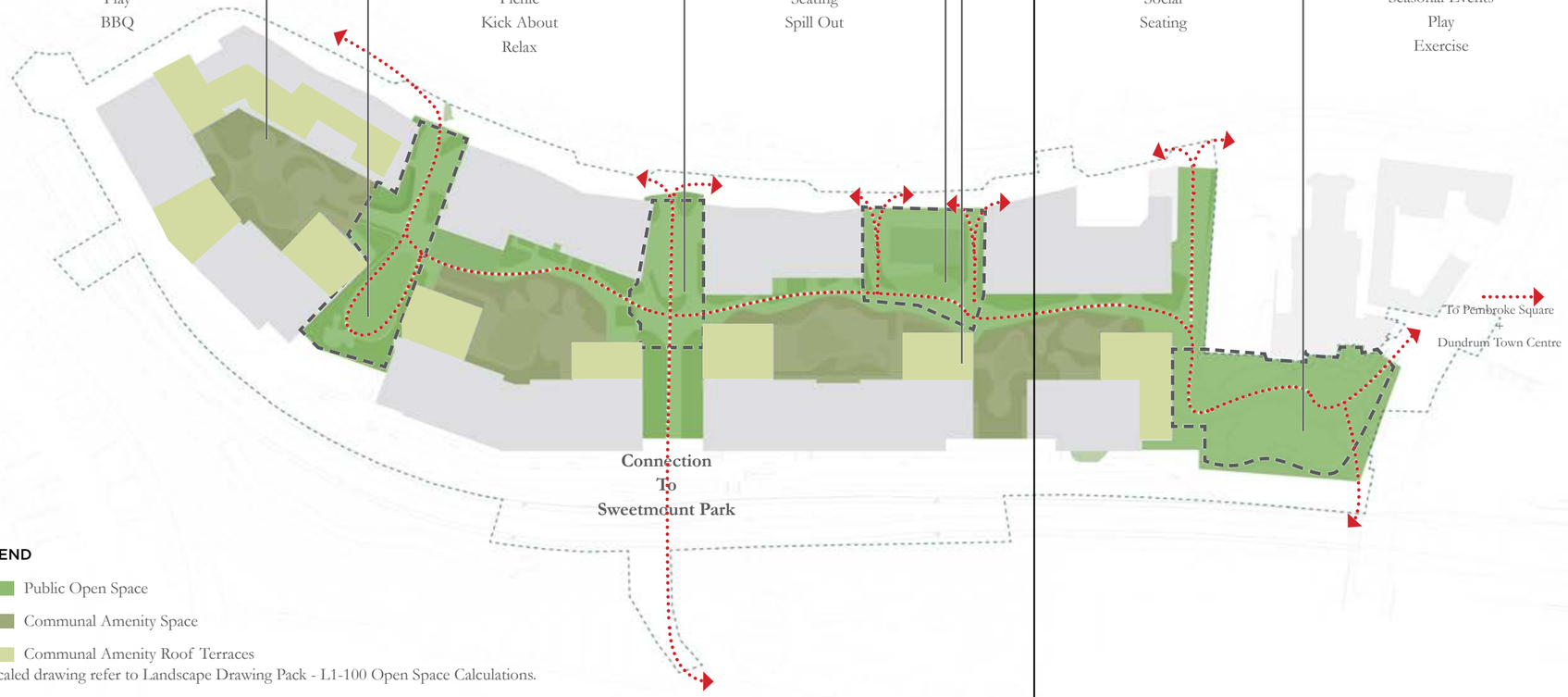
Seating

Public Open Space (Primary)

Seasonal Events

Play

Exercise



LEGEND

- Public Open Space
- Communal Amenity Space
- Communal Amenity Roof Terraces

For scaled drawing refer to Landscape Drawing Pack - L1-100 Open Space Calculations.

The Open Space for Dundrum Village SHD has been planned without boundaries as an open permeable and welcoming piece of public realm. The ground floor area has been allocated as public open space with a series of smaller pocket spaces designed for seating, exercise or play which interface with the communal spaces bound by dense planting and within which a 1.1m railing sits, providing visual permeability. Some roof garden has been proposed to capture views and create a unique amenity for the development which is entirely communal open space. The hierarchy of space is allocated in between the blocks - with gathering spaces located in close proximity to core entrances to include BBQ and seating areas, varying in scale as the primary spaces. With highly active areas, secondary spaces and a series of smaller tertiary spaces arranged throughout the masterplan as connective tissue, tying the entire development together as one cohesive masterplan and a series of interconnected spaces. A lawn area allows for informal play and activities. In addition, as previously noted there will be opportunities to kick a ball and potential for calisthenics. All of this is compliant with **section 12.8.5.1** design aspect of the development plan.

The core public spaces open out onto mainstreet to invite users in as respite to the street life, to compliment it and not compete with it. They occur on a route linking with Dundrum Shopping Centre and further connect to the existing Pembroke Square to the south.

Public Open Space Precedents

Primary Open Space Reference

DLR Lexicon, Dun Laoghaire

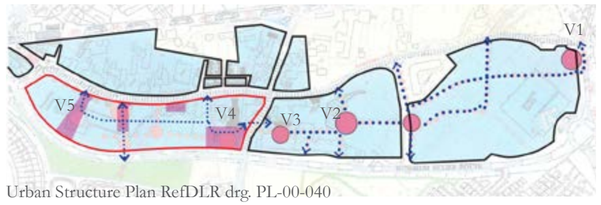
Secondary Open Space Reference

Pembroke Square, Dundrum

Secondary Open Space Reference

Myrtle Square, Dun Laoghaire

3.3 Landscape Strategies: Scale Comparison + Necklace of Space



Urban Structure Plan RefDLR drg. PL-00-040

View 1: Proposed Usher Place

View 2: The Mill Pond

View 3: Pembroke Square

1. Usher Place

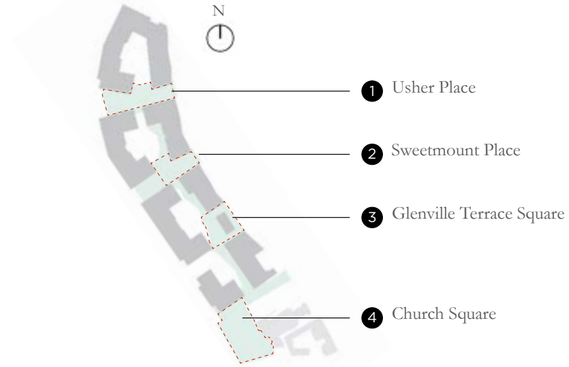
National Gallery of Ireland, Dublin

2. Sweetmount Place

Pembroke Square, Dundrum

The north south route is rooted in Phase 1, Mill Pond and Pembroke Sq which sets up the meandering route and necklace of spaces, linking squares of similar scale and quality as referenced by DLR's urban design intent and creating a variety of spatial experiences. as connective tissue, tying the entire development together as one cohesive masterplan and a series of interconnected spaces.

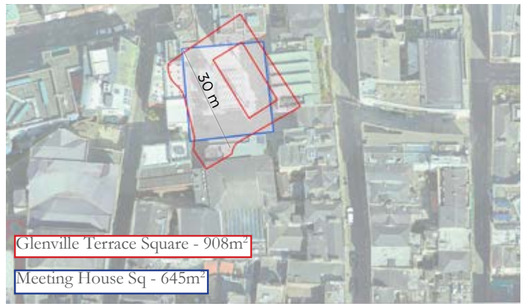
View 4: Proposed Church Square



Core Space Location Plan

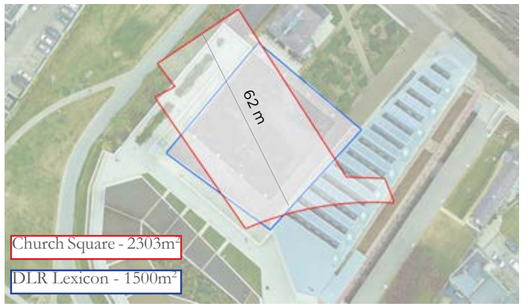
3. Glenville Terrace Square

Meeting House Square, Templebar



4. Church Square

DLR Lexicon Library, Dun Laoghaire

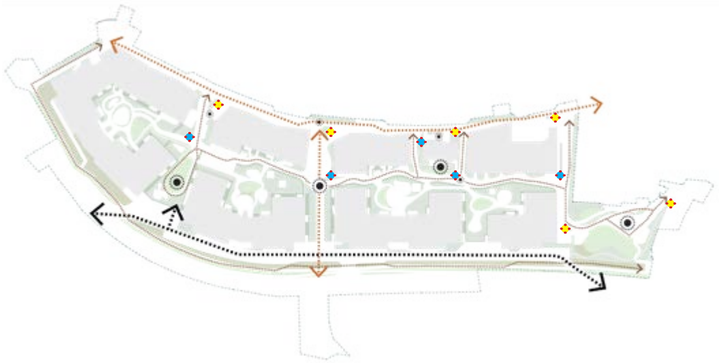


3.4 Landscape Strategies: Circulation + Wayfinding +Access

As per Section 8.2.8.3 (ii) Accessibility + Permeability - DLR County Development Plan 2016-2022

The proposed character of Dundrum Village SHD encourages active engagement with nature. The space will be utilized for jogging, walking, dog walking as well as access to the apartment blocks. Ultimately this will encourage greater use of the outdoor environment, greater opportunities for interactions and places health and wellbeing at the forefront of spatial planning. The entire site will be Part M compliant and universally accessible. Vehicles are constrained to access underground parking located directly from the access road alongside the Dundrum Bypass which serves for deliveries also.

A series of exercise routes for walking or running or dog walking have been identified and will be sign posted accordingly. These safe, active routes will be appropriately lit and overlooked to ensure passive surveillance. Dotted along the route will be exercise stations in the form of single items of equipment or clusters. These can form part of a work out either during, before or after a routine. It is proposed to include pull-up bars, rope climbs, monkey bars and elements to compliment the calisthenic workout. Nature becomes the gym!



LEGEND

- Car Route
- Primary Pedestrian Route
- Secondary Pedestrian Route
- Nodes

Wayfinding

- Primary - Totem Sign
- Secondary - Finer Post

3.5 Landscape Strategies: Play + Exercise Strategy

As per Section 8.2.8.5 Apartments Play Facilities - DLR County Development Plan 2016-2022

Inclusive play spaces have been proposed to provide opportunities for everyone to play together. The play spaces are accessible, engage children of all ages and abilities and encourage them to interact with each other. These will promote health and well-being, learning, and social interactions. Play is provided throughout the site and responds to age, context and ability. Several principles have driven the design all of which underpin creating a well-integrated community:

- equipment that stimulates the senses such as sound play
- equipment that is accessible to all such as rocker's with the width for wheelchair access and part M compliant and space for children who do not like to be touched
- surface materials meet EN 1176 and EN 1177 standards, to be safe and visually pleasing
- play for all has been provided for with play equipment that has similar tasks but different levels of challenge for age groups and abilities, such as the climbing frame, providing children with choice.
-Providing for calm and landscaped areas with seating, or cubby-holes in tree houses.
-A variety of routes to encourage exploration but also allowing for solitary play, onlooker play, parallel play (playing beside one another), associative play (playing close by and mimicking other children).
- Exercise Stations have been dotted around the development also.

LEGEND

- Play Area
- Exercise Area
- Exercise Loop

Reference Image

Reference Image

Reference Image

3.6 Landscape Strategies: Planting Strategy

As per Section 8.2.7.1 Biodiversity - DLR County Development Plan 2016-2022

The predominant mix of shrubs will be perennial species, shade tolerant and evergreen. Roof gardens will be low water usage and wind tolerant species.

Scale of planting and transition in shrub planting from low medium and high to create defensible space has been planned according to programme, thresholds and spatial hierarchy.

The pollinator plan 2020 has richly informed the planting pallet and soft landscape approach. This in conjunction with a selection of native plant species will characterize the landscape design. Planting will inform and define public routes to differentiate from communal or private space.

Planting will respond to the existing character in which it is located and enhance the sense of place to compliment it and not compete with it.

It is proposed that trees will be planted as large specimens. It is anticipated that these trees will not achieve full mature heights as they are in most parts proposed over podium. This will ensure the concept and need to make provision for tree planting can be realised whilst day light to ground floor apartments can still be provided for using a range of large and small tree species.

LEGEND

- Planting
- Evergreen Hedge
- Lawn

Reference Image

Reference Image

Reference Image

3.7 Existing + Proposed Trees

As per Section 8.2.7.1 Biodiversity - DLR County Development Plan 2016-2022

The existing trees can be found on the south west corner and these will be retained. The street trees within the application line will be retained, or moved if they are part of the pandemic plant programme. For further details, please refer to the Arborist's report.

Trees to be removed are indicated in the arborist's tree impact drawings.

It is proposed to re-plant a large portion of new trees to define spaces, enhance character and bio-diverse credentials. These will vary in specification of size and species. There will be a majority selected form native tree species and they will be deciduous and evergreen in nature and varying habit.

LEGEND

- Existing Trees To Be Retained
- Proposed Trees

Reference Image

Reference Image

Reference Image

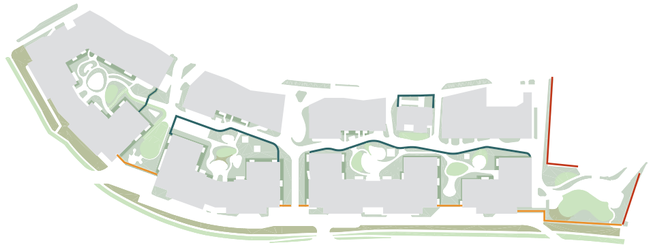
3.8 Boundaries Strategy

As per Section 8.2.8.4 (iii) Boundaries - DLR County Development Plan 2016-2022

For the most part the boundary conditions for Dundrum will be retained and repaired where required the building podium will form most of the edge. However, some alterations and interventions will be required as follows:

1. Existing 1.3m-2.5m Rubble Wall to be retained

2. Proposed railings to communal open space within planting and to podium parapets and PAS.



LEGEND

- 1. Limit Of Work
- 2. Boundaries to Communal Open Space - Gated Access
- 3. Existing Boundaries to be Retained (Refer to Chapter 1.3)
- 4. Railing with Hedge in front

Reference Image

Reference Image

Existing Rubble Wall

3.9 Water Attenuation Strategy

As per Section 8.2.8.3 (iv) SuDS - DLR County Development Plan 2016-2022

The landscape surface water drainage strategy will incorporate bio-retention tree pits on street, rain gardens on podium and large planted areas also on podium to slow release of water to the main system. It will also include green roof sedum blankets and roof gardens. The soft landscape percentage will allow water to drain freely if not captured by flirter drains and drained into an attenuation tank before release or for re-use in the irrigation system of the podium area. Currently green roofs have been planned for a percentage of the roof area which are extensive with the exception of the roof terrace gardens where the planting will be intensive. Refer to Engineering Services Report for further detail. Rain gardens, also known as bio-retention filters, gather storm water. By using a combination of mulch, compost, well-drained soil, and plants, rain gardens store and clean rainwater slowly by releasing it into the ground. Some of his water can be captured as part of the overall water harvesting system.

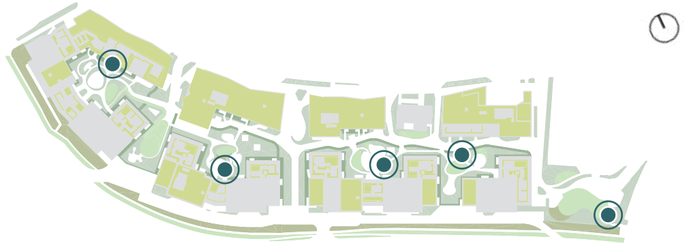
Rain gardens benefit both people and the natural environment in the following ways;
- Filtering pollution contaminated in storm water runoff.
- Resupplying groundwater by allowing clean water to soak into the earth.
- Maintaining stream flows during summer months.
- Providing habitat for butterflies, birds and other insects.

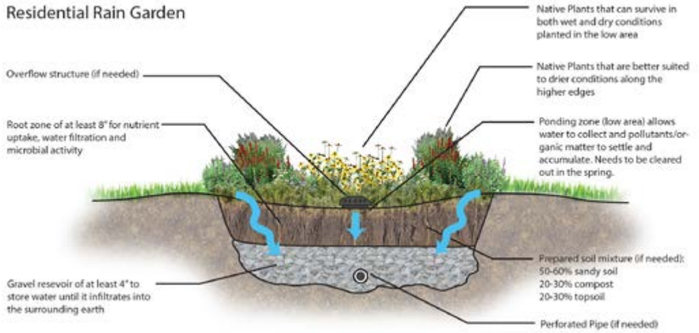
LEGEND

- Rain Garden
- Water flow Direction
- Green Roof

Reference Image

Reference Image





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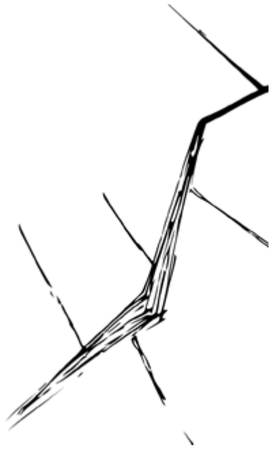


Tailored to explore the sites context and awaken the notion of village living the design will celebrate the tradition village park and green with programmed spaces, moments to sit and opportunities for incidental or chance meetings to engage and foster a sense of community and place.

4.0 LANDSCAPE CONCEPT DESIGN

The landscape masterplan strives to bring nature as closely as possible to the building, creating a sense of living with nature. a series of spaces are carved our below the transitional routes, creating stationary moment for programme, peace and tranquility. The design encourages social interactions in a bid to create a greater sense of community and appreciation of the outdoor environment.

The public spaces open out onto main street as nodes and offer respite from the busy nature of the street without competing with it. The mainstreet improvements tie in with the scheme so it reads as one cohesive place.

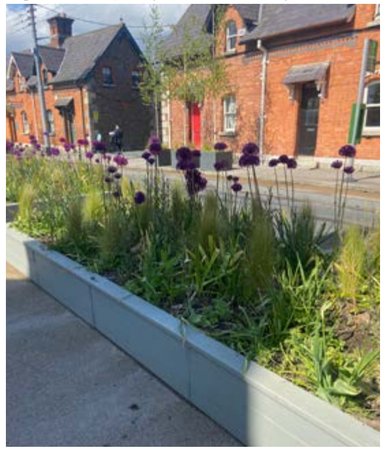
Glenville Terrace Square + Usher Place have both been designed with reference to wind analysis. The spaces have been mitigated agaisnt wind impacts to create a human comfort for sitting and standing through tree planting and altering of levels.

LEGEND

1. Communal Courtyard
2. Lawn
3. Public Space
4. Seating Wall
5. Play
6. Exercise
7. Amenity Terrace
8. Roof Terrace
9. Streetscape
10. Church Square
11. Pedestrian Bridge
12. Sweetmount Park
13. Bypass Planting
14. Stairs to Bypass

4.1 Main Street

For the most part main street Dundrum will remain unchanged. The core spaces will spill out onto mainstreet to engage and address them as part of a wider place making approach. It is proposed to replace the existing surface finish from the building curtilage to the kerb line (including the kerb), with a high quality paved finish. Threshold to doors will be indicated with a different paving material and pattern, as was traditional on the high street. At key points the public space will spill out from the development onto the street indicating a change of use and drawing users into the space. The existing seating and planting will be replaced in the current locations on site to be at grade and more permanent in position, subject by the local authority and utilities surveys.



Legend

1. High quality paving
2. Flush kerb/Paving band
3. Dark paving setts
4. Existing paving to be removed and replaced.
5. Building entrance paving mat
6. Planting

4.1 Main Street

Illustrative Plan

Illustrative Elevation

4.2 Usher Place

Illustrative Plan

Usher Place opens up onto main street as a visual connection with the internal 'parkland like' north south pedestrian route – offering a respite to the street without compromising its re-invigoration. The access route is gently sloping and provides for flexible hard landscaped space in the zones transitioning from the street. The western part of the space is more soft in nature, creating a pocket park for a human scale to soften the building edges. It benefits from passive surveillance and a sense of enclosure.

Reference Image: Hard Plaza

Reference Image: Interactions

Soft Pocket Park

Usher Place Indicative Landscape View

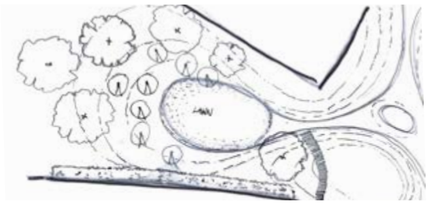
4.2 Usher Place

One of the core open spaces the Usher Place utilizes changes in grade to create a bowl like Amphitheatre. The slopes can be utilized for play while terrace seating has been integrated on the edges facing the point of confluence or meeting between the various publicly accessible roots. This in essence is a small gathering point, while the bowl can be utilized for picnics, a kick about or just sitting.

The space is wrapped in wildflowers on the side adjacent to the access road and bypass with tall tree planting to screen the view and act as a focal point upon arrival to the space between zone 1 and zone 2 from Dundrum main street.

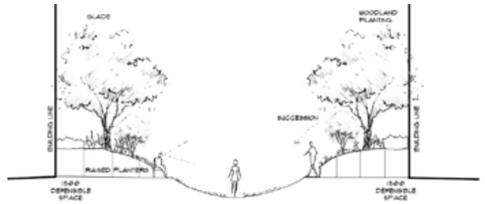
Within this planting fairy houses and rock boulders have been arranged for imaginative play with balance beams and other natural play equipment.

The design also responds to wind analysis and creates a human comfort for sitting and standing by using tree planting and tall shrubs to shelter spaces and mitigate agaianst winds.



Usher Place Design Process Sketch Plan

Layering
+
Detail



Usher Place Design Process Sketch Section

Usher Place Illustrative Section

Usher Place Indicative Landscape View

4.3 Sweetmount Place + Glenville Terrace Square

Sweetmount Place will be a flexible space to allow for small events, concession stands activated with F+B to one side an seating opportunities and planting to the other. The grade change from main street to the link bridge occurs after the main space in a 1:21 slope. A small planter wraps the space to negate the need for railings, this forms a tear drop shape of raised stone seating.

Glenville terrace railings will be retained and the garden space to the front will be utilised for public seating with coffee and concession opportunities. The delineation between the garden boundaries will be made of a stone inlay. The space to the rear of the houses will also be public, treated as lawn and enclosed in planting. This will be flexible in nature, encouraging users to linger with integrated seating along the route as walls.

Public Space Indicative Landscape View

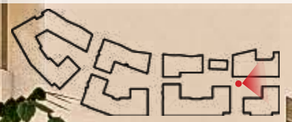
View towards Sweetmount Park

Public Space Indicative Landscape View
View towards Sweetmount Place

Public Space Indicative Landscape View

Rear of Glenville Terrace

As described in the strategy section of this report the north south route does not aim to compete with main street but offer an alternative connection upon which a variety of spatial typologies and scales have been proposed. This creates a unique public realm experience for visitors, members of the public and residents. The route bellows open at the open spaces before narrowing down to over 3m in its narrowest sections. The passive surveillance promotes this scale of route and these are well planted and pleasant environments to be in.



Public Route Indicative Landscape View

4.4 Church Square

The Church Square offers a generous open space, with a large square, lawn, play and exercise. There is direct access to the Holy Cross Church, which could allow for spill out and events such as weddings and religious ceremonies. The large lawn offers a place to relax, kick a ball or have a picnic. The square allows for seasonal events, such as ice-skating or live music, as well as sufficient space for pop-up markets and stalls. An open swale running along the south west of the site allows for bio-diversity and deals with storm water from the upper bridge level. There is access from the square down to the Bypass below as well as access to the Dundrum Town Centre across the road. The square is bound by apartments to the north with retail at the lower level, a bridge to the south with overlooking for the adjacent existing apartment blocks and the church to discourage anti-social behavior. It will be an active route by the very nature that it occurs on a zone of transition.

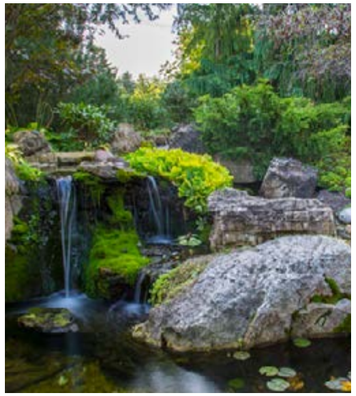
Location Plan

Socail Gatherings + Markets

Seasonal Events

Picnic

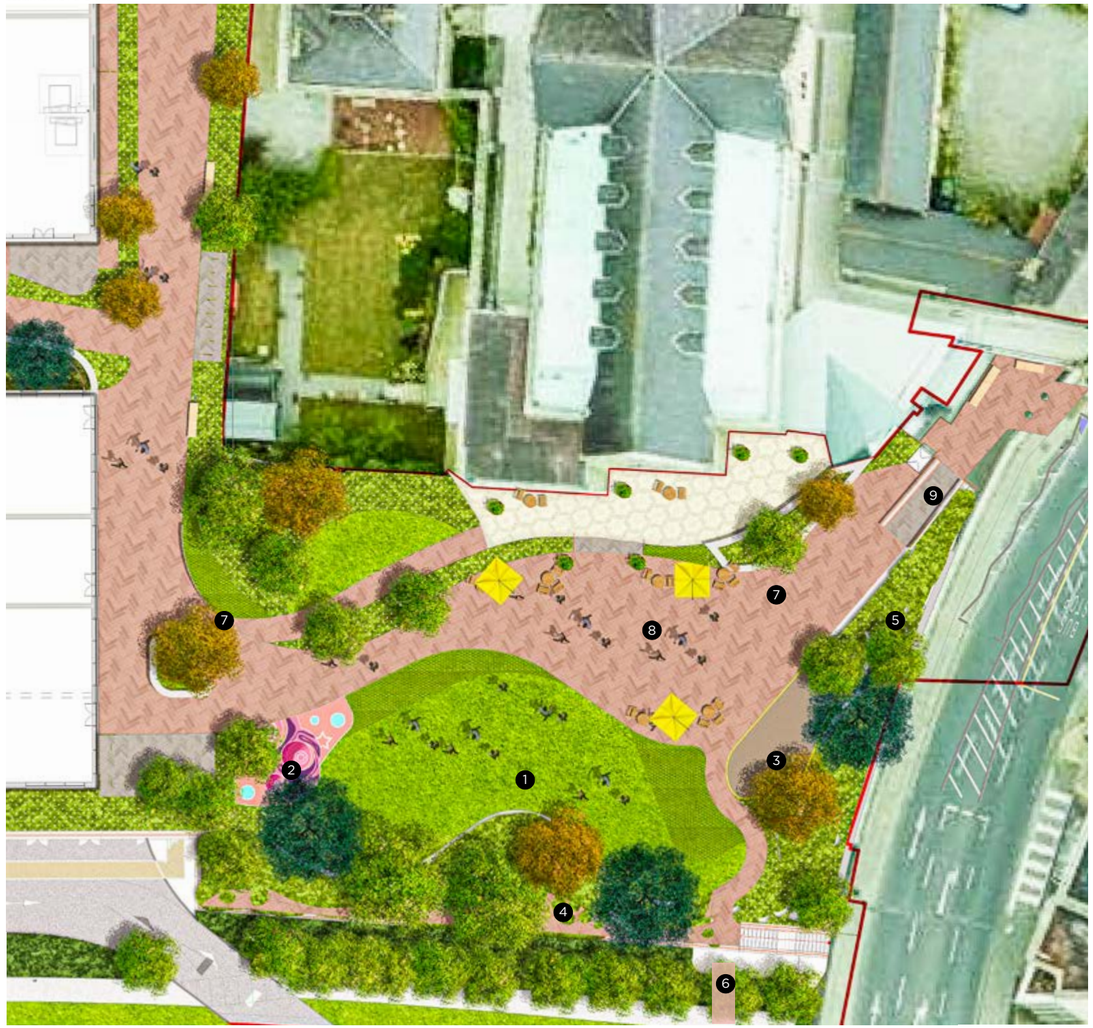
Church Events



Bio-Diversity

Play + Exercise

Illustrative Plan



Legend

1. Lawn
2. Play
3. Exercise
4. Bio-Diversity Swale
5. Cascade
6. Stairs to Bypass
7. Seating Edge
8. Events Square
9. Connection to Town Centre

Church Square Indicative Landscape View

4.5 Courtyard 01 - Taney Garden

The Courtyard for Zone 01 will cater for the communal open space needs for the residents of this zone only. All the ground floor units onto the podium will have own door access (also from within an internal corridor accessed by cores.) The design has been arranged on the key desire lines to core positions. This has created an organic geometry in responding to ground floor amenity. The space will be secured and only accessed by key or fob owned by residents.

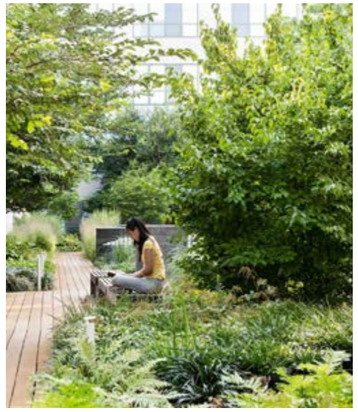
Programmatically the open space function as an amenity to cater for all ages, abilities and family groups. With play, allotment gardens, exercise and BBQ area all provided for enriched with high quality planting, furniture and materials.

Location Plan

Circulation

Core Areas

Tree Grid



Reference Image

Reference Image

Illustrative Plan

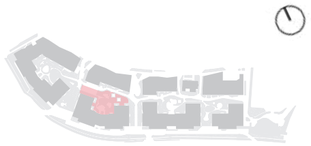
Legend

1. Terrace
2. Lawn
3. Playground
4. Exercise Area
5. Planting
6. Entrance

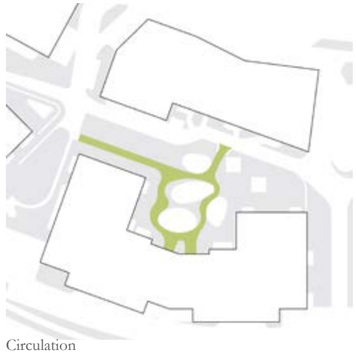
4.6 Courtyard 02 - Sweetmount Garden

This enclosed courtyard is located on the eastern portion of the site. A generous buffer of communal open space also surrounds the active areas with a wealth of plant material. The northern portion of this 'edge' space is predominantly active with exercise equipment and an area for yoga.

A gathering space with BBQ welcomes residents and visitors adjacent to ground floor amenity which can spill out onto it. Play has been programmed in close proximity to this and a sunken lawn to the central portion opposite the main core entrances. Circulation allows for access to the cores and own door access has been provided within the courtyard and externally.

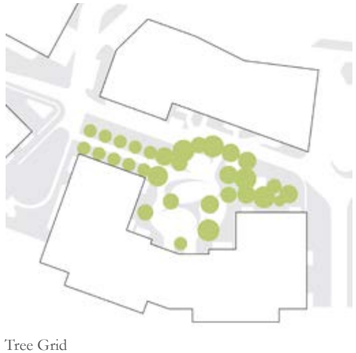


Location Plan



Circulation

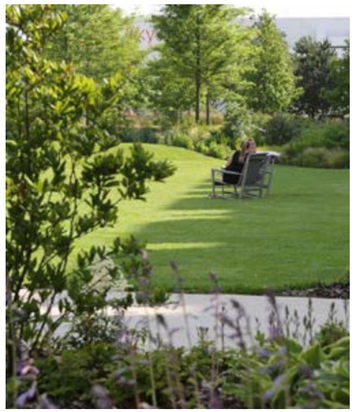
Core Areas



Tree Grid

Reference Image

Reference Image



Reference Image

Illustrative Plan

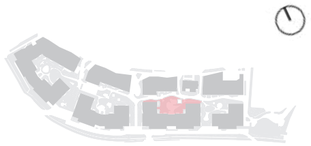
Legend

1. Terrace
2. Lawn
3. Playground
4. Exercise Area
5. Entrance
6. Undercroft Bike Parking

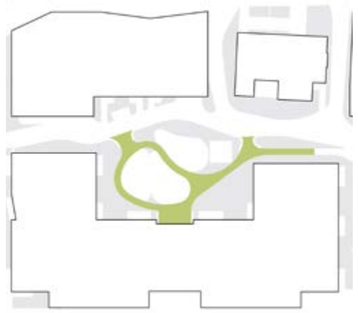
Communal Courtyard Indicative Landscape View

4.7 Courtyard 03 - Finsbury Garden

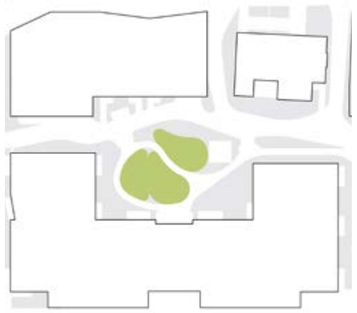
This courtyard garden has been designed to create a woodland experience. To immerse the user in nature and provide as many habitat opportunities for flora and fauna as is possible. The opportunity to sit in the presence of trees has a calming effect on residence and guests and the design provides for this in an overwhelming capacity whilst also carting for programme, sunken gathering spaces, sculpture and exercise. The design is heavily driven by the desire to increase bio-diverse credentials and create a unique sense of place in how it interacts with the buildings and public realm.



Location Plan



Circulation



Core Areas

Tree Grid

Reference Image

Reference Image

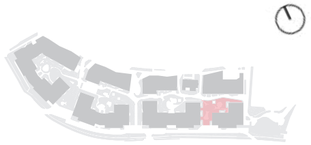
Illustrative Plan

Legend

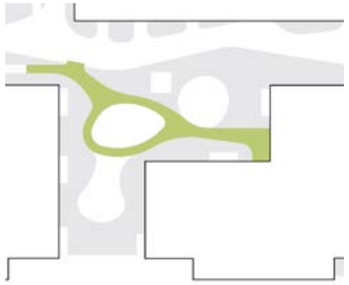
1. Terrace
2. Lawn
3. Playground
4. Exercise Area
5. Planting
6. Entrance

4.8 Courtyard 04 - Village Garden

Each of the courtyards have been planned with BBQ, seating, terrace, play, exercise and allotment gardens. The edge condions create a sense of security with dense planting and a within which a railing is hidden. The visual permeability between both the public and private realsm is maintaiend. a sense of security. This space ties in zone 3 allowing both blocks to utilise the space and thus offering more opportunity for community engagement.

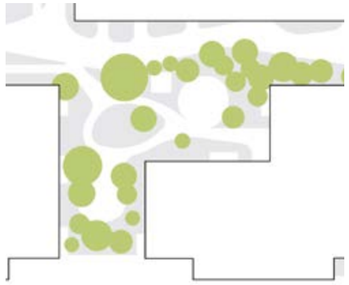


Location Plan



Circulation

Core Areas



Tree Grid

Reference Image

Reference Image

Illustrative Plan

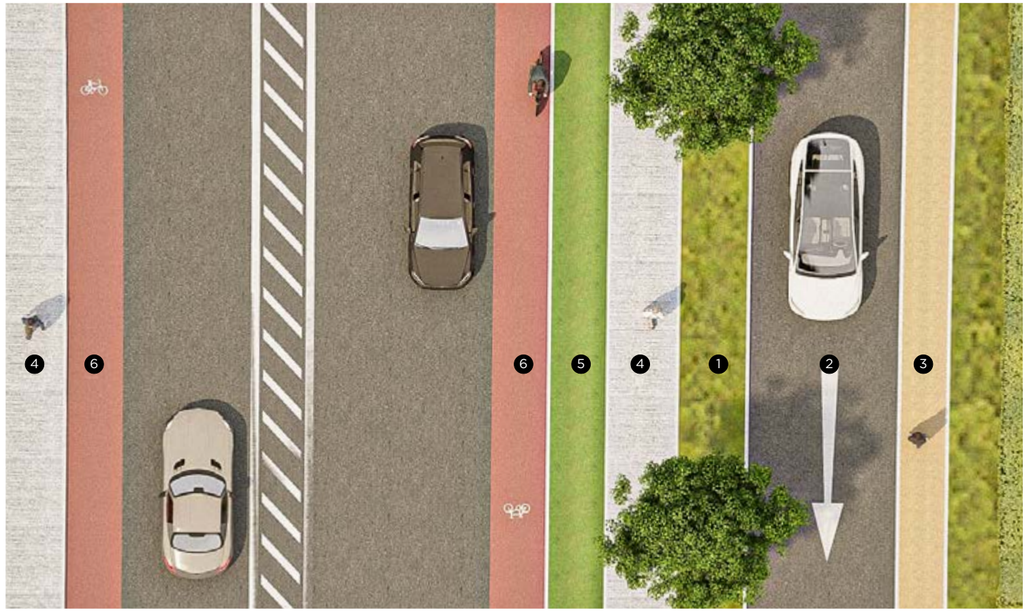
Legend

1. Terrace
2. Lawn
3. Playground
4. Planting
5. Entrance
6. High Quality Paving

4.9 Dundrum Bypass

The bypass road landscape serves an important function both in terms of screening the development back of house and its role in SuDS. The planted areas are proposed to proved some flood alleviation and bio-retention. The planting design will follow the existing plant palette currently screening the back of the Shopping Centre further up the road in an effort to unify the two elements. The final layout is for agreement with the NTA.

Bypass illustrative section

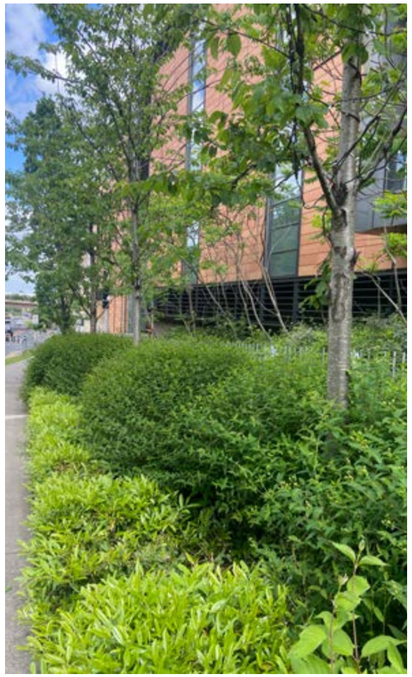


Bypass illustrative plan

Legend

1. Planting Strip
2. Access road
3. Shared Pedesrian + Cycle Access
4. Existing footpath made good
5. Grass verge
6. Cycle lane

Proposed Landscape Iso View



Existing Bypass plantig Phase 1

4.10 Sweetmount Park Bridge

The proposed combined pedestrian and cycle bridge links the development to Sweetmount Park. The landscape design on each side will tie into the bridge. The hard landscape surfaces will continue from the development across the bridge into Sweetmount Park. The topography of the site and the Sweetmount park will be adjusted to create a gentle approach to the bridge to deal with the change in levels. The use of corten steel in landscaping is commonplace and will allow the bridge to be well integrated into the landscape on site and in Sweetmount Park.

Modelworks CGI

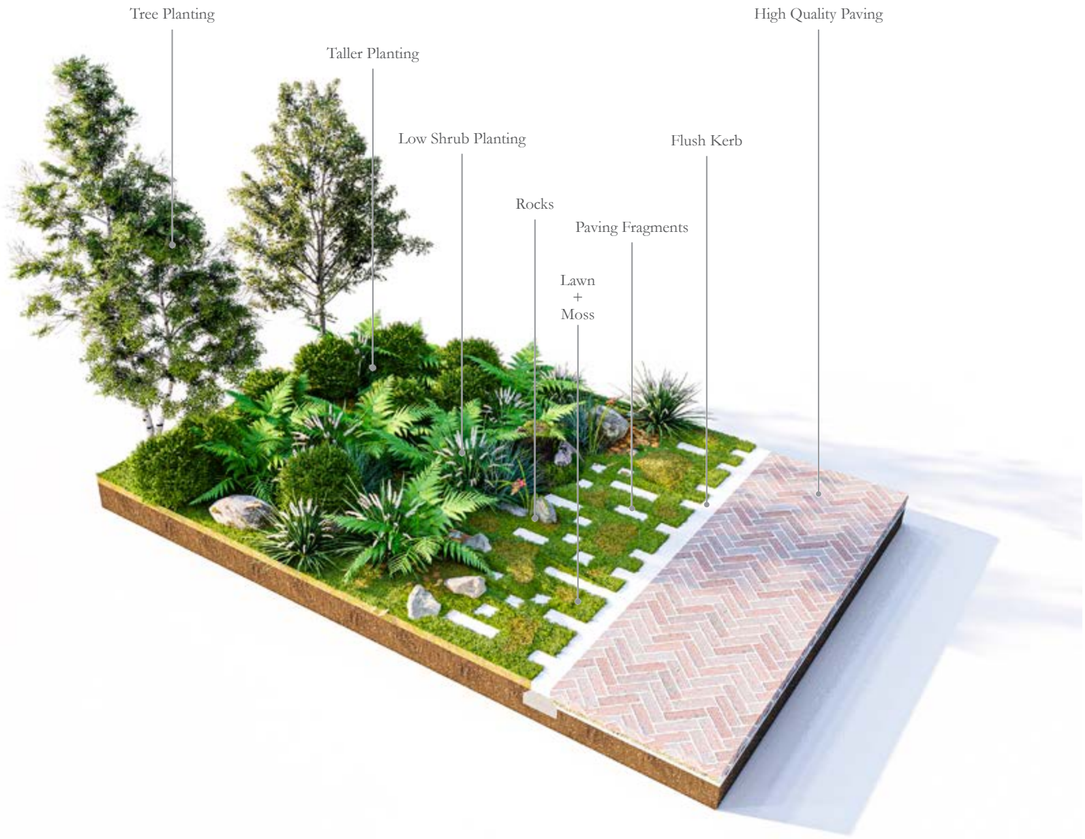
Modelworks CGI

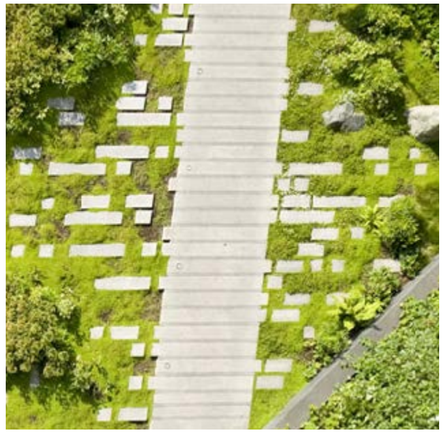
Legend

1. Sweetmount Park Bridge
2. Sweetmout Park
3. Break out path to tie in with existing
4. Topography to be re-graded
5. Replacement vegetation with slope stabilising vegetation
6. Existing Trees to be retained

4.11 Blurring The Edges

Paving bleeds into planted areas, softening the edges and intergrating hard and soft landscape. There is a succession of planting from lawn/moss to low planting, shrubs and trees. Paving, rocks and planting create a pixel effect which blurs the edge.





Reference Images

Landscape Plans and schedules included in the application, prepared by NMP Landscape Architects includes a detailed schedule of proposed planting and illustrates the location and extent of mown grass, managed long grass, reinforced grass, low ground cover, hedge and tree planting as well as existing trees to be retained where applicable.

Tree species are selected for longevity, suitability to local soil conditions and micro-climate, biodiversity (native species) and where required suitability for proximity to residential buildings. Proposed tree sizes range from heavy standards and multi-stemmed trees to native whip and forestry transplants. There will be a net gain of individual trees in order to improve the species mix and the proportion of native species on site. Typical species are illustrated on the following pages.

Low planting is utilized to make and reinforce sub-spaces within the larger landscape spaces, for visual screening, defensible space, visual interest, ecological purposes and to guide or direct people's movement. The low planting is conceived as subtle layering of greens within the open spaces. The planting is layered as follows; lowest - bulb planting, ground cover planting, highest - clipped hedge planting.

The selection of hard landscape materials is determined by function but also to provide a cohesive palette of materials throughout. Materials are chosen for durability, but where practical are proposed to be constructed in a way which is sensitively integrated with lawn and soft landscape, in order to minimise the impact of hard landscape surfaces. Primary vehicular, pedestrian and cycle circulation are proposed as a durable, limited range of neutral materials with robust construction. Typically, in the perimeter loop, a 3.7m wide route is proposed. Self-binding gravel and large format reconstituted stone slabs are proposed for pedestrian routes in open space.

LANDSCAPE PALETTES 5.0

5.1 Indicative Hard Landscape Material Approach

SURFACE FINISHES

The hard materials palettes have been selected to represent and respond to use and character of specific spaces. They will be durable and of high quality with patterning developed in the latter stages to indicate moments and celebrate thresholds.

Natural Stone

To Key Spaces + Thresholds

Self Binding Gravel

To gardens

Porous Paving

To edge of grass areas

WALLS + FENCES

The boundaries between the site both external and internal will be of high quality and and provide a degree of visual transparency.

Railings

To boundaries + GF terraces

Random Rubble Wall

To Retaining Walls + Sign Wall

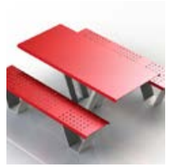
Planters

To raised planters at roof level

FURNITURE

Bins, bollards and seating have been selected as appropriate to the design language and surroundings within which they fit. These for the most part, will be off the shelf products and specified accordingly.

Picnic Table



To woodland

Bins

To pedestrian areas

Bollards

To road edges

Grasscrete

To utility service areas

Soft Pour

To play + fitness zone

Porous Paving

Public Areas

Ecology

Habitat Opportunities

Seat Wall

To edges of communal open space + public

Bike Stand

To bike parking

Benches

To pedestrian areas

Play

Bespoke Imaginative

Exercise

To fitness areas

Tree Grille

To trees in paving

5.2 Indicative Soft Landscape Material Approach

WOODLAND TREE PLANTING

Informed by the existing and formative tree planting and a native palette the tree planting will bleed into the site and grade out form north to south.

Fagus sylvatica

Betula utilis

Pinus sylvestris

STREET TREES + SMALL FEATURE TREES + PODIUM TREES PLANTING

Specimen tree planting will provide year long interest and beauty - landmarks in the landscape, to celebrate and identify with.

Betula jacquemontii

Carpinus betulus multistem

Cornus sanguinea

WILDFLOWER & SHRUB PLANTING

To enhance bio-diverse credentials wildflower planting will occupy edges and large swathes of the sites periphery along with shade tolerant understory planting including plant selection to encourage foraging.

Papaver rhoeas

Silene dioica

Lotus corniculatus

WOODLAND UNDERSTORY & SHADE LOVING PLANTING

Woodland areas and shaded gardens will be planted with mix of shade loving plants.

Polystitchum aculeatum

Cyathea australis

Dicksonia antarctica

Sorbus aucuparia

Pyrus callerayana

Quercus robur

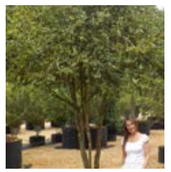
Prunus serrula

Pinus sylvestris watereri

Acer griseum

Magnolia grandiflora

Buxus sempervirens



Matricaria chamomilla

Ranunculus acris

Medicago lupulina

Lavandula x intermedia

Salvia officinalis

Dryopteris filix-mas

Viburnum davidii

Heuchera ‘Fireworks’

Hosta sp.

Pachysandra terminalis

5.3 Planting Palette - Planting Approach

Shade loving plants for Woodlands

Shade loving plants for Woodlands

Bulbs to add seasonal interest

Native trees planting including birches and pines birch trees

Shade loving plants for Woodlands

Woodlands with ferns understory

Wildflower meadow

Podium planting with small feature trees

APPENDIX

Appendix 1 - Soft Landscape Outline Specification

1. Specifications for supply.

1.0 Schedule of supply:

The nursery stock material will be delivered following consultation between the Landscape Architect, landscape contractor and the selected nursery, and the Engineer. Delivery will be at all times by means of covered vehicles, and all plant material will be clearly labeled. The source of origin must be from the selected nursery as no other additional stock from other nurseries will be permitted without prior inspection and approval.

1.1 Programme of Works

The planting works shall be executed at the earliest opportunity.

1.2 Nursery stock:

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

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

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

1+0	1 Year old seedling
1+1	1 Year old seedling lined out for 1 year
1+2	1 Year old seedling lined out for 2 years
1+1+1	1 Year old seedling lined out for 1 year, lifted and lined out for one further year
1u1	1 Year old seedling undercut then 1 more year in seedbed.
1u2	1 Year old seedling undercut then 2 more years in seedbed.
0/1	1 Year old Hardwood cutting
0/2	2 Year old Hardwood cutting
2X	Twice transplanted tree
3X	Three times transplanted tree
4X	Four times transplanted tree
P9	Containerised plant in 9cm pot

1.3 Species:
All plants supplied shall be exactly true to name as shown in the plant schedules. Unless stipulated, varieties with variegated and/or coloured leaves will not be accepted, and any plant found to be of this type upon leafing out shall be replaced by the contractor at his/her own expense.
Bundles of plants shall be marked in conformity with B.S. 3936: Part 1: 1965 and B.S. 3936: part 4: 1966. The nursery supplier shall replace any plants which, on leafing out, are found not to conform to the labels. Definitions of all terms used are in accordance with the following British Standards: -

B.S. No. 3936: Part 1: 1965 entitled “Nursery Stock- Trees and Shrubs”

B.S. No. 3936: Part 4: 1966 entitled “ Nursery Stock- Forest Trees”

B.S. No. 3936: 1967 entitled “Specification for Nursery Stock”

2.0 Tree specifications:

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

2.1 Standard trees shall have a clear stem 1.70m in height from ground level to the lowest branch, a minimum girth of 8cm measured at 1.00m above ground level and a total height of 2.75-3.00 m.

2.2 Light Standard trees have a clear stem 1.30m in height from ground level to the lowest branch, a minimum girth of 6cm measured at 1.00m above ground level and a total height of 1.80-2.40m.

2.3 Select standard trees shall have a clear stem 1.70 m in height from ground level to the lowest branch, a minimum girth of 10 cm. measured at 1.00.m. above ground level and a total height of 3.0 to 3.5 metres.

2.4 Heavy standard trees shall have a clear stem 1.80-1.90m in height from ground level to the lowest branch, a minimum girth of 14 cm. measured at 1.00.m. above ground level and a total height of 4.0 to 4.5 metres. All trees shall have been undercut a minimum of three times.

2.5 Extra Heavy standard trees shall have a clear stem 2.0m in height from ground level to the lowest branch, a minimum girth of 16 cm. measured at 1.00.m. above ground level and a total height of 4.5 to 5 metres. All trees shall have been undercut a minimum of three times.

2.6 Semi-mature trees shall have a clear stem 2.0m in height from ground level to the lowest branch, a minimum girth, as specified in the Bill of Quantities, measured at 1.00.m. above ground level and a total height of min. 5 metres. All trees shall have been undercut a minimum of three times.

All standards shall be clearly labeled.

2.7 Feathered Trees 180-240cm
Feathered trees shall be not less than four years old, and shall have been transplanted at least three times. Trees of species not listed in BS 3936: Part 4: shall be sturdy, with a balanced root and shoot development. Size shall conform to the schedules.
Trees shall be well furnished with lateral fibrous roots, and shall be lifted without severance of major roots. Roots shall be of the habit normal for the species, without deformation. Transplants shall be wrapped in polythene in bundles of 50 no. and clearly labeled from the time of lifting until planting to conserve moisture.

2.8 Feathered Transplants 120-150cm
Transplants shall be not less than two years old, and shall have been transplanted at least once. Trees of species not listed in B.S. 3936: Part 4: shall be sturdy, with a balanced root and shoot development. Size shall conform to the schedules.
Trees shall be well furnished with lateral fibrous roots, and shall be lifted without severance of major roots. Roots shall be of the habit normal for the species, without deformation. Transplants shall be wrapped in polythene in bundles of 50 no. and clearly labeled from the time of lifting until planting to conserve moisture.

2.9 Feathered Transplants 90-120 cms, 60-90 cm, 40-60 cm, 30-40 cm
Transplants shall be not less than one year old. Trees of species not listed in B.S. 3936: Part 4: shall be sturdy, with a balanced root and shoot development. Size shall conform to the schedules. Trees shall be well furnished with lateral fibrous roots, and shall be lifted without severance of major roots. Roots shall be of the habit normal for the species, without deformation. Transplants shall be wrapped in polythene in bundles of 50 no. and clearly labeled from the time of lifting until planting to conserve moisture.

2.10 Shrubs

(1) Containerised Shrubs shall be of the size specified in the schedules, with several stems originating from or near ground level and of reasonable bushiness, healthy, vigorous and with a sound root system. Pots or containers shall be appropriate to the size of shrub supplied and clearly labeled. Shrubs shall not be pot bound or with girdled or restricted roots.

(2) Bare Root Shrubs shall be of size specified in the schedules, with several stems originating from or near ground level, with reasonable bushiness, healthy, and vigorous. They shall be well furnished with fibrous roots and shall be lifted without severence of major roots. All bare root shrubs shall be wrapped in polythene in bundles of 50 no. and clearly labeled from the time of lifting until planting to conserve moisture.

2.11 Container Grown Conifers:
Conifers shall be of the size specified in the schedules, with one main stem originating from or near ground level and of reasonable bushiness and health, with a well-grown, root system. Pots or containers, where required, shall be appropriate to the size of plant supplied and clearly labeled. Plants shall not be pot bound, or with deformed or restricted roots.

Appendix 1 - Soft Landscape Outline Specification

2.12 Protection:
The interval between the lifting of stock at the nursery and planting on site is to be kept to an absolute minimum. Plants shall be protected from drying out and from damage in transport. All stock awaiting transport shall be protected from the wind and frost and from drying out.
Protection shall include for the supply of stock to site to a suitable heeling-in/ storage area prior to planting. The landscape contractor shall allow for liaison with the site engineer to arrange the heeling-in area/ storage. The contractor shall continue to be entirely responsible for the maintenance of this stock to ensure that at the time of planting the stock complies with the requirements for the supply of nursery stock as per clause 1.0 thereof. No responsibility for the maintenance of the stock will attach to the site engineer whilst the stock is protected on site. No time limit shall attach to the period of protection.

In the event of the Landscape Architect being dissatisfied with the care and attention given to the stocks, following heeling-in, he shall notify the Landscape Contractor who shall take steps to ensure careful heeling-in procedures.

The preparation of the heeling-in area and its subsequent maintenance is the sole responsibility of the Landscape Contractor.

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

2.14 Inspections
The Landscape Architect will inspect the hardy nursery stock on the selected nursery during the execution of the works. Only plants selected and approved in the landscape contractors selected nursery will be accepted on the site.

2.15 Delivery and heeling in
All plants will be delivered on a phased basis as called up in advance in agreement with the Engineer, Landscape Architect and the appointed Landscape Contractor. In the event of the Landscape Architect being dissatisfied with the care and attention given to the stocks, following heeling-in, he shall notify the Landscape Contractor who shall take steps to ensure careful heeling-in procedures.

The preparation of the heeling-in area and its subsequent maintenance is the sole responsibility of the Landscape Contractor.

3.0 Specifications for site operations:

3.1 Setting out:
Setting out shall be in accordance with site meetings with the Landscape Architect, and the drawings listed in the preliminaries. No planting works shall take place when the soil /fill is in a waterlogged condition.

3.2 Finished grading:
All planting pits and topsoiled areas disturbed by the landscape contractor shall be left in an even state, with all soil clumps broken up and stones of greater than 50mm diameter shall be removed.

4.0 Specifications for Planting and Plant Materials

4.1.1 Stakes:
Round stakes shall be of peeled larch, pine or Douglas fir, preserved with a water-borne copper chrome arsenic composition in accordance with I.S. 131. For standard and select standards stakes shall be 1.8m long, 75mm in diameter. Stake all whips and transplants greater than 120cm in height. For all transplants exceeding 120cm height stakes shall be 1.2m long, 37mm x 37mm square. Stakes shall be pointed at the butt end. Set stakes vertically in the pit, to the western side of the tree station, and drive before planting. Drive stake with a wooden maul or cast-iron headed drive. Stakes shall be driven into the excavated planting pit to a depth of:

800mm for Standards/Light Standards/Feathered Trees
1000mm for Heavy Standards
500mm for Whips/Transplants

4.1.2 Canes:
Bamboo canes or similar approved shall be used to provide spot spraying location markers for small plants including Pinus, species. The canes are not to be attached to the plants.

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

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

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

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

4.5 Watering / Alginure / Fertilisers:
All bare rooted light standards and select standards shall be soaked in water overnight, on site, before planting in a liquid solution containing “Alginure” at the recommended dilution rate. Fertilisers shall conform to BS 5581: 1981. In the case of granular fertiliser being added to plantings, it must be mixed through and incorporated into the base of the planting hole and covered over in order to avoid roots of plants coming in direct contact.

4.6 Setting out:
Setting out shall be in accordance with site meetings with the Landscape Architect. Transplants in mixtures shall be planted in staggered rows. Species shall be planted in groups, as indicated in the planting drawings.
No planting shall take place until all planting holes (with ameliorants) have been inspected and approved by the Landscape Architect, or a person appointed by him as a representative, to ensure accordance with the specifications. No planting shall take place when ground conditions are frozen or waterlogged. All planting holes shall be opened and closed on the same day.

Be planted in the centre of the planting pit and planted upright. Stones or other rubbish over 75mm shall be removed. Supply and drive the stake 800mm into the ground for standards, 500mm for other transplants. Backfill planting hole 4.7 Tree planting:
Trees shall be planted at the same depth as in the nursery, indicated by the soil mark on the stem of the tree. They shall with excavated topsoil, and remove all stones and debris, firming plant into position

4.7.1.Select Standards
Excavate tree pits to 800mm x 800mm x 600mm deep, or as approved. The base of the pit shall be broken up to a depth of 80mm and glazed sides roughened. F.Y.M. at the rate of 0.047 cu.m.(equivalent to 60mm deep) and 100gms of 0.10.20 shall be applied to each tree pit prior to planting. Farm manure shall consist predominantly of fecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.7.2 Heavy and Extra Heavy Standards
Excavate tree pits to 1000mm x 1000mm x 800mm deep, or as approved. The base of the pit shall be broken up to a depth of 100mm and glazed sides roughened. F.Y.M. at the rate of 0.047 cu.m. (equivalent to 60mm deep) and 100gms of 0.10.20 shall be applied to each tree pit prior to planting. Farm manure shall consist predominantly of fecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.7.2 Semi-mature trees
Excavate tree pits to 1200mm x 1200mm x 1000mm deep, or as approved. The base of the pit shall be broken up to a depth of 200mm and glazed sides roughened. F.Y.M. at the rate of 0.047 cu.m. (equivalent to 60mm deep) and 100gms of 0.10.20 shall be applied to each tree pit prior to planting. Farm manure shall consist predominantly of fecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.7.3.Light Standard Trees
Excavate tree pits to 500mmx500mmx500xx deep, or as approved. The base of the pit shall be broken up to a depth of 80mm and glazed sides roughened. F.Y.M. at the rate of 0.047 cu.m. (equivalent to 60mm deep) and 100gms of 0.10.20 shall be applied to each tree pit prior to planting. Farm

Appendix 1 - Soft Landscape Outline Specification

manure shall consist predominantly of fecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.8 Feathered Trees 180-240cm, container grown conifers (>2l)
Excavate tree pits to 400mm x400mm x 400 mm deep, or as approved (slit or notch planting are not acceptable planting methods). The base of the pit shall be broken up to a depth of 80mm and glazed sides roughened. Trees shall be planted at the same depth as in the nursery and backfilled with compound fertiliser 0.10.20 at the rate of 50gm per tree and 0.020m3 of Mushroom Compost or similar approved. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.9 Feathered Whips 120-150 cm:
Excavate tree pit to depth of 300mm x 300mm x 300mm deep, or as approved (slit or notch planting are not acceptable planting methods). Excavation to be achieved by machine digging or auguring methods, approved by the Landscape Architect. The base to be broken up to a depth of 60mm and glazed sides roughened. Whips to be planted at same size as in the nursery. Apply 60gm 0.10.20 and 0.020m3 of Mushroom Compost or similar approved. Per tree pit to plants. Stakes 1.2m high x 37mm diam. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.10 Feathered Whips and Transplants 90-120cm, 60-90 cm, 40-60cm, 30-40cm, container grown conifers (<2l size) and container grown shrubs (<2l size):
Excavate planting hole to a depth of 300mm x 300mm x 300mm deep; the base to be broken to a depth of 50mm and glazed sides roughened (slit or notch planting are not acceptable planting methods). Excavation to be achieved by machine digging or auguring methods, approved by the Landscape Architect. Apply 30gm 0.10.20.per planting pit. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.11 C. G. Shrubs / C. G. Wall Shrubs / C.G. Climbers:
Excavate planting hole to a depth of 300mm x 300mm x 300mm deep; the base to be broken to a depth of 50mm and glazed sides roughened. The following products are to be supplied and incorporated in to the bottom 100mm of topsoil at the base of the planting pit and in to the topsoil for backfilling around each plant: (1)Seanure soilbuilder as supplied by Farmura @ 1.5Kg per cu.m of topsoil, (2) clean and friable green waste compost @ 25 Kg per cu.m of topsoil and (3) Sierrablen Flora 15:9:9 slow release fertiliser @ 70 grams per m2 Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

4.12 Grassing
All grass areas to be ripped with a tractor mounted tine prior to rotovating. The contractor shall grade off all areas to smooth flowing contours, removing all stones greater than 10mm diameter and tip off site. All hollows to be filled in. Roll all areas with a roller as approved. Following the completion of final grading and raking, the area is to be left fallow for a period of 14 days. Spray with 'Basta' at recommended rates, and seed with fine grass mix at a rate of 35gr/Sq.m together with fertilizer 10:10:20 at a rate of 50gr/Sq.m use Coburns Irish premier low maintenance mixture or other as approved by the Landscape Architect.

4.12.1 Grass cutting
Grass cutting shall be carried out during the three year maintenance period and is defined into three categories:
4.12.2 Regular grass cutting
Shall be carried out to the frequencies indicated in the Bill of Quantities. Attention to neat and tidy cutting shall be required to all areas. Sightlines, as set out with the Engineer, at junctions and roundabouts must be kept clear of vegetation at all times.

GENERAL
Upon completion of planting, all pits shall be raked over lightly to leave an even surface and neat appearance. All stones greater than 50mm dia. to be removed. Provision should be made for the watering of light and select standards during periods of prolonged drought in the first year following planting.

4.13 Inspections:
The Landscape Architect will inspect the site with the Landscape Contractor during the execution of the works and following maintenance visits.

4.14 Presentation of certificates:
The Landscape Contractor shall present for the Landscape Architect's inspection, all seed and fertiliser bags, together with their markings. If requested, the contractor shall furnish the Landscape Architect with receipts of purchase for these respective materials.

4.15 Spraying:

1) Following planting of embankments, slopes etc., weed free circles to be formed around individual plants, as directed, using an approved broad-spectrum contact herbicide, as approved by the landscape architect, in mid-spring following planting. Herbicide to be applied using controlled drop applicator containing a dye to indicate areas sprayed. In areas where grass is excessively long, such grass will be strimmed off and collected prior to spraying. The contractor shall be responsible for keeping the ground (1m diameter circle) around all planted material weed free by means of herbicidal application, using approved sprays, during the course of the contract. Weeds to be removed include grasses ,broad-leaved annual and perennial weeds and all noxious weeds.

2) Selective spot spraying will be carried out to all grassed areas, whether planted or unplanted through the application of contact herbicide to control broad-leaved annual and perennial weeds, including thistle, dock and ragwort. Contact herbicide to be approved by the landscape architect prior to application. Herbicide to be applied using controlled drop applicator containing a dye to indicate areas sprayed. The contractor shall allow for the removal of gorse by cutting, as required prior to spraying to ensure its eradication from all grassed areas for the duration of the contract.

3) The boundary hedgerows shall be kept weed free by herbicidal application by forming a 300mm wide spayed strip along the full length of each respective hedgerow. Approved herbicide (broad-spectrum contact herbicide) to be applied using controlled drop applicator containing a dye to indicate areas sprayed. Spraying of planted areas on roundabouts is also included in this spraying application.

4) Such routine spraying (1, 2 and 3 above) shall be carried out during maintenance visits over the three-year period. No spraying shall take place during adverse weather conditions or at times not recommended by the manufacturer.

4.16 Cutting back:
Plants for cutting back/tip pruning shall be cut back after inspection by the Landscape Architect. This work to be carried out initially following planting for plants suffering from wind damage.

4.17 Mulching
Mulching may be considered as an optional factor that may be implemented. Mulch shall be from coniferous trees. It shall be shredded, but not pulverised, so that no dimension exceeds 75mm. Bark shall have been composted for a min. of 3mths. In the case of areas requiring mulch the depth of bark shall measure 30 mm.

4.18 Ground finish:
Upon completion of planting, all ground finish shall include for the removal of stones greater than 50mm excavated during the course of the digging for planting purposes.

Appendix 2 - Hard Landscape Outline Specification

PAVING & KERBS

FOOTPATHS

General: Public footpaths, roadways, kerbs etc. shall be constructed in accordance with the requirements of the Roads Maintenance Dun Laoghaire Rathdown County Council.

Accuracy of Levels and Alignment: The levels of paths and paving shall be carefully set out and frequently checked. All care shall be taken to ensure that the correct cross sections are maintained. The finished face of paths shall be formed so as to provide adequate fall and satisfactory run off to surface water outlets, gullies, etc. Cross-falls of paths shall be carried without break across verges and kerbs to prevent ponding of water between back of kerb and path.

Sub-Base: Granular material shall comply with Clause 804 of the D.o.E. Specification for Roadwork's and shall be spread uniformly over the formation and compacted by vibrator roller. Rolling shall continue until there is no movement under the roller. The finished surface of the compacted sub-base shall be parallel to the proposed finished surface of the footpath. The surface levels for each layer shall not deviate from the design levels by more than +15mm or –15mm.

For sub-base thickness in paved areas see area engineers spec. and attached following schedule. Each contractor shall do all necessary tests to ensure a well compacted, plain even surface on all areas with traffic movement. If paving shows settling after 1 year which normally is related to an insufficient depth and compaction of the sub-base the contractor shall rebuilt the failed area to his own cost.

Use of Surfaces by Construction Traffic:
Constructional traffic used on pavements under construction shall be suitable in relation to the courses it traverses so that damage is not caused to the sub-grade. Where damage is caused to the formation of the sub- grade in strength or level the damaged area shall be excavated for an area and depth which shall be determined by the Architect and this area shall be filled to the required levels with crushed rock of 50mm maximum size. The degree of compaction for this area shall be the same as that specified for the remainder of the formation. All this excavation and making good of damaged areas shall be carried out at the expense of the Contractor. Where damage is caused to the sub-base, the damaged area shall be made good as noted above, using the material of which the sub-base is composed. The wheels or tracks of plant moving over the various pavement courses shall be kept free from deleterious materials.

MODULAR PAVING

Concrete Pavers Precast concrete pavers shall conform to the requirements of BS 6717 Part 1.
Ensure that sub-bases are suitably accurate and to specified gradients before being laid.

Sample: Before placing orders submit representative samples for approval.
Ensure that delivered materials match sample.

Laying Generally:

1. Laying Specification

1.1 Paving blocks/bricks shall be laid to the requirements of Part 3: 1997, BS 7533, except that the lip onto gully gratings is modified to 5 - 6 mm.
Note, in particular, the following requirements of Part 3.
i. The difference in level between two adjacent blocks shall not exceed 2 mm.
ii. The finished pavement surface shall not deviate more than 10 mm under a 3m straight edge.
iii. The accuracy of cutting a block should be such that the resulting joint should not exceed 5 mm.
iv. The surface course should be between
(a) 3 - 6 mm above drainage channels
(b) 5 - 10 mm above gullies (*BRL modify this to 5 - 7 mm above gullies to reduce "trips")
v. The surface course should be inspected soon after completion and at regular intervals thereafter - additional sand should be brushed in where necessary.
1.2 The surface course for chamfered units should be 3 - 5 mm above the kerb to facilitate surface drainage. The surface course for non-chamfered units should be 2 mm above the kerb to facilitate surface drainage.
1.3 When paving units need to be trimmed, pieces with a dimension less than 50 mm should not be used.

2. Drainage Channels

2.1 Where paving blocks are used in a channel, they shall be laid on freshly mixed moist 3:1 sand-cement mortar. The mortar should have thickness between 10 mm and 40 mm. Vertical joints should be filled with 3:1 wet sand-cement mix.
2.2 Mortar, which has been mixed for over 2 hours, should be discarded.
2.3 The mortar should be laid on a previously prepared concrete base as per construction drawing detail. Select blocks/paviors vertically from at least 3 separate packs in rotation, or as recommended by manufacturer, to avoid colour banding. Lay blocks/paviors on a well graded sand bed and vibrate to produce a thoroughly interlocked paving of even overall appearance with sharp sand filled joints and accurate to line, level and profile. Refill joints once a week three weeks after first fill. Commencing from an edge restraint lay blocks/paviors hand tight with a joint width of 2-3mm for pedestrian use and 3-5 mm for areas with traffic. Maintain an open working face and do not use mechanical force to obtain tight joints. Place blocks/pavers squarely with minimum disturbance to bedding. Supply blocks/paviors to laying face over newly laid paving but stack at least 1 m back from laying face. Do not allow plant to traverse areas of uncompacted paving. Continually check alignment of pavers with string lines as work proceeds to ensure maintenance of accurate bond.Infill at edge restraints as work proceeds. Wherever the type of bond and angle of edging permit, avoid very small infill pieces at edges by breaking bond on the next course in from the edge, using cut blocks/pavers not less than 1/3 full size. Cut stones shall be rectangular or trapezoidal; the smallest point shall be a minimum of 35mm. (May be pavers have to be turned by 90 deg.)Half stones shall be cut at manufacture. Thoroughly compact blocks/pavers with vibrating plate compactor as laying proceeds but after infilling at edges. Apply the same compacting effort over the whole surface. Do not compact within 1 m of the working face. Do not leave uncompacted areas of paving at the end of working periods, except within 1 m of unrestrained edges. Checks paving after compacting first few metres, then at frequent intervals to ensure that surface levels are as specified; if they are not, lift blocks/pavers and relay. Brush sharp sand into joints, revibrate surface and repeat as required to completely fill joints. Make sure that paving is held by a kerb on both sides before vibration to avoid uneven joints. Avoid damaging kerb haunching and adjacent work during vibration. Do not begin vibration until kerbs have matured. The paving pattern will be stretcher bond, make sure that the joints will be in straight line after vibrating. Also ensure joints are off equal width. The block pavement shall have a surface regularity/ flatness tolerance of less than 10 mm under a 3 m straight edge.

Sample: Before placing orders submit representative samples for approval.
Ensure that delivered materials match sample.

PRECAST CONCRETE FLAGS
Pre-cast Concrete Flags:
1. Precast concrete flags shall be laid to the requirements of BS 7533 Part 4.
Note the following selected items from BS 7533, Part 4.
- The difference in level between two adjacent flags should not exceed 3 mm.
- The top surface of the paving units should stand 3 - 6 mm above the drainage channel.
- A 30 - 50 mm (compacted thickness) of the sand laying course is given as suitable (for narrow joints)

2. Flags should be laid with narrow joints (2 - 5 mm).Joints should be filled with dried sand (conforming to table 4 of the code), or as determined by the Landscape Architect.

KERBS
Kerbing General: Kerb radii shall be in accordance with Architects and Engineers drawings. Use radius kerbs for all new kerbs.

Laying Generally:
Natural stone and precast concrete kerbs shall meet the requirements of BS 435 and BS 7263-1.
1. Precast concrete kerbs shall be laid to the requirements of BS 7533, Part 6.
2. Units shall be laid on fresh concrete or mortar bed and adjusted to line and level.
3. Concrete for foundations and haunching shall be to BS 5328.
4. Bedding mortar shall be freshly mixed, moist 3:1 sand-cement between 12 and 40 mm thick.
5. Kerbs shall be backed with concrete as per drawing.
6. Radius kerbs shall be used on radii of 12 m or less.
7. Kerbs should not deviate from the required level by more than 6mm.
8. Kerbs should not deviate by more than 3 mm under a 3 m straight edge.
9. Open-jointed kerbs should have joints of 2 - 4 mm wide.
Mortar jointed kerbs should have joints of 7 - 10 mm wide filled completely with 3:1 sand-cement mortar, and finished to give a smooth flush joint or as specified by the Landscape Architect.

Appendix 3 - Programme For Implementation, Maintenance + Defects Period

5.0 Maintenance:

5.1 Period:

The Contractor shall be responsible for aftercare of the completed works for 1 Year from the date of completion of planting. Subject to satisfactory performance the maintenance contract may be extended for two further periods of 12 months. Maintenance in years 2 and 3 shall be provisional. Maintenance during years 2 and 3 may be assigned directly to the Board Of Management of the school. This will include grass cutting, weed control of all planted areas, litter clearance and watering of Select Standard trees during dry weather.

5.2 Organisation:
The aftercare programme will be organised as follows:-
(1) Scheduled operations, in whose timing the contractor will be permitted some flexibility and which will be the basis of payment to the Contractor.
(2) Performance standards, which the Contractor is required to meet at all times, and on which his performance will be assessed.
(3) Critical dates, by which time scheduled operations, shall have been completed, and at which performance will be assessed.

5.3 Performance standards:
Shrub, woodland and hedgerow planting to be maintained in accordance with specifications e.g. spraying, firming, tree tie adjustment. Weeds shall not cover more than 20% of the ground surface within planting areas and the maintained 1m diameter weed free circles at any time, and neither shall they exceed 100mm in height. Weeds shall be treated before they establish.

Within grass areas noxious and competitive weeds shall not be allowed to establish and all perennial weeds shall be spot treated at each maintenance visit, 3 times per year.

5.4 Watering:
The contractor is responsible for the survival of all plants during the maintenance period. Apply water to moisten full depth of root run using proprietary irrigation system. Avoid washing or compaction of the soil surface. The Landscape Contractor is responsible for informing the Landscape Architect if the plants require watering. A minimum of 16 no. waterings year1, 8 no. year 2, 4 no. year 3. Prior notification to the landscape architect and a record of attendance will be requested for each visit. Spot checks will be made to ensure full compliance with this condition.

5.5 PROGRAMME
Year One (After Planting): Period of 12 months from date of practical completion

5.5.1 By end of May (Year One):
Application of herbicide agreed with Landscape Architect to all planting areas. Protect all plants. Hand weed all large weeds too close to nursery stock for safe treatment. Strim long grass prior to spray application. Provision for 1 no. visit for spot weed control application to areas where perennial weeds are apparent in the grass sward. Tip prune, firm plants. Grass cutting. All necessary cultural/husbandry methods to be completed in order to leave the sites in a clean, orderly and tidy manner. Water select standard trees.
Critical date: 30 May (Year One)

5.5.2 By end August (Year One):
Application of herbicide agreed with Landscape Architect to all planting areas. Protect all plants. Hand weed all large weeds too close to nursery stock for safe treatment. Provision for 1 no. visit for spot weed control application to areas where perennial weeds are apparent in the grass sward. All necessary cultural/husbandry methods to be completed in order to leave the sites in a clean, orderly and tidy manner. Grass cutting. All necessary cultural/husbandry methods to be completed in order to leave the sites in a clean, orderly and tidy manner. Water select standard trees.
Critical Date: 30 August (Year One)

5.5.3 October (Year One):
Remove dead plants after Landscape Architect's inspection.

5.5.4 November (Year One):
Replacement planting. Tree care shall mean pruning deciduous trees including those of hedgerow form when dormant to promote open frame works in the crown. Remove all suckers and dead branches, and branches that are encroaching on to footpaths should be cut back to point of branching.

5.5.5 By end December:
Application of herbicide agreed with Landscape Architect to all planting areas. Grass cutting. All necessary cultural/husbandry methods to be completed in order to leave the sites in a clean, orderly and tidy manner. Water extra heavy standard trees, standard trees.
Critical Date: 30 December (Year One).

5.5.6 Year 2

As year 1.

5.5.7 Year 3

As year 1 . Hedgerow to be fully pruned at end of season.

5.5.8 Sweeping and Cleaning

Sweeping shall mean sweeping of the footpaths, playing courts, car parks and the schools road network and removal of all grit rubbish moss and leaves, keeping the hard landscaped areas of the site in a neat and tidy manner. Number of sweepings per annum -12no.

Cleaning shall mean the removal of paper, plastic bags and all other rubbish from grassed areas, roads, car parks, playing courts, shrubbery's, hedging etc. or any part of the school grounds. This operation shall be carried out twice a month.
All dirt and rubbish to be removed off site to a tip to be provided by the Landscape contractor.
Autumn leaves shall be swept on a weekly basis from end of October to mid-November (three weeks). Any additional cleaning and sweeping deemed necessary, during the year, and requested by the school for any part of the schools grounds will be paid for at a pro rata basis to the rates for the programmed maintenance schedule.

5.5.9 Other Maintenance Works
All grassed areas are to be edged 3 times a year using a machine and are not to be sprayed.

Carry out any other maintenance to ensure the works are kept in a satisfactory state during the defects liability period.

Appendix 3 - Programme For Implementation, Maintenance + Defects Period

5.6 Grass Cutting

Grass cutting shall be deemed to include for:
[a] Removal of lodged grass.
[b] Removal and disposal of grass cuttings from adjoining roads and paving.
[c] Removal and disposal of stones and other obstructions from area of grass to be cut.

high profile grassed areas, eg. central gardens are to be Fine cut. Fine cutting shall mean mowing to 25mm high. This operation is to be carried out in each location shown on the landscape drawings and in locations as directed on site by a representative of the management team. A rough schedule is as follows-
March: 1cut
April: 3 cuts
May: 4 cuts
June: 4 cuts
July: 4 cuts
August: 4 cuts
September: 4 cuts
October: 4 cuts
November - February: 1 cut
Total 29 cuts

Fine cutting shall be deemed to include for grass cut to 25mm high evenly over the whole area, with cuttings left evenly spread over the surfaces. Grass not to exceed 50mm between cuts.

Other grass areas of which are less high profile are to be cut 16 times a year. These will include the grassed areas around the woodland areas, in between the pitches and any grassed area hidden from the main road by the school.

Areas indicated as wildflower mix shall be cut three times per annum. Cuts shall be carried out at specified times as agreed with landscape architect and recommended by the wildflower seed producer. Remove cuttings after each cut and remove offsite to tip.

Leave cuttings evenly spread. This operation is to be carried out in each location shown on the landscape drawings and in locations as directed on site by a representative of the Board Of Management.

At every second grass cut, grass shall be trimmed from around the base of walls and fences, back of footpaths and kerbs, litter bins, sluice valves and hydrant markers, trees, shrubberies poles and public lighting columns etc., and kept in a neat and tidy condition.

The contractor shall apply a broad spectrum weed killer, once a year, mid April, at the recommended application rate, to control weeds in the grassed areas during the growing season. In addition, 1 no. applications of herbicide to kill off clover in the grass areas shall be applied in April in line with approved herbicides under current legislation.

NMP
LANDSCAPE ARCHITECTURE