NMP
LANDSCAPE ARCHITECTURE

KILBRIDE LRD

Landscape Design Statement Stage 3

Certain Assets of Dawnhill and Windhill Limited

MAY 2025

CONTENTS

0.0 Introduction

0.1 Development Description

1.0 Context + Analysis

1.1 Historic Context- Understanding Time & Place

1.2 Site Analysis

1.4 Site Character & Characteristics

1.5 Site Character & Characteristics- Sense of Place

2.0 Landscape Vision

2.1 Natural + Cultural Influences

2.2 Environmental Design Principles

3.0 Landscape Design Strategies

3.1 Open Space Quantum

3.2 Access & Circulation

3.3 Boundaries Plan

3.4 Tree Plan

3.5 Water Attenuation

4.0 Landscape Concept Design

4.1 Phase 1 Landscape Masterplan

4.2 Local Centre

4.3 Character Area A

4.4 Character Area B

4.5 Character Area C

4.6 Character Area D

4.7 Communal Open Space

4.8 Boardwalk

4.9 Streetscapes- Types 1,2,3 & 4

5.0 Landscape Palette

5.1 Indicative Hard Landscape Material Approach

5.2 Indicative Soft Landscape Material Approach

6.0 Appendix

6.1 Response to LRD Opinion

INTRODUCTION 0.0

A planning application was submitted by CADW in October 2023 for 86 no. residential units as part of an initial phase of development (Ref. 23/745) on the Masterplan site. The application was consented by Wicklow County Council in April 2024, with a slight reduction to 84 units in total.
The planning application to which this TTA relates is for development proposals comprising a total of 666 residential units with accompanying commercial/ community/medical centre and crèche facilities. The 84-unit development has been included within the analysis as a committed scheme – collectively a total of 750 units will be developed at the site as part of both schemes.

The proposed mixed use Large scale Residential Development will result in the demolition of an existing dwelling and 2 no. sheds/outbuildings and the construction of 666 no. residential units with a mix of semidetached and terraced houses along with duplex apartments and apartments. These will comprise 1, 2, 3 and 4 bed units. All residential units will have associated private open space facing north/ south/ east/ west. The proposal will also deliver a local centre containing 3 no. retail units, 3 no. community/ medical units and 1 no. creche unit. A new pedestrian/ cyclist link is provided via a new boardwalk and bridge across the marsh and over the Avoca River adjoining the existing greenway and the Main Street. A new road providing vehicular access is also proposed connecting to the north to Kilbride Road along with road improvements in the surrounding area. The development will also provide for landscaping, public open spaces and all associated site development works to enable the development including boundary treatments, attenuation storage area and other service provision including ESB works.

The boardwalk and bridge connection, which will be provided as part of the development, is not included within GDA Cycle Network, but it will form an important part of the Arklow cycle network, providing a high-quality segregated pedestrian and cycle connection through to the Avoca Marsh trail, and across the Avoca River to connect to Main Street within the town centre.

OPINION RESPONSE:

Requirement: Item O: The overall layout and landscaping details in respect to the open/ communal space is generally acceptable. In any future application it should be clearly indicated how the provision of the communal/ public open space will tie in with the overall phasing of development. Any application should in addition clearly outline the areas of communal open space dedicated to the apartments and state the measured area on the drawings.

Response: Refer to drawings L1-102_1 and L1-102_2 for open and communal space drawings. Proposed open space areas will be proposed in conjunction with overall Masterplan open space areas (some of the proposed open space areas are proposed in Phase 1 and future Phases of the development).

Requirement: Item O: Additional details to confirm the protection of the existing watercourse having regard to the provisions of the publication by Inland Fisheries Ireland Planning for Watercourses in the Urban Environment and Objective CPO 13.3 and CPO 17.26

Response: Existing dry ditch to the eastern site boundary will be retain and enhanced where necessary.

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

George Crabbe, 'The Village'.

CONTEXT ANALYSIS

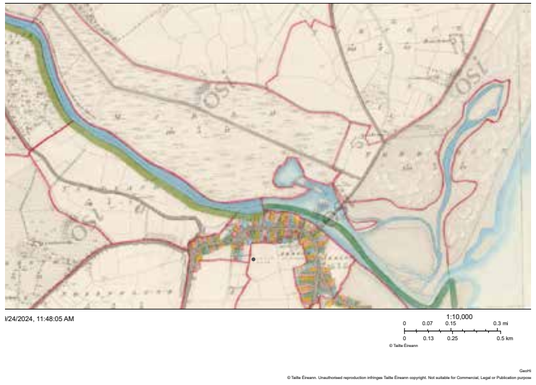
1.0

1.1 Historical Context - Understanding Time &

Arklow derives its name from the Irish words translating to “Big Estuary”. Historic maps of the area reveal the presence of Killbride Church and Graveyard, Kilbride House, and Woodmount House, set amidst a landscape of marshland and farmland, offering a glimpse into the area’s rich cultural and agricultural heritage.

6 INCH FIRST EDITION

6 INCH FIRST EDITION COLOUR



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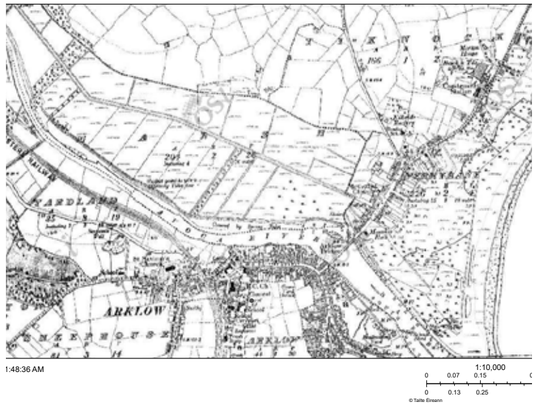

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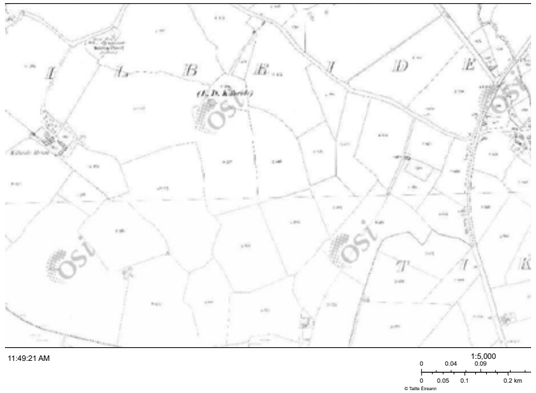
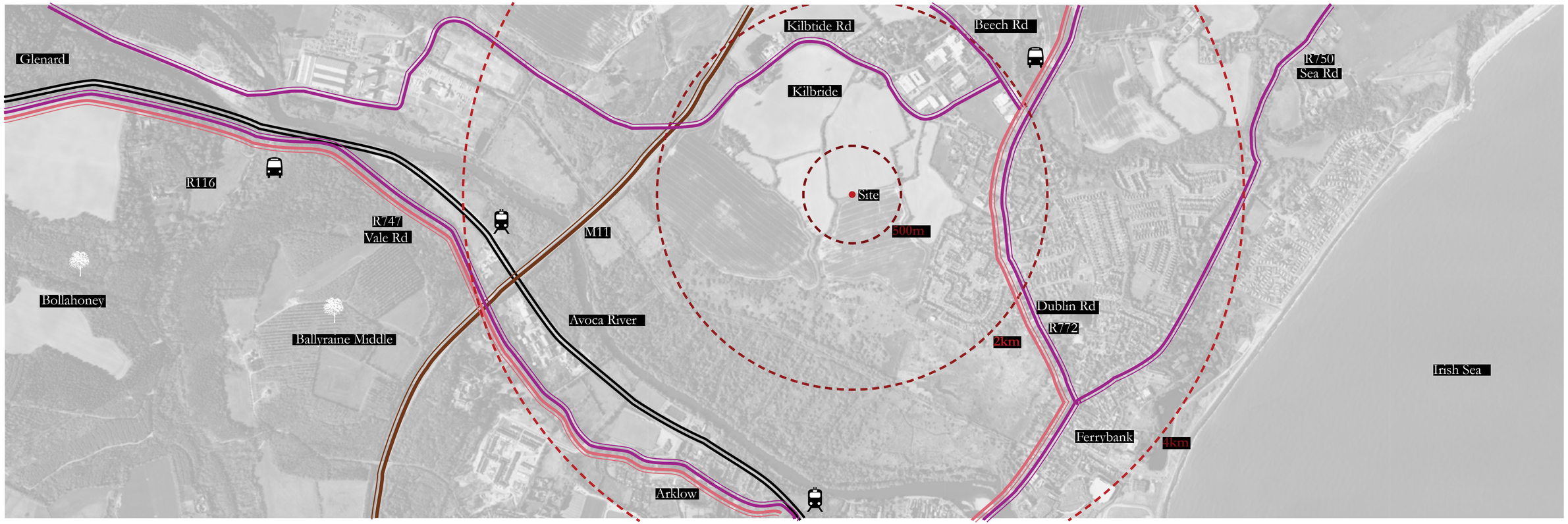


Standing prominently in the ancient Kilbride cemetery, the Howard family pyramid tomb is a striking historical landmark overlooking the River Avoca. Commissioned by Ralph Howard, 1st Viscount Wicklow, in 1785, this monument is described as the largest pyramid tomb this side of the Nile. Designed by Simon Vierpyl, its imposing structure dwarfs the nearby medieval church ruins and is visible for miles. The mausoleum serves as a testament to the Howard family’s influence in the area, with its unique design marking a shift towards aristocratic burial customs in 18th-century Ireland.

1.2 Wider Context - Access & Amenity



Motorway

Primary Roads

Southeastern Commuter Train

Dublin Bus Route

Arklow beach

Avoca River

Howard Mausoleum Pyramid

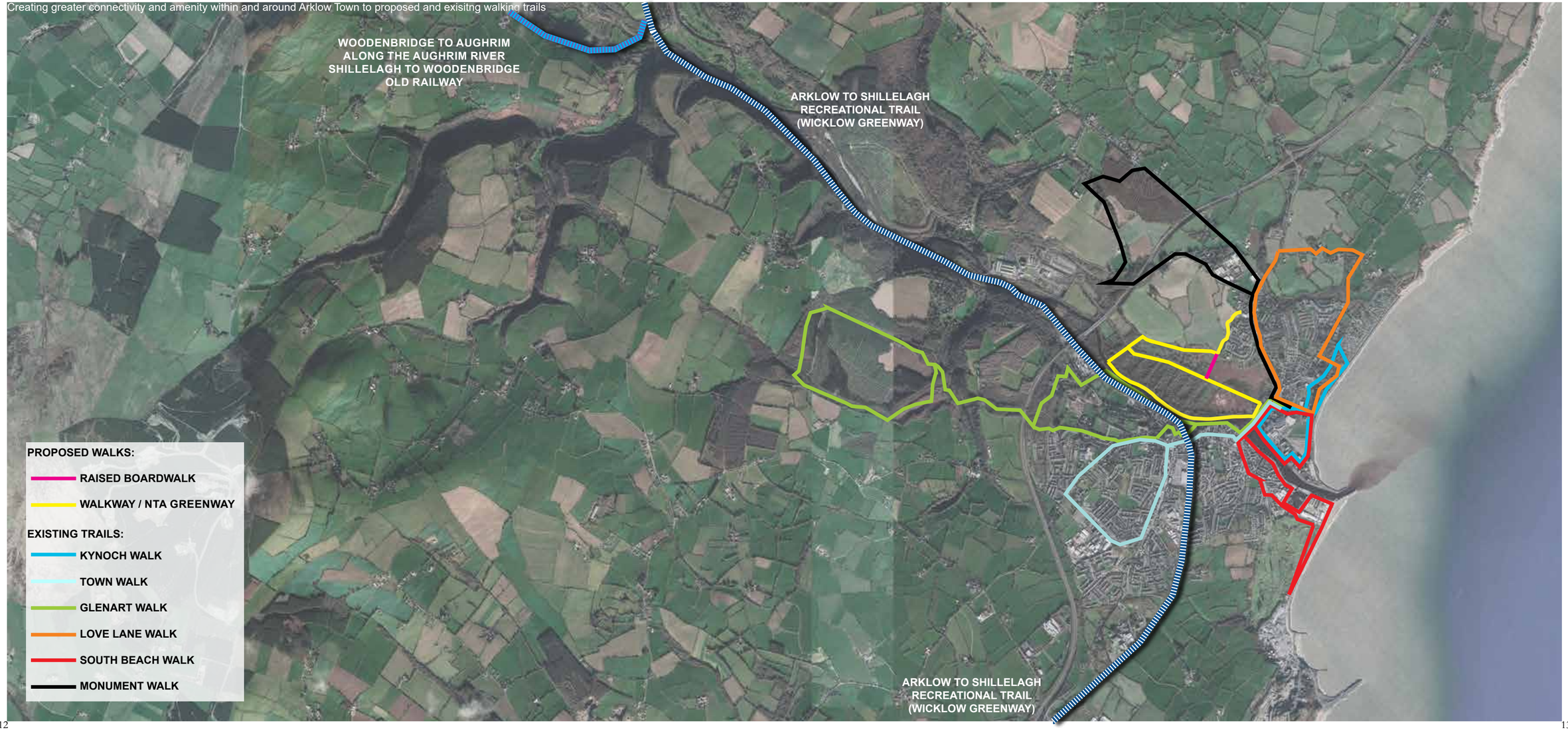
Ferrybanks

Arklow Nature & Wildlife Reserve

1.2 Wider Context - Access & Amenity

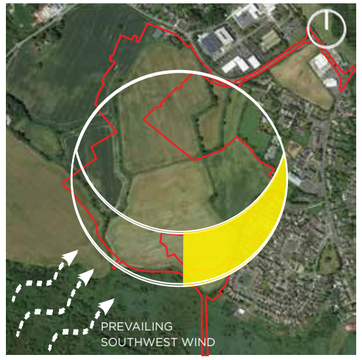
TOWN MARSH AND ARKLOW TOWN PEDESTRIAN AND CYCLE LINK: PROPOSED WALKING TRAILS

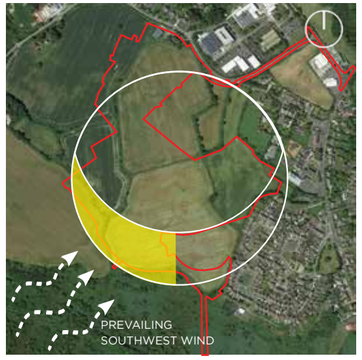
Creating greater connectivity and amenity within and around Arklow Town to proposed and exisitng walking trails



1.2 Site Analysis

Micro - Climate - The Influence of Light + Seasonal Change





The site in particular along the southern boundary is exposed to strong westerly winds due to very little shelter with only a low lying hedgerow that runs along the southern periphery. .

The western and eastern portions of the proposed development are also very well sheltered and guarded with existing vegetation.

The time of day and how the sun moves across the sky is very influential in how the character and feel of the site changes throughout the day and in turn throughout the seasons. The sun rises beyond the eastern boundary of the proposed site development.

The sun then moves higher in the sky in a westerly direction until it sets just above the surrounding mountains. The gradual and continuous change of the suns cycle creates opportunities for wonderful vistas in various areas of the site and at multiple times throughout the day and throughout the seasons.

The influence of the sun also provides great contrast within the site in terms of the relationship between light and shadow due to the strong presence of vegetation on the site. The suns cycle will greatly aid and inspire the landscape design rational in terms of creating multiple spaces with the suns pattern and influence on the site firmly in mind.

Topography

The topography of the proposed development currently runs in a north to south direction more dramatically toward the bottom of the site.

The significant and abrupt change in levels begins to manifest itself along the southern portion of the site. From this portion, the topography slopes downwards in a broad easterly direction.

Overall there is quiet a significant level change from the highest most point of the development to the lowest. In all, level change stands mostly at 34m from one end of the development to the other, becoming steeper and more noticeable along the southern edge falling into a valley where the site is bound by the marsh.

Existing Vegetation

A rich network of existing tree and hedgerow boundaries currently occupies the site and its boundaries. This intricate network of tree and hedgerow boundaries also follows the same pattern outside of the development boundary which connects the site in wider context of vegetation boundaries enclosing between picturesque pastoral fields. Many of these hedgerows will be retained.

Access + Connections

The site has good access and road frontage on the northern edge. Cycling infrastructure will be improved along a portion of this road.

1.4 Character & Characteristics

View 1

View 2

View 3

View 4

View 5

View 6

View 7

View 8

View 9

1.5 Character & Characteristics - Sense of Place

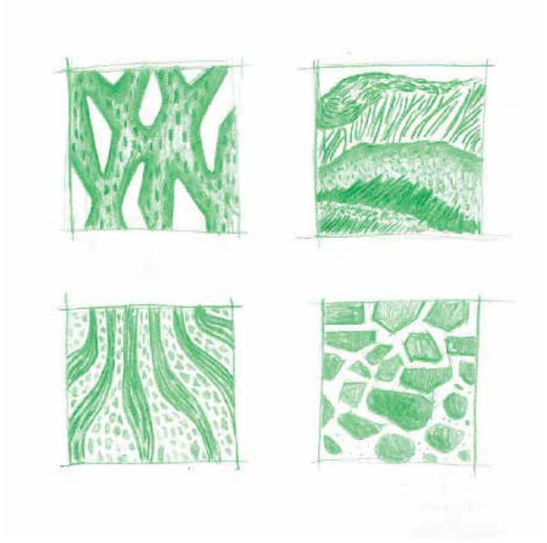
Landscape Character Diagram influenced by the scenic views surrounding the site. Indicative Site Boundary

Arable Land

Views to Village

Rising Land to West

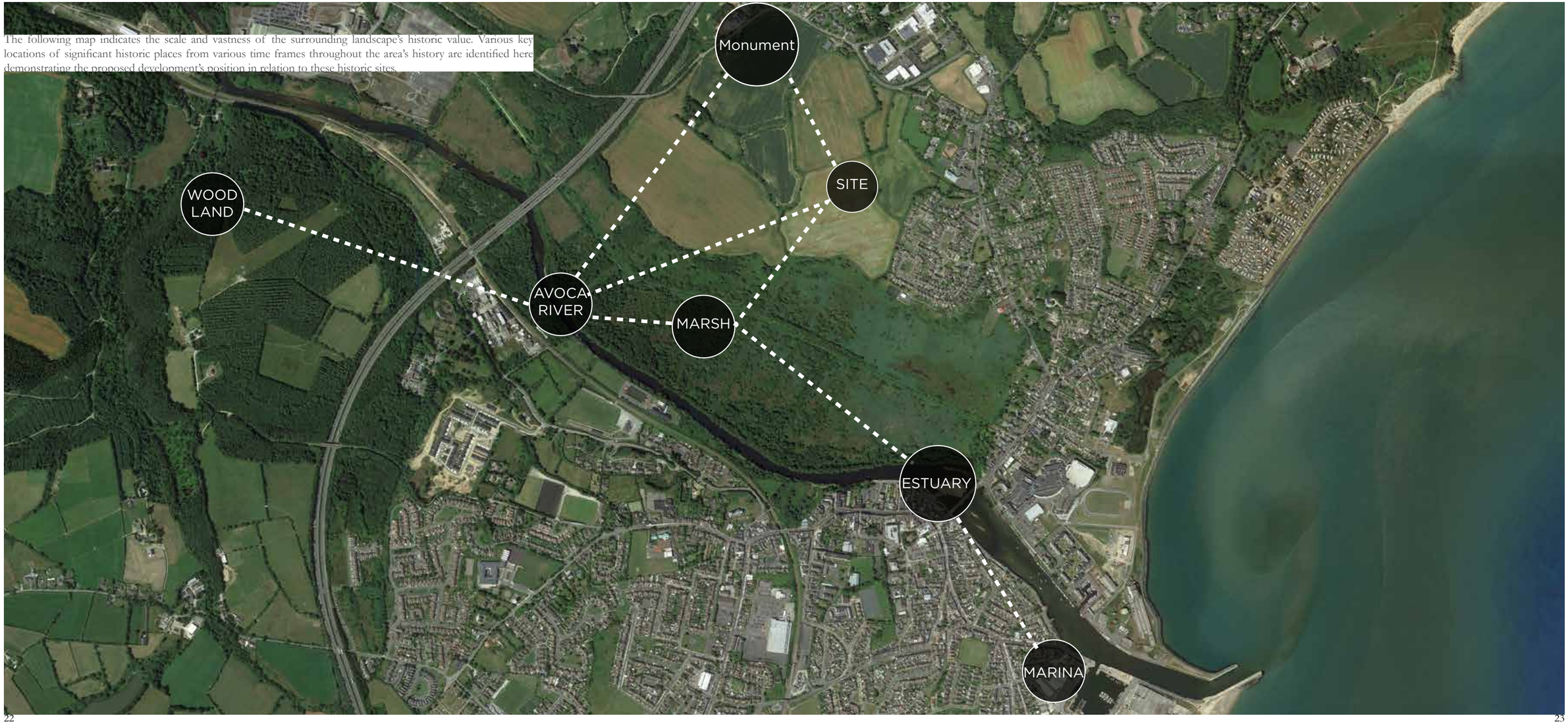
Views to Mausoleum



LANDSCAPE VISION 2.0

2.1 Landscape Vision - Natural + Cultural Influences

The following map indicates the scale and vastness of the surrounding landscape's historic value. Various key locations of significant historic places from various time frames throughout the area's history are identified here demonstrating the proposed development's position in relation to these historic sites.



2.1 Landscape Vision - Natural + Cultural Influcences

HISTORY

The rich history of the site, including the Howard Mauseleum, the medieval Kilbride Church ruins, and the surrounding farmland, provides a foundation for a landscape vision that celebrates its heritage.The landscape vision is to create a design that both honors the past and enhances the landscape's character.

CONTEXT

The site's proximity to the river is vital, as the Avoca provides a rich natural corridor that enhances biodiversity. The riverbanks serve as habitats for a variety of species, contributing to the ecological value of the landscape.

Arklow, with its strong road and rail links, brings significant potential for human access and engagement with the site. Arklow's transport networks, including the N11 road and rail connections, position the development as a key gateway, attracting visitors and residents alike.

ECOLOGY

The existing marshland on the site is a vital habitat, supporting a diverse ecosystem of flora and fauna, including wetland plants, bird species, and aquatic wildlife. This rich biodiversity is integral to the landscape vision, which aims to preserve and enhance these natural ecosystems. Biodiversity is a central theme of the landscape vision, promoting sustainability and creating a harmonious connection between the natural environment and human interaction with the space.

CULTURE

By embracing Arklow's industrial roots and riverside character, the landscape can bridge the natural beauty of the site with the town's dynamic history, fostering a sense of place that resonates with the local community. Public spaces will encourage community engagement, weaving the site into the fabric of local life and fostering a sense of belonging.

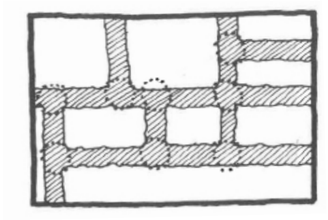
2.1 Landscape Vision - Natural + Cultural Influcences

FLUIDITY MOVEMENT CHANGE

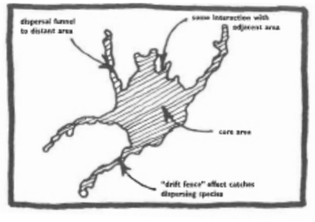
A comming together of the sites core assets in a reflection of the Arklow Estuary weaving ecology, history, culture and context as one unified response to its 'genius loci', complimenting it's and enhancing unique characteristics in the creation of a new neighbourhood for the Arklow Kilbride community.

2.2 Environmental Design Principles: Ecology & Gradation

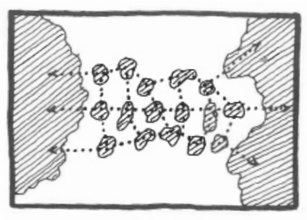
Ecology First Principles



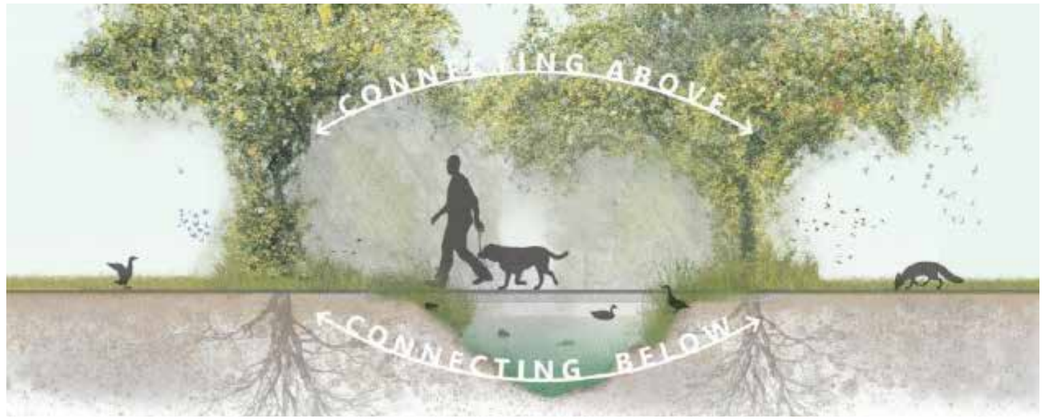
Intersection Effect



Ecologically optimum "Patch Shape"



Cluster of Stepping Stone



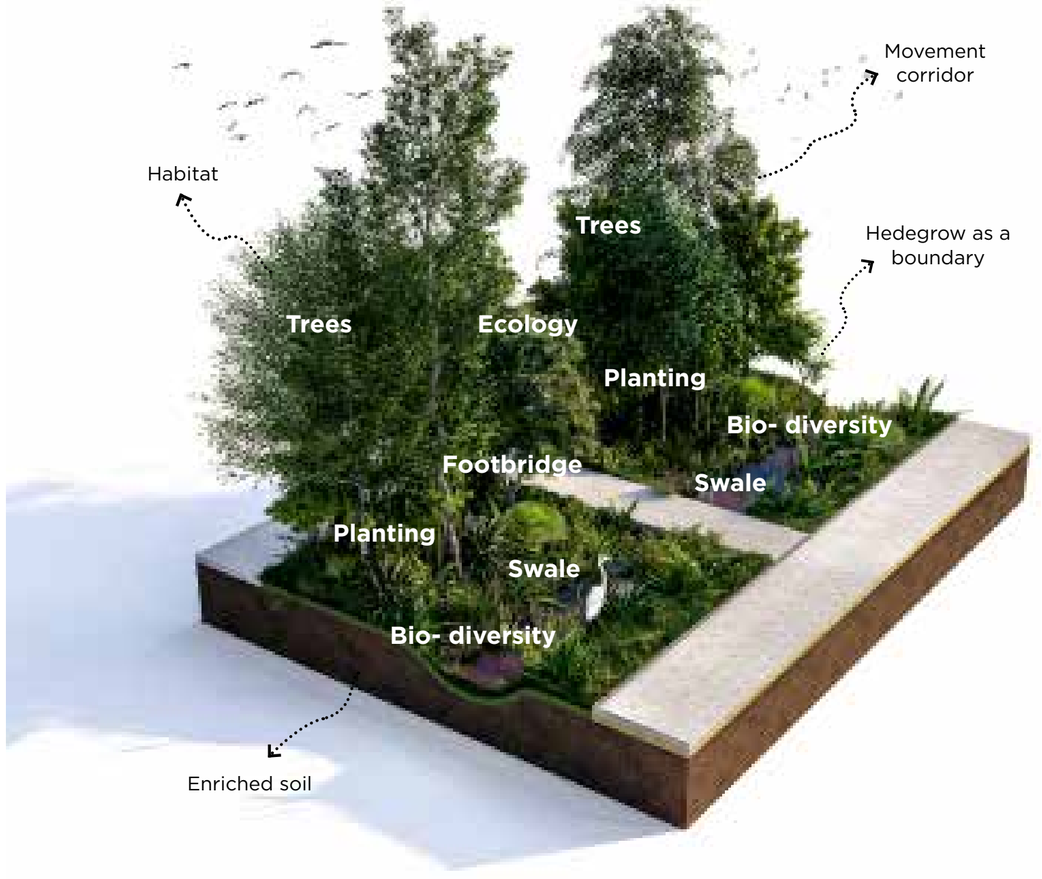
Ecological networks can exist on a number levels and thrive given the opportunity – the flexibility to provide refuges in one cluster connecting with stepping stones or corridors must be considered in the design of modern developments. Going further, and providing connections over and under our settlements can be of huge importance in the provision of habitat as well as planting appropriate food sources for wildlife, retention of water at surface and planting of native trees for carbon sequestration as well as habitat creation and amenity for communities.

There is an existing dry ditch to the eastern boundary of the dedvelopment that will be retained and enhanced.

Gradation + Natural Succession

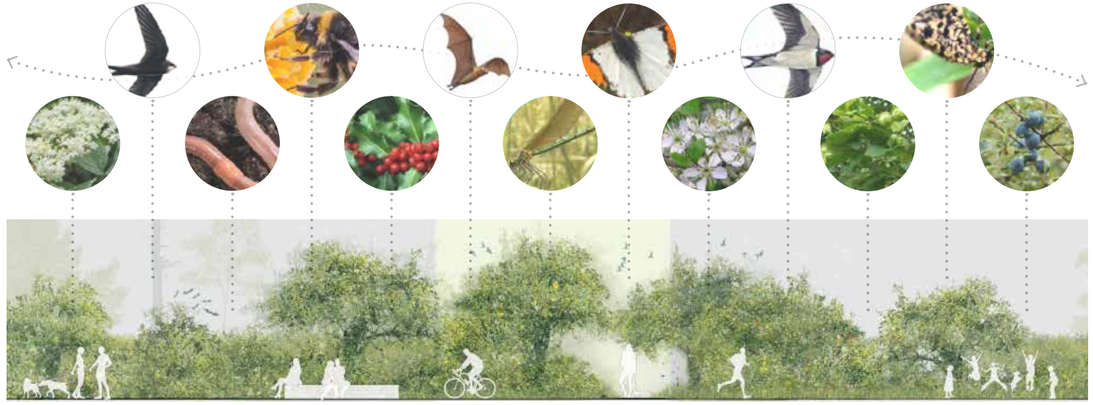
The principle of succession in establishing habitats, plant and animal relationships can influence character whilst providing opportunities for existing habitat and the creation of new ones. This in turn, assuming well considered and appropriate to place, will encourage diversity. The site is made up of hedgerow and fields, ecological networks that were taken into consideration in the proposed design. Importantly, the protection and amelioration of soil should be a source of inspiration and driver in the sites restoration and accommodation of human habitation.

2.2 Environmental Design Principles: Hedgerow Enhancement



Axonometric of Enhanced Hedgerow

It is proposed to retain as much existing hedgerow as possible. With this in mind, the goal and aim is to replace and further enhance the removal of hedging here by creating bio- rention / swale / planting, which will greatly improve bio- diversity and ecology on site.



Proposed Nature's Highway

Existing Hedgerow

"BEAUTY IS THE MOMENT OF TRANSITION..."

- Ralph Waldo Emerson

LANDSCAPE DESIGN STRATEGIES

3.0

3.1 Landscape Strategies: Open Space Quantum

Public Open Space for the Phase 1 of the development will deliver in excess of the 33,230 sq.m . It will be largely delivered in the form of the pocket parks for each character area.

The residential units will have private gardens to the rear whilst the front gardens will be shorter to accommodate car parking in some instances and providing defensible space whilst also encouraging interactions.

The spaces will be delivered in line with current design and taking in charge standards, celebrating SUDs features, informal play, exercise and seating opportunities with an abundance of tree planting, shrubs and wild flower areas to support localised biodiversity needs and requirements. The woodland corridor and village green will provide points whereby the neighbourhood can interact and gather to create a genuine sense of community as has been documented with great success across developments of similar scale.

The landscape proposal of the phase 1 of the wider masterplan will enable its integration with the future development.

LEGEND

- Public Open Space
- Communal Open Space
- Formal Play
- Informal Play
- Fitness Area

Podium Amphitheatre

Communal Open Space

Natural Play

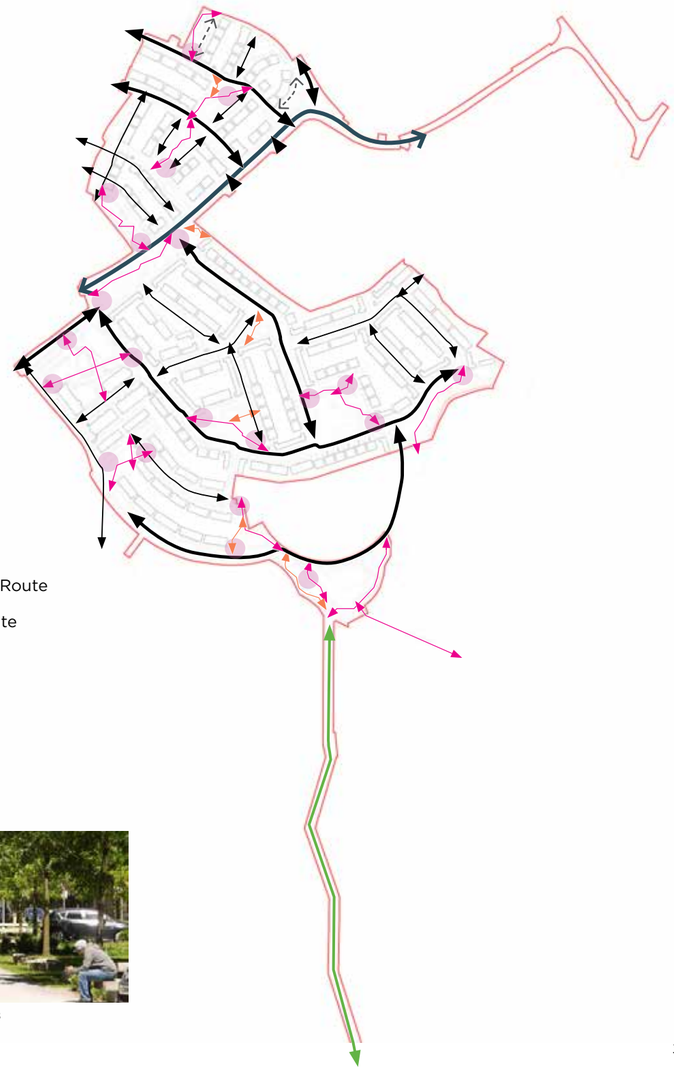
Pocket Park

3.2 Landscape Strategies: Access & Circulation

The site presents with multiple access points to and from the surrounding context and road infrastructure. These include both vehicular and pedestrian links are present throughout the site.

Within the development vehicular and pedestrian infrastructure mostly align and follow each other in a systematic and methodical approach across the development. There is good permeability within the development allowing adequate circulation for both pedestrians and vehicular access across the site. In terms of road hierarchy, the 2 major roads that navigate the development run through the nucleus of the site and are orientated in a north south, east west direction. The principles of shared surfaces are also embraced in the design.

From the primary road routes, local street access and pedestrian route infrastructure will connect and circulate to the primary access routes and points. Cycling infrastructure will mirror primary roads and local street routes. Furthermore, additional pedestrian and cycling infrastructure will take advantage of the existing green infrastructure within the development in particular reference to the boardwalk.



LEGEND

- Road Network Beyond Site
- Primary Avenue / Cycle & Pedestrian Route
- Local Street / Cycle & Pedestrian Route
- Boardwalk
- Primary Pedestrian Routes
- Secondary Pedestrian Route
- Shared Surface / Raised Table
- Access Points

Pedestrian Focused

Green Connections

3.3 Landscape Strategies: Boundaries Plan

The proposed development will incorporate a significant array of boundary types both external and internal.

The private back gardens of the development will be separated by typical timber fences. Feature walls will appear where back garden divisions will be visible to public open space. Boundary hedging to the some units within the development will strongly aid privacy and protection for residents within the site. Hedging to dwellings will also soften buildings edges.

For much of the eastern boundary, it is proposed to plant native hedging to support biodiversity and have an appropriate boundary that is visually conducive with the surrounding landscape. Most of the northern and western sides of the development will be bound by buffer planting.

Double sided wooden fences are mostly located where back gardens are bound to the site periphery (red line boundary).

LEGEND

- Timber Fence Wall to Back Gardens
- 2m High double sided timber panel fence
- 2m High brick clad wall and piers to rear garden and POS division
- Parkland Railing
- Gate to back gardens
- 1.8m street fence on 0.3m wall with gates (Part of Kilbride School Campus Application)
- 0.8m railing on 0.2m block wall between front gardens / front gardens and POS Division
- Gabion Gravity Wall
- Retaining wall to Creche Play area
- Existing Fence to be retained
- Existing Wall to be retained
- Existing Hedgerow to be retained
- Timber Post with Wire Mesh

*Indicative plan only, see the Landscape drawing pack for further details.

Feature Stone Wall

Existing Stone Wall to Site Edge

Private amenity defensible space

Metal railing with hedge

3.4 Landscape Strategies: Tree Plan

The tree planting layout for the development is hugely significant to the success and design of the overall site. It is of paramount importance that any trees that are considered of good quality from the arborist report be protected. In the illustration to the right, we have indicated the existing hedgerows that are to be retained and existing to be removed.

Overall, number of existing hedgerows are to be retained. Along with existing trees, much of the development will contain a vast variety of proposed trees. Proposed planting styles and types will vary depending on use.

Within the public realm, plants will be more robust, evergreen and require less maintenance. Street trees will be tried and tested urban species. Scale of planting and transition in shrub planting from low medium and high to create defensible space has been planned according to programme, thresholds and spatial hierarchy. Within the semi-private apartment courtyards, the palette will be softer, colorful and generally more shade tolerant.

LEGEND

- Proposed Trees: 1278 No.
- Existing Trees To Be Retained
- Existing Trees To Be Removed
- Hedgerow To Be Retained
- Hedgerow To Be Removed

Tree lined streets

Existing Trees

Accent + specimen trees

3.5 Landscape Strategies: Water Attenuation

Sustainable Drainage, or SuDS, is a way of managing rainfall that mimics the drainage processes found in nature and addresses the issues with conventional drainage. The landscape surface water drainage strategy incorporates SUDS features and has been designed in line with best practice.

The soft landscape will allow water to drain freely to recharge the ground water if not captured by filter drains before release. In addition it is proposed to create several rain gardens on the courtyards and pocket parks to capture run off. Bio Retention Tree Pits are proposed for Streets and have been detailed in coordination and collaboration with engineers. The tree pits are designed with adequate depth to accommodate for large deluges and also allow for attenuation of water in case of drought.

A bioretention structure differs from a rain garden in that it employs an engineered topsoil and is used to manage polluted urban rainfall runoff in street locations and carparks. The free-draining nature of engineered soils leads to the washing away of nutrients from the soil. The proportion of organic matter should be relatively high and replenished yearly by the application of a mulch layer of well composted green waste or shredded plant matter arising from maintenance.

LEGEND

- Bio Retention
- Swale
- Tree Pit
- Attenuation Tank

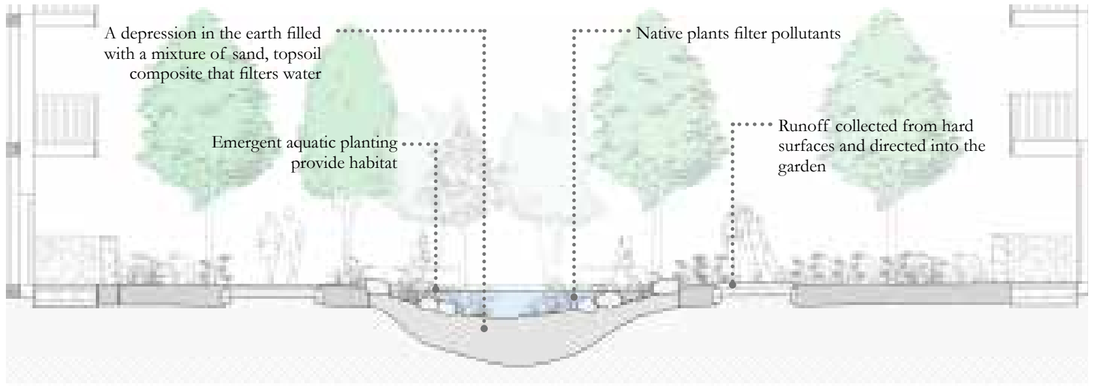
*Indicative plan only, see the drainage engineers' drawing pack for fu

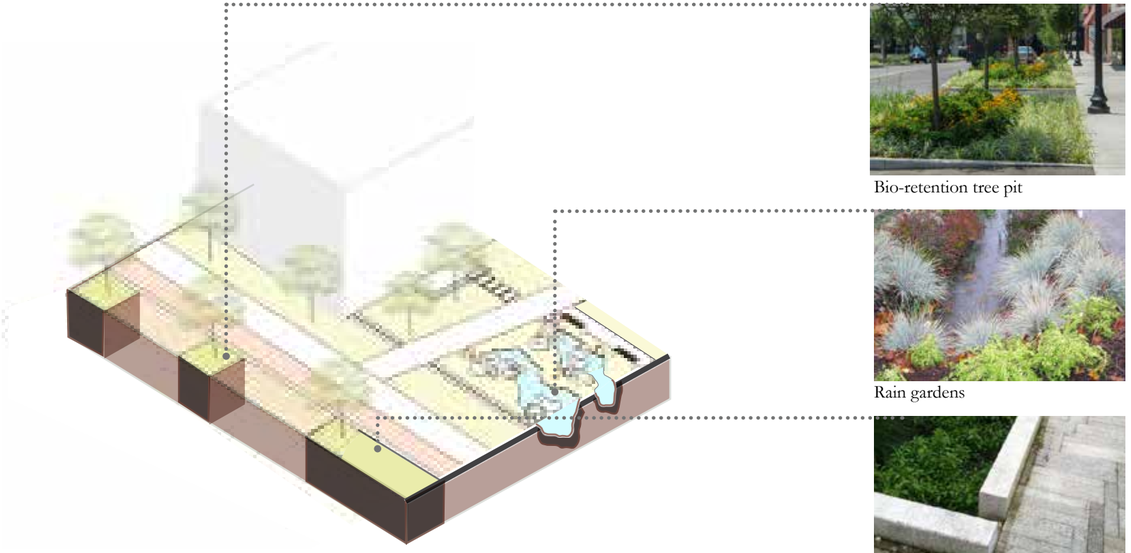
Drainage

Bio-retention Tree Pits

Rain Gardens

Swale





Schematic stormwater strategy

Bio-retention tree pit

Rain gardens

Kerb cuts for direct surface water infiltration

4.0 LANDSCAPE CONCEPT DESIGN

Tailored to protect, enhance and celebrate the sites key characteristics, the design will explore the undergrowth of the forest and below this again, carving our subterranean spaces enclosed by tree planting and wrapped around by routes and trails designed to evolve naturally overtime and grade out in density from south to north.

4.1 Phase 1 Landscape Masterplan

Landscape design proposals for Kilbride Residential Development are driven by ecological influences in response to the sites context and relationship with surrounding character. Experienced sequentially as routes of discovery and exploration which weave themselves across the lands revealing a sensorium of spatial typologies.

The landscape design 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. Pedestrian and cycle routes complement this strategy underpinning the sustainable credentials associated with the development.

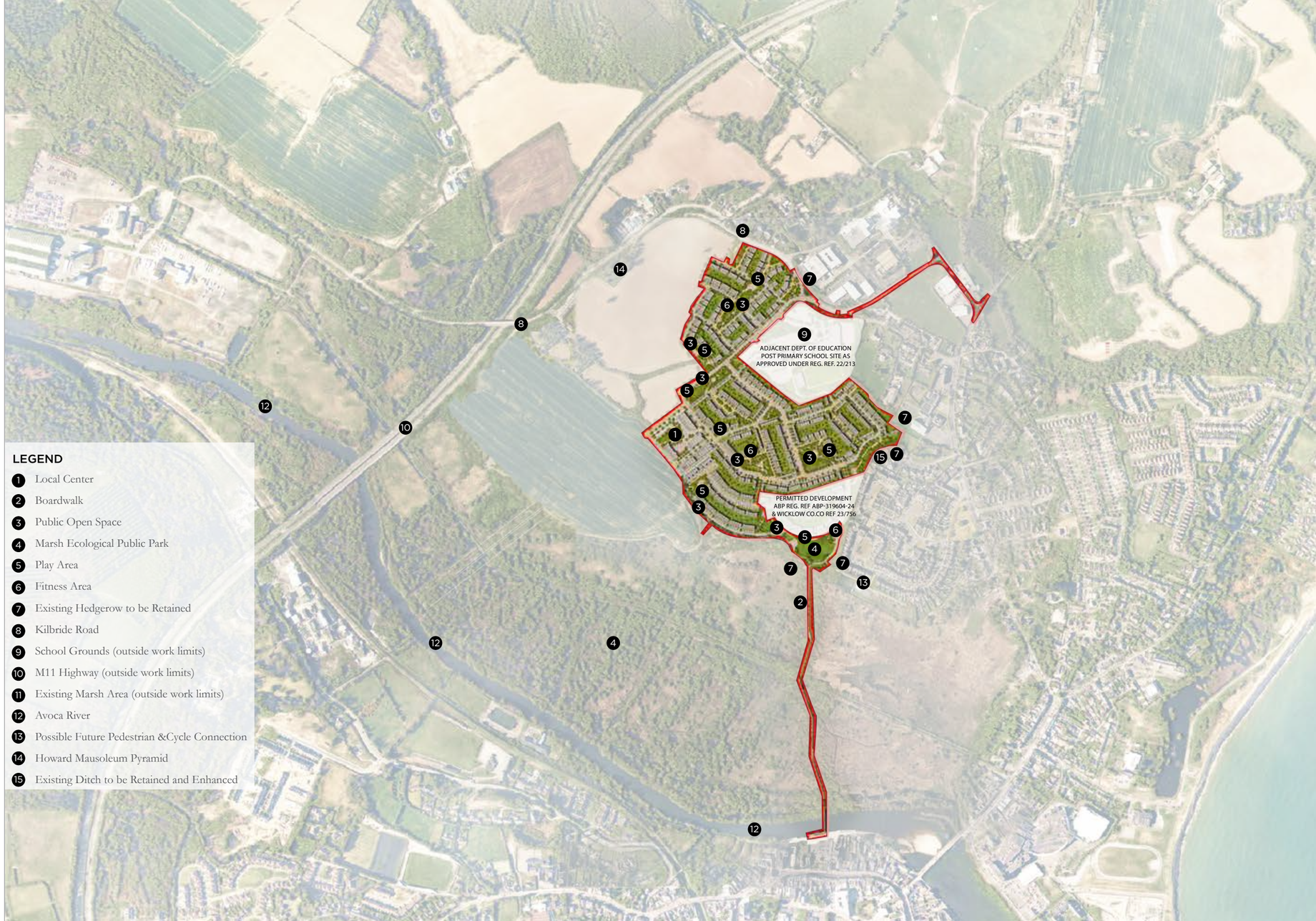
In addition, it is anticipated that the development will offer a net gain to biodiversity through the development of additional habitat connecting existing surrounding ecological stands with continuous tree canopies for bat and bird roosting and provision of specific plants for wildlife to forage through.

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





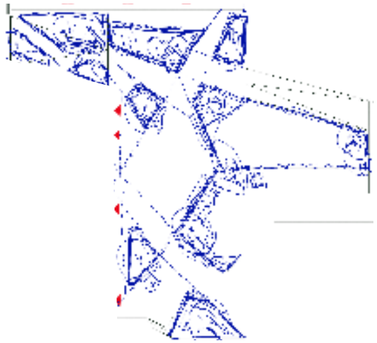
LEGEND

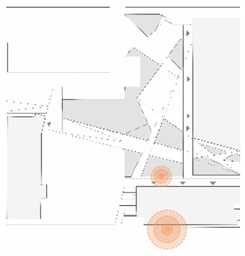
1. Local Center
2. Boardwalk
3. Public Open Space
4. Marsh Ecological Public Park
5. Play Area
6. Fitness Area
7. Existing Hedgerow to be Retained
8. Kilbride Road
9. School Grounds (outside work limits)
10. M11 Highway (outside work limits)
11. Existing Marsh Area (outside work limits)
12. Avoca River
13. Possible Future Pedestrian &Cycle Connection
14. Howard Mausoleum Pyramid
15. Existing Ditch to be Retained and Enhanced

4.2 The Local Centre

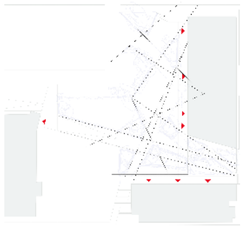
Central to the project is the local area centre with its village green and square. It is oriented to maximise solar gain and views whilst welcoming residents and visitors. It will be an active space with flexibility for events and community gatherings to complement the retail component of the adjacent ground floor uses. This will be the 'front door' for the development, ultimately welcoming users to permeate the site.

The square and lawn presenat a good tool in dealign with difficult level changes. The lawn is sunken to create safe kick about space and spill out zone for events. The space will be central to the community in fostering a meaningful neighbourhood.

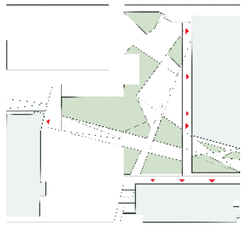




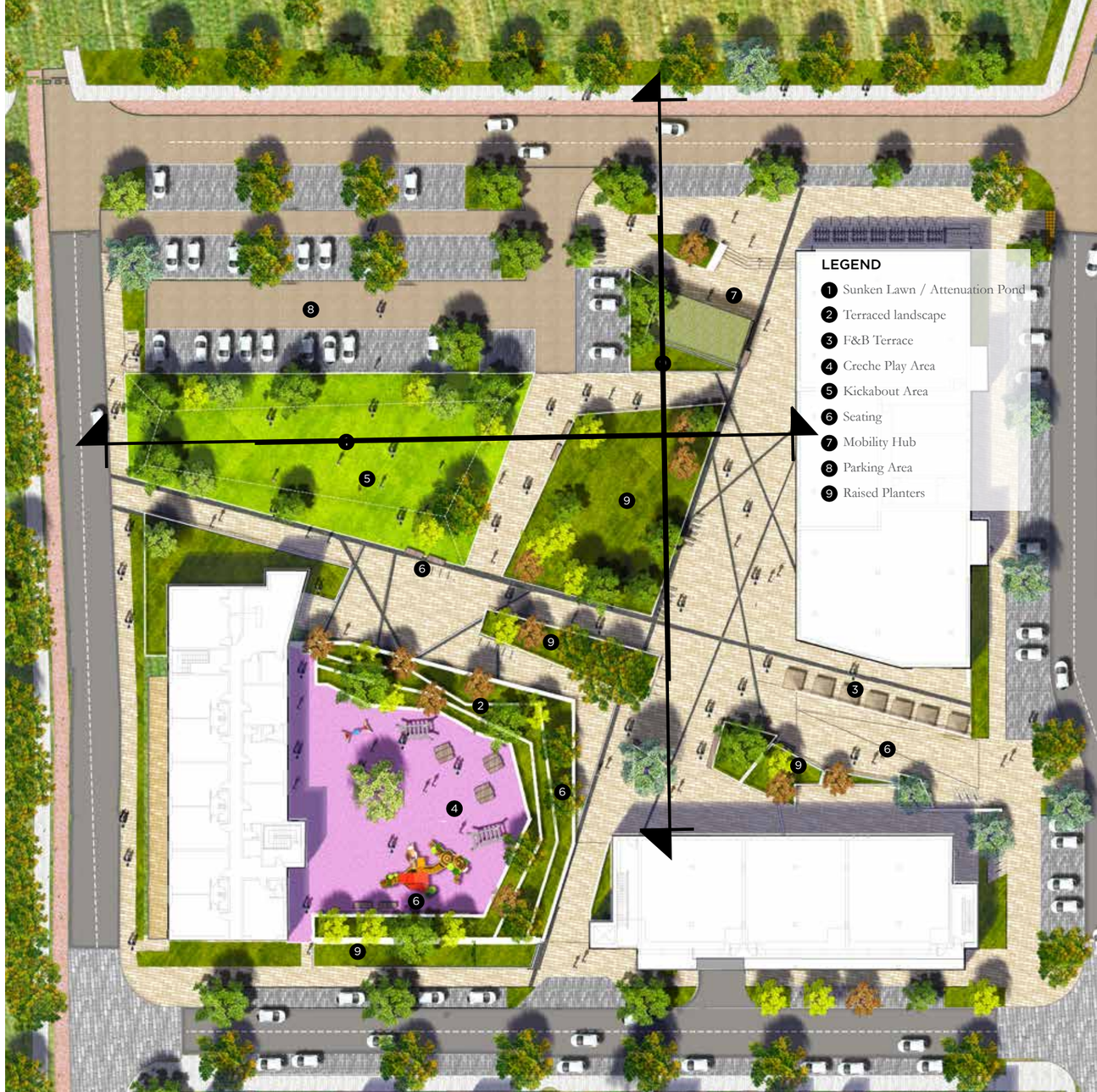
Creating a focal point and character



Linking Views + Context

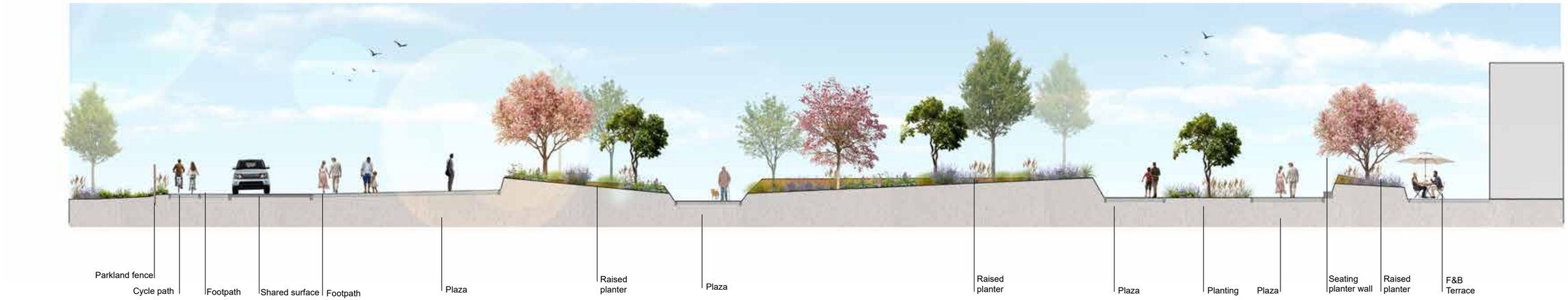


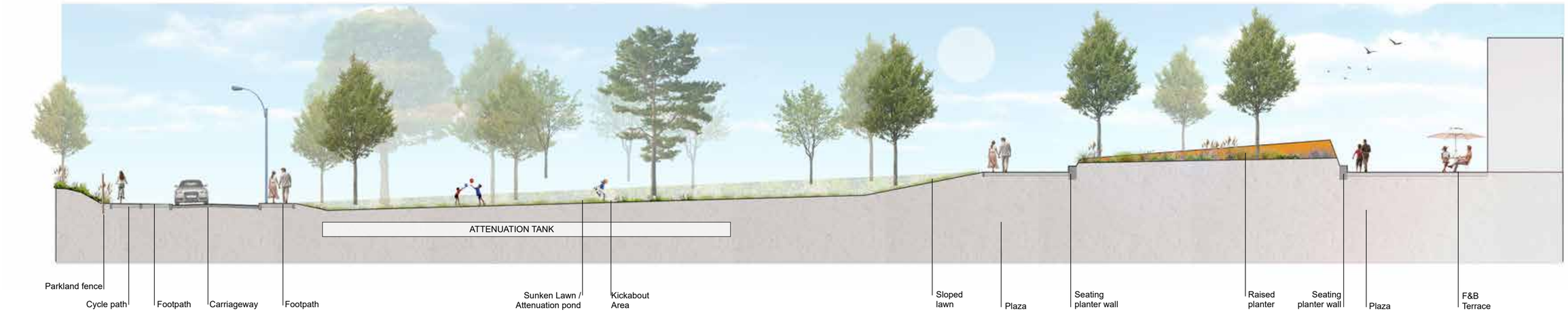
Fragments of space working as one



4.2 The Local Centre

4.2 The Local Centre Sections





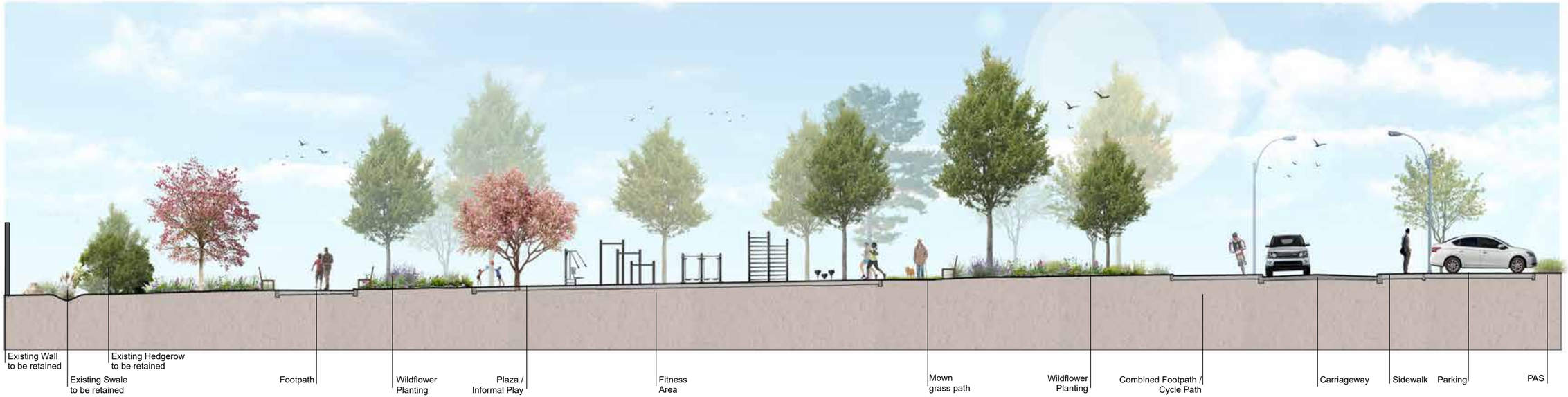
4.3 Character Area A

The southern most portion of the site provides a transition to the marsh land and will be partially inundated with flood water. It lends itself well to a more ecological character, blending wetland type plants with wildflowers adn lawn. The space has fantastic views to the wetland.

Execise areas, play and a large lawn for kick abouts, picnics and general flexibility of space make it exceptionally useable. This will be the point the boardwalk joins the development.

LEGEND

1. Marsh Ecological Public Park
2. Combined Pedestrian & Cycle Path
3. Boardwalk Connection
4. Mown Grass Path
5. Formal Play Area
6. Fitness Area
7. Seating
8. Landforms
9. Picnic Area
10. Existing Marsh Planting
11. Existing Hedgerwo to be Retained
12. Attenuation pond


Existing Wall to be retained
Existing Swale to be retained
Existing Hedgerow to be retained
Footpath
Wildflower Planting
Plaza / Informal Play
Fitness Area
Mown grass path
Wildflower Planting
Combined Footpath / Cycle Path
Carriageway
Sidewalk
Parking
PAS

4.4 Character Area B

The core space of character area B forms a depression as a flexible lawn space also serving attenuation. The 'sunken' nature protects it from the adjacent road, it has more of a parkland character and the main link for the cycle route crosses its western edge. its easterna edge is programmed with play and exercise and there are ample seating opportunities.

Ecologically a series of rain gardens have also been provided for to double as informal play areas surrounded by native planting.

LEGEND

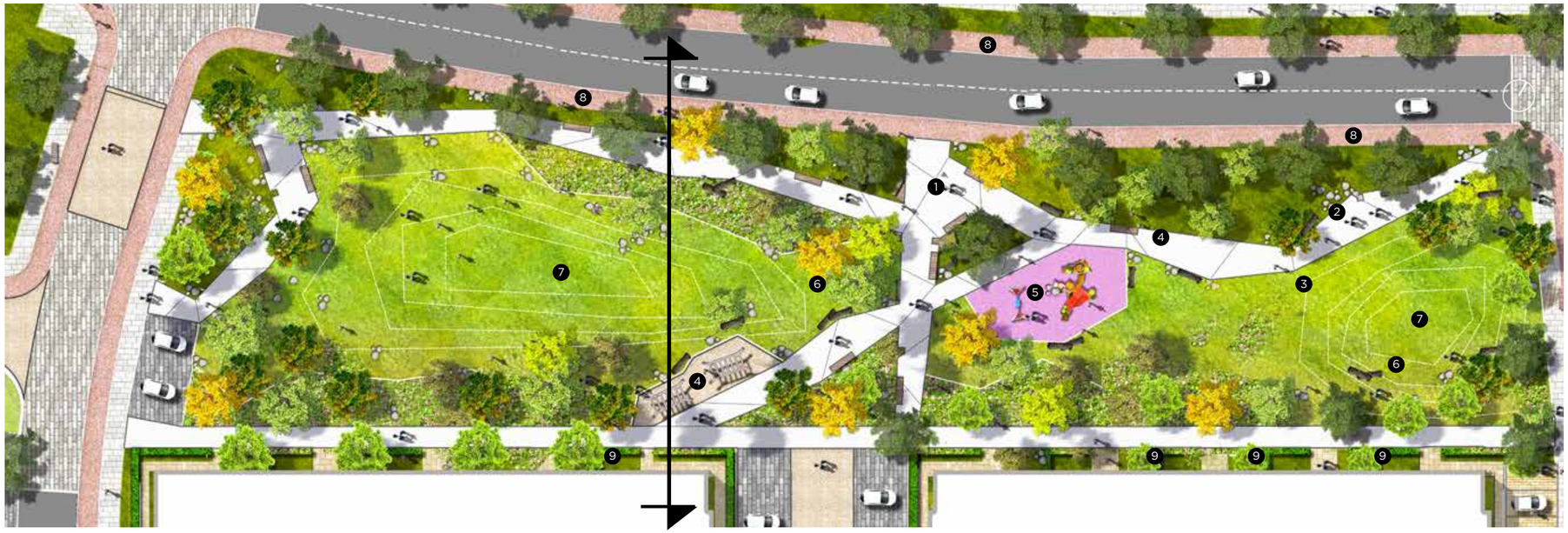
1. Lowered lawn / Attenuation Pond
2. Kickabout Area
3. Bike Path
4. Fitness Area
5. Formal PlayArea
6. Informal Play Area
7. Stepped path
8. Shared Surface
9. Plaza

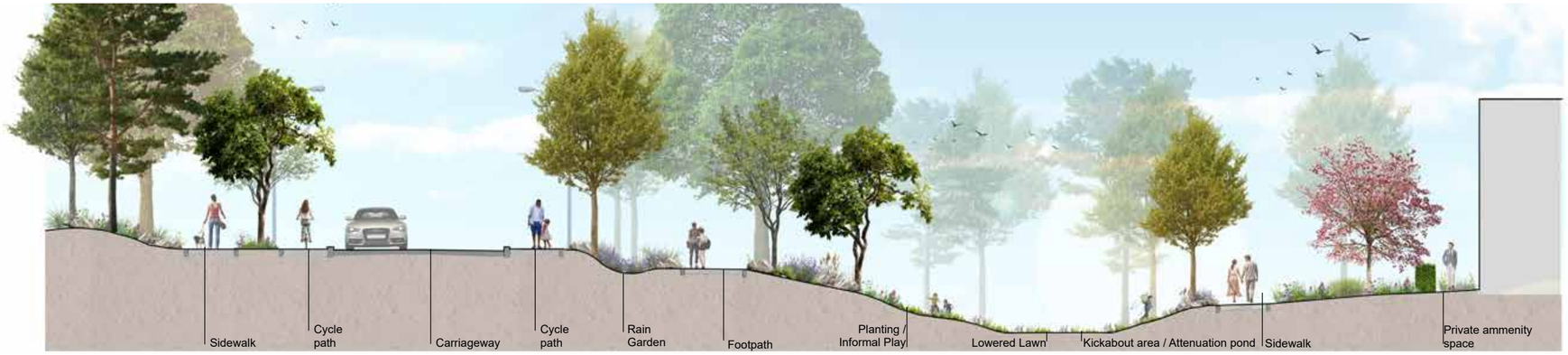

ATTENUATION TANK
Carriageway
Cycle path
Footpath
Sunken Lawn
Kickabout area / Attenuation basin
Planting / Informal Play
Footpath
Sunken Lawn
Kickabout area / Attenuation basin
Shared surface

4.5 Character Area C

The core open space for character area C is similar to a linear park. With residential units on its southern edge the sunken space takes it well below road level, again protecting it from the adjacent road, noise and fumes. It has a gathering garden with seating and picnic tables and adjacent play area.

The pocket spaces infront of the residential units create a buffer space but also provide significant habitat opportunities.





4.6 Character Area D

The core open space for character area D is similar to a local park in character. It has a perimeter route, play area, exercise, central lawn for kick abouts and a gathering area.

It has an abundance of ecological and bio-diversity opportunities with rain gardens, boulders, logs and informal play integrated. Plenty of seating opportunities are also provided for.

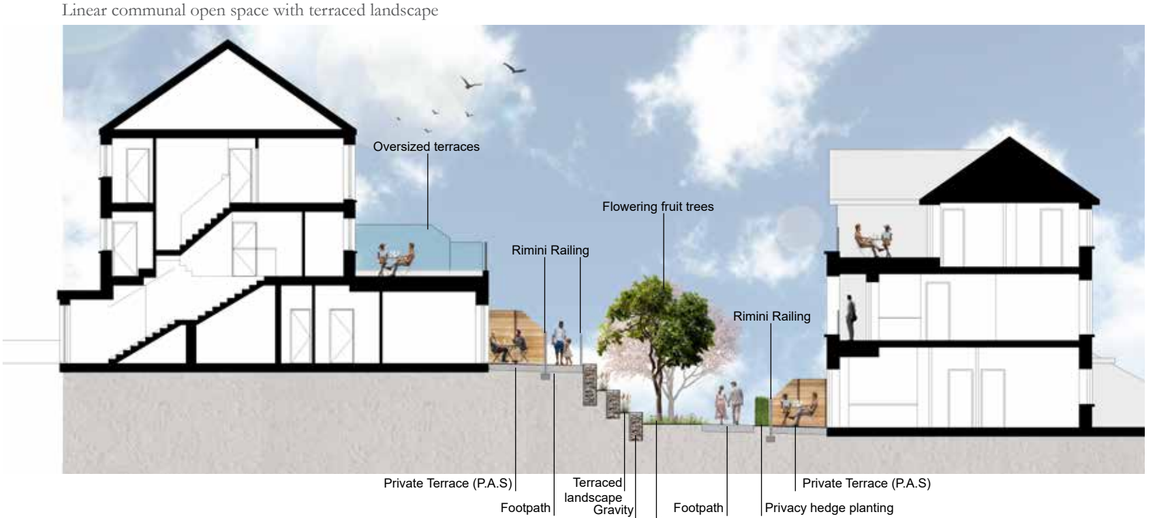
4.7 Communal Open Space

Proposed Communal Open Space between duplex apartments is creating linear space with seating opportunities and different planting types with fruit trees planting. Private terraces are separated from the communal open space with rimini railing and hedge planting where possible.

LEGEND

1. P.A.S
2. High Quality Paving
3. Lawn
4. Flowering shrub planting
5. Wildflower planting with bulbs
6. Seating Area
7. Shared surface
8. Steps
9. Gabion gravity walls
10. Safety railing
11. Raised planter
12. Fruit trees
13. Privacy hedge planting
14. Bike Storage
15. Rear gardens
16. Parking

Linear communal open space with terraced landscape



Gabion Gravity walls with terraced landscape

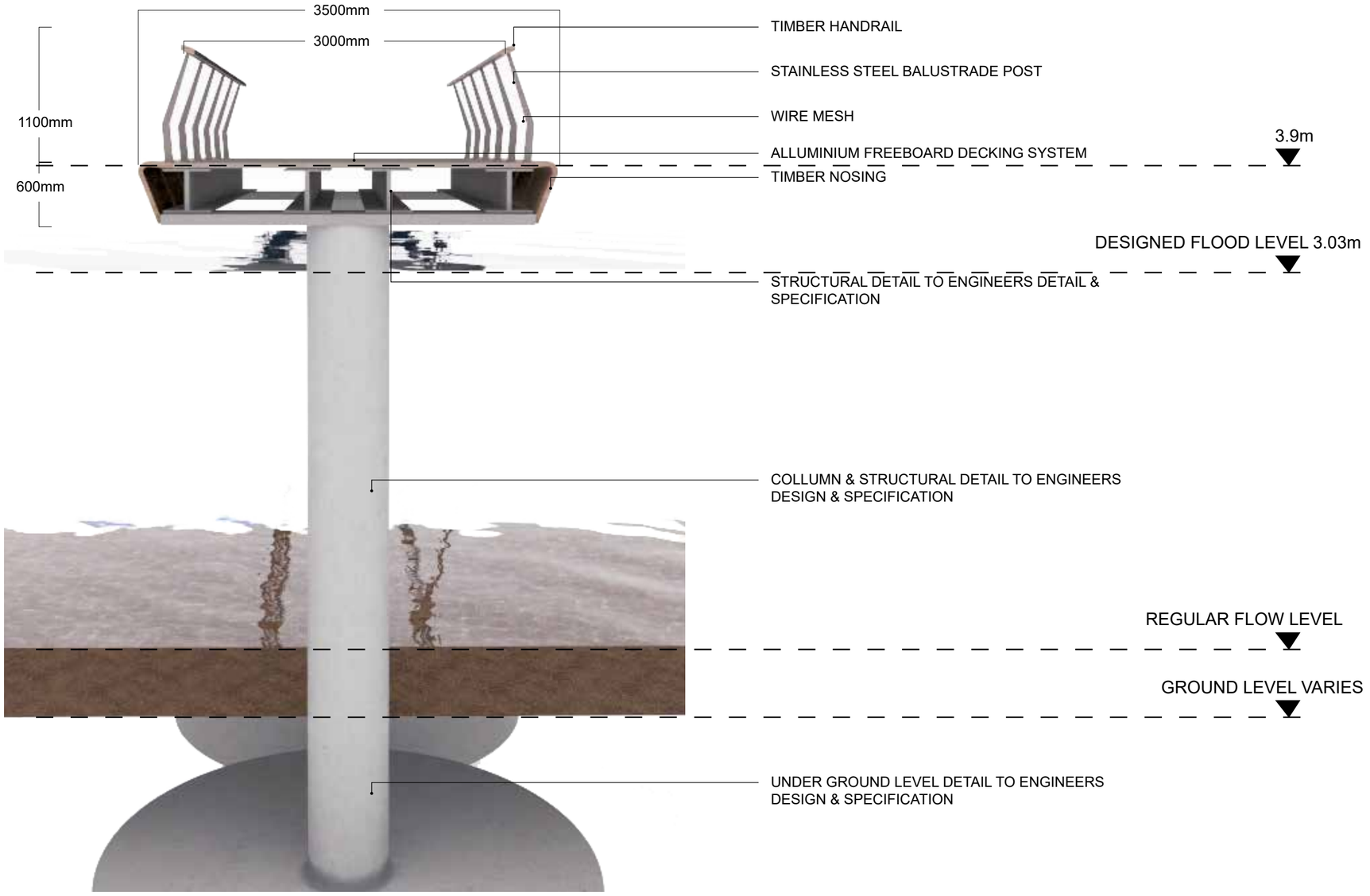
Linear Communal Open Space

Terraced landscape

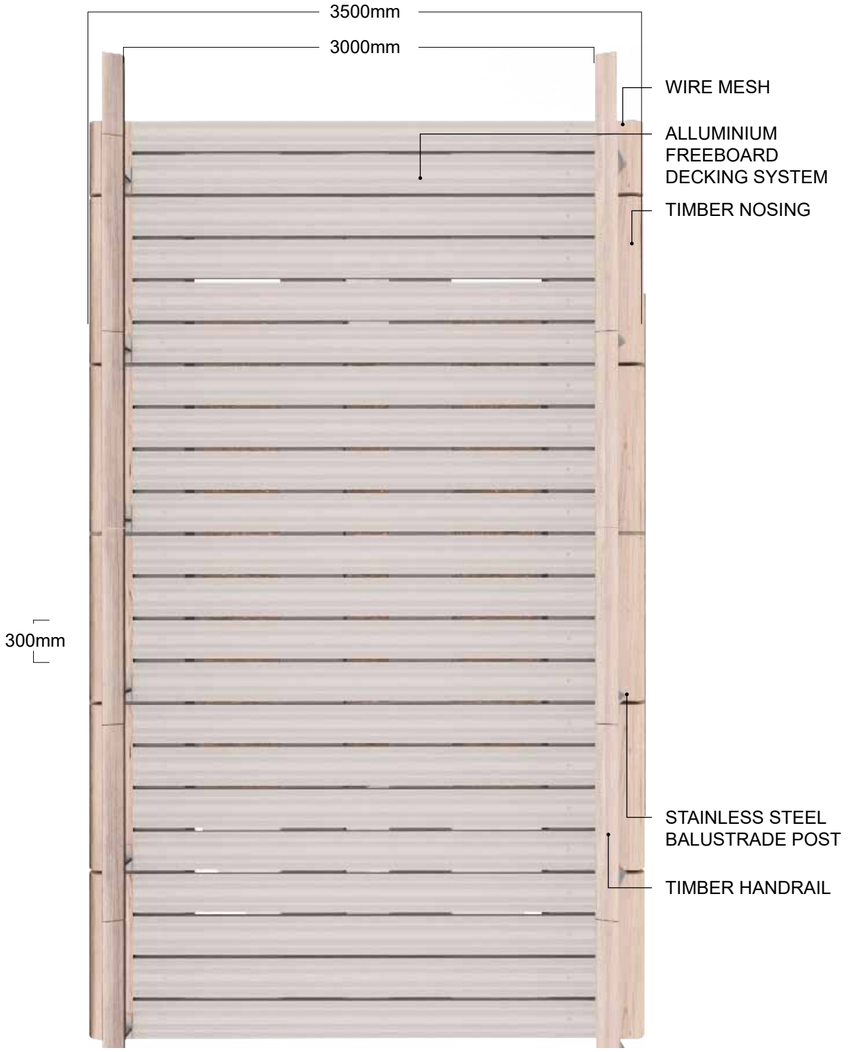
4.8 Boardwalk

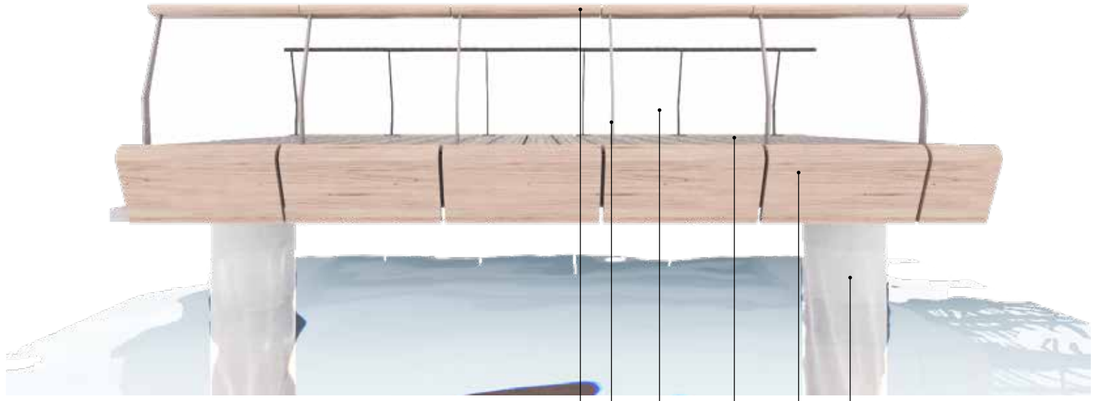
The proposed boardwalk will link with the approved bridge scheme across the Avoca River. It will create greater connectivity and amenity within and around Arklow Town to proposed and existing walking trails and will create a more direct link to the town acting as a great amenity for the new proposed development but also adjacent existing schools and residential communities. It also acts as a significant opportunity for visitors and local residents to engage with and learn from nature.

The design is light footed in its approach hovering over the marsh land, helping to retain, augment and protect the existing marsh.



4.8 Boardwalk





TIMBER HANDRAIL

STAINLESS STEEL BALUSTRADE POST

WIRE MESH

ALLUMINIUM FREEBOARD DECKING SYSTEM

TIMBER NOSING

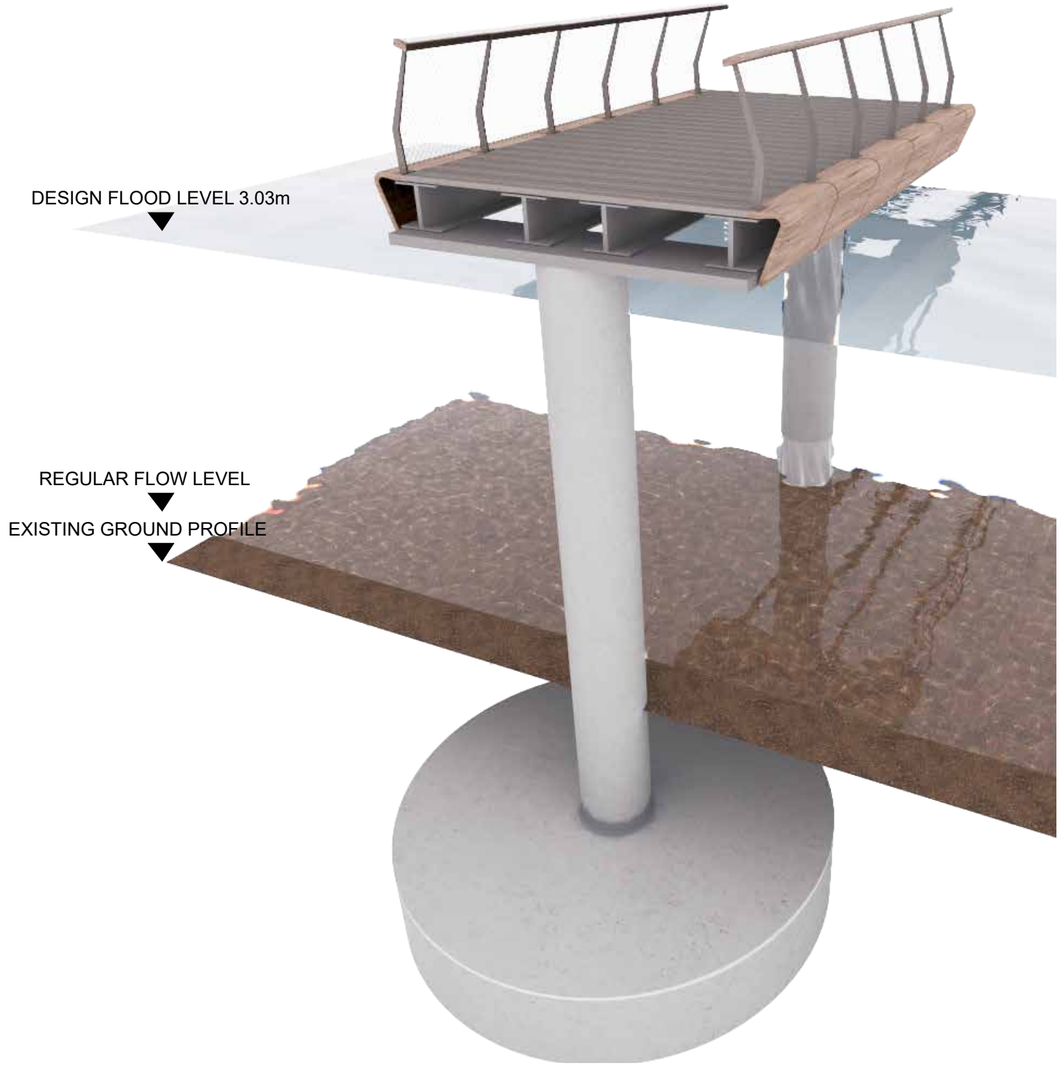
COLLUMN & STRUCTURAL DETAIL TO ENGINEERS DESIGN & SPECIFICATION

4.8 Boardwalk

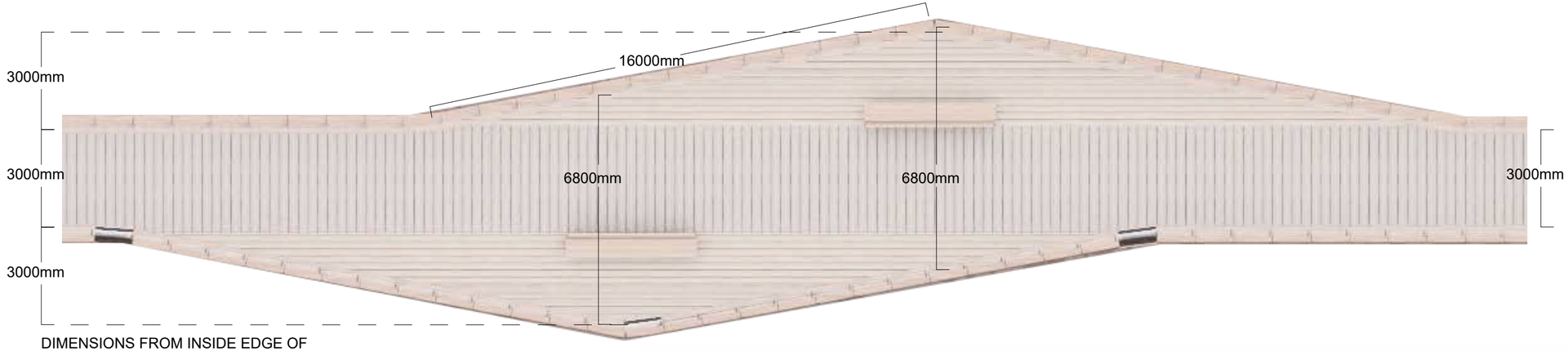
NOSING TO FIX TO THE STRUCTURAL BASE SUBJECT TO ENGINEERS DETAILS

STAINLESS STEEL POST TO FIX TO STRUCTURAL BASE SUBJECT TO ENGINEERS DETAILS
WIRE MESH PANELS

ALLIUMINIUM FREEBOARD SYSTEM SUBJECT TO ENGINEERS DETAILS
RAL 7039 QUARTZ GREY
300mm PLANKS



4.8 Boardwalk



DIMENSIONS FROM INSIDE EDGE OF
THE HANDRAIL

TYPICAL REST AREA BENCH TO
MATCH MATERIALITY

4.8 Boardwalk Plan

4.8 Boardwalk View

4.8 Boardwalk View

4.8 Boardwalk View

4.8 Boardwalk View

4.8 Boardwalk

Elevated walkway through exisitng wetland

Elevated walkway through exisitng wetland

Open wetland glimpses

Trees connecting

Open wetland glimpses

Open edge of wetland providing long views over a natural landscape

Seating points and markers

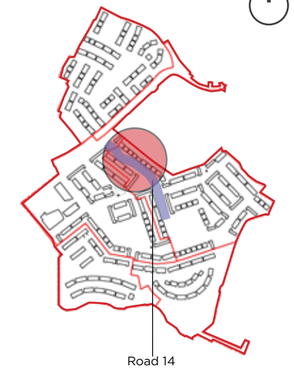
4.8 Boardwalk

CRUAGH WOOD GREENWAY

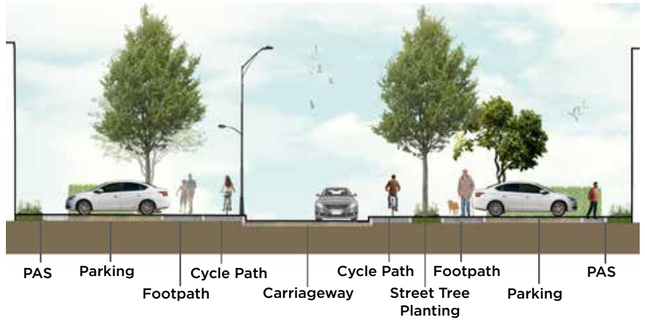
4.9 Streetscapes

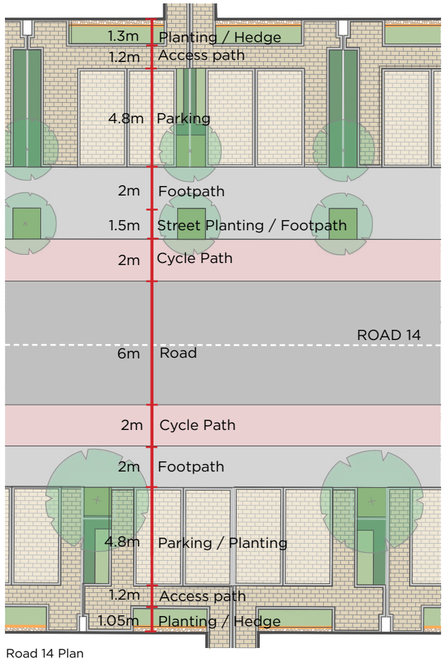
Streetscape Type 1

This is one of the main local Streets within the development. Typically the road cross section consists of a 6m carriageway with a 2m footpaths and 2m cycle paths provided on each side of the road. Perpendicular car parking 4.8m long is provide to dwellings on both sides of the carriageway. Numerous crossing opportunities are provided and raised tables and side entry treatments are provided at certain locations to facilitate pedestrian movement and lower vehicle speeds.



Location Plan



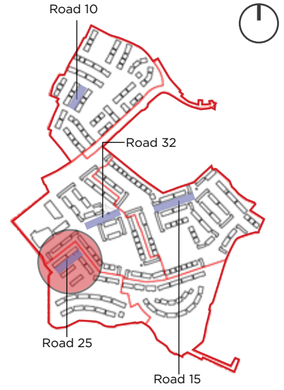


Road 14 Plan

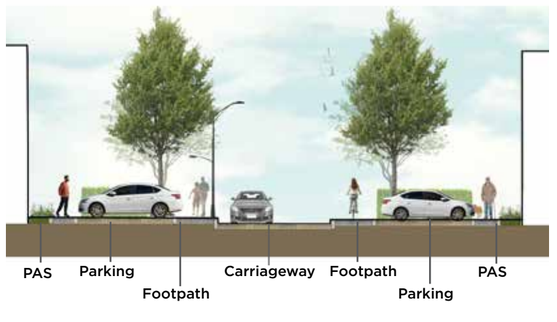
4.9 Streetscapes

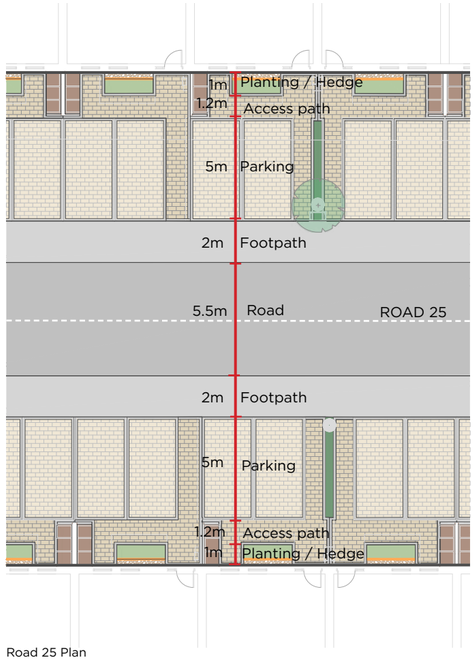
Streetscape Type 2

There are a large number of local streets located within the masterplan lands. Typically they provide connections from external road network to residential zones within the development. These street types would typically carry higher volumes of vehicular traffic than homezone streets, although volumes are still low. Typically local streets have a cross section of 5.5m carriageway and 2m footpaths provided on each sides of the road. A variety of car parking arrangements are proposed including in-curtilage and on-street arrangements in perpendicular arrangements.



Location Plan



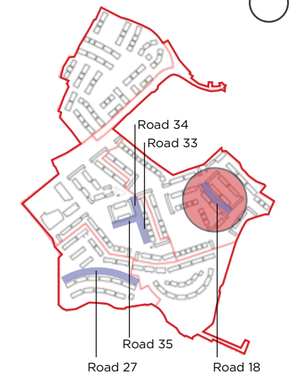


Road 25 Plan

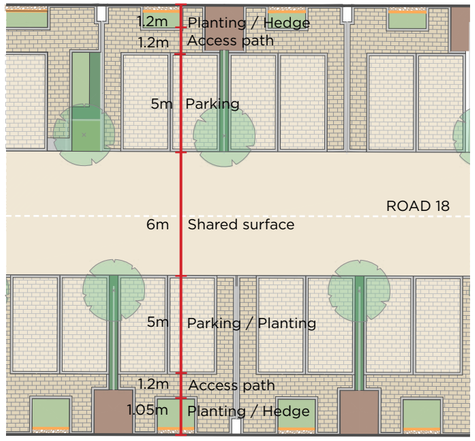
4.9 Streetscapes

Streetscape Type 3

There are numerous home zones (with shared surface treatment) located with the masterplan lands. Home zones are located in low traffic low speed locations where pedestrians, cyclist and vehicle share the street. Typically the cross section consists of a 4.5m to 4.8m shared surface with a 1.2m to 1.5m pedestrian comfort zone. A variety of car parking arrangements are provided on home zones street. In the image below a single line of perpendicular car parking broken up with landscaping is shown.



Location Plan



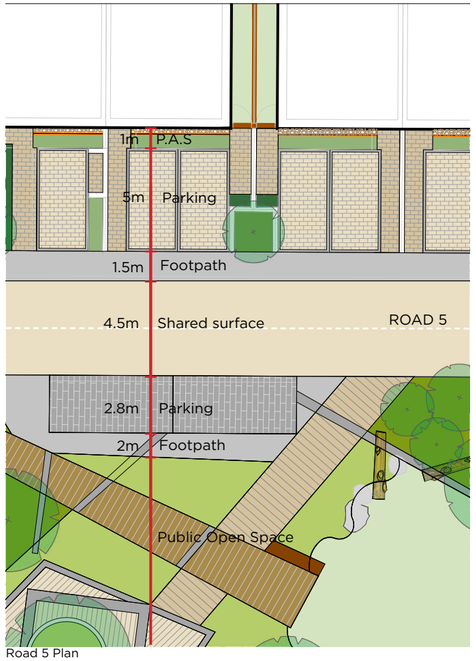
Road 18 Plan

4.9 Streetscapes

Streetscape Type 4

There are numerous home zones (with shared surface treatment) located with the masterplan lands. Home zones are located in low traffic low speed locations where cyclist and vehicle shared the street. Typically the cross section consists of a 4.5m shared surface with a 1.5m pedestrian sidewalk. These examples are short sections of residential areas located in cul-de-sacs streets.

Location Plan



Road 5 Plan

LANDSCAPE PALETTES

5.0

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.

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.

High Quality Permeable Paving

To Public Spaces

High Quality Permeable Paving

To Public Spaces

Fractured Paving

To Public Spaces

Steping Stones

To Public Spaces

Fractured Paving

To Public Spaces

Block Paving

To Driveways / Street

Block Paving

To Driveways / Street

Block Paving

To Driveways / Street

Permeable Paving

Car Parking

Permeable Paving

Car Parking

5.1 Indicative Hard Landscape Material Approach

Brushed Concrete

To Paths on Avenues

Brushed Concrete

To Paths on Avenues

Exposed Concrete Aggregate

To Public Area's

Exposed Concrete Aggregate

To Public Area's

Colored Asphalt

To Homezones

Colored Cycle

To Cycle Tracks

Self Binding Gravel

To Woodland Paths

Self Binding Gravel

To Woodland Paths

Soft Pour

To play + fitness zone

Black Top Asphalt

To Roads

5.1 Indicative Hard Landscape Material Approach

FURNITURE

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

Picnic Table

To Woodland

Bins

To Pedestrian Areas

Log Benches

To Public Area's

Natural Stone Benches

To Public Area's

Wooden Benches

To Public Area's

Picnic Table

To Road Edges

Bins

To Pedestrian Areas

Wooden Benches

To Public Area's

Natural Stone Benches

To Public Area's

Wooden Benches

To Public Area's

5.1 Indicative Hard Landscape Material Approach

Stone Wall

Boundery

Natural Stone Wall

To Public Area's

Little Library / Book Swap

To Public Area's

Bike Stand

To Bike Parking

Insect Hotel

Habitat Opportunities

Bollards

To Road Edges

Bollards

To Road Edges

Natural Play

Bespoke Imaginative

Exercise

To fitness areas

Nest Box

Habitat Opportunities

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 from north to south.

Carpinus betulus

Fagus sylvatica

Pinus sylvestris

Quercus robur

Pyrus callerayana

Sorbus aucuparia

Crataegus monogyna

Malus 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 utilis ‘Multistem’

Liquidambar

Gleditsia triacanthos

Prunus serrulata

Arbetus unedo

Magnolia grandiflora

Acer campestre

Tilia cordata

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

Centaurea cyanus

Ranunculus acris

Medicago lupulina

Rhinanthus minor

Lavandula x intermedia

WOODLAND UNDERSTORY & SHADE LOVING PLANTING

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

Polystitchum aculeatum

Dryopteris wallichiana

Viburnum davidii

Helleborus x ericsmithii

Polygonatum multi-florum

Hosta sp.

Convallaria majalis

Pachysandra terminalis

APPENDIX 6.0

Appendix 1 - Soft Landscape Outline Specification

1. Specifications for supply.

1.0 Schedule of supply:

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

1.1 Programme of Works

The planting works shall be executed at the earliest opportunity.

1.2 Nursery stock:

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

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

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

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

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

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

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

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

2.0 Tree specifications:

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

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

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

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

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

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

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

All standards shall be clearly labeled.

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

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

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

2.10 Shrubs

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

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

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

Appendix 1 - Soft Landscape Outline Specification

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

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

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

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

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

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

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

3.0 Specifications for site operations:

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

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

4.0 Specifications for Planting and Plant Materials

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

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

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

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

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

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

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

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

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

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

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

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

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

4.7.3.Light Standard Trees
Excavate tree pits to 500mmx500mmx500xx deep, or as approved. The base of the pit shall be broken up to a depth of 80mm and glazed sides roughened. F.Y.M. at the rate of 0.047 cu.m. (equivalent to 60mm deep) and 100gms of 0.10.20 shall be applied to each tree pit prior to planting. Farm manure shall consist predominantly of fecal matter and shall be free of loose, dry straw and undigested hay. It shall be free of surplus liquid effluent. Backfill planting hole with excavated topsoil, and remove all stones and debris, firming plant into position.

Appendix 1 - Soft Landscape Outline Specification

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

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

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

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

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

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

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

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

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

4.15 Spraying:

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

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

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

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

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

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

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

Appendix 2 - Hard Landscape Outline Specification

PAVING & KERBS

FOOTPATHS

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

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

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

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

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

MODULAR PAVING

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

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

Laying Generally:

1. Laying Specification

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

2. Drainage Channels

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

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

PRECAST CONCRETE FLAGS
Pre-cast Concrete Flags:
1. Precast concrete flags shall be laid to the requirements of BS 7533 Part 4.
Note the following selected items from BS 7533, Part 4.
• The difference in level between two adjacent flags should not exceed 3 mm.
• The top surface of the paving units should stand 3 - 6 mm above the drainage channel.
• A 30 - 50 mm (compacted thickness) of the sand laying course is given as suitable (for narrow joints)
2. Flags should be laid with narrow joints (2 - 5 mm).Joints should be filled with dried sand (conforming to table 4 of the code), or as determined by the Landscape Architect.

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

Laying Generally:
Natural stone and precast concrete kerbs shall meet the requirements of BS 435 and
BS 7263-1.

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

Appendix 3 - Programme For Implementation, Maintenance + Defects Period

5.0 Maintenance:

5.1 Period:

The Contractor shall be responsible for aftercare of the completed works for 1 Year from the date of completion of planting. Subject to satisfactory performance the maintenance contract may be extended for two further periods of 12 months. Maintenance in years 2 and 3 shall be provisional. Maintenance during years 2 and 3 may be assigned directly. 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 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.

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 etc.

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 council.

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