April 2025

Woodland, Ballycullen Large-Scale Residential Development

Dublin 16

Landscape Design Statement

LRD

NMP LANDSCAPE ARCHITECTURE JFOC

Applicant: Lagan Homes Ireland

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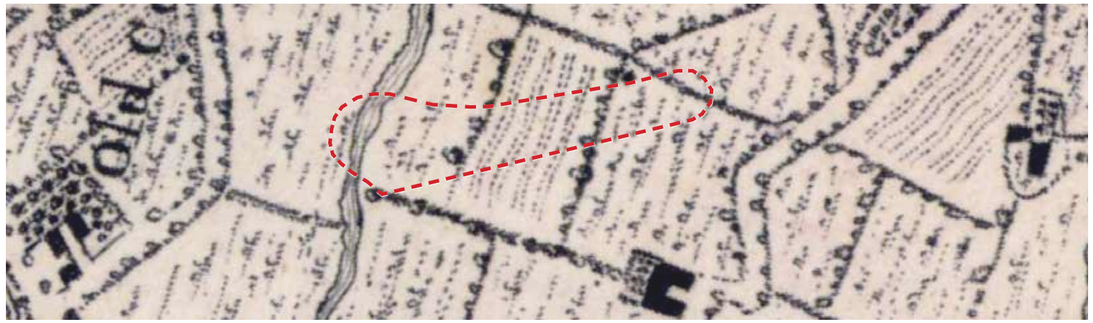
Lagan Homes Ballycullen Limited intend to make a planning application for planning permission for a Large Scale Residential Development (LRD) in the townland of Woodtown, Ballycullen, Dublin 16. The lands are located to the east of Abbots Grove Park, south-east of Abbots Grove Avenue, south of Stocking Avenue and Stocking Wood estate, and west of White Pines Park.

The proposed development will consist of 502 no. residential units (108no. 1-bed, 170no. 2-bed, 162 no. 3-bed; 62 no. 4-bed) comprising 197no. 2 storey houses (terraced/ semi-detached/detached) (19no. 2-bed, 116no. 3-bed; 62no. 4-bed) and 28no. 3 and 4 storey simplex/duplex apartment blocks providing 305no. apartments (108no. 1-bed apartments, 151no. 2-bed apartments, 46no. 3-bed apartments). The proposed development also includes a crèche (c.475sq.m), public open space, car parking (surface/ undercroft), bicycle parking, bicycle storage structures and lockers, bin stores, and 8no. ESB substations. Vehicular access to be provided from the existing spur road connection to Stocking Avenue to the west of the site, and via Stocking Wood Drive to the east of the site (with relocation of existing ESB substation and associated works to the existing hammerhead). Additional pedestrian only routes will be provided into Abbot's Grove Park and Stocking Wood Copse with future connections provided for into Stocking Wood Manor, White Pines Park and the future school site to the north of the application site. The proposed development includes all associated site development works (including site reprofiling, retaining structures and downing of ESB overhead lines), landscaping, boundary treatments and services provision.

1.0 LANDSCAPE ANALYSIS

1.1 Landscape Analysis: Historical Context



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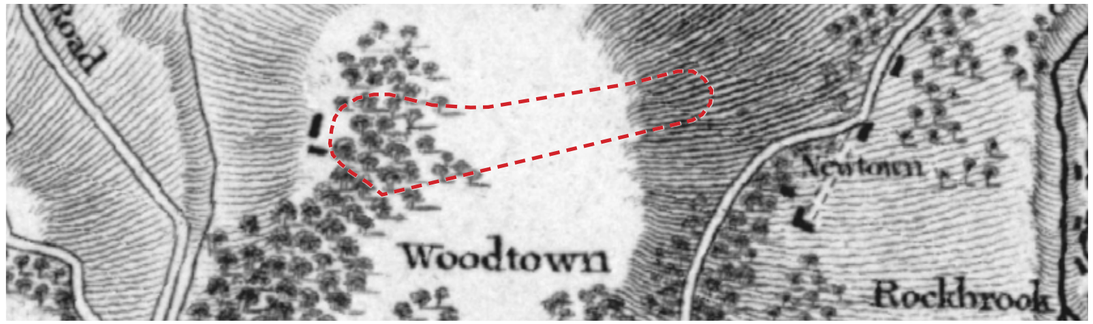
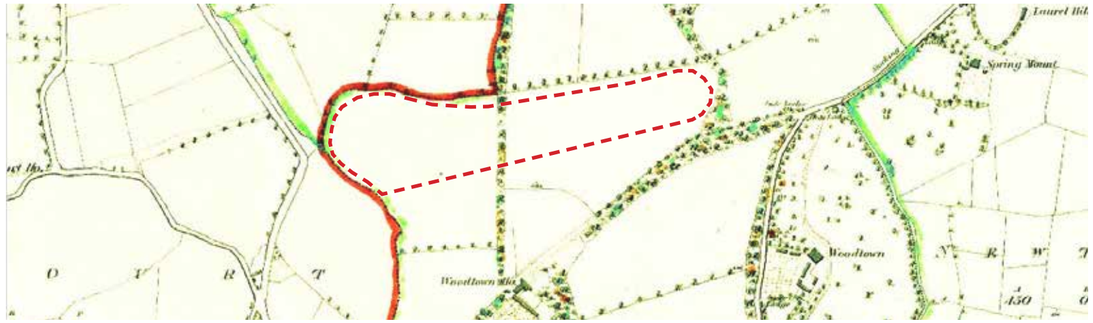


1816

1821



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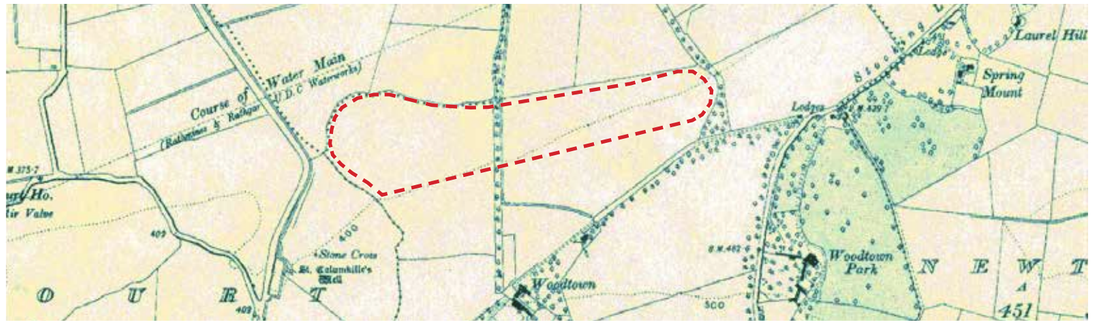
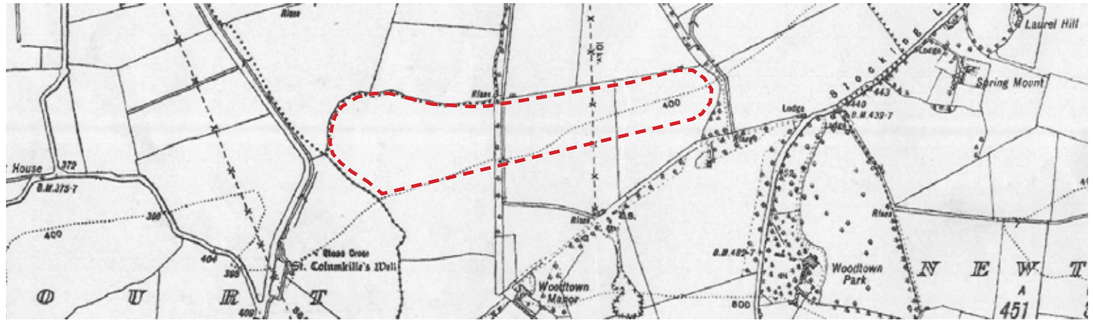


1912



1938

1.1 Landscape Analysis: Historical Context

2013

2021

Ballycullen is an area with a rich history that has undergone significant transformations over the centuries. Initially, the land was densely forested, but over time it was converted into agricultural land. As Dublin developed, Ballycullen evolved from a rural village into a suburban district. Today, it is a place where modern residential developments coexist with remnants of its agricultural past and natural landscape. One of the most distinctive features of this region is its diverse landscape, which attracts both residents and tourists. The picturesque surroundings of Ballycullen offer not only historical landmarks but also natural attractions that provide opportunities for outdoor activities. The hills surrounding this district are ideal for trekking, offering breathtaking views of Dublin and the surrounding area.

The area is home to several important landmarks, such as Orlagh House, an impressive mansion surrounded by a picturesque park. Over the years, this building has served various purposes, including as a residence and a religious retreat. Ballycullen is also a site of religious significance, like St. Colmcille's Well, which attracts pilgrims. Nearby, there are also scenic hills ideal for trekking, offering beautiful views of the area. The Hell Fire Club, a mysterious 18th-century ruin, is one of the most well-known tourist spots in this area. The building is surrounded by numerous legends and ghost stories, drawing in both history enthusiasts and those interested in the paranormal. Ballycullen is a place that combines rich history, picturesque landscapes, and modern suburban development, creating a unique space on the map of Dublin.

Orlagh House (originally called “Footmount”)

Site view to Orlagh House and The Hell Fire Club (1962)

View to Orlagh House and St. Colmcille's Well (1962)

The Hell Fire Club

St. Colmcille's Well

1.2 Landscape Analysis: Local Context

The project site is located on the edge of Dublin's residential development, providing access to full urban infrastructure. This ensures that residents are close to essential amenities such as shops, services, and educational facilities. Additionally, the area offers various sports facilities, including a golf course and an athletic club, promoting an active lifestyle. The site is also well-connected to the rest of the city. Nearby are bus stops for lines 15 and 15B. Furthermore, the project site is situated near several key transport nodes, offering convenient access to different parts of the city. To the east, it borders R115, to the north R113, and to the west Ballycullen Road, providing easy access to nearby districts. Moreover, the proximity to the M50 motorway allows for quick connections to major routes. With such a convenient location, the project site combines the benefits of peaceful suburban living with easy access to all key areas in Dublin.

Transport

Buses 15 and 15B

Proximity to M50 Motorways

Nature

Rural Landscape

Historic Landscape

Leisure

Equestrian Centre

Golf Club

1.3 Landscape Analysis: Site Context

The natural areas surrounding the project encourage spending time outdoors. Picturesque hills provide excellent conditions for hiking, and the numerous walking trails allow for relaxing strolls through the area. Walkers can admire the beauty of nature and pursue their passions, such as observing plants, insects, or birds. This makes it an ideal place for those who value proximity to nature while still wanting to enjoy the conveniences of urban amenities.

Mountain view

Existing hedgerow

Wildflower field (Common Ragwort)

1.4 Landscape Analysis: Existing Site Views

View 1

View 2

View 3

View 4

View 5

View 6

View 7

View 8

View 9

1.5 Landscape Analysis: Topography + Micro-climate

The area, particularly along the southern boundary, is exposed to southwest winds. It is currently shielded only by the hedges belonging to neighboring properties. The best sheltered spots are located among the main trees on the boundary and to the east. The northern part is significantly less exposed to the wind due to a slight elevation in the terrain. Due to the specific elongated layout of the site, it benefits from full sunlight throughout the day.

1.6 Landscape Analysis: Landscape Character

The site was once used as pastureland, which has led to the dominance of grassland vegetation. Only in the central and eastern parts of the site are there significant clusters of trees forming dense hedgerows. The largest of these hedgerows is located in the central section and spans approximately 25 meters in width.

Within these hedgerows, you can find plants typical of wetland areas. The vegetation here is diverse, consisting mainly of mature trees and shrubs. This part of the site serves as a true oasis among the pastures, providing refuge for many plant and animal species.

LEGEND

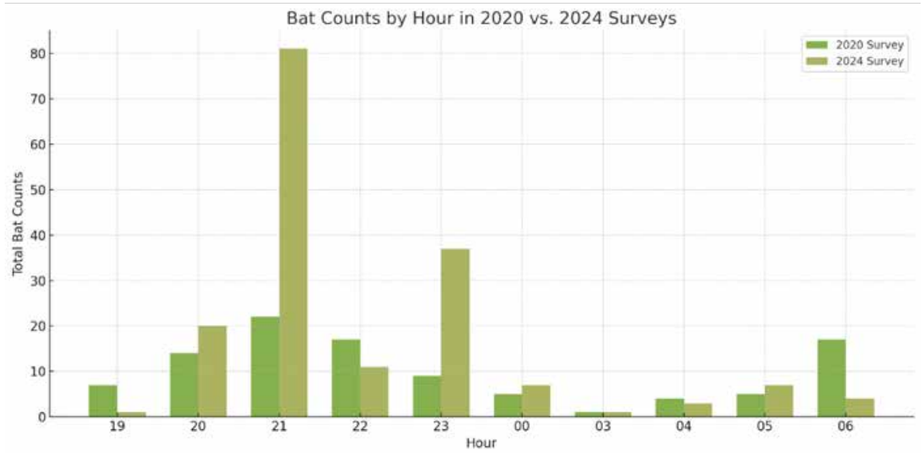
- Pastoral / Grassland
- Hedgerows
- Mature Landscape / Woodland Area

1.7 Landscape Analysis: Bats and Mammal Migration

In the analysis of animal migration, the presence of three species of bats was observed. It was noted that their foraging areas are located in the central part of the region near wooded areas. Besides these animals, the area is frequented by mammal species such as mainly Sika deers, rabbits, foxes, grey squirrels, and brown rats.

LEGEND

- Common pipistrelle
- Soprano Pipistrelle
- Leisler's bat



Studies conducted in 2017 and 2024 revealed that three species of bats inhabit this area.

Bat activity increased in 2024 by 70.3% over the 2020 level. There was one additional species noted in 2020 that was absent in the surveys in 2017 and 2024. Over a long survey period, more species would be expected to be encountered. This increase in feeding onsite could be attributed to slightly warmer conditions of 17°C at dusk in 2024 as opposed to 13°C in 2020. Both temperatures are favourable to bat activity meaning there is apossibility of increased bat reliance on this site.

*For funther information, refer to: Wildlife Surveys Ireland Ltd (2024). A bat and badger assessment of Stocking Wood Grove, Stocking Avenue, Ballycullen, Knocklyon Co. Dublin. Prepared for Lagan Homes. Authors: Donna Mullen, Brian Keeley, Ferdia Keeley. Date: 13/11/2024.

Bats

Species of bat feeding within the site in 2024

Soprano pipistrelle (Pipistrellus pygmaeus)

Common pipistrelle (Pipistrellus pipistrellus)

Leisler's bat (Nyctalus leisleri)

Mammals

The following mammals were noted within the site:

Sika deer (Cervus nippon)

Rabbit (Oryctolagus cuniculus)

Fox (Vulpes vulpes)

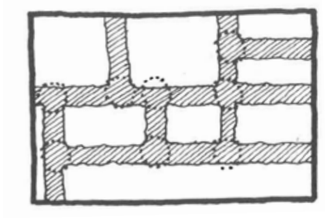
Grey squirrel (Sciurus carolinensis)

Brown rat (Rattus norvegicus)

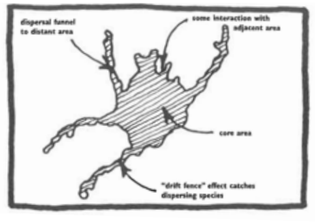
2.0 PRINCIPLES + VISION

2.1 Landscape Principles: Ecology & Gradation

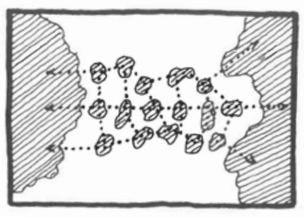
Ecology First Principles



Intersection Effect



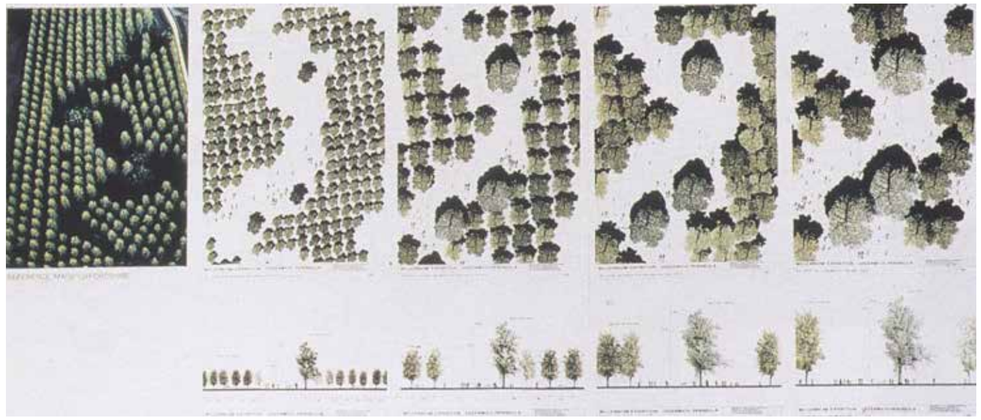
Ecologically optimum "Patch Shape"



Cluster of Stepping Stone

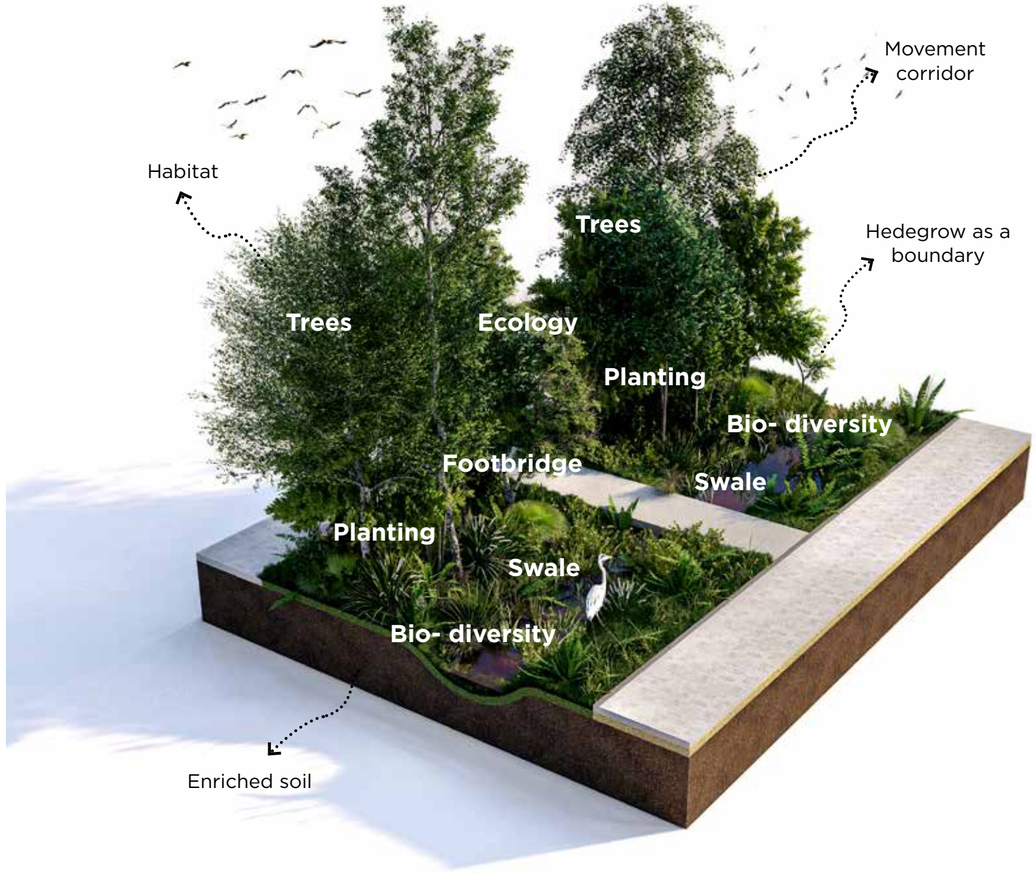
Ecological networks can exist on a number levels and thrive given the opportunity – the flexibility to provide refuges in one cluster connecting with stepping stones or corridors must be considered in the design of modern developments. Going further, and providing connections over and under our settlements can be of huge importance.

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.

2.1 Landscape Principles: Hedgerow Enhancement

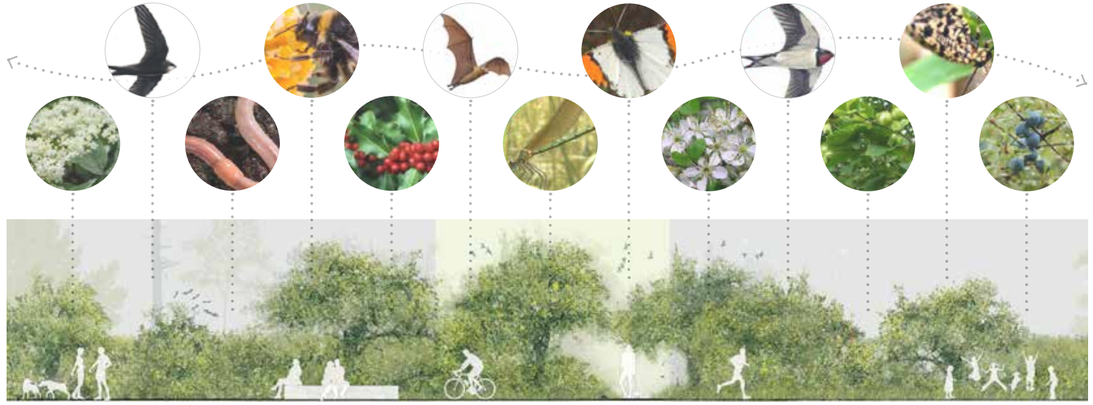


Axonometric of Enhanced Hedgerow

As part of the project, the preservation of existing hedges, which are valuable elements of the local landscape, has been planned. Moreover, the approach aims to create extensive, integrated ecosystems that not only protect nature but also strengthen it.

This strategy is designed not only to protect and enhance the natural environment but also to benefit the residents of the community, who will gain access to attractive woodlands walks and gathering spaces. The preserved trees and hedges will serve as the foundation upon which we will build new Public Open Space. This will allow us to connect existing natural spaces with new plantings, creating a cohesive, green landscape that will be vibrant with life. Expanding woodland planting into the POS will increase the biologically active surface area, contributing to improved microclimates, enhanced biodiversity, and the protection of local plant and animal species.

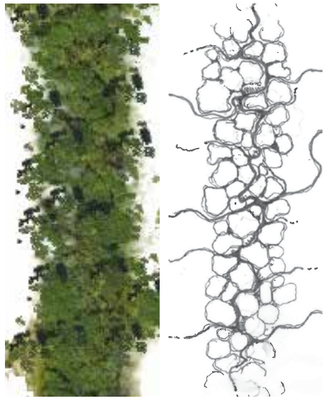
In summary, the trees and hedges in the project are not just landscape elements—they are living, dynamic structures that perform multiple ecological, social, and aesthetic functions, significantly enhancing the value of the entire community.



Proposed Nature's Highway

Existing Hedgerow Located in the main Puclic Open Space

2.2 Landscape Vision



At the heart of the site are the remains of what was once a wider woodland habit, since forming a filed boundary serving as a route for people, plants, animals and water to pass through and along, a corridor which has paid witness to time. These patterns in canopy and plain, when paid attention too tell tales and leave clues. They inform what once was and what might be. Extending into the steeply sloped site to create passages and plains upon which natural systems can be manipulated and integrated to serve all needs.

By centring the site around the north central woodland and extending or re-imaging its successive habitat types east west, a series of ecological stepping stones can establish themselves. An enormous emphasis has been placed on retention of water, combining this with public open space and places for plants, animals and people to live and thrive is a unique opportunity and innovations must be embraced if policy aspirations are to be satisfied, particularly given the steeply sloped nature of the site. Water and grade changes along with habitat creation are the single biggest influencers of the open space design.

Ragwort, thou humble flower with tattered leaves
I love to see thee come & litter gold,
What time the summer binds her russet sheaves;
Decking rude spots in beauties manifold,
That without thee were dreary to behold,
Sunburnt and bare-- the meadow bank, the baulk
That leads a wagon-way through mellow fields,
Rich with the tints that harvest's plenty yields,
Browns of all hues; and everywhere I walk
Thy waste of shining blossoms richly shields
The sun tanned sward in splendid hues that burn
So bright & glaring that the very light
Of the rich sunshine doth to paleness turn
& seems but very shadows in thy sight

John Clare, 1793-1864

LANDSCAPE DESIGN STRATEGIES

3.0

3.1 Landscape Design Strategies: Open Space Quantum + Programme

Spatial quality is centred around strategies, policies, design and effective creation & use of spaces. This applies to buildings, landscapes and infrastructure. Effective design will have a higher spatial quality as functioning increases, use rises and a variety of needs for the user is met. A variety of spatial typologies and scale of spaces add to the overall landscape experience as users pass through, actively using and participating in the spatial experience. The more users encouraged into the space, the more successful the development will be, thereby creating active, engaging and fun communities.

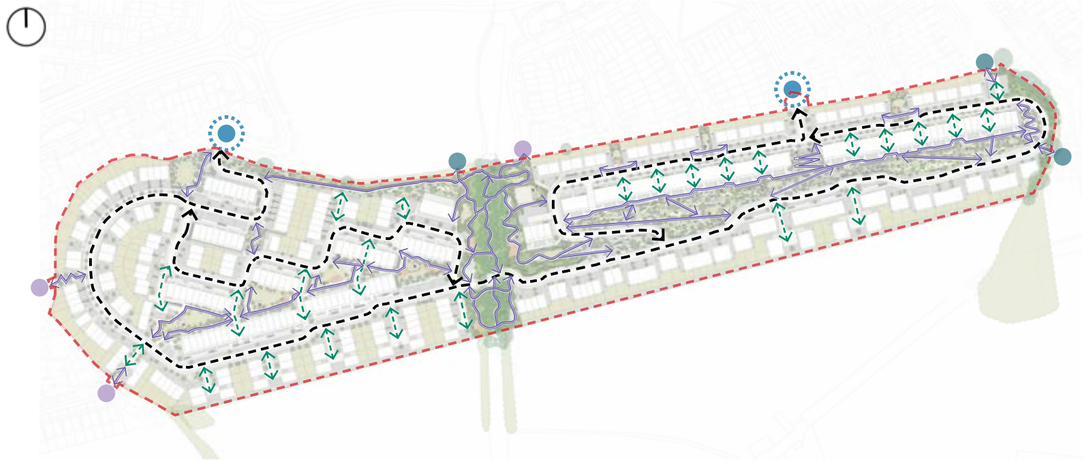
The landscape, by consequence of its sloping nature is tiered and operates across a series of levels. Adding to the challenge is the requirement for all water to be attenuated at surface. Combined with the density requirements under compact guidelines, this makes for a very challenging design resolution. However, the site embraces the cross over of these requirements, and shares the space accordingly. Particular areas of open space will flood during certain storm events (100 yr etc) dry most of the time, these same spaces cater for play and landscape programme and are designed to be inundated, thrive with biodiversity and encourage natural play and active or passive recreation in a natural setting.

LEGEND

- Public Open Space
  - Gross POS 22.5% (22,927.00 sq.m)
  - Which includes the required COS area (2,007.00 sq.m) in an integrated manner.
  - Net POS 20.2% (20,920.00 sq.m)
- Private Garden
- Multi-functional Lawn Space/Informal Play
- Formal Play (Structured /Natural)
- Exercise Station
- Seating Opportunities
- Biodiversity Interventions

Reference Images

3.2 Landscape Design Strategies: Accessibility + Circulation



By the nature of its geographical positioning, the site is well connected to its greater context, public transport and a key artery into and out of the City with access to bus networks within short walking distance. Its positioning as a sustainable development lends itself to making use of public transport as well as non-motorised transport such as walking and cycling. The pedestrian routes within the public open space allow for leisurely meandering and enjoyment of the amenities.

Primary access point to the site is from Stocking Avenue. Internal roads provide access into the site with traffic calming spots, allowing for an additional layer of permeability and fucntionality. Service- & emergency vehicles will have access to areas around the buildings as appropriate. The pedestrian- & cycle routes throughout the development, with several proposed access points into the lands, assist with accessibility & permeablility. Pedestrian routes traversing the public open spaces allow for leisurely meandering and enjoyment of the amenities.

LEGEND

- Shared Surface
- Vehicular Route
- Vehicular Access (Private)
- Pedestrian Route
- Proposed Road Connection
- Proposed Pedestrian + Bicycle Connection
- Possible Future Pedestrian Connection

Reference Images

3.3 Landscape Design Strategies: Vehicular + Bicycle Parking

The landscape project integrates both car and bicycle parking facilities seamlessly into its design. Perpendicular parking spaces are predominantly situated along the typical roads, while parallel spaces are strategically placed around public park areas. The design includes deliberate spacing between parking bays, allowing for the integration of tree pits and creating breathing room amidst the parking blocks.

To enhance sustainability and environmental friendliness, all parking areas, except those within shared surfaces, utilize permeable pavement. This feature not only facilitates efficient water drainage but also promotes water absorption. Additionally, strategically located bicycle parking spaces have been incorporated into public areas and internal gardens of communal spaces, catering to both public and private bicycle parking needs.

LEGEND

- Non-Allocated Parking
- Allocated Parking
- Bike Stands

Reference Images

3.4 Landscape Design Strategies: Boundary Treatments

The proposed residential landscape development incorporates a diverse array of boundary treatments, meticulously designed to harmonise with the surrounding environment while ensuring privacy, security, and aesthetic appeal. The project prioritises preserving existing boundaries, especially along the western perimeter along the back gardens. Towards the south and east, where lush foliage thrives, efforts are made to maintain the existing fence line with enhancements to minimise disruption to vegetation.

Timber panel fences define back gardens, while rear boundaries are defined by capped and fair block walls. Privacy is delicately integrated into the design with railings and hedges in terraces and communal gardens, providing seclusion and enhancing aesthetic appeal.

LEGEND

- Render Finished Block Wall with Brick Cladded Piers
- Block Wall with Brick Cladded Piers
- Concrete Post and Timber Panel Fence with Concrete Kicker
- Low Retainning Wall
- Retainning Wall with Railing for Fall Protection
- Retaining Gabion Wall
- Ibex Fence
- Rimini Railing
- Parkland Railing

Reference Images

3.5 Landscape Design Strategies: Trees

All trees within the lands subject to this planning application have been surveyed reference should be made to the Arboricultural Consultancy Report. The masterplan has been envisaged to retain as many of the existing trees as possible. 27 trees and 1 tree groups were considered to be of poor quality or -value and have been identified for removal. The proposed new trees are intended to enhance the landscape character & aesthetic quality of the site as well as the biodiversity credentials (net gain in biodiversity) and will be located along streets and within public- & communal spaces with the intention of mitigating existing tree loss. The new trees will vary in specification of size and species. There will be a majority of trees selected from native tree species, which will be deciduous and evergreen, as well as having a variable habit. Clusters of trees rather than formal rows will dominate the landscape expression. There will be a total of 900 new trees planted.

LEGEND

- Proposed Trees: ca. 900 No.
- Existing Tree to be Retained
- Existing Hedge to be Retained
- Existing Hedge to be Removed

Reference Images

3.6 Landscape Design Strategies: Vegetation

Shrub- & groundcover mixes will be utilised to define space with planting styles and types varying, depending on use, thereby assisting in creating distinctive landscape typologies. The scale of planting and transition in planting from low, medium and high to define space, has been planned according to programme, thresholds and spatial hierarchy. Within the public realm, plants will be robust, mostly evergreen and require less maintenance. Street trees will be tried and tested urban species.

Parkland planting is earmarked for the public open space and surrounds with plant species suited as understorey planting being proposed for the woodland- / periphery type planting zones, where applicable. The All-Ireland Pollinator Plan 2021-2025 has richly informed the planting palette and soft landscape approach and in conjunction with a selection of native plant species, will characterise the landscape expression.

LEGEND

- Lawn
- Parkland Planting
- Woodland Planting
- Meadow Planting
- Wildflower Planting

Reference Images

3.7 Landscape Design Strategies: Water Story

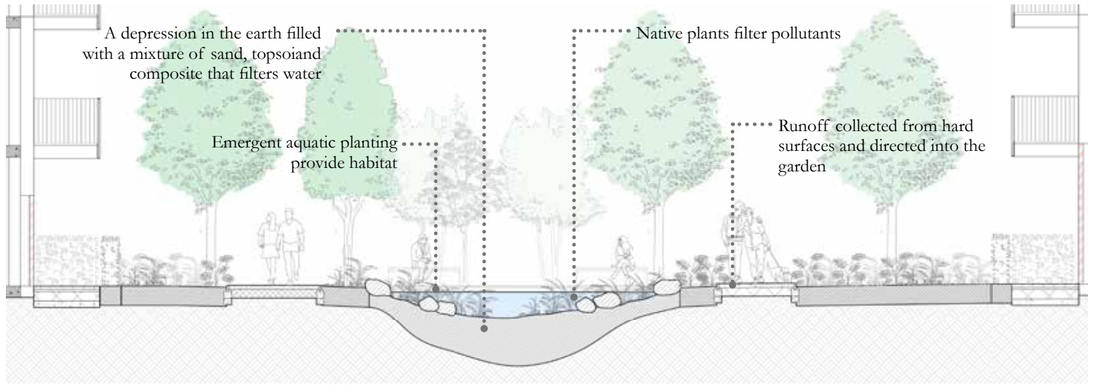
Sustainable Drainage, or SuDS, is a way of managing rainfall that mimics the drainage processes found in nature and addresses the issues with conventional drainage. The landscape surface water drainage strategy incorporates SuDS features and has been designed in line with best practice. The soft landscape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

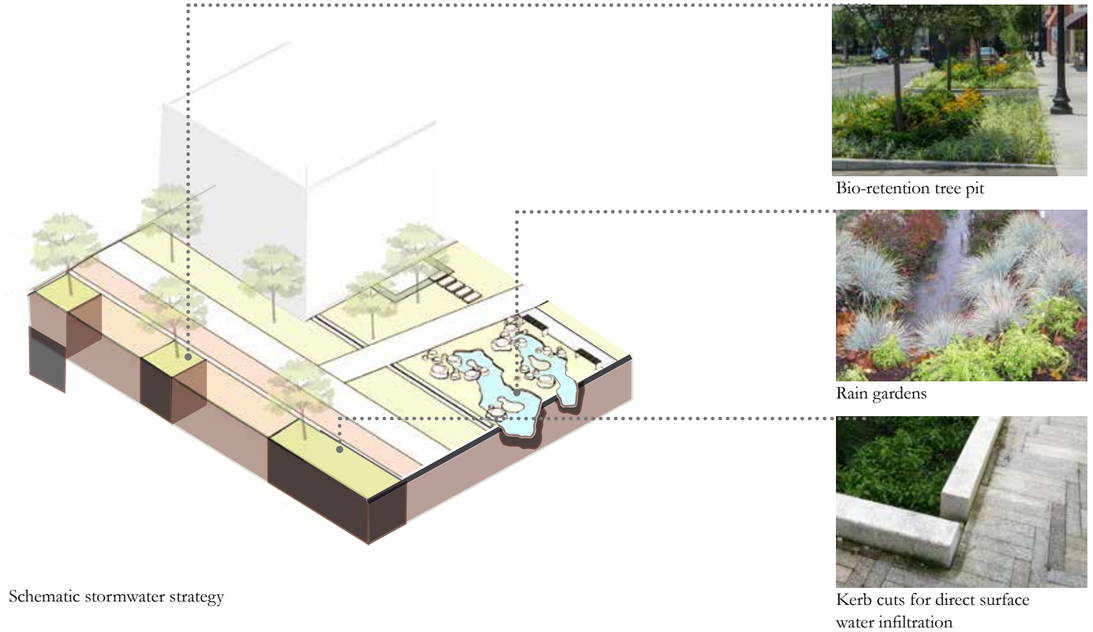
A bioretention structure differs from a rain garden in that it employs an engineered topsoil and is used to manage polluted urban rainfall runoff in street locations and carparks. The free-draining nature of engineered soils leads to the washing away of nutrients from the soil. The proportion of organic 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

- Proposed Surface Retention
- Proposed Tree Pit Attenuation 3 no.

Reference Images





Schematic stormwater strategy

Bio-retention tree pit

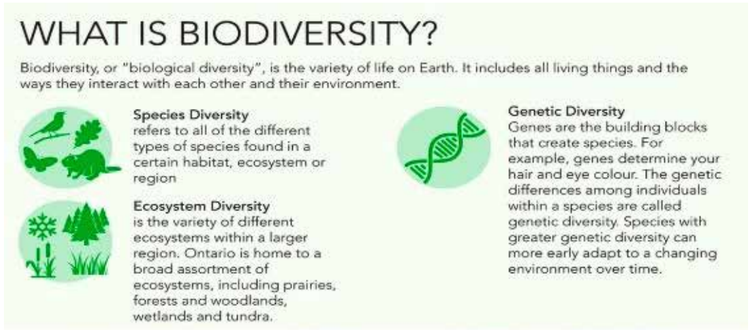
Rain gardens

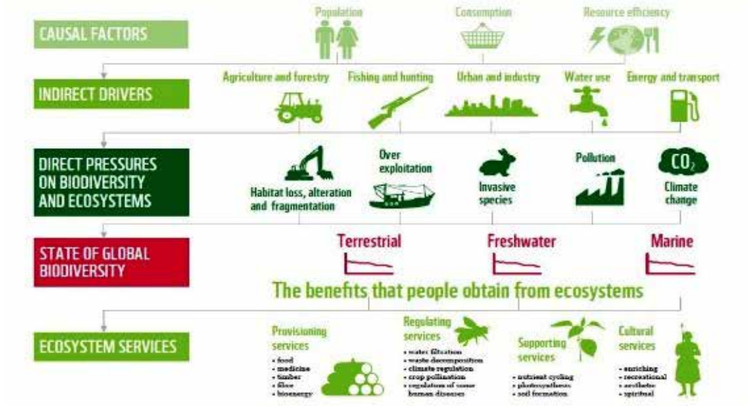
Kerb cuts for direct surface water infiltration

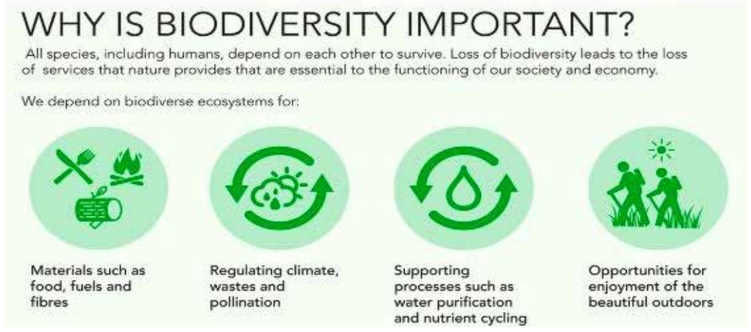
3.8 Landscape Design Strategies: Biodiversity

Reference Images

An awareness and the enhancement of the site's existing natural features will inform the character of vegetation and the sense of place it derives from this character. In turn, there will be a net gain in biodiversity by planting native tree species, coupled with plants selected fom a list of pollinator friendly species and maintained to increase the availability of flowering plants in the shoulder months. The loss of habitat will be negated by the inclusion of native tree- & plant species within the vegetation palette and complemented with habitat boxes, etc.







3.9 Landscape Design Strategies: Migration

The proposed development actively supports the continued presence and activity of local wildlife, including bats and other mammals that forage in the area. Recognising the ecological value of the site, proactive steps have been taken to ensure these species are protected and can thrive alongside the new residential community. Comprehensive mitigation measures have been designed to avoid potential negative impacts associated with construction and habitation. These measures aim to promote coexistence and include the following specific guidelines to be implemented throughout the construction phase:

All trees shall be checked for the presence of bats prior to felling*

All trees within the site shall be examined for the presence of bats prior to felling by a bat specialist. Should bats be noted in any tree, it is a protected structure, and a derogation must be sought.

Lighting*

Lighting must be controlled to avoid light pollution of green areas and should be targeted to areas of human activity and for priority security areas. The following measures are proposed to reduce the impacts of lighting:
• Motion-activated sensor lighting is preferable to reduce light pollution.
• None of the remaining mature trees or trees proposed for planting shall be illuminated. • Dark corridor for movement of bats along the grounds of the site.
• Lighting should be directed downwards away from the treetops.
• All luminaires shall lack UV elements when manufactured and shall be LED • A warm white spectrum (ideally <2700 Kelvin) shall be adopted to reduce blue light component
• Luminaires shall feature peak wavelengths higher than 550 nm
• Tree crowns shall remain unilluminated
• Planting shall provide areas of darkness suitable for bats to feed and commute through the site.
• Lighting shall be kept to a minimum around the trees (see below). No light shall fall directly on the trees from street lighting or private houses.

Panting of vegetation*

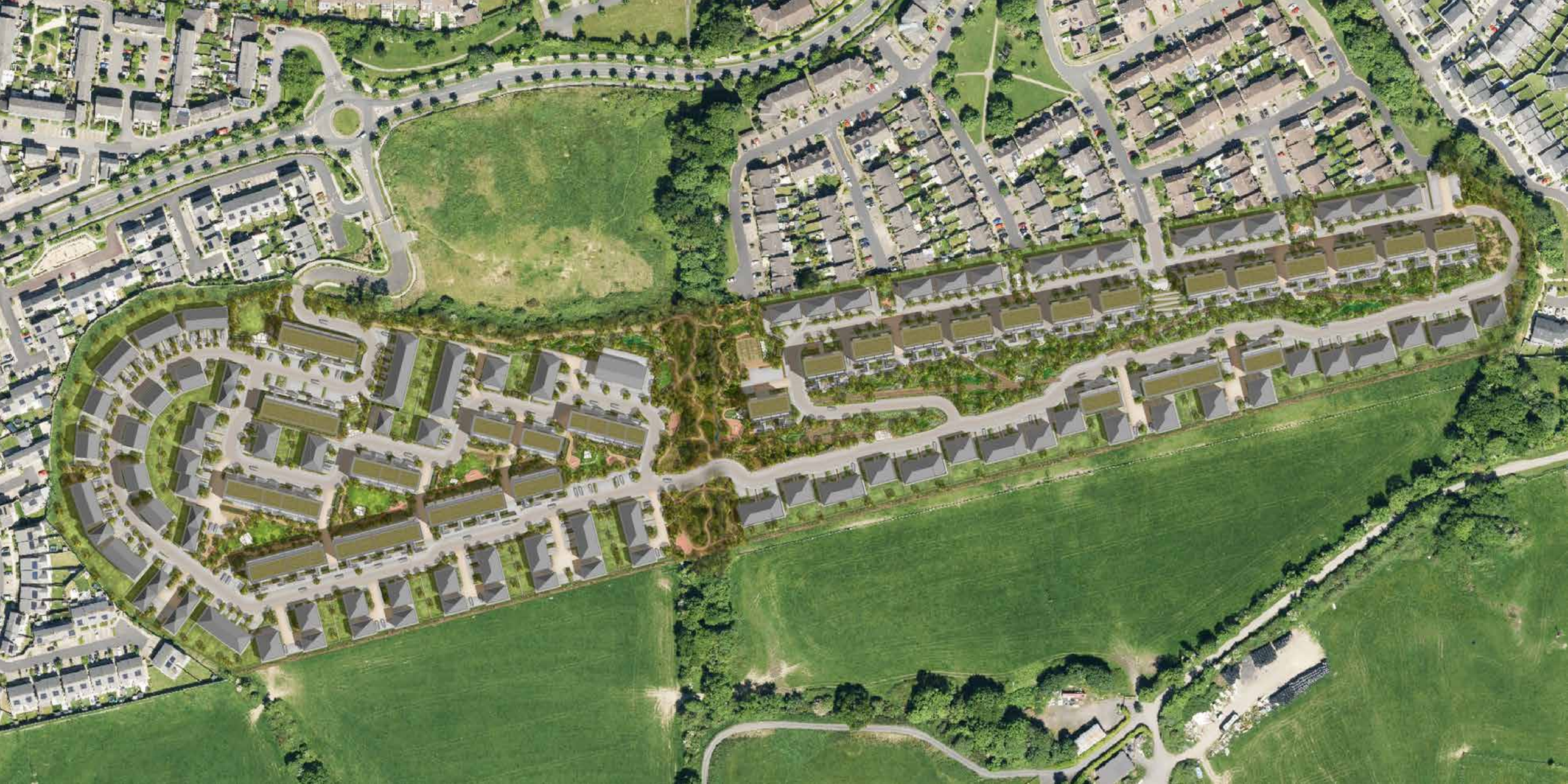
Where there is an opportunity to provide vegetative cover, native and local plant species should be employed including typical plants such as oak (the greatest value for most wildlife), hawthorn, blackthorn, elder, gorse, bramble, in addition to other species such as dog rose with an encouragement of species such as Clematis and other species attractive to moths.

Speed restriction in the new housing estate of 30 kmph past the mature trees
No vehicles shall travel in excess of 30 kmph over the new road through the trees to ensure that any wildlife moving here are not killed.

Culvert under the new road to provide mammal access
Any drainage system under the road shall provide a diameter of 30 cm to allow badgers to pass under the road to avoid traffic.

*For funther information, refer to: Wildlife Surveys Ireland Ltd (2024). A bat and badger assessment of Stocking Wood Grove, Stocking Avenue, Ballycullen, Knocklyon Co. Dublin. Prepared for Lagan Homes. Authors: Donna Mullen, Brian Keeley, Ferdia Keeley. Date: 13/11/2024.

4.0 LANDSCAPE CONCEPT DESIGN



4.1 Landscape Masterplan

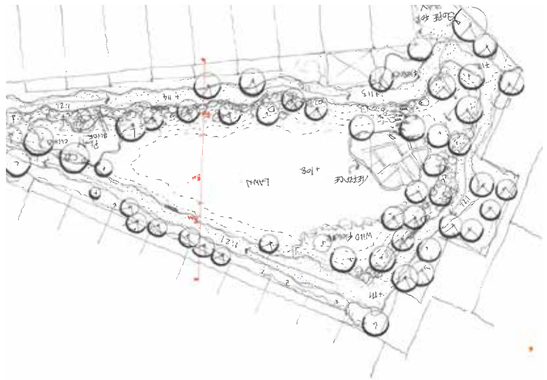
Landscape design proposals for Ballycullen are driven by ecological influences in response to the sites context and relationship with surrounding character. Experienced sequentially as routes of discovery and exploration which weave themselves across the lands revealing a sensorium of spatial typologies.

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.



Concept Design Sketch

LEGEND

1. Woodland Corridor
2. Muga
3. Linear Park
4. Wetland Walk
5. Habitat Gardens
6. Homezone
7. Obstacle Course
8. Natural Habitat & Pocket Park
9. Play
10. Private Gardens
11. Future Potential Link
12. Development Access
13. Existing trees to be retained

4.2 Woodland Corridor

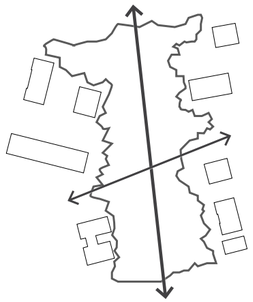
The woodland corridor exists as a beautiful site feature. Formally utilised for access between fields, it provides more use nowadays as a habitat and wildlife corridor. The small stream and earth paths lend a rural feel to the feature. It provides protection from the elements and a very unique walking experience which can be harnessed and sensitively utilised for people, plants and animals.

It is proposed to integrate a self binding gravel path on a web cell base using a non-dig approach to areas around tree roots. This will not compete with the existing character and ensure healthy tree growth for the future.

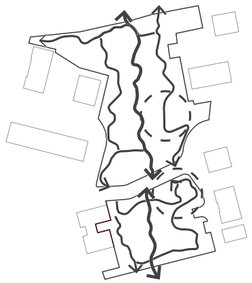
The corridor will be augmented with further tree planting to protect the existing ones and also utilise a woodland understory planting mix. The route will be planned with seating, sculpture and opportunities for exercise.

Intersecting Plants

Intersecting Plants



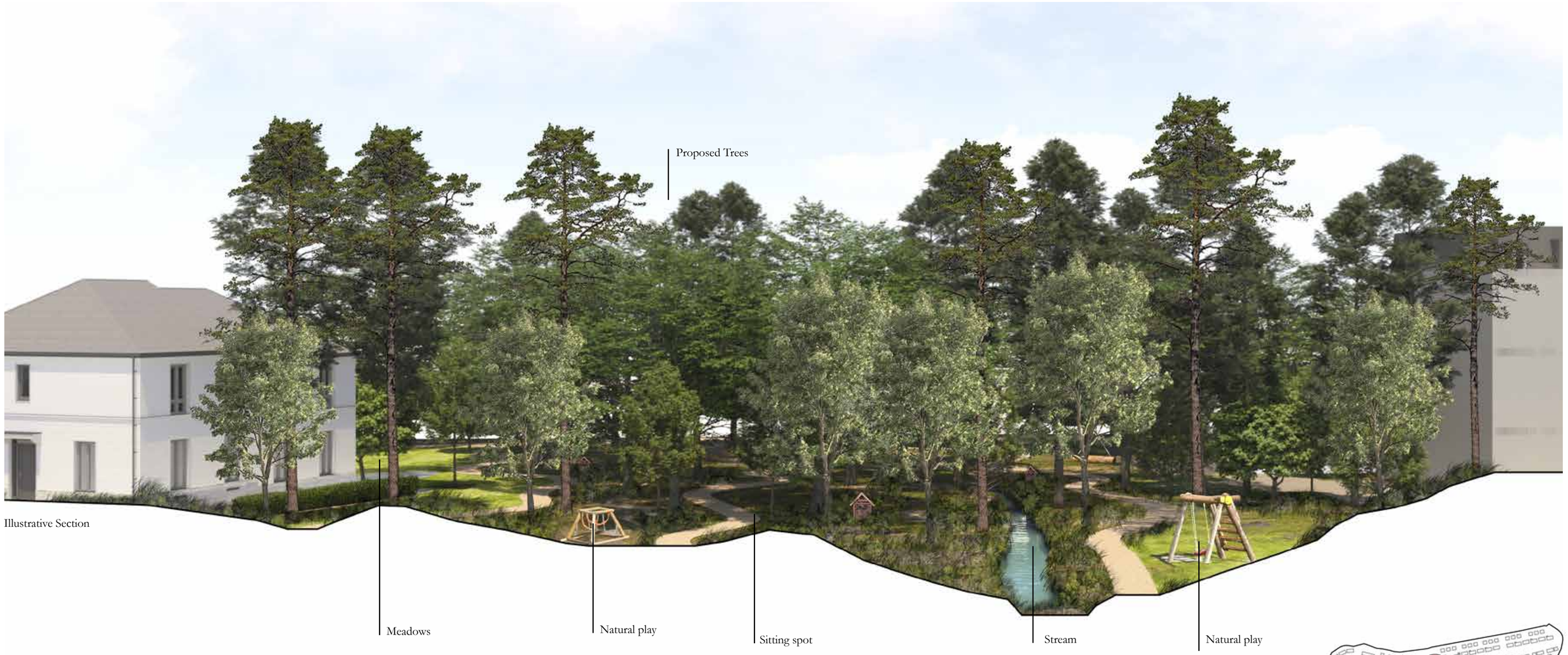
Linking Views + Context



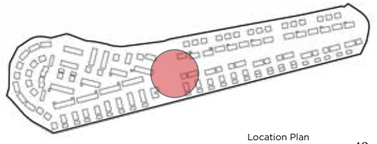
Creating a focal point and character

Activating Space

4.2 Woodland Gardens



Illustrative Section



Location Plan

4.3 Linear Park

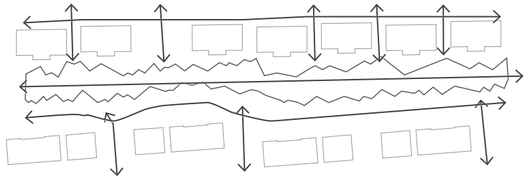
Illustrative Plan

The linear park serves as an amenity space for residents whilst at the same time acting to serve surface water drainage requirements through the use and adaption of rain gardens and swales. The is a significant level change from the street to the park which creates a dramatic 'canyon' like effect.

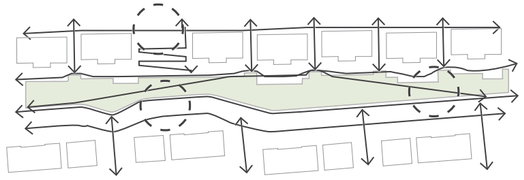
This will add to the drama of the landscape experience by utilising the level change for slides, climbing walls and plants to grow along softening its appearance. It offers a very unique experience in respect of any current development known of an is ambitious in its desire to serve so many needs and respond to current policy.

LEGEND

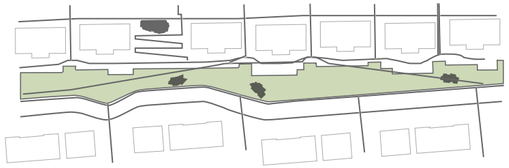
1. Feature Stone Wall
2. Access Route (stepped)
3. Access Route (ramped)
4. Natural Play
5. Rain Gardens
6. Terrace
7. Access Route (Part M)
8. Bike Shelter
9. PAS



Linking Views + Context

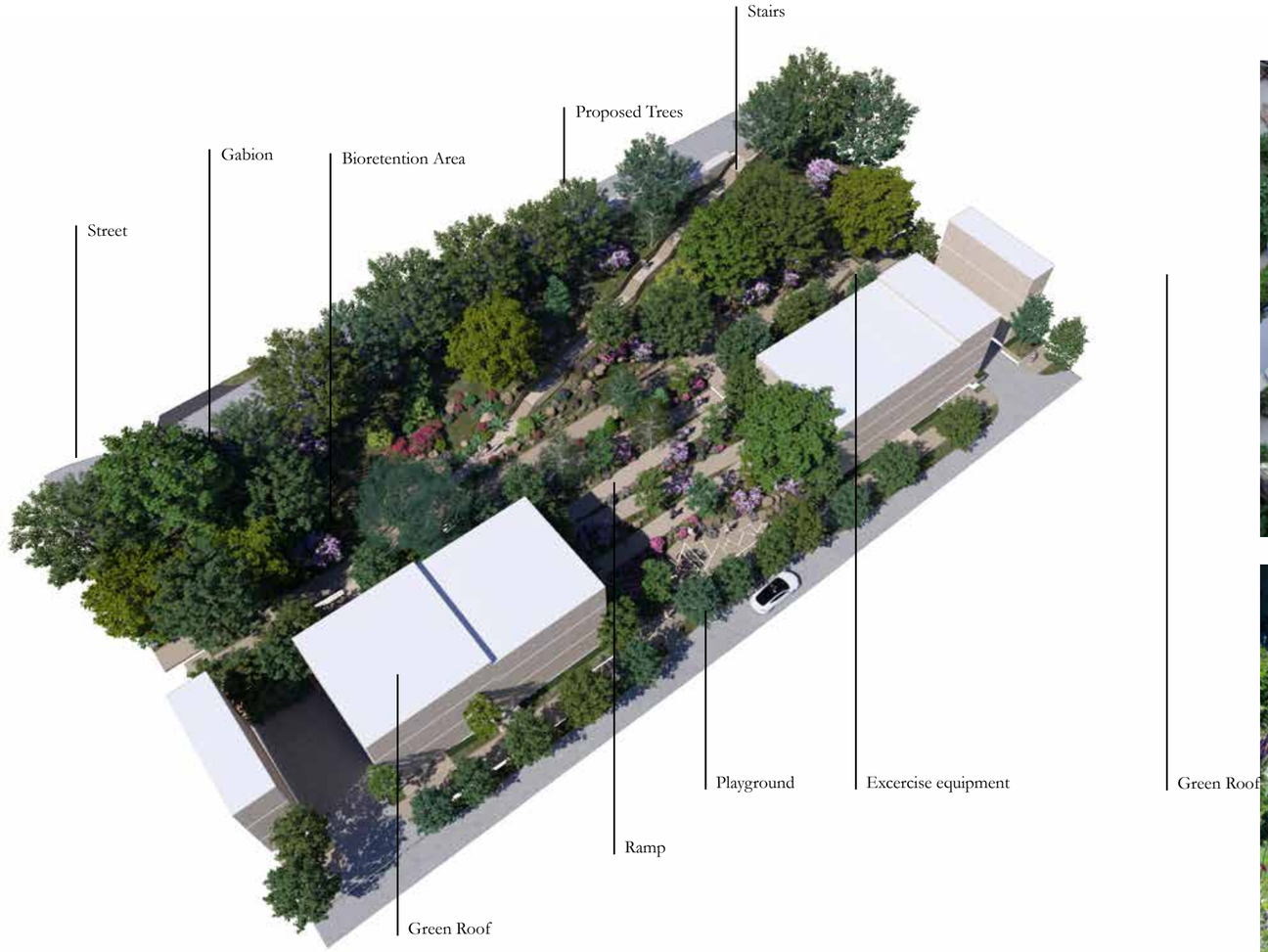


Creating a focal point and character



Activating Space

4.3 Linear Park



4.3 Linear Park

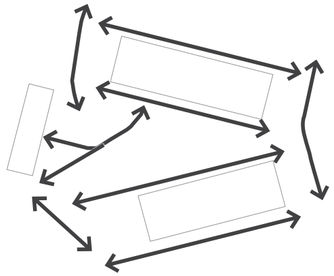
4.4 Woodland Gardens

Nestled on the east west corridor of the site the woodland gardens respond to a depression in the landscape to capture rain water for attentuation at ground level. This setting creates somewhat of a secret garden.

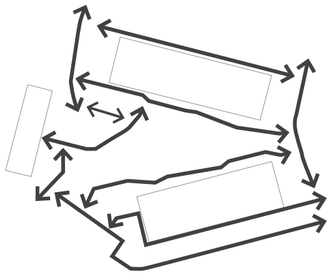
Dropping away as an open lawn crafted out of wildflower meadows to provide a kickabout space. The units themselves take advantage of this grade change to overlook the space. The space replicates the design language throughout the site, using boulders to retain soil and provide habitat.

Play is both formal and natural, with the grade changes used for children to roll on, rocks to explore and gravel paths to run along. an exercise area has been provided for along with a terrace for gatherings.

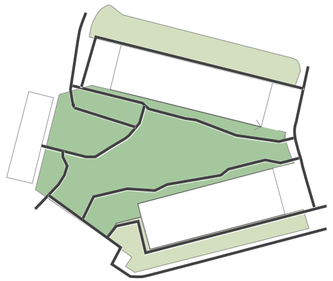
Intersecting Plants



Linking Views + Context



Creating a focal point and character



Activating Space

4.4 Woodland Gardens: Dry

4.4 Woodland Gardens: Wet

4.4 Woodland Gardens

Character Imagery

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

Block Paving

To Driveways / Street

Block Paving

To Driveways / Street

Fractured Paving

To Public Spaces

Steping Stones

To Public Spaces

Block Paving

To Driveways / Street

Permeable Paving

Car Parking

Fractured Paving

To Public Spaces

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

Appendix 1 - Soft Landscape Outline Specification

1. Specifications for supply.

1.0 Schedule of supply:

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

1.1 Programme of Works

The planting works shall be executed at the earliest opportunity.

1.2 Nursery stock:

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

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

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

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

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

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

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

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

2.0 Tree specifications:

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

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

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

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

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

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

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

All standards shall be clearly labeled.

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

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

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

2.10 Shrubs

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

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

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

Appendix 1 - Soft Landscape Outline Specification

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

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

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

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

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

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

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

3.0 Specifications for site operations:

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

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

4.0 Specifications for Planting and Plant Materials

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix 1 - Soft Landscape Outline Specification

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

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

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

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

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

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

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

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

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

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

4.15 Spraying:

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

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

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

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

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

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

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

Appendix 2 - Hard Landscape Outline Specification

PAVING & KERBS

FOOTPATHS

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

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

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

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

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

MODULAR PAVING

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

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

Laying Generally:

1. Laying Specification

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

2. Drainage Channels

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

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

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

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

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

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

Appendix 3 - Programme For Implementation, Maintenance + Defects Period

5.0 Maintenance:

5.1 Period:

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

Appendix 3 - Programme For Implementation, Maintenance + Defects Period

5.6 Grass Cutting

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

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

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

Other grass areas of which are less high profile are to be cut 16 times a year. These will include the grassed areas around the woodland areas 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