

Residential Development at Former Teagasc Lands, Kinsealy, County Dublin

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LANDSCAPE DESIGN RATIONALE

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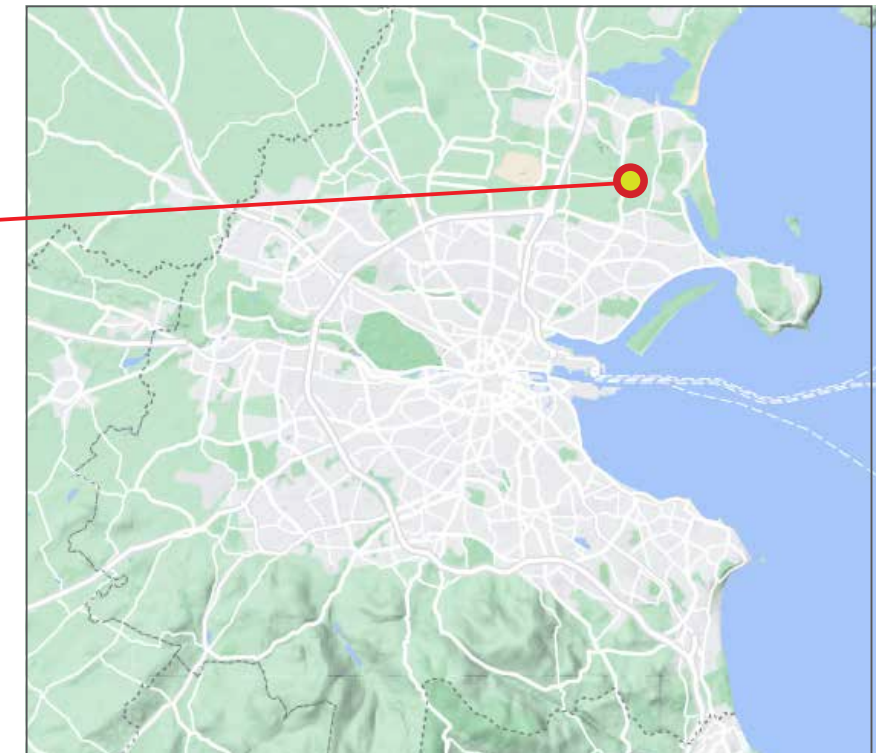
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1. SITE CONTEXT

Site Location



Gross Site Area c.8.2 ha



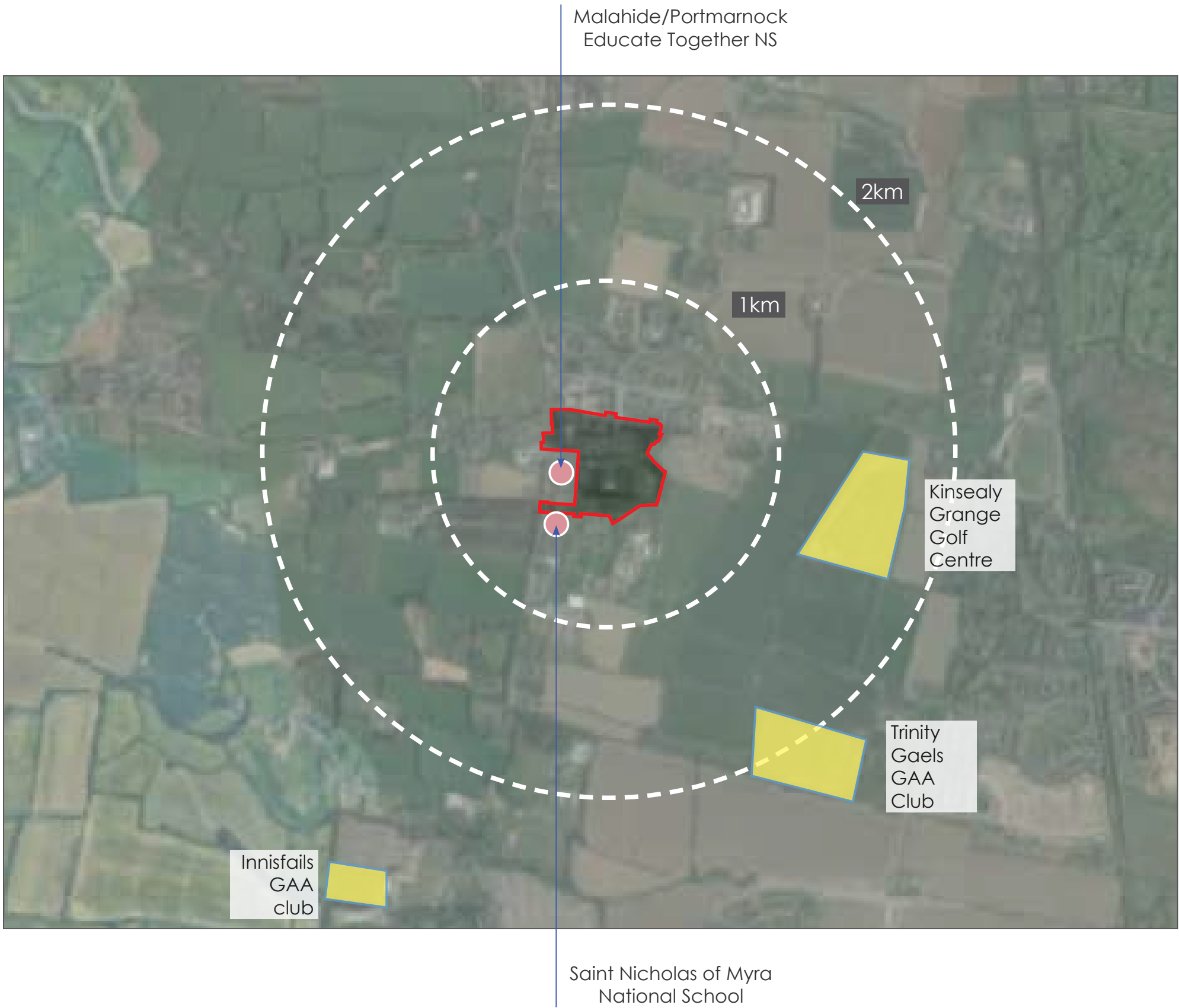
Existing School Site

The proposed development consists of the demolition of existing buildings and structures on a site associated with the former Teagasc Research Centre, and the construction of 193 no. residential dwellings comprising 153 no. two storey houses (consisting of 30 no. two-bed; and 123 no. three-bed terraced houses) and 40 no. duplex units (comprising 20 no. two-bed ground floor apartments with 20 no. three-bed duplexes above) arranged in three storey blocks.

The proposed development includes a single storey childcare facility (approx. 283 sqm gross floor area) with the capacity for approximately 50 children.



Wider Context



- Subject Lands
- Schools
- Recreation & Sports Facilities



- Subject Lands
- Existing Trees



Existing Entrance to old Teagasc research centre



Boundary with Existing Trees along Road



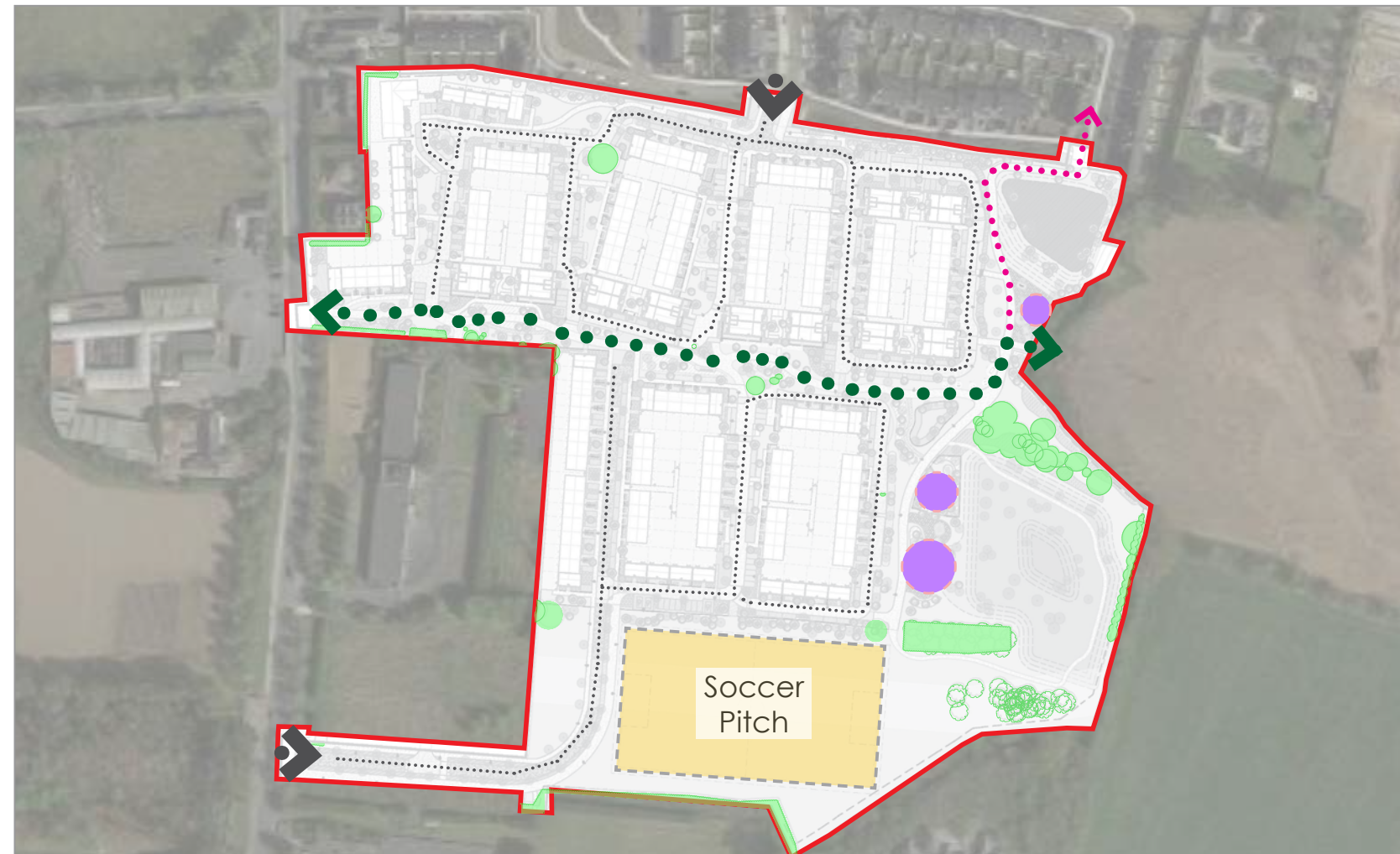
Boundary with adjoining pathways that will link in with proposed greenway

2. CONCEPT DEVELOPMENT



Existing Trees

Incorporate existing mature vegetation into new development proposals where practical and feasible.



The following are Parks, Open Space and Recreation Objectives of the LAP:



Green Route

Objective 7.1

The Teagasc and Kinsale House Development Areas shall provide a green route/ corridor accommodating cycle and footpath facilities through both sites, connecting to the Malahide Road. The route shall provide for high quality pedestrian and cycle facilities, shall be tree lined, appropriately lit and afforded high levels of passive surveillance.



Soccer Pitch

Objective 7.2

Provide for active recreational facilities in the form of a full size all-weather soccer pitch and associated car parking on lands adjacent to the proposed National School in the Teagasc Development Area (Area 3). The soccer pitch shall be 600 sq.m in area (60 metres x 100 metres minimum dimensions). - Please see planning consultants response.



Junior Playground

Objective 7.5

Provide for a playground within the Teagasc Development Area (c. 400 sq.m), suitably designed by a specialist playground provider which shall be accessible via the proposed green route serving the Teagasc Development Area and via the proposed car park serving the soccer pitch. The play area shall have a suitably designed boundary treatment with passive supervision provided by adjoining residential units.



Cycle / Pedestrian Link

Facilitate pedestrian and cycle access from the adjoining lands to the north and to the east connecting to the proposed green route.



Vehicle Access Points

Minimise land take from the internal road layout by including two access points to the north and south of the Development Area and preventing vehicular movements through the site.



Proposed Road Layout

Vehicular movements shall not impact on the proposed green route.

What is Biophilic Design?



Our proposed design embraces the principles of Biophilic Landscape Design, which recognizes the vital role that the built environment plays in human health, well-being, and overall quality of life. By integrating natural elements into the landscape, we aim to foster a deep and meaningful connection between people and nature. Research suggests that biophilic design can reduce stress, enhance focus, and contribute to emotional, intellectual, and spiritual well-being—benefits rooted in our innate preference for organic and biomorphic forms.

At the heart of this development is the goal of creating a living environment that prioritizes human well-being while enhancing the natural character of Kinsealy, establishing it as a high-quality place to reside.

Objectives:

- Enhancing Existing Vegetation – Strengthening and enriching the existing landscape with planting that is well-suited to both the local ecosystem and the newly proposed environment.
- Creating New Landscape Features – Introducing thoughtful landscape elements that complement and elevate the overall setting.
- Harmonizing Development with Nature – Designing a residential environment that integrates seamlessly with its surroundings, preserving and enhancing the unique character of the area.



3. DESIGN PROPOSAL

Masterplan



The proposed development incorporates approximately 1.65 ha of dedicated public open space comprising a series of open spaces and a central east-west green route linear park and parklands along the east boundary. In addition, 2.2 ha of green belt lands are included to the south and south-east of the residential development area to accommodate a playing pitch.

Vehicular access to the site will be via a new vehicular entrance at Gandon Lane to the north (providing access to the northern part of the site) and a new vehicular access from the Malahide Road, located to the south of the existing Malahide Portmarnock Educate Together National School (providing access to the southern part of the site).

The proposed development includes 229 no. car parking spaces, and 345 no. bicycle parking spaces.

The proposed development facilitates pedestrian and cycle links to existing and proposed adjoining developments, including the provision of an east-west greenway connecting residential lands to the east of the site at Newpark to the Malahide Road and the provision of a north-south link connecting Beechwood in the north to the green belt lands in the south, with provision for a future link to the St Nicholas of Myra national school.

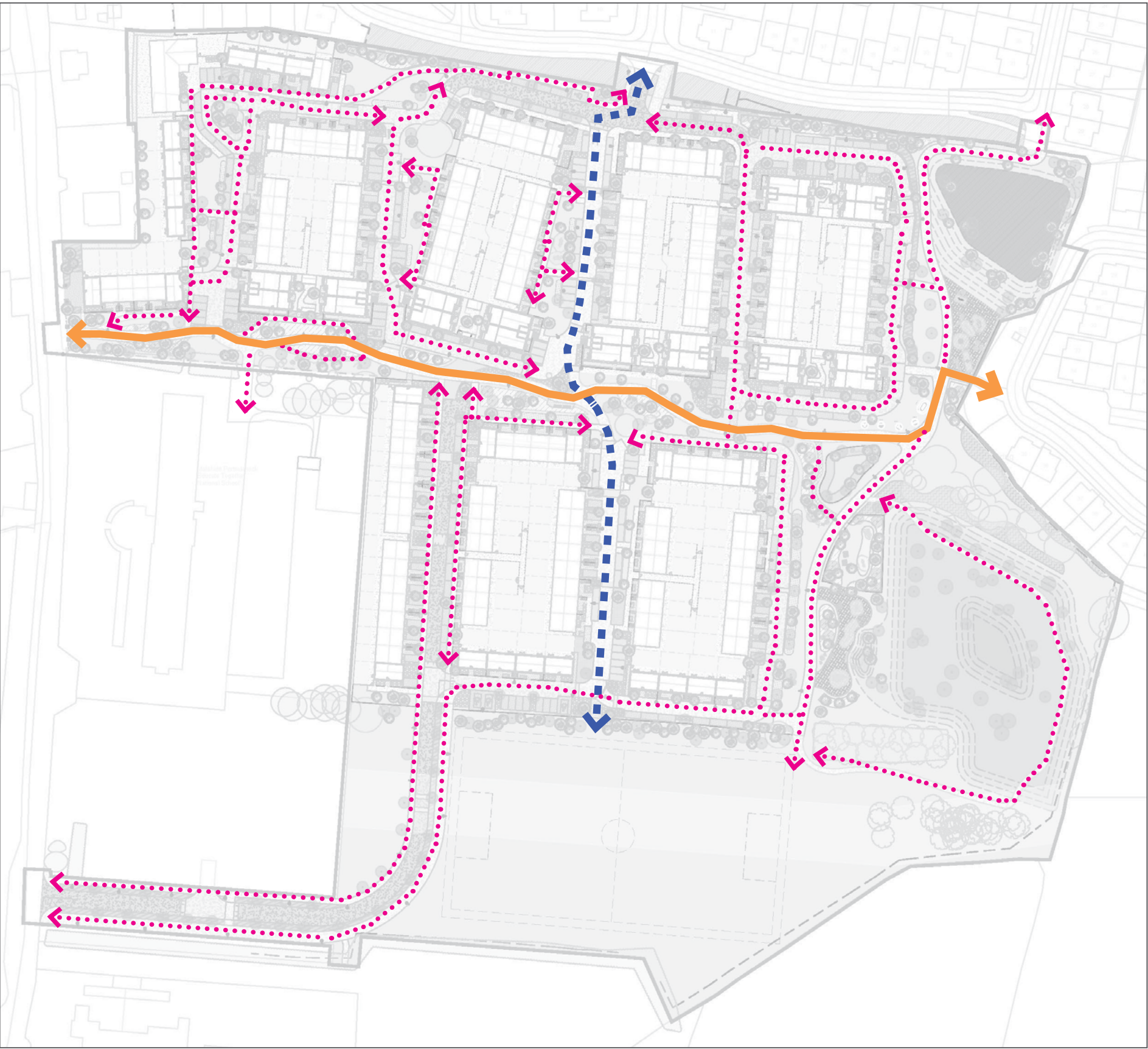
The proposed development has an overall site area of 8.2 ha, and includes bin storage, internal roads, boundary treatments, public lighting, 3 no. ESB unit substations, water supply, surface water drainage and foul water drainage infrastructure, and all associated and ancillary site and development works.

The proposed landscape seeks to provide ;

- Adequate Public Open Space and Green Infrastructure Network;
- Interactive Public Space Amenities;
- Communal open space for Residents;
- High quality material choices and finishes.

-  Net Site Area
4.81ha
-  Gross Development Area
8.2ha
-  RV Zoned POS - Greenway, Linear park, public realm, congregation areas, informal play spaces and recreation
0.80ha (16.6% of net dev. area)
-  GB Zoned POS - Greenway, play spaces, recreation and SuDS features.
0.85ha
- Total Public Open Space: 1.6ha
-  Communal Open Space
357m² (requirement: 240m²)
-  Greenbelt Lands Zoned Residual Open Space 2.25ha
- Total Open Space: 3.9ha
(49% of landholding)





- Primary Rote
- Secondary Route
- Greenway

Connectivity & Universal Access

A key objective of the scheme to reduce car dependency by providing high quality pedestrian and cycle networks. The provision of green infrastructure integrates the new development with the existing greenway.

The increased permeability of the development it's context is important to connect residents to surrounding opportunities.

In accordance with the Fingal Development Plan 2023–2029, Chapter 14.2.1 on Universal Access, the landscape and public realm, including public spaces, shared surfaces, car parking, and footpaths are designed to meet the mobility and convenience needs of all individuals. Particular attention is given to addressing the needs of vulnerable groups, such as the elderly and persons with disabilities, ensuring these spaces are fully accessible and inclusive.

Connectivity - Surface Material



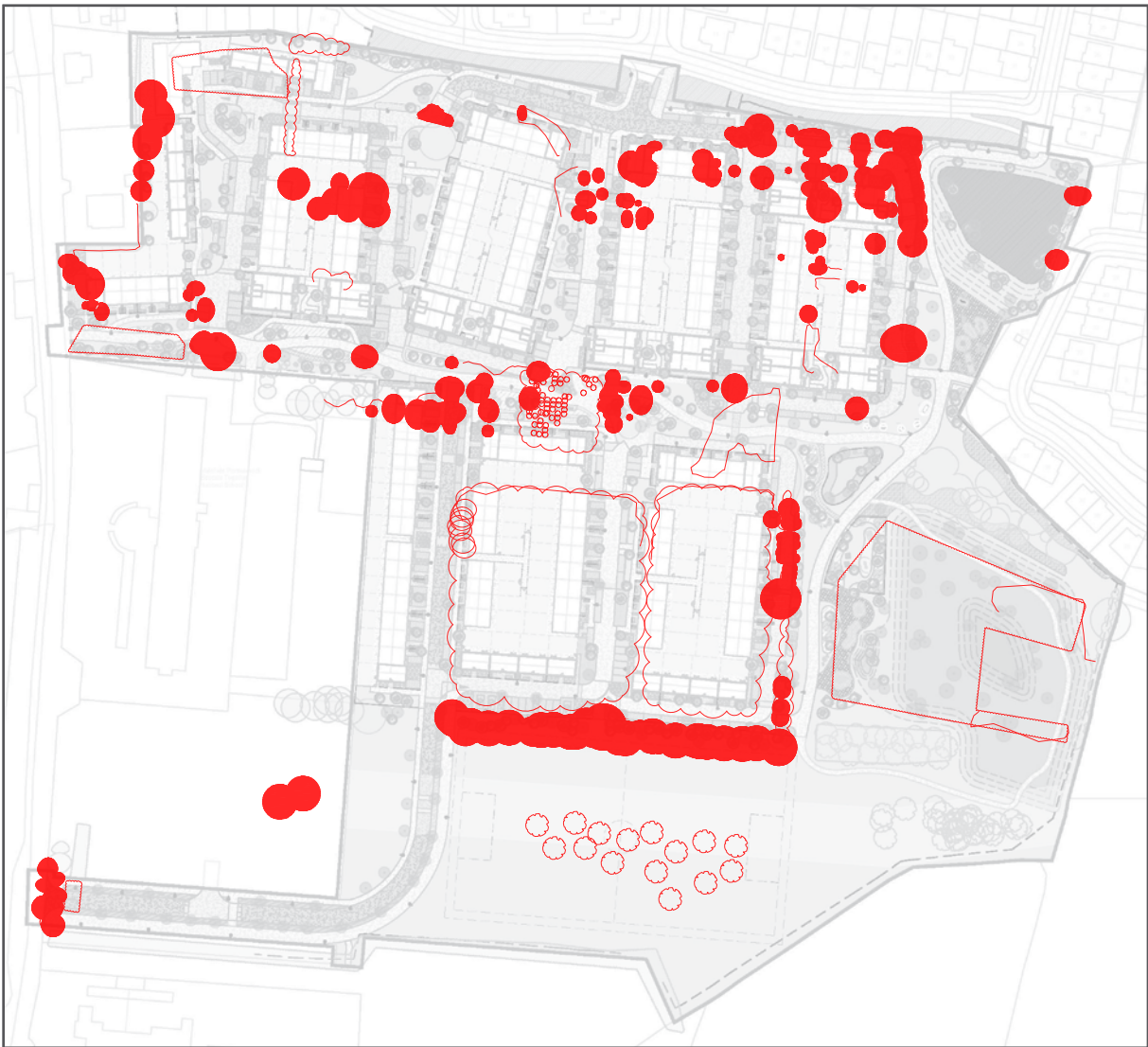
- Vehicle Access
- Main Roadway
Tarmac
- Homezone Streetscape
Red-chipped Tarmac
- Homezone Streetscape / Paths-
Permeable Asphalt
- Paved Streetscape Delineation
- Parking Bays
Permeable paving / Grasscrete



EXISTING TREES

200no. (within redline)

Within the overall site area, the trees have been tagged with the reference numbers 1774-1964 & 1982-1990 with three tree lines, three woodland blocks, four tree groups, two shrub borders and ten hedges numbered numerically.



REMOVAL TREES

162no.

A total of 162 trees are slated for removal to accommodate the proposed development and as part of active management.



RETAINED TREES

38no. (within redline)

A total of 38 trees are set to be preserved on-site.



PROPOSED TREES

612no.

The site proposes a total of 612 trees, significantly surpassing the current tree count on-site.

Street Trees / Front Garden 14-16cm

- Tilia Tomentosa 'Brabant'
- Pyrus calleryana 'Chanticleer'
- Carpinus betulus 'Fastigiata'
- Sorbus aucuparia
- Tilia cordata 'Greenspire'

Open Space 14-16cm / 20-25cm

- Betula pendula
- Pinus sylvestris
- Alnus glutinosa
- Quercus robur 'Koster'
- Quercus robur

- Aesculus hippocastanum
- Fagus sylvatica
- Prunus avium

Front Garden 12-14cm

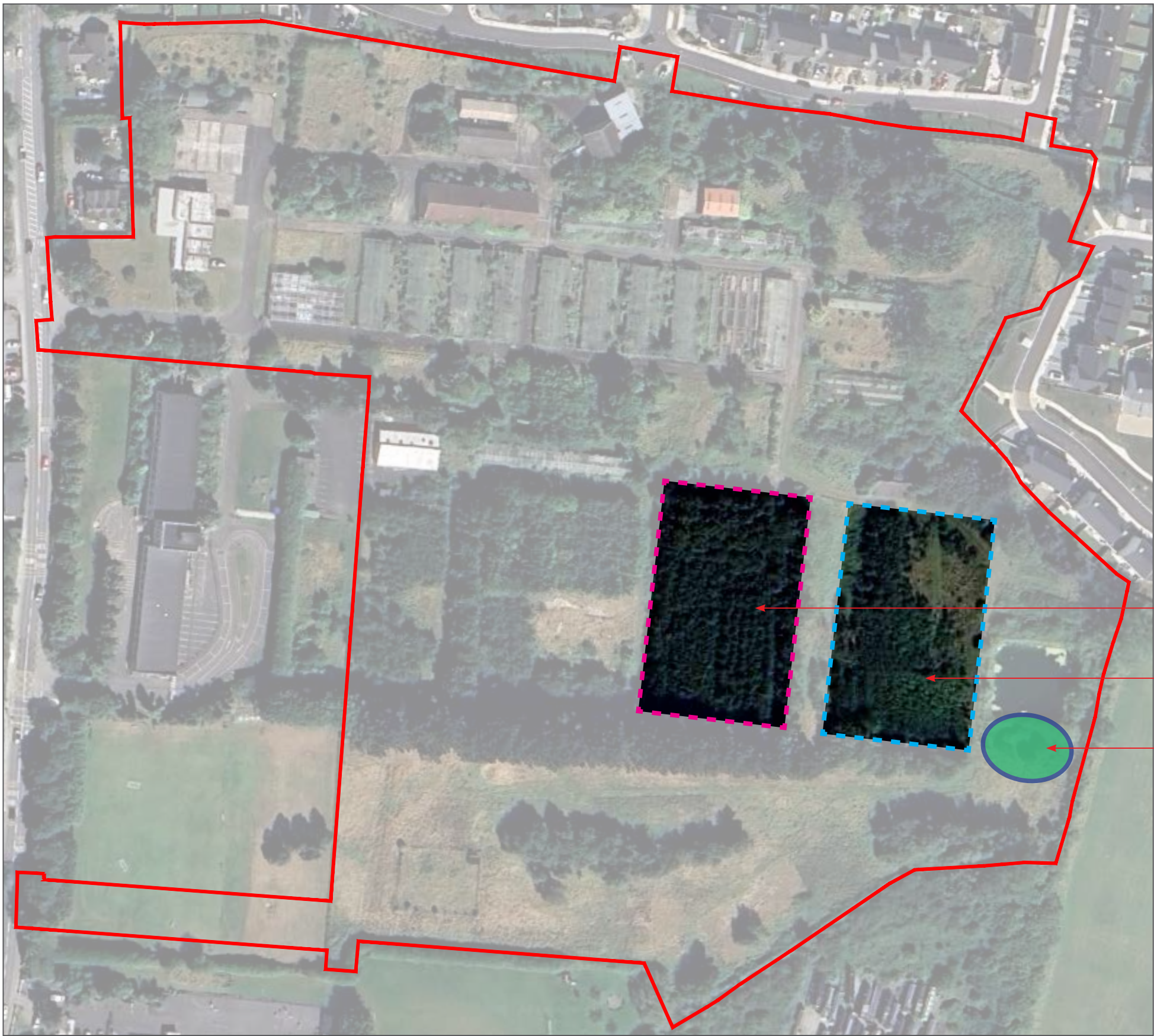
- Amelanchier lamarckii

Multistemmed Trees

4 stem min. 250-400cm

- Prunus avium 'Plena'
- Malus 'John Downie'^
- Betula utilis var. jacquemontii

Existing Trees to be Replanted



Additional existing trees, including pioneer species, have been selected for retention. These trees will be transplanted onto the existing mounding on the site's eastern boundary.

This approach serves multiple benefits: preserving mature trees and their established canopy significantly enhances the site's biodiversity by supporting local flora and fauna. Additionally, retaining these trees minimizes the ecological impact of the site development by maintaining natural vegetation and stabilizing the landscape.

- Subject Lands
- Trees to be selected for nursery ≈3600m²
- Pioneer Trees ≈3600m²
- Mounding: location for trees to be planted

Proposed Landscape Design - Methodology

We have provided a comprehensive landscape design combining all elements, roads, and green spaces into one total. A combination of all elements, amenity, SuDS, and connectivity to create a unique environment.

These areas combine to create a robust Green infrastructure which offers betterment in terms of biodiversity enhancement & public amenity.

The open spaces will provide for habitat to enhance site wide biodiversity.

Drainage - Natural SuDS Measures

Proposals have been developed to inform the strategic drainage network across the development. The SuDS provision comprises of a large detention basins, bioretention raingardens, tree pits, permeable paving, and swale borders with supplementary trees.





Design Character







This development area’s key feature is the green route that runs on an east west axis through the site. The route shall contain a cycle route and a natural setting, setting the tone for a theme applied throughout the development.

The green route will act as a green buffer between residential units and frame the active open spaces that along the centre of the site.





DESIGN REQUIREMENTS LEGEND

-  Passive surveillance of the green route.
Objective 7.9 Ensure that public and or communal open space areas are designed to be overlooked to ensure the potential for antisocial behaviour is minimised through passive surveillance.
-  Close the existing entrance to Malahide Road to vehicular traffic and incorporate into the green link.
-  Facilitate pedestrian and cycle access from the adjoining lands to the north and to the east connecting to the proposed green route.
-  Playground not less than 400 sq.m
-  Incorporate existing mature vegetation into new development proposals where practical and feasible. walks through landscaped areas and mature trees
-  Play Space to be 25m. distance from housing units



- Subject Lands
- Calisthenics Equipment
- Proposed Play Space
- Requirements: 193units x4 = 772m²
- Proposed structed play 1160m²

Parks, Open Space and Recreation

Improve the range of amenities available to children by providing a playground to serve the broader area within Development Area 3 (Teagasc).



Junior Play - Over 6 years of age



Play Equipment will be constructed of low maintenance and weather resistance materials.

- Wooden Log
- Stepping logs
- Balance Beams
- Mound & Slide
- Bird's nest
- Rope nest swing

Natural Play Equipment



We are proposing natural play areas with a varied and interesting physical environment. A bespoke designed space that has gentle grass mounding, thus providing a change in levels. This provides a varied and interesting physical play environment.

In addition, natural playgrounds stimulate a child's imagination and creativity more than a traditional playground. They provide a more sustainable use of materials and blend in with natural environment and existing topography.

Junior Play - Under 5 years of age



All surfaces manufactured and installed to EN 1176 and all play equipment manufactured and installed to EN1177

Calisthenics Equipment



Calisthenics Equipment

- incline press
- dip bench
- inshape hyperextension
- decline bench
- in shape step up
- in shape situp



Stone Wall Pier



Gate Access to Gardens (1.8m high)



Rendered Block Wall
2m high



Residential Boundary Fence
Concrete Post & Panel Fence 1.8m high

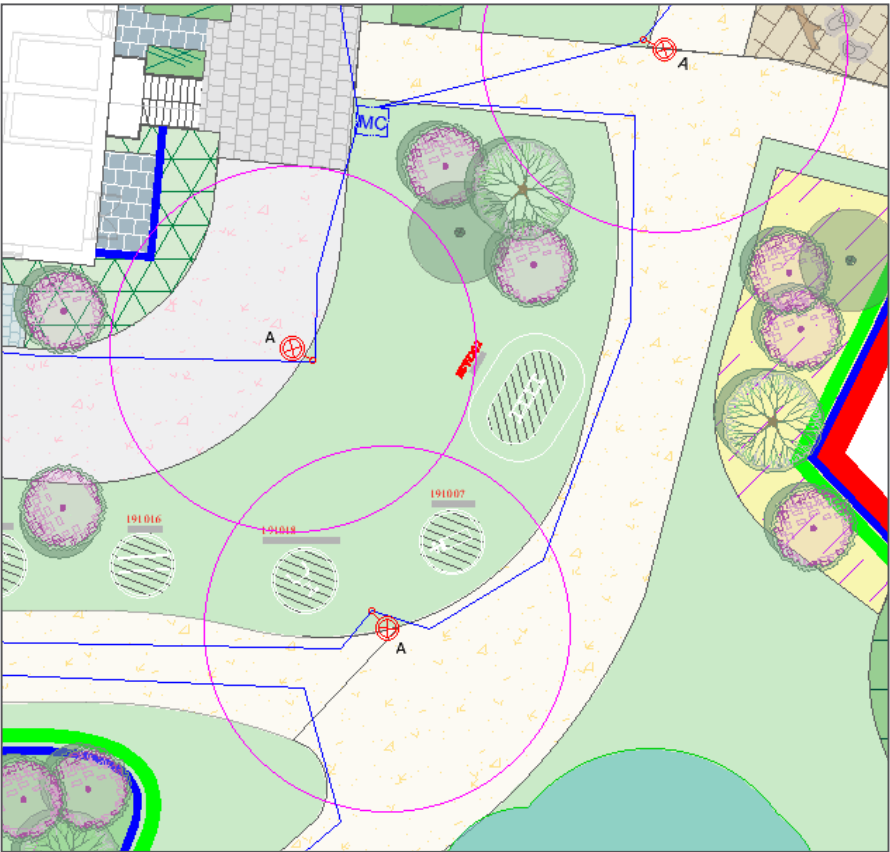


Residential Boundary Fence
Timber Panel & Concrete Post Fence
w/ gravel board 1.8m high



Parkland Railing 1.2m high





Lighting Columns at a minimum separation distance of 7m from proposed tree planning.



LED Luminaire Locations
6m high column

*indication of location only



Proposed Trees



Betula jacquemontii
multi stem



Malus domestica



Pinus sylvestris



Proposed Trees Planting Location



Amelanchier lamerckii



Prunus domestica



Sorbus aucuparia



Quercus robur



Prunus avium



Fagus sylvatica

Proposed Shrub Planting



Persicaria affine



Bergenia cordifolia



Libertia grandiflora



Aucuba japonica



Prunus 'Otto luyken'



Lavandula angustifolia



Hypericum hidcote



Astelia 'Silver Spear'



Agapanthus 'Blue Giant'



Kniphofia 'Royal standard'



Nerine bowdenii



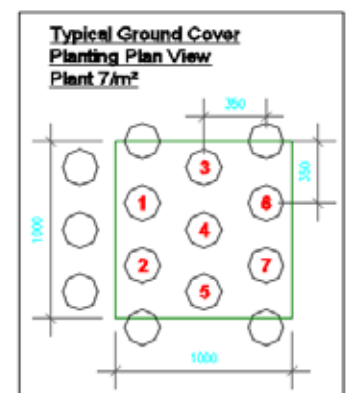
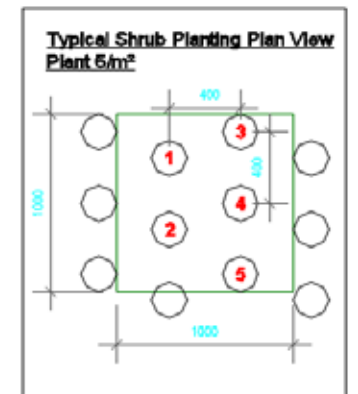
Sedum spectabile



Miscanthus sinensis



Proposed Shrub Planting Location



Proposed Buffer Defensive Planting



Defensive Planting

Defensive space is provided between private patios, apartments and public open space across the scheme. These are planted with low shrub planting, large shrubs and small trees. Similarly the same treatment is used within the communal courtyard between private patios and communal open space.



Proposed Hedgerow



Proposed Native hedgerow



Proposed Hedgerow to define boundaries and create a village like look to the place.



Prunus lusitanica



Proposed Planting - Wildflower



Yellow Rattle
Rhinanthus minor



Ribwort plantain
Plantago lanceolata



Red clover
Trifolium pratense



Bird's-foot trefoil
Lotus corniculatus



Meadow buttercup
Ranunculus acris



Lady's-bedstraw
Galium verum



Cowslip
Primula veris



Oxeye daisy
Leucanthemum vulgare



Proposed Wildflower Planting Location



Common knapweed
Centaurea nigra



Common sorrel
Rumex acetosa



Burnet saxifrage
Pimpinella saxifraga



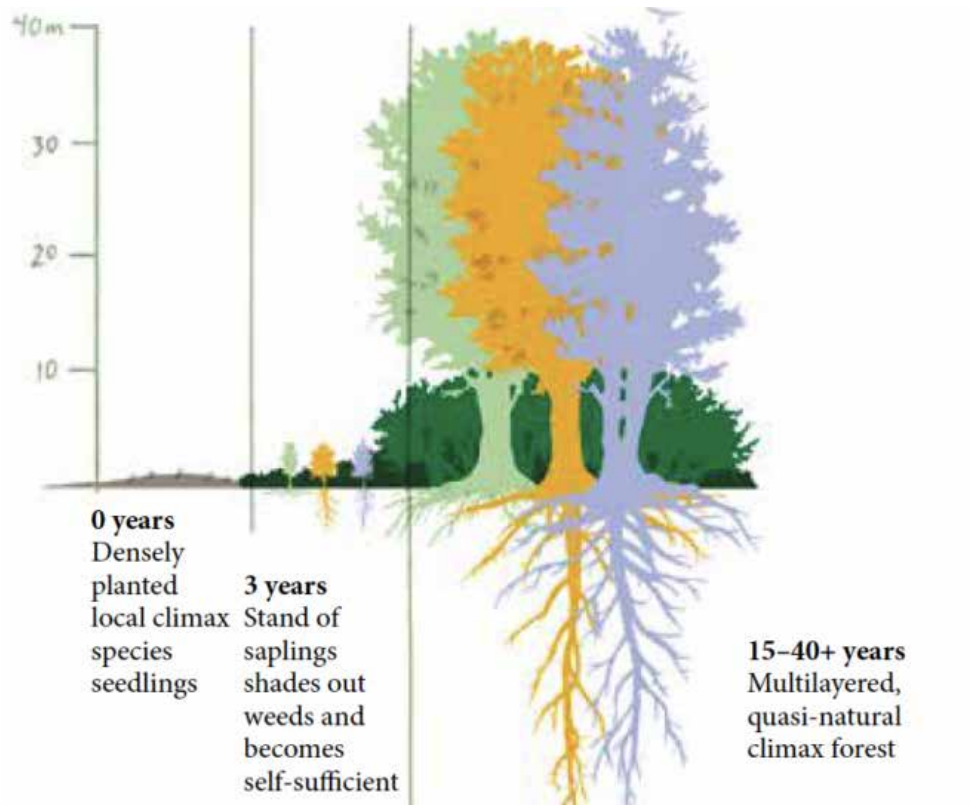
Autumn hawkbit
Leontodon autumnalis



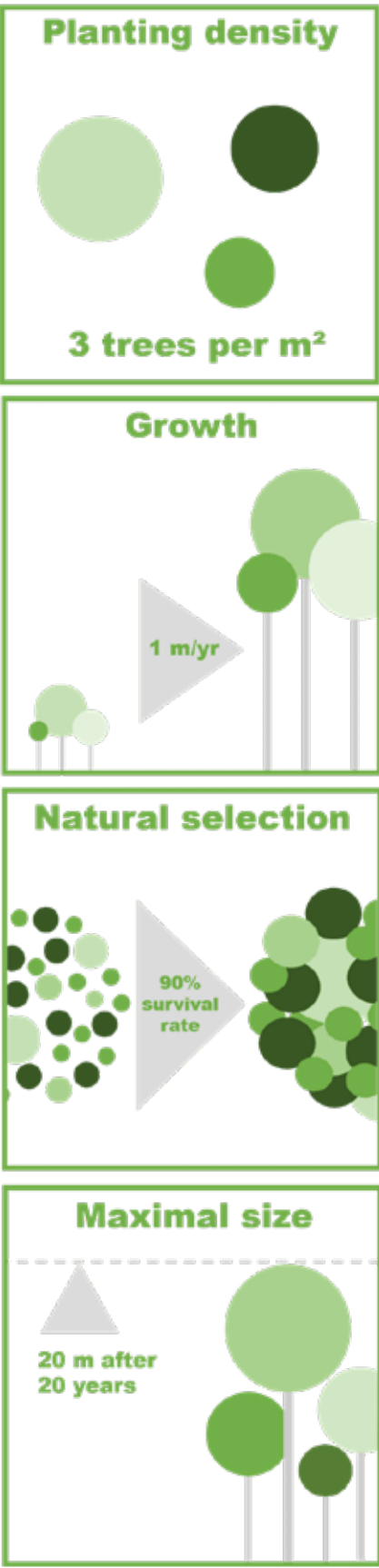
Rough hawkbit
Leontodon hispidus

Note: The Wildflower Meadow will need to be cut once in Autumn (Late August/Early September) with a tractor and mower. Leave the mowings for a few days to allow seed to drop to the ground. Then it should be baled and bales removed.

Proposed Miyawaki Forest Planting

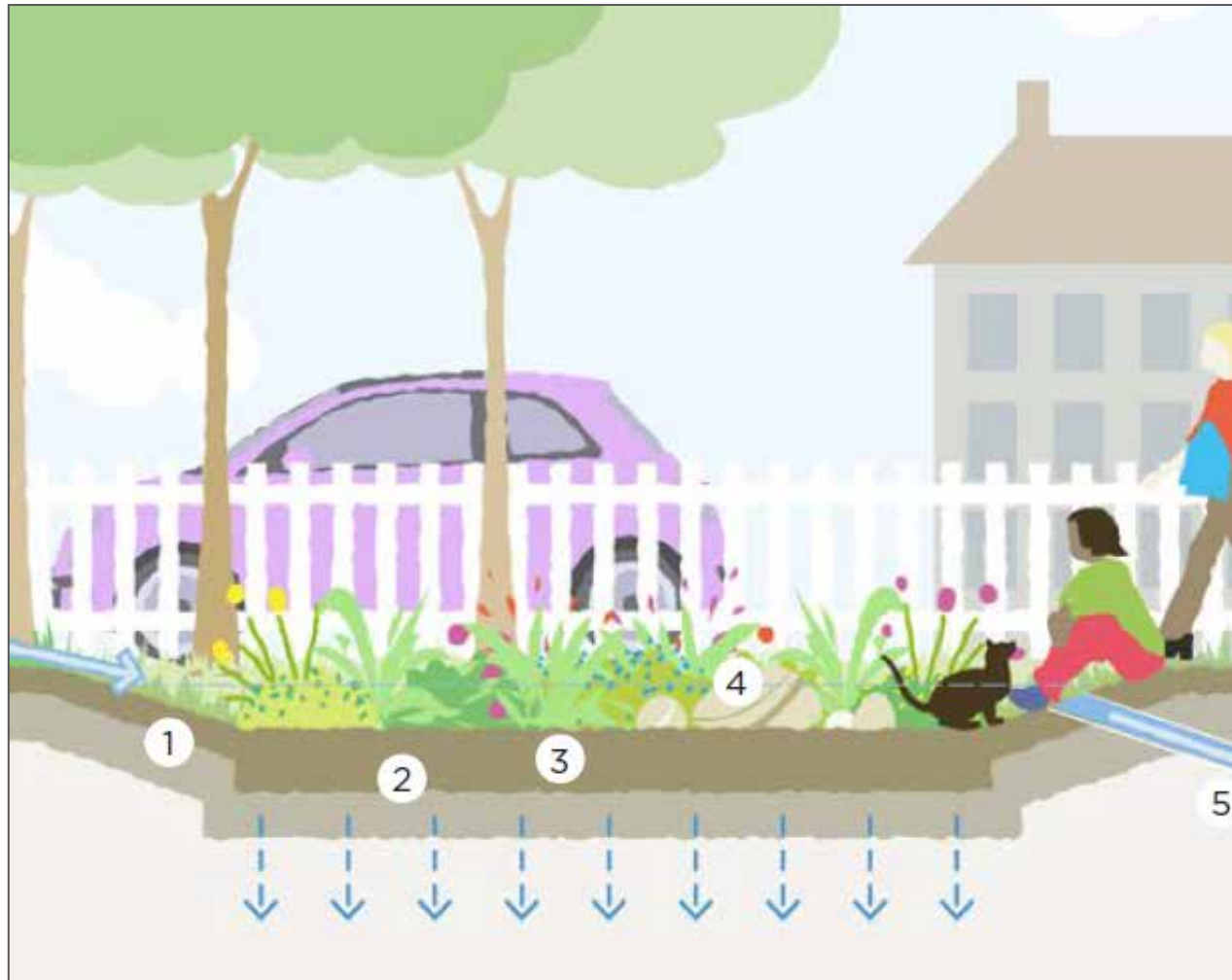


The Miyawaki Mini Forest Method



Miyawaki mini-forest locations

The Miyawaki Method is a reforestation technique that involves planting a diverse mixture of native tree species in a small area, closely packed together to mimic the natural density and biodiversity of a forest. The method aims to accelerate the growth of a dense, native forest in a short period, typically within 20 to 30 years, compared to the decades or centuries required for traditional reforestation techniques. This technique is known for its ability to restore degraded land, improve soil quality, increase biodiversity, and mitigate climate change by sequestering carbon dioxide. It has gained popularity worldwide as an efficient and sustainable approach to ecological restoration and urban greening.



Raingardens are designed to collect and manage reasonably clean water from roofs and low pollution risk drives and pathways. They are generally installed where community or private maintenance is available to upkeep these attractive features.

Key aspects of raingarden design include:

1. gentle side slopes with water collected at the surface
2. a free-draining soil, sometimes with an underdrain to avoid permanent wetness
3. a minimum of 450mm improved topsoil with up to 20% coarse compost
4. garden plants that can tolerate occasional submersion and wet soil – this includes most garden plants other than those particularly adapted to dry conditions
5. an overflow in case of heavy rain or impeded drainage.

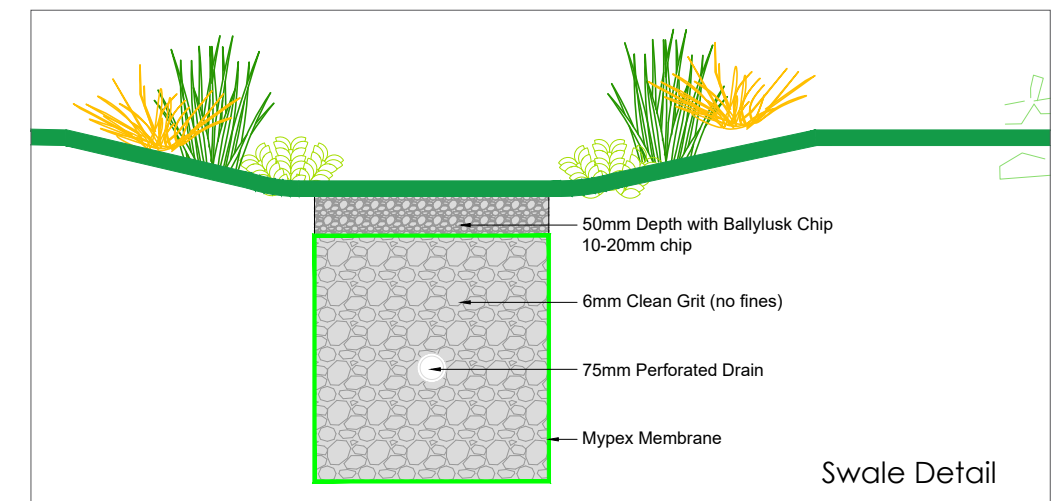
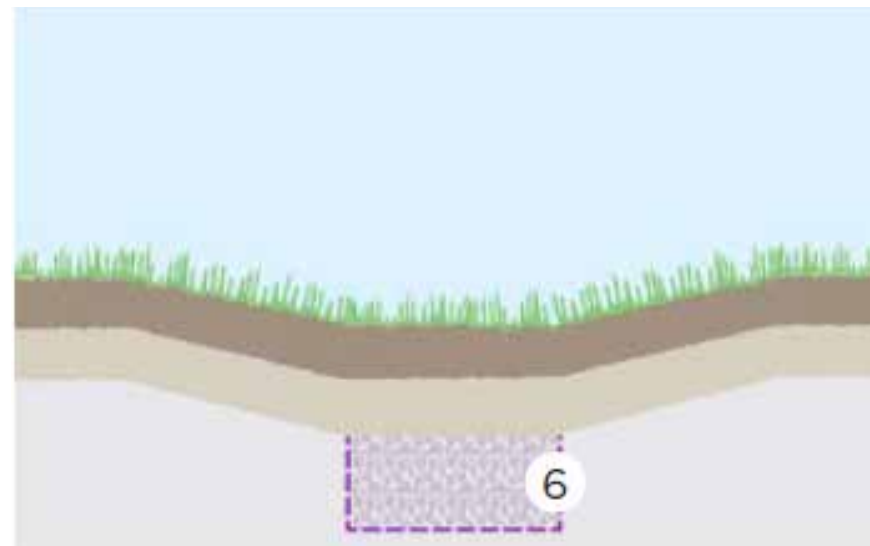
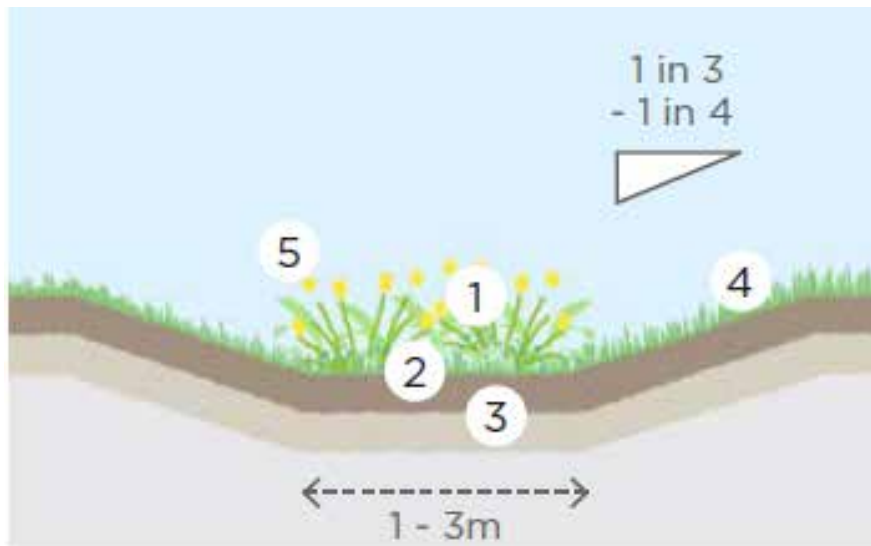


Rain Garden Locations

SuDS - Swales

Swales are shallow, flat bottomed vegetated channels which can collect, treat, convey and store runoff.

1. The basic profile is a 1 in 3 or 1 in 4 side slopes to a flat base falling at no more than 1 in 50 to prevent erosion. Check dams or terraced swales can be used to mitigate risk of erosion where 1 in 50 falls cannot be achieved.
2. Base width less than 1m wide will increase the risk of erosion and ditch forming, conversely, base width wider than 3m a meandering channel can develop.
3. 150mm clean topsoil over subsoil. Ripping or light harrowing will improve establishment of the swale by providing a key for the topsoil, encourage deep rooting and assist infiltration.
4. Where swale vegetation is kept less than 100mm, the shoulders at the top of the swale can be 'scalped' leaving bare soil. The shoulders should therefore be rounded to prevent this happening.
5. Swale can be vegetated with more biodiverse plants to attract pollinators etc.
6. Swale can be under-drained using a filter drain to create a dry swale.





Silver 208x173x50mm & 173x173x50mm



Charcoal 200x100x50mm



Beige Tarmac roads and pathways



Brushed exposed aggregate concrete



Seating



Silver/Natural grey and contrasting Charcoal paving
A mixture of block and linear paving to create a contemporary yet functional space.



Kerbing
Country Kerb & Edge, Granite Aggregate
900 x 75 x 150mm



Bike Stands

4. DETAIL AREAS

Detention Basin

The proposed Detention Basin will function as a sustainable drainage feature that provides multiple benefits to a development, enhancing both environmental performance and community well-being.

The Detention Basin will contribute to biodiversity and ecological enhancement by creating a habitat for wildlife, supporting plant diversity, and improving local microclimates. Designed as an accessible green space, it will enhance the aesthetic quality of a development, providing opportunities for recreation and contributing to residents' mental and physical well-being.



Section A

Natural Pond

The proposed pond is a standing water reservoir spanning approximately 250 square meters, designed to support local bat and bird wildlife in the area. It is proposed as a mitigation measure required by the bat surveyor.

The pond is engineered to function as both an ecological habitat and a sustainable stormwater management feature. The proposed pond will not only enhance the ecological value of the site but also function as a critical element of the stormwater management system, reflecting sustainable design principles and fostering community engagement with nature.

Construction and Base Design:

The pond will have a clay backfill base to ensure impermeability and long-term water retention. Its base will feature a gentle 1:5 slope, creating a variety of depths to accommodate diverse wildlife and promote natural sediment settling. The permanent pool will maintain a consistent water depth of 600mm, supporting aquatic ecosystems throughout the year.

Water Source and Management:

The pond will be fed by a Sustainable Drainage Systems (SuDS) network, collecting and filtering runoff from within the development. This will ensure a sustainable water supply, mitigate flood risks, and enhance local water quality by naturally filtering pollutants through vegetation and sedimentation.

Marginal Planting:

A robust selection of native marginal and aquatic plants will be established along the edges and in shallow areas, including species such as *Iris pseudacorus* (yellow flag iris), *Carex acutiformis* (greater pond sedge), and *Juncus effusus* (soft rush). These plants will stabilize the banks, provide habitat and food sources for invertebrates, and act as natural biofilters for water quality improvement.

Wildlife Habitat:

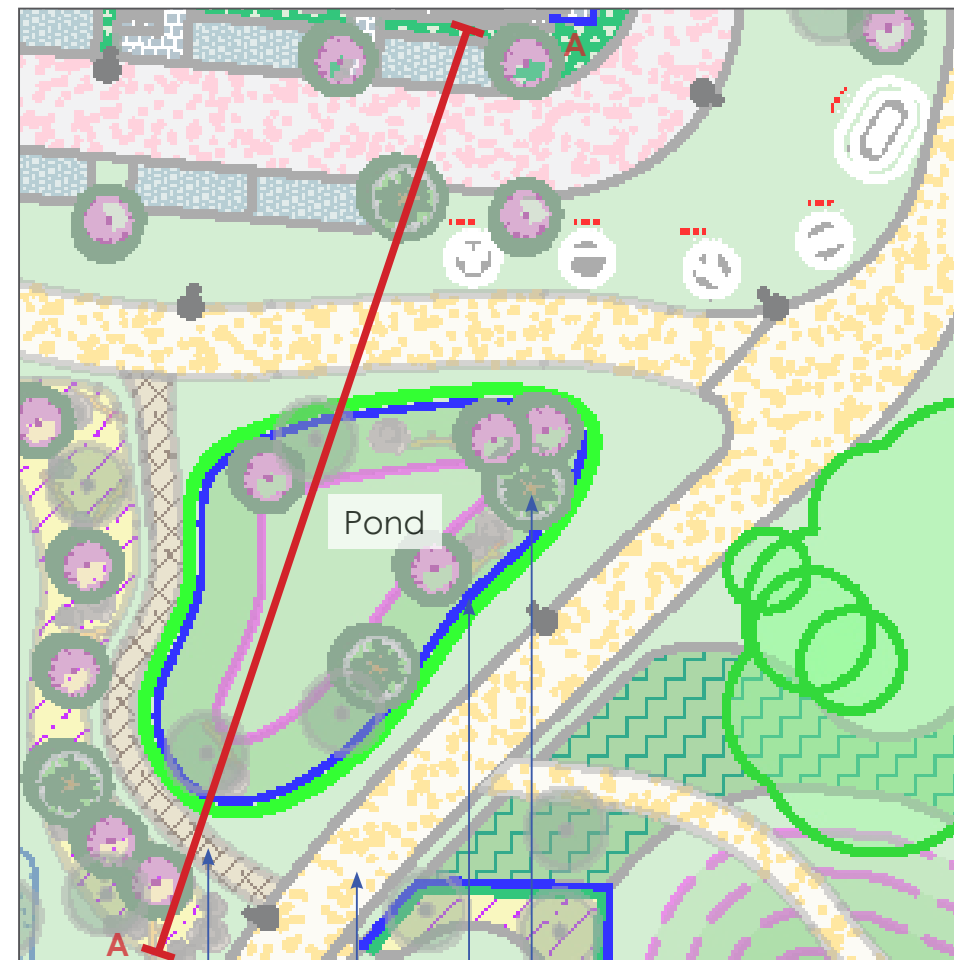
The pond will feature gently sloping edges to allow safe access for birds, small mammals, and amphibians, while open water zones will serve as a vital foraging habitat for bats during dusk and dawn.

Fence Perimeter:

A low-impact fence will enclose the pond. The design will include gaps to allow passage for smaller wildlife while deterring larger disturbances, ensuring safety and habitat protection.

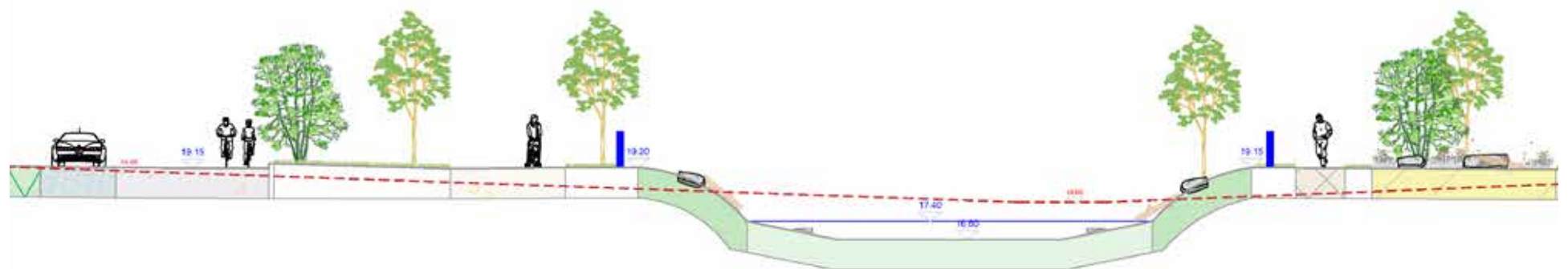
Ecological and Aesthetic Benefits:

The pond will contribute to local biodiversity, functioning as a hub for native species while providing seasonal visual interest with flowering plants and grasses. Submerged vegetation will help oxygenate the water, maintain clarity, and support aquatic life.



Secondary path
Path
Tree and aquatic marginal planting
Fence & Native Hedge Boundary

Section A



5. DETAIL DESIGN

Soft Landscape Details

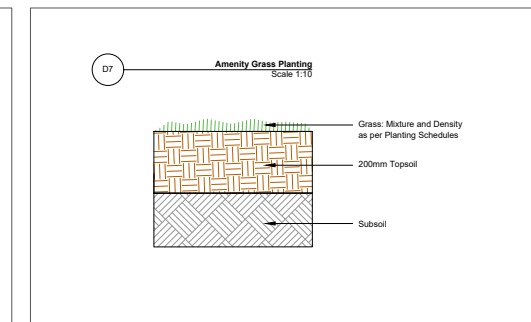
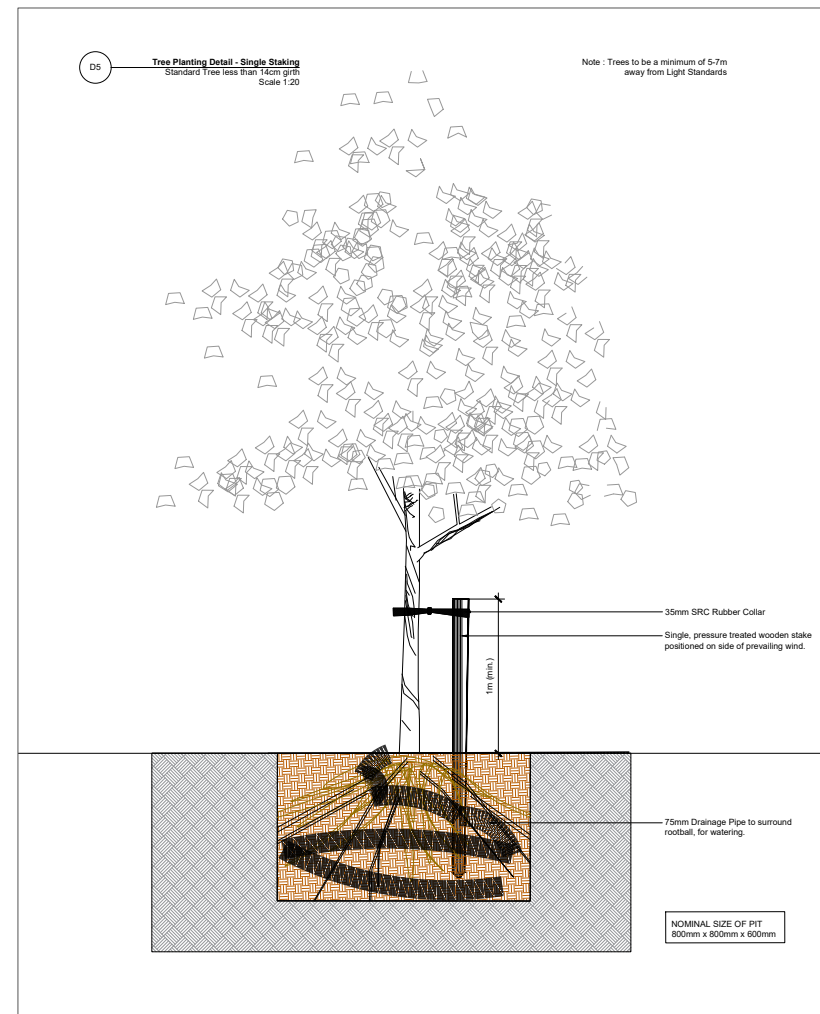
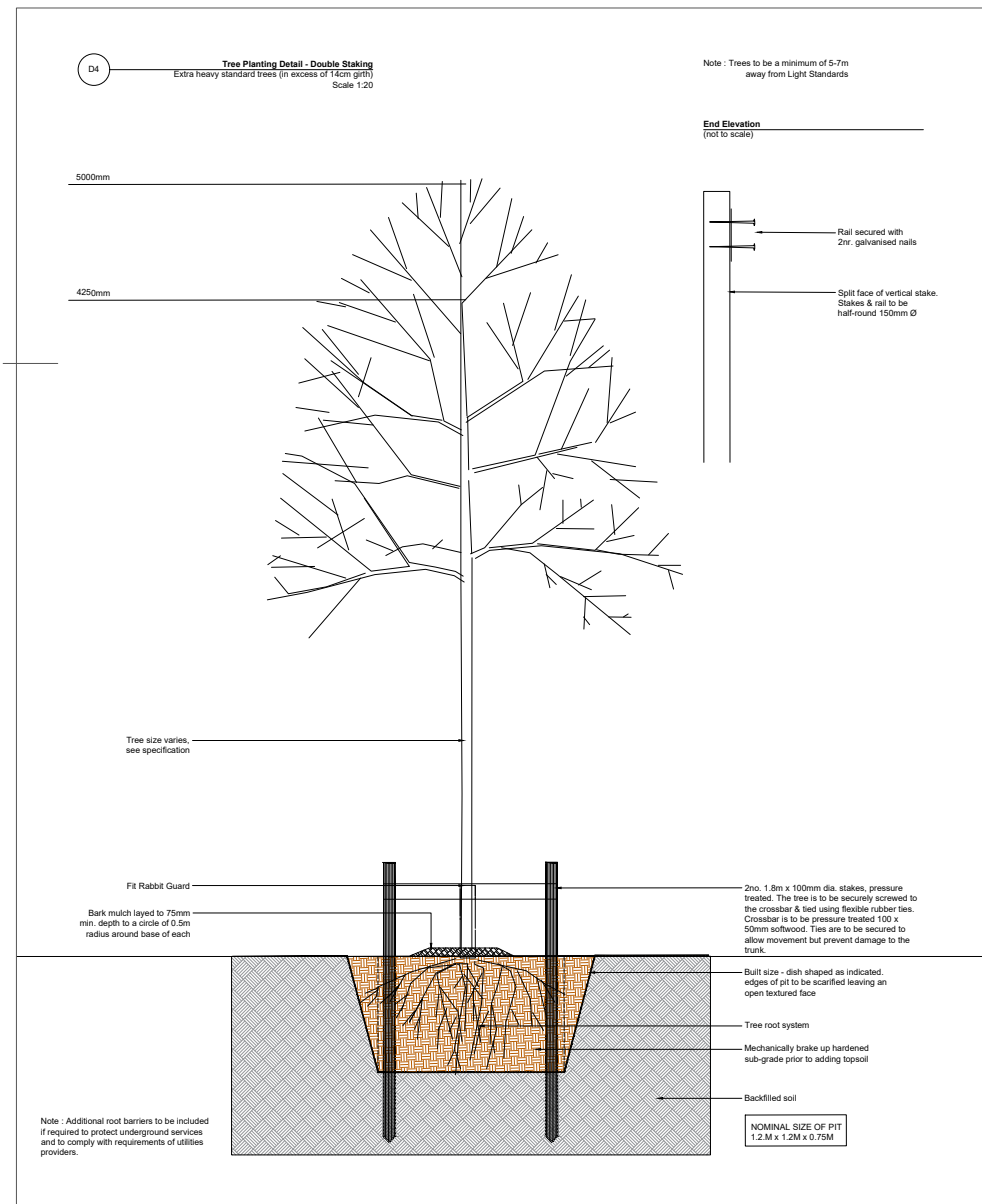
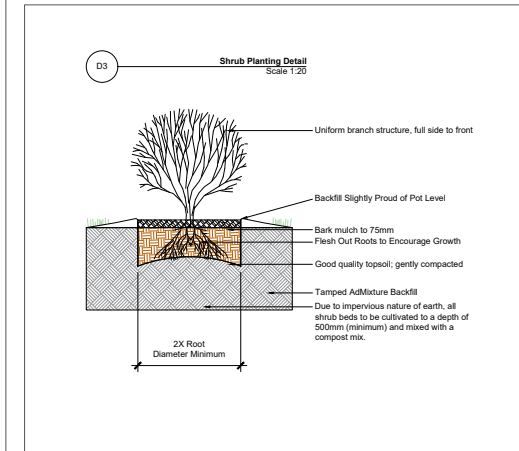
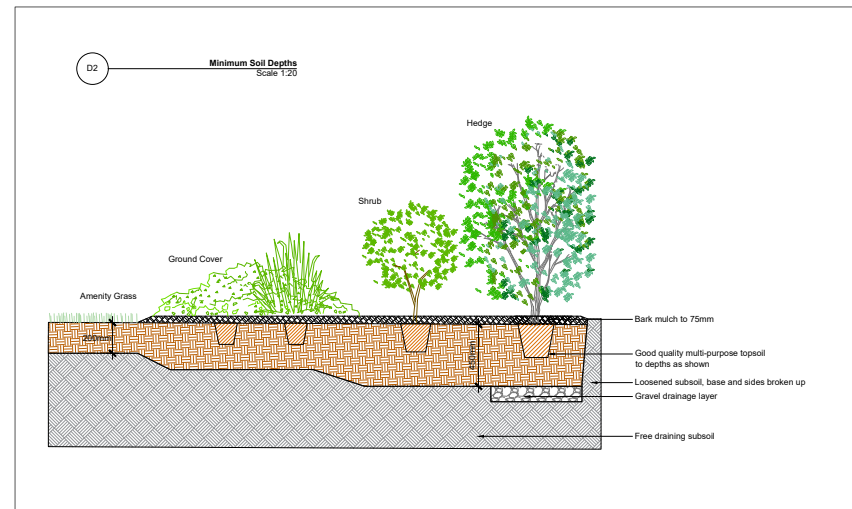
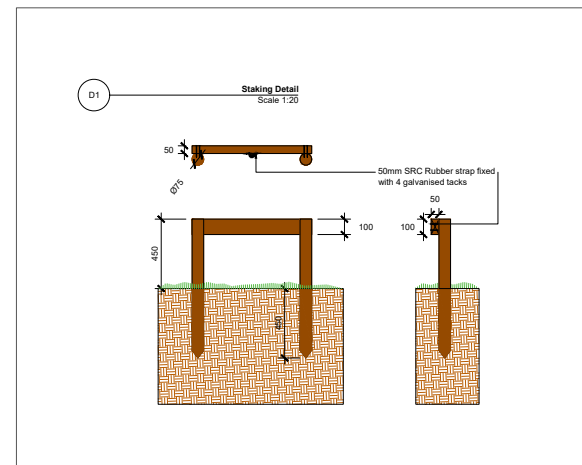
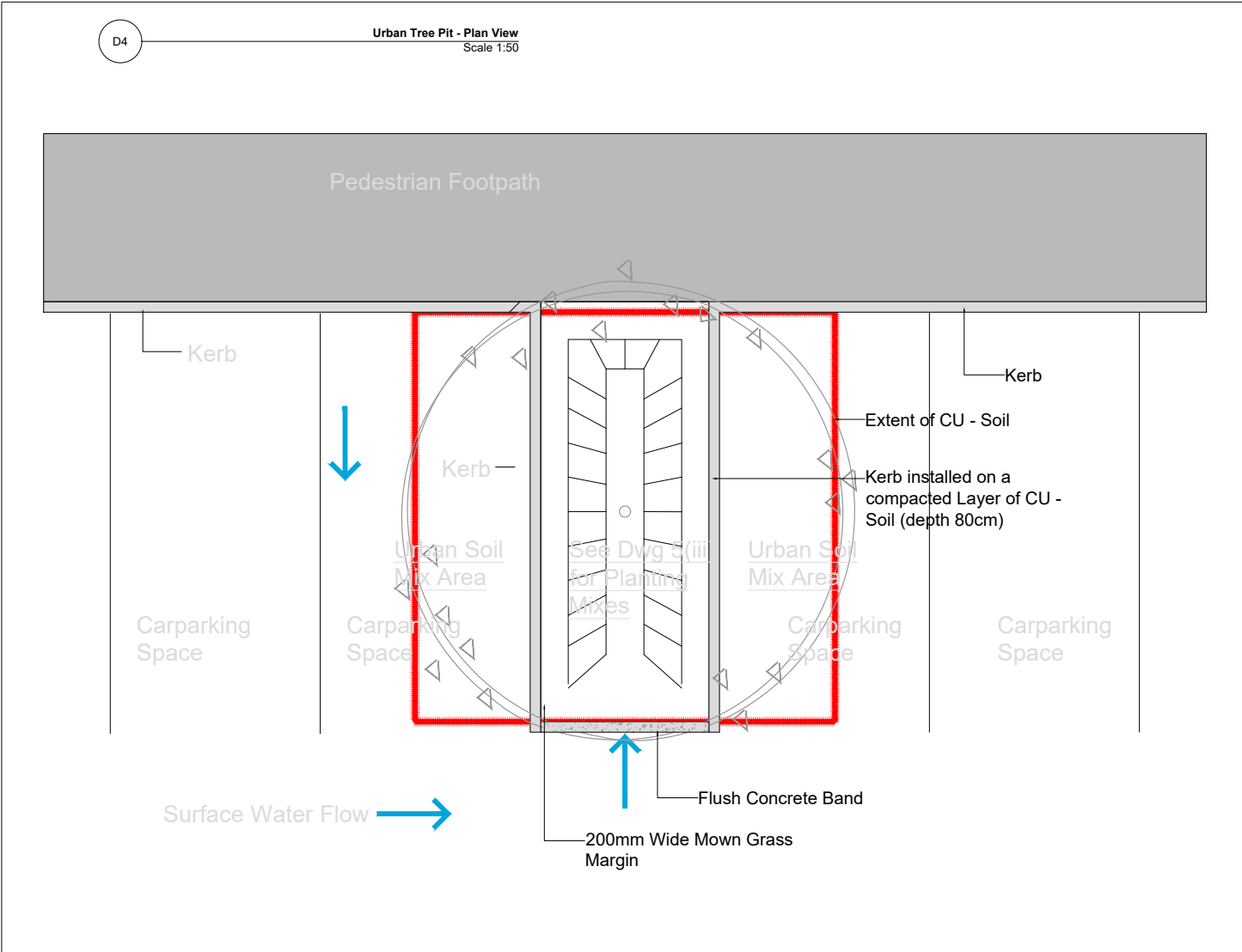
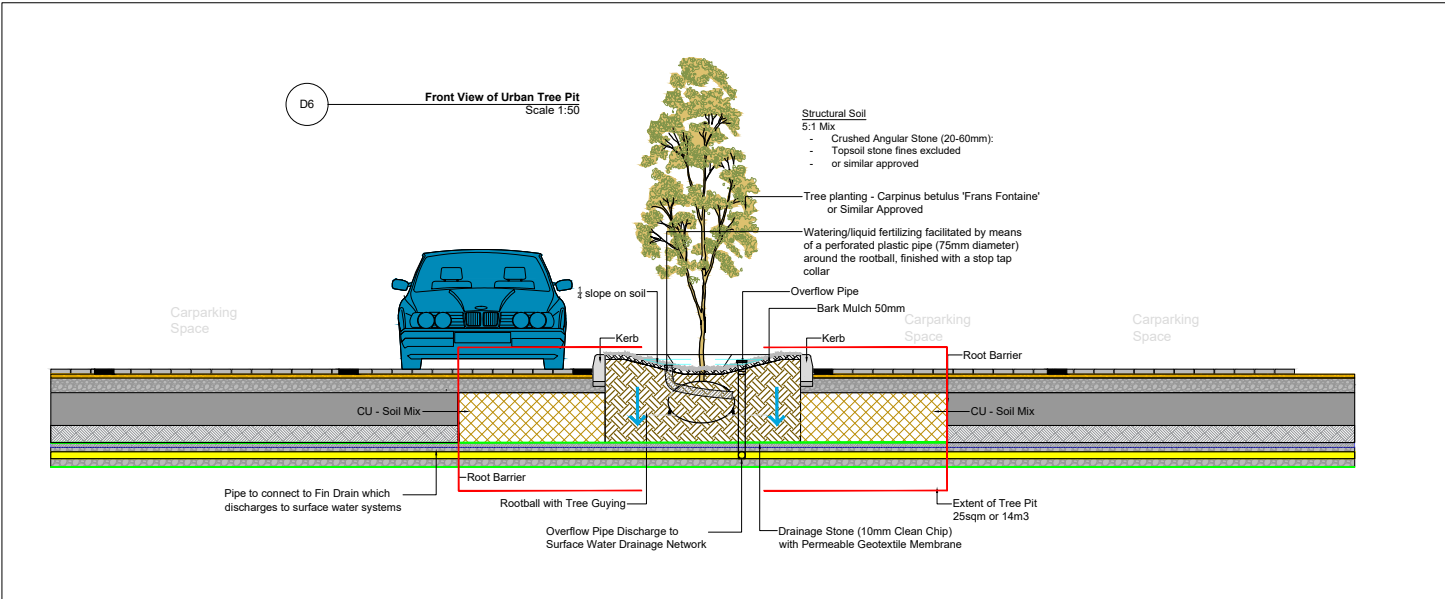




Diagram of SuDS Tree Pit



- Helleborus
- Astible
- Carex pendula
- Iris siberica
- Kniphofia Red Hot Poker



Permeable Paving

Permeable surfaces direct rainfall straight into a SuDS structure for cleaning and storage or infiltration into the ground. Utilizing:

1. pervious surface to allow water through the pavement surface
2. an open-graded sub-base layer that provides structural strength to the pavement with about 30% by volume available for water storage. The subbase designed structurally and hydraulically.
3. to avoid silt washing off adjacent landscape areas and leading to localised surface clogging., the following measures have been considered:
 - sloping adjacent landscape areas away,
 - using paved or turfed surfaces to adjacent areas,
 - proposing soil in adjacent planting beds at min. 50mm below the top of kerb with dense ground cover to bind the soil.

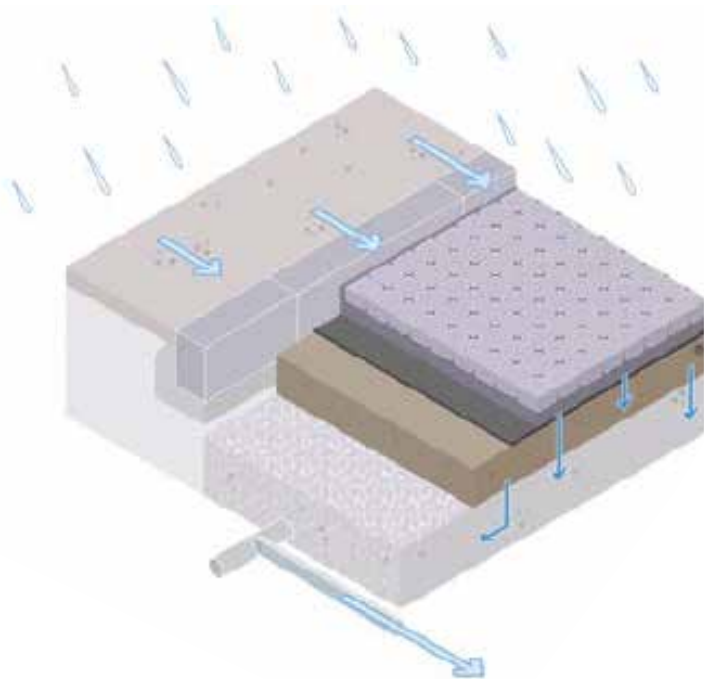


Diagram of
Permeable Paving
in parking bays



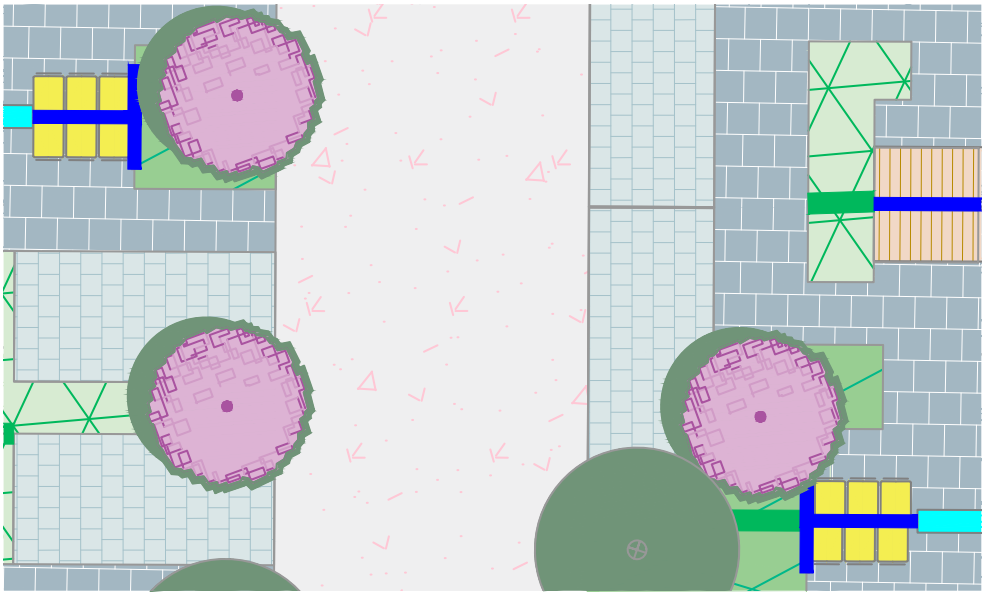
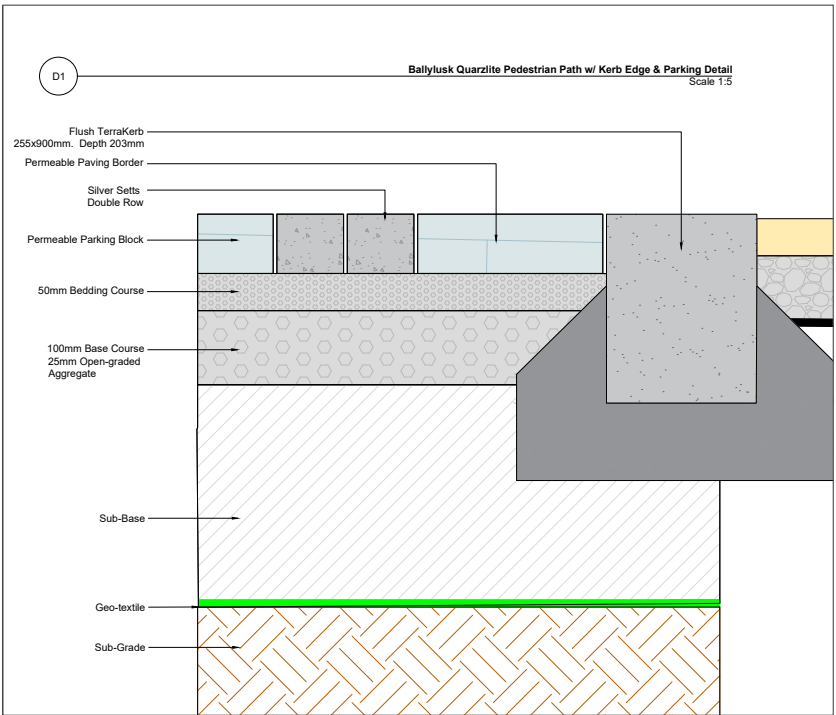
Permeable parking surfaces



Permeable Parking Pavers



Grasscrete



Permeable Parking Pavers

CLIENT



MULTIDISCIPLINARY DESIGN TEAM



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Landscape Architects & Consultants

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Architects & Urban Designers

