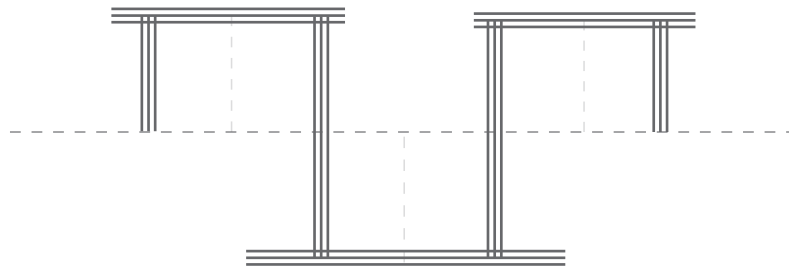


Carmanhall Road SHD 2022

Residential Development
Former Avid Technology International
Site, Carmanhall Road, Sandyford
Industrial Estate, Dublin 18



SHD STAGE III
Landscape Design Statement

August 2022

Applicant: Atlas GP Limited



CONTENTS

0.0 Introduction

1.0 Context + Analysis

- 1.1 Wider Context
- 1.2 Local Context
- 1.3 Development Plan Context

2.0 Landscape Vision

- 2.1 Evolution of Place
- 2.2 Initial Concept Sketch

3.0 Landscape Design Strategies

- 3.1 Open Space Quantum + Circulation
- 3.2 Programme + Planting

4.0 Landscape Concept Design

- 4.1 Landscape Masterplan
- 4.2 The Gardens
- 4.3 The Streets

5.0 Landscape Palettes

- 5.1 Hardscape
- 5.2 Softscape
- 5.3 Planting Approach

Appendix



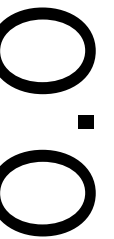
Niall Montgomery + Partners Landscape Architects were engaged by Atlas GP Limited to collaborate with MDO Architects and a wider consultant design team, to provide landscape design proposals for for a strategic housing development at this site.

Atlas GP Ltd, intend to apply to An Bord Pleanála for planning permission for a strategic housing development at this site of c. 0.99 ha at the Former 'Avid Technology site', at the junction of Blackthorn Road and Carmanhall Road, Sandyford, Dublin 18.

The development will consist of 334 Build to Rent residential apartment units within 4 no. apartment blocks and as follows:

- 79 No. Studio
 - 175 No. 1 bed
 - 80 No. 2 bed
-
- All residential units provided with private balconies/terraces to the north/south/east and west elevations
 - Crèche 272 sq.m.
 - Residential amenity spaces 893 sq.m. (including a unit of 146.5 sqm open to the public, resident's gym, business centre, multipurpose room, staff facilities, multimedia/cinema room, shared working space, concierge, and games room)
 - Height ranging from 5 to 16 storeys (over basement)
 - Landscaped communal space in the central courtyard
 - Provision of a new vehicular entrance from Carmanhall Road and egress to Blackthorn Road
 - Provision of pedestrian and cycle connections
 - 125 No. Car Parking, 6 No. Motorcycle Parking and 447 cycle spaces at ground floor/undercroft and basement car park levels
 - Plant and telecoms mitigation structures at roof level

INTRODUCTION





CONTEXT ANALYSIS

1.0

1.1 Wider Context



1.2 Local Context

The development site is located in Sandyford Business Park, south of Dublin City. The site comprises of the former AVID site. It is bounded to the east by Blackthorn Road, to the north by Carmanhall Road and to the south by existing commercial buildings.

Currently a brownfield site in a busy commercial area, its boundaries are secured with a timber hoarding along Carmanhall Road and Blackthorn Road, a block wall on the internal western boundary and harris panels along the north western and south western boundaries.

The site has a prime location and benefits from access through both Blackthorn Road and Carmanhall Road. Access to public transport is provided through the two Luas stops located a short walking distance to the north of the site. The M50 is south of Sandyford, which allows great vehicular access to it.

A variety of facilities are easily reached at a walk distance from the site, such as secondary schools, supermarkets, museums, hospitals, warehouses, etc. Public and private amenities in close proximity include Foxrock Golf Club and Clonmore Park.

Stillorgan Reservoir dated from 1860 is north of the site, which adds inherent historic value to the development. In addition, the view towards Dublin mountains add to the attractiveness of the development.

Levels fall across the site by 4m from South West to North East.

The intention is to work with the grades, eliminate railings and ramps and minimize walls and cut and fill. Development and altering of grades has been carefully considered in the retention of existing trees. The site is adjacent to Walls Construction offices to the west, Mercury Engineering to the south west, Chill Insurance, Innopharma Education and Febvre to the south. To the east is the Inverso offices and Medlab Pathology. The directly north of the site is occupied by a Londis Supermarket and Insomnia Coffee shop, with a 6-storey block located beyond these shops, which is currently occupied by Microsoft office.

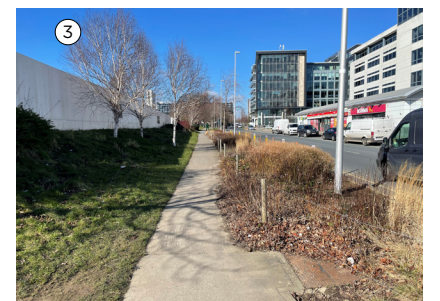
Due to the commercial and office activities that surround the site, the adjacent public roads are heavily used, which contributes to the provision of active frontages and passive surveillance.



Current internal view looking into site









Street view of site corner from Blackthorn Rd



Street view looking North on Carmanhall Rd

1.3 Development Plan Context



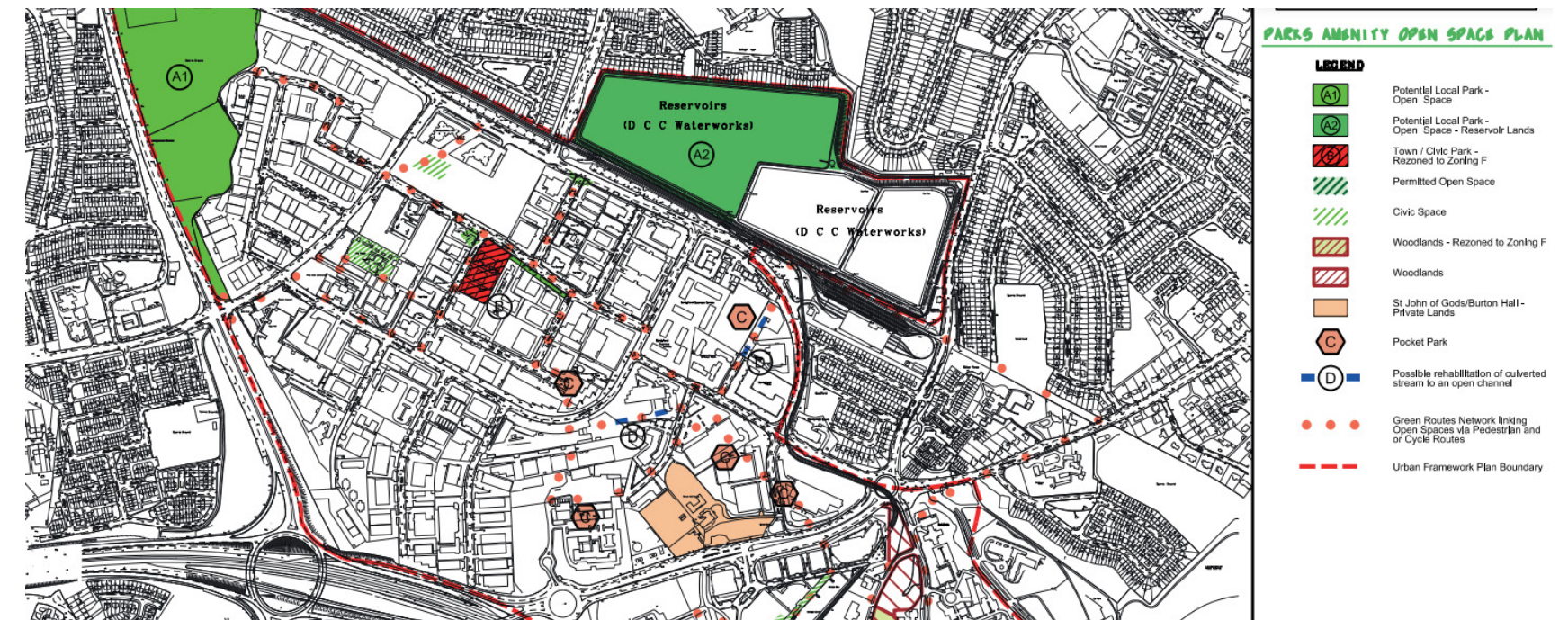
-  Existing Park
-  Existing Civic Space
-  New Future Civic Space
-  Civic Park, Rezoned to Zoning F as described in the DLRC Development Plan
-  Pocket Park as described in the DLRC Development Plan
-  New potential park as described in the DLRC Development Plan

1.3 Development Plan Context

Under the new Draft Development Plan 2022-28 (Sandyford Framework Plan, p.16) – adopted in April,

(Objectives in Zone 7)

- F2 It is an objective of the Council to actively pursue the use of the evolving reservoir site as active public open space
- F3 It is an objective of the Council to develop a Sandyford Business District Civic Park (circa 0.8ha of public open space) through a combination of development contributions and other funding streams. A balance will be struck in the design and the layout of this park between the smart, civic quality of an urban square, and the casual, spontaneous nature of a residential area. This will include significant water features, a high degree of sculptural influence, play opportunities, including those for children’s play, hard & soft landscape features and extensive tree planting (Map 1, SLO 57)
- F4 It is an objective of the Council to provide public open space for active and recreational uses as identified on Drawing No. 10. The Local Authority will actively pursue the provision of this public open space. This public open space will be funded in accordance with the Development Contribution Scheme adopted for the Plan area.
- Local Objective 85 - To secure the use of lands at Stillorgan Reservoir for Public Amenity Purposes



On drawing No. 10 of the Urban Framework Plan there is no Open Space indicated for the Avid or Tack sites.

Guiding Principles



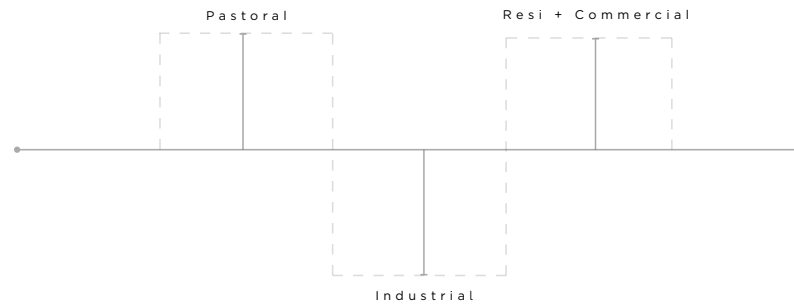
The use of native tree and shrub planting and wildflower meadow grass areas to respond to, support and promote the national pollination plan will have a positive net gain for bio-diversity. This will enhance the existing ecological system, creating more habitat and diversity. Additional tree planting will 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.

LANDSCAPE VISION 2.0

2.1 Landscape Vision

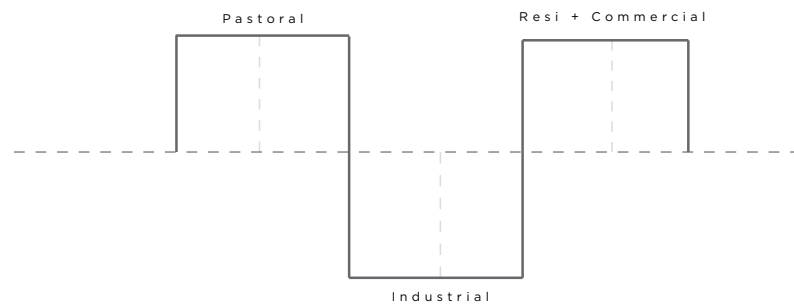
An Evolution of Place

Evolving Time-line



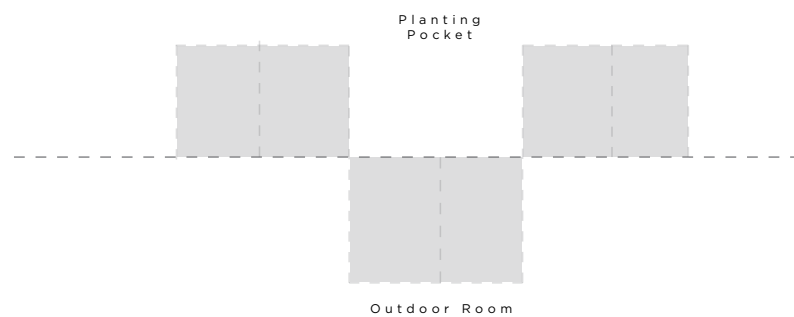
Sandyford continues to reinvent itself, with a continuous evolution of how a place can become more. The landscape concept explores Sandyford's transition from historical pastoral lands, to its industrial presence and the current shift towards residential development.

A Journey Through Time



Time is linear with many moments to celebrate on its course. These are represented as space's active and passive, as simple as a bench on a path, creating the opportunity to engage and integrate with community.

Programme

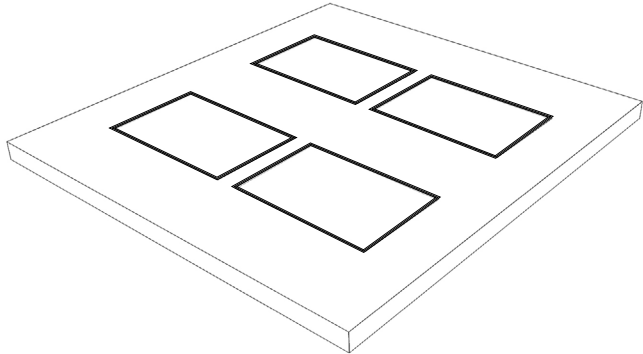


Programme further defines how planting can encourage its evolution or principal use. Variation in palettes and robustness all contribute to a successful place.



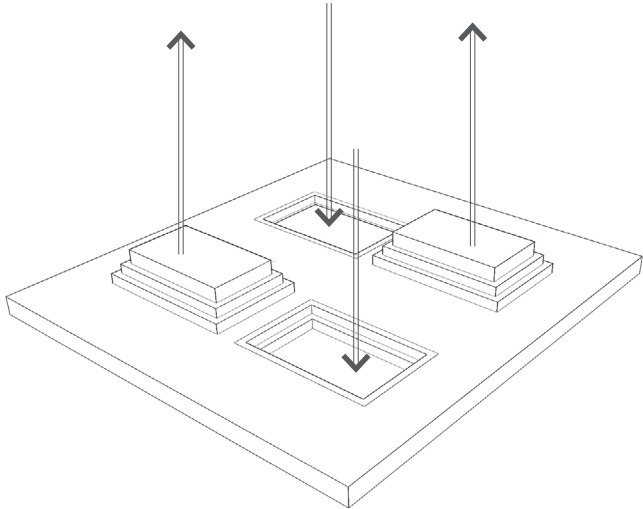
2.2 Initial Concept Sketch

Landscape Concept



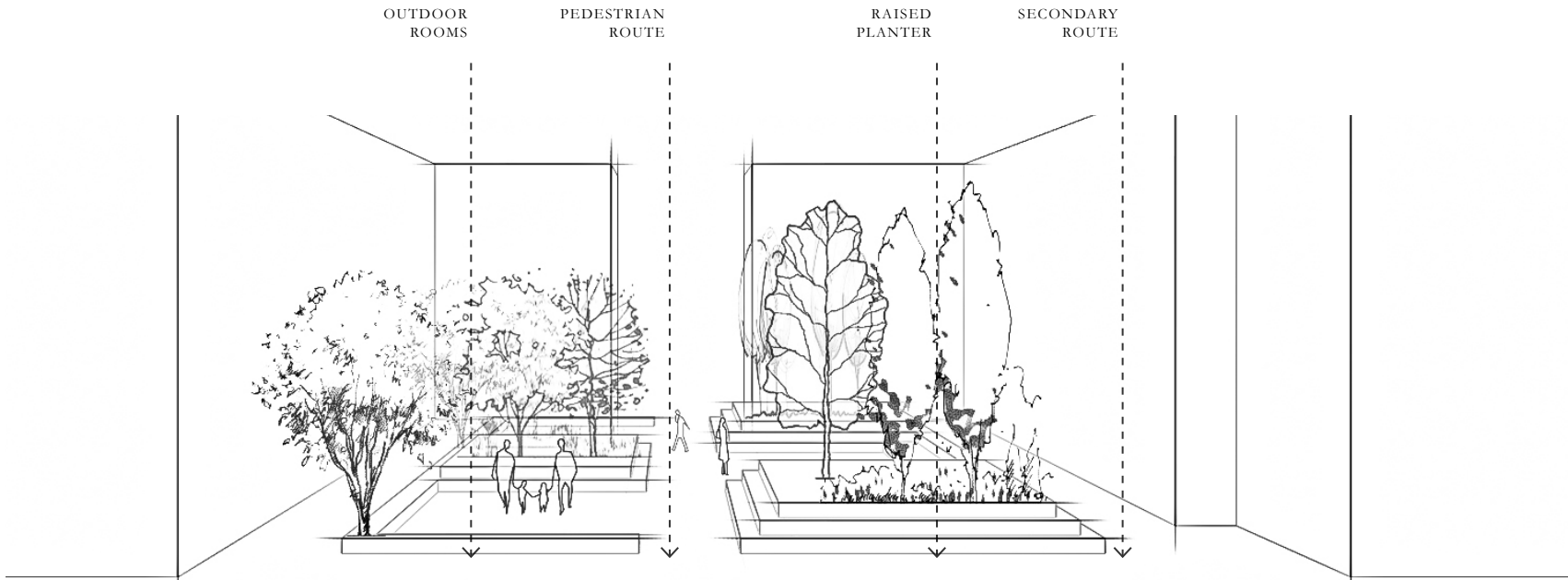
Define Spaces

A traditional quadripartic layout responding to practical functions.



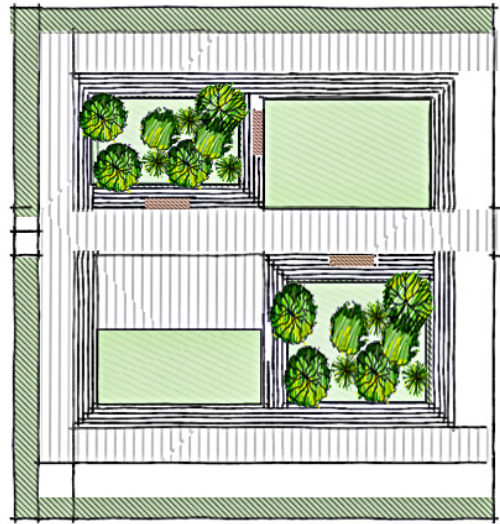
Push + Pull

Pushing and pulling to create enclosure and glimpse views, drawing the user into the space.



Volumetric Arrangement

Understanding the volumetric relationship of space and time as users pass through it from morning to evening.



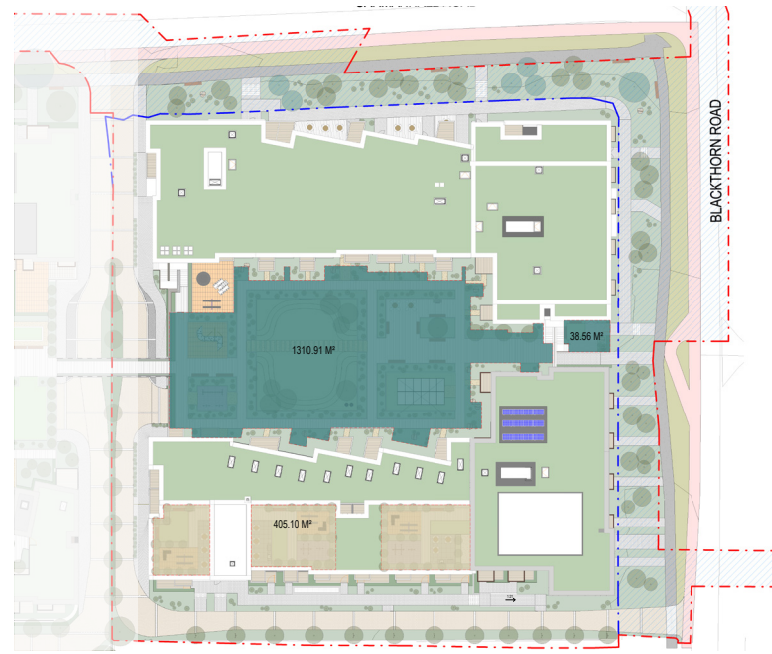
An Evolving Space

LANDSCAPE DESIGN STRATEGIES

3.0

3.1 Open Space Quantum + Circulation

OPEN SPACE QUANTUM



LEGEND

- Public Open Space. 0sqm
- Communal Open Space - Courtyard - 1349.47 Sqm
- Communal Open Space - Roof Terrace - 405.10 Sqm

SITE	REQUIRED	PROVIDED
AVID Site:	1751 Sqm	1754.57 Sqm

No public open space is provided as part of the site development. The communal open space is provided as a secure area as courtyard gardens over podium. This in combination with the roof gardens meets the communal open space requirements with less than 30% of the communal open space provision allocated to the roof top.

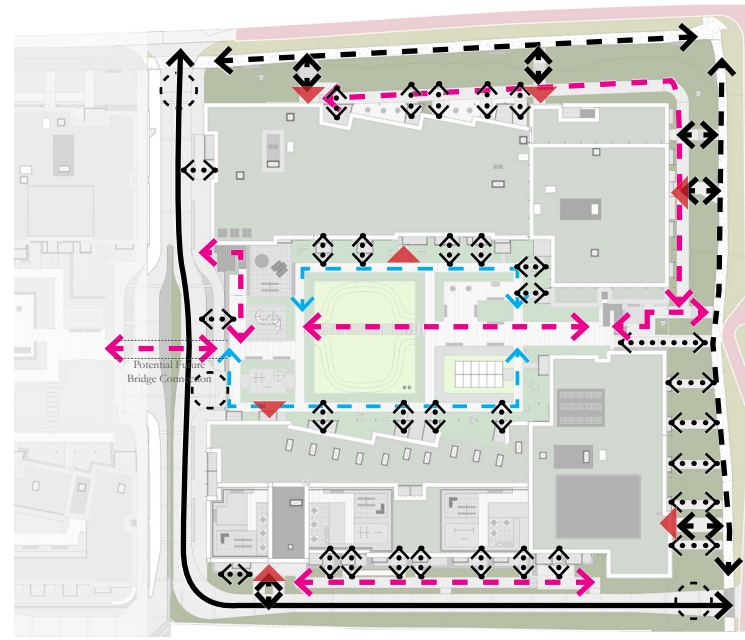


Tertiary Open Space



Communal Open Space

ACCESS + CIRCULATION



LEGEND

- Car Route + Pedestrian + Cycle
- Primary Pedestrian Route
- Secondary Pedestrian Route
- Tertiary Pedestrian Route
- Access
- Core Access
- Vehicle Access

Pedestrian permeability through the site is outlined in the diagram above. It is envisioned that the central street will be an active shared pedestrian surface, core set down area with cafe and gym to help enliven it. It will be made as green as possible in appearance with trailing and climbing plants, street level shrubs. The interface between the adjacent site will be a 1.1m hedge and railing, noting potential development to integrate with it.



Primary Circulation



Tertiary Circulation

3.2 Programme + Planting

PROGRAMME



LEGEND

- Play Area
- Exercise Area
- Passive Space

A variety of spatial typologies have been catered for including play, exercise, allotment gardens, semi covered areas and passive recreation with BBQ, sitting and lawns. Play has been identified to be formal and informal both at podium and roof terrace level. Details of play equipment and layouts can be found in the associated landscape drawing set.

Play provision is made for younger age groups in the form of fixed play facilities, offering a variety of challenges for all abilities as well as the flexible lawn area. Older groups can utilise the exercise areas or lawn area for kickabout/ frisbee. Play is also provided at roof level as a supplement to that provided on podium. It is contained with a minimum balustrade height of 1.1m over the FL (as per the building regulations).

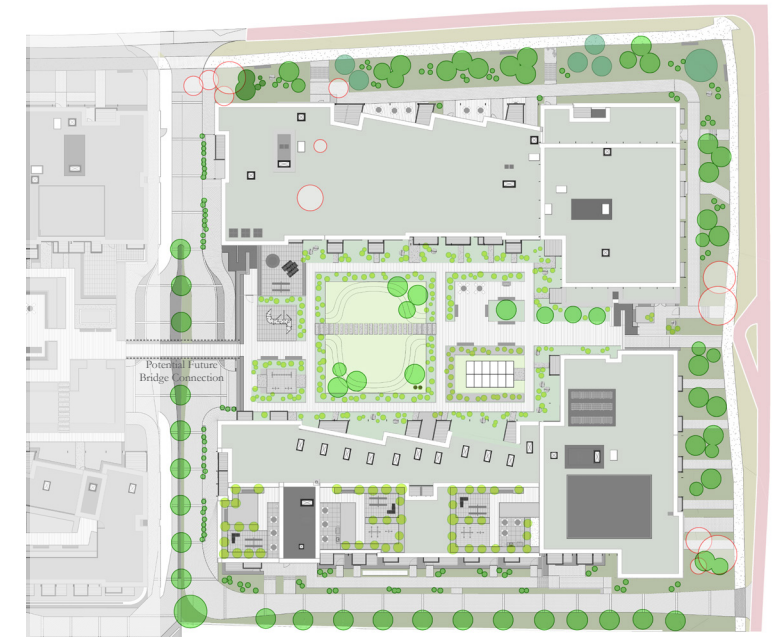


Destination Play



Natural Play

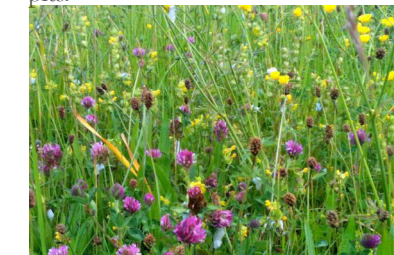
PLANTING



LEGEND

- | Trees | Planting |
|-------------------------------|---------------------|
| Existing Trees To Be Retained | Wildflower Planting |
| Proposed New Trees | Herbaceous Planting |
| Proposed New Shrubs (GF) | Lawn |
| Large Shrubs (Podium Level) | |
| Existing Trees To Be Removed | |

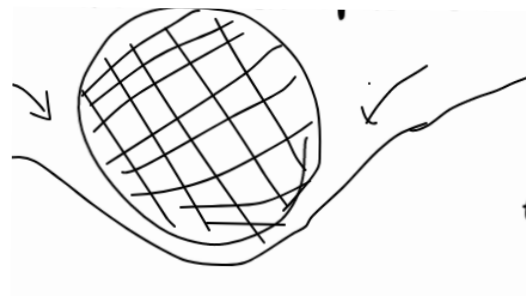
The planting strategy intends to retain as much of the existing landscape to the sites periphery as possible and tie in with the character and wild flower / perennial mix. On the edge of the defensible space it is intended to use structural planting with raised planters on the podium and more herbaceous material with 'pops' of colour including rain gardens and attenuation tree pits.



Native Pollinators



Structural Planting



"TIME AND SPACE ARE NOT CONDITIONS OF
EXISTENCE, TIME AND SPACE IS A MODEL
FOR THINKING."
- Albert Einstein

LANDSCAPE 0 CONCEPT DESIGN 4

4.1 Landscape Masterplan

The landscape design for Avid site brings together a cohesive series of spaces driven by historical and ecological influences in response to the sites context and relationship with surrounding lands. Experienced sequentially as routes of discovery and exploration weave themselves together revealing a sensorium of spatial typologies.

The landscape design has been planned in such a way so as to maximise the sites orientation and anticipated micro-climate to create habitable, quality spaces which respond to human comfort ,encouraging residents and public into a safe and surveilled space. A number of potential routes through the site have been identified to benefit connections with its surroundings and provide a better amenity for the wider community. Pedestrian and cycle routes complement this strategy underpinning the sustainable credentials associated with the development.

In addition, it is anticipated that the development will offer a net gain to biodiversity through the development of additional habitat.

An increased number of trees, areas for surface water treatment and wildflower meadows, coupled with best practice maintenance will ensure a sustainable landscape for the future. Edge conditions and relationships with neighbouring developments are sensitively integrated and screened.

The primary objectives of the design are to encourage biodiversity through varied tree and shrub planting, create a series of interlinking spaces which 'blur' the boundaries and create 'moments' for interactions, crafting a sense and extension of the community for the wider Sandyford neighborhood.

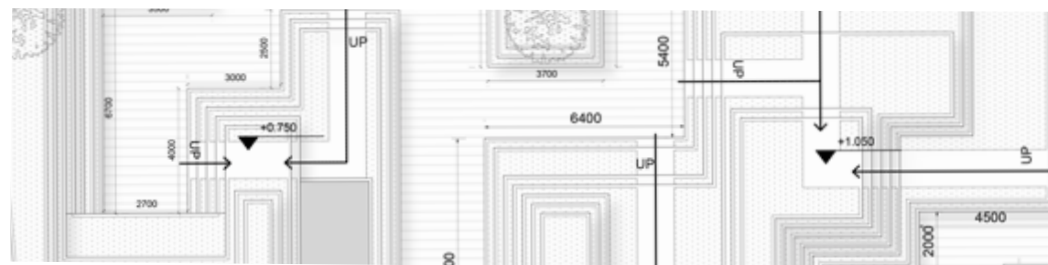
The following pages will demonstrate through illustrations and narrative the spatial experience for each area of significance.

The scheme sets out a clear hierarchy of Private and Communal open space in a way that will ensure all open spaces are owned and taken care of. An outline landscape maintenance proposal is set out within the appendix of this landscape design statement. The interface between the communal open space and public would be delineated by a railing and secure gate system.

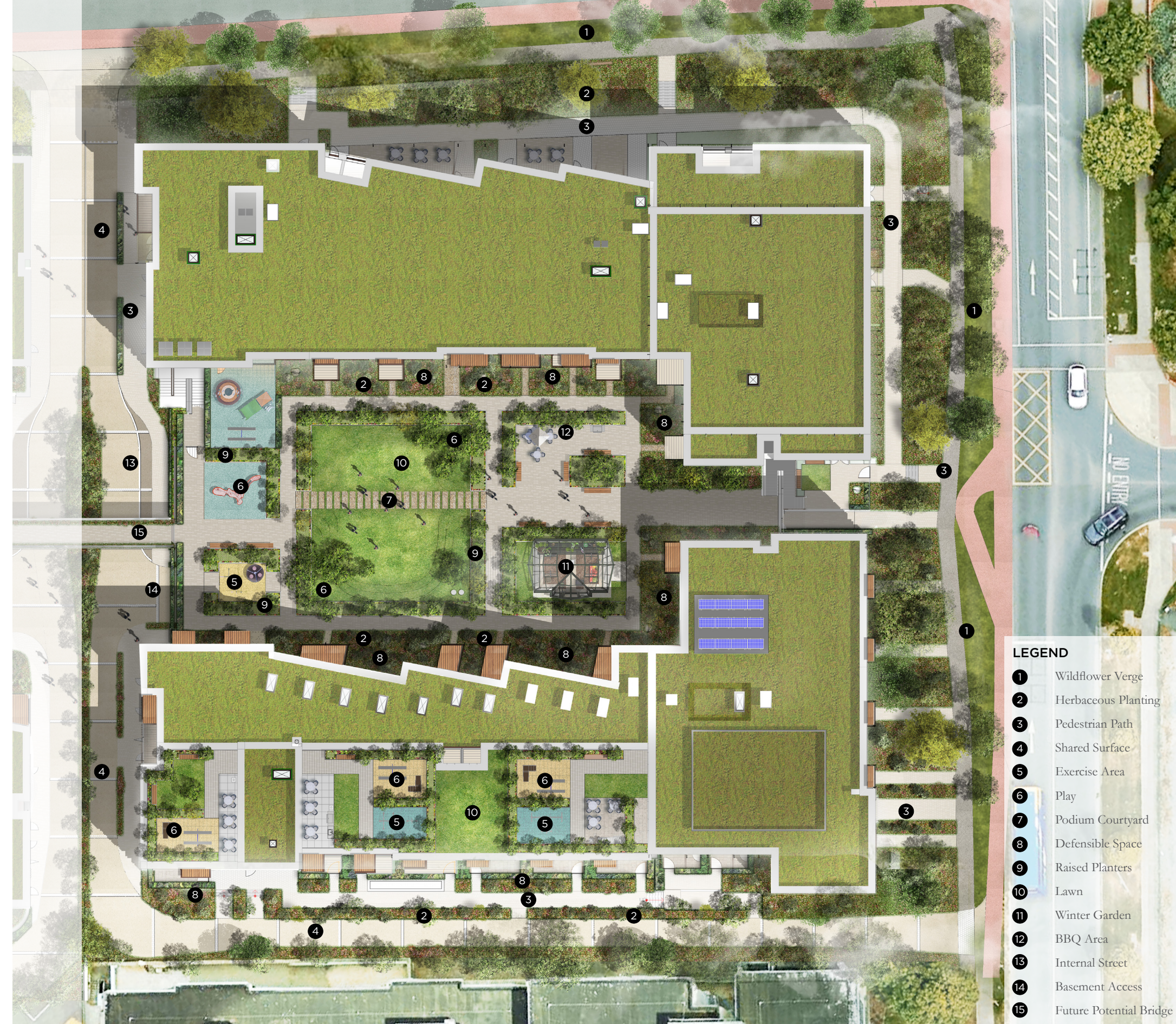
Throughout every stage of the design process accessibility has been at the forefront of the design team's considerations. This ensured that every public and communal open space within the scheme is completely accessible, usable and available for all – visually and mobility impaired. Tactile paving is proposed adjacent to street crossing points. Street furniture is positioned "out of the way" to ensure it doesn't form an obstruction to anyone visually impaired. Slopes and gradients are designed to be no more than 1:21 slope gradient to ensure slopes are manageable for people who are physically impaired. High quality railings are used to segregate Public & private uses, vehicular and pedestrian traffic are separated using planting or kerbs appropriately.

A masterplan has been prepared for the adjoining Tack and Avid sites, which includes a proposal for a bridge linking the two sites at podium level. This is provided for as part of this planning application.

In the event this bridge is not implemented, the internal street remains a viable and attractive place to balance access with qualities of a secure and vital place. Street View scenarios are presented in Figure 4.3 below to illustrate that the street retains a high quality character.



Concept Form + Arrangement



LEGEND	
1	Wildflower Verge
2	Herbaceous Planting
3	Pedestrian Path
4	Shared Surface
5	Exercise Area
6	Play
7	Podium Courtyard
8	Defensible Space
9	Raised Planters
10	Lawn
11	Winter Garden
12	BBQ Area
13	Internal Street
14	Basement Access
15	Future Potential Bridge

4.2 The Gardens

The Podium Garden will be the predominant provision of private communal open space to serve the development. Studies have proven that a front garden or private terrace opening onto a shared space has a positive influence in social interaction and passive surveillance on the street (2001, Gehl, Jan).

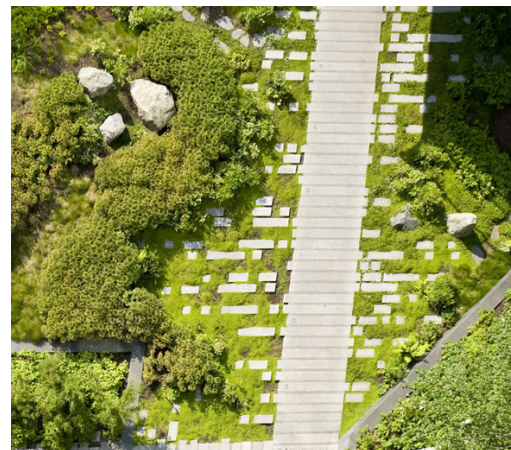
The semi-private communal courtyard is located at the core of the site. It offers significant amenity potential for the residents. This space will be programmed with play areas and sitting opportunities.

Where located over a basement podium slab, the courtyard will act as a green roof with hard and soft landscaping constructed over a surface water storage mat providing interception, filtration and attenuation of surface water. Where located on grade, surface water will drain to ground through direct infiltration.

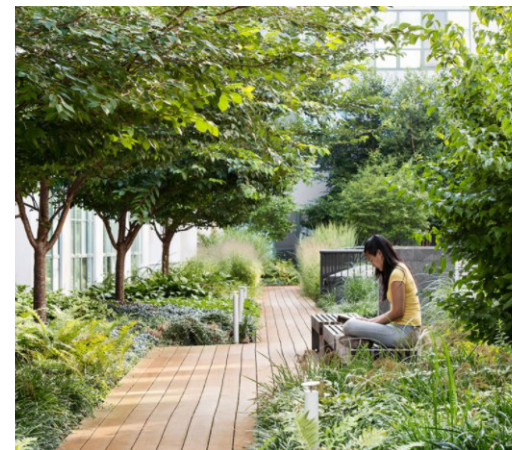
The space has been designed to be the focal point of the development. Natural Play has been incorporated with the lawn itself tilted and is anticipated to be flexible in nature for use as kickabouts, picnics, frisbee throwing, small community events, art programmes etc. Programmed play incorporates opportunities for tots and older children with exercise areas targeting older teens and adults. In addition, there is a winter garden which can be used for reading, small gatherings and home to plants. A larger terrace area with BBQ facilities, integrated seating and loose furniture will create opportunities for community events which in turn generate a sense of community.



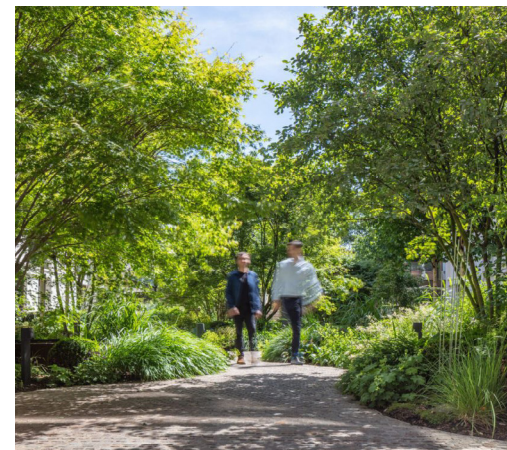
Location Plan



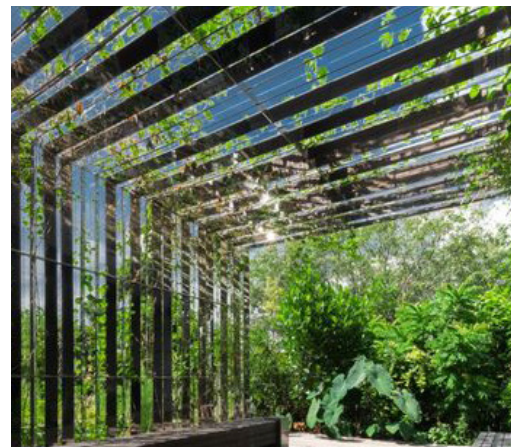
Flexible materials



Discrete Spaces



Woodland Integration



Covered Areas



Social Spaces to Encourage Social Interactions

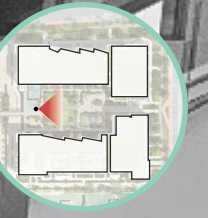
LEGEND

- 1 Lawn
- 2 BBQ
- 3 Creche Play
- 4 Exercise
- 5 Amenity Terrace
- 6 Play
- 7 Raised Planter
- 8 PAS
- 9 Path
- 10 Defensible Space
- 11 Winter Garden



Illustrative Plan

4.2 The Gardens View 1



BBQ TERRACE

SLOPING LAWN

RAISED PLANTERS

STEPPING STONES

4.2 The Gardens View 2



4.3 The Streets

The internal street will be a shared surface - high friction finish, with paved areas for set down and parking for mobility impaired drivers. It will be narrow in width and will provide access for residents of blocks, service and emergency vehicles as well as pedestrians and cyclists. The external street will be an active vibrant space and a positive for the masterplan with cafe and gym facing onto it to create activation. The street will be delineated with a low 1.1m hedge and railing allowing provision for integration of future adjacent development. Various planting opportunities have been identified to soften the street both trailing and climbing from and to the podium.

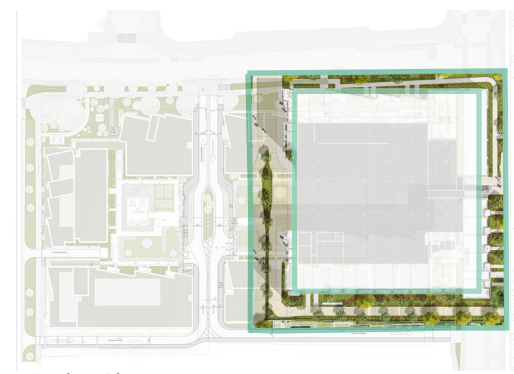
The planted areas to the periphery will replicate the existing DLRCC wildflower and perennial plant mix in transitioning from the private development into a more unified streetscape which integrates various level changes and rain gardens.



Section A-A Blackthorn Road



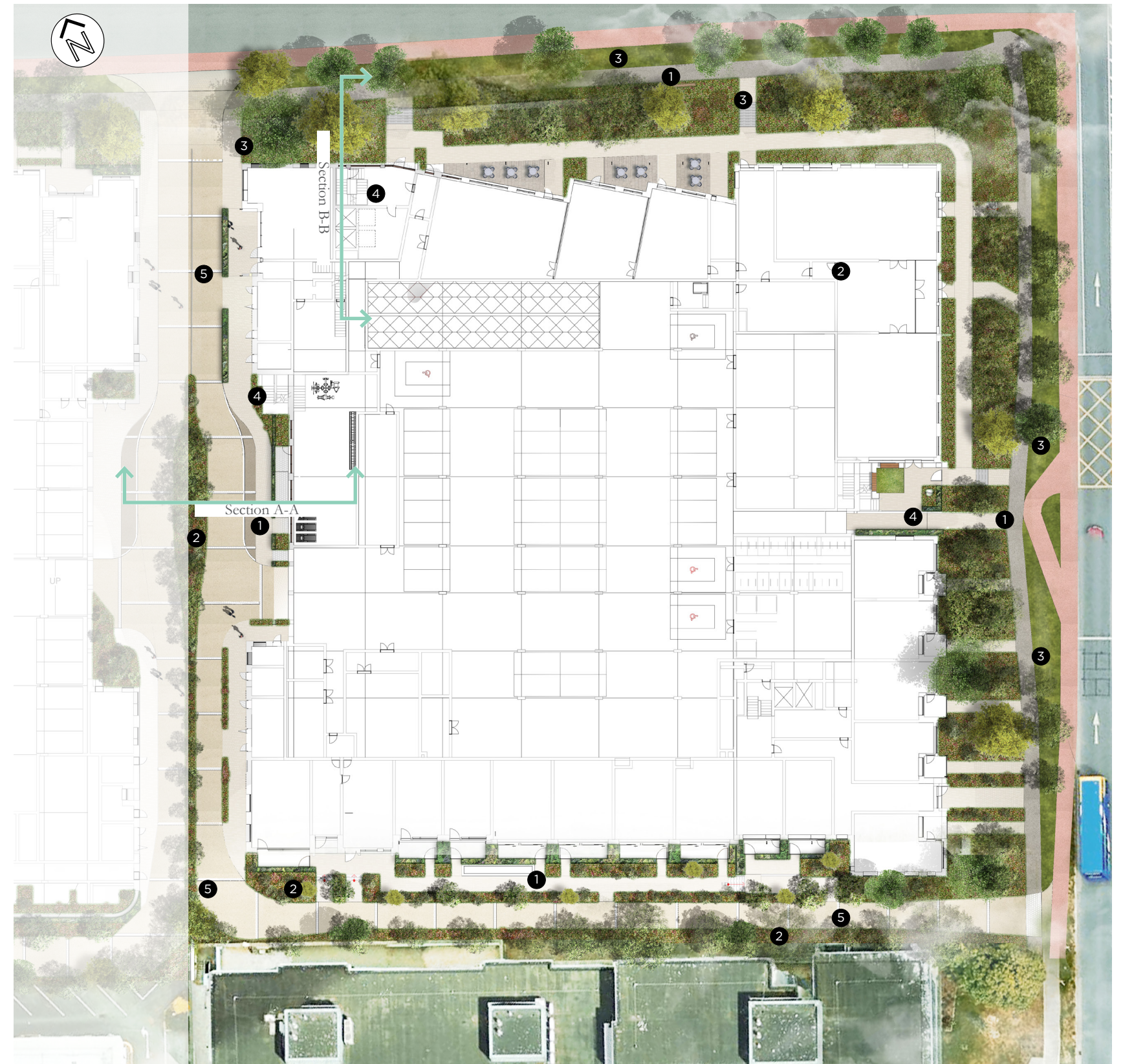
Section B-B Internal Street



Location Plan

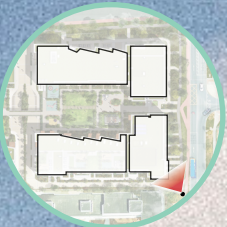
LEGEND

- ① Pavement
- ② Green Street
- ③ Wildflower
- ④ Podium Access
- ⑤ Shared Surface



Illustrative Plan

4.3 The Streets View 1



SHARED SURFACE

RAIN GARDEN

OWN DOOR ACCESS PATH

WILDFLOWER PLANTING

4.3 The Streets View 2 A



TRAILING PLANTS



CLIMBING PLANTS



RAILING TO DEFINE EDGE



UNDEVELOPED ADJACENT DEVELOPMENT



LOW EVERGREEN HEDGE



SHARED SURFACE



Internal Street View Scenario (A)

This view demonstrates a scenario where a secure boundary is provided between the development line and future potential development. As such it retains a high quality character in the absence of any adjoining development.

4.3 The Streets View 2B



TRAILING PLANTS

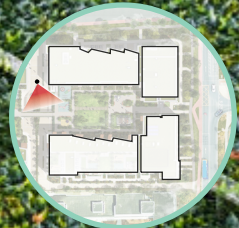
BRIDGE WITH TRAILING PLANTS

CLIMBING PLANTS

LOW EVERGREEN HEDGE

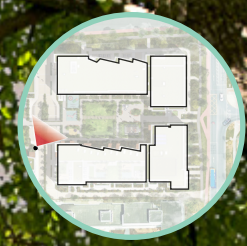
HEDGE TO DEFINE ADJACENT DEVELOPMENT

SHARED SURFACE



Internal Street View Scenario (B)
Illustrating Future Potential Development

4.3 The Streets View 3



CLIMBING PLANTS

SHARED SURFACE

TRAILING PLANTS

LOW EVERGREEN HEDGE

Internal Street View
Scenario (B)
Illustrating Future Potential Development

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, a 3.7m wide route is proposed for service vehicles. Self-binding gravel and large format reconstituted stone slabs are proposed for pedestrian routes in open space.

LANDSCAPE PALETTES

0.
5

5.1 Indicative Hard Landscape Material Approach

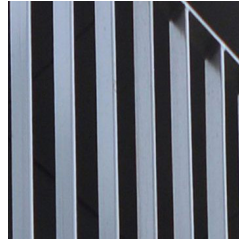


SURFACE FINISHES

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.

<p>Natural Stone</p>  <p>To Thresholds Spaces</p>	<p>Self Binding Gravel</p>  <p>To forest walk and Running Track</p>	<p>Porous Paving</p>  <p>To edge of fire tender route</p>
---	--	--

WALLS + FENCES







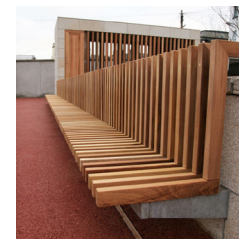

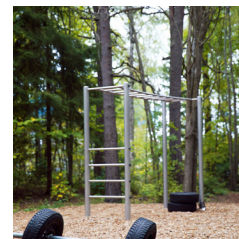

The boundaries between the site both external and internal will be of high quality and provide a degree of visual transparency.

<p>Railings</p>  <p>To boundaries + GF terraces</p>	<p>Fence</p>  <p>To secure boundaries (behind planting)</p>	<p>Planters</p>  <p>To raised planters at roof level</p>
---	--	---

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.

<p>Picnic Table</p>  <p>To woodland</p>	<p>Bins</p>  <p>To pedestrian areas</p>	<p>Bollards</p>  <p>To road edges</p>
---	--	--

<p>Grasscrete</p>  <p>To utility service areas</p>	<p>Soft Pour</p>  <p>To play + fitness zone</p>	<p>Porous Paving</p>  <p>To parking</p>		
<p>Random Rubble Wall</p>  <p>To Retaining Walls + Sign Wall</p>	<p>Green Roof</p>  <p>To Lift Over Runs</p>			
<p>Bike Stand</p>  <p>To bike parking</p>	<p>Benches</p>  <p>To pedestrian areas</p>	<p>Play</p>  <p>Bespoke Imaginative</p>	<p>Exercise</p>  <p>To fitness areas</p>	<p>Tree Grille</p>  <p>To trees in paving</p>

5.2 Indicative Soft Landscape Material Approach

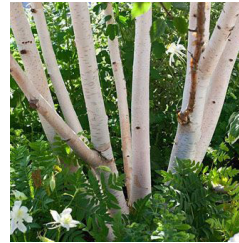
WOODLAND TREE PLANTING

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.

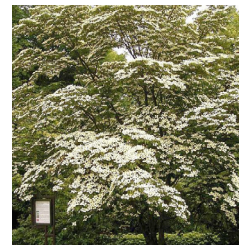
Betula jacquemontii



Carpinus betulus multistem



Cornus sanguinea



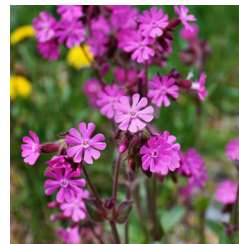
WILDFLOWER & SHRUB PLANTING

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



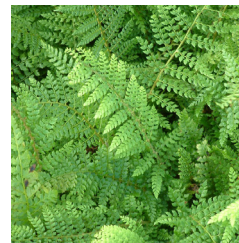
Lotus corniculatus



WOODLAND UNDERSTORY & SHADE LOVING PLANTING

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

Polystichum aculeatum



Cyathea australis



Dicksonia antarctica



Sorbus aucuparia



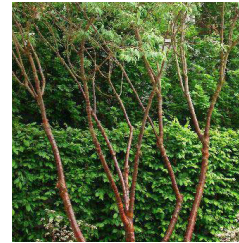
Pyrus calleryana



Quercus robur



Prunus serrula



Pinus sylvestris watereri



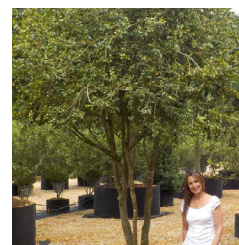
Acer griseum



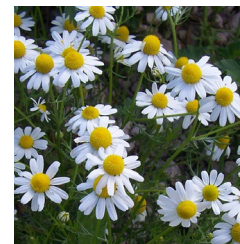
Magnolia grandiflora



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



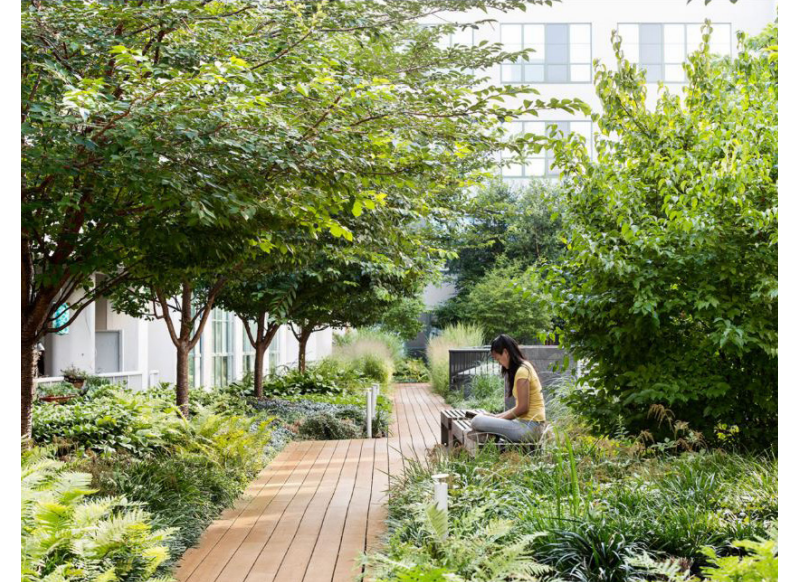
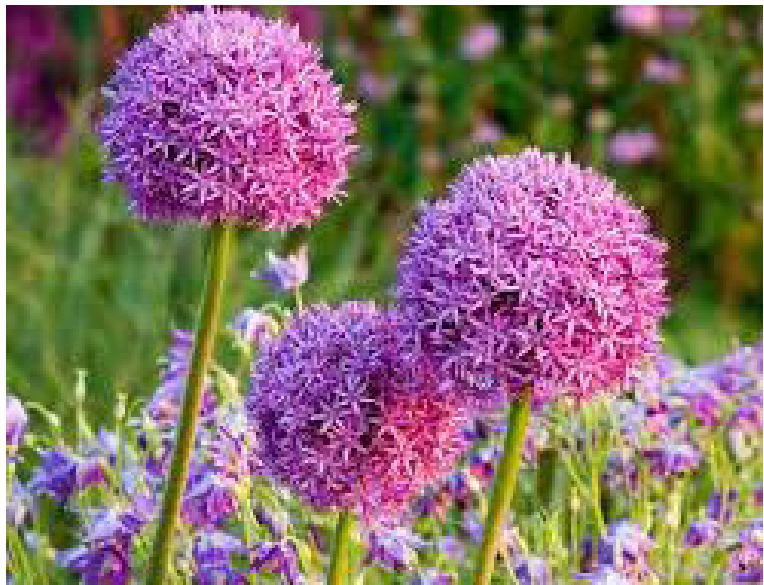
Shade loving plants for Woodlands



Shade loving plants for Woodlands



Woodlands with ferns understory



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 conducive 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 severance 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/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 faecal 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 faecal 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 faecal 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.

Appendix 1 - Soft Landscape Outline Specification

4.7.3. Light Standard Trees

Excavate tree pits to 500mmx500mmx500mm 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 faecal 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 augering 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 dia. 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 augering 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 back-filling 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.

d 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 sprayed 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. 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.

