

CUNNANE STRATTON REYNOLDS
LAND PLANNING & DESIGN

MONACNAPPA, BLARNEY RESIDENTIAL DEVELOPMENT
Landscape Design Rationale

PROJECT NO. 19271

February 2022



LAND PLANNING & DESIGN

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LAND PLANNING & DESIGN

01. Context & Introduction

DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development will consist of a strategic housing development of 143no. residential units (8no. 1-bed; 38no. 2-bed; 71no. 3-bed; and 26no. 4-bed units), comprising 105no. houses (3no. detached; 42no. semi-detached; and 60no. terraced units) and 38no. apartments.

The proposed development will also consist of the demolition of an existing garage and southern boundary wall, to be replaced with a new southern boundary wall, as well as the lowering of the existing eastern boundary wall and pier, at no. 1 Sunberry Drive; a crèche; all associated ancillary site development and landscaping works, to include bin stores, bicycle and car parking, ground works and retaining structures, foul drainage, stormwater drainage, water supply, service ducting and cabling, public lighting, relocation of existing ESB substation, and all boundary treatments.

The proposed development is to be accessed via the existing Sunberry Heights/Sunberry Drive off the Blarney Relief Road (R617). An upgrade is proposed to the existing Sunberry Heights/Sunberry Drive and the existing access to the proposed strategic housing development, including the widening of the footpath at the junction with the Blarney Relief Road (R617), raised platforms, security barriers and fencing as necessary, road markings, and road resurfacing to facilitate improved pedestrian/cycle connectivity.

TREE SURVEY REPORT

A specialist tree survey report prepared by Arbor Care accompanies this planning application. The report examines the condition of existing site trees all of which are located along the southern and western boundaries of the site.

The report also examines the potential for impact on trees located on the adjoining property to the south of the subject site. For these an assessment of crown spread and root protection zones was conducted from the subject site relating to the first row of trees on the adjoining lands i.e. the neighbouring lands were not entered for this purpose.

The tree report clearly sets out the crown spread and root protection zones (RPZ) of boundary trees and this in turn informed the proposed housing layout and development footprint with the aim of avoiding any impact on the trees. The report concludes that the development will not impact existing trees and while the report recommends remedial works of a small number of trees, this is as a result of the existing poor condition of the trees in question only. The applicant does not propose the removal of any trees, nor does the proposed development rely on their removal.

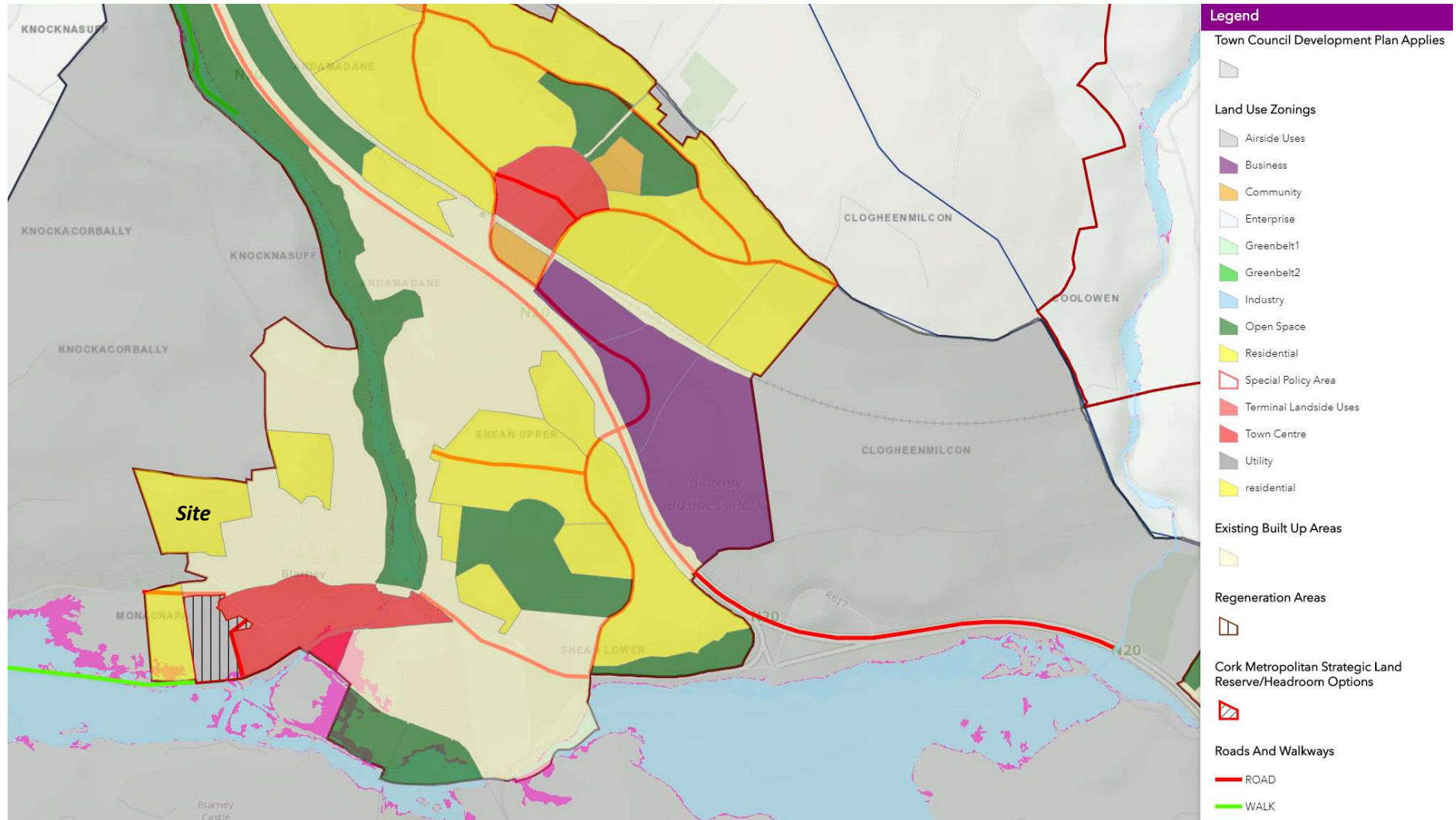
PROPOSED TREE PLANTING STRATEGY

The development proposal for the site includes a significant programme for tree planting which is shown on Landscape Masterplan drg. no. 19271-2-101.

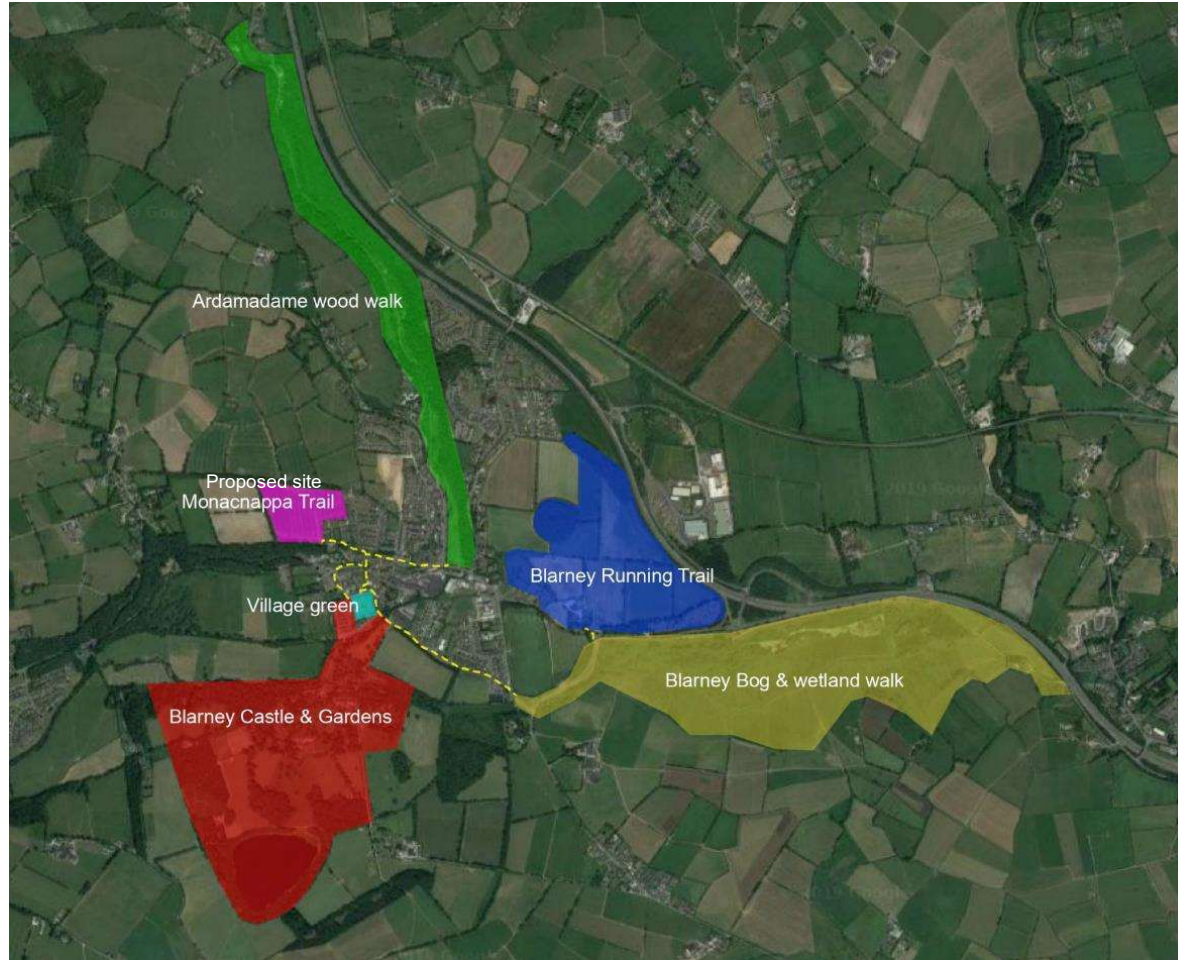
Tree planting proposals have the following key functions:-

- The provision of a long-term landscape framework which will soften the built environment.
- Augmentation of existing screening along boundaries
- Spatial definition across public open spaces and streets.
- The provision of seasonal variation and interest through the site including along pedestrian/cyclist routes.
- Promotion of the biodiversity potential of the site.

The upper part of the site is excluded from development and the long term planting strategy for it comprises the planting of specimen trees on the embankment which defines the northern edge of the development site. The planting will provide green infrastructure in keeping with existing field boundary trees to provide a natural backdrop to the development and contribute towards integration of the new houses in the local landscape setting as demonstrated in the Landscape and Visual Impact Assessment.



Extract from *Blarney Macroom Municipal District Local Area Plan 2017*



Natural Heritage Areas and Routes as per Cork County Development Plan 2015-2021



KEY

- Site Boundary
- - - Pedestrian Routes
- 1. Village Retail
- 2. Church of Ireland Building
- 3. Catholic Church
- 4. Blarney Wollen Mills
- 5. Blarney Bridge
- 6. Blarney Castle & Gadrens Entrance



Pedestrian routes to local amenities and noted protected Structures

02. Site Analysis



Key Plan

NOTE: Existing boundary trees along the western and southern boundaries of the site are the subject of a specialist arborist's report which accompanies this planning application. While the report recommends the removal of a small number of trees due to their poor condition, no trees will be impacted by the proposed development footprint.



A. East boundary to existing Sunberry Drive residential development with sporadic native & ornamental planting



B. South boundary: mature woodland planting



D. North boundary: mature field boundary of trees & hedgerow








C. West boundary: mature field boundary of trees & hedgerow



Blarney Castle (aerial view)

Legend

-  Site boundary
-  Existing mature vegetation in close proximity to site
-  Potential scenic views from site
-  Existing neighbouring residential
-  Views out from Blarney Castle parapet

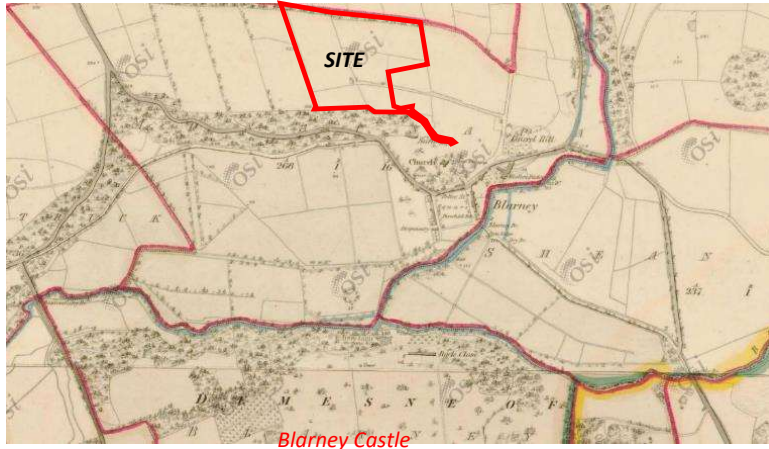


Site Constrains

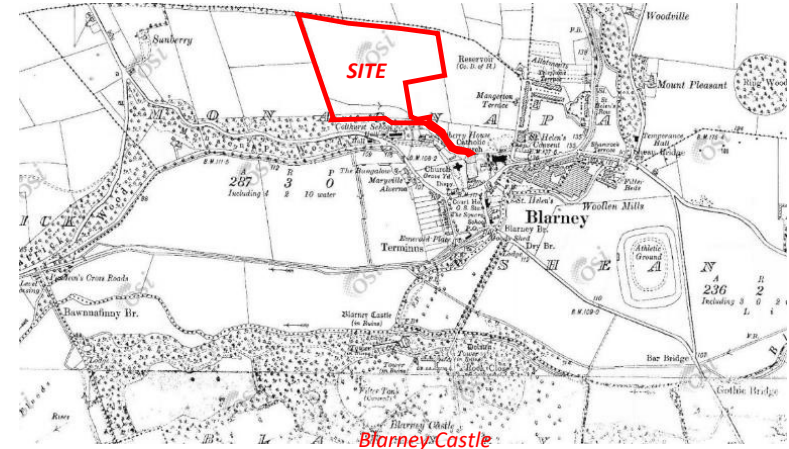
- Site slopes from North to South approximately 35m; the topography is a significant design factor.
- Careful consideration to existing residential units next to the site and integration of proposed development in the environs.
- Retaining existing vegetation along northern, eastern and southern boundary
- Views from Blarney Castle –upper level of site partially visible from Castle (see LVIA report)



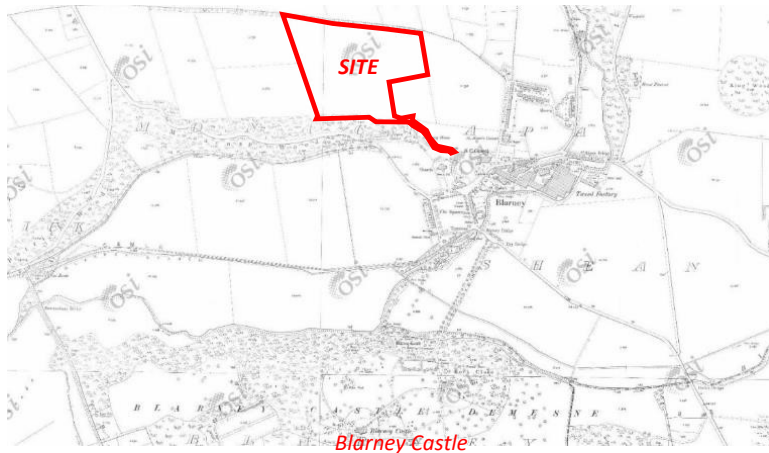
Indicative Wider Area Section- (site proximity to castle)



Historic map 6inch colour -1837-1842 (OSI)



Historic map Cassini -c.1940 (OSI)



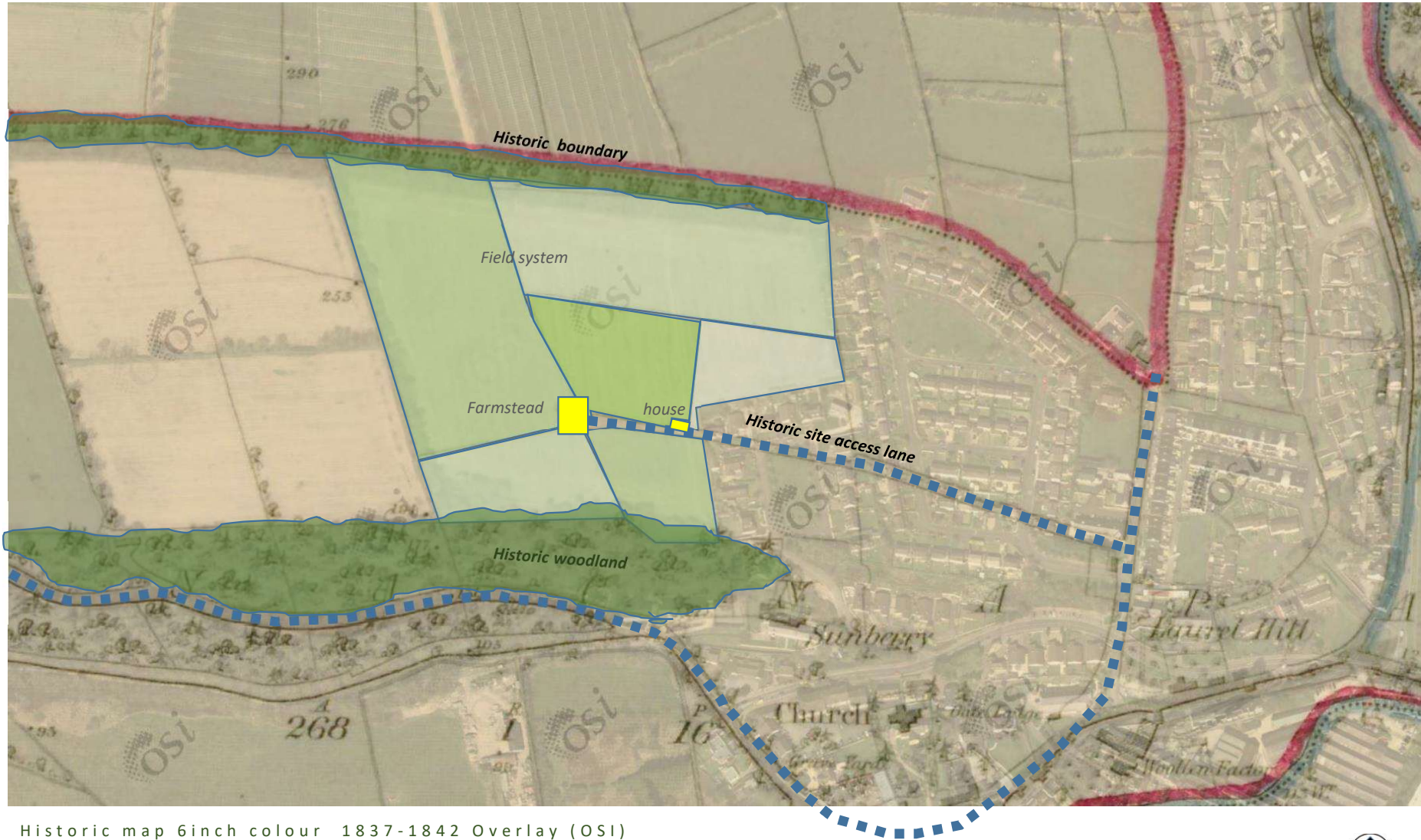
Historic map 25inch black & White -1888-1913 (OSI)



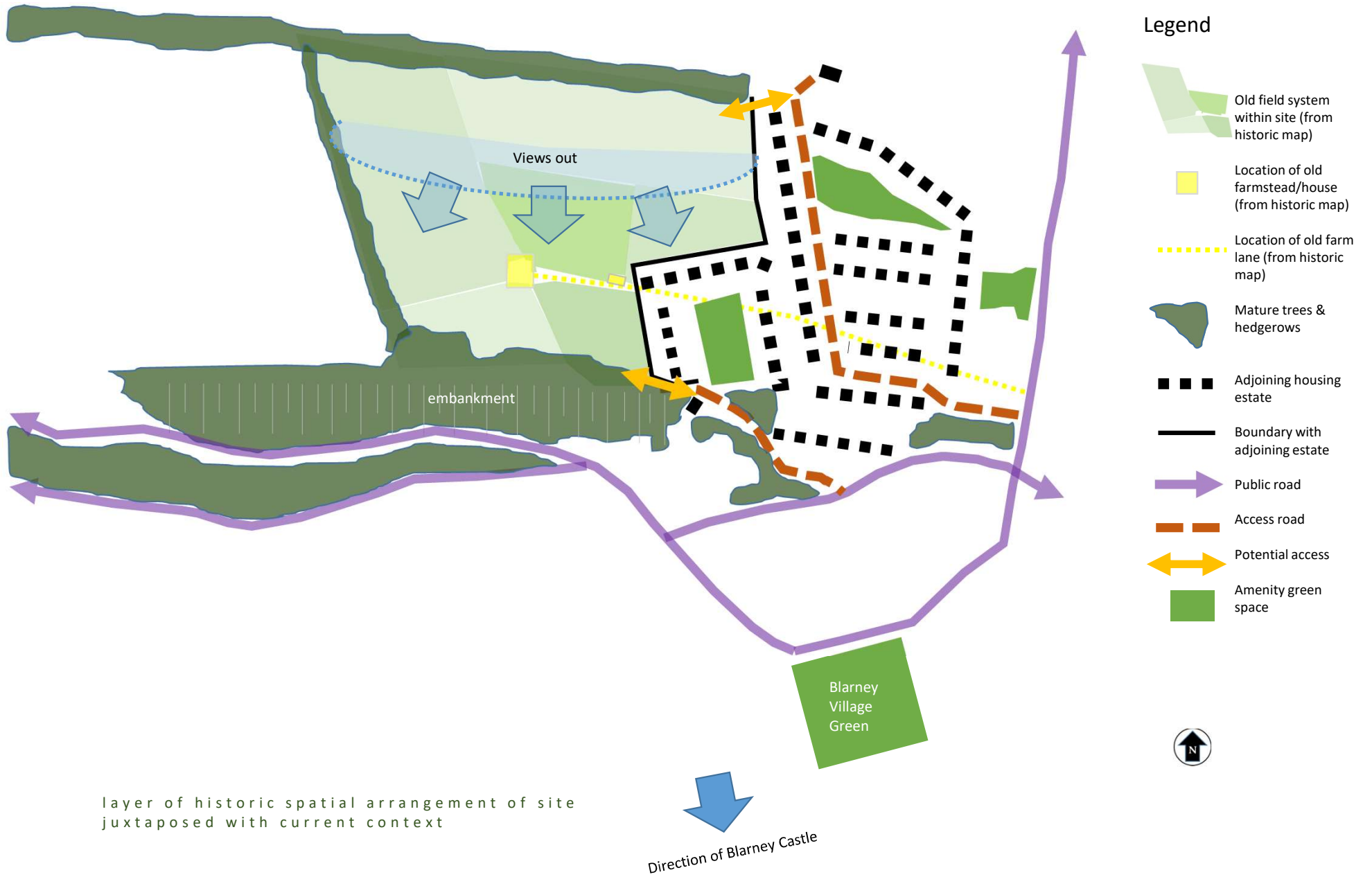
Aerial view -current (OSI)

With the intention of achieving the objective of placemaking, a selection of historic maps and current images are utilised to review the land use of the site and it's context over time.





Historic map 6inch colour 1837-1842 Overlay (OSI)
Showing historic use of site
with the layer of historic spatial arrangement of site
juxtaposed with current context

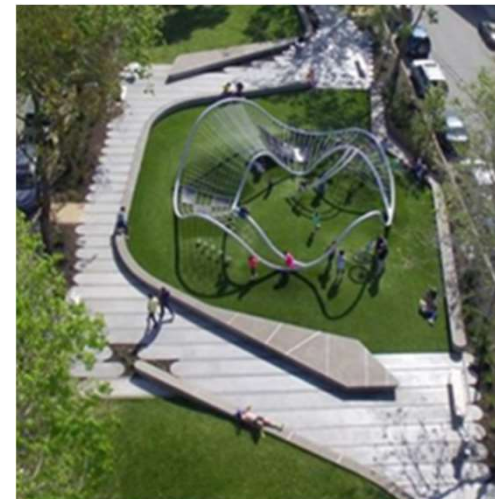
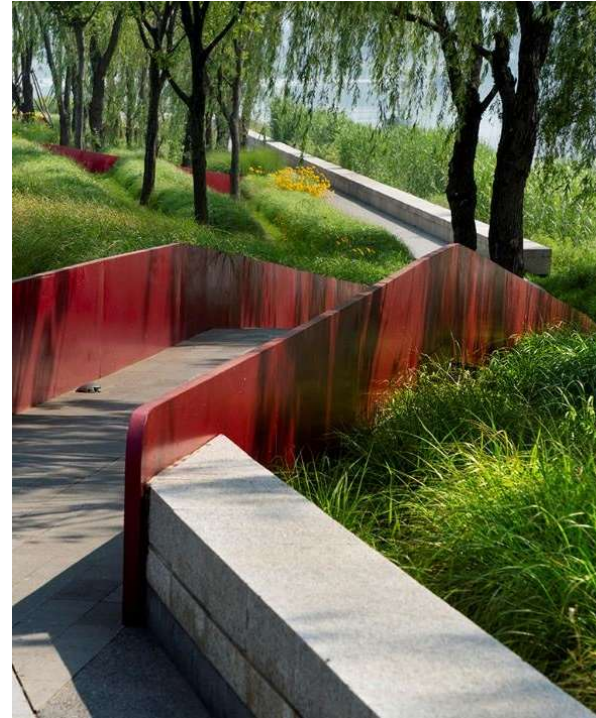


03. Landscape Concept

DESIGN AIMS

- Prioritisation of **‘Place Making’** in the evolution of the site layout. Delivery of sense of place/distinctiveness through the site.
- Provision of a **green framework** across the site into which the proposed development will be integrated.
- **Connectivity/Permeability** – prioritisation of pedestrian/cyclist movement in line with DMURS principles.
- **Recreation and Amenity** - provision of safe, overlooked open spaces, routes and facilities through the site with access for all.
- **Open Space** – provision of a hierarchy of accessible and overlooked open spaces through neighbourhoods with well-defined connectivity to wider green infrastructure
- **Play Provision** – promotion of a child-centred approach, based, where appropriate, on ‘home-zone’ principles that enable children of all ages to: Move freely and safely around their neighbourhood; Play within sight of their home; Play in naturalistic environment; Play at purposefully designed play elements; and Encourage interactive play.
- **Communal Space** – provision of multi-functional and flexible communal spaces logically distributed throughout the development scheme.
- **Legibility** – provide legible routes and clear definition of space.
- **Views** - Optimise experience of panoramic views along the circulation routes.
- **Biodiversity** – Maximise retention of existing hedgerows and provision of new planting measures to enhance the biodiversity potential of the site
- **Maintenance and Management** – Provision of landscape infrastructure which is manageable and promotes long term sustainability

Inspiring Images





Changing paths, changing experience



Biodiversity



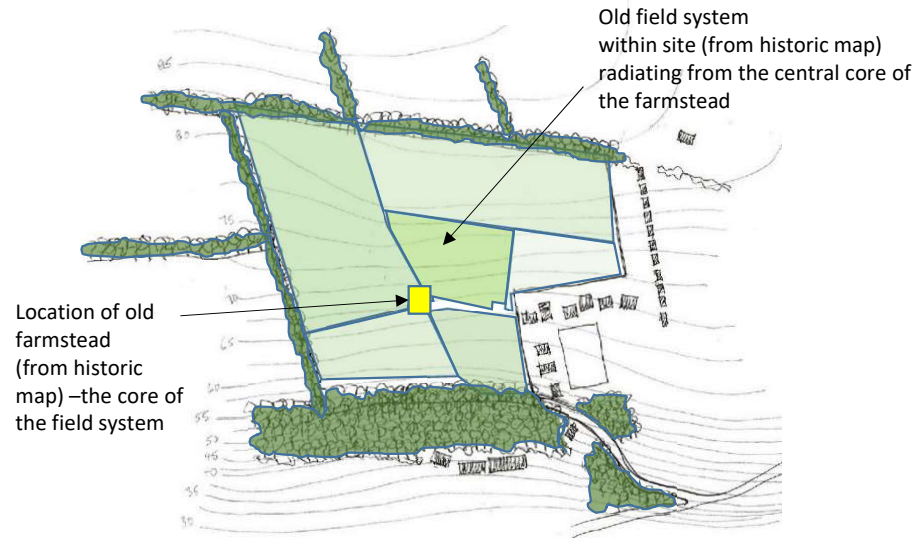
Play opportunities



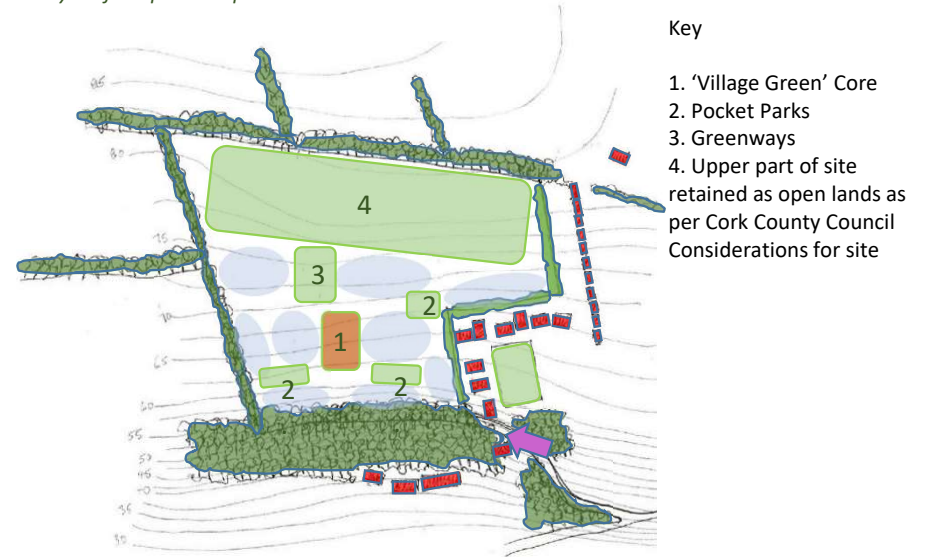
Home Zones



Historic Core of Site



Hierarchy of Open Space

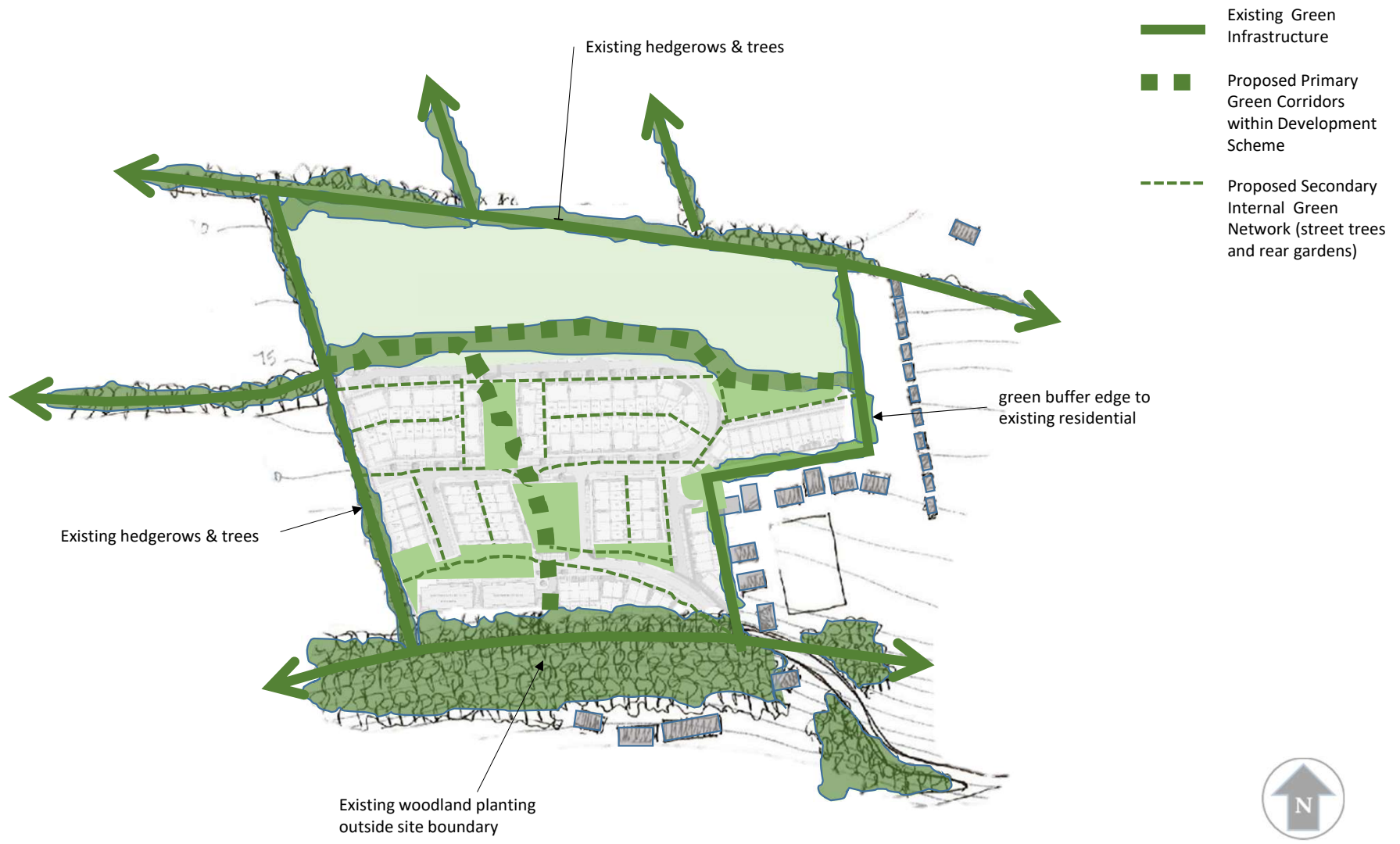


Permeability/Desire Lines



Green Infrastructure





Green Infrastructure

NOTE: See arborists tree survey and report for information on existing trees



A. Gateway



B. 'Village Green' large open space for amenity and communal events



C. Terraced Space with varied topography for natural play and viewing/resting points



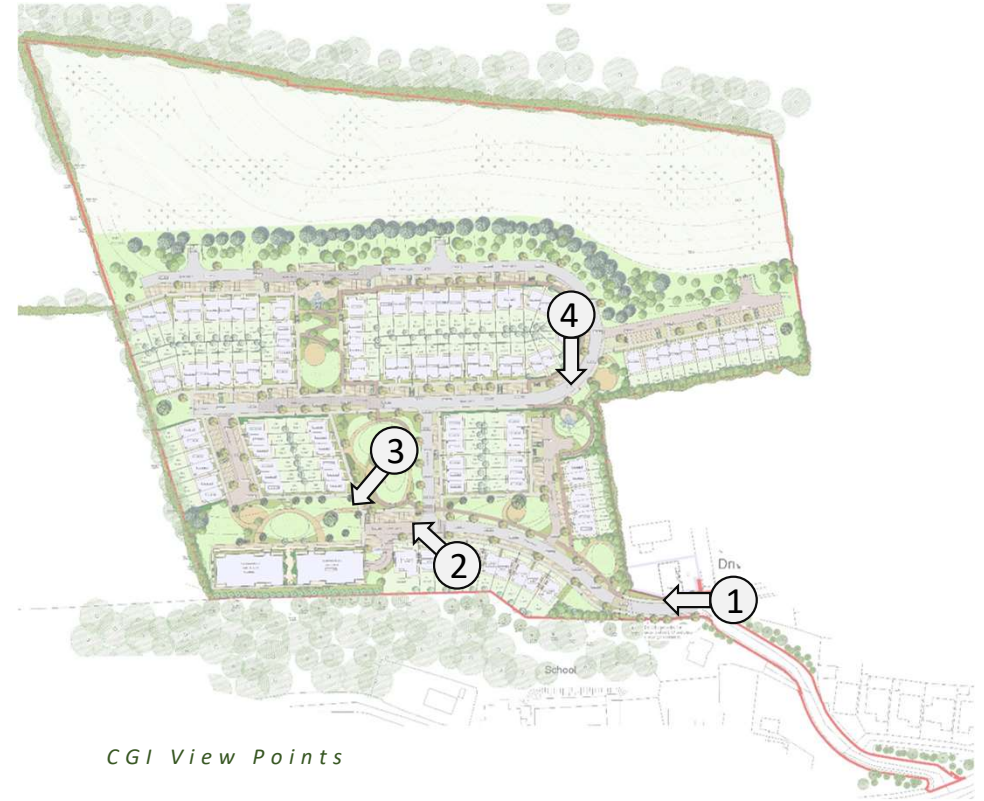
D. Formal 'quad' amenity green



E. Seating Area



F. Play spaces



RECREATION & AMENITY STATEMENT

As per the Cork County Council Recreation & Amenity Policy (interim) Approach to Implementation (June 2019) we are providing:

Usable Open Space Provision 19% min. of site area

- High quality, accessible, and suitable proportioned areas of public open space
- Connectivity to other open spaces
- Suitably overlooked and passively supervised
- Opportunities for informal play and passive amenity

RECREATION AND AMENITY OF DIFFERENT AGE GROUPS/USERS

The proposed development provides generous open spaces, a home zone and a street and footpath hierarchy which ensures passive supervision of the spaces and ease of movement through the site.

It is proposed to providing an unstructured play-scape within the home zone areas of this scheme, to be inclusive for toddlers, young children and teenager/young adults within the communal open space as well as an outdoor space for the crèche. The emphasis is on natural play so little or no proprietary play equipment will be provided but the allocation of strategically positioned Play Areas for the more junior children carefully sited in easily accessible locations and well overlooked by adjacent housing, while not causing a nuisance to nearby residences.

The optimum arrangement is for play to be accommodated within each character area. Space in varying shapes and sizes will be provided to allow for active or quiet play and socialising for all ages, for whole families, neighbours and friends to interact. This arrangement facilitates recreational use for all age groups.

Children 2-12 years old are catered for in each of the five open spaces which are spread through the site to ensure ease of access within a short distance of the home. 5no. Neighbourhood Play Areas are provided for a development of this configuration, together with terraced and level play areas. The compacted stone dust finish on these areas facilitates year-round play and kickabout.

Teenagers are also catered for in each of the open spaces in respect of kickabout space but particularly on the largest green space, the ‘Village Green’, which has two large kickabout areas, all-weather play space, circulation paths and seating plaza, for passive and active pursuits.

Adults of All Ages can use the street and footpath hierarchy for walking and jogging around the site while the open spaces and home zone provide opportunities for sitting and socialising.

Safety note:

Any furnishings and surfaces included within the children's play spaces will be to ISEN 1176/ISEN 1177 standards and meeting the RoSPA, NSC and other appropriate health and safety requirements.



Photo of typical area provided for LPA/NPA with all weather compacted gravel surface



Level grass areas for kickabout



Circulation paths for activity and connectivity



Family friendly spaces



Opportunity to add elements for natural play



Areas for exploration and biodiversity



Legend –Distribution of amenity spaces

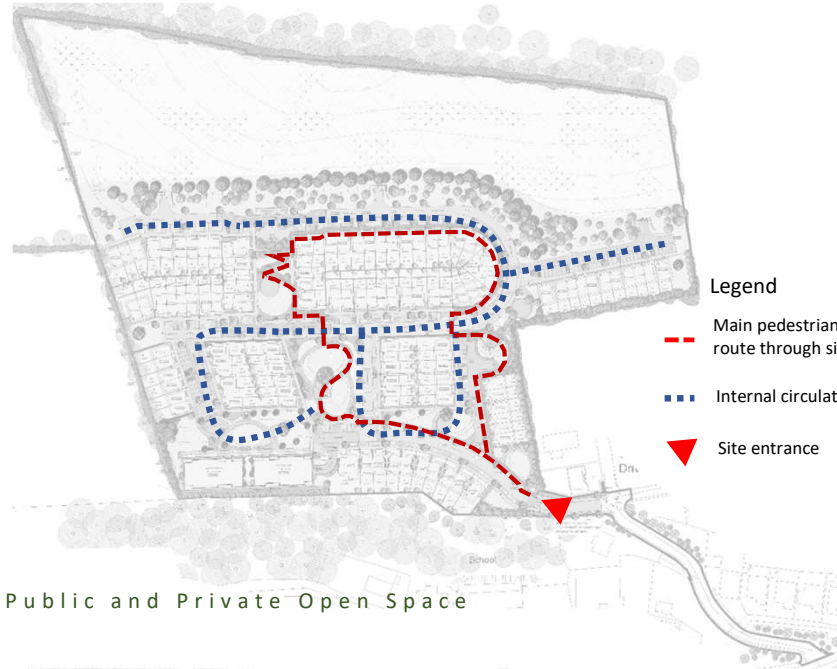
- - - Amenity Trail- Main pedestrian/cyclist route through site and to enhance connectivity within the site
- 5no. Neighbourhood Play Areas
- 2no. Multi-functional Seating/ Viewing Plaza Areas
- 7no. Grassed public open space areas with level grass kickabout and adjoining terraced natural play areas
- Proposed Woodland Belt with native species
- Bulb & Wildflower Areas/Pollinator planting

RECREATION & AMENITY PROVISION

Provision of On-Site Recreation Facilities for the development scheme of this size as per the guidelines of Cork County Council Recreation & Amenity Policy (interim) Approach to Implementation (June 2019)

- Usable Open Space Provision 19% min. of site area
- Quality landscape public open space for all residents and visitors
- Accessible hard surfaced 5no. neighbourhood play areas (NPA) at 100sq.m minimum each in size for young children suitably located throughout the development area within close proximity to their homes
- Kickabout level grass spaces
- Terraced space for natural play and seating/viewing
- Integrated recreational walking/jogging route to enhance connectivity
- Plaza areas for seating/multifunctional activities
- Interactive woodland & biodiverse areas for exploration and adventure play

Pedestrian and Cycle Connectivity and Permeability



- Legend
- Main pedestrian/cyclist route through site
 - Internal circulation
 - ▲ Site entrance

Passive supervision



- Legend
- Main pedestrian/cyclist route through site
 - ▲ Passive supervision
 - ▲ Site entrance

Public and Private Open Space



- Legend
- Public open space

BIODIVERSITY

The biodiversity potential of the site will be enhanced by the following measures:-

- Significant specimen tree planting across the site including open space trees, street trees, garden trees and site boundary trees
- Native hedge planting along site boundaries
- Ornamental hedge planting within the site
- Shrub and groundcover planting on open spaces, along streets and within gardens.
- Bulb planting
- Wildflower meadow planting along the embankment to the northern edge of the site

The emphasis is on the use of native tree species while ensuring that selected trees are suitable for each location in respect of ultimate size and crown spread. Otherwise, the selection of non-native trees, shrubs and groundcover species will make a valuable contribution towards the promotion of biodiversity on the site in line with the aims and objects of the All-Ireland Pollinator Plan. The current monoculture production of field crops on the site will, therefore, be changed to a residential environment with a richer mix of trees, shrub, groundcovers and grass swards.

SUSTAINABILITY

Sustainability aspects of the proposed development are:-

- The retention and protection of existing mature trees along site boundaries.
- The planting of trees and shrubs suitable for the long term site objectives such as definition of space, screening, seasonality etc.
- Careful consideration of maintenance and management requirements through design development
- Access for All - the delivery of optimal access and circulation-routes for pedestrians and cyclists in the context of the hillside setting.
- The provision of safe and healthy recreational spaces which promote activity, exploration and social interaction
- SuDS strategy for dealing with surface water run-off and measures for avoiding contamination of water and erosion
- Promotion of biodiversity
- Provision of quality residential environments through the site which make for sustainable communities. Key considerations include sense of arrival, sense of place, distinctiveness, sense of well being and safety.
- The provision of a range of accommodation typologies which provide choice for residents across all age groups.

The principles of sustainability can be extended into the detailed design of the site as follows:-

- Specification of environmentally friendly materials and products with a low carbon footprint
- Minimisation of the use of herbicides and pesticides

Note: See Landscape Masterplan dwg. no. 19271-2-101 for full planting schedule

Planting scheme to include the following:

Note: Planting selection in line with the All Ireland Pollinator Plan

SPECIES	SIZE	SPACING	%
STREET AND AVENUE TREES - All trees to have straight, unsupported leaders with symmetrical crowns.			
<i>Tilia cordata</i> 'Greenspire'	20-25cm girth RB	as shown	30
<i>Pyrus calleryana</i> 'Chanticleer'	20-25cm girth RB	as shown	30
<i>Sorbus aucuparia</i>	20-25cm girth RB	as shown	20
<i>Prunus padus</i>	20-25cm girth RB	as shown	20
SPECIMEN ORNAMENTAL TREES			
<i>Amelanchier x grandiflora</i> 'Robin Hill'	2-2.5m RB	as shown	30
<i>Malus tschonoskii</i>	2.5-3m RB	as shown	40
<i>Prunus serrulata</i>	4-4.5m RB	as shown	30
OPEN SPACE & NATIVE TREES. to be under-planted with bulbs & perennials			
<i>Quercus petraea</i> ,	14-16cm gth, 4.25-6m ht.	as shown	25
<i>Sorbus Aucuparia</i>	14-16cm, 3-4m.	as shown	15
<i>Prunus avium</i>	12-16cm gth.	as shown	10
<i>Corylus avellana</i> ,	MS 2.5-3.5m ht.	as shown	10
<i>Alnus glutinosa</i> ,	14-16cm gth.	as shown	10
<i>Pinus sylvestris</i> ,	120-150cm, RB.	as shown	20
<i>Larix decidua</i> ,	120-150cm, RB.	as shown	10
NATIVE HEDGEROW TRANSPLANT MIX-			
Whips	SIZE	SPACING	%
<i>Crataegus monogyna</i>	60-90cm high, BR	3/m	40
<i>Prunus spinosa</i>	60-90cm high, BR	3/m	20
<i>Viburnum opulus</i>	60-90cm high, BR	3/m	10
<i>Ilex aquifolium</i>	60-90cm high, PG	3/m	5
<i>Sambucus nigra</i>	60-90cm high, PG	3/m	10
<i>Euonymus europaeus</i>	60-90cm high, BR	3/m	10
<i>Rosa canina</i>	60-90cm high, BR	3/m	5



SPECIES	SIZE	SPACING	%
FORMAL HEDGE			
<i>Sarcococca confusa</i>	90-120cm 1+2	3/m	35
<i>Elaeagnus pungens</i>	90-120cm 1+2	3/m	25
<i>Viburnum tinus</i>	90-120cm 1+2	3/m	40
SHRUB AND GROUND COVER PLANTING- plant in groups of same species ranging from 5-15no.			
<i>Rosmarinus officinalis</i>	3L, PG	5m2	5
<i>Hebe sp.</i>	3L, PG	5m2	10
<i>Prunus tenella</i>	3L, PG	5m2	15
<i>Potentilla fruticosa</i>	3L, PG	5m2	10
<i>Skimmia japonica</i>	3L, PG	5m2	10
<i>Lavandula angustifolia</i> 'Hidcote'	3L,PG	5m2	15
<i>Allium sp.</i>	3L,PG	5m2	5
<i>Stachys byzantina</i>	3L,PG	5m2	10
<i>Erysimum 'Bowles's Mauve'</i>	3L,PG	5m2	10
<i>Pachysandra terminalis</i> 'Green Carpet'	3L,PG	5m2	10
BLUBS & PERENNIALS			
Typical species will include: <i>Anemone nemorosa, Allium triquetrum, Dryopteris filix-mas, Geranium robertianum, Hyacinthoides non-scripta, Hypericum androsaemum, Muscari 'Blue Spike', Oxalis acetosella, Primula vulgaris, Viola riviniana, Colchicum sp., Crocus sp., Galanthus nivalis, Salvia sp., Anemone x hybrida, Anemone hupehensis, Aster sp., Chrysanthemum sp., Dahlia sp., Helleborus sp., Rudbeckia 'Goldstrum' Calamagrostis 'Karl Foerster', Stipa 'Ponytails'</i>	bulbs, corms, & p9's	planted in drifts	100
IRISH WILDFLOWER CONSERVATION GRADE MIX			%
Species List: Black Meddock, Centaury, Corn Marigold, Corn Poppy, Cornflower, Corncockle, Cowslip, Devil's Bit Scabious, Eyebright, Kidney Vetch, Lady's Bedstraw, Marjoram, Scented Mayweed, Ox-eye Daisy, Red Bartsia, Red Campion, Red Clover, Selfheal, Sorrel, St Johnswort, Yarrow, Yellow Rattle	Seed mix		100
RB = Rootball, BR = Bare root, PG = Pot grown, std. = standard, ftd. = feathered			

Implementation of Planting

Planting within red line area and along boundaries to be carried out in the first available season after the completion of construction works.

For the longevity of the existing and newly planted landscape, the landscaping will be maintained by the contractor for a minimum 18 months defects liability period, and there after for 12 month running periods or as approved.

All landscaping will be carried out by a competent landscape contractor and in accordance with the BS3936.

Indicative Images



Tilia cordata 'Greenspire'



Prunus padus



Malus tschonoskii



Amelanchier 'Robin Hill'



04. Maintenance & Management

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.

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.

1.26 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 administering 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.

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.

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 site. 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.

2.1.4 Edging and Strimming

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.

2.10 Litter Clearance/Pick-up

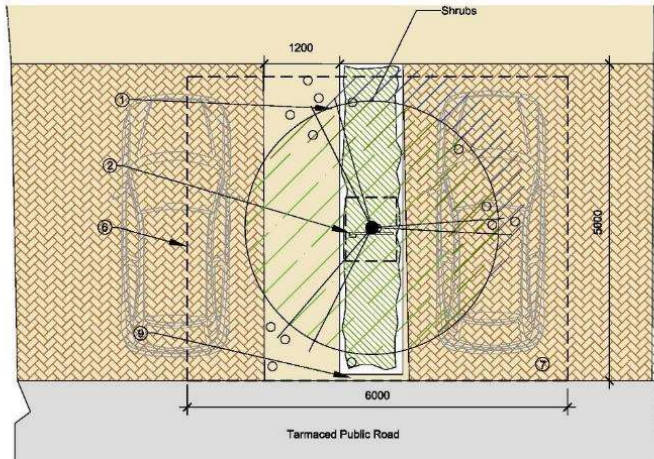
The contractor shall maintain all areas free from litter. This shall mean the removal of all extraneous litter, rubbish and any other debris from all areas, which will include grass areas, planted areas, carparks, footpaths as well as woodlands and tree canopies.

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.

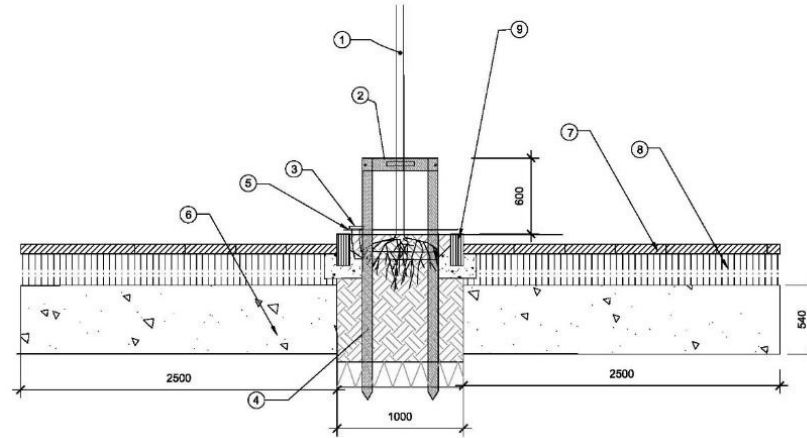
In addition to removal of litter from footpaths, planted areas, etc., the contractor shall make provision for the immediate (within 1 days of notification) arrangement for collection and removal of all extraneous matter which has been deliberately been deposited on site by persons known or unknown (fly-tipping).

2.11 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.



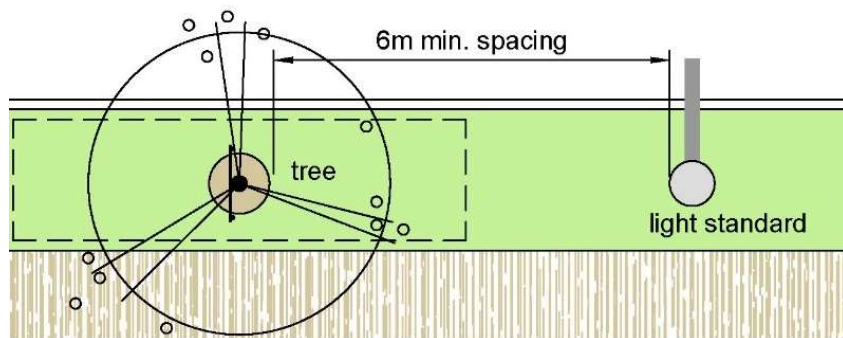
VO1: Street Tree Pit Detail – Plan



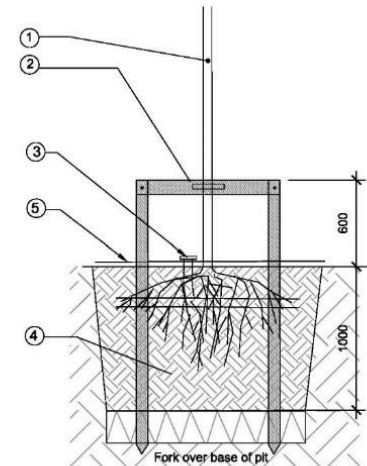
VO1: Street Tree Pit Detail – Section

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 firm-in layers. All planting to receive a minimum of 25lit 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



VO2: Street Tree Pit Detail – Section

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 1x1x1m 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 firm-in layers. All planting to receive a minimum of 25lit water per m2 immediately after planting.
- ⑤ 50mm bark mulch in 80cm dia circle to base of trunk.

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 24 cuts)		*	**	**	***	***	***	***	***	**	**	
Edging to lawn grass areas				*			*			*		
Rough Grass							*					
Fertiliser application to lawn grass areas.					*		*			*		
Hedge pruning/cutting					*			*			*	
Shrubs pruning and feeding				*		*			*			
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	***	***	***	***	***	***	***	***	***	***	***	***