May 2024

Gort Mell

Drogheda, County Louth

Landscape Design Statement

LRD_Stage 3

NMP LANDSCAPE ARCHITECTURE JFOC LaganHomes

Applicant: Lagan Home Ireland Ltd.

CONTENT

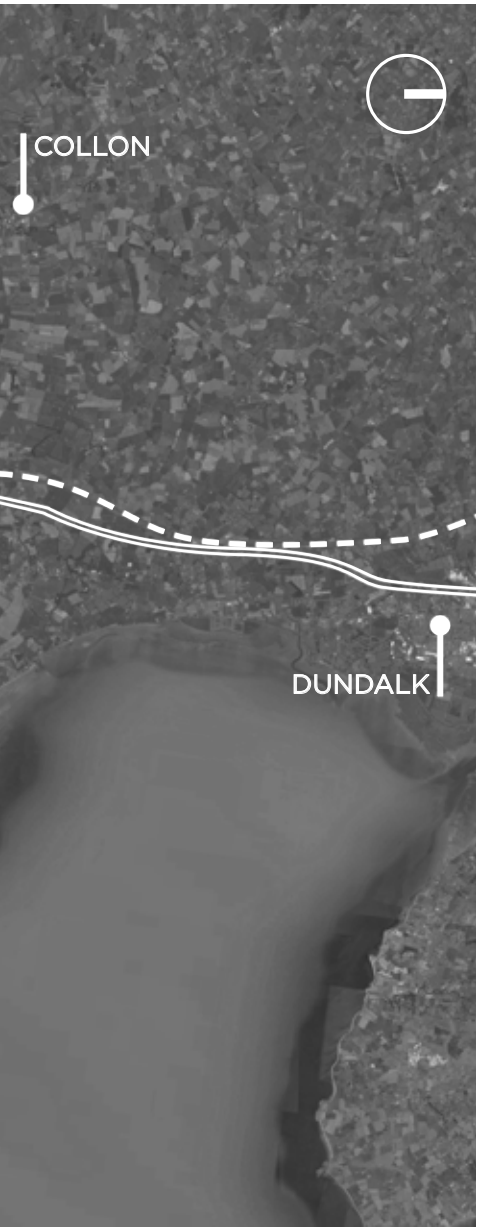
Niall Montgomery + Partners Landscape Architects were engaged by the Client, Lagan Homes Ireland Ltd., to collaborate with JFOC Architects as well as the wider design team, to provide landscape design proposals for the proposed development of the lands at Old Slane Road, Drogheda.

The proposed development seeks modifications to a permitted Strategic Housing Development (SHD) (APB-311678-21, as amended under P.A.Ref. 2360368) that will change the mix of housing from 237no. dwellings units comprising 147no. apartments and 90no. houses, to 237no dwellings comprising 42no. apartments and 195no. houses with associated modifications to the road layout and distribution of public open space, car parking, site services and site development works. The LRD planning application is for 207no. units within the permitted SHD. The new house types and apartments proposed have a residential mix of 21no. 1-bed, 49no. 2-bed, 115no. 3-bed & 22no. 4-bed units.

A crèche was permitted as part of the original SHD. The crèche remains part of the proposed development but has been redesigned as a standalone building and incorporated into the revised site layout. This planning application also seeks permission for 2no. ESB substations required to serve the proposed development.

INTRODUCTION 00.


ASHBOURNE
BOYNE VALLEY
SITE
DROGHEDA
DUNLEER
DUBLIN INTERNATIONAL AIRPORT
SWORDS
M1 MOTORWAY
RAILWAY
BALBRIGGAN
BETTYSTOWN
IRISH SEA



1.0 LANDSCAPE ANALYSIS

1.1 Landscape Analysis: Historical Context

Drogheda is an industrial and port town, the eleventh largest town in the Republic of Ireland and is located on the border between County Louth and County Meath. Situated 49km from Dublin, it is located along the Dublin–Belfast corridor, connected by the M1 motorway and railway.

The town is situated in an area that contains a number of archaeological monuments dating from the Neolitwhic period onwards. The UNESCO World Heritage Site of Newgrange is located 8km west of the town. The Boyne Valley was one of the first areas settled by early farmers due to its rich alluvium soil.

Drogheda, meaning "Bridge of the Ford" was first developed by the Normans, building a fort on the south bank of the River Boyne, circa1186. It is the last bridging point on the river before it enters the Irish Sea.

The walled town was besieged twice during the Irish Confederate Wars. In the second siege of Drogheda in 1649, the town was taken by Oliver Cromwell as part of the Cromwellian conquest of Ireland and it was the site of a massacre of the Royalist defenders. The Battle of the Boyne in 1690 occurred some 6km west of the town, on the banks of the River Boyne at Oldbridge. This battle not only decided the throne of England and its religion but had deeper geopolitical roots that would ripple across Europe.

Two decades into the 21st century, some of the historic core of Drogheda town has suffered urban decline. Some of the buildings have been derelict for some years and are in danger of collapse.

In recent years Drogheda has seen much development, going as far as hosting the The Fleadh, a national traditional music festival, in 2018 and again in 2019.

River Boyne

Mary McAleese Boyne Valley Bridge

Drogheda Town

1.2 Landscape Analysis: Local Context

The site is located on the outskirts of Drogheda, 4km from the town centre, between Exit 10 and the M1 Retail Park. The large M1 intersection to the north-west of the site connects Drogheda with the towns of Slane (16km away) and Collon (15km away). The proximity of M1 gives quick access to Dublin, allowing residents to reach Dublin International Airport in approximately 25 minutes.

The surrounding lands are characterised by agriculture and mature vegetation along the River Boyne. The newly installed greenway links Drogheda town centre to the amenities of Townely Hall, a Georgian country house, including 60 acres of rolling parkland and a golf course.

Transport

Dublin International Airport

Proximity to M1 Motorway

Nature

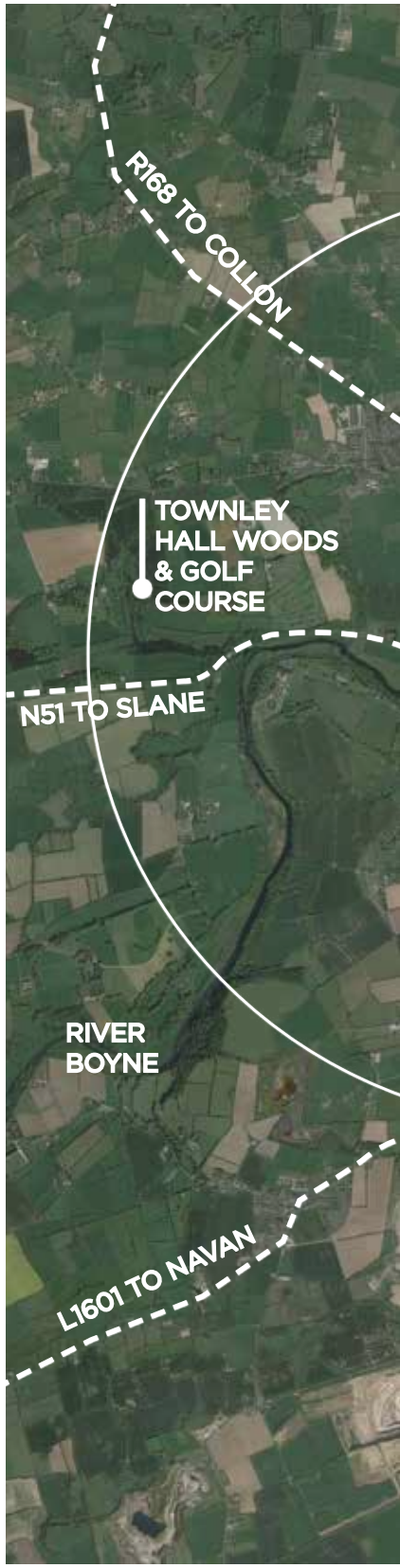
Rural Landscape

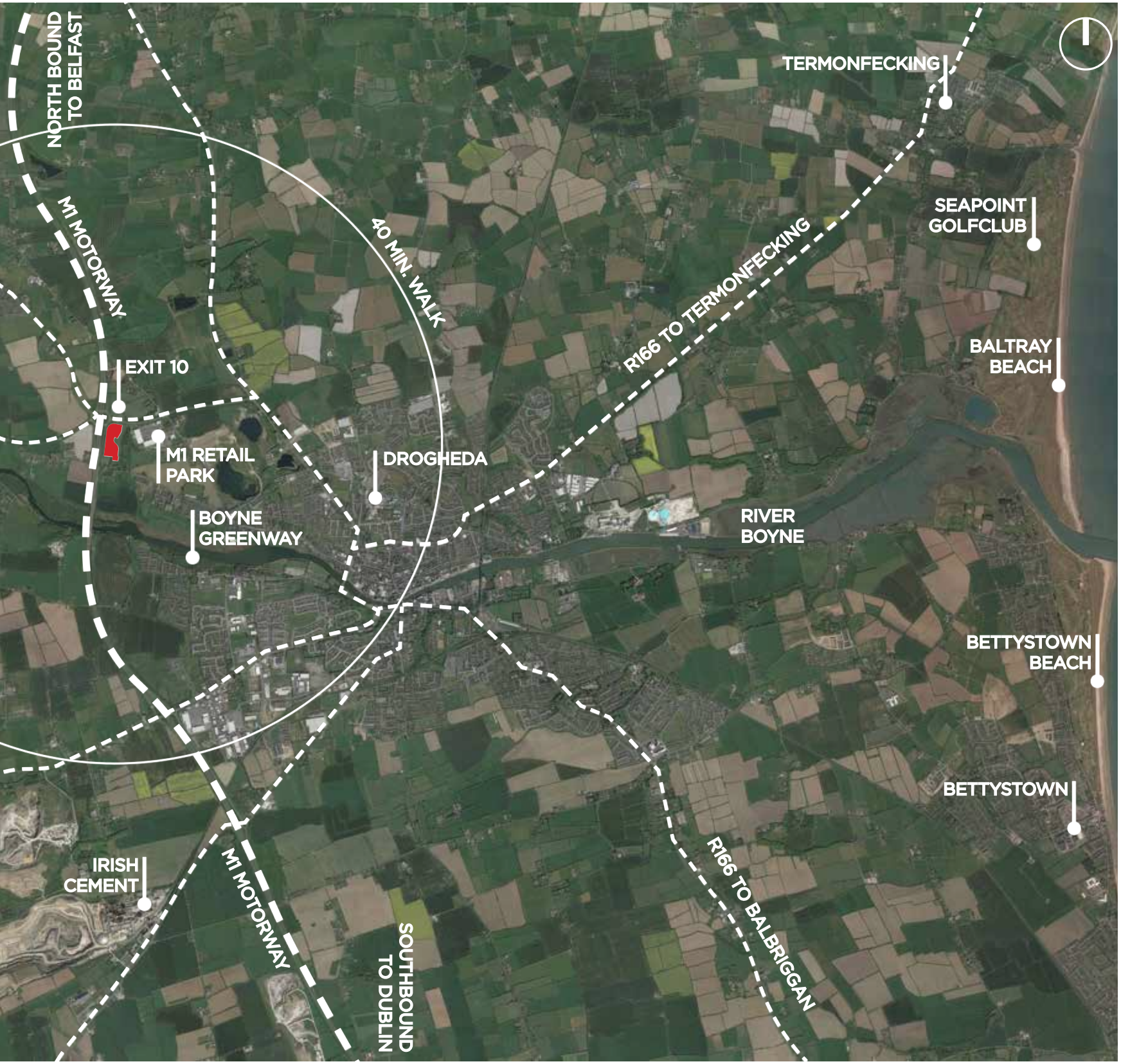
Historic Landscape

Leisure

Greenway

Beach




NORTH BOUND TO BELFAST
M1 MOTORWAY
40 MIN. WALK
TERMONFECKING
SEAPOINT GOLFCLUB
R166 TO TERMONFECKING
BALTRAY BEACH
EXIT 10
M1 RETAIL PARK
DROGHEDA
BOYNE GREENWAY
RIVER BOYNE
BETTYSTOWN BEACH
BETTYSTOWN
IRISH CEMENT
M1 MOTORWAY
SOUTHBOUND TO DUBLIN
R166 TO BALBRIGGAN

1.3 Landscape Analysis: Site Context

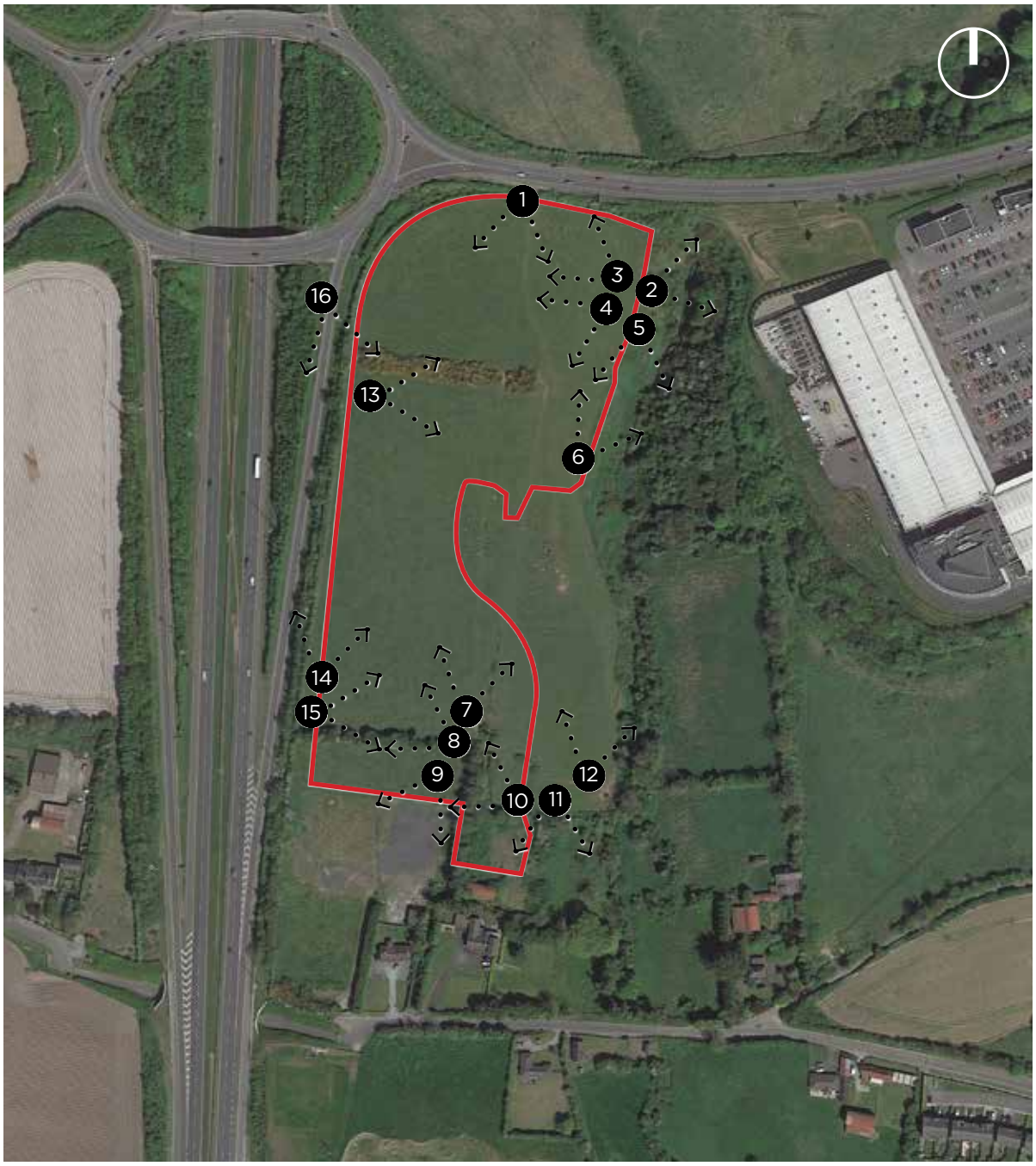
These lands are characterised by the views down towards the River Boyne.

Vegetative field boundaries screen the M1 Motorway & Exit 10 to the west and north-west of the lands. Beyond are vast expansive agricultural lands. To the east, the lands slope down into a ravine giving a good vantage point of the mature vegetation along this edge as well as the opposite bank.

As stated above the main characterised and feature of the site is the sloping River Boyne creating a panorama view of the west bank capturing the Mary McAleese Bridge and Irish Cement factory on the horison.


NORTH BOUND
TO BELFAST
R168 TO COLLON
AGRICULTURE
EXIT 10
M1 RETAIL
PARK
RECYCLING
CENTURE
BARRACK LANE
OLD SLANE ROAD
PÁIRC OILIBHEAR
PLUINCÉAD
AGRICULTURE
TO DROGHEDA
TOWN CENTER
SOUTHBOUND
TO DUBLIN
MARY MCALEESE
BOYNE VALLEY BRIDGE
RIVER BOYNE

1.4 Landscape Analysis: Existing Site Views



Understanding the site and its existing character provides clues as to how it should be developed as amenity for residential use.

The existing characteristics such as the rivine and river should be enhanced, protected and enbraced whilst the motorway should be screened.

The following views capture some of these components.

View Point 1

View Point 5

View Point 9

View Point 13

View Point 2

View Point 6

View Point 10

View Point 14

View Point 3

View Point 7

View Point 11

View Point 15

View Point 4

View Point 8

View Point 12

View Point 16

1.5 Landscape Analysis: Topography + Micro-climate

Topographically, the site slopes gently south, south-east with level change of approximately 10m

The south and west portion of the site is partially sheltered by mature landscape.

The site has a positive aspect to take advantage of solar gain.

1.6 Landscape Analysis: Landscape Character

Pastoral Land / Grassland

Marture Landscape

Pastoral / Grassland

Mature Landscape

02 LANDSCAPE VISION + CONCEPTUALISATION

2.1 Landscape Vision

Meander + Pause

Enhance

Curate

The development 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 & connection, thereby supporting the essence of community in providing verdant nature- & sensory positive space, set within a semi-urban context.

Influenced by its formative years as pastoral land and an objective both at a project, national and a global level to meaningfully increase our biodiverse credentials, the public realm will be predominantly characterised by soft landscaping.

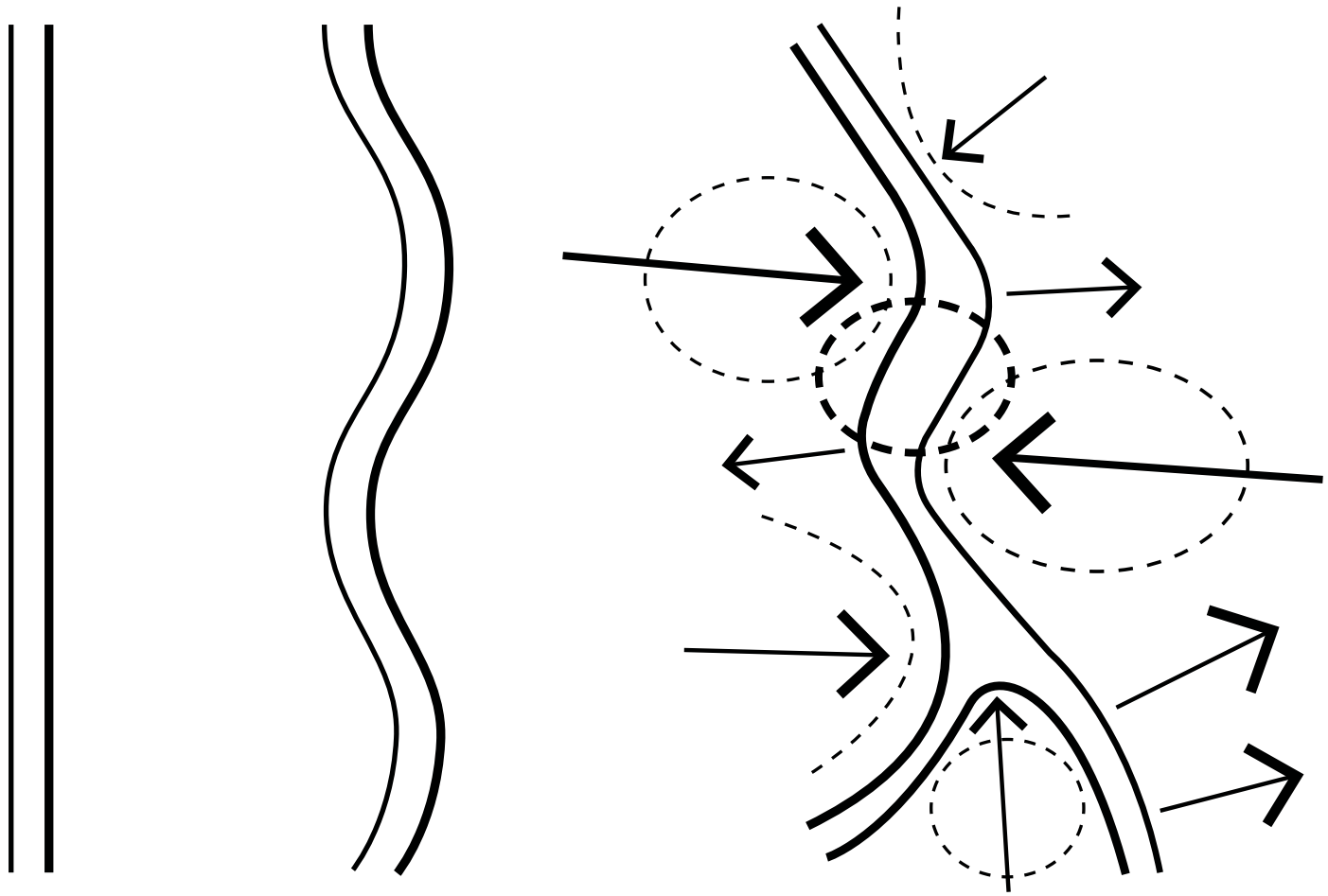
The use of native tree & shrub planting and wildflower meadow areas to respond to, support and promote the National Pollination Plan, will have a positive net gain for biodiversity. This will enhance the existing ecological system, creating more habitat and diversity. Additional tree planting will promote carbon sequestration as well as a varied habitat, roosting for bird life and screening of the development.

The overall site serves the development in encouraging social interaction and a connection with community & nature, thereby creating a sense of well-being.

2.2 Conceptualisation

The landscape expression should respond to the masterplan and seeks to enrich this by positively emphasising its sense of space and place. The landscape expression should be welcoming and memorable. To compliment but not compete with, the design should respond to the needs of the residents & greater public as well as to the architecture, in a legible and elegant manner.

The landscape should encourage meandering, pause and leisurely enjoyment, with the public open spaces requirement conceived as verdant landscape expressions with serpentine circulation within the streetscapes as well as the public open space which seamlessly blend together, thereby unifying the public realm. Space within space, this approach creating a variety of memorable spatial experiences, diversity of use and a celebration of place.



3.0 LANDSCAPE CONCEPT DESIGN

3.1 Landscape Masterplan

The landscape expression for Gort Mell brings together a cohesive series of spaces, driven by social and ecological influences, experienced as meandering routes of discovery and exploration, weaving themselves through the site.

The landscape expression has been planned in such a way so as to maximise the site's orientation and anticipated microclimate 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.

The public open spaces and shared sufraces assist as activators for ease of leisurely movement as well as social interaction, all in the name of community.

In addition, it is anticipated that the development will offer a net gain in biodiversity through the development of additional habitat typologies, and coupled with best practice maintenance, will ensure a sustainable landscape for the future.

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

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


LEGEND
1 Streetscape - Roadway
2 Streetscape - Shared Surface
3 Public Open Space
4 Woodland- / Periphery Landscape
5 Private Amenity Space
6 Creche

3.2 Streetscape_Typical Roadscape

Axonometric

Locality Plan

Reference Images

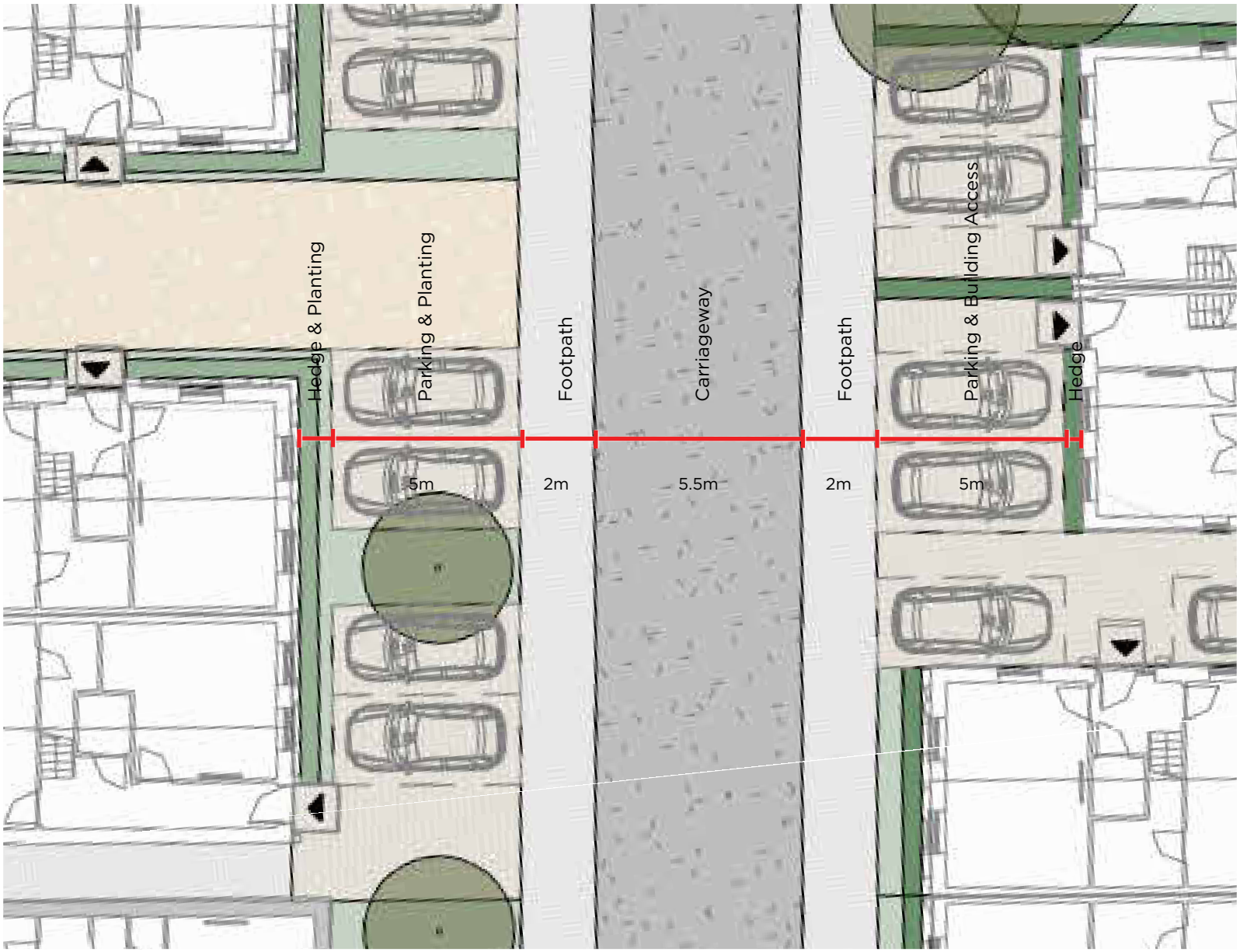
There are a large number of local streets located within the masterplan to facilitate general accessibility and circualtion.

These streets provide connections from external road networks to residential zones within the greater neighbourhood.

Typically the cross section consists of a 5.5m carriageway and 2m wide footpaths provided on either side of the carriageway.

A variety of car parking arrangements are proposed including in-curtilage and on-street arrangements in perpendicular and parallel arrangements.

Horisontal deflections within the roadways will assist as traffic calming measures as well create interest within the streetscape.



Typical Plan View

3.2 Streetscape_Typical Shared Surface

Reference Images

There are numerous home zones located with the masterplan.

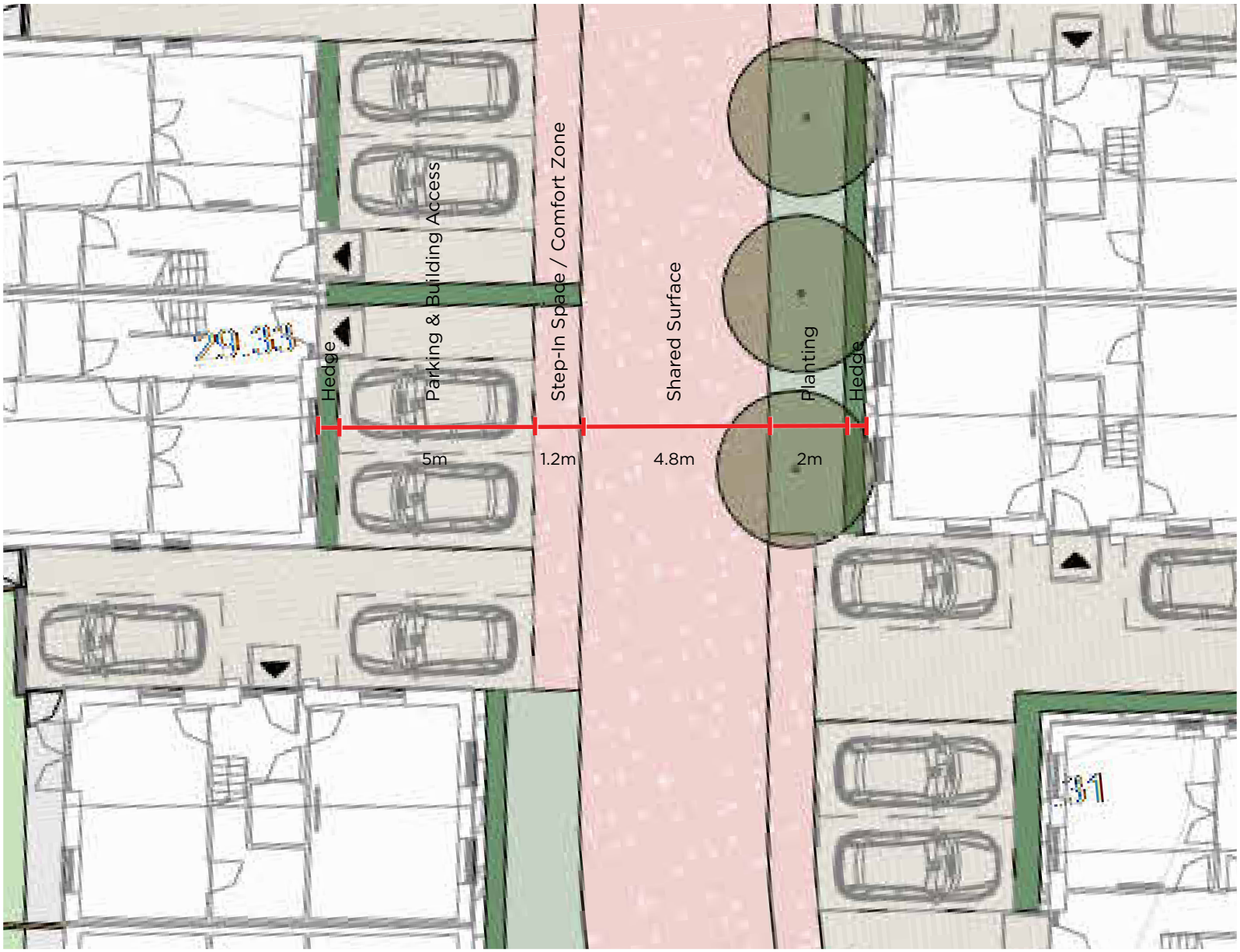
These shared surfaces are located in low traffic speed locations and in proximity & leading up to the public open spaces, where pedestrians, cyclist and vehicles share the street and is defined by a colour finished tarmac.

Typically the cross section consists of a 4.8m shared surface with a 1.2m pedestrian or step-in spaces or comfort zone.

These shared surfaces act as an extension to public open spaces in encouraging meandering, pause and leisurely enjoyment, thereby assisting with creating a sense of community.

Axonometric

Locality Plan



Typical Plan View

3.3 Western Boundary - Acoustic Strategy

2m High Acoustic Fencing

Buildings as Accoustic Buffer + 2m High Concrete Post & Panel Fencing

2m High Acoustic Fencing

Buildings as Accoustic Buffer + 2m High Concrete Post & Panel Fencing

2m High Acoustic Fencing Style Gates between Buildings

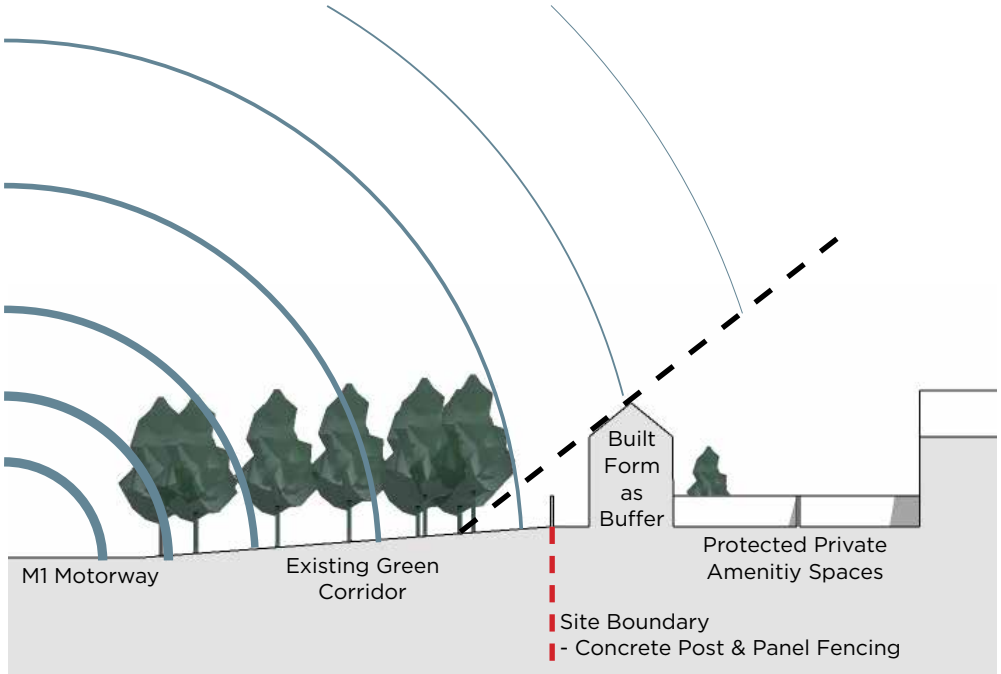
3m High Render Finished Block Wall with Brick Clad Piers & 3m High Acoustic Fencing Style Gates

2m High Planted Berm & 3m High Acoustic Fencing (West) + 2m High Planted berm & 2m High Acoustic Fencing (South)

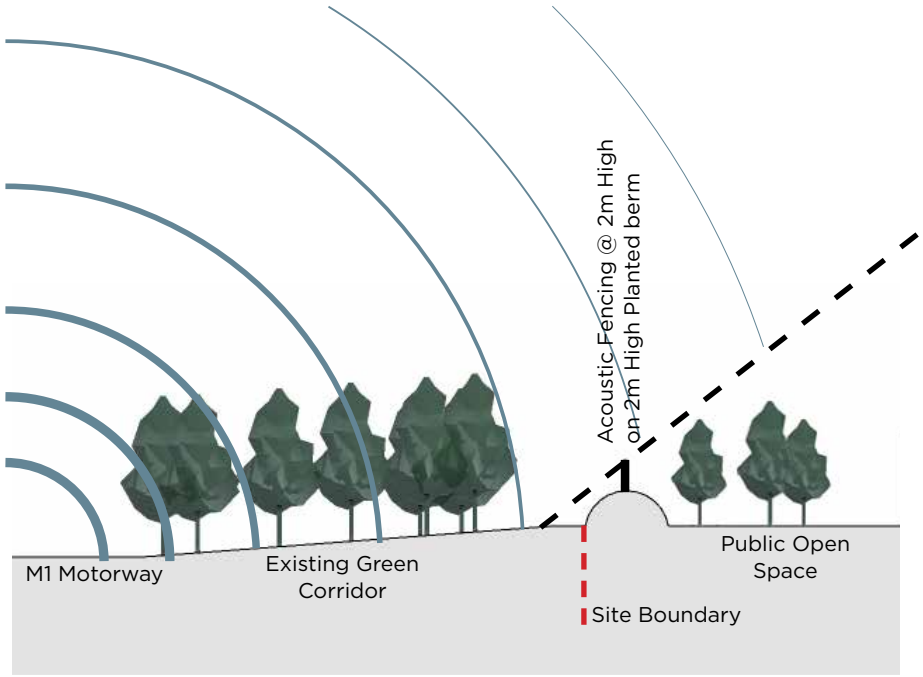
4m High Acoustic Fencing

Reference Images

Locality Plan



Typical Section - Buildings as Accoustic Buffer + 2m High Concrete Post & Panel Fencing



Typical Section - 2m High Acoustic Fencing on 2m High Planted berm

The boundary treatments along the western side of the site is envisaged as a multi-layered and integrated acoustic buffer strategyy that will assist with managing and curbing road noise eminating from the M1 Motorway slip road along the western edge of the site as well as the M1 Motorway to the south of the site.

The propsoed acoustic strategy includes primarily the built form of the houses (Type O) as acoustic buffer, thereby creating protected private amenity spaces for the houses.

Taking the Acoustic Design Statement into consideration, other acoustic buffer typologies include:

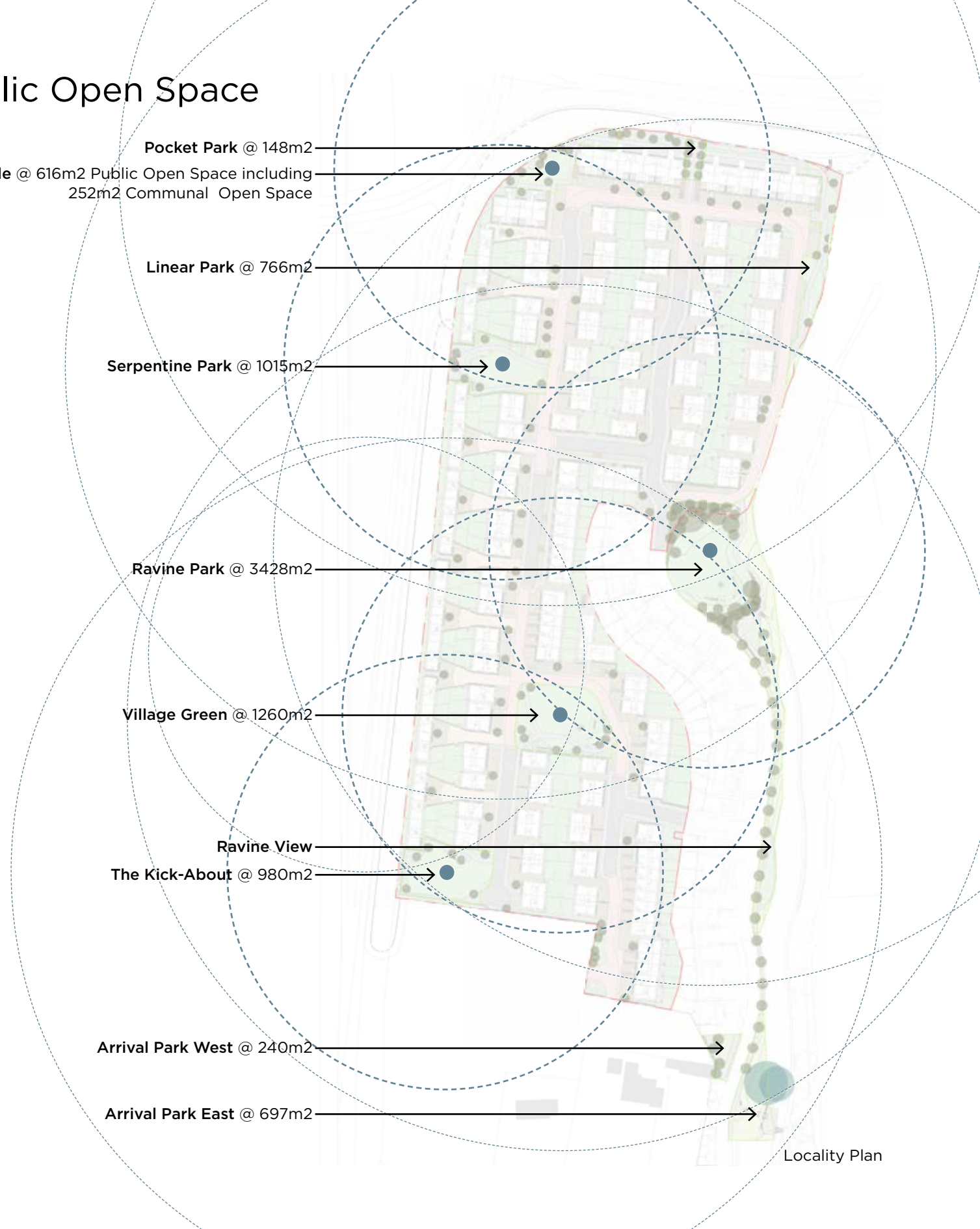
- 2m High acoustic fencing along the north-western and western boundaries of the site, aligned with the public open spaces

- 2m High Planted Berm & 3m High Acoustic Fencing + 2m High Planted berm & 2m High Acoustic Fencing in the south-west corner of the site

- 4m High accoustic fencing along the southern portion of the site

- 2m High acoustic fencing style gates between buildings

3.4 Public Open Space



Locality Plan

The public open space is conceived as verdant destination park spaces, integrated into the Masterplan for ease of accessibility (refer 100m & 200m radius distance indicators for the main plulic open spaces located within the overall development) and allowing for passive surveillance, that seamlessly blend together with the shared surfaces and beyond, thereby unifying the public realm.

The vision underpinning the landscape expression is centred around the creation of welcoming nature-powsitive, legible, interactive and healthy landscape experiences that will encourage and promote the essence of community.

The use of native tree & shrub planting and wildflower meadow areas to respond to, support and promote the National Pollination Plan, will have a positive net gain for biodiversity. 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 of the development.

Inclusive natural play spaces are provided throughout the Masterplan and respond to age, context and ability, encouraging users to interact with each other.

Several principles have driven the design all of which underpin creating a well-integrated community:

- Equipment that stimulates the senses.

- Equipment that is accessible to all such as rockr's with the width for wheelchair access and Part M compliant including space for children who do not like to be touched.

- Equipment that has similar tasks but different levels of challenge for age groups and abilities thereby providing children with choice

- Surface materials that meet EN 1176 and EN 1177 standards, to be safe and visually pleasing

- Providing for calm and landscaped areas with seating, or cubby holes in tree houses, etc.

- 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), etc. with natural play encouraged to include imaginative play, discovery, exploration and adventure.

Exercise has been envisaged throughout within flexible spaces arranged appropriately. Opportunities for larger groups to exercise in the open space and engage in yoga or 'HITT' / 'HIRT' training sessions are encouraged.

Ultimately the provided programme will encourage greater use of the outdoor environment, greater opportunities for interactions and places health & wellbeing at the forefront of spatial planning.

Reference Images

3.4 Public Open Space_Arrivals Park East

NOTE: This Public Open Space Falls Outside of this Application Boundary, but Included in this Document to Provide a Full Overview of the Extent of Public Open Space Associated with the Entire Development.

LEGEND

1. Seating Opportunity
2. Existing Trees
3. Proposed Street Trees
4. Meadow-/ Grassland Type Planting
5. Main Access Road
6. Pathway

3.4 Public Open Space_Arrivals Park West

NOTE: This Public Open Space Falls Outside of this Application Boundary, but Included in this Document to Provide a Full Overview of the Extent of Public Open Space Associated with the Entire Development.

LEGEND

1. Proposed Trees
2. Planting
3. Lawn
4. Main Access Road
5. Pathway

3.4 Public Open Space_Ravine View

NOTE: This Public Open Space Falls Outside of this Application Boundary, but Included in this Document to Provide a Full Overview of the Extent of Public Open Space Associated with the Entire Development.

LEGEND

1. Seating Opportunity
2. Proposed Street Trees
3. Streetscape Planting
4. Lawn
5. Ravine

3.4 Public Open Space_Ravine Park

NOTE: This Public Open Space Falls Outside of this Application Boundary, but Included in this Document to Provide a Full Overview of the Extent of Public Open Space Associated with the Entire Development.

LEGEND

1. Multi-functional Lawn Space
2. Natural Play
3. Seating Opportunity
4. Proposed Trees
5. Planting
6. Lawn
7. Pathway
8. Shared Surface
9. Ravine

3.4 Public Open Space_Linear Park

LEGEND

1. Multi-functional Lawn Space
2. Proposed Trees
3. Planting
4. Lawn
5. Pathway
6. Shared Surface
7. Parking
8. Bicycle Parking
9. Ravine

3.4 Public Open Space_Pocket Park

LEGEND

1. Proposed Trees
2. Planting
3. Lawn
4. Pathway
5. Bicycle Shelter

3.4 Public Open Space_The Triangle

LEGEND

1. Multi-functional Lawn Space
2. Seating Opportunity
3. Proposed Trees
4. Planting
5. Lawn
6. Pathway
7. Parking
8. Bin / Bicycle Shelter
9. Bicycle Parking

3.4 Public Open Space_Serpentine Park

LEGEND

1. Multi-functional Lawn Space
2. Natural Play
3. Seating Opportunity
4. Proposed Trees
5. Planting
6. Lawn
7. Pathway
8. Shared Surface

3.4 Public Open Space_Village Green

LEGEND

1. Multi-functional Lawn Space
2. Natural Play
3. Seating Opportunity
4. Proposed Trees
5. Planting
6. Lawn
7. Pathway
8. Shared Surface
9. Parking

3.4 Public Open Space_The Kick-About

LEGEND

1. Multi-functional Lawn Space
2. Seating Opportunity
3. Berm with Acoustic Fencing
4. Proposed Trees
5. Planting
6. Lawn
7. Pathway
8. Streetscape

3.5 Block Type O Landscape

The Block Type O arrival is envisaged as an inviting courtyard space, accessed from a shared surface, which opens in a fan-shaped configuration to reveal the houses and lead the eye to the front doors.

The paved hard surface finishing in front of the houses assist in defining the dedicated parking spaces within the courtyard and serves as subtle devide be public and semi-private.

The soft landscape expression is prediminanrtly structured with planting along the shared boundary being hedging as well as planting in front of the houses to assist in softenig the space.

Tree planting on axis with the shared surface acts as a focal point in the space.

The boundary treatment along the preiphery of the courtyard consists of a 2m high render block wall with brick piers and gated opes to allow for access into the adjacent private amenity spaces.

Reference Images

LEGEND

1. Courtyard
2. Private Amenity Space
3. Shared Surface
4. Paving
5. Cast In Situ Concrete Paving
6. Parking
7. Focal Tree
8. Hedging
9. Planting
10. Lawn
11. Concrete Post & Panel Fencing @ 2m High
12. Rendered Block Wall with Brick Piers
13. Gated Access

Landscape Plans included in the application, prepared by NMP Landscape Architects, illustrates the location and extent of hard surfaces as well as, tree, shrub-, groundcover- and manicured lawn planting.

The selection of high quality hard landscape materials is determined by function but also provides a cohesive palette of materials throughout to define and compliment the space.

Tree species are selected for longevity, suitability to the micro-climate and biodiversity. Proposed tree sizes range from large- & smaller sized trees to fit the scale of the landscape space as well as multi-stemmed trees to assist with creating volume and screening.

Shrub- & groundcover planting is utilised to make and reinforce the landscape vision, create visual interest and for ecological purposes. The planting is conceived as subtle textured layering of greens with flashes of colour shades.

4.0 LANDSCAPE MATERIALS PALETTE

4.1 Indicative Hard Landscape Materials Approach

Surface Finishes

The hard materials palette has been selected to represent and respond to use and character of specific spaces in a cohesive manner. The materials have been selected 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. The hard materials palette is proposed as selectin of durable materials with robust construction.

Boundary + Edge Treatments

The boundary- and edge treatments, both along the periphery of the lands as well as internally, will be of high quality, act as physical barriers and provide a degree of visual transparency where required.

Landscape Elements / Furniture

The family of landscape element / furniture has been selected as appropriate to the design language and surroundings within which they fit. The family will be visually cohesive, aesthetically pleasing and robust. These, for the most part, will be off the shelf products and specified accordingly.

4.2 Indicative Soft Landscape Materials Approach

Planting styles and types will vary depending on use. Planting within the streeetscapes will have an element of formality. Within the public realm, planting will be more organic in look and feel, robust, mostly evergreen and require less maintenance. 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. The 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.

Streetscape + Courtyard

The intention with the planting is to, along with the tree planting, create a memorable streetscape & courtyard experience with structured planting contributing to the landscape typology

Parkland / Meadow Type Planting

The planting will bleed into the site, linking to the streetscape planting, to create a memorable landscape expression. Wild flowers will assist in promoting a net gain in biodiversity, provide flashes of ephemeral colour and enhance the enjoyment of seasonal change.

Woodland Type / Periphery Planting

Informed by the existing and formative tree planting & a native palette, the tree planting will envelop the development to, along with the ground level vegetation, create a green buffer along the boundaries to adjoining lands where possible.

APPENDIX 5.0

Appendix 1 - Pollinator Plan

All-Ireland Pollinator Plan 2021-2025 has richly informed the planting palette and soft landscape approach. This in conjunction with a selection of native plant species will characterise the landscape design. Planting will inform and define public routes to differentiate from communal or private space.

Perennial Flowers For Pollinators

Incorporate pollinator friendly perennial plants into the local community to provide food for pollinators from spring through to autumn. Pollinator friendly perennial plants are excellent sources of pollen and nectar. They are much more attractive to bees when planted in blocks rather than as single plants.

Wildflower Meadow

Meadows managed in the following way will allow wildflowers to bloom throughout the pollinator season. A further benefit is that bumblebees are provided with an undisturbed area for nesting. Over a number of years, the area will become more and more flower-rich with local species that are adapted to the site.

Annual Flowers For Pollinators

Work with local authorities to ensure a component of annual planting in parks is with pollinator friendly annual plants - single rather than double flowered varieties. You should always try to select scented, single-flowered varieties. The block planting of these can be an excellent source of food for pollinators.

Short Flowering '6-Week Meadow'

Identify areas of grass that could be cut on a 6-weekly rotation to allow Clovers and Bird's-foot-trefoil to flower. This will provide food for pollinators where shortly mown grass does not. Such areas could be beside areas of shortly mown grass, a path or a meadow.

Pollinator Friendly Urban Planters

Identify some urban planters or hanging baskets where the standard annual bedding mix could be replaced by perennial pollinator friendly plants.

Flowering Trees + Shrubs

Incorporate a mix of pollinator friendly trees and shrubs into the local community that will flower throughout the season. An orchard can be a wonderful addition for pollinators and the community. It is important to prioritize increasing native plants (trees, shrubs, wildflowers) across the landscape to provide food for pollinators.

Native Wildflower Meadows

Identify areas where it may be possible to create a native wildflower meadow using commercially purchased seed. This would be more flower-rich than the meadow but it is also more costly and requires careful planning and management. It is very important to buy a pollinator friendly seed mix that has been grown in Ireland from native wildflowers and is suitable for your soil type.

Hedgerows For Pollinators

Flowering hedgerows that contain Hazel, Willow, Blackthorn and Hawthorn provide food in spring when wild bees come out of hibernation. Bramble is a good source of food in summer, and Ivy in the autumn. Bumblebees often nest in long grass at the base of hedgerows.

Clover Lawns

Identify small areas where grass could be entirely replaced with a permanent clover mix. Red and white clovers will provide colour, and are a very important food source for bees.

Eliminate The Use Of Pesticides

Identify some areas where the use of pesticides could be eliminated. This could be streets/areas where your group is willing to take responsibility for manual weed control. Most herbicide use is along edging or tree bases that mowers can't access. Identify areas of south facing edging that could not be sprayed to provide solitary bee nesting habitat.

Awareness

Promote the All-Ireland Pollinator Plan to local businesses and encourage them to make their outdoor spaces pollinator friendly or to sponsor local pollinator friendly actions

Pesticide Avoided

Identify areas of grass that could be cut on a 6-weekly rotation to allow Clovers and Bird's-foot-trefoil to flower. This will provide food for pollinators where shortly mown grass does not. Such areas could be beside areas of shortly mown grass, a path or a meadow.

Signage

Put up signage explaining the importance of pollinators and what is being done locally to support the All-Ireland Pollinator Plan. Templates that can be used to create signage can be downloaded from the website.

Bee Hotels For Pollinators

Incorporate a mix of pollinator friendly trees and shrubs into the local community that will flower throughout the season. An orchard can be a wonderful addition for pollinators and the community. It is important to prioritize increasing native plants (trees, shrubs, wildflowers) across the landscape to provide food for pollinators.

Training

Deliver training programmes locally on pollinators and how to take action to protect them. Resources will be available to allow interested parties to deliver training on: creating nest sites for wild pollinators: how to participate in the All Ireland Bumblebee Monitoring Scheme; collection, storage and use of local wildflower seed to improve areas that are being managed as small meadows in parks, greenways.

Appendix 2 - Soft Landscape Outline Specifications

1.0 Specifications for Supply:

1.1 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.

1.2 Programme of Works:

The planting works shall be executed at the earliest opportunity.

1.3 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

1.4 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:

2.1 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.

2.2 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.

2.3 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.

2.4 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.

2.5 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.

2.6 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.

2.7 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.

2.8 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.

2.9 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.

2.10 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.

3.0 Shrub Specifications:

3.1 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.

3.2 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.

3.3 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 2 - Soft Landscape Outline Specifications

3.4 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.

3.5 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.

3.6 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.

3.7 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.

4.0 Specifications for Site Operations:

4.1 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.

4.2 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.

5.0 Specifications for Planting and Plant Materials:

5.1 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

5.2 Cane:
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.

5.3 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.

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

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

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

5.6 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.

5.7 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.

5.8 Tree Planting:
5.8.1 Trees to 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

5.8.2 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.

5.8.3 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.

5.8.4 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 2 - Soft Landscape Outline Specifications

5.8.5.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 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.

5.8.6 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.

5.8.7 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.

5.8.8 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.

5.9 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.

5.10 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.

5.10.1 Grass Cutting:
Grass cutting shall be carried out during the three year maintenance period and is defined into three categories:

5.10.2 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.

6.0 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.

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

6.2 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.

6.3 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.

6.4 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.

6.5 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.

6.6 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 3 - Hard Landscape Outline Specifications

PAVING & KERBS:

FOOTPATHS:

General: Public footpaths, roadways, kerbs etc. shall be constructed in accordance with the requirements of the Roads Maintenance, Dublin 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:

1.0 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.

2.0 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.
10. 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 4 - Programme For Implementation, Maintenance + Defects Period

1.0 MAINTENANCE:

1.1 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 Managementl. This will include grass cutting, weed control of all planted areas, litter clearance and watering of Select Standard trees during dry weather.

1.2 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.

1.3 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.

1.4 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.

2.0 PROGRAMME

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

2.1 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)

2.2 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)

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

2.4 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.

2.5 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).

2.6 Year 2:

As year 1.

2.7 Year 3:

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

2.8 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.

2.9 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 4 - Programme For Implementation, Maintenance + Defects Period

2.10 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