LAND PLANNING & DESIGN

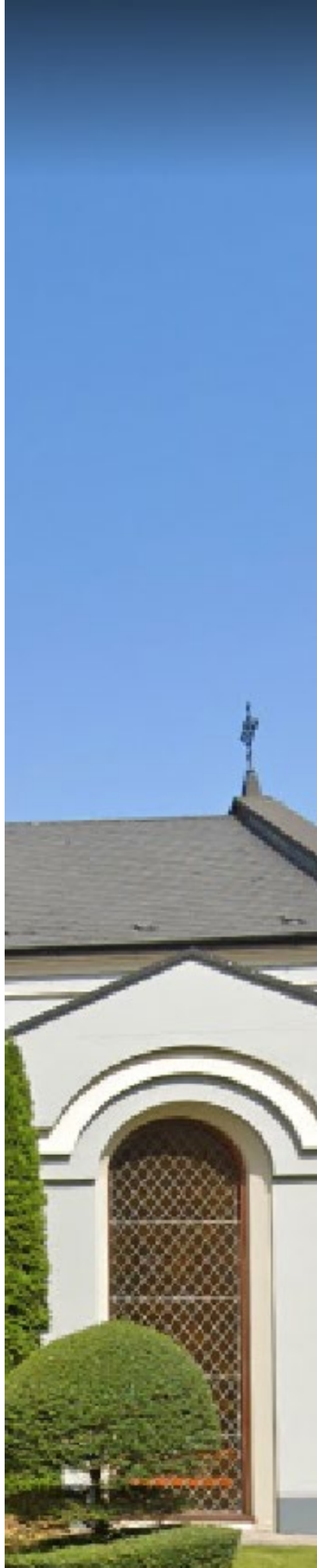
CUNNANE STRATTON REYNOLDS
LAND PLANNING & DESIGN

Barry's Field Apartments

Landscape Design Rationale

PROJECT NO. 24275

January 2025



LAND PLANNING & DESIGN

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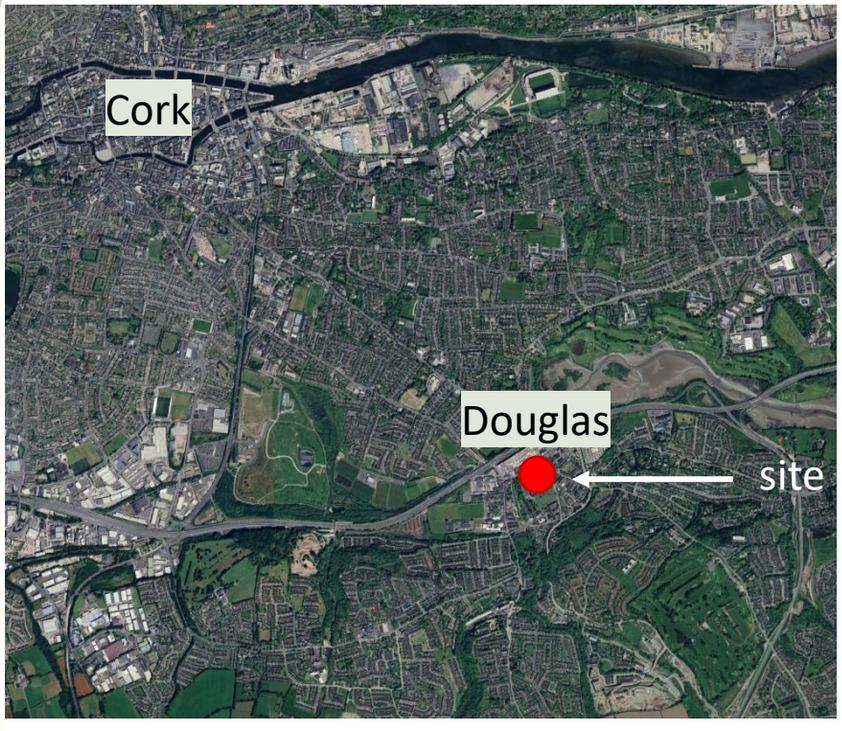
LAND PLANNING & DESIGN

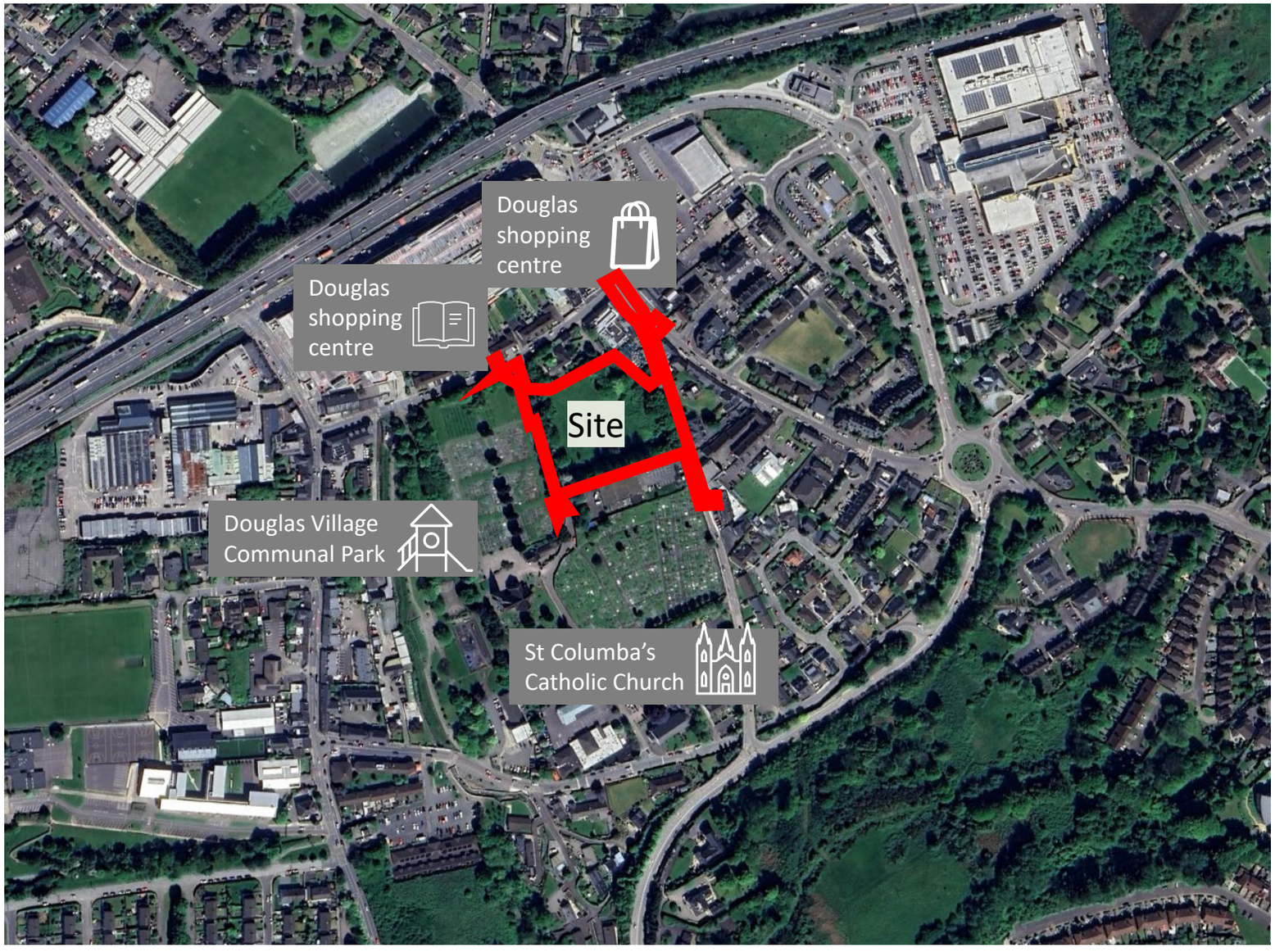
01. Context & Introduction

LAND PLANNING & DESIGN

SITE CONTEXT

The site is situated within the suburban area of Douglas, which is a prominent residential and commercial district approximately 5 kilometers southeast of Cork City center. Douglas village is known for its bustling town center, which includes a mix of retail shops, supermarkets, restaurants, and pubs. The area features a mix of detached and semi-detached houses, apartments, and townhouses, reflecting a suburban residential character.



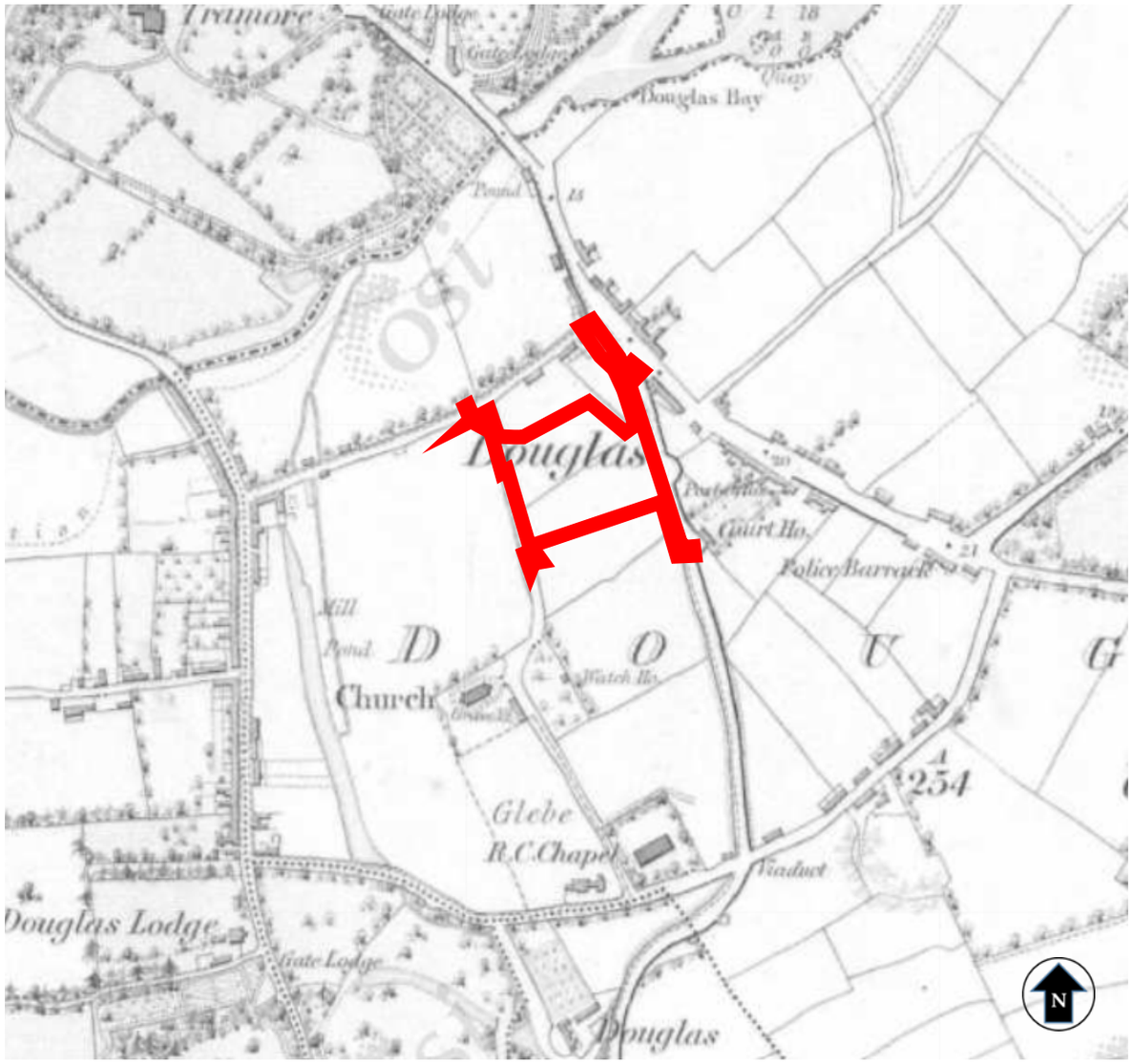


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02. Analysis

ANALISYS: LANDSCAPE HERITAGE





Tramore river



St Columbas Catholic church, Douglas

The name "Douglas" is derived from the Irish "Dubhglas," meaning "***dark stream***" or "***black river***," referring to the Douglas River that once played a *crucial role in shaping the village*. The river not only provided water for early agricultural and industrial activities, but it also helped establish Douglas as a thriving mill village during the 18th and 19th centuries.
Douglas was originally a small rural village that developed around key landmarks like St. Columba's Church and the local mills. The presence of the stream would have made the area attractive for settlement, providing water for both agricultural and domestic use.



The tram arrives in Douglas village

ANALYSIS : SITE BOUNDARIES AND VEGETATION



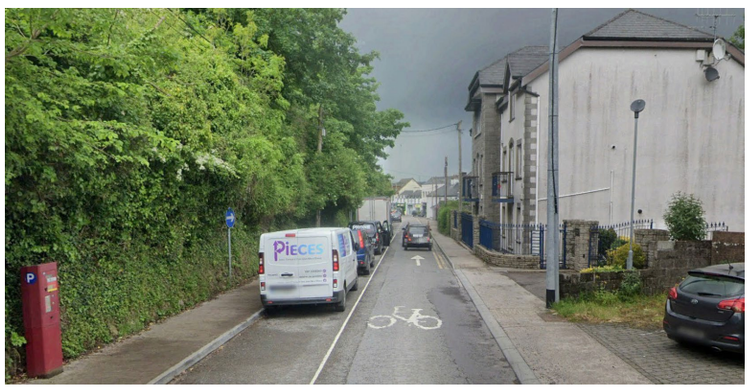
1. Existing vegetation along western boundary



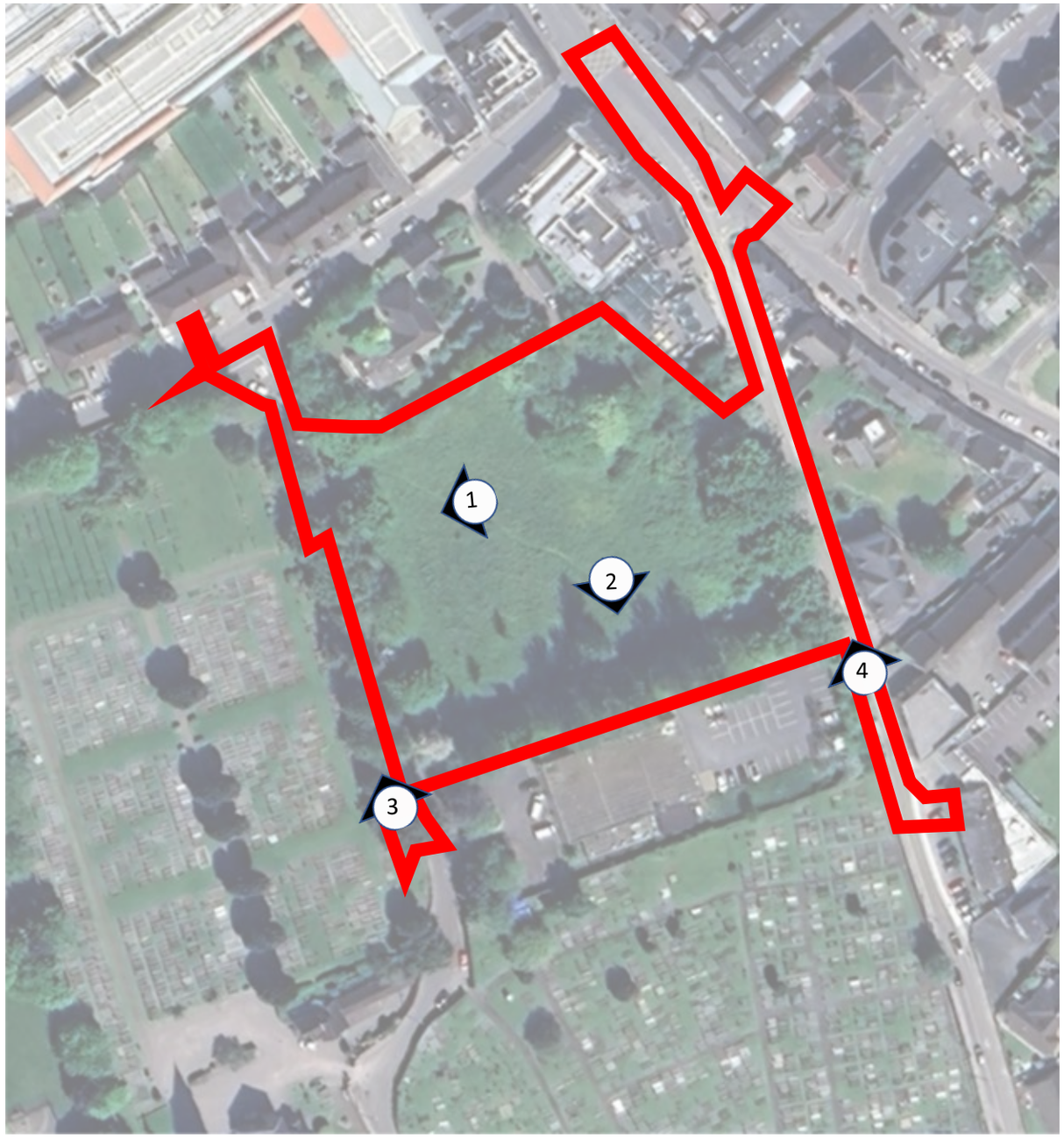
2. Existing vegetation along southern boundary



3. View northward along Church lane



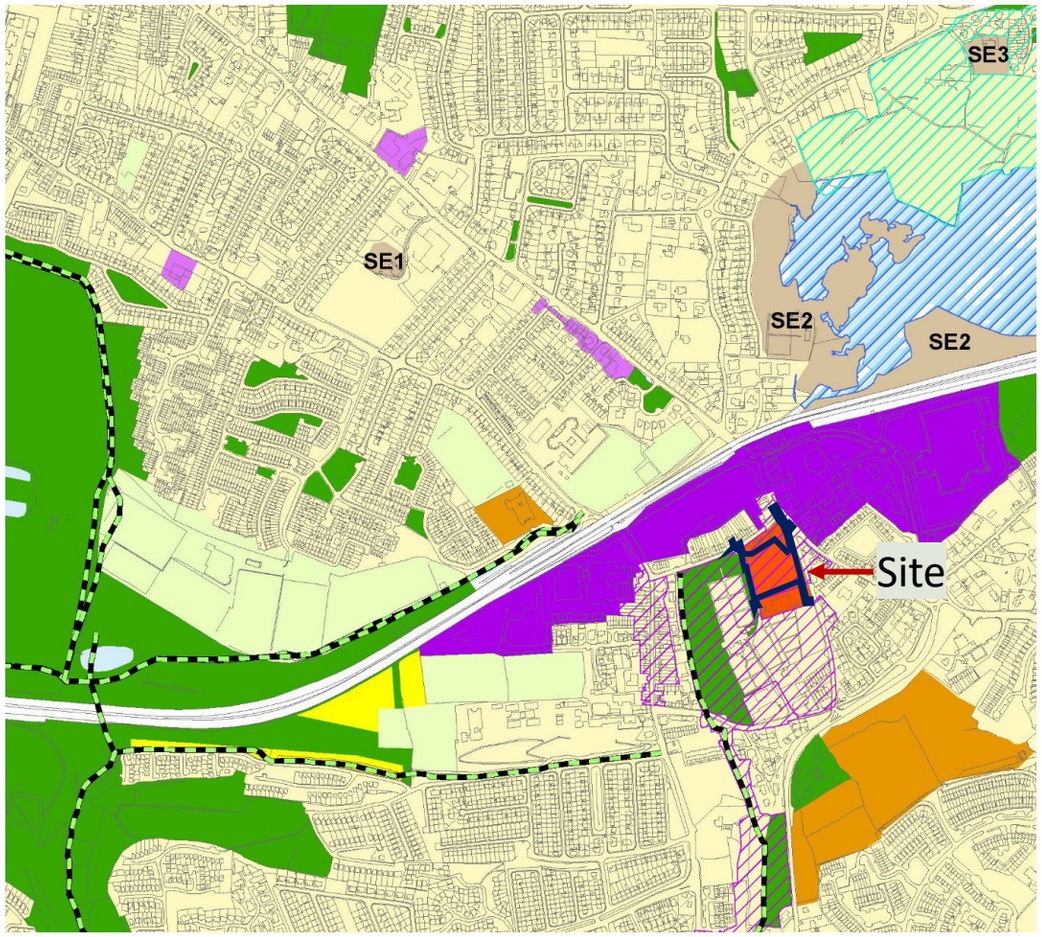
4. View northward along Carrigaline Road.



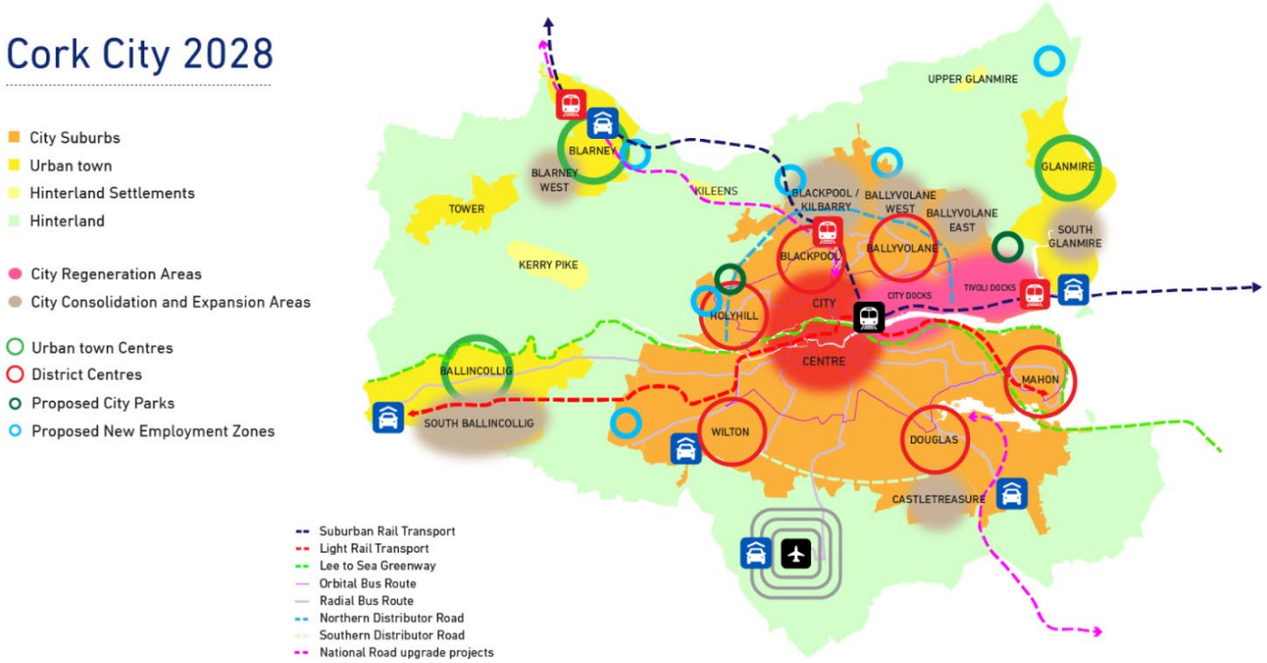
The site trees are the subject of a specialist arborists report prepared by Heritage Tree Care Ltd. (For full details refer to Arboricultural Tree Survey Report and Reference Plans)

Despite being a high-density development, all existing trees will be retained, except for those along the eastern boundary to accommodate the proposed building footprints, access road infrastructure, and public realm interface along Carrigaline Road.

ANALISYS: DEVELOPMENT PLAN EXTRACT



- ZO 12, Education
- ZO 15, Public Open Space
- ZO 07, District Centre
- ZO 16, Sports Grounds and Facilities
- ZO 17, Landscape Preservation Zones
- ZO 19, Rivers and Water Bodies Protection
- Walkways & Cycleways
- Architectural Conservation Areas
- ZO 01, Sustainable Residential Neighbourhoods
- ZO 02, New Residential Neighbourhoods
- ZO 04, Mixed Use Development



Cork City 2028 Vision

Compact Liveable Growth promotes development at the right locations primarily through regeneration, consolidation and re-intensification. This growth is supported by new physical and social infrastructure that puts people first, supporting everyday life that makes it easy and safe to move around Cork City. A mix of uses, densities and high-quality design will ensure a balance between protecting the amenities and character of a neighbourhood.

LAND PLANNING & DESIGN

02. GREEN AND BLUE INFRASTRUCTURE PRINCIPLES

GREEN & BLUE INFRASTRUCTURE:
PRINCIPLES AND THEMES





This development will benefit from proactive management of both green and blue infrastructure to provide benefits to the environment and residents alike. A green infrastructure strategy typically prioritizes the incorporation of plants, trees, and green spaces into the development, while a blue infrastructure strategy focuses on managing water resources, such as watercourses, wetlands and swales. By combining the two, this development can become more sustainable, promote biodiversity and ecosystem health, and improve human well-being. This approach requires careful planning, collaboration with stakeholders, and the use of innovative design techniques to integrate green and blue infrastructure into the development's fabric. Ultimately, a green and blue infrastructure strategy can help create healthier and more resilient communities, reduce the environmental impacts, and enhance the quality of life for residents.

Overall, blue and green infrastructure strategies aim to create sustainable, resilient, and liveable communities that benefit both the environment and the people who inhabit them.



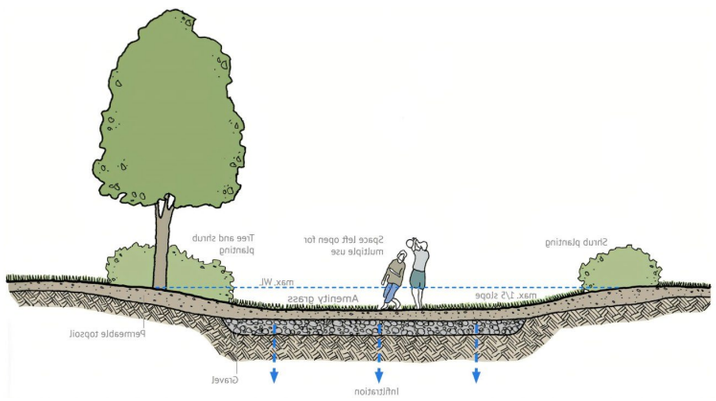
GREEN BLUE INFRASTRUCTURE:
KEY COMPONENTS:

Sustainable Urban Drainage Systems (SuDS) aim to manage stormwater effectively, minimize flood risks, and promote sustainable water management practices. By implementing a comprehensive SUDS strategy, the development site can enhance its resilience to extreme weather events, protect water resources, and create a more sustainable and environmentally friendly living environments. SuDS proposals must be developed appropriate to local site ground conditions.
SuDS components can make a significant contribution at to the biodiversity (ecological) value of an area (eg. rain gardens, swales, detention basins, trees). It is this biodiversity and ecology

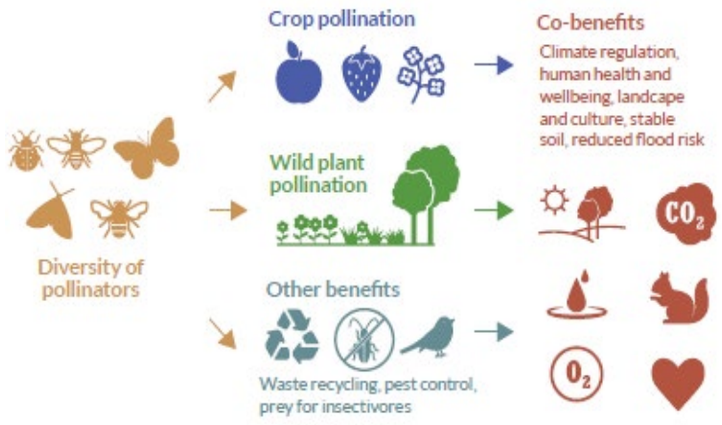
SUDS EXAMPLES:
- Permeable Paving
- Rain Gardens
- Swales
- Infiltration Basins
- Wetlands

Biodiversity in housing developments is crucial. It means a variety of plants, animals, and insects can thrive, creating a balanced environment. This diversity improves air quality, promotes pollination for gardens, and enhances residents' well-being. Preserving biodiversity ensures a healthier and more sustainable living space for everyone.
Enhance biodiversity is done by choosing native plant species that naturally belong to the area and including pollinator-friendly non-native species to attract bees and butterflies. This thoughtful landscaping promotes a thriving ecosystem, supports local wildlife, and contributes to the overall well-being of both nature and residents.

Open spaces and recreation are integral components of green infrastructure in housing developments. Emphasizing the preservation of existing habitats and the establishment of new ones within amenity spaces is essential. This approach fosters biodiversity and enhances the overall ecological balance. Ensuring robust connectivity among all green spaces contributes to a cohesive and well-integrated environment. Beyond providing areas for leisure and physical activity, this systematic incorporation of green infrastructure elevates the quality of life for residents. It also underscores a commitment to sustainable urban planning, creating neighbourhoods that harmoniously blend with nature while offering residents accessible and thriving green environments.



SuDs example

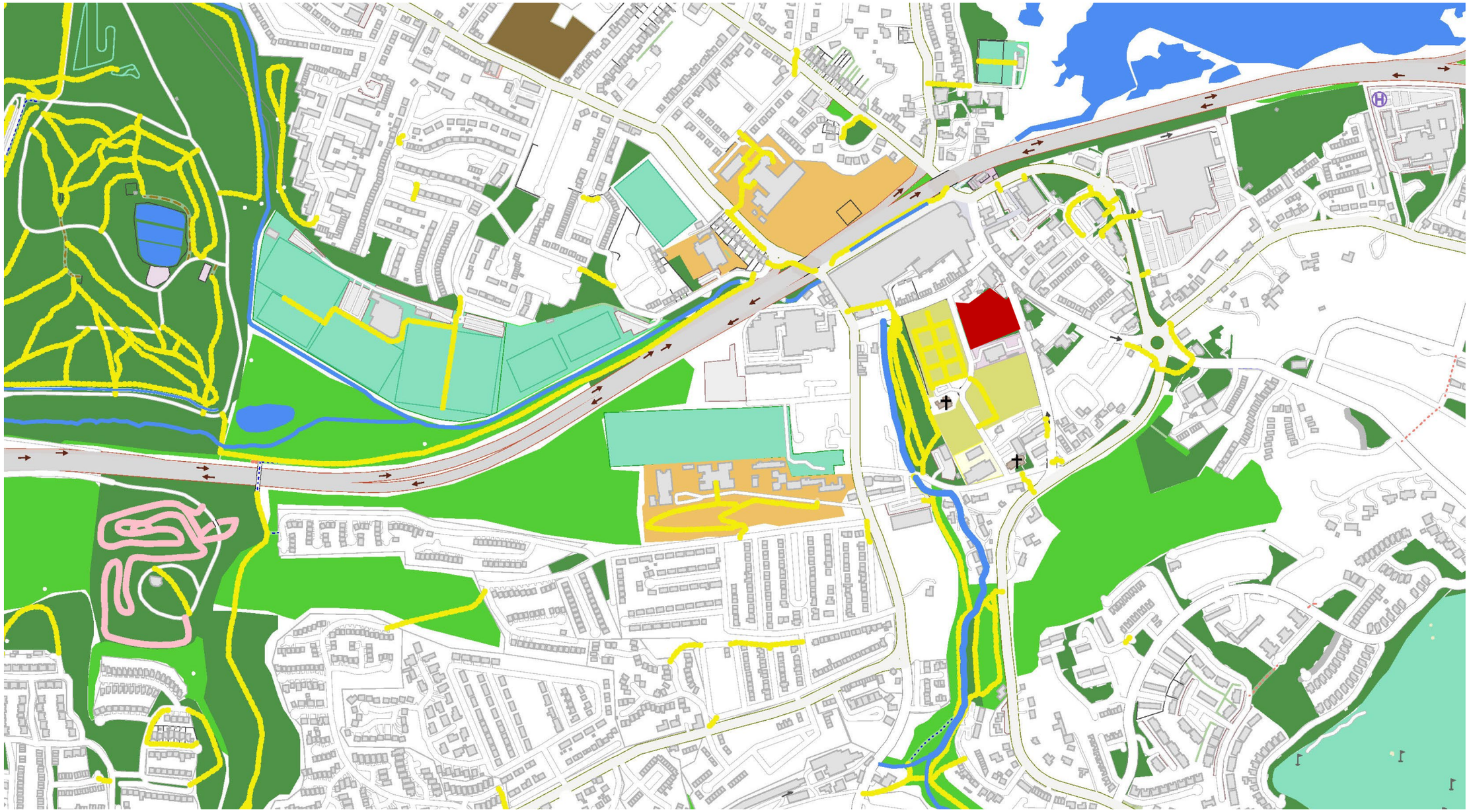


The benefits of protecting pollinators



Variety of use and function within open spaces

GREEN & BLUE INFRASTRUCTURE STRATEGY: LOCAL AREA OVERVIEW



Public open space

Sports ground

Woodland area

School ground

Green field

Graveyard

Waterbody

Amenity path

Subject site

LAND PLANNING & DESIGN

03. Landscape Concept

DESIGN CONCEPT: AIMS & STRATEGY













The landscape design proposal for the site is intended to establish an outdoor environment that effectively addresses the needs of residents while being seamlessly integrated into the surrounding framework.
The landscape strategy for the project site at Douglas village aims to deliver the following:-

Create a Sense of Place- through developing a unique, vibrant residential area that integrates with the character and fabric of Douglas Village. Place-making is emphasized by designing communal spaces that encourage interaction and foster a sense of community. Focal points within the landscape will act as gathering spaces, using high-quality materials and design elements that reflect the local culture and aesthetics.

Amenity and Recreational Spaces - designing amenity areas that cater to a variety of age groups, including children, adults, and the elderly, ensuring inclusivity and accessibility. Multi-functional spaces will be provided to accommodate activities such as relaxation, social gatherings, and play, with high quality materials.

Biodiversity - retaining and protecting the mature boundary vegetation to serve as a habitat for local wildlife and as a natural green buffer for the development. Native tree and shrub planting will be introduced to complement the existing vegetation, including some pollinator friendly species, enhancing biodiversity and providing diverse habitats for birds, pollinators, and other wildlife

Connectivity - developing inviting, well-connected pedestrian pathways that link the residential area to surrounding amenities in Douglas Village. Safety and accessibility will be prioritized to enhance the experience of residents and visitors, fostering a stronger sense of community connection.

Maintenance and Management – requiring that all specified hard and soft materials, finishes and treatments are robust, durable and can be managed / maintained with relative ease.

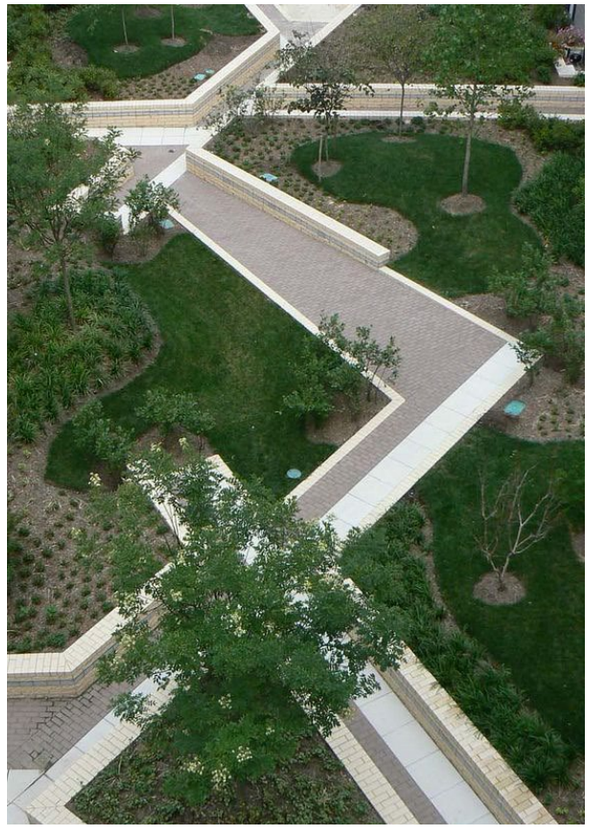
Green & Blue Infrastructure
integration of green infrastructure that supports water management, such as permeable paving and rain gardens, attenuation tanks, promoting sustainability across the development

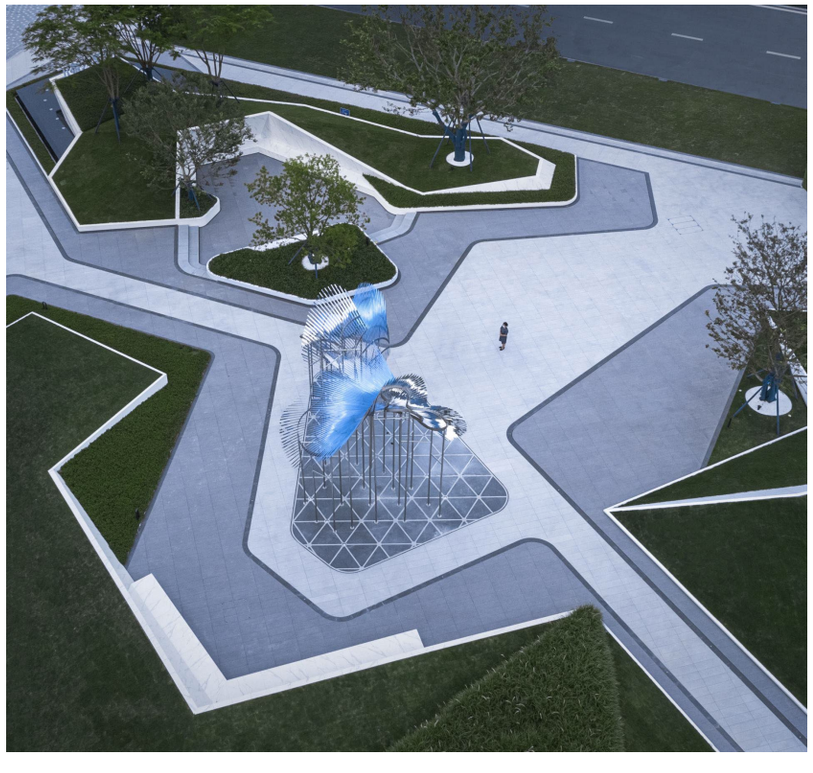
DESIGN CONCEPT: INSPIRATION IMAGES

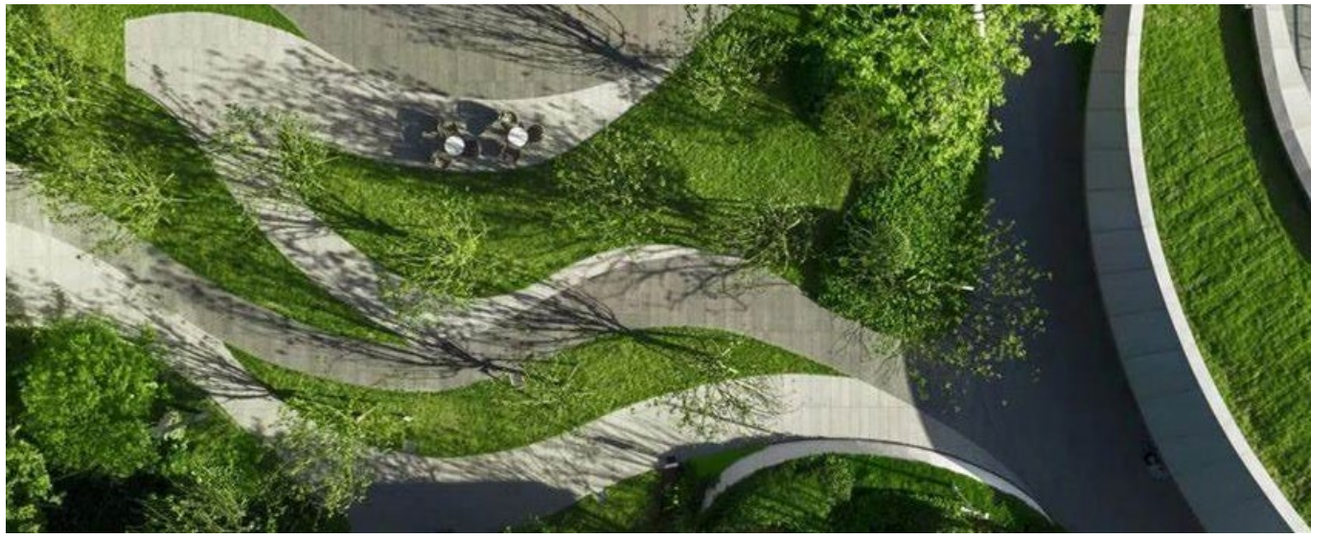
Review of flow river patterns, with pathways, landscaping, and features reflecting its meandering course.









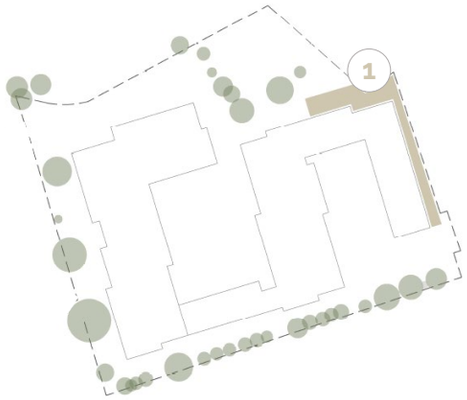


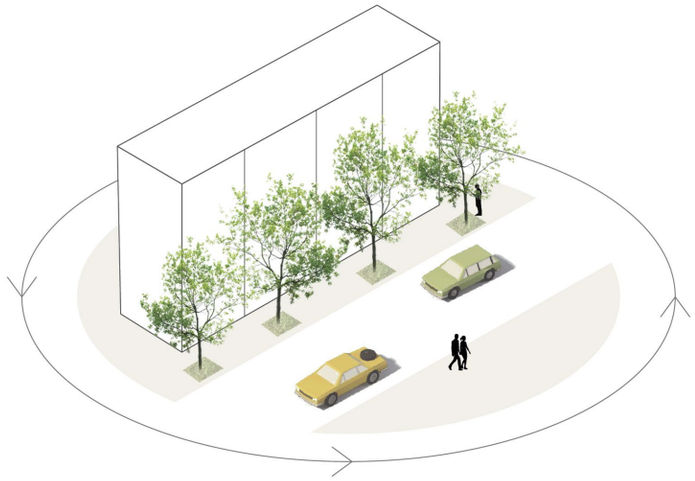


SPACES

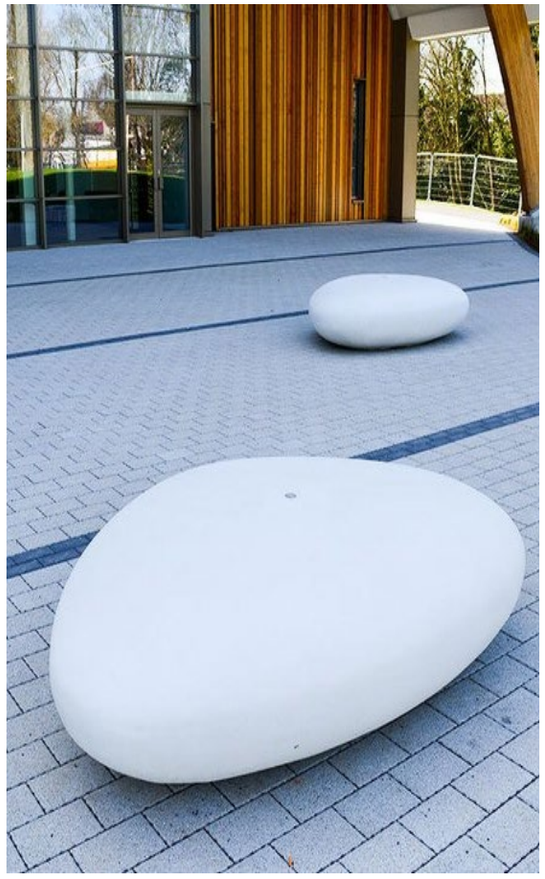
The area is divided into four different zones, which will lead to a distinction in the use of space
1 – Public realm 2 – Shared Crossway 3 – Courtyard 4 – Common Green

PUBLIC REALM





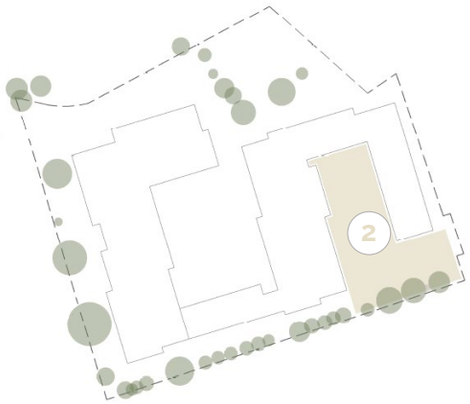


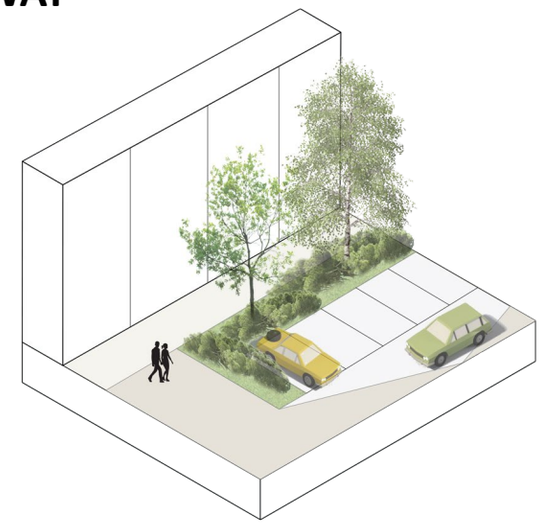




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SHARED CROSSWAY



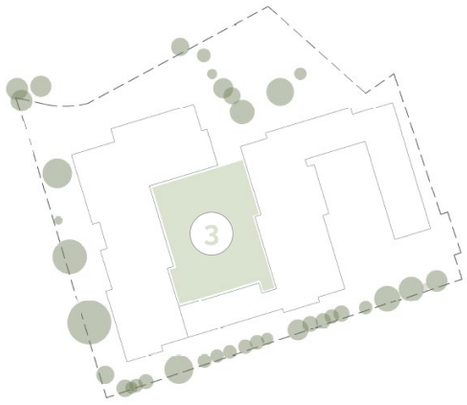


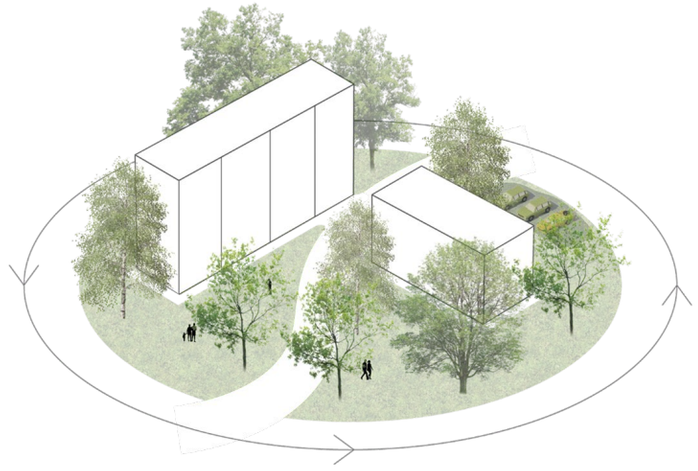


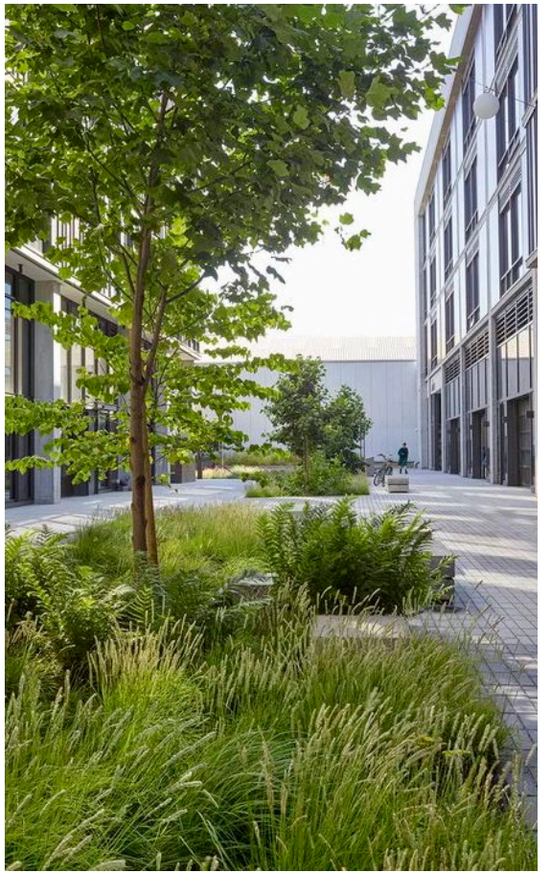


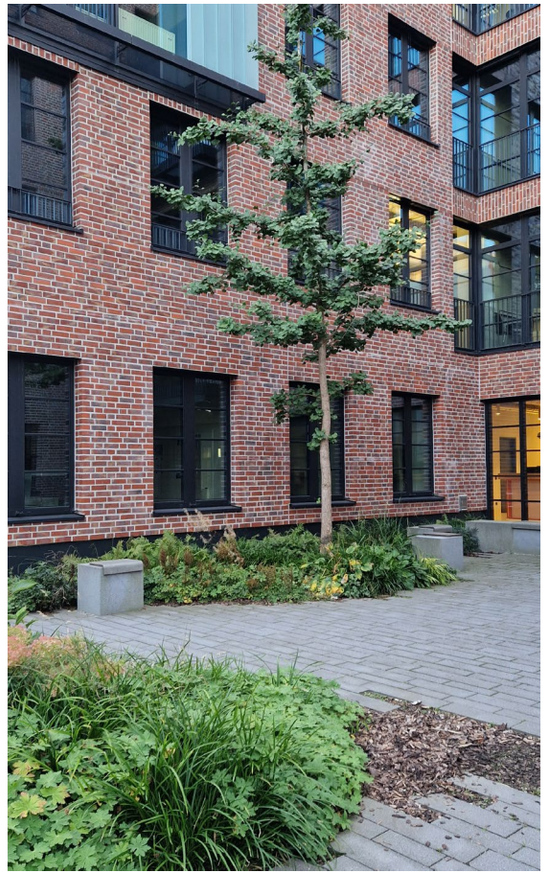


COURTYARD



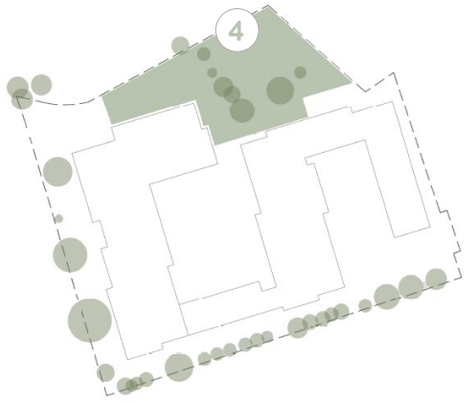


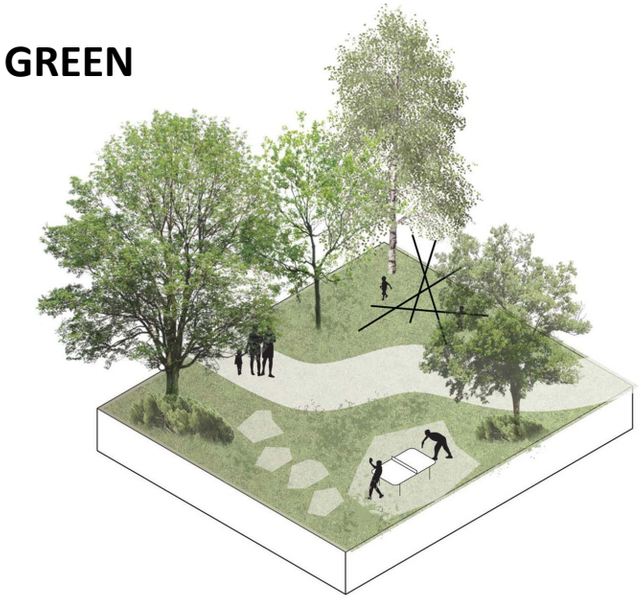






COMMON GREEN









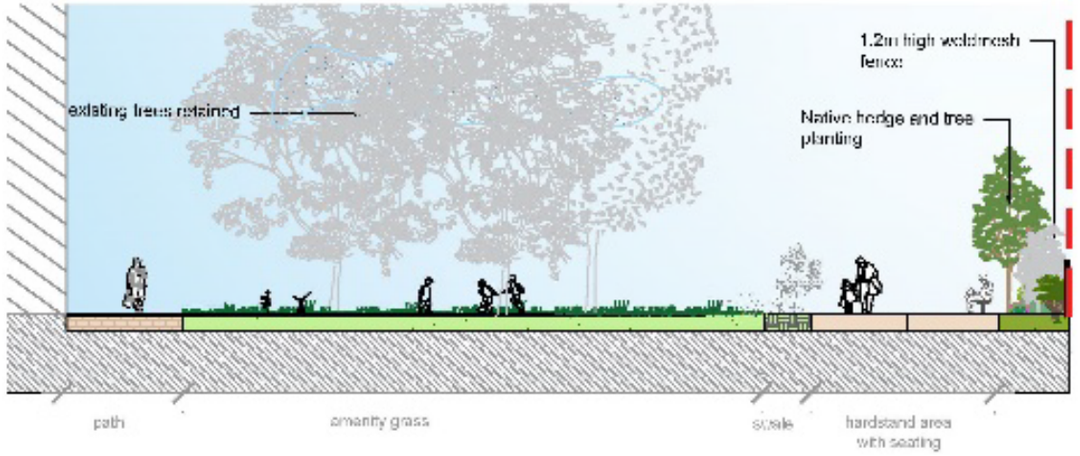


DESIGN CONCEPT: LANDSCAPE MASTERPLAN

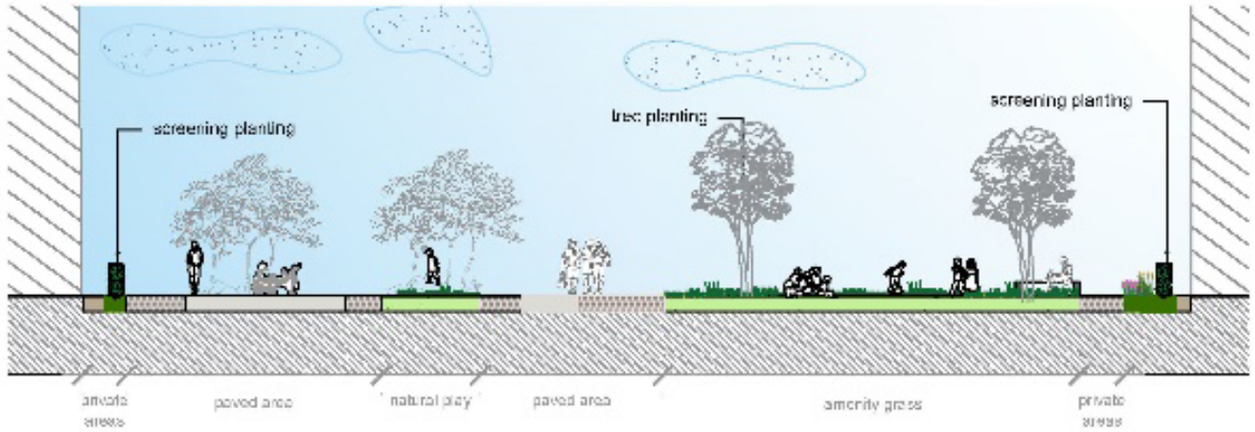


Extracted from Landscape Masterplan drg. No. 24275-2-101

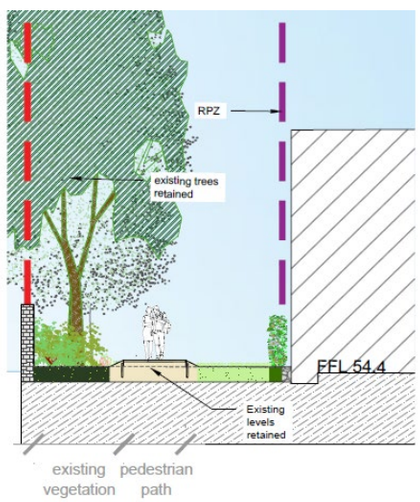
DESIGN CONCEPT: SITE SECTIONS



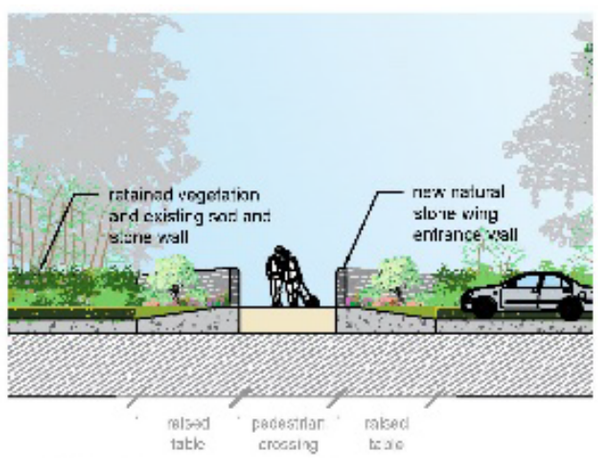
INDICATIVE SECTION A-A, 1:200@A1



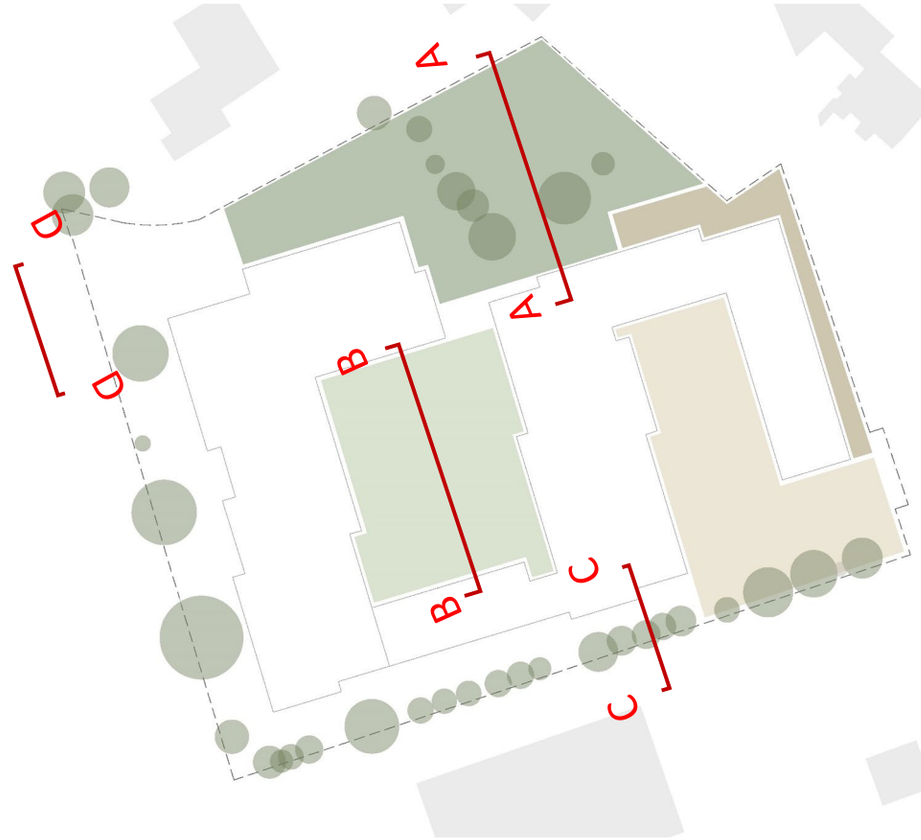
INDICATIVE SECTION B-B, 1:200@A1



INDICATIVE SECTION C-C, 1:200@A1



ELEVATION D-D, 1:200@A1



Extracted from Landscape Masterplan drg. No. 24275-2-101

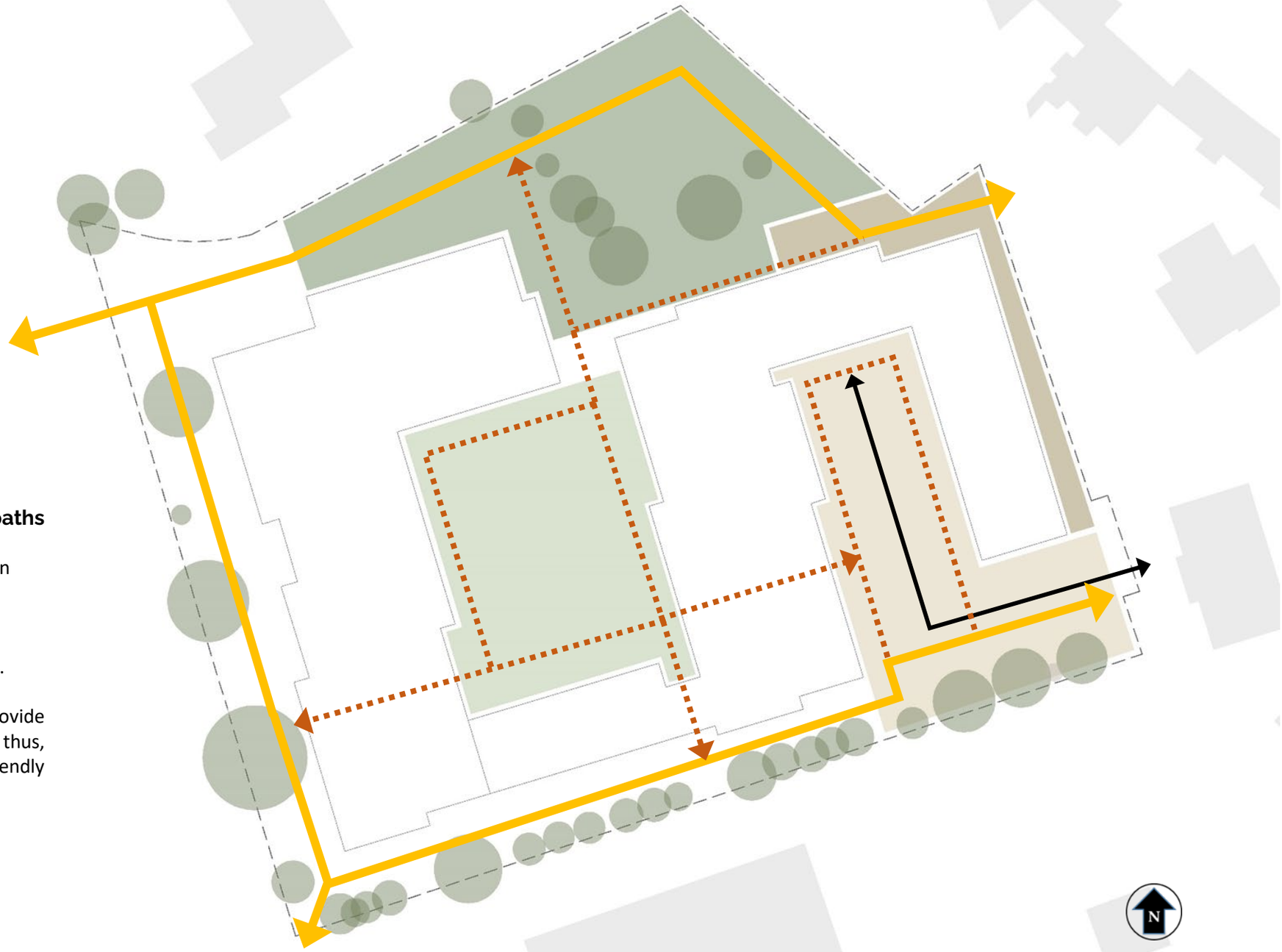
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DESIGN CONCEPT: ACCESS & CIRCULATION

The proposed network of pedestrian paths will provide;

- Access to and from the main site entrance on Church lane & Carrigaline Road
- Access to public open space
- Circulation to amenity spaces within the immediate curtilage of the apartment blocks.

The proposed footpath network will provide universal access for residents and visitors alike, thus, promoting inclusivity and a user-friendly environment.

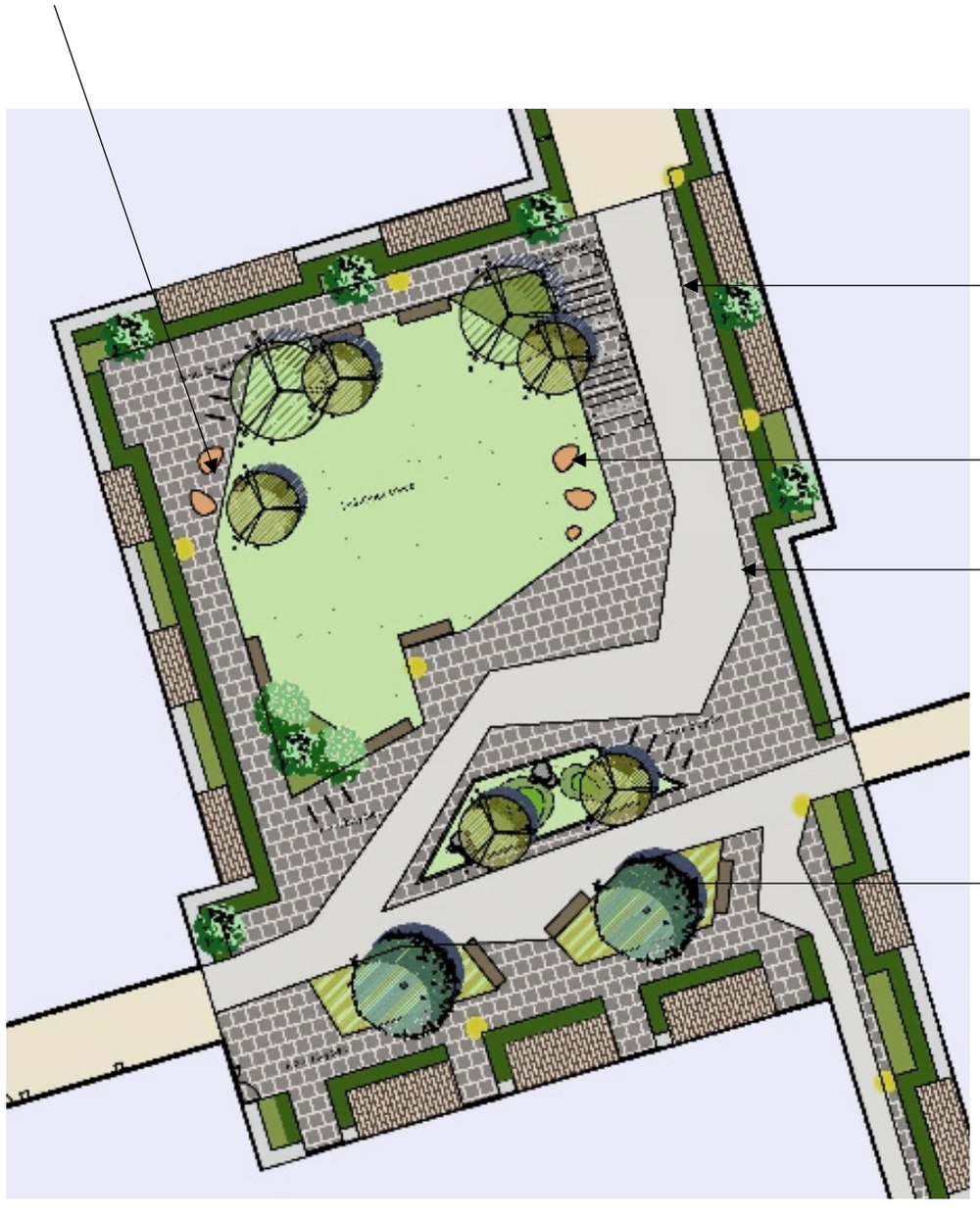


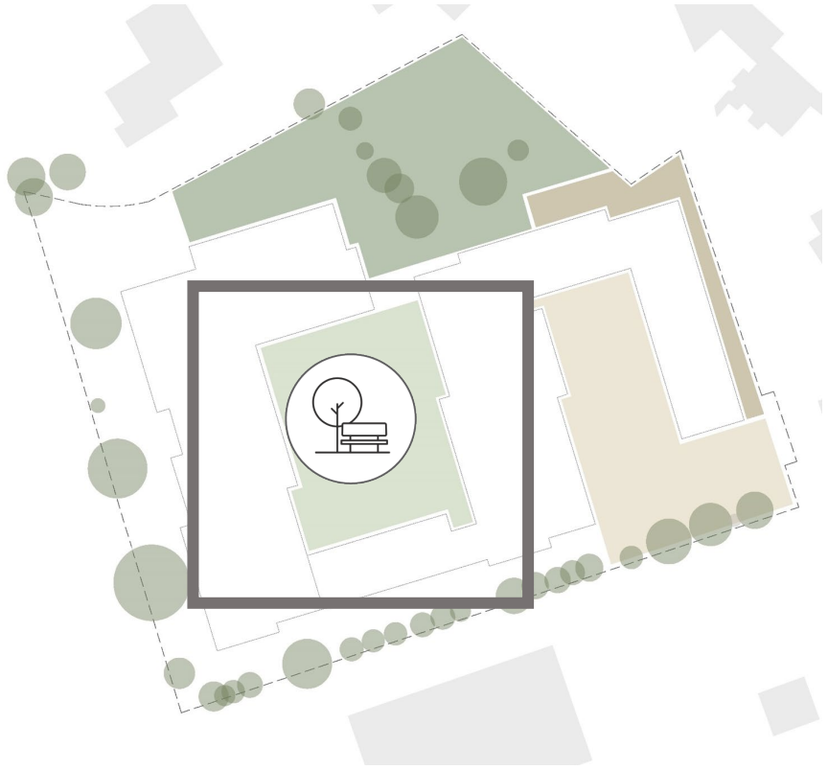
The site is well-connected to local amenities via pedestrian links

main access road Primary pedestrian routes secondary pedestrian routes

22

DESIGN CONCEPT: OPEN SPACE STRATEGY



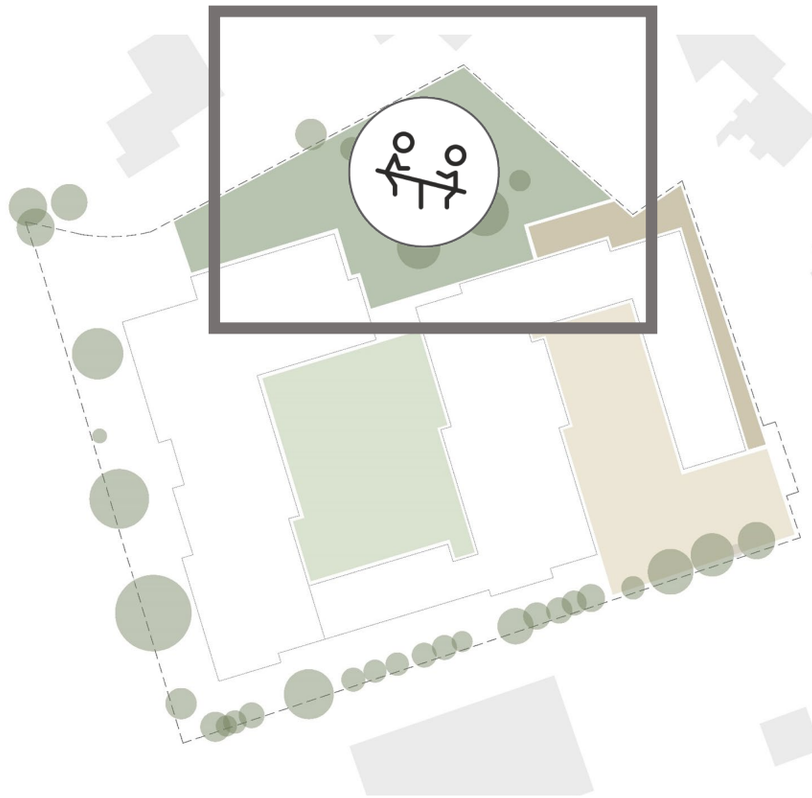


Courtyard



DESIGN CONCEPT: OPEN SPACE STRATEGY



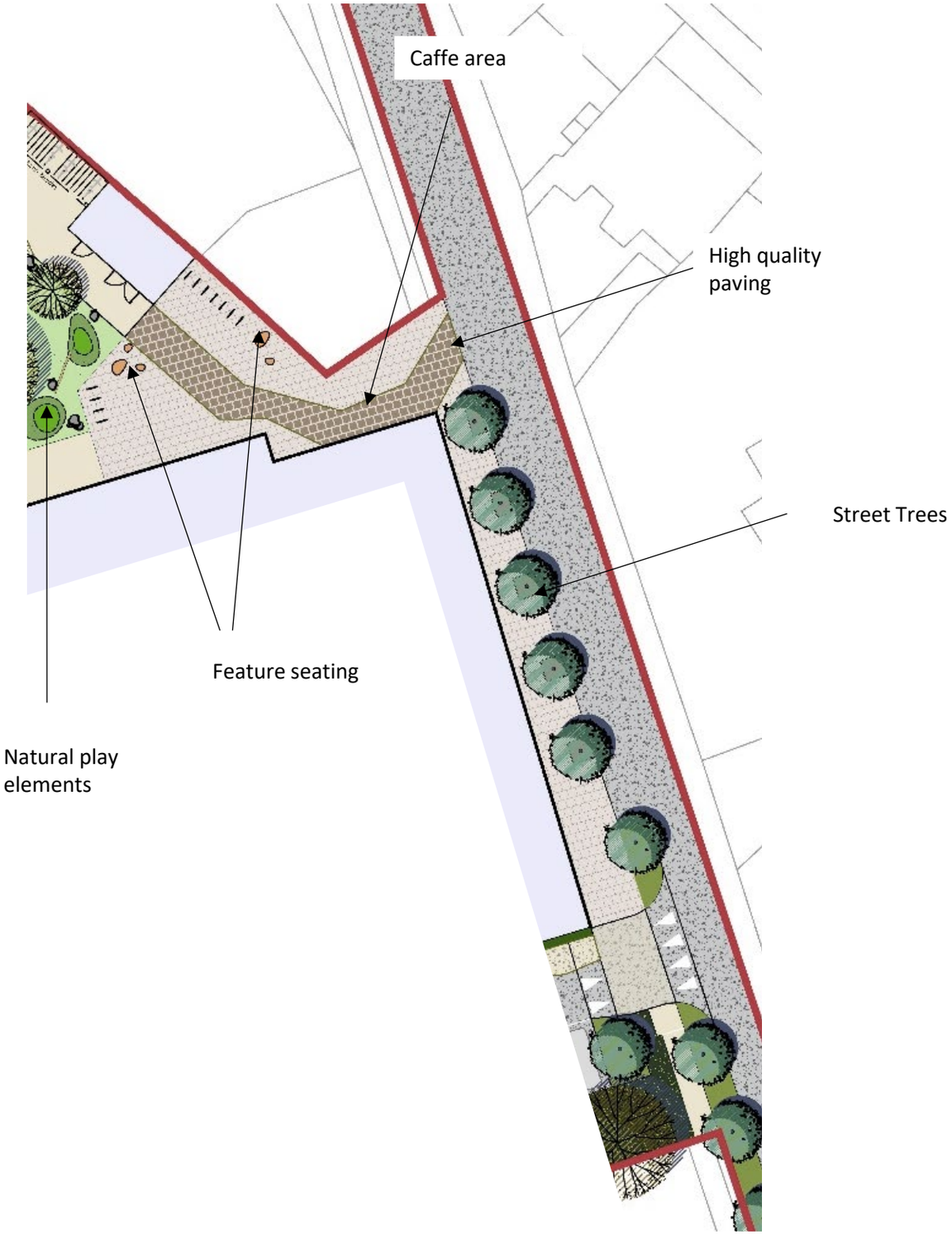


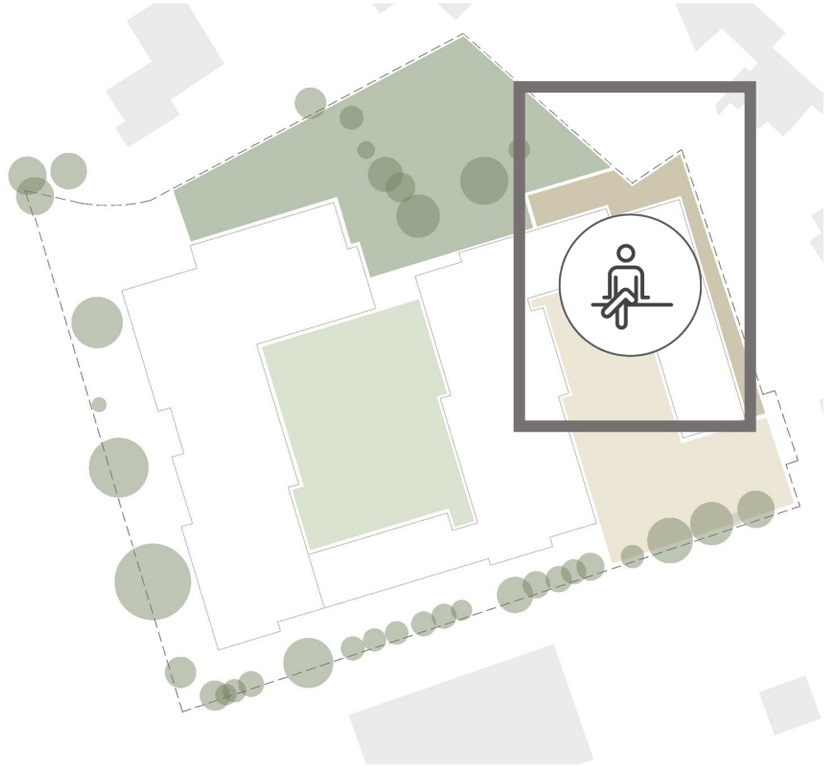
Common Green





DESIGN CONCEPT: OPEN SPACE STRATEGY





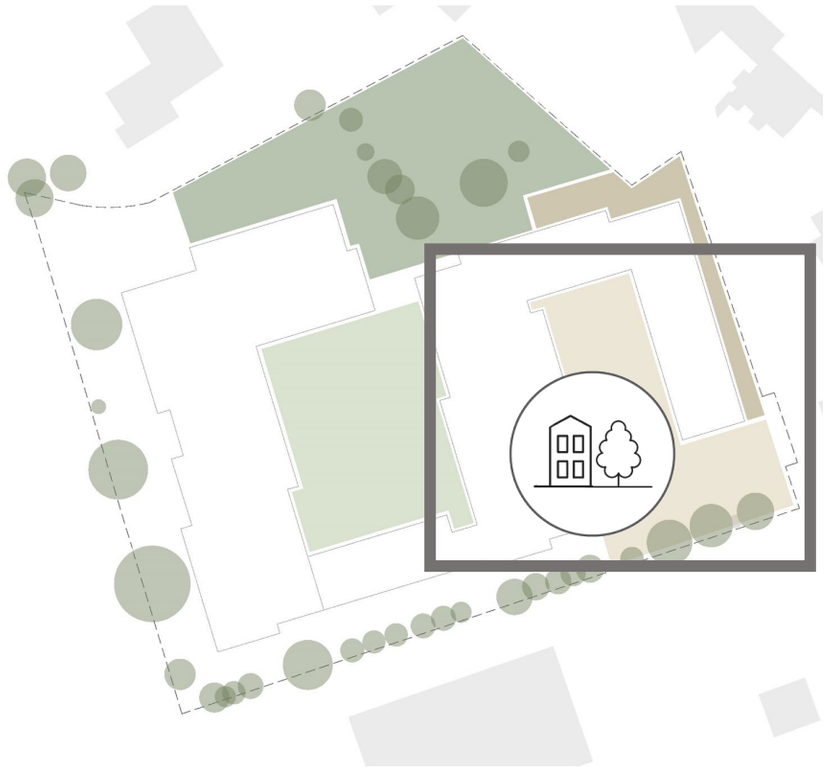
Common Green





DESIGN CONCEPT: OPEN SPACE STRATEGY





Shared Crossway



LAND PLANNING & DESIGN

DESIGN CONCEPT: GREEN & BLUE INFRASTRUCTURE STRATEGY ON SETTLEMENT LEVEL

GI Components:

- The retention/enhancement vegetation
- The provision of safe and healthy recreational spaces throughout the site.
- The planting of native/pollinator friendly trees and shrubs suitable for the long-term site objectives such as definition of space, screening, seasonality etc.
- Where appropriate, provide wildlife- friendly features such as bat and bird nest boxes, insect hotels etc.
- GI management/maintenance operations

BI Components

- Existing Ditches, Trees and Hedgerows

Whenever feasible on the site existing trees, and hedgerows will be retained. This conservation effort will aid in the conveyance and treatment of surface water runoff produced on the site. Additionally, by retaining the existing trees the project will contribute to the reduction of surface water runoff through the process of evapotranspiration.

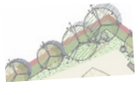
- Refer to the engineers' details on SuDS Strategy

SuDS strategy to include:

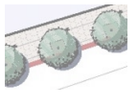
- Swales
- Bioretention systems
- Underground attenuation



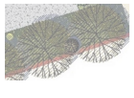
LEGEND



Native hedge and tree planting



Street trees



Existing boundary vegetation retained

Native and pollinator shrub planting

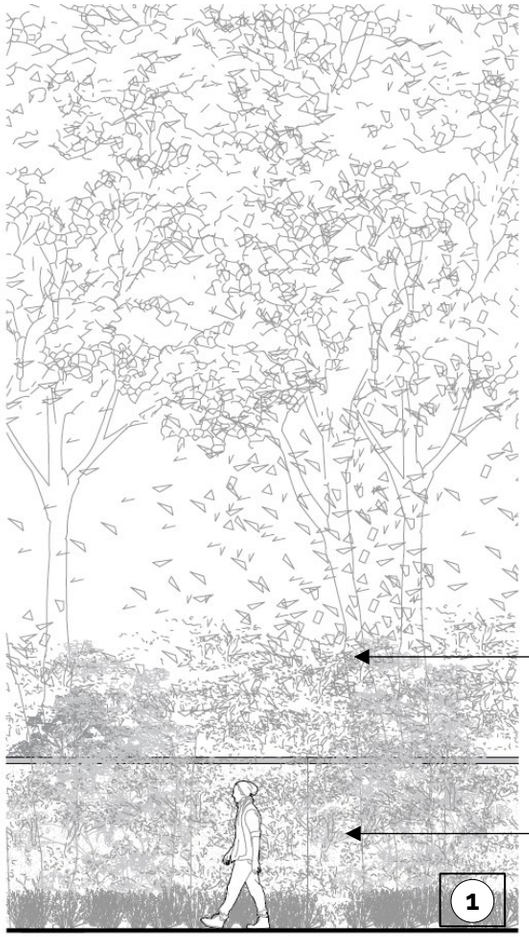
Mown grass

Bioretention system

Drain

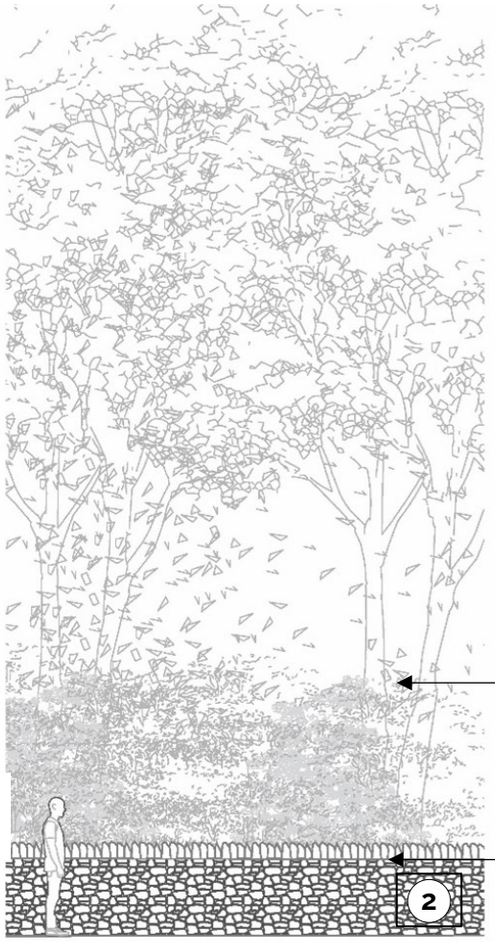
Attenuation

DESIGN CONCEPT: BOUNDARY TREATMENT



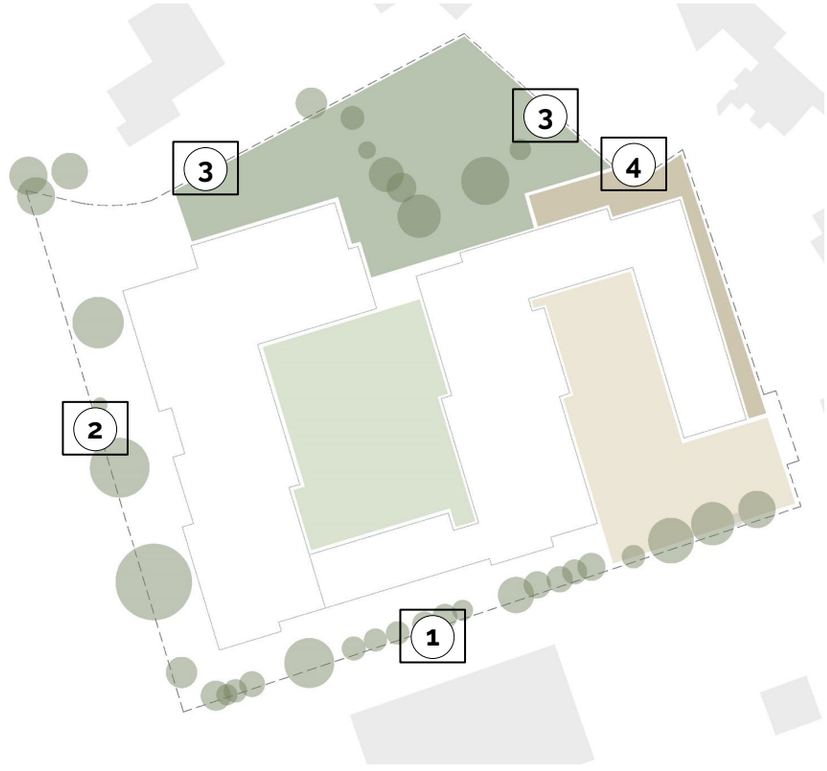
Existing vegetation retained

Existing wall retained



Existing vegetation retained

Existing sod and stone wall retained





Proposed weldmesh fence with planting to inner side



Proposed timber fence

Extracted from Boundary treatment Plan drg. No. 24275-2-102

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05. MAINTENANCE AND MANAGEMENT

INTRODUCTION

This document sets out the proposed maintenance and management plans for the establishment and ongoing maintenance of the landscape element of the proposed development. There will be a minimum 18 months defects period on all soft landscape works implemented. Thereafter the landscaping will be maintained in perpetuity consecutive 12 months periods.

1.0 SOFT LANDSCAPE WORKS SPECIFICATIONS

1.1 Site Clearance Generally

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with any dimension exceeding 25mm.
- Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life. In accordance with current Health and safety legislation.
- Vegetation: remove all weed growth.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.

1.2 Weed Control

Remove all noxious and undesirable weeds from the sit. Weeds shall include: Ragwort, Himalayan Balsam, Giant hogweed & Japanese knotweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. For the removal of certain species such as Japanese Knotweed a method statement is to be prepared and submitted to the Department of Environment.

1.3 Standards

In preparing the landscaping, supplying plants and maintaining the landscaping the following standards are to be adhere to:

- BS 3882 Specification for topsoil and requirements for use
- BS 3936-1 to 10 Specification for the supply of nursery stock
- NPS National Plant Specification
- BS 3998 Tree Works: Recommendations
- BS 4428 Code of Practice for general Landscape Operations
- BS 5837 Tree in relation to Construction
- BS 7370-1 to 5 Grounds Maintenance
- BS 8545 Trees: from nursery to independence in the landscape- recommendations
- BS 8601 Specification for subsoil and required use
- BS EN 1722-9 Fences Specification for mild steel - low carbon steel - fences with round or square verticals and flat horizontals

The latest publications for each document are to be used.

1.4 Soil Conditions

- Soil for cultivating and planting: Moist, friable and do not plant if waterlogged.
- Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

1.5 Climatic Conditions

- General: Carry out the work while soil and weather conditions are suitable.
- Strong winds: Do not plant.

1.6 Times of year for planting

- Deciduous trees and shrubs: Late October to early March.
- Evergreens/Conifers: October/November or Feb/ March.
- Container Grown plants: Any time of years.

1.7 Mechanical Tools

Restrictions: Do not use within 100mm of tree and plant stems.

1.8 Watering

- Quantity: Wet full depth of topsoil.
- Application: Even and without damaging or displacing plants or soil.
- Frequency: As necessary to ensure establishment and continued thriving of planting.

1.9 Preparation, Planting and Mulching Materials

General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

1.10 Plants/ Trees - General

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Budded or grafted plants: Bottom worked.
- Root system and condition: Balanced with branch system.
- Species: True to name.

1.11 Container Grown Plants/ Trees

- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
- Plants: Centred in containers, firmed and well watered.
- Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
- Hardiness: Grown in the open for at least two months before being supplied.
- Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

1.12 Labelling And Information

General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:

- Full botanical name., Total number, Number of bundles, Part bundles.
- Supplier's name, Employer's name and project reference.
- Plant specification, in accordance with scheduled National Plant Specification categories and BS 3936.

1.13 Plant/ Tree Substitution

Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering. Submit alternatives, stating the price and difference from specified plants/ trees. Obtain approval before making any substitution.

1.14 Plant Handling, Storage Transport and Planting

- Standard: To HTA 'Handling and Establishing Landscape Plants'.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Planting: Upright or well balanced with best side to front.

1.15 Treatment of Tree Wounds

Cutting: Keep wounds as small as possible.

- Cut cleanly back to sound wood using sharp, clean tools.
- Leave branch collars. Do not cut flush with stem or trunk.
- Set cuts so that water will not collect on cut area.
- Fungicide/ Sealant: Do not apply unless instructed.

1.16 Protection of Existing Grass

- General: Protect areas affected by planting operations using boards/ tarpaulins.
- Excavated or imported material: Do not place directly on grass.

Duration: Minimum period.

1.17 Surplus Material

Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, pruning's and other arising's: Remove.

1.18 General Planting/Seeding

- Planting shall be carried out within the contract period but not during periods of frost, drought, cold drying winds or when the soil is waterlogged, or when the moisture of the soil exceeds field capacity.
- All containers and protective coverings including biodegradable coverings to root systems shall be removed prior to planting. Roots, except for emergent vegetation, shall be teased out from the root-ball, spread evenly and not twisted.

  All plant material shall be planted upright or placed so as to be well-balanced. Extreme care is to be taken to avoid damage to the root system, stem and branches when planting. The plant shall be positioned such that after planting the original soil mark on the stem is at finished ground level.
- Following completion of planting, grass seeding and turf laying, the soil over the whole of the planted, seeded or turfed area shall be sufficiently watered to achieve its field capacity.
- On completion of planting, watering and mulching, all areas shall be left tidy and weed-free and shall be maintained in a tidy and weed-free state until completion of the works.
- For shrub and transplant pit planting, notch planting and ordinary planting, the plant positions shall be set at equal centres in order to obtain a natural dense cover when mature. For notch and pit planting plants shall be planted in parallel lines. Planting positions in each row shall be staggered with the previous row.
- Finely-broken backfill material shall be carefully spread around roots and root trainers of all plants and the plants given slight shake to ensure that all interstices/ gaps are filled with soil, which shall then be consolidated by heeling. Careful filling and heeling shall continue as necessary at 150mm layers.

1.18.1 Mulching

Newly planted shrub areas shall be mulched immediately after planting to a depth of 50mm or in accordance with the details indicated on the drawing. Mulch shall be coarse chipped tree bark, composted for 2-4 months. Particle size 25-75mm diameter. No Fines.

1.18.2 After Planting & Mulching

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
- All areas shall be left tidy and weed-free and shall be maintained in a tidy and weed-free state until completion of the works.

1.19 Tree Planting

Attached in the appendix are typical tree planting details for this site.

1.19.1 Tree Pits

- Sizes: at least 300mm greater than rootball in all directions.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 100mm.
- Pit sides: Scarify.

1.19.2 Semi-Mature Trees

- Standard: Prepare roots and transplant to BS 8545.
- Planting shall be carried out by positioning the tree in the centre of the pit closely against the tree stake and spreading the tree roots to their fullest extent.
- Backfilling material: Previously prepared mixture of topsoil excavated from pit and additional compost as required.
- Immediately following planting, trees with stakes shall be secured with tree ties. Tree ties shall be fixed so that movement of the tree shall not cause damage or abrasion to the bark, top tie to be 50mm below top stake.

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1.19.3 Staking Generally
Softwood, peeled chestnut, larch or pine, straight, free from projections and large or edge knots and with pointed lower end. Adjustable rubber ties to be fixed to all trees and at the correct size for the tree.

1.19.4 Mulch Circles/Squares
All existing trees/newly planted trees within open grass areas or grass verges shall have 50mm depth mulch circle/square of a maximum 1m diameter or as allowed by verge width.

1.20 Shrub Planting
- All shrubs are to be pit planted. General pit dimensions are to be wide enough to accommodate roots when fully spread and 75mm deeper than root system.
- Break up base of pit to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m².
- Pits to be backfilled with previously excavated material. Backfilling to be done in layers of 150mm depth; at each stage the filling to be firmly consolidated.
- Soil ameliorants can be premixed with the soil applied or mixed in during planting.
- Soil ameliorants to consist of an approved compost at 10L per m2; and 150g/m2 of 10:10:10 NPK slow release fertilizer, or as approved.
- All shrub areas to be finished, with 75mm of medium grade bark mulch.

1.21 Hedgerow Planting
- Preparation: Dig trench to 500mm width for single staggered row, ensuing pit base is broken up 100mm deeper than plant rootball.
- Ameliorants: Compost at 10lt/m2 and 10:10:10 NPK slow release fertiliser at 150g/m2.
- Planting: Mix in soil ameliorants with excavated topsoil, or if there is poor topsoil then mix in with imported new topsoil. Firm down topsoil lightly in layers of 150mm by treading.
- Additional Requirements: If there is no existing fencing or barrier, install a protective fence to stop people walking through it until hedge is established. If there is livestock adjoining hedge install a stockproof fence or electrical fence 1m from hedge line until hedge is established.
- Prior to new growth cut the hedge back by 300mm to encourage new growth from base.

1.23 Removing Trees and Shrubs
- Identification: Clearly mark trees and hedges to be removed.
- Work near retained trees: Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.

1.24 Failures of Planting
- Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
    - Exclusions: Theft or malicious damage after completion.
    - Rectification: Replace with equivalent plants/ trees/ shrubs.
- Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.

1.25 Green Roofs
Due care is to be taken when planting in gardens to ensure no damage occurs to the waterproof membranes. All planting is to be laid over a green-roof system that complies with EEuropean Federation of Green Roof Associations, (EFB), or equivalent, and in accordance with the drawings provided.

1.26 Grass Seeding

1.26.1 Herbicide Application
- Type: Suitable for suppressing perennial weeds and existing grass.
- Glyphosate and other controlled chemical pesticides will not be used under any circumstances.
- Suitable herbicide use to the instruction of a registered professional user.
- Timing: Allow fallow period before cultivation.
- Duration: As manufacturer's recommendation.

1.26.2 Seedbed cleaning before sowing
Operations: Herbicides as per registered professional user only.

1.26.3 Cultivation
- Compacted topsoil: Break up to full depth.
- Soil ameliorant/ Conditioner/ Fertilizer are to be used to boost late seeding only. Type to be used is to be agreed with the administrating body depending on the time of year and the condition of the soil.
- Tilth: Reduce topsoil to a tilth suitable for blade grading.
    - Depth: 75 mm.
    - Particle size (maximum): 20 mm.
- Material brought to the surface: Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

1.26.4 Topsoiling
- Areas to be reinstated shall be top-soiled to a min. depth of 150mm.
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
    - Corrosive, explosive or flammable;
    - Hazardous to human or animal life;
    - Detrimental to healthy plant growth.

1.26.5 Grading
- General appearance to be achieved: A fine graded finish to bring the ground to a uniform and even grade at the correct finished levels with smooth, flowing contours.
- Topsoil condition: Reasonably dry and workable.
- Contours: Smooth and flowing, with falls for adequate drainage.
- Hollows and ridges: Not permitted.
- Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
- Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 150mm.
- Give notice: If required levels cannot be achieved by movement of existing soil.

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1.26.6 Fertilizer for Seeded Areas

- Types: Apply both:
    - Superphosphate with a minimum of 18% water-soluble phosphoric acid.
    - A sulphate of ammonia with a minimum of 20% nitrogen.
- Application: Before final cultivation and three to five days before seeding/turfing.
- Coverage: Spread evenly, each type at 70 g/m², in transverse directions.

1.26.7 Final Cultivation

- Timing: After grading and fertilizing.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.
- Depth: 50-100mm.
- Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
- Remove surface stones/earth clods exceeding:
    - Pastoral areas: 50mm.
    - Fine lawn areas: 10mm.
- Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

1.26.8 Grass Seed

- All seeds shall carry appropriate certificates.
- Seed shall be purchased fresh for each growing season and seed purchased impervious sowing seasons is not to be used.
- Seed shall be stored under non-transparent wrapping, off the ground, in a dry, shaded place, in well ventilated conditions under cover and shall be protected from vermin and contamination until required for use.
- No seeding shall take place until the seedbed is completed. All seeding shall be carried out within the sowing season.

1.26.9 Sowing

- General: Establish good seed contact with the root zone.
- Method: To suit soil type, proposed usage, location and weather conditions during and after sowing.
- Distribution: 2 equal sowings at right angles to each other.
- Protection: fence off areas with suitable fencing to stop people or animals from trampling new growth.

1.26.10 Grass sowing season

Grass seed generally: April to June or August to November.

1.27 Cleanliness

After completion of all works remove all debris and waste material from site.

- Soil and arisings: Remove from hard surfaces and grassed areas.
- General: Leave the works in a clean tidy condition at completion and after any maintenance operations.

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2.0 MAINTENANCE

The maintenance programme will be organised on the basis of specific **performance standards** which must be met by the contractor at all times and will be the basis on which this contract will be assessed. Along with these performance standards a monthly report sheet shall be filled out and returned each month. Details of the performance standards are outlined below.

Remove all noxious and undesirable weeds from the sit. Weeds shall include: Ragwort, Himalayan Balsam, Giant hogweed & Japanese knotweed, Thistle, Dock, Common Barberry, Male Wild Hop and Spring Wild Oat, or any other noxious species identified by the Department of Environment. For the removal of certain species such as Japanese Knotweed a method statement is to be prepared and submitted to the Department of Environment.

Performance Standards and Maintenance Operations

2.1 Grassed Areas

2.1.1 Fine-Cut Grass Areas

Fine cut grass areas shall achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass species. No more than 5% of the grass areas shall contain dicotyledonous (dicots) weeds, except clover. Grass cutting shall not be carried out during excessively wet or waterlogged conditions. Contractor to inform administrative authority if conditions are unsuitable.

Fine-Cut Mowing

Where practical fine grass areas shall be cut using a cylinder mower, otherwise a rotary mower shall be used. All grass clippings shall be collected and removed off-site after each cut.

Lawn grass cutting shall be carried out every 10-14 days during the growing season, (throughout the period of March to October), but will need to be adjusted according to season's weather conditions. Grass shall be kept at a maximum height of 50mm and minimum height of 35mm. A minimum of 24 cuts shall be carried out annually.

Weed Control

Lawn grass areas shall be treated using an approved selective Glyphosate-free herbicide according to a registered professional user and manufacturer's instructions. Areas of invasive and noxious species in the lawn or areas, shall be mechanically removed or spot sprayed by a registered professional user.

Fertilizer

Approved fertilizer shall be applied 2no. times per year to lawn areas if required due to poor grass growth / establishment or yellowing. Spring fertilizer application of NPK ratio 9:7:7 shall be applied in May of each year and Autumn/Winter fertiliser of NPK ratio 3:12:12 shall be applied in October of each year to all fine cut grass areas.

2.1.2 Amenity Grass Areas

Amenity grass areas shall achieve an even cover of vegetation of uniform height and colour comprising predominantly of grass species. Unless otherwise agreed with the landscape architect no more than 15% of the grass areas shall contain dicotyledonous (dicots) weeds, except clover. Grass cutting shall not be carried out during excessively wet or waterlogged conditions. Contractor to inform administrative authority if conditions are unsuitable.

Amenity Grass Mowing

Where practical grass areas shall be cut using a cylinder mower, otherwise a rotary mower shall be used. Unless excessive or unsightly, or likely to cause a nuisance or damage to the sward, arisings shall be spread evenly over sward areas collected.

Lawn grass cutting shall be carried out every 10-14 days during the growing season, (throughout the period of March to October), but will need to be adjusted according to season's weather conditions. Grass shall be kept at a maximum height of 75mm and minimum height of 35mm. A minimum of 24 cuts shall be carried out annually.

Weed Control

Areas of invasive and noxious species in lawns, shall be mechanically removed. Glyphosate and other chemical pesticides will not be used under any circumstances unless otherwise instructed by a registered professional user. Weed infestations shall be reviewed in the context of the aesthetic and amenity functioning of the grass and if necessary controlled or eradicated.

Fertilizer

Approved fertilizer shall be applied 2no. times per year to lawn areas if required due to poor grass growth / establishment or yellowing. Spring fertilizer application of NPK ratio 9:7:7 shall be applied in May of each year and Autumn/Winter fertiliser of NPK ratio 3:12:12 shall be applied in October of each year to all fine cut grass areas.

2.1.3 Wildflower areas

Prepare the area before each cut remove all litter and debris.

Height and frequency of cut in first growing season:

- Time of first cut: August or September, only after the first flowering.
- Time of second cut: Another cut will be required prior to flowering in the following April or May to 'strim' away the taller annual growth.
- Height of first cut: 100mm.
- Frequency of subsequent cutting (max.): every 24 weeks.
- Trimming: All edges.
- Arisings: Remove.

If using mulching mowers rake the soil very well at the end of the season to remove all the dead debris. Any cut that produces substantial clippings should have the clippings removed and composted.

Height and frequency of cut in second growing season:

- Time of cut: Year: Year 2 = 2 cuts in spring and autumn. For mown strip along cycle paths 5 cuts per year.
- Height of cut: 150mm.
- Any cut that produces substantial clippings should have the clippings removed and composted.
- Trimming: All edges.
- Arisings: Remove.

2.1.4 Edging and Trimming

Grass edges along pathways, planting borders, roadways, trees, lampposts, signs and any other obstacle shall be kept neat and tidy at all times.

Between the months of March and October inclusive edging shall be carried out to all areas of grass abutting isolated/ specimen trees or shrub borders or mulch circles. These areas shall be maintained using a half moon tool or similar to maintain straight or curved defined line and shall be carried out a minimum of 2 - 3 times per year.

Mowing strips against permanent obstacles shall be a max. width of 150mm and shall be maintained using a hand strimmer. Large areas of desiccated/ burnt off grass are not permitted. Strimming shall be carried out a min. of 12 times per year.

Grass clipping and all arisings shall be swept up and removed off site.

2.1.5 Spring Bulbs in Grassed Areas

Only cut grassed areas populated by spring bulbs after the leaves of the bulbs have died down and/or yellowed completely. Initially reduce height by one third, followed by a 2-3 stage further reduction over two weeks to achieve desired grass height.

2.1.6 Failed areas

Areas of grass which fail or are damaged or worn shall be reinstated by re-turfing or re-seeding in accordance with the original specification.

2.2 Shrub Planting

Shrub areas shall be kept litter and weed free, particularly of perennial weeds. Healthy growth shall be maintained to cover as much as possible of the planting area and allowing the individual plants to achieve as near as possible their natural form. With the exception of hedges, boxing or pruning to shapes is prohibited. Plants shall be contained with designed planting areas and pruned to avoid obstructing pathways or sightlines. Climbers are to be pruned and tied into trellises as required, with two main inspections annually to check trellis system is intact and anchor points are secure.

2.3 Pruning

In general pruning shall be done only to enhance natural growth. Dead, damaged and diseased portions of the plant will be removed. All cuts shall be flush and clean, leaving no stubs or tearing of bark. All major pruning shall be done following flowering or during plant's dormant season. Emergency or minor pruning shall be done when needed.

Pruning shall be carried out to maintain proper size in relationship to adjacent plantings and intended function. Remedial attention and repair to shrubs shall be provided as appropriate by season or in response to incidental damage.

Groundcover plants shall be pruned as required to restrain perimeter growth to within planting bed areas where adjacent to walks and curbs. Tip prune selected branches of low growing shrub or groundcover masses to maintain even overall heights and promote fullness.

Certain plants, such as Cornus spp. will require heavy annual pruning in order to maintain healthy colourful stems and healthy leaves. All arising's from pruning shall be removed of site.

2.4 Weed Control

Planting beds shall be maintained relatively weed free (no more than 10% of weed cover at maximum) by hand weeding or spot spraying any emergent weeds during the growing season with Glyphosate-free herbicide or approved equivalent. Saplings shall be removed from all planting areas on emergence or immediately after to prevent establishment.

Specific weed control operations shall be carried out a min of 9no. times per year, however it will be the contractor's duty to control weeds by hand weeding or other accepted method if weed cover exceeds 10% of the planting area.

2.5 Mulching

Shrub beds shall contain a min. depth of 50mm bark mulch throughout the year. Contractor to top-up as 2 times per year or as appropriate to maintain depth. Mulch is not required in areas where plant foliage completely covers the soil surface, such that the soil is not visible through the foliage. The contractor shall spot treat to remove emergent weeds as specified above but do not cultivate or incorporate the mulch into the soil. Any mulch outside of designated planting areas shall be returned to the planter on a weekly basis.

Mulch shall be uniform in colour and appearance, and free of leaves, sticks, or trash. Mulch may be chipped or shredded wood, bark. When replacing existing mulch, use a mulch product that is similar in appearance to that already at the site.

2.6 Tree Planting Care

Trees shall be maintained in a healthy, vigorous growing condition with a well-shaped framework for future growth.

2.7 New Tree Planting

Spring and autumn of each year during the maintenance period the trees, double-stakes, rabbit guards and ties shall be checked and adjusted, the soil firmed, any dead wood removed back to healthy tissue and mulch adjusted to original levels. Any broken stakes or ties evident throughout the maintenance period shall be replaced.

A 1m-diameter mulch circle/square shall be maintained at the base of each tree located in open grass areas or grass verges. Top up bark mulch to 75mm where required and make good any mulch mats.

During the first growing season all standard trees / semi-mature trees shall be watered at least five times during the growing season - in April, May, June, July and August unless otherwise directed by the Landscape Architect. During the second growing season trees will be kept well watered, particularly during June, July and August.

The edge of the mulch circle shall be maintained in a neat and tidy condition as above.

The surface of all planting pits is to be kept free of weeds during the maintenance period by mechanical weeding of annual weeds and perennial weeds - to be carried out on three visits during the growing season.

2.9. Tree Stakes and Ties

Check tree stakes and ties on each maintenance visit. Repair, strengthen and adjust (loosen / tighten) to ensure optimum functioning and trees not being damaged by poor fixings. If trees no longer require stake / tie remove. Prior to handover, check all tree stakes and ties and remove those no longer required.

2.8 Woodland/Scrub Area Management

Woodland areas specified shall be maintained in a healthy, vigorous condition and free from litter and noxious weeds throughout the year.

Certain areas of woodland may require thinning over the 5-year period. These areas shall be thinned by no more than 10%, removing only the weaker tree specimens. Thinning shall be carried out as directed onsite by administrative authority.

Weed control around trees bases and in shrub areas will be achieved by mulches and mulch top ups only. Contractor to ensure that no damage is caused to trees by herbicide application.

Areas of natural scrub as indicated on the maintenance plans shall be contained by trimming back once per year. The contractor shall control noxious weeds. This shall be carried out 2no. times per annum.

All clearance operations within woodland and scrub areas shall be carried out outside of the bird-nesting season to preserve the bird life in the area. This season extends from the 1st March to 31st August.

2.9 Native hedgerow Areas

Maintain hedges to ensure they remain healthy, neat, and free from litter and noxious weeds throughout the year. Regularly observe the hedge's health, growth, and any signs of distress throughout the year.

Trim every three years in rotation around the site leaving soe areas undisturbed for wildlife. Trim only from the 1st of September to the last day of February to avoid disturbing nesting birds. Trimming in late winter allows full use of the hedgerow's food resources.

Before cutting, inspect the hedgerow to identify trees and other wildlife features, as well as obstacles or hazards. Cut hedgerows in a triangular shaped profile with a bushy structure for maximum protection from wind., providing a variety of heights.

Weed control around will be achieved by mulches and mulch top ups only. Contractor to ensure that no damage is caused to trees by herbicide application.

Control competing vegetation by mechanical weeding. to prevent smothering and to allow lower branches develop, giving a dense base.

2.9 Soft Landscaped SuDS Areas

Regular Inspections:

•Inspect infiltration surfaces: Check for silting and ponding, record the de-watering time of the facility, and assess standing water levels in the underdrain (if applicable) to determine if maintenance is necessary.
Typical Frequency: Quarterly.

•Check operation of underdrains: Inspect flows after rain.
Typical Frequency: Annually.

•Assess plants: Look for signs of disease, poor growth, or invasive species, and replace plants as necessary.
Typical Frequency: Quarterly.

•Inspect inlets and outlets: Ensure there are no blockages.
Typical Frequency: Quarterly.

Regular Maintenance:

•Remove litter, surface debris, and weeds: Ensure the area remains clean and tidy.
Typical Frequency: Quarterly (or more frequently for tidiness or aesthetic purposes).

•Replace plants: Maintain planting density by replacing plants as needed.
Typical Frequency: As required.

•Remove sediment, litter, and debris build-up: Focus on areas around inlets or forebays.
Typical Frequency: Quarterly or biannually.

Occasional Maintenance:

•Infill holes or address scouring in the filter medium: Improve erosion protection if necessary.
Typical Frequency: As required (review biannually or after significant storm events).

•Repair minor silt accumulations: Rake away surface mulch, scarify the surface medium, and replace the mulch.
Typical Frequency: As required (review biannually or after significant storm events).

Remedial Actions:

•Remove and replace soils and vegetation: Address as needed, typically expected after more than 20 years.
Typical Frequency: As required but likely greater than 20 years.

2.9 Litter Clearance/Pick-up

The contractor shall maintain all areas free from litter. This shall mean the removal of all extraneous litter, rubbish and any other debris from all areas, which will include grass areas, planted areas, carparks, footpaths as well as woodlands and tree canopies.

Notwithstanding the above it is expected that the contractor and his staff shall take sufficient pride in the appearance of the site and that they would pick up all visible litter during every site visit.

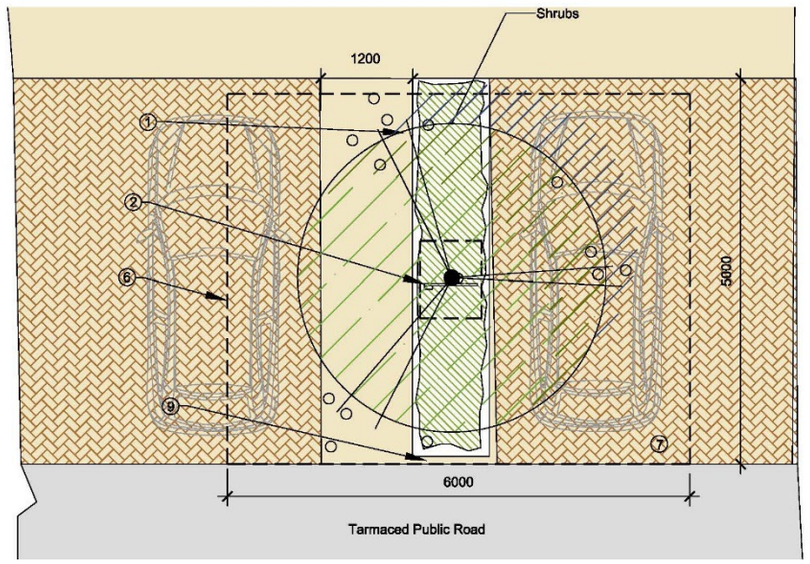
In addition to removal of litter from footpaths, planted areas, etc., the contractor shall make provision for the immediate (within 1 days of notification) arrangement for collection and removal of all extraneous matter which has been deliberately been deposited on site by persons known or unknown (fly-tipping).

2.10 Replacements

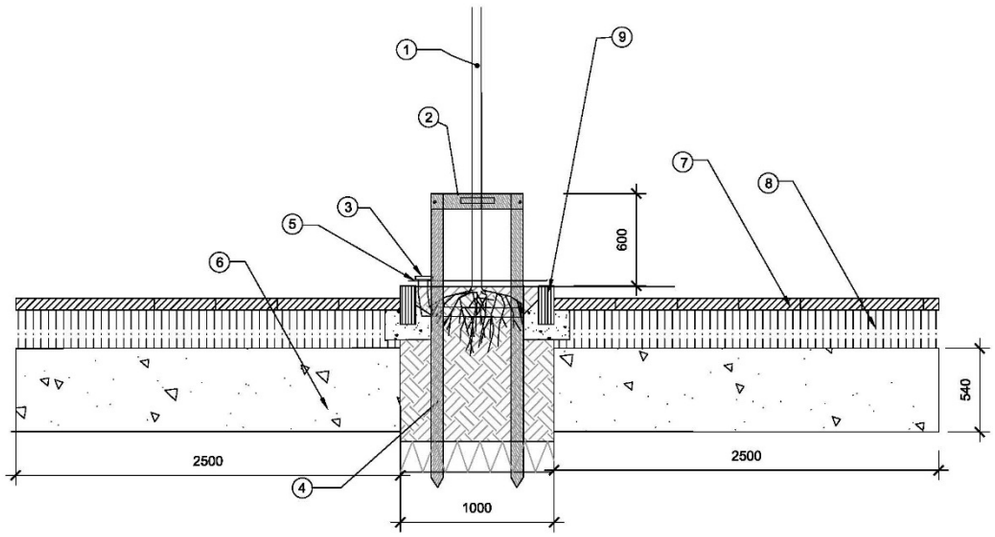
Any tree, hedge or shrub that is removed, uprooted, destroyed or becomes seriously damaged, defective, diseased, or dead shall be replaced in the same location with another plant of the same species and size as that originally planted within the defect period after planting. All such replacements shall be carried out in the first available planting season after the requirement to do so is recognised.

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Tree planting detail



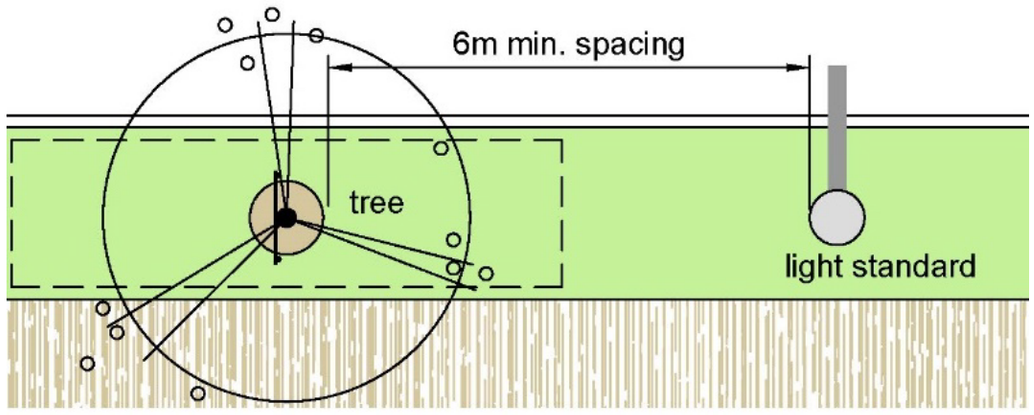
VO1: Street Tree Pit Detail – Plan



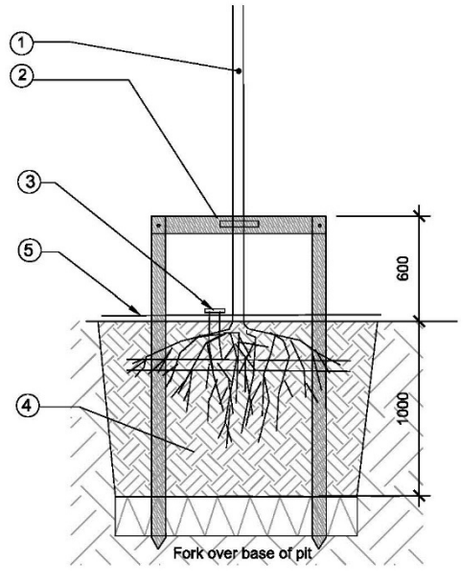
VO1: Street Tree Pit Detail – Section

NOTES

1. Tree to have a clear stem height of 2000mm.
2. 2no. 75mm diameter stakes pressure treated driven 1300mm below ground 600mm above ground with specified biodegradable adjustable tie affixed to tree & stake.
3. 6cm diameter perforated flexible plastic drainage pipe positioned as shown over rootball with one end open to surface to facilitate watering.
4. Pits to be size 80x125x100cm. Remove the full depth of topsoil and set aside for reuse. Scarify sides, break up base of pit to a depth of 200mm and incorporate a soil ameliorant into base. Back fill pit with topsoil mixed with soil ameliorants in 150mm firmed-in layers. All planting to receive a minimum of 25lt water per m2 immediately after planting.
5. 50mm bark mulch in 80cm dia circle to base of trunk.
6. 16m3 area root zone under permeable paving for parking bays, made up of 50% 70-100mm aggregate sizes, 30% multipurpose topsoil and 20% grit (20mm down).
7. Permeable parking paving to engineers spec.
8. Sub base to parking to engineers spec.
9. Kerb to engineers spec.



VO2: Street Tree Pit and Light Standard Detail – Plan



NOTES

1. To have a clear stem height of 2000mm.
2. 2no. 75mm diameter stakes pressure treated driven 1300mm below ground 600mm above ground with specified biodegradable adjustable tie affixed to tree & stake.
3. 6cm diameter perforated flexible plastic drainage pipe positioned as shown over rootball with one end open to surface to facilitate watering.
4. Pits to be size 1x1x1mm or 15cm wider than rootball which ever is greater. Remove the full depth of topsoil and set aside for reuse. Scarify sides, break up base of pit to a depth of 200mm and incorporate a soil ameliorant into base. Back fill pit with topsoil mixed with soil ameliorants in 150mm firmed-in layers. All planting to receive a minimum of 25lt water per m2 immediately after planting.
5. 50mm bark mulch in 80cm dia circle to base of trunk.

VO2: Street Tree Pit Detail – Section

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3.0 Maintenance Programme

This programme is a guideline only and times of operations may vary on approval by landscape architect.

ONGOING REQUIREMENTS:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Lawn grass cutting (Min 18 cuts)		*	**	**	***	***	***	***	***	**	**	
Edging to lawn grass areas				*			*			*		
Rough Grass							*					
Wildflower areas				*					*			
Fertiliser application to lawn grass areas.					*		*			*		
Hedge pruning/cutting					*			*			*	
Shrubs pruning and feeding				*		*			*	*	*	*
Native hedgerow cutting (no more than every other year)		*										
Weed control of hedge and shrub planting areas		*	*	*	*	*	*	*	*	*	*	
Tree pruning											*	*
Removal of tree stakes (3-5yr)				*								
Mulch top-up to tree circles/ squares						*				*		
Weed control to tree mulch circles				*			*				*	
Weed control to shrubs & hedgerow				*			*				*	
Watering of new trees (or after 3 weeks of no rain)				*	*	*	*	*				
Trimming of scrub areas												*
Weed control of scrub areas				*					*			
Weed control to footpaths, cycle paths.				*								
Litter Clearance/pick up	***	***	***	***	***	***	***	***	***	***	***	***