

Residential Development at Kilcarbery, Clondalkin, South Dublin

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Landscape Architects & Consultants



LANDSCAPE RATIONALE

Client: South Dublin County Council

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CONTENTS

1. SITE CONTEXT

SITE LOCATION 3

2. DESIGN PROPOSAL

LANDSCAPE MASTERPLAN 4
LANDSCAPE MOOD BOARD 5
GREEN INFRASTRUCTURE PLAN..... 6
CONNECTIVITY - PEDESTRIAN ROUTES..... 7
CONNECTIVITY - VEHICULAR MOVEMENT..... 8
OPEN SPACE HIERARCHY..... 9
OPEN SPACE SUDS 10
FLOW ROUTE ANALYSIS..... 11
ATTENUATION AREAS..... 12
BOUNDARY TREATMENT PLAN..... 13
ARBORICULTURAL IMPACT - REMOVAL 14
ARBORICULTURAL IMPACT 15

3. LANDSCAPE FEATURES

PROPOSED STREET & OPEN SPACE TREES 16
PROPOSED SHRUBS PLANTING 17
PROPOSED BUFFER DEFENSIVE PLANTING 18
PROPOSED PLANTING - HEDGEROWS..... 19
PROPOSED AQUATIC SWALE PLANTING..... 20
SUDS - SWALES 21
PROPOSED TREE PIT PLANTING..... 22
HARD LANDSCAPE PALETTE 23
HARD LANDSCAPE SURFACES..... 24
PERMEABLE PAVING..... 25
SUDS - BIORETENTION RAINGARDEN..... 26

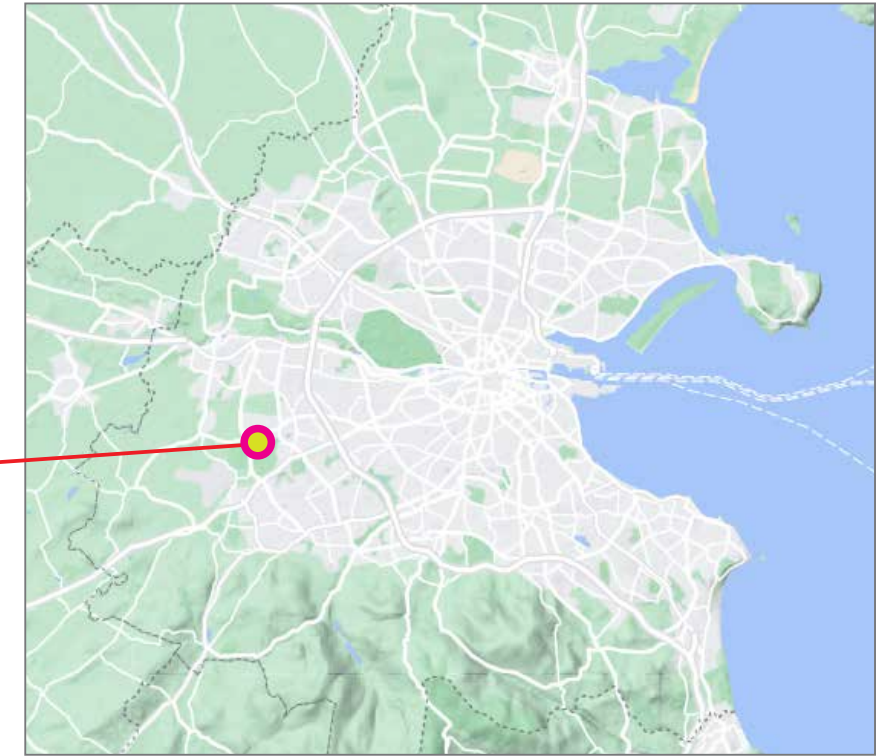
4. DETAIL DESIGN

SOFT LANDSCAPE DETAILS 27
DRAINAGE - SUDS..... 28



1. SITE CONTEXT

Site Location



 Subject Lands



2. DESIGN PROPOSAL

Landscape Masterplan



- SOFT LANDSCAPE**
- Proposed Tree Planting**
- T1 *Acer campestre* 'Elsrijk'
 - T3 *Carpinus betulus* 'Fastigiata'
 - T5 *Fagus sylvatica* 'Dawyck' 16-18cm
 - T7 *Quercus robur* 'Koster'
 - T9 *Amelanchier lamarckii*
 - T2 *Pyrus calleryana* 'Chanticleer'
 - T4 *Tilia cordata* 'Greenspire'
 - T6 *Betula pendula*
 - T8 *Prunus avium**
 - T11 *Malus* 'John Downie'
- Multistemmed Trees 12-14cm**
- T10 *Prunus avium* 'Plena'
 - T12 *Betula pendula* 'Multi-stem'
- G1 Amenity Grass**
300mm min. Topsoil depth
- G2 Amenity Grass - Rear Gardens**
300mm topsoil depth
- Attenuation Areas**
- S1 - Shrub Planting: Edging Buffer**
450mm topsoil depth
Species List
Agapanthus 'Blue Umbrella', *Armeria maritima* 'Splendens', *Bergenia cordifolia*, *Lavandula angustifolia* 'Vera', *Perovskia* 'Blue Spire', *Schizostylis coccinea* 'Sunrise'
- S2 - Shrub Planting**
450mm topsoil depth
Species List
Agapanthus africanus, *Allium ursinum*, 'Eryngium 'Bowles' Mauve', *Libertia grandiflora*, *Kniphofia* 'Royal Standard', *Tulbaghia violacea*
- S3 - Tree Pit Shrub Planting**
Species List
Persicaria affine, *Astilbe*, *Iris sibirica*, *Helleborus*, *Kniphofia* Red Hot Poker, *Carex pendula*
- S4 - Swale / Aquatic Planting**
Species List
Iris pseudacorus, *Caltha palustris*, *Ailisma plantago-aquatica*, *Lychnis flos-cuculi*, *Myosotis scorpiodes*, *Veronica becabunga*, *Menyanthes trifoliata*
- H1 - Native Hedgerow**
450mm topsoil depth / 100cm Double Staggered Row
Species List
Craetagus monogyna, *Prunus spinosa*, *Ilex aquifolium*, *Rosa canina*, *Viburnum opulus*
- H2 - Structural Hedgerow**
450mm topsoil depth / 100cm Single Row
Species List
Prunus lusitanica
- HARD LANDSCAPE**
- Beige Tarmac**
- Feature Paving - Unit Entrance** (to Engineer's Specification)
- Feature Paving - Public Open Space** (Engineer's Specification)
- Parking - Permeable Paving**
- Concrete Footpath** (to Engineer's Specification)
- Bicycle Path - Coloured Tarmac**
- LANDSCAPE FURNITURE / FEATURES**
- Benches**
- Found Play Elements**
Natural Play Elements - mounding, stepping stones, balance logs, vertical logs, Climbing Rocks as agreed prior to taking in charge
- Structured Play Elements**
Multi-age play Elements
- Bicycle Parking**
- Bird/Bat Boxes**
- BOUNDARY TREATMENT**
- Feature Stone Wall** (2m high) or similar approved
- Parkland Metal Railing** (1.2m high) (3 Bar Powder Coated Black) or similar approved.
- Fair Faced Block Wall with Concrete Capping** (2m high) or similar approved
- Residential Boundary Fence** (1.8m high) Timber panel & concrete post fence or similar approved
- Dash Block Wall with Brick Piers** (2m high) or similar approved



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.



Dry Detention Basin will help increase sustainable water treatment.

Cycle Path

Bioretention Raingardens

Shared Surface Streetscape

Proposed hedgerow to be planted with a range of native species to enhance biodiversity

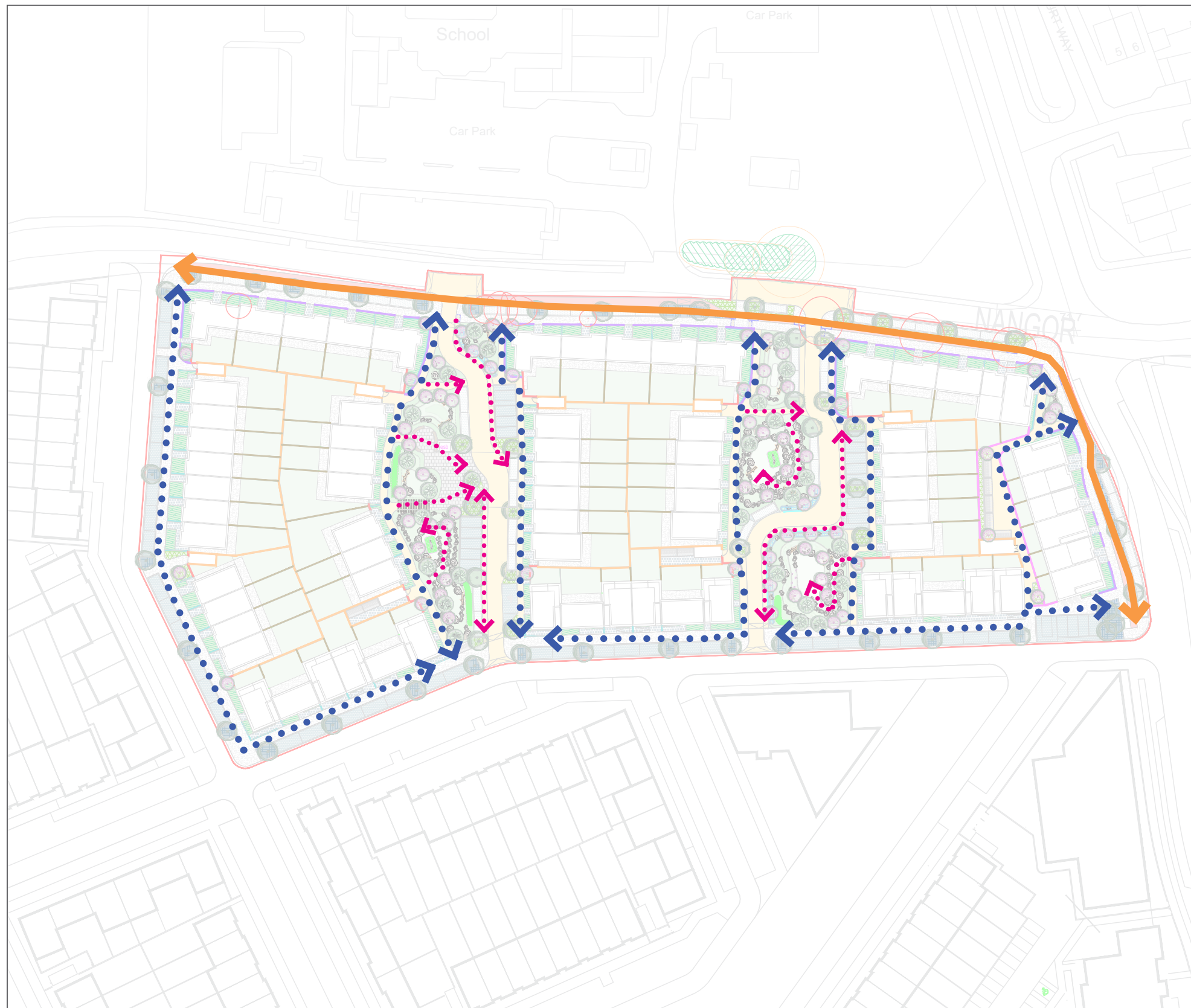
Provision of constructed tree pits Tree Pits

Swales - intervention that will help increase sustainable water treatment.

Permeable Paving Parking Bays

Provision of verge to allow for avenue tree planting

Connectivity - Pedestrian Routes



Primary Route

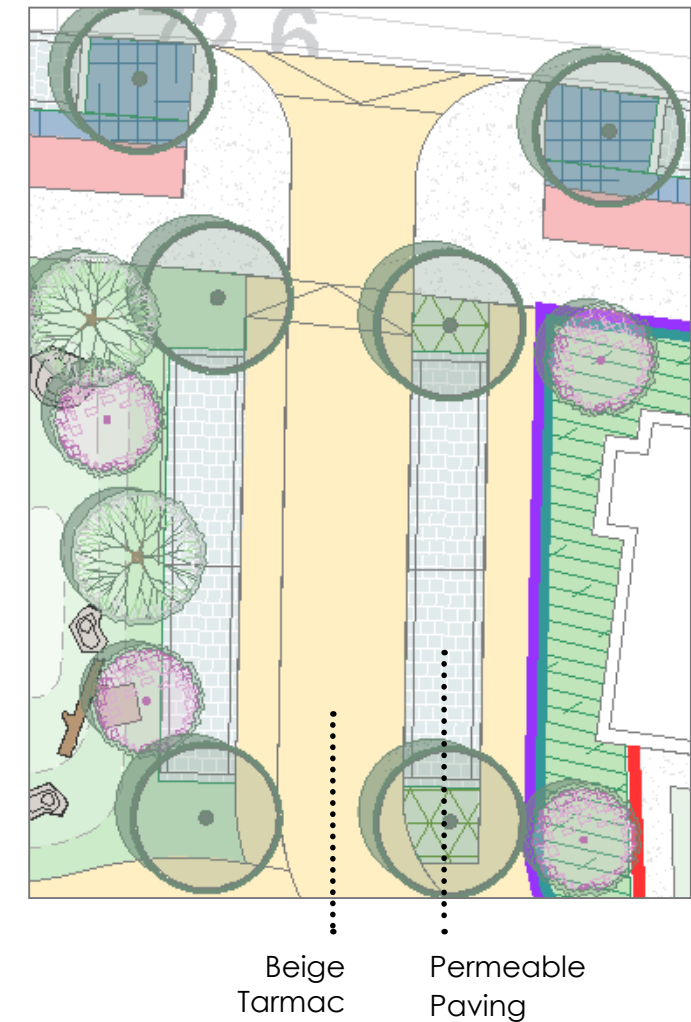
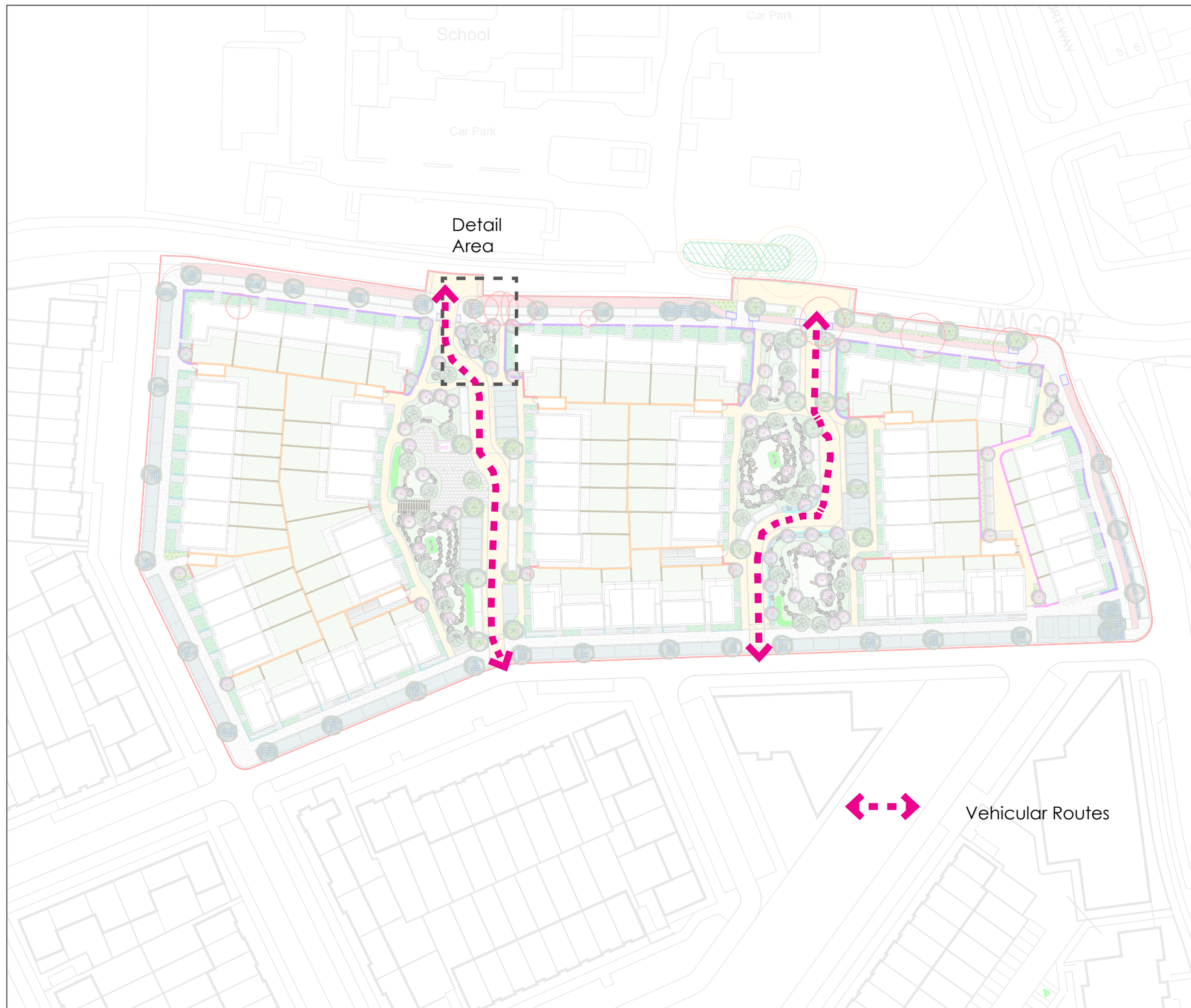
Secondary Route

Pedestrian / Cycle Route

Connectivity

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.

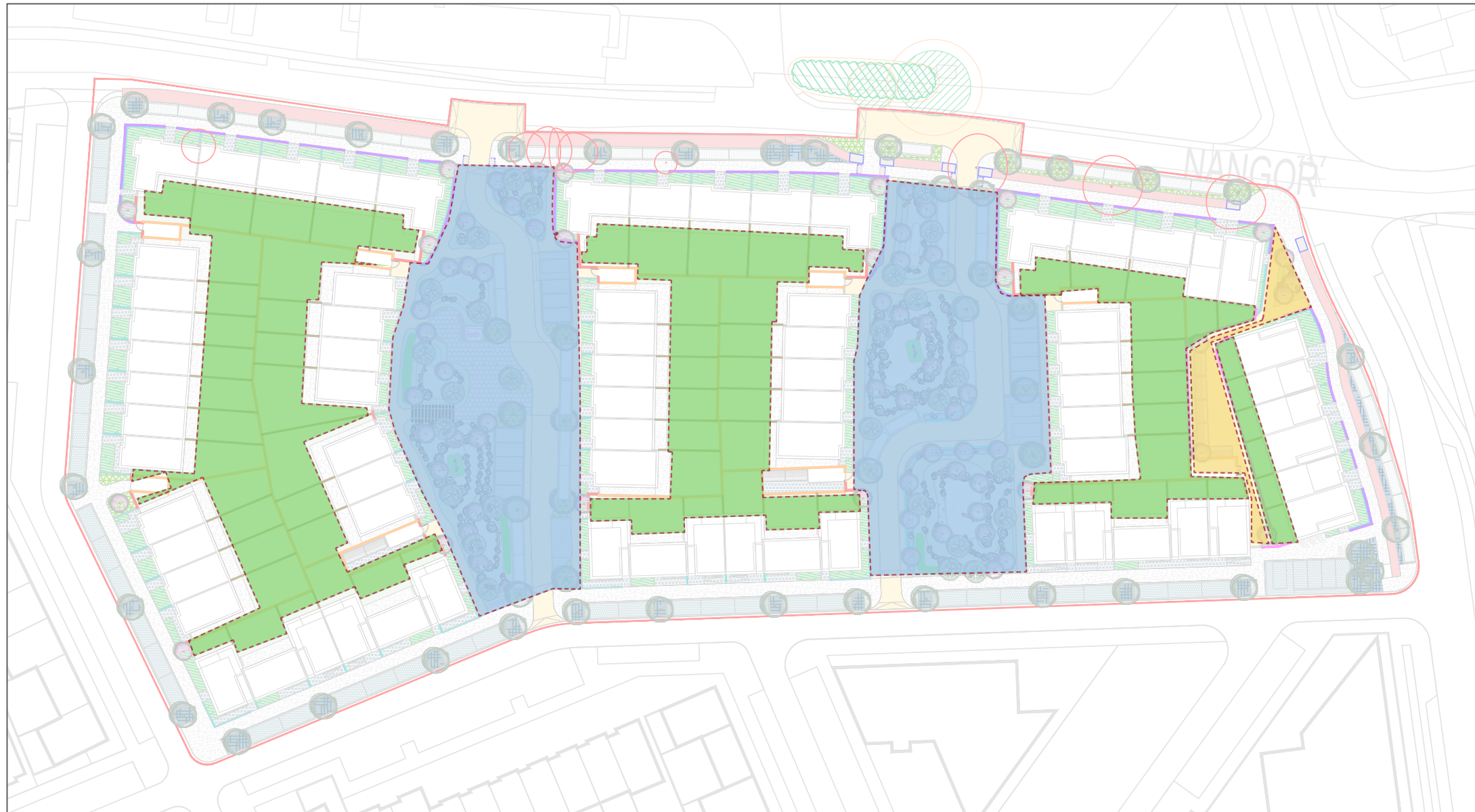
The increased permeability of the development it's context is important to connect residents to surrounding opportunities.



The street network for the proposed development aims to provide a permeable street layout that emphasises pedestrian priority.




The design aims to provide a pedestrian friendly environment in the form of shared spaces and homezones. Street trees and horizontal deflection will limit traffic speeds and increase pedestrian comfort, while defensive planting define individual residential units.

Open Space Hierarchy




The proposed landscape seeks to provide ;

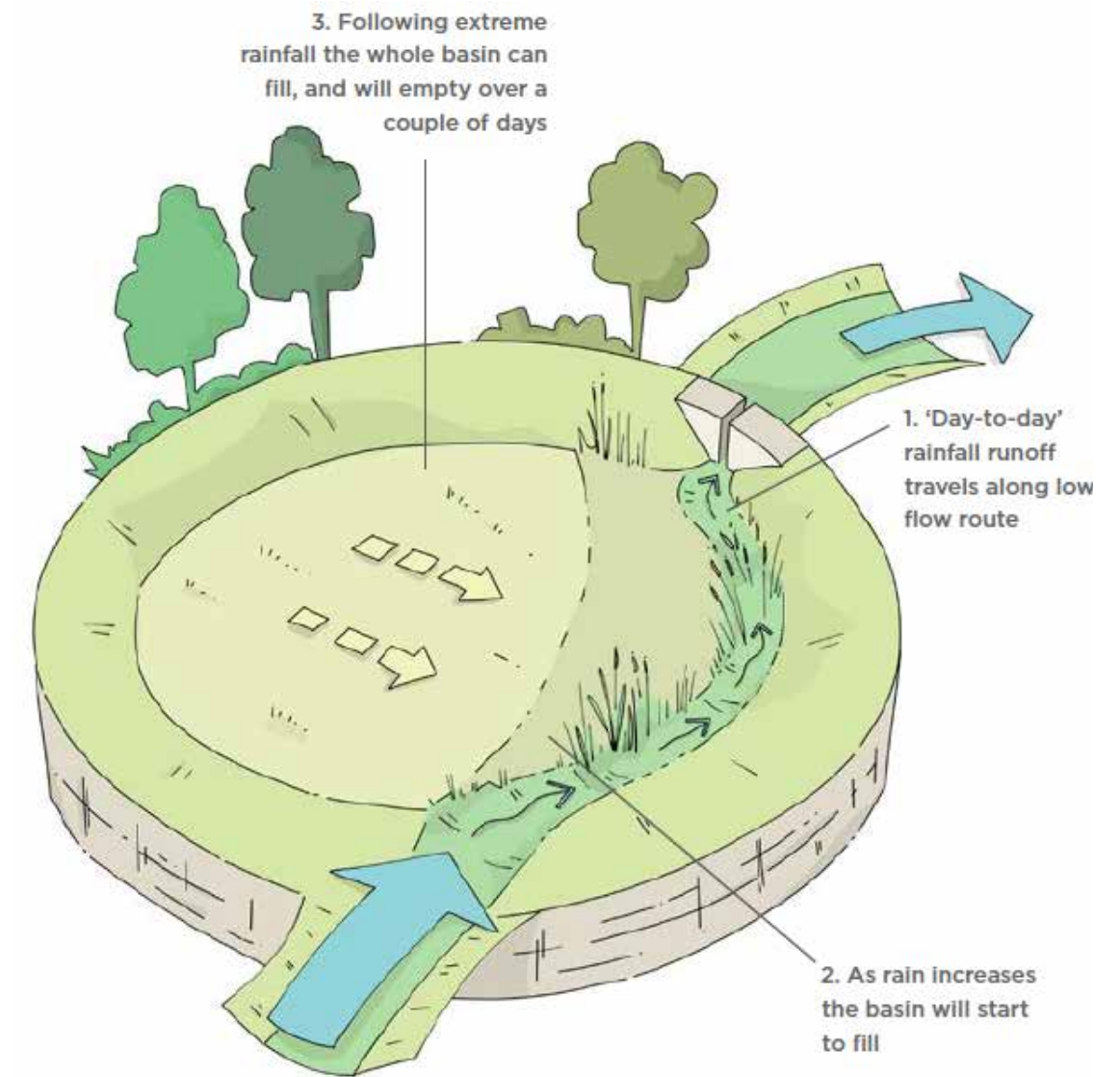
- Adequate Public Open Space and Green Infrastructure Network;
- Interactive Public Space Amenities;
- Communal open space for Residents;
- High quality material choices and finishes.

-  Public Open Space - Linear park, public realm, congregation areas, informal play spaces and recreation
-  Communal Open Space - seating space, visual amenity, sensory planting
-  Private Gardens

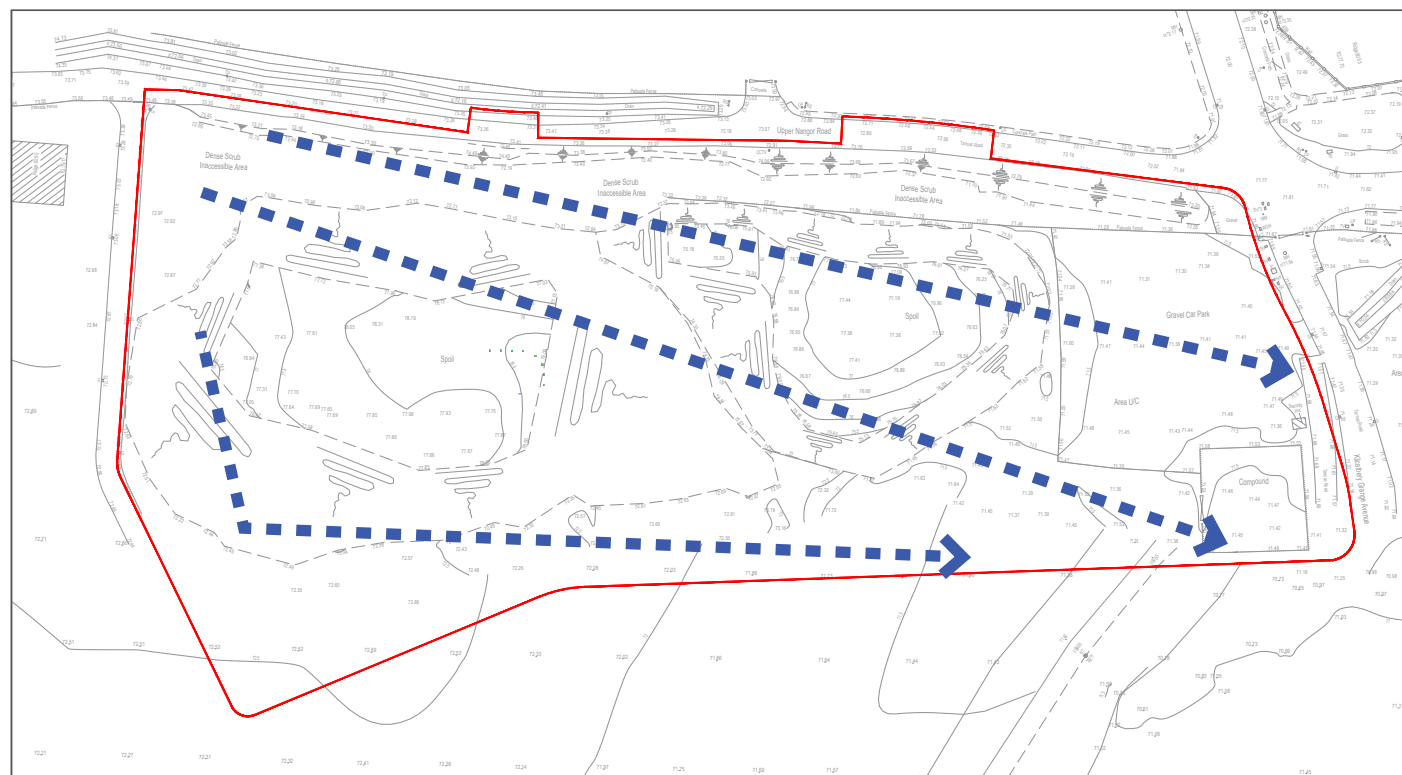


 SuDS in Public Open Space

The following graphic demonstrates how levels within a basin can be adapted to ensure that most of the basin is available for play during the majority of rainfall events. As further surface runoff is stored water will encroach gradually up the slope, until the full storage capacity of the basin is utilised.



Flow Route Analysis



— — — — —> Flow Route

The site layout optimises the following SuDS measures to mimic and support the existing flow route and .

- Raingardens
- Tree pits
- Permeable paving
- Swales
- Infiltration trenches
- Bioretention areas
- Infiltration/detention basins

Existing flow route analysis

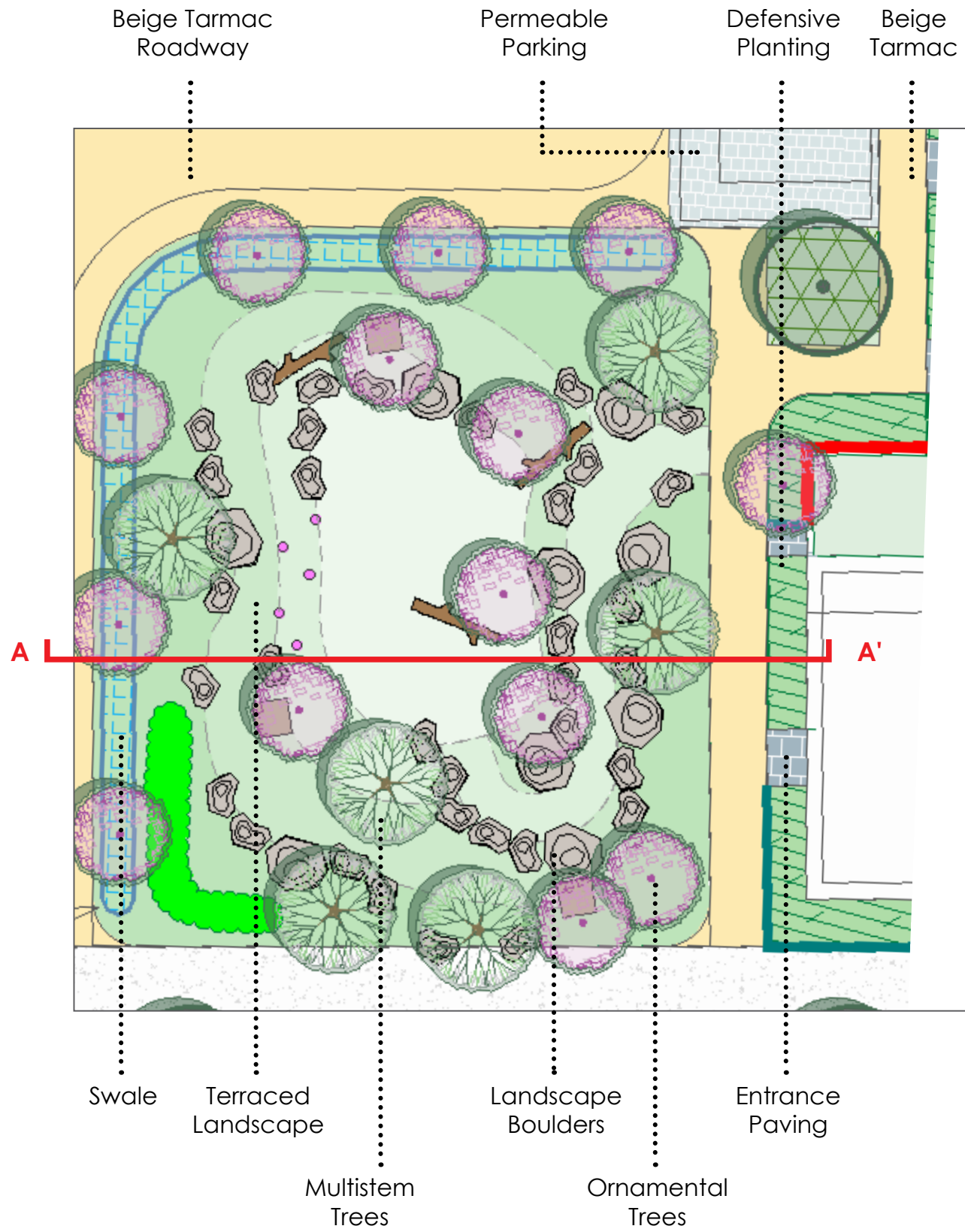


— — — — —> Flow Route

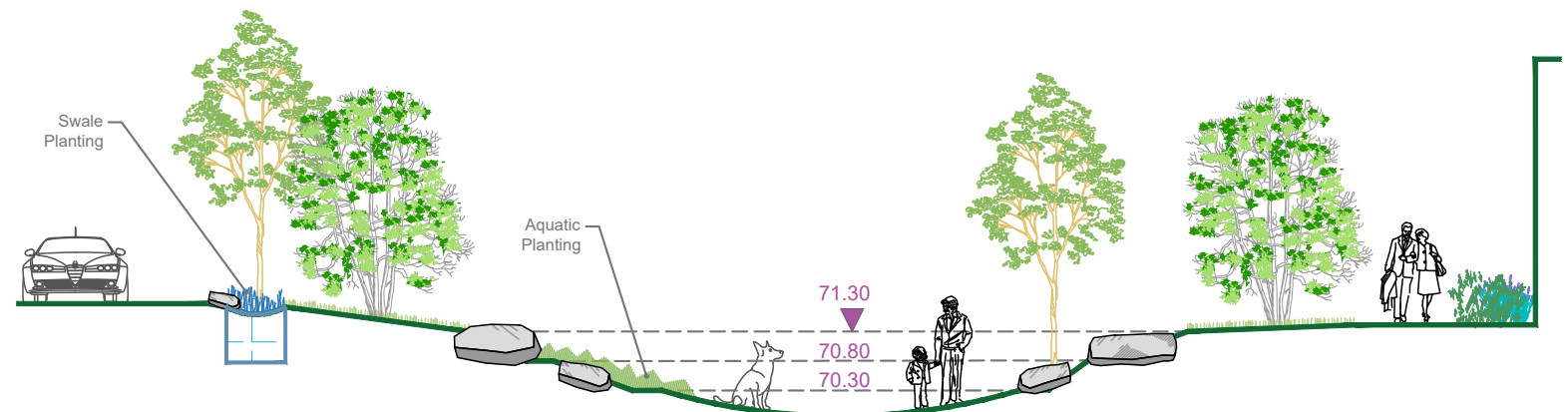
.....> SuDS flow route

Flow route analysis

Attenuation Areas



Section AA'





Stone Feature Wall
2m high



Brick Pier and plaster wall
2m high



Fair faced block wall
w/ concrete capping
2m high (Internal Garden Walls)



Parkland Railing
1.2m high



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



Arboricultural Impact - Removal



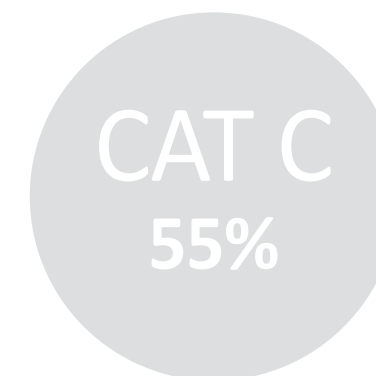
EXISTING

11no. (9no. within redline boundary)

A total of 11 trees were identified and assessed and 4 hedgerows.

The condition of trees is generally moderate to poor.

The percentage of trees refers to trees within the red line only.



% of the total number of the existing trees



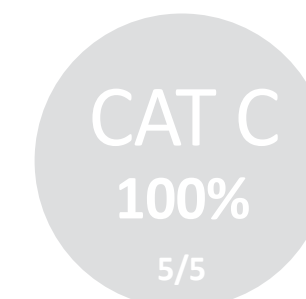
REMOVAL

9no.

100% of the 9no. trees will be removed at the site, many of which have been highlighted for removal due to poor condition.

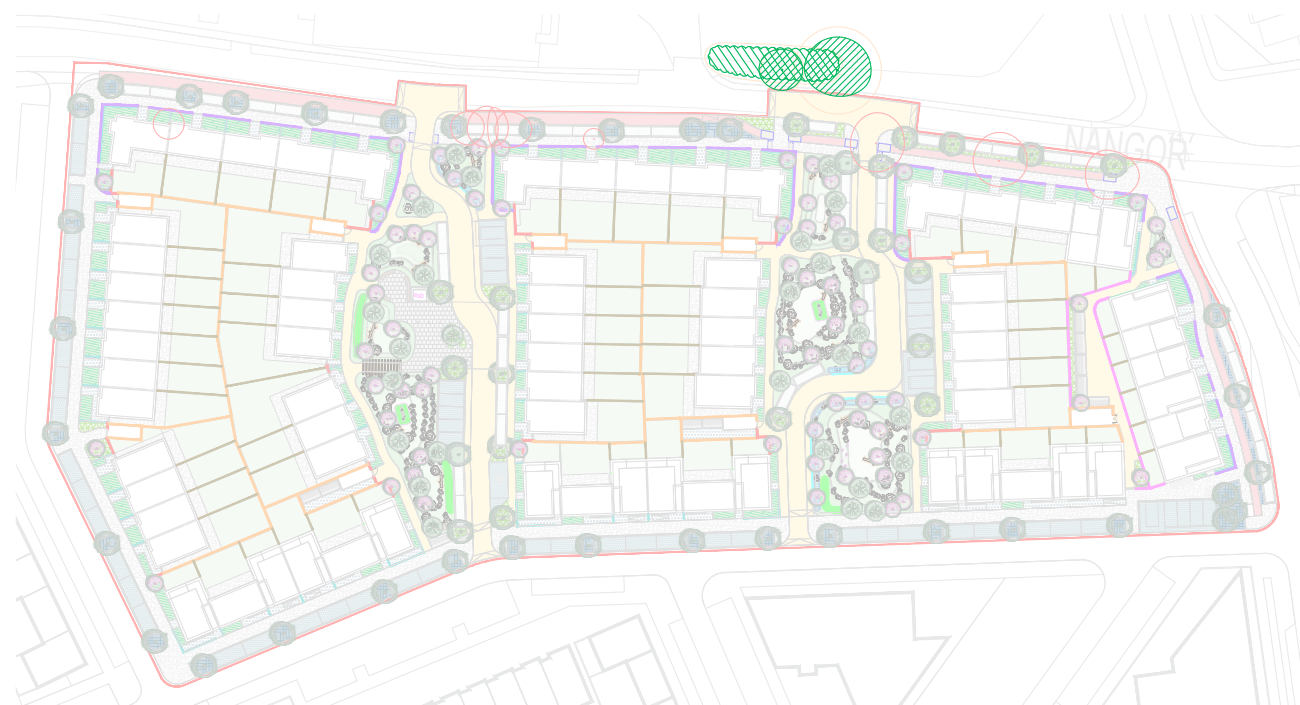
A further 4 hedgerows have been identified for removal.

To offset any loss of hedgerows, it is proposed to retain the topsoil containing the local indigenous seed mix which will be used in the open spaces. If possible some of the existing hedge will be reused in the proposed hedgerows on the new development.



% of the total in category

Arboricultural Impact



RETAINED TREES

2no. (0no. within redline boundary)

0% of the existing trees within the redline will be retained at the site



PROPOSED TREES

150no.

A total of 150 trees are proposed at the site, far in excess of what is on site at present.

Front Garden 12-14cm

Amelanchier lamarckii

Multistemmed Trees 12-14cm

Prunus avium 'Plena'

Malus 'John Downie'^

Betula utilis var. *jaquemontii*

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

3. LANDSCAPE FEATURES

Proposed Street & Open Space Trees



Quercus robur 'Koster'



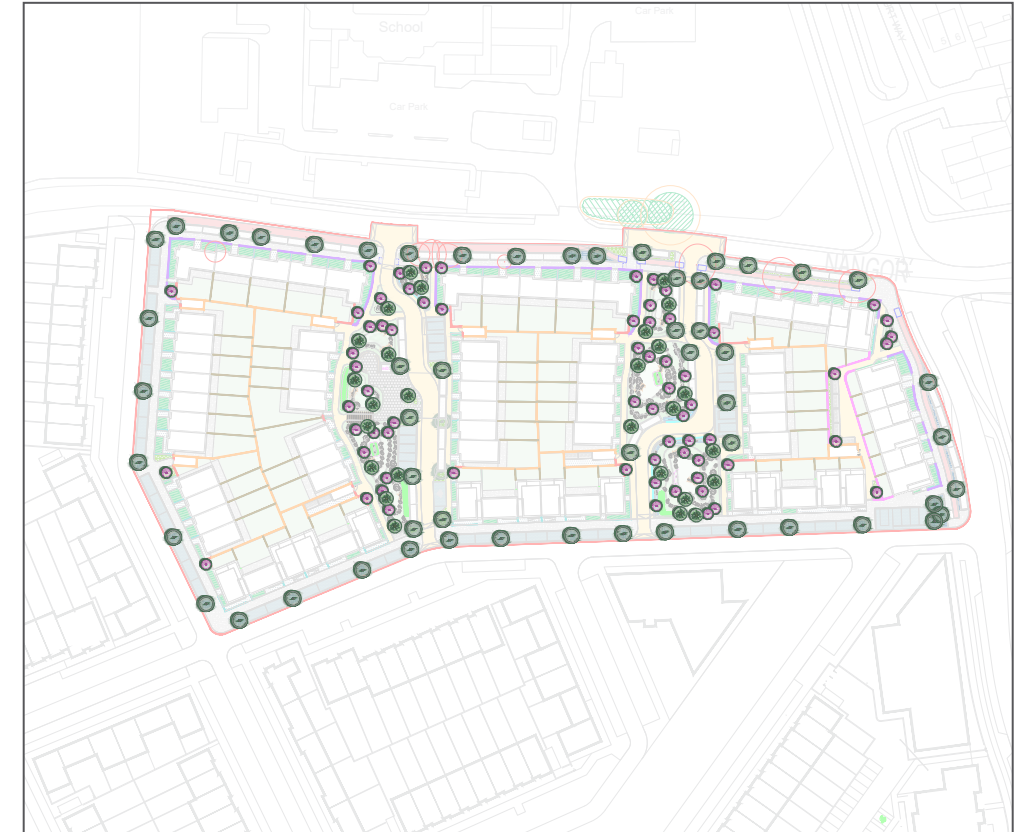
Fagus sylvatica



Betula jacquemontii
multi stem



Malus domestica



Note: Planting shown throughout rationale are mature and are not indicative of size that shall be planted first.



Prunus avium



Betula pendula



Amelanchier lamerkii



Prunus domestica

Proposed Shrubs Planting



Persicaria affine



Bergenia cordifolia



Libertia grandiflora



Aucuba japonica



Prunus 'Otto luyken'



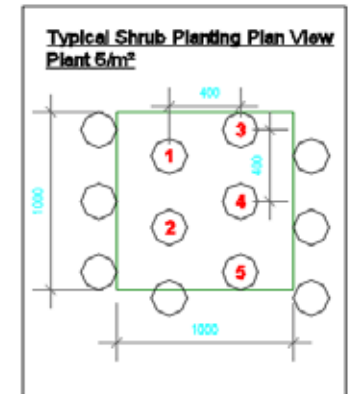
Lavandula angustifolia



Hypericum hidcote



Astelia 'Silver Spear'



Agapanthus 'Blue Giant'



Kniphofia 'Royal standard'



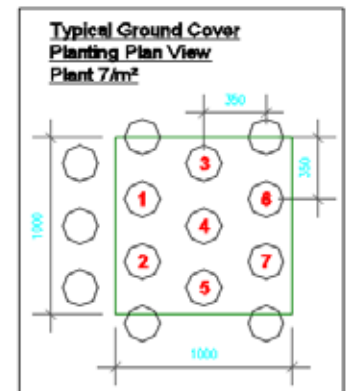
Nerine bowdenii



Sedum spectabile



Miscanthus sinensis



Proposed 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, apartments and communal open space.



Proposed Planting - Hedgerows

H2 - Structural Hedgerow

- Private Space Hedgerow
- Noise Barrier
- Single Row
- 100cm. height 500 c/c



Prunus lusitanica

H1 - Native Hedgerow

Native Hedgerows functionally create habitat links throughout the site which would be beneficial for commuting and foraging for animal species, leading to the compensation of the removal of the hedge along the northern boundary.

- Double Row
- 40-60cm. height 500 c/c



Rosa canina



Crataegus monogyna



Prunus spinosa



Ilex aquifolium



Viburnum opulus

Proposed Aquatic Swale Planting



Yellow Flag iris (*Iris pseudacorus*)



Water plantain (*Alisma plantago-aquatica*)



Water forget-me-not (*Myosotis scorpiodes*)



Marsh marigold (*Caltha palustris*)



Ragged robin (*Lychnis flos-cuculi*)



Brooklime (*Veronica becabunga*)



Bogbeam (*Menyanthes trifoliata*)



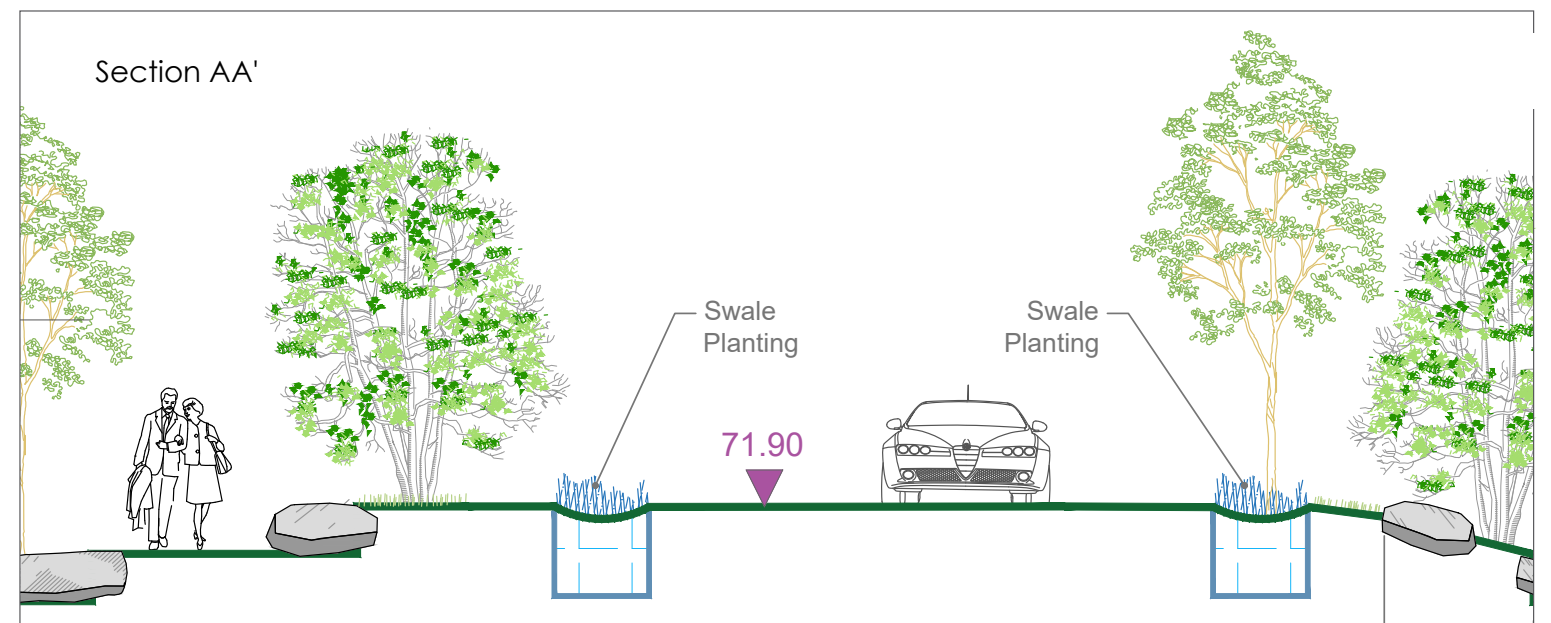
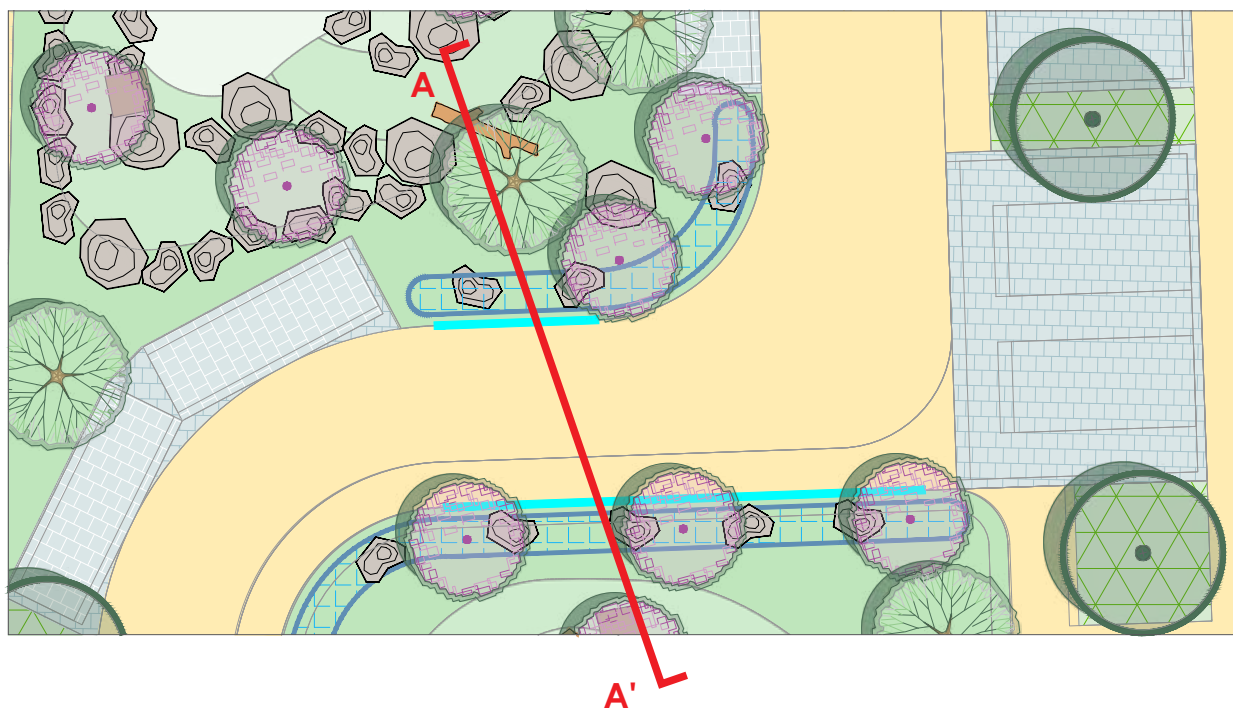
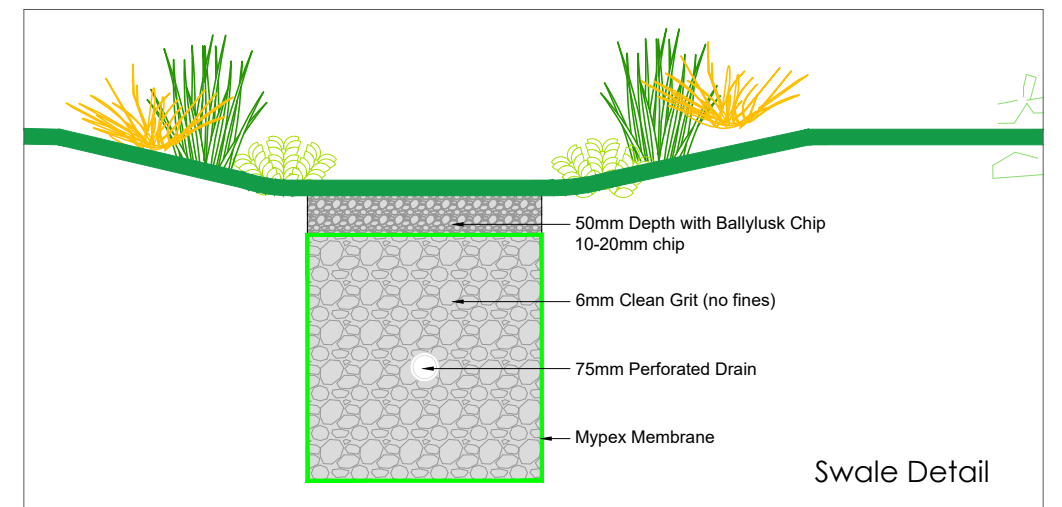
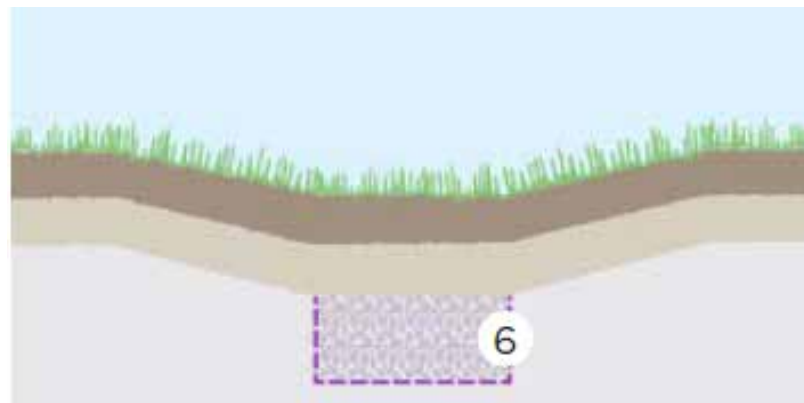
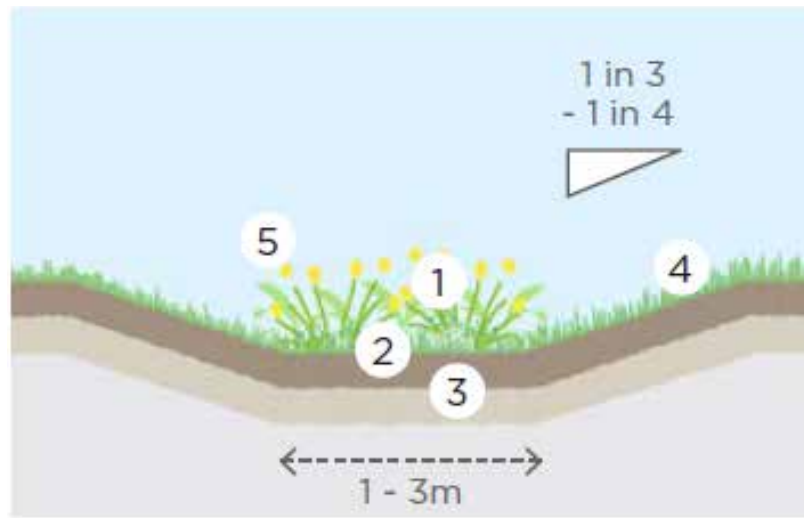
Note: The Wildflower Meadow will need to be cut once in Autumn (Late August/Early September) with a tractor and mower. Leave the mowings for a few days to allow seed to drop to the ground. Then it should be baled and bales removed.



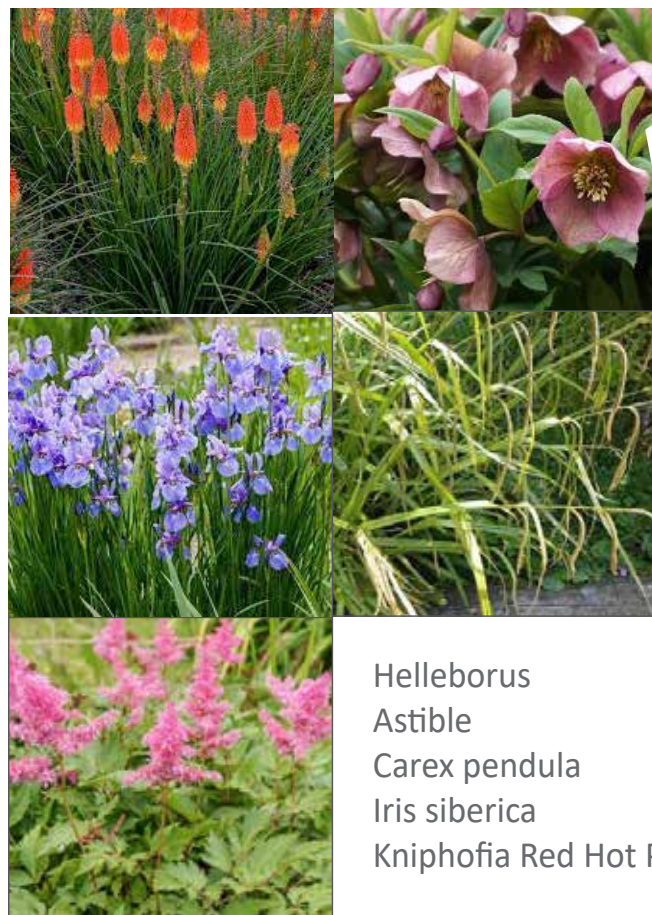
SUDs - Swales

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

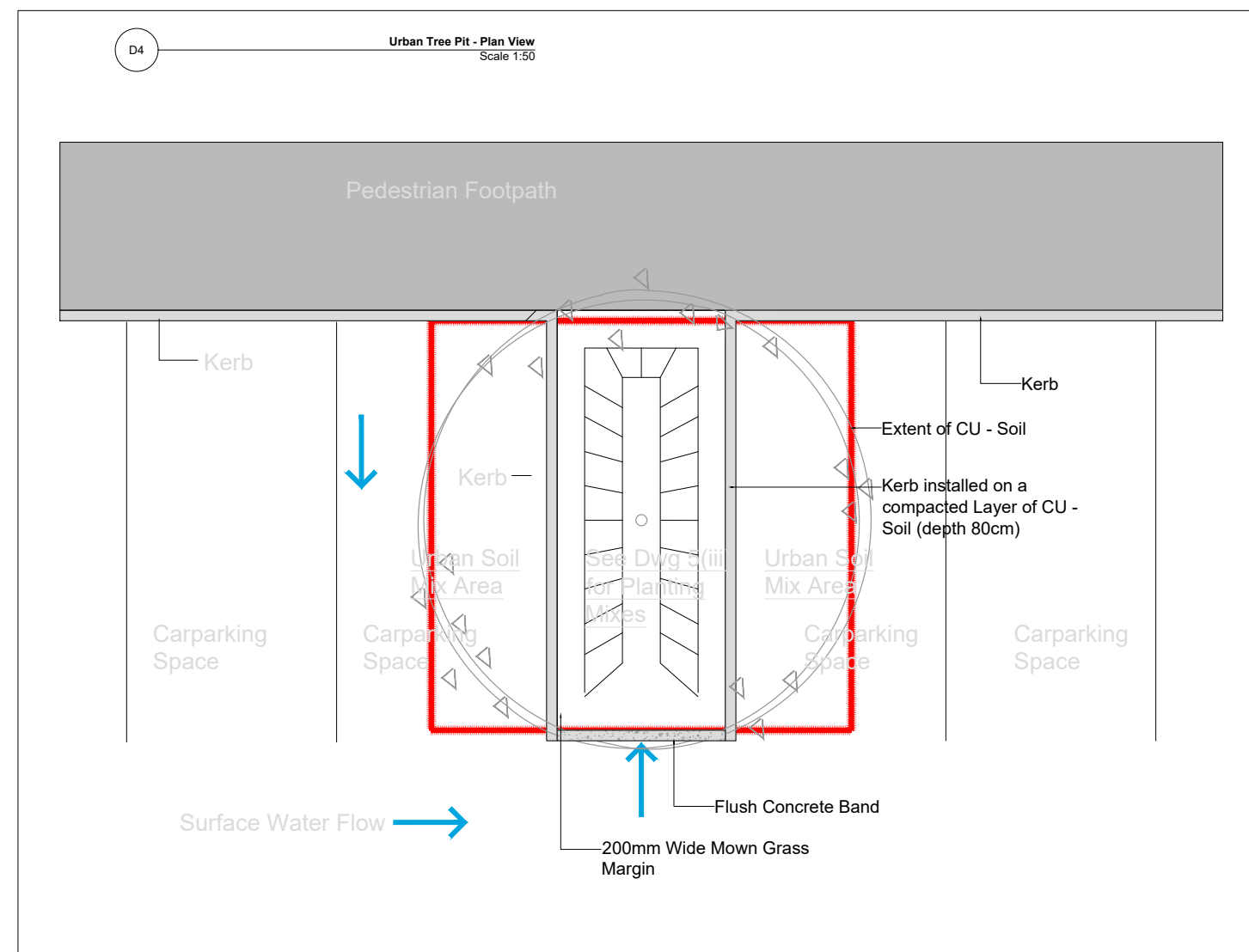
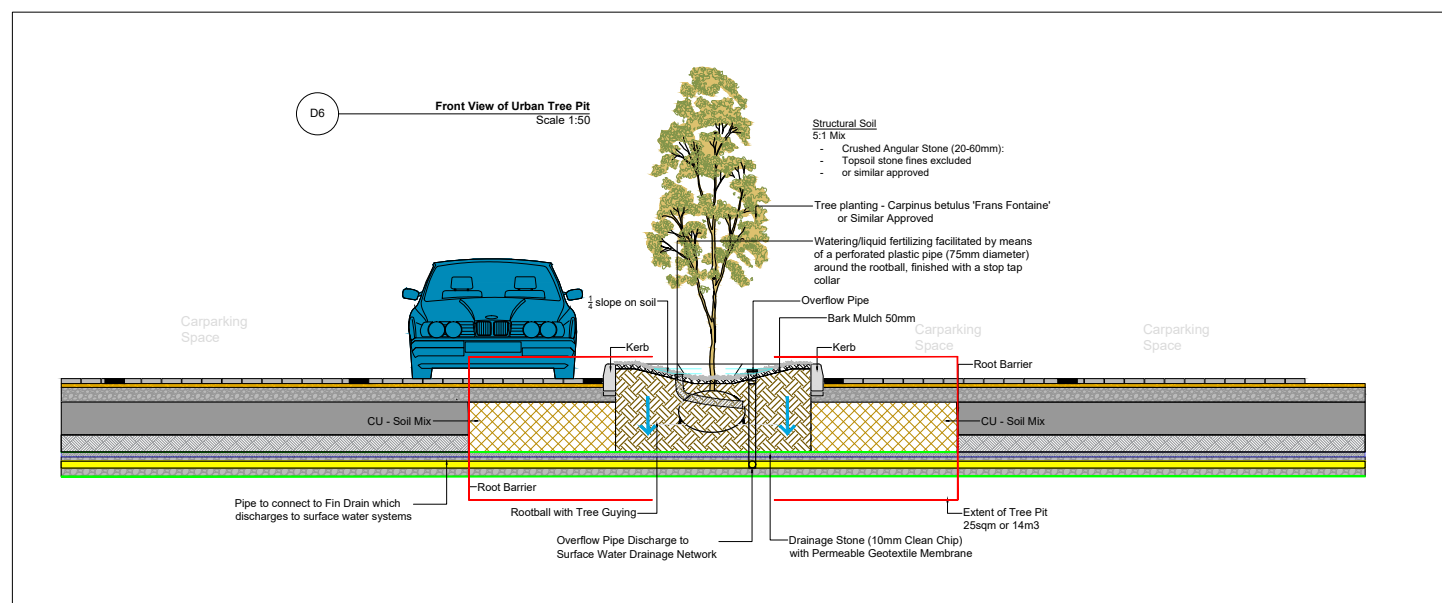
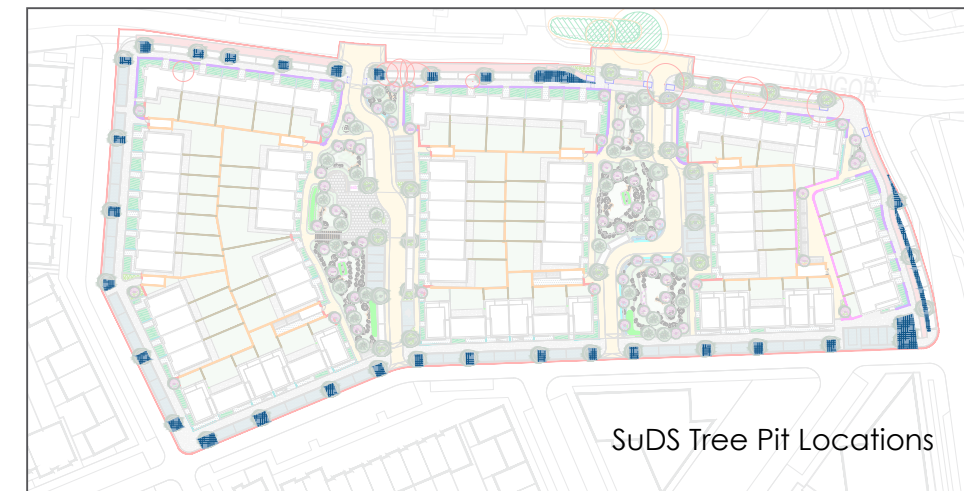
1. The basic profile is a 1 in 3 or 1 in 4 side slopes to a flat base falling at no more than 1 in 50 to prevent erosion. Checkdams or terraced swales can be used to mitigate risk of erosion where 1 in 50 falls cannot be achieved.
2. Base width less than 1m wide will increase the risk of erosion and 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.



Proposed Tree Pit Planting



Helleborus
Astible
Carex pendula
Iris siberica
Kniphofia Red Hot Poker



Furniture Palette



Wooden seating



Logs as seating



Tree Pit Grilles

Play Equipment Palette



Play Equipment

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



Calisthenics Equipment

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

Hard Landscape Surfaces

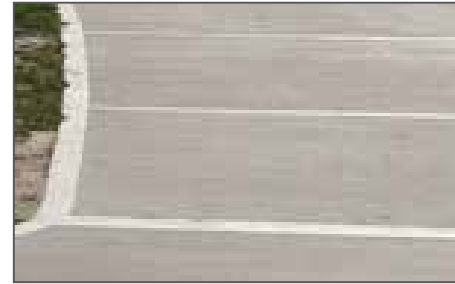
Surface Palette

In-situ Surfaces

Surfacing for high impact areas across the development



Beige Tarmac roads and pathways

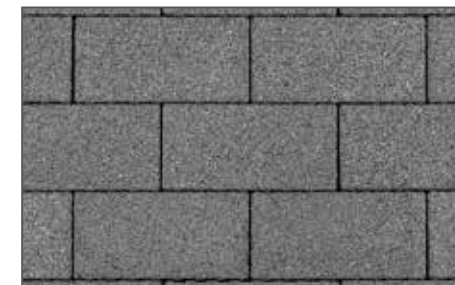


Brushed exposed aggregate concrete

Paving Palette

Feature Paving

Light coloured flags to maximum light within courtyards w/ contrasting paving blocks



Graphite Paving

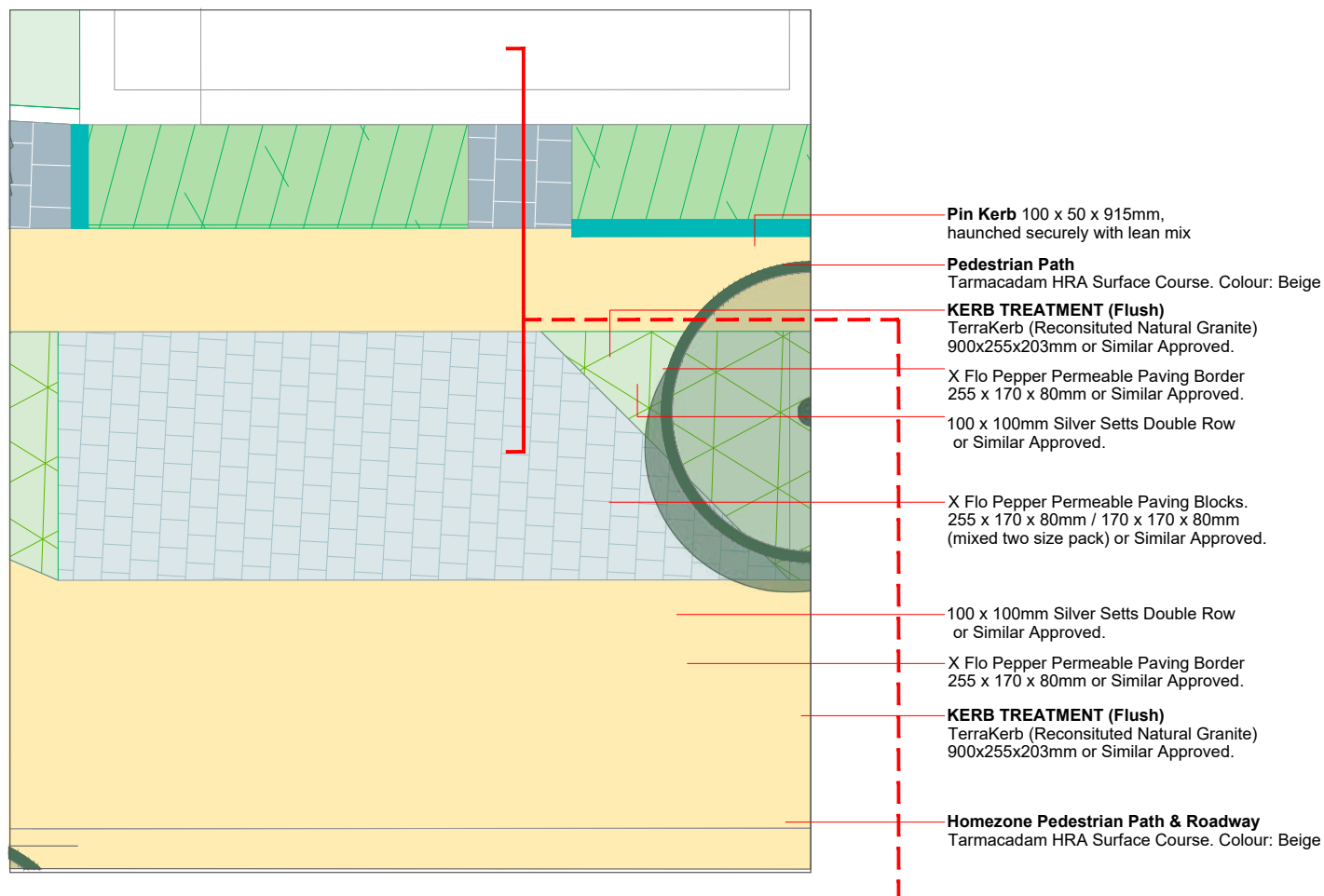


Feature Paving



Permeable Parking Pavers

Permeable Paving



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

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.

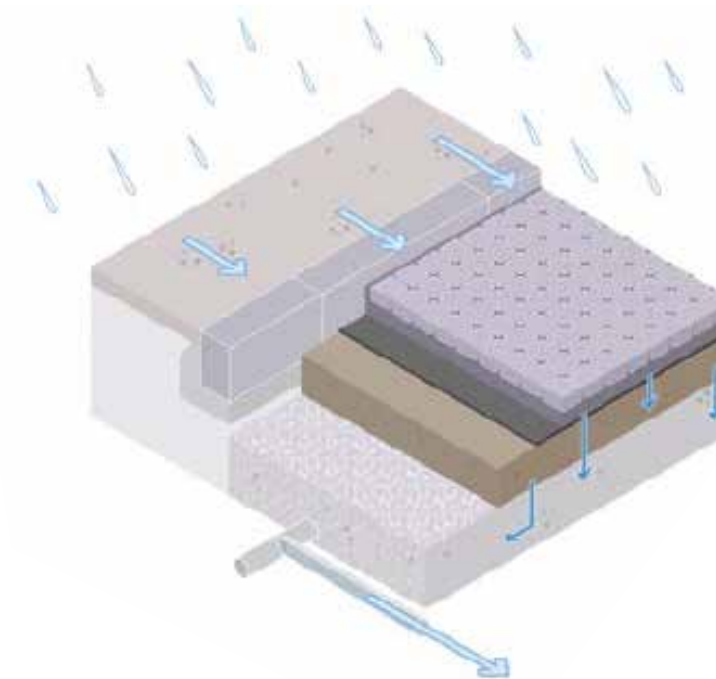
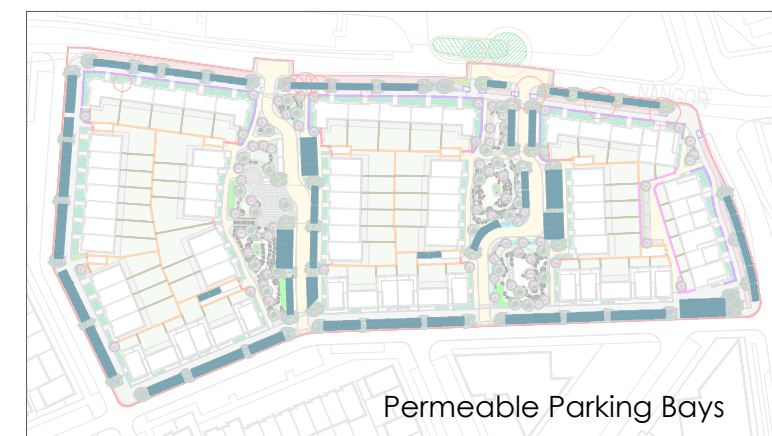
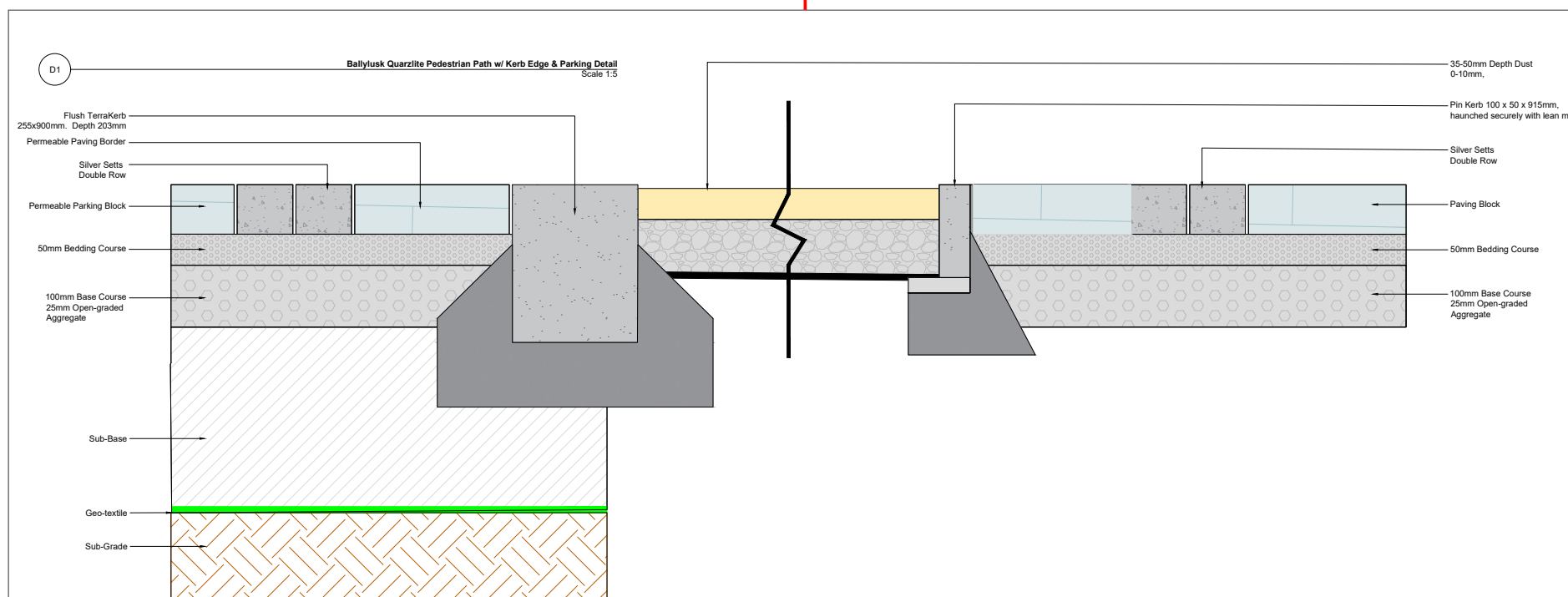


Diagram of Permeable Paving in parking bays

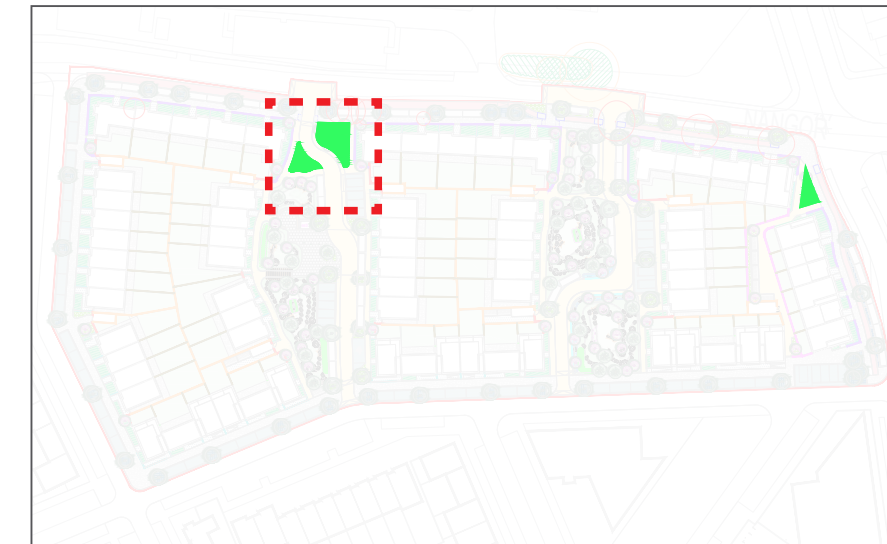
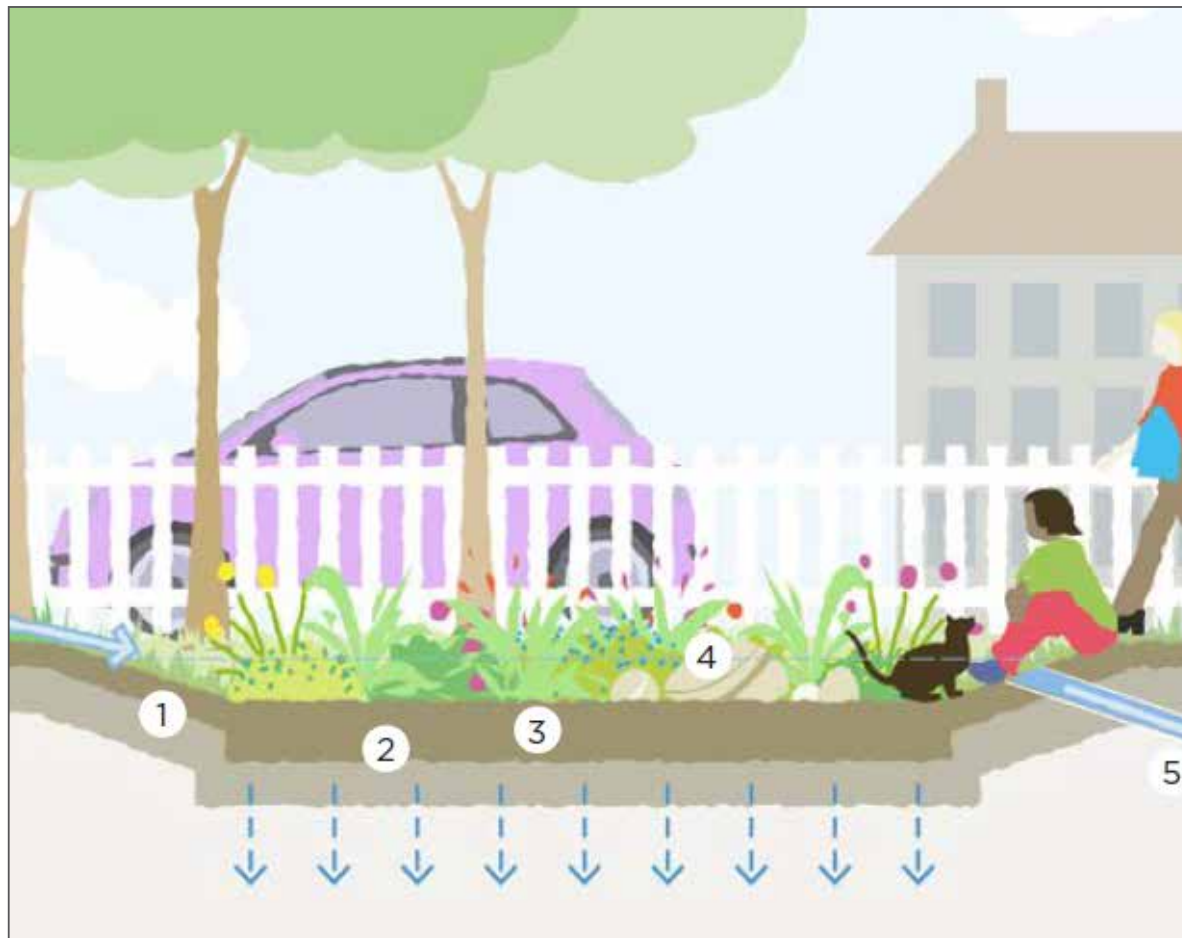


SUDs - Bioretention Raingarden

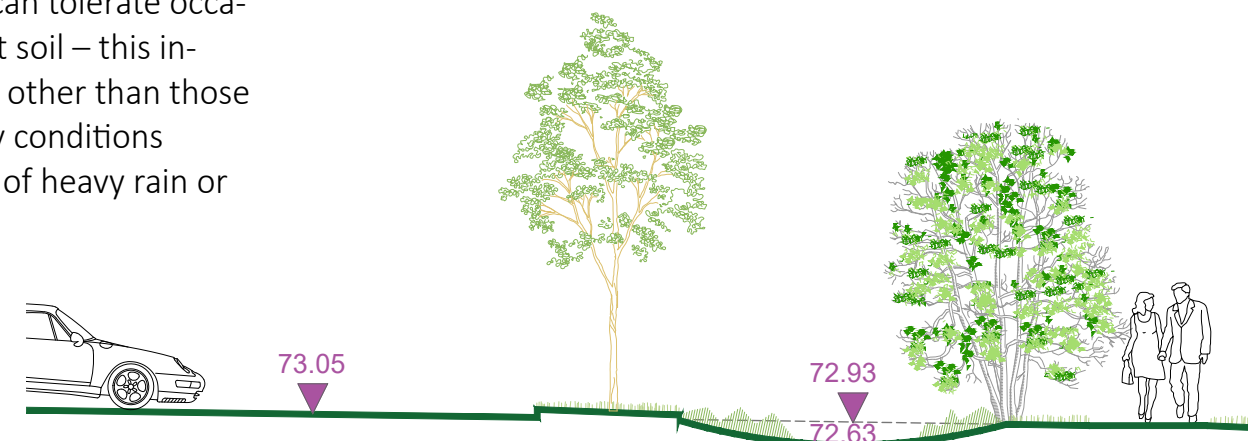
Raingardens are designed to collect and manage reasonably clean water from roofs and low pollution risk drives and pathways. They are generally installed where community or private maintenance is available to upkeep these attractive features.

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 Gardens



Section AA'

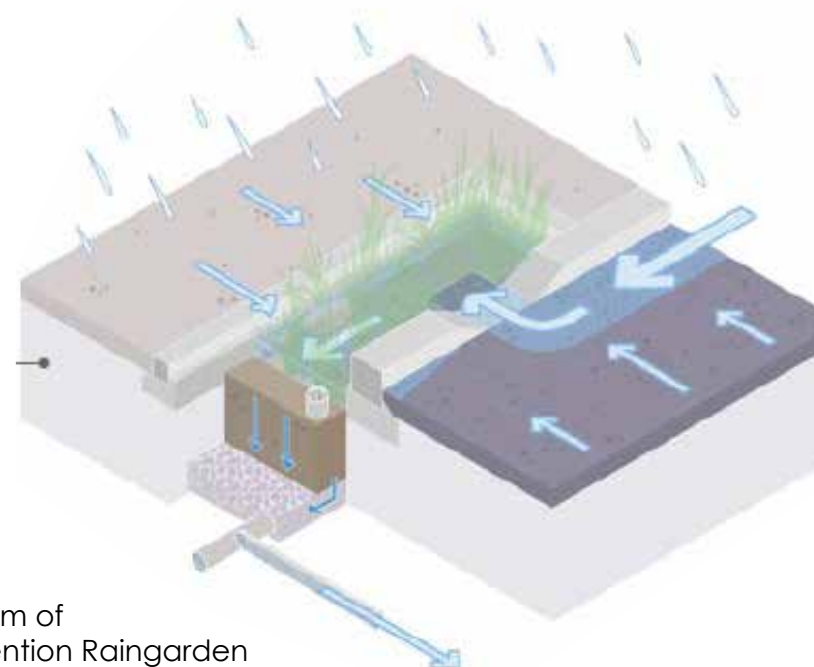
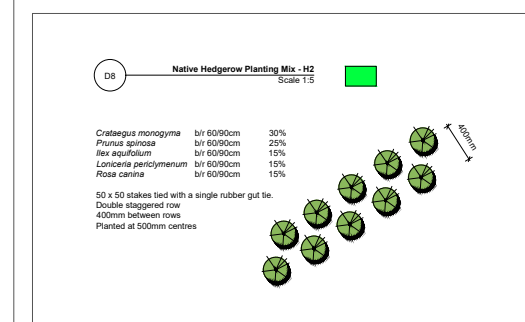
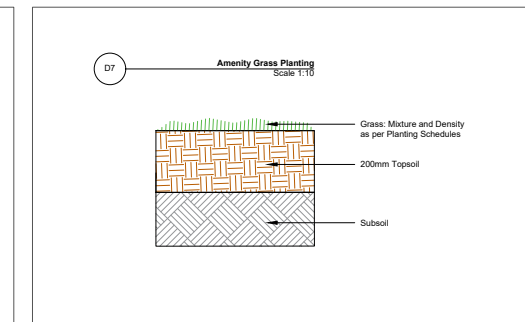
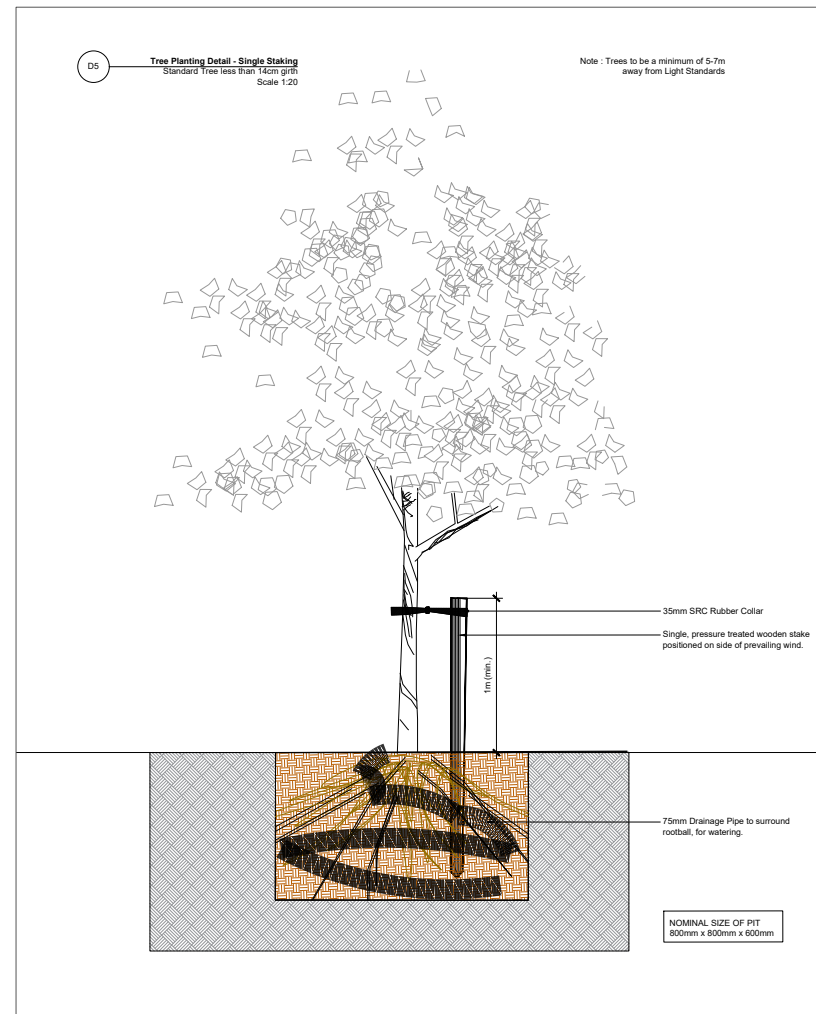
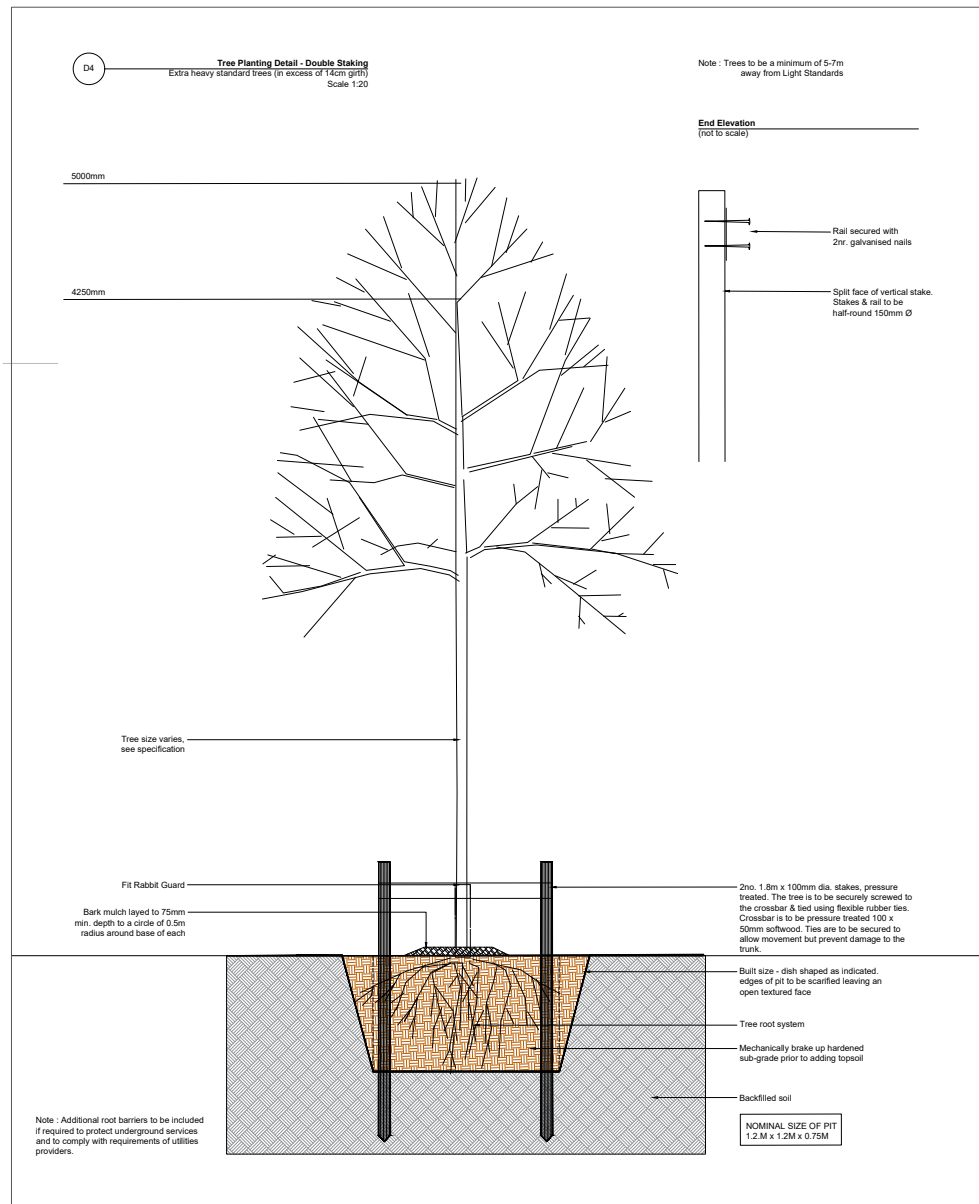
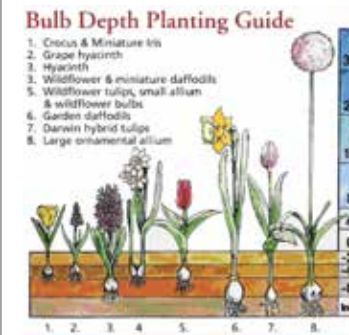
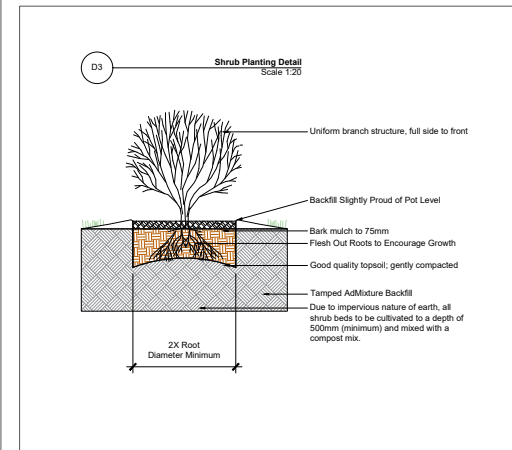
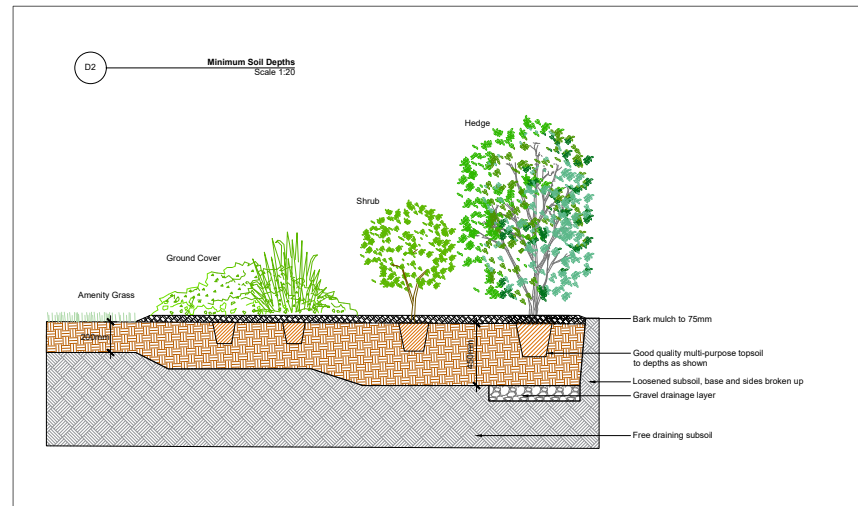
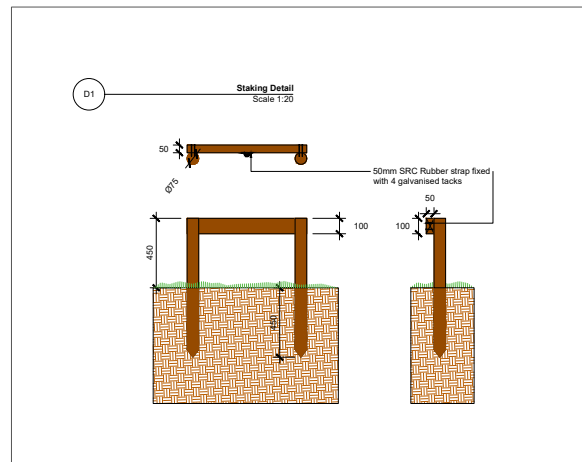


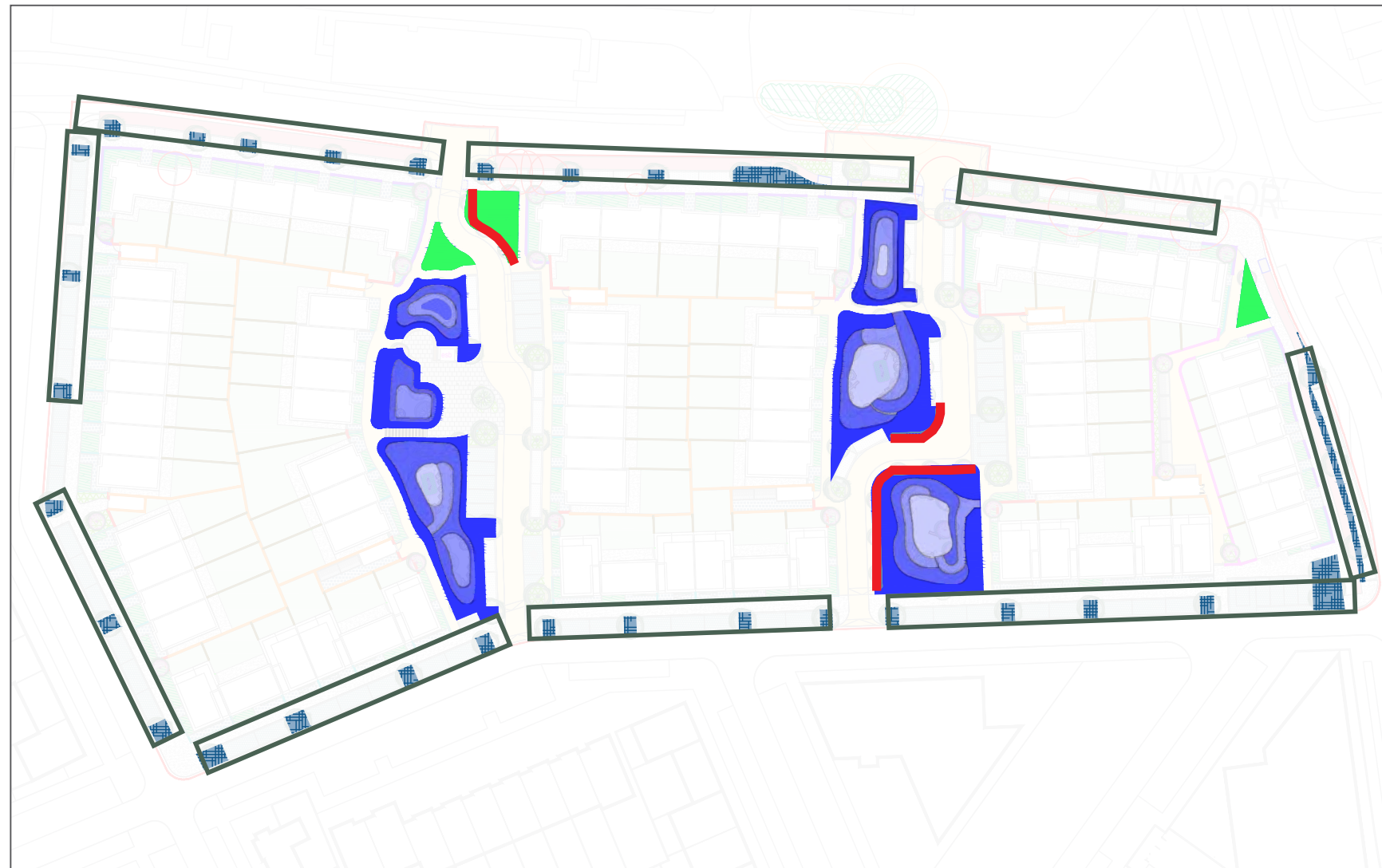
Diagram of Bioretention Raingarden







4. DETAIL DESIGN

Soft Landscape Details

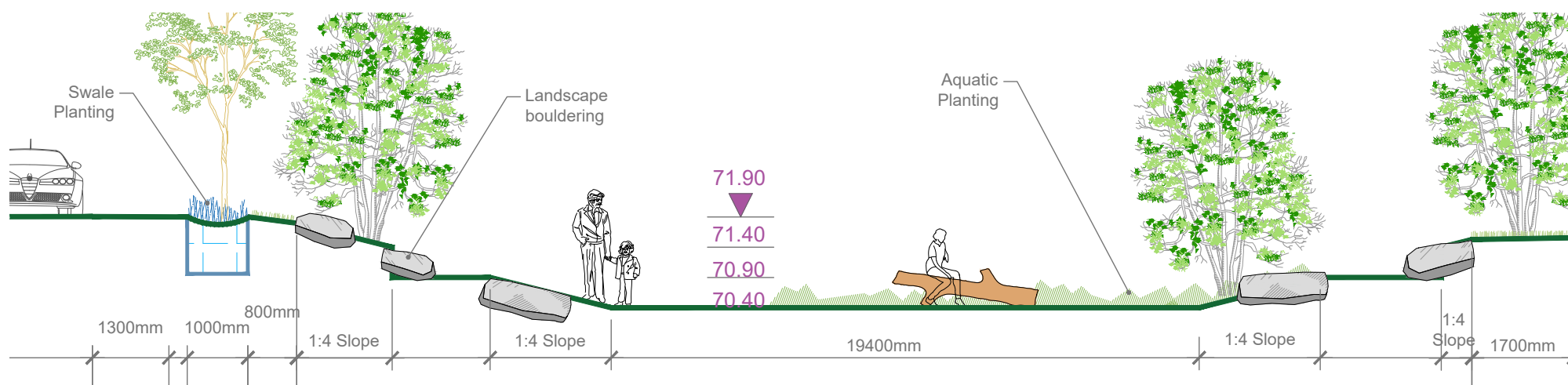




-  Attenuation Basins
-  Rain Gardens
-  Tree Pit Locations
-  Swales



Dry basins incorporating nature based play



Attenuation Areas

MULTIDISCIPLINARY DESIGN TEAM



Ronan Mac Diarmada & Associates
Landscape Architects & Consultants

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TEL 01 4124476
EMAIL info@rmda.ie
WEB www.rmda.ie

