

WATERROCK MIDLETON CORK LANDSCAPE DESIGN DEVELOPMENT

OBJECTIVES

The landscape proposals have been developed through an iterative process by the project team to ensure that the designed landscape meets the amenity requirements of future residents in a safe and stimulating environment, whilst simultaneously providing an attractive setting for the proposed built elements. Throughout the design process careful consideration was given to the layout of the proposed houses, apartment buildings, open spaces and access roads to ensure that the proposals respond to the fabric of the surrounding landscape to minimise any potential landscape and visual effects brought about by the proposals. General biodiversity enhancement has also been carefully considered, with a particular emphasis on making the landscape more pollinator friendly.

It is proposed that these aims would be achieved by;

- providing a landscape structure of specimen trees, robust ornamental shrubs and hedge planting to soften and compliment the appearance of the built elements whilst also enhancing the local landscape for pollinators.
- creating a public open space that is overlooked and framed by the proposed residential units, providing passive surveillance and enclosure in an environment that facilitates social interaction between future residents and the local community.
- installing a clearly defined defensible private open space with active frontages which will allow householders to maximise the potential amenity value of their open space.
- designing a complimentary range of hard landscape features and finishes to subtly define vehicular and pedestrian surfaces and to also differentiate between private and communal open space.

01 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - PHOTOGRAPHIC SURVEY OF THE APPLICATION SITE

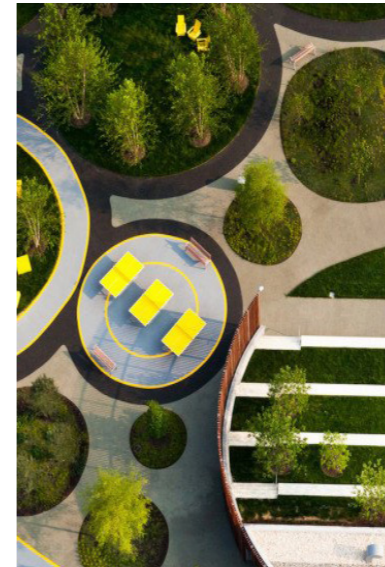


02 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - CONCEPT

LANDSCAPE CONCEPT

The concept was developed to rationalise the layout of the open spaces within the boundaries of the application site, whilst also facilitating coherent and effective connections with open spaces associated with potential future developments throughout the surrounding area.

The name of the townland provided the inspiration for the concept. 'Rocks', or cobbles when loosely arranged form a series of circles and arcs. Circle and arc shapes were used throughout the landscape proposals to define spaces and create a path network linking the open spaces of the proposed scheme. This infrastructure will have potential for expansion beyond the boundaries of the application site, as the land surrounding the site, becomes developed over time.



03 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - AMENITIES

RECREATIONAL FACILITIES DESIGN STATEMENT

The recreational infrastructure required in a proposed scheme of this size, (see Cork County Council Recreation & Amenity Policy), was carefully considered during the design and layout of the open spaces associated with the proposed development.

The open spaces are defined and overlooked by the built elements to provide passive surveillance, whilst shared surface access roads and raised tables facilitate safe and convenient access for future residents.

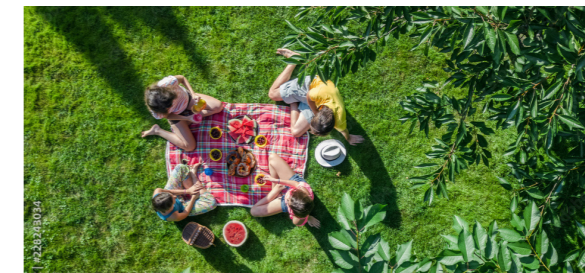
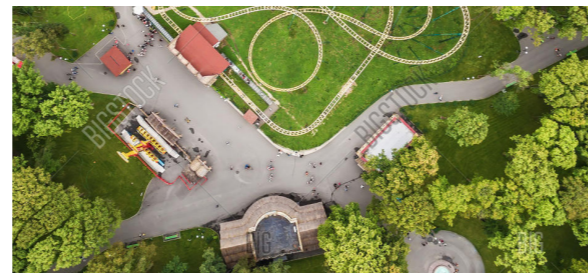
Other landscape elements such as tree and shrub planting, together with robust seating and lighting have been incorporated throughout the development to ensure that the recreational infrastructure which forms an integral part of the proposals is aesthetically pleasing, functional and welcoming for children of all age groups in a safe and stimulating environment.



Table 1: Indicative thresholds for recreational facilities on schemes of 100 houses or greater	
Type of Facility	Indicative threshold
Neighbourhood play areas	1 per 100 units
Local play areas	1 per 100 units
Recreational walks/jogging routes	May be considered where they can be suitably integrated into the design and are of sufficient length as to provide a useable route, or enhance connectivity to adjoining residential areas/nearby recreational infrastructure/ local services.
District Play Areas/Ball Courts	Suitable in larger schemes / sites where they can be appropriately sited – 250 houses minimum.
Multi Use Games Areas (MUGAs)	Suitable in larger schemes / sites where they can be appropriately sited – 250 houses minimum.

330 Proposed Units

- 01** Neighbourhood Play Areas, (x4)
- 02** Local Play Areas, (x3)
- 03** Recreational Walks/ Jogging Routes
- 04** Ball Courts, (x1)



04 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - STRATEGY



DESIGN PRINCIPLES

- 01 CEATE A PEDESTRIAN & CYCLE PATH NETWORK THROUGH THE SITE WHICH CAN BE EXTENDED OVER TIME.
- 02 PROVIDE OPEN SPACE THAT IS OVERLOOKED AND FRAMED BY THE RESIDENTIAL UNITS PROVIDING AN ATTRACTIVE SETTING AND PASSIVE SURVEILLANCE.
- 03 INCORPORATE THE OBJECTIVES OF PLANNING POLICIES FOR THE AREA, IN PARTICULAR, 'WATER- ROCK URBAN DESIGN FRAMEWORK 2020' AND 'CORK COUNTY COUNCIL RECREATION & AMENITY POLICY'.
- 04 PUBLIC OPEN SPACES WITH HIGH AMENITY AND VISUAL VALUES, TO FACILITATE BOTH ACTIVE & PASSIVE RECREATION.
- 05 PROMOTE ECOLOGY & BIODIVERSITY THROUGH THE RETENTION AND ENHANCEMENT OF EXISTING NATURAL FEATURES.
- 06 RESPOND TO BOTH THE EXISTING LANDSCAPE AND POTENTIAL FUTURE DEVELOPMENT BY RETAINING THE EXISTING LANDSCAPE FEATURES WHERE APPROPRIATE AND FACILITATING LINKAGES THROUGH THE PROPOSED DEVELOPMENT.

ACCESS & CIRCULATION

- SHARED SURFACES/ RAISED TABLES TO ENHANCE THE AMENITY VALUE OF THE ADJACENT PUBLIC OPEN SPACE, REGULATE TRAFFIC SPEED AND FACILITATE A PEDESTRIAN FRIENDLY EAST-WEST CORRIDOR THROUGH THE PROPOSED DEVELOPMENT.
- DISCERNIBLE ROAD HIERARCHY THROUGH THE PROPOSED SCHEME.
- DESIGN CONCEPT TO PROVIDE A FLEXIBLE PATH NETWORK WHICH CAN BE EXTENDED OVER TIME.
- FORMAL ENTRANCE & ASSOCIATED BOUNDARY TREATMENTS TO MAKE A POSITIVE CONTRIBUTION TO THE AESTHETIC VALUE OF THE PERMITTED WATERROCK SERVICES LINK CORRIDOR AND PROVIDE A SENSE OF PLACE & ARRIVAL AT THE ACCESS POINT TO THE PROPOSED DEVELOPMENT.
- NEIGHBOURHOOD AND LOCAL PLAY AREAS LOCATED THROUGHOUT THE SCHEME FOR EASE OF ACCESS FOR FUTURE RESIDENTS.

CHARACTER AREAS

- 01 VILLAGE GREEN WITH SPECIMEN TREE BOULEVARD, NEIGHBOURHOOD PLAY AREA AND A BALL COURT.
- 02 ROCK SQUARE, SHARED SURFACE ACCESS ROAD, LEVEL MOWN GRASS AREA & OPORTUNITIES FOR PASSIVE RECREATION.
- 03 LANDSCAPED COMMERCIAL NEIGHBOURHOOD CENTRE WITH CRECHE.
- 04 STREETScape WITH SPECIMEN TREE PLANTING & LIGHTING.
- 05 EAST-WEST PEDESTRIAN FRIENDLY LANDSCAPE CORRIDOR WITH A CYCLE PATH THROUGH THE LINEAR PARK.
- 06 NORTH-SOUTH PEDESTRIAN FRIENDLY LANDSCAPE CORRIDOR WITH A CYCLE PATH.
- 07 HIGH QUALITY BOUNDARY TREATMENT TO ADDRESS PERMITTED WATERROCK SERVICES LINK CORRIDOR.

05 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - MASTERPLAN 1:500@A0



- 01** CENTRAL SPINE ROAD, MAIN VEHICULAR/ PEDESTRIAN ENTRANCE.
- 02** RESIDENTIAL OPEN SPACE FOR INFORMAL ACTIVE RECREATION.
- 03** SHARED SURFACE ZONES
- 04** POTENTIAL PEDESTRIAN ACCESS TO THE PROPOSED SCHOOL GROUNDS
- 05** DISTRICT PLAY AREAS/ BALL COURTS
- 06** NEIGHBOURHOOD PLAY AREAS
- 07** LOCAL PLAY AREAS
- 08** LEVEL OPEN SPACE
- 09** ROCK SQUARE
- 10** NEIGHBOURHOOD CENTRE, CRECHE & APARTMENT BLOCK
- 11** VILLAGE GREEN WITH REFERENCE TO THE LAYOUT OF WATER-ROCK LANE
- 12** POTENTIAL FUTURE PART OF WATER-ROCK GREENWAY WITH CYCLE & PEDESTRIAN FACILITIES, (SEE WATER-ROCK URBAN DESIGN FRAMEWORK 2020)
- 13** POTENTIAL FUTURE PUBLIC PARK, (SEE WATER-ROCK URBAN DESIGN FRAMEWORK 2020)
- 14** POTENTIAL FUTURE RIVERSIDE PARK, (SEE WATER-ROCK URBAN DESIGN FRAMEWORK 2020)
- 15** LAND ZONED HIGH DENSITY RESIDENTIAL DEVELOPMENT TO INCLUDE A MIX OF HOUSE TYPES. (CCOC DEVELOPMENT PLAN 2022, MD-R-06)
- 16** SECONDARY SCHOOL SITE (SEE WATER-ROCK URBAN DESIGN FRAMEWORK 2020)
- 17** PRIMARY SCHOOL SITE (SEE WATER-ROCK URBAN DESIGN FRAMEWORK 2020)
- 18** APPROVED DEVELOPMENT BY CCOC, NOW SUBJECT TO APPEAL WITH ABP
- 19** PRIVATE GARDENS WITH A PAVED AREA ADJACENT TO THE HOUSE
- 20** MEETING AREA WITH ROBUST SEATING FURNITURE
- 21** PERMITTED WATERROCK SERVICES LINK CORRIDOR
- 22** EAST WEST LINEAR PARK
- 23** APPLICATION SITE BOUNDARY.







06 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - WIDER CONTEXT

CONTEXT

THE APPLICATION SITE IS LOCATED TO THE NORTH WEST OF THE TOWN-
LAND OF MIDLETON. IT IS A GREENFIELD SITE CURRENTLY IN AGRICULTURAL
USE, PREDOMINANTLY TILLAGE. THERE ARE CONTINUOUS EXISTING HEDGE-
ROWS ON THE EAST AND WEST BOUNDARIES WHILST PARTS OF THE NORTH
AND SOUTH BOUNDARIES ARE OPEN AND UNDEFINED.

LAND BETWEEN THE EASTERN BOUNDARY OF THE APPLICATION SITE AND
THE OWENACURRA RIVER IS ZONED FOR A PUBLIC PARK WHILST TO THE
SOUTH LAND IS ZONED FOR MIXED USE DEVELOPMENT. PRIMARY & SEC-
ONDARY SCHOOLS ARE PROPOSED TO THE WEST AND NORTH RESPECTIVELY.

KEY

-  WATER-ROCK GREENWAY WITH CYCLE & PEDESTRIAN PATHS
-  CYCLE/ PEDESTRIAN FRIENDLY EAST-WEST CORRIDOR
-  VEHICULAR/ PEDESTRIAN NORTH - SOUTH ACCESS ROAD FOR POTENTIAL FUTURE LINKAGES.
-  PERMITTED WATERROCK SERVICES LINK CORRIDOR
-  POSSIBLE INTERURBAN CORK-MIDLETON CYCLE, PATH MAY BE IMPLEMENTED ON LAND ADJACENT TO THE RAILWAY TRACK.
-  SERIES OF LANDSCAPED OPEN SPACES PROVIDE A NORTH-SOUTH LINK THROUGH THE DEVELOPMENT AND IS A REFERENCE TO WATERROCK LANE.
- 01** MD-C-03 5.2 HA SECONDARY SCHOOL
- 02** MD-C-01 3.3 HA PRIMARY SCHOOL
- 03** MD-GR-10 2.8 HA PUBLIC PARK
- 04** MD-GR-08 9.48 HA PUBLIC PARK
- 05** APPROVED DEVELOPMENT BY CCoC, NOW SUBJECT TO APPEAL WITH AN BORD PLEANALA
- 06** LAND ZONED HIGH DENSITY RESIDENTIAL DEVELOPEMENT TO INCLUDE A MIX OF HOUSE TYPES, (CCoC DEVELOPMENT PLAN 2022, MD-R-06)
- 07** MD-R-10 DEVELOPMENT
- 08** MD-R-16 DEVELOPMENT



07 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT- A-A' SECTION ELEVATION



			Rock Square			Village Green				
RESIDENTIAL OPEN SPACE AND POTENTIAL PEDESTRIAN ACCESS TO THE PROPOSED SCHOOL GROUNDS.	ROAD 08 & ON STREET PARKING.	ROAD 07 & ON STREET PARKING.	ROAD 03 & ON STREET PARKING.	ROCK SQUARE, SHARED SURFACE ACCESS ROAD, LEVEL AREA FOR INFORMAL PLAY & OPORTUNITIES FOR PASSIVE RECREATION.	ROAD 03.	ROAD 04 SHARED SURFACE PEDESTRIAN FRIENDLY COURTYARD PARKING.	CENTRAL SPINE ROAD - MAIN VEHICULAR ENTRANCE. TREE LINED AVENUE WITH SHARED CYCLE LANE & FOOT-PATH.	FEATURE SPECIMEN TREE & HEDGE PLANTING TO REFERENCE WATERROCK LANE, NEIGHBOURHOOD PLAY AREA AND A BALL COURT.	ROAD 11 PARALLEL STREET PARKING.	CONTIUNED SHARED SURFACE PEDESTRIAN FRIENDLY EAST-WEST CORRIDOR.

08 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT- B-B' SECTION ELEVATION



	Village Green					
←						→
PERMITTED WATERROCK SERVICES LINK CORRIDOR	DISTRICT PLAY AREA/ BALL COURTS.	CENTRAL MEETING POINT, WITH ROBUST SEATING, PART OF PEDESTRIAN FRIENDLY EAST-WEST CORRIDOR LINK.	A NORTH-SOUTH LINK THROUGH THE DEVELOPMENT AND A REFERENCE TO THE EXISTING WATERROCK LANE. FEATURE SPECIMEN TREE/ HEDGE PLANTING WITH A NEIGHBOURHOOD PLAY AREA AND A BALL COURT.	ROAD 10 SHARED SURFACE PEDESTRIAN FRIENDLY COURT-YARD PARKING.	CENTRAL SPINE ROAD - MAIN VEHICULAR ENTRANCE. TREE LINED AVENUE WITH SHARED CYCLE LANE & FOOTPATH.	WATERROCK GREENWAY WITH A SHARED CYCLE & FOOTPATH

09 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT VISUALISATION- VIEW 1



10 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT VISUALISATION- VIEW 2



11 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT VISUALISATION- VILLAGE GREEN



12 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT VISUALISATION- ROCK SQUARE



13 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - BOUNDARY TYPES



- A** LOW NATURAL STONE WALL WITH A GALVANISED METAL RAILING, TOTAL HEIGHT C. 1.2M. GENTLY SLOPING TOPOGRAPHY WITH MOWN GRASS & WILDFLOWER MEADOW PLANTING.
- B** REAR GARDEN BOUNDARY FENCE 1.8M HIGH: CONCRETE POST AND PRESSURE TREATED TIMBER PANEL FENCING.
- C** RENDERED CONCRETE BLOCK WALL, C. 1.8M HIGH.
- D** WELDED MESH PANEL FENCE C. 1.8M HIGH.
- E** REAR GARDEN WELDED MESH PANEL FENCE, C. 1.8M HIGH, WITH 1M OFFSET FROM THE EXISTING HEDGEROWS

14 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - BOUNDARY TREATMENT



A - A' REAR GARDEN WELDED MESH PANEL, C. 1.8M HIGH, WITH A 1M OFFSET FROM THE EDGE OF THE EXISTING RETAINED HEDGEROW.



B - B' LOW NATURAL STONE WALL WITH A GALVANISED METAL RAILING, TOTAL HEIGHT C. 1.2M. GENTLY SLOPING TOPOGRAPHY WITH MOWN GRASS & WILDFLOWER MEADOW PLANTING.



C - C' WELDED MESH PANEL FENCE C. 1.8M HIGH, WITH 1M OFFSET FROM THE EXISTING RETAINED HEDGEROW



D - D' WELDED MESH PANEL FENCE, C. 1.8M HIGH, WITH A 1M OFFSET FROM THE EXISTING RETAINED HEDGEROW.

15 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - GREEN INFRASTRUCTURE

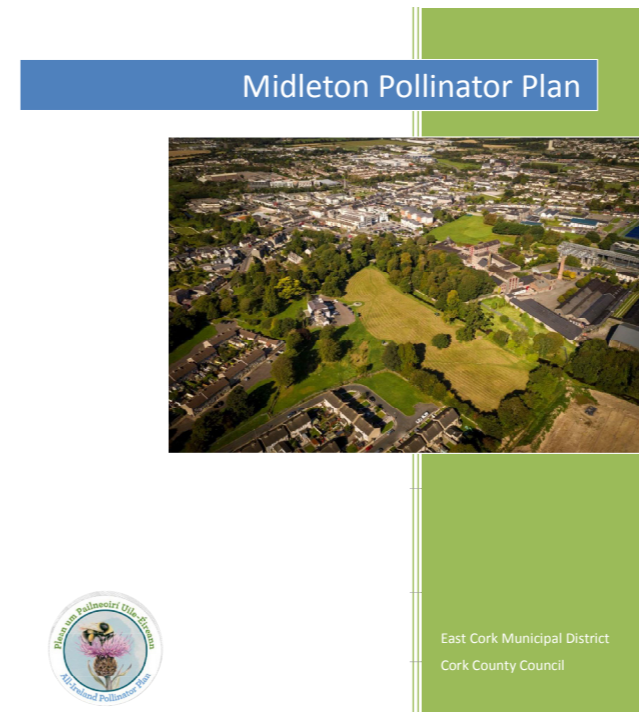
GREEN INFRASTRUCTURE DESIGN STATEMENT

Green infrastructure has been defined as, 'a network of green spaces, habitats and ecosystems within a defined geographic area, which can range in size from an entire country to a neighbourhood. This includes a wide range of natural and semi-natural land cover, including mountains, uplands and agricultural lands across the county, as well as smaller sites such as parks, amenity spaces and gardens, hedgeorws, woodlands and single trees. Blue Infrastructure refers to water bodies, including coastline, rivers and streams, resevoirs, lakes and ponds. Together they are known as 'Green & Blue Infrastructure'.

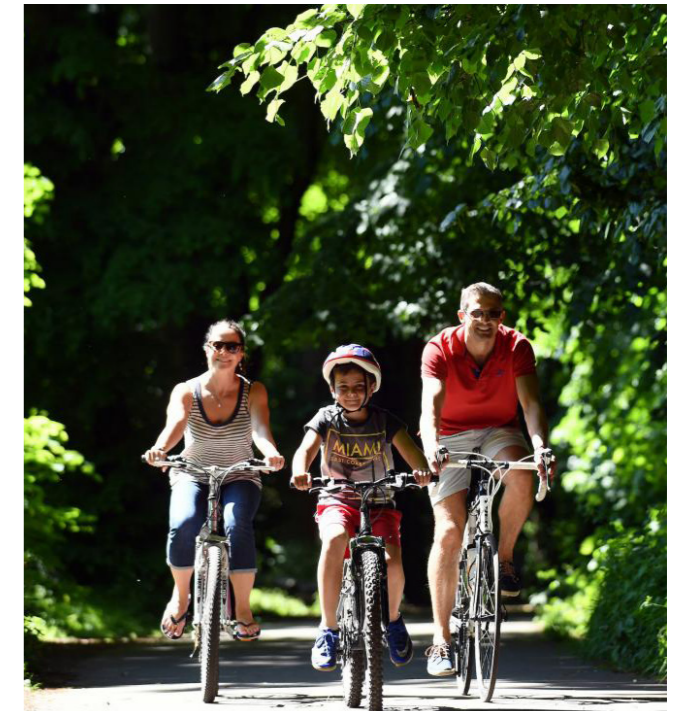
The landscape design associated with the proposed development has been prepared through an iterative process by the design team to improve the multi functional roles and benefits of existing, and future green and open space assets to promote sustainable links between them and to ensure that the proposed settlement would have an adequate level of quality green and recreational infrastructure, both passive and active, which is sustainable and promotes biodiversity.

These aims would be achieved by;

- providing green corridors that promote connectivity and linkages, both ecological and physical.
- the protection and enhancement of existing green and blue infrastructure resources that would form an integral part of the proposals.
- responding to and complimenting the existing local landscape character and sense of place. This would be achieved through the retention of existing landscape elements and features, together with the introduction of indigenous planting and a sensitive design approach that incorporates the natural heritage and cultural values of the area.
- protecting and promoting biodiversity to enhance the overall ecological value of the application site.
- contributing to the sustainable management of surface water run-off and quality.
- improving the multi-functional roles and benefits of existing and future open space assets whilst also promoting sustainable links between them.
- providing new connections, (physical and ecological corridors), between open spaces associated with the proposals and potential future parks and schools on the periphery of the application site, to enhance the overall network through the surrounding area.
- creating pocket parks and other public open spaces throughout the proposed development to allow opportunities for shared enjoyment.
- meeting the recreational needs of the proposed and adjoining communities as per Cork County Councils Recreation & Amenity Policy.
- introducing pollinator friendly planting schemes and management plans as per the recommendations of the All Ireland Pollinator Plan & the Midleton Pollinator Plan.



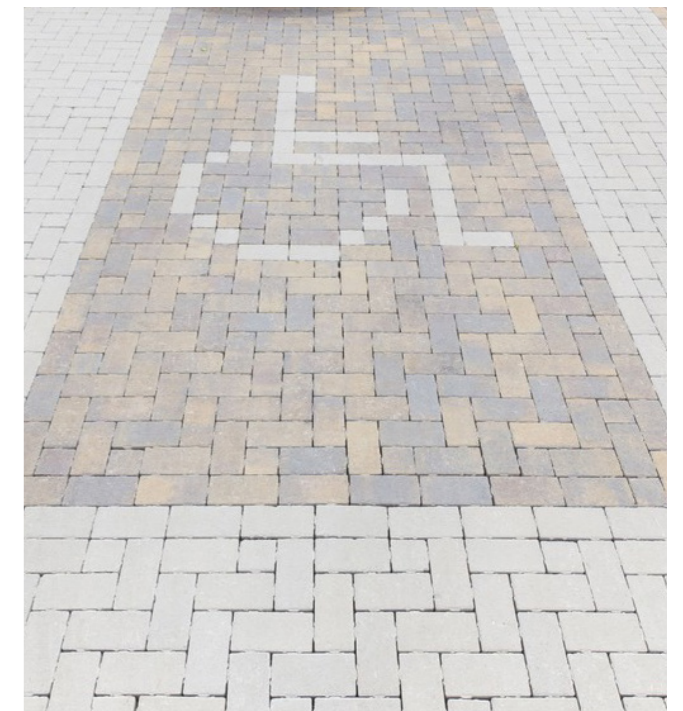
Follow the guidelines and recommendations of the All-Ireland Pollinator Plan & the Midleton Pollinator Plan.



Sustainable development of an interconnected network of green spaces.



Public open space to provide passive and active recreational benefits for residents.



Sustainable urban drainage design to regulate surface water run-off and water quality, whilst also enhancing biodiversity & amenity.

16 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - GREEN INFRASTRUCTURE

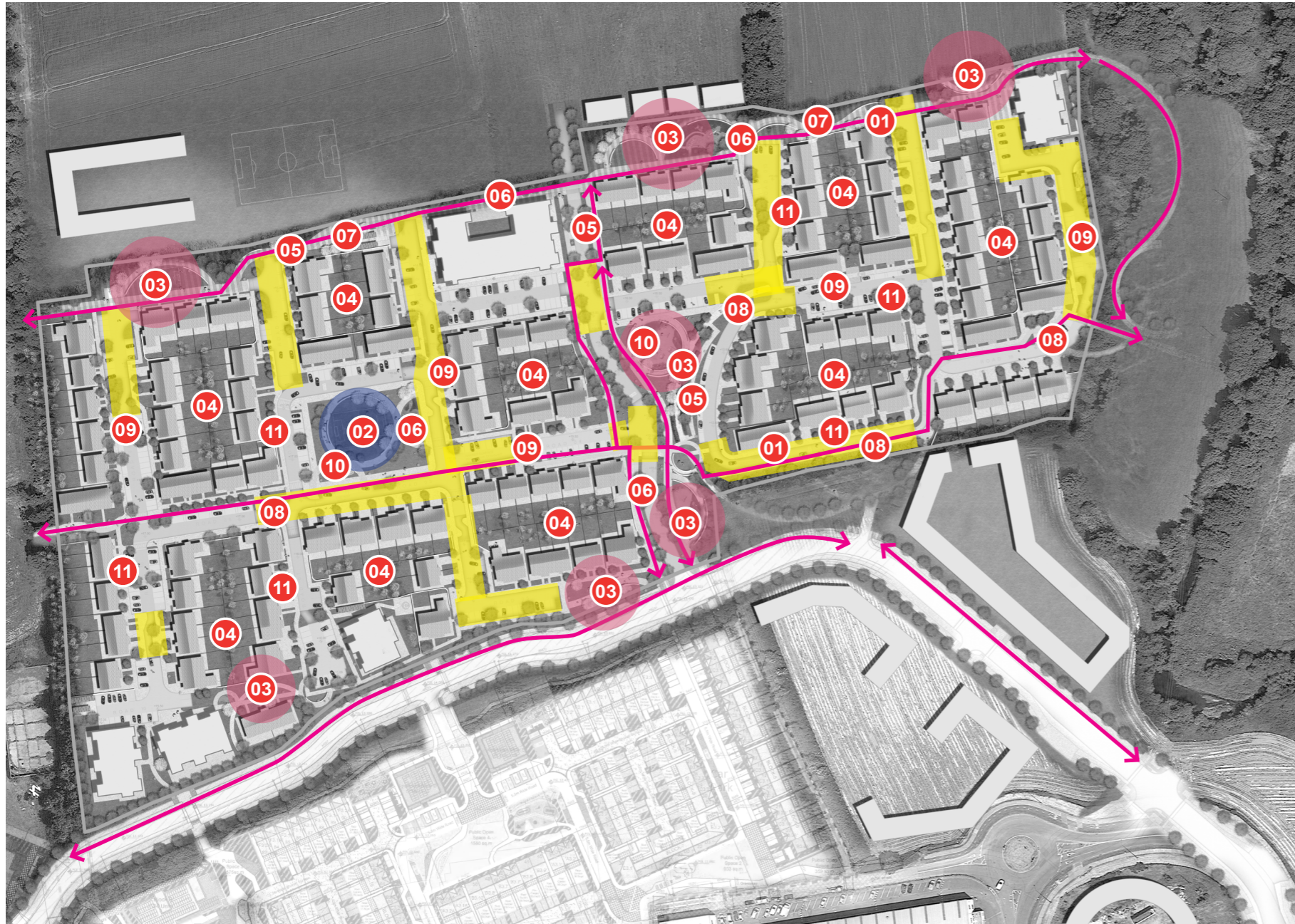


FIGURE NOT TO SCALE, SEE LANDSCAPE MASTERPLAN DRAWING FOR MORE INFORMATION.

1. ACCESSIBILITY, RECREATION, HEALTH AND WELLBEING:



POTENTIAL CONNECTIONS TO WATERROCK GREENWAY CYCLE AND FOOT-PATH NETWORK. LINKAGES THAT HELP ENCOURAGE TRAVEL BY SUSTAINABLE MODES OF TRANSPORT.

ACCESSIBLE HIGH QUALITY RECREATION AND AMENITY FACILITIES, (PASSIVE & ACTIVE), THROUGHOUT THE PROPOSALS TO MAKE A POSITIVE CONTRIBUTION TO THE QUALITY OF LIFE OF FUTURE RESIDENTS, (SEE SHEET NO 3, AMENITIES)



- LEVEL MOWN GRASS AREA FOR INFORMAL RECREATION



- DISTRICT PLAY AREAS/ BALL COURTS, NEIGHBOURHOOD & LOCAL PLAY AREAS.



PRIVATE OPEN SPACE AS PER RECOMMENDATIONS OF THE SUSTAINABLE RESIDENTIAL DEVELOPMENT IN URBAN AREAS GUIDELINES 2009.



A PROPOSED LANDSCAPE STRUCTURE OF SPECIMEN TREES, ROBUST ORNAMENTAL SHRUBS AND HEDGE PLANTING TO SOFTEN AND COMPLIMENT THE APPEARANCE OF THE BUILT ELEMENTS WHILST ALSO ENHANCING THE LOCAL LANDSCAPE FOR POLLINATORS.



ENERGY EFFICIENT LIGHTING USED THROUGHOUT THE PROPOSED SCHEME. TO REDUCE ECOLOGICAL IMPACTS FULL CUT OFF LIGHTING IS RECOMMENDED WITH NO LIGHT EMITTED ABOVE THE HORIZONTAL.



LINEAR PARK INCORPORATING LOCAL PLAY AREAS AND AN EAST-WEST CYCLE/ FOOTPATH CORRIDOR ACROSS THE SITE.



TRAFFIC CALMING AND SHARED SURFACES TO CREATE A RESIDENTIAL AREA THAT FACILITATES THE MOVEMENT AND SAFE INTERACTION OF PEDESTRIANS OF ALL AGES AND ABILITIES, CYCLISTS AND VEHICULAR TRAFFIC IN AN INCLUSIVE, LEGIBLE AND PLEASANT ENVIRONMENT.



TREES AND OTHER PLANTING USED TO REGULATE TRAFFIC SPEED AND PROVIDE AN ATTRACTIVE ENVIRONMENT FOR ALL ROAD USERS.



WELL PROPORTIONED PUBLIC OPEN SPACE THAT IS OVERLOOKED AND FRAMED BY THE PROPOSED RESIDENTIAL UNITS, PROVIDING PASSIVE SURVEILLANCE AND ENCLOSURE IN AN ENVIRONMENT THAT FACILITATES SOCIAL INTERACTION BETWEEN FUTURE RESIDENTS AND THE LOCAL COMMUNITY.



CLEARLY DEFINED DEFENSIBLE PRIVATE OPEN SPACE WITH ACTIVE FRONTAGES WHICH WILL ALLOW HOUSEHOLDERS TO MAXIMISE THE POTENTIAL AMENITY VALUE OF THEIR OPEN SPACE.

17 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - GREEN INFRASTRUCTURE



TREES

- EXISTING TREES TO BE RETAINED (14)
- TREES TO BE REMOVED (8)
- PROPOSED TREES (674)
- NET GAIN (666)**

SEMI-MATURE REPLACEMENT TREES. (60% OF TOTAL)

- REPLACEMENT TREES TOTAL (16)
- SEMI MATURE TREES (10)

HEDGEROWS

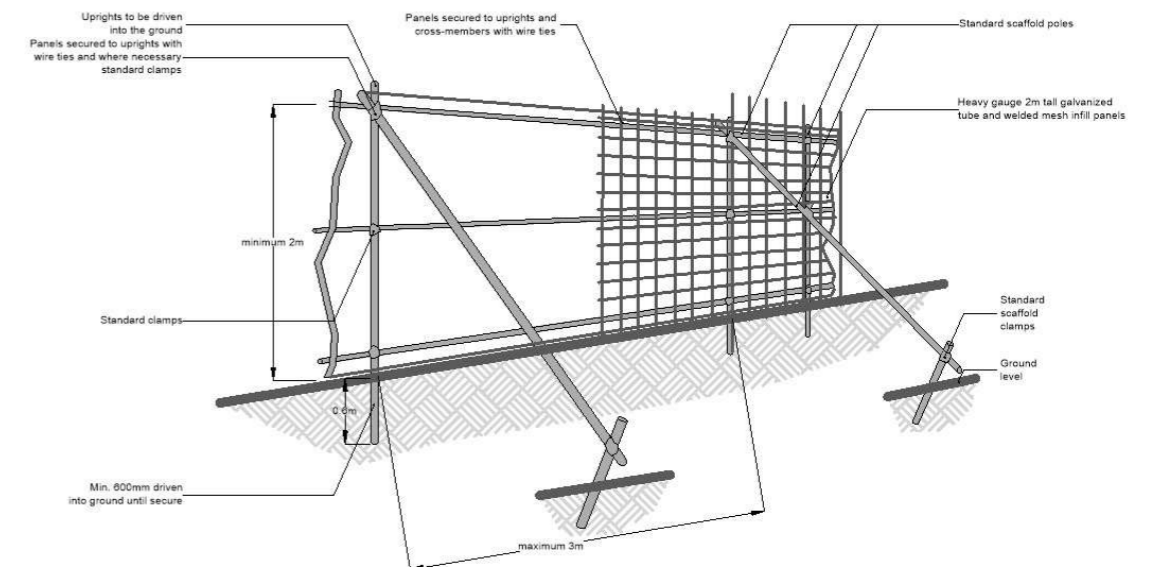
- HEDGEROWS TO BE RETAINED (585 LINEAR METRES)
- HEDGEROWS TO BE REMOVED (349 LINEAR METRES)
- PROPOSED HEDGEROWS (435 LINEAR METRES)
- NET GAIN (86 LINEAR METRES)**

2. NATURAL AND CULTURAL HERITAGE:

The landscape proposals have been prepared through an iterative process to ensure that the proposed development responds to the character of the receiving landscape by the creation of a series of sensitively designed, inter-linked open spaces that will meet the amenity requirements of future residents in an aesthetically pleasing and stimulating environment, whilst also making a positive contribution to local biodiversity.

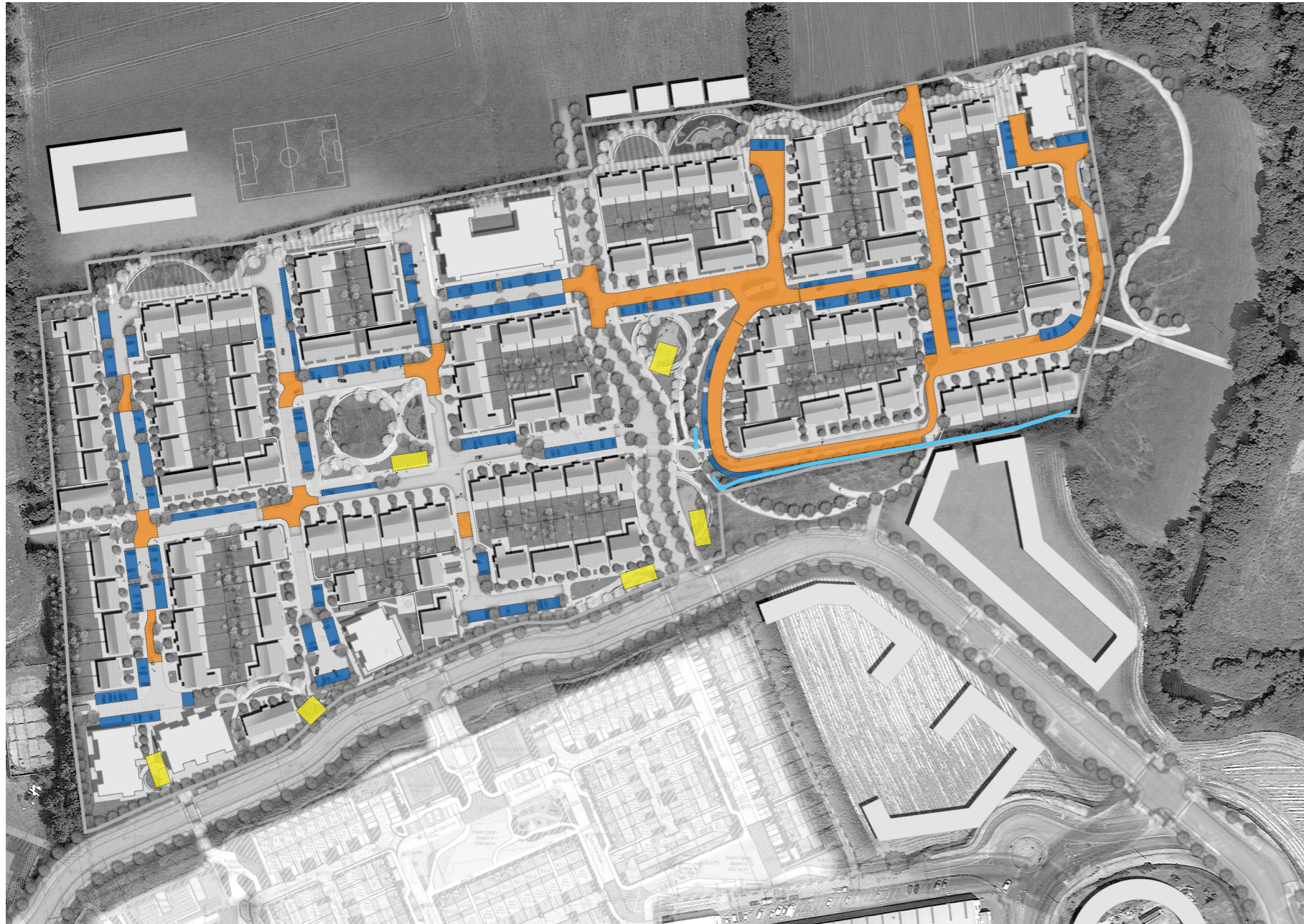
These aims would be achieved by the following measures;

- retention of existing trees and hedgerows where their future is sustainable. Where it's not possible to retain trees and hedgerows, mitigation planting is proposed utilising native pollinator friendly species, (see Sheet No 19 for details).
- a sensitive lighting strategy would be implemented as part of the proposals to avoid potential disturbance to nocturnal species, (see Malone O'Regan Ecological Impact Assessment & MHL & Associates Ltd Public Lighting Design).
- proposed new tree and hedgerow planting to compliment existing planting types throughout the area and make a positive contribution to the existing landscape character of the area.
- protecting and enhancing biodiversity as per the recommendations of the Ecological Impact Assessment prepared by Malone O'Regan Environmental.
- protecting existing trees and hedgerows that are to be retained from unnecessary damage as per the measures in the Aborigicultural Impact Assessment undertaken by County Tree Care Ltd.



HEDGEROW PROTECTION - BS 5837 TREES IN RELATION TO CONSTRUCTION

18 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - GREEN INFRASTRUCTURE



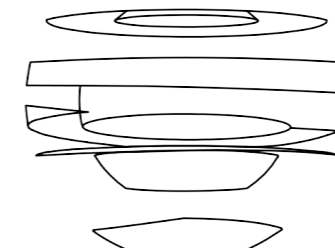
- Permeable paving
- Permeable paving (Road)
- Attenuation cell locations
- Swales

3. WATER MANAGEMENT:

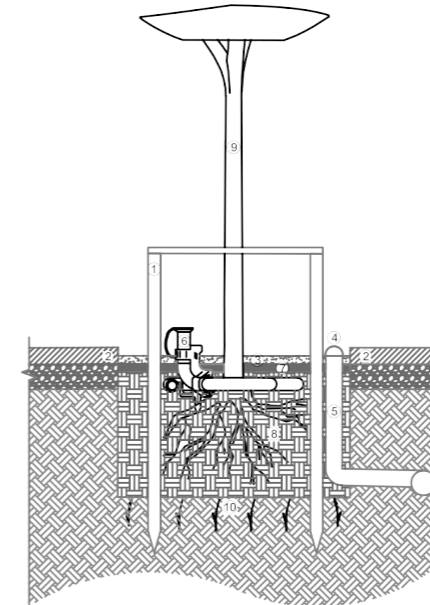
The surface water drainage strategy has been designed by O'Shea Leader Consulting Engineers to ensure that storm water flows will be restricted to greenfield runoff rates in the northern portion of the site and there will be no potential for the impairment of water quality due to increased storm water run off through the instalment of attenuation cells and hydrocarbon interceptors with silt collection features.

These aims would be achieved by the following measures;

- protection of water quality during construction as per the recommendations contained in the Ecological Impact Assessment prepared by Malone O'Regan Environmental.



- the use of permeable paving where appropriate throughout the site, (see figure opposite & the engineering report prepared by O'Shea Leader Consulting engineers for details).
- Bio-retention measures including tree pits, dry swales and on-line bio retention areas as per the Engineering Report prepared by O'Shea Leader Consulting Engineers.



1. Double stakes 75mm dia x 1.8m long with cross bar 75mm half round 900mm long, all pressure treated, with cushioned tie.
2. Surface water from adjacent hard surfaces to drain to the tree pit as per engineers detail design & specification.
3. Top of water level.
4. 100mm dia. overflow pipe with protective cowl 50mm max above soil level of tree pit.
5. 100mm dia perforated overflow stack & discharge pipe to storm sewer as per engineers specification.
6. 100mm dia perforated upvc drainage pipe wrapped around root area with irrigation cap.
7. 50mm layer of loose stone mulch to surface of tree pit.
8. Where possible backfill with nutrient rich, free draining in situ topsoil, min. 900mm depth. Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter. Only use imported topsoil if suitable in situ soils are not available. Imported topsoil to be to BS 3882:2015; general purpose grade.
9. Specified tree planting.
10. Subsoil at base of pit broken up, min depth 150mm.

BIO RETENTION TREE PIT DETAIL

19 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - SOFT MATERIAL PALETTE



LARGE STRUCTURE TREES

Large growing species have been selected for planting areas adjacent to roads and through routes to reduce and humanize the spatial scale.

Where possible pollinator friendly species have been selected, (see All-Ireland Pollinator Plan 2015-2020).

These large growing species have the potential to become heritage trees and a legacy for the future:

Tilia cordata 'Greenspire', (**Lime**)
Paulownia tomentosa, (**Foxglove Tree**)
Prunus padus, (**Bird Cherry**)
Pinus sylvestris, (**Scots Pine**)



HEDGEROW PLANTING

This planting will over time, as the native trees and shrubs mature, provide an attractive setting for the proposed development and make a positive contribution to the wildlife corridor network through the surrounding area.

The species selected are pollinator friendly, with careful consideration given to successional flowering periods, (see All-Ireland Pollinator Plan 2015-2020):

Sorbus aucuparia, (**Mountain Ash**)
Sorbus aria, (**Whitebeam**)
Crataegus monogyna, (**Hawthorn**)
Prunus spinosa, (**Blackthorn**)
Lonicera periclymenum, (**Honeysuckle**)
Corylus avellana, (**Hazel**)
Viburnum opulus, (**Guelder Rose**)



MEDIUM TREES

These smaller trees have been selected for their texture, colour and habit. They will be planted along the access roads and on the boundaries between adjacent houses.

Their introduction will improve air quality and microclimate within the development. In addition, the scale of these spaces will be reduced creating a more pedestrian/residential quality. Pollinator friendly species have been selected to enhance the ecological value of the planting proposals:

Prunus avium, (**Bird Cherry**)
Amelanchier x grandiflora 'Robin Hill', (**Snowy Mespill**)
Pyrus calleryana 'Chanticleer' (**Callery Pear**)
Malus tschonoskii, (**Chonosuki Crab**)
Crataegus monogyna 'Stricta', (**Hawthorn**)
Sorbus aucuparia 'Joseph Rock' (**Mountain Ash**)



HEDGES

Clipped hedges are a very effective natural screen and boundary. As a living material they improve air quality and create potential habitat/shelter for nesting birds. In a street-scapes environment, they soften the visual appearance, screen parked cars, utilities etc and define spaces for sitting or playing. With appropriate species selection they can create attractive colour, texture, form and seasonal variation.

Selected species include:
Taxus baccata 'Rependans' (**Yew**)
Lonicera pileata (**Box Leaved Honeysuckle**)



SHRUB & PERENNIAL PLANTING

Groundcover and specimen shrub species will be used to create focal points throughout the area. This includes complimentary plant selection and combinations within the open spaces.

There are numerous appropriate species, however the palette will be limited to avoid over complication both visually and in terms of maintenance requirements. Species are frost hardy, pollinator friendly, robust and low maintenance. Selected species include:

Arbutus undedo
Spirea nipponica 'Snowmound'
Hydrangea paniculata 'Little Lime'
Mahonia 'Soft Caress'
Viburnum tinus 'Eve Price'
Perovskia atriplicifolia
Libertia grandiflora
Geranium x cantabrigiense 'Cambridge'
Nepeta 'Walkers Low'
Crocsmia 'Babylon'

20 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - PLANTING SCHEDULES

CLEAR STEMMED TREES - PUBLIC/ COMMUNAL AREAS

Name	Type	Size
Tilia cordata 'Greenspire'	RB	(12-14cm, G.)
Paulownia tomentosa	RB	(12-14cm, G.)
Prunus padus	RB	(10-12cm, G.)
Pinus sylvestris	RB	(4m High)

ORNAMENTAL TREES - PRIVATE GARDENS

Name	Type	Size
Prunus avium	RB	(10-12cm, G.)
Amelanchier x grandiflora 'Robin Hill'	RB	(10-12cm, G.)
Pyrus calleryana 'Chanticleer'	RB	(10-12cm, G.)
Malus tschonoskii	RB	(10-12cm, G.)
Crataegus monogyna 'Stricta'	RB	(10-12cm, G.)
Sorbus aucuparia 'Joseph Rock'	RB	(10-12cm, G.)

HEDGES

Name	Type	Size	Density.
Lonicera pileata	PG	(30-35cm, H.)	5 per lin. m
Taxus baccata 'Repens'	CG	(3L Pot)	3 per sq. m

ORNAMENTAL SHRUBS

Name	Type	Size	Density.
Hydrangea paniculata 'Little Lime'	CG	(2L, Pot)	2 per sq. m.
Arbutus undedo	CG	(3L, Pot)	2 per sq. m.
Spirea nipponica 'Snowmound'	CG	(2L, Pot)	2 per sq. m.
Mahonia 'Soft Caress'	CG	(2L, Pot)	2 per sq. m.
Viburnum tinus 'Eve Price'	CG	(2L, Pot)	2 per sq. m.
Perovskia atriplicifolia	CG	(2L, Pot)	3 per sq. m.

ORNAMENTAL PERENNIALS

Name	Type	Size	Density.
Nepeta 'Walkers Low'	CG	(1L, Pot)	3 per sq. m.
Libertia grandiflora	CG	(1L, Pot)	3 per sq. m.
Crocsmia 'Babylon'	CG	(1L, Pot)	4 per sq. m.
Geranium x cantabrigiense 'Cambridge'	CG	(1L, Pot)	3 per sq. m.

HEDGEROW PLANTING

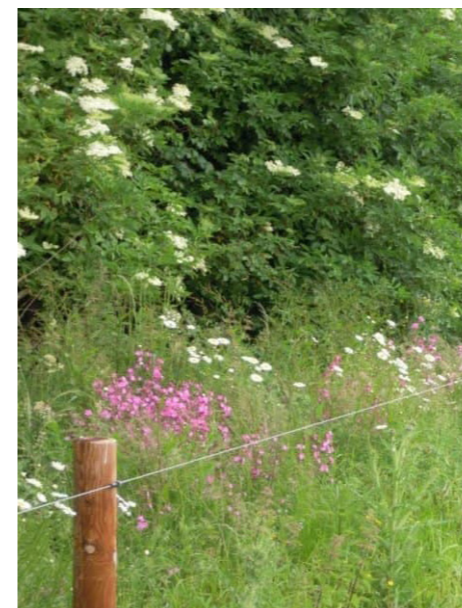
Name	Type	Size	%
Sorbus aucuparia	BR	(Feathered Std- 200cm)	15
Sorbus aria	BR	(Feathered Std- 200cm)	10
Crataegus monogyna	BR	(Whip- 45cm)	50
Prunus spinosa	CG	(Whip- 45cm)	10
Lonicera periclymenum	CG	(1L)	05
Corylus avellana	BR	(Whip- 45cm)	05
Viburnum opulus	CG	(1L)	05

NOTE:
BR = Bare Root
RB = Root Balled
G = Girth
H = Height
CG = Container Grown

CLEAR STEMMED TREES



HEDGEROW PLANTING



ORNAMENTAL SHRUBS



ORNAMENTAL PERENNIALS



21 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - PLANTING SPECIFICATIONS

GENERAL

Planting to be carried out in accordance with the following specification:

MATERIALS

All plant material will be good quality nursery stock, free from fungal, bacterial or viral infection. Aphids, Red Spider or other insect pests, and physical damage. It shall comply with the requirements of the sections of BS 3936, Specification for Nursery Stock, where applicable:

TREES AND SHRUBS, FOREST TREES, GROUND COVER PLANTS

All plants will have been nursery grown in accordance with good practice and shall be supplied through the normal channels of the wholesale nursery trade. They shall have the habit of growth that is normal for the species.

Except for any cultivated varieties or exotic species, which do not set viable seed in Ireland, all plants shall have been grown from seed.

SPECIES

All plants supplied shall be exactly true to name as shown in the plant schedules. Unless stipulated, varieties with variegated or otherwise coloured leaves will not be accepted, and any plant found to be of this type upon leafing out shall be replaced by the Contractor at his own expense.

Bundles of plants shall be marked in conformity with the relevant part of BS 3936.

ADVANCED NURSERY TREES

Trees shall have a well defined straight and upright central leader, with branches growing out of the stem with reasonable symmetry, or a well balanced branching head, according to the work schedule.

The crown shall be well-shaped, balanced, of a form and habit natural for the species. Trees shall have a sturdy; reasonably straight stem not less than 1.80 metres from ground level to the lowest branch, and other dimensions as follows:

Category	Girth At 1.00 m	Min. Height
Semi-Mature	> 16 cm	4.0m +
Extra Heavy Standard	14-16 cm	4.0-4.5m
Heavy Standard	12-14 cm	3.0-3.5m
Selected Standard	10-12cm	2.5-3.0 m

Trees shall be supplied with roots balled, (except where stated otherwise) and securely wrapped to ensure that the soil and roots remain moist and intact until planting. Trees shall have been transplanted or undercut, and shall have been spaced in the nursery to permit development of a full and balanced crown. Trees shall have been carefully lifted, avoiding tearing of major roots and preserving a suitable proportion of smaller and fibrous roots to be conducive to successful transplantation. Any torn or lacerated roots shall be pruned to sound growth before dispatch.

Except for named cultivated varieties, all trees shall have been grown on their own roots. Budded or grafted trees will be rejected. Each tree shall be labelled with a durable tie-on label.

STANDARD TREES

Standard trees shall have a clear stem 1.10m to 1.85 m in height from ground level to the lowest branch, a minimum girth of 8 cm measured at 1.00 m above ground level and a total height of 2.5 to 3.0 metres.

Category	Girth At 1.00 m	Min. Height
Standard	8-10cm	1.7-1.85 m
Light Standard	6-8cm	1.7-1.85 m

Standard trees shall have a sturdy, reasonably straight stem, a well-defined and upright central leader, with branches growing out of the stem with reasonable symmetry, or a well-balanced branching head.

The crown and root systems shall be well formed and in keeping with the nature of the species. Roots shall be in reasonable balance with the crown and shall be conducive to successful transplantation.

Standard trees shall be supplied bare rooted (except where stated otherwise in the works schedule). They shall have been regularly undercut or transplanted. They shall have been lifted carefully to avoid tearing of major roots and to preserve a substantial proportion of smaller and fibrous roots. Trees shall have been grown on their own roots. Budded or grafted trees will be rejected.

HALF STANDARD TREES

Half standard trees shall be as described for standard trees but with a clear stem of 1.05 m to 1.35 m, a minimum girth of 6 cm, a total height of 1.8 to 2.4 metres, and a well balanced, branching head.

FEATHERED TREES

Feathered trees shall have a well branched feathered stem and a total height as per the works schedule, and a well balanced head. The crown and root systems shall be well formed and in keeping with the nature of the species. Roots shall be in reasonable balance with the crown and shall be conducive to successful transplantation. Branching shall be relatively even to the base of tree.

WHIPS AND TRANSPLANTS

Whips and transplants shall not be less than three years old, and shall have been transplanted at least once. Trees of species not listed in BS 3936: Part 4: 1984 shall be sturdy, with a balanced root and shoot development. Sizes shall conform to the schedules.

Plants shall be well furnished with lateral and fibrous roots, and shall be lifted without severance of major roots. Roots shall be of the habit normal for the species.

SHRUBS

Shrubs shall be of the minimum size specified in the schedules, with several stems originating from or near ground level and of reasonable bushiness, healthy, well grown, and with a good root system. Pots or containers shall be as scheduled. Plants shall not be pot bound, or with roots deformed or restricted.

22 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - PLANTING SPECIFICATIONS

HERBICIDES

Glyphosate- 'Roundup' by Monsanto Chemicals Ltd. Apply to manufacturer's recommendations. Do not apply when rain is forecast within six hours. Do not apply when wind is likely to cause spray drift (over 24 kph/15 mph). Allow leaf symptoms to develop before carrying out any cultivation.

'Basta' by Hoechst Ltd. Apply to manufacturers recommendations. Do not spray when wind is likely to cause drift (over 24 kph/15 mph). Protect all foliage of transplants or shrubs.

Propyzamide- 'Kerb 50W. Apply to manufacturer's recommendations between 1st October and 20th December only, when ground is damp. Ensure complete cover of the ground.

All weed killer shall be applied with properly designed equipment, maintained in good working order and calibrated to deliver the specified volume, evenly and without local over-dosing in accordance with BS 7293:1990.

SOIL CONDITIONS

Planting shall be not carried out while the ground is frozen or waterlogged, or during periods of drought. Ripping shall be carried out only when the ground is dry enough to fracture. Cultivations shall not be carried out when the ground is frozen or waterlogged.

WATERING

All root balled and pot grown plants shall be well soaked before planting. All planting shall be watered after planting, to consolidate soil around the roots, unless ground is so wet as to make additional water unnecessary.

SETTING OUT

Setting out shall be from figured dimensions where indicated, and otherwise by scaling. Whips and transplants shall be planted at the spacings indicated. in staggered rows. Trees in shelters shall not be planted in fines. Whips and transplants in mixtures shall be planted at the spacings indicated, in staggered rows or at random according to instructions on the contract drawings. Species shall be planted in groups in each area.

Groups shall generally be of not less than 80 plants or more than 120. The size of groups shall reflect the proportion of each species in the planting area. Set out groups avoiding obvious repetition, regularity, and single lines of one species.

Shrubs shall not generally be planted closer to a kerb or to the edge of a planting area than a distance equal to half the spacing indicated for that species.

SITE PREPARATION

Preliminary Weedkilling: 'Roundup' to manufacturer's recommendations. Standard Trees: Set out. Spray off grass 1000 mm dia. Tree pits to specification backfilled with topsoil from stockpile/returning excavated material. Transplants & Shrubs: Weedkill full ground area. Apply a first treatment before 15th July, and a second not later than 15th September to kill regrowth. Hedge Trench: Weedkill. Excavate trench 600 x 400 mm.

Add ameliorants as follows, incorporate evenly into excavated material, and backfill:

Organic Manure: Fertiliser 0:10:20: Fertiliser I.B.D.U.:
75 mm deep 40 g/sq.m. 40 g/sq.m.

TREE PLANTING

Excavate tree pits to 0.6 cubic metres volume (900 mm square x 750 mm deep). The base of the pit shall be broken up to a depth of 15 cm and glazed sides roughened. Supply and drive the stake.

For planting in areas of made up ground, load and carry topsoil from stockpile on site. In undisturbed ground, backfill with excavated material. Mix the following ameliorants evenly throughout the topsoil while it is stacked beside the pit. (Quantities are calculated for a pit of the specified dimensions):- Organic Manure: Fertilizer 0:10:20: Fertilizer I.B.D.U.: 0.05 cubic m (equivalent to manure 6 cm deep over base of tree pit).

Trees shall be planted at the same depth as in nursery, as indicated by the soil mark on the stem of the trees. They shall be centred in the planting pit and planted upright. The roots shall be spread to take up their normal disposition. Fit tie. Clean a neat circle 1000 mm dia. of all grass. Fit tree guard.

WORKMANSHIP

Trees and Transplants: Ground will be left free of superficial debris and lightly raked to remove stones over 50mm and to leave smooth even finish. Hedges, Shrubs and Groundcover: Ground will be left free of superficial debris and lightly raked to remove stones over 35mm and to leave smooth even finish. Trees in Grass: Ground to be left free of superficial debris, edged and lightly raked to remove over 20mm and to leave smooth even finish.

REPLACEMENTS

The planting will be inspected in September following planting. Any tree or shrub found to have failed will be replaced. Replacement planting shall conform in all respects with this Specification, including all specified excavation, provision and incorporation of all fertilisers and ameliorants, and weedkiller treatments.

23 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENT - STRIPPING AND STORAGE OF TOPSOIL SPECIFICATIONS

WEATHER AND SOIL CONDITIONS

Topsoil shall not be stripped, excavated or worked in any way when frozen or waterlogged. Work involving topsoil shall not proceed; where areas have been exposed to a cumulative rainfall exceeding 60mm over the preceding 28 days; or where moisture content is wetter than the Plastic Limit (PL) of the soil is 3%. The PL of the soil can be assessed in the field as the minimum moisture content at which the soil can be rolled and moulded into a thin thread approximately 3mm in diameter without breaking or cracking and in a laboratory according to BS 1377:Part 2:1990. when heavy rain is falling.

STRIPPING

Prior to stripping the existing topsoil layer, all vegetation will be cut to a maximum height of 100mm and sprayed with an approved systemic herbicide. A minimum period of 14 days will be allowed for the herbicide to take effect (or as recommended by manufacturer).

Prior to stripping, trial holes will be prepared to ascertain the full depth of the topsoil layer (normally 150-250mm deep). The full depth of the existing topsoil layer shall be stripped from all existing landscape areas liable to disturbance of any kind including building works, all temporary access routes, excavation for services, permanent mounding areas, ponds, compounds and storage areas.

STOCKPILES

Stockpiles shall be kept as low as possible, and shall not exceed 3 metres in height except where topsoil is to be stored for less than 12 months. Stockpiles shall be located on dry, free draining ground, not subject to temporary standing water. Topsoil stockpiles shall not be covered or contaminated by subsoil, rock, rubble, remains of trees, site debris, fuel or chemical pollution. In formation of stockpiles, soil will be loosely dumped and stockpiles shaped to shed water.

MAINTENANCE OF TOPSOIL STOCKPILES

In order to reduce the surface area of bare or disturbed soil, the topsoil mounds will be seeded with Italian Ryegrass as a temporary grass cover (which will die naturally at the end of the second summer). Noxious weeds (such as Docks, Thistle, and Ragwort) will be controlled with a proprietary selective weed killer.

DECOMPACTION

Prior to subsoiling or topsoiling all disturbed landscape areas will be decompacted using a back-actor of a 'Hymac' to a depth of 450mm and only during dry weather conditions. Alternatively, ripping may be carried out with a three or five tine ripper to a depth of 600mm. One tine shall be mounted centrally in each wheel track. The maximum distance between the outer tine tracks in adjacent passes of the ripper shall be 1200mm.

SUBSOIL FORMATION

Prior to and allowing for the spreading of subsoil and topsoil, the sub-grade will be roughly graded to the same falls etc. as the proposed final surface. This will avoid the requirement for significant grading of subsoil to form falls and levels.

All landscape areas disturbed by the construction works will have a minimum of 200mm of subsoil material underlying the topsoil layer. In addition, formation levels will allow for the following depth of topsoil after settlement and cultivations;

Grass Areas: 150 mm
Planting Areas: 350 mm.
Tree Planting Pits: 1000 x 1000 x 600mm deep

Make up excessive depth with additional subsoil material before topsoiling. Subsoil material will be clean material (from soil layer extending between the natural topsoil and the parent material), free draining, free from rubbish, building contamination, large stones/rocks greater than 250mm. Subsoiling operations shall be carried out in layers with each layer being lightly consolidated with a maximum depth of 200-300mm per layer.

In spreading the subsoil layer allow for topsoil to stand 50 mm proud of all kerbs, paths, edgings and manhole covers etc to allow for settlement. The final surface must be free of debris etc, and stones over 50mm in diameter.

PREPARATION FOR TOPSOILING

Before topsoiling, all stones, rubble and rubbish over 50 mm diameter will be removed from the surface of the subsoil formation. Any areas liable to ponding of rainwater will be broken up so that they drain. Where areas do not drain naturally, land drainage will to be provided discharging to a suitable outlet.

TOPSOILING

Topsoil will only be moved and spread in dry weather. No work to topsoil will be carried out when it is waterlogged, or if its moisture content is conducive to structural deterioration.

CULTIVATION AND FINISHING

Accept in localised situations, falls and grades in landscape areas will be less than 1 in 3 to allow for ease of mechanised maintenance. The finished surface will be free flowing, relatively even and free from angular variation (except where terracing is proposed).

All landscape planting areas will have a minimum of 350mm deep of topsoil plus subsoil layer and 150mm deep in grass seeding areas.

'Cultivation and finishing will leave a free flowing soil surface, of light open texture capable of sustaining grass or plant growth, with levels approximately 50mm above the finished levels of kerbs, manholes etc. to allow for settlement.

Operations will be carried out so as to avoid re-trafficking of soil in order for it to ensure that the topsoil remains in an un-compacted state.

REINSTATEMENT WORK

All other ground driven over or otherwise disturbed will be reinstated with a minimum of 150mm topsoil to even flowing gradients, matching the levels of the surrounding areas. Finished levels will be free of humps, depressions and vehicle tracks.

24 WATERROCK MIDLETON LANDSCAPE DESIGN DEVELOPMENTAFTERCARE SPECIFICATIONS

PERIOD

The initial landscape development will be managed under an aftercare contact for a period of up to 36 months from the date of substantial completion. Thereafter the entire site will be managed under a renewable maintenance contract based on the following specification for works.

GENERAL STANDARDS:

ALL PLANTS

Shall be alive, healthy, free of minor defects and free of weedkiller or cultivation damage. Planting areas shall be free of litter and debris from weeding, cultivation or pruning. Mulches, where present, shall be maintained in continuous cover.

TREES

Weed-free circles around trees shall be 1000 mm diameter in grass areas. Weeds shall not cover more than 10% of each circle at any time after the first scheduled weedkilling. All weeds in the circles shall be killed at each aftercare visit. Shelters, tree stakes and ties shall be secure and correctly adjusted. Weeds shall not exceed 100 mm in height at any stage.

GRASS

Grass cut to the specified height evenly over the whole area, with cuttings left evenly spread over the surface. Grass shall be healthy, and of the quality specified above for each respective grade of grass.

WEED KILLING

Weedkillers and their application shall be as specified under 'Planting' above. Foliage of all plants will be protected during applications of a non-selective foliar-acting herbicide with an 'Arboguard', 'Politec' guard, or equivalent to the satisfaction of the Engineer. No plant, foliage or stem, shall be direct sprayed, even in winter.

WEED CONTROL IN SHRUBS AND IN HEDGES

Weeds shall be controlled by a combination of hand weeding and herbicide application. Where foliar-acting weed killers are applied, all plants shall be protected during their application, as specified. No residual herbicides shall be used in the first season after planting.

WEEDING

Remove weeds by surface hoeing and pulling. Dig out all roots of deeply rooted or noxious species. All weeds and arisings will be removed from the site after each visit.

WATERING

All planting including all trees in grass, shrubs, ground-cover, areas etc. will be watered as necessitated by dryweather. Washing or compaction of the soil surface shall be avoided.

FIRMING

Any plant loosened by frost, wind or cultivation will be firmed in.

PRUNING

Any shoot damaged or found to be dying back on a periodic visit will be cut back neatly to sound growth with a sharp pruning knife.

FERTILISER: TREES

10:10:20. Apply in two equal passes in transverse directions at a combined rate of 17 gl sq. m. (0.5 oz. per square yard). Avoid any 'banding'.

GRASS

Any shoot damaged or found to be dying back on a periodic visit will be cut back neatly to sound growth with a sharp pruning knife.

MOWING

Mowing shall be carried out with machines in good repair, sharp and evenly set, avoiding laying or pulling of the grass. Mowing shall be carried out in dry conditions. Swards will be mowed evenly at each visit, including for around obstacles. Grass cuttings will be left evenly spread and clippings on hard surfaces shall be removed from site.

If a delay to or omission of a scheduled grass cut results in unsightly swathes of long grass being left after cutting, the Contractor shall rake the cuttings off at no extra cost to the contract.

LITTER

Prior to mowing, remove litter. Remove all litter in all planting when weeding or spraying.

DEFECTS ARISING: PROTECTION

The Contractor shall take all necessary steps to protect paving, roads, kerbs, channels, gullies, walls, fences, structures, furnishings and existing vegetation during the course of his works. Include where necessary temporary coverings, planked barrow runs, etc. Clean mud and soil of all hard surfaces and surroundings to the work.

Any damage to services, surfaces or structures or to existing vegetation caused in consequence of the work shall be made good at the cost of the Contractor.

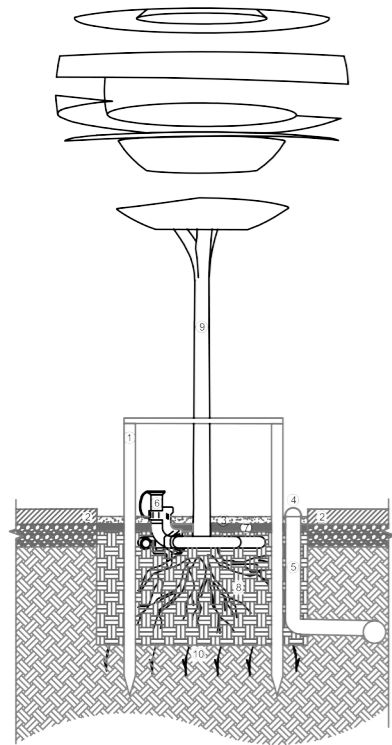
TIDINESS AND CLEARANCE

All areas of work and access routes shall be kept in a tidy condition. All areas of the site will remain in use by the public and for building users during the course of the contract. The Contractor shall clean all debris from beds and surrounding surfaces daily during his visits to site and at more frequent intervals if necessary for the safety of users of the site.

PUBLIC ROADS

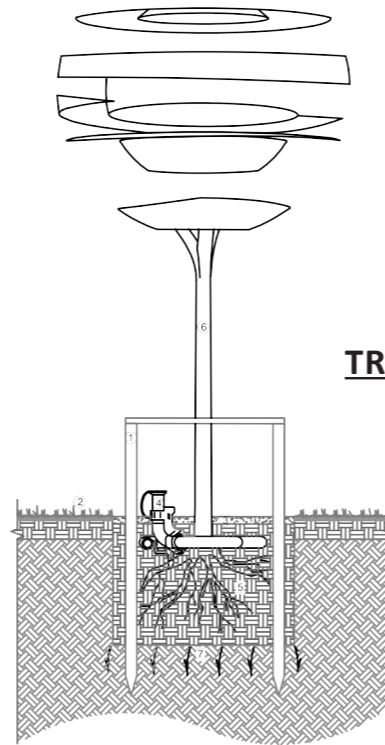
The Contractor shall take all precautions for the safety of users of public roads, shall comply with all regulations governing road safety, and shall include for warnings of any temporary obstruction. He shall comply with the instructions of the Garda Síochána and the local authority. No vehicle entering or leaving the site shall deposit mud or material of any kind on the public road.

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BIO RETENTION TREE PIT

1. Double stakes 75mm dia x 1.8m long with cross bar 75mm half round 900mm long, all pressure treated, with cushioned tie.
2. Surface water from adjacent hard surfaces to drain to the tree pit as per engineers detail design & specification.
3. Top of water level.
4. 100mm dia. overflow pipe with protective cowl 50mm max above soil level of tree pit.
5. 100mm dia perforated overflow stack & discharge pipe to storm sewer as per engineers specification.
6. 100mm dia perforated upvc drainage pipe wrapped around root area with irrigation cap.
7. 50mm layer of loose stone mulch to surface of tree pit.
8. Where possible backfill with nutrient rich, free draining in situ topsoil, min. 900mm depth. Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter. Only use imported topsoil if suitable in situ soils are not available. Imported topsoil to be to BS 3882:2015; general purpose grade.
9. Specified tree planting.
10. Subsoil at base of pit broken up, min depth 150mm.

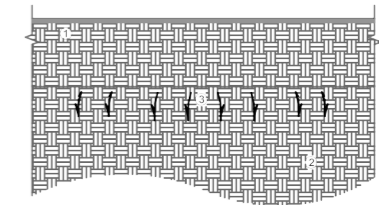


TREE PLANTING SOFT LANDSCAPE

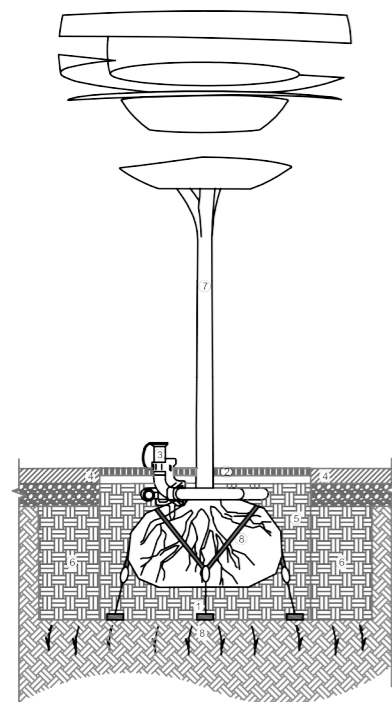
1. Double stakes 75mm dia x 1.8m long with cross bar 75mm half round 900mm long, all pressure treated, with cushioned tie.
2. Adjacent vegetation.
3. Layer of fine grade bark mulch, min 50mm depth.
4. 100mm dia perforated upvc drainage pipe wrapped around root area with irrigation cap.
5. Where possible backfill with nutrient rich, free draining in situ topsoil, min. 900mm depth. Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter. Only use imported topsoil if suitable in situ soils are not available. Imported topsoil to be to BS 3882:2015; general purpose grade.
6. Specified tree planting.
7. Subsoil at base of pit broken up, min depth 150mm.

EARTHWORKS DETAILS

PLANTING AREAS

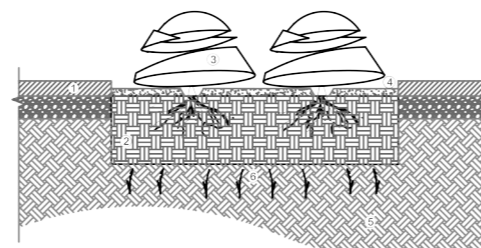


1. Where possible backfill with nutrient rich, free draining in situ topsoil, min. 450mm depth. Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter. Only use imported topsoil if suitable in situ soils are not available. Imported topsoil to be to BS 3882:2015; general purpose grade.
2. Undisturbed sub grade.
3. Subsoil at base of planting pit broken up, min. depth 150mm.



TREE PLANTING HARD LANDSCAPE

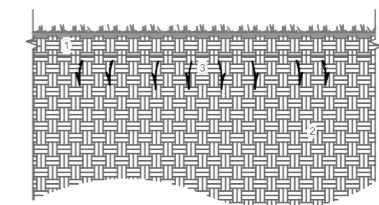
1. Duckbill Rootball Anchoring Kit, or similar approved, installed as per manufacturers specifications.
2. Galvanised metal tree grille, fixed as per suppliers specifications.
3. 100mm dia perforated upvc drainage pipe wrapped around root area with irrigation cap.
4. Adjacent hard surface as per engineers detail design.
5. Where possible backfill with nutrient rich, free draining in situ topsoil, min. 900mm depth. Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter. Only use imported topsoil if suitable in situ soils are not available. Imported topsoil to be to BS 3882:2015; general purpose grade.
6. Nutrient rich engineered topsoil, width varies dependent on site conditions, min 1m³ growing medium per tree pit.
7. Specified tree planting.
8. Subsoil at base of pit broken up, min depth 150mm.



SHRUB & PERENNIAL PLANTING

1. Adjacent surface to engineers specification.
2. Where possible backfill with nutrient rich, free in situ topsoil, min. 450mm depth. Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter. Only use imported topsoil if suitable in situ soils are not available. Imported topsoil to be to BS 3882:2015; general purpose grade.
3. Specified shrub & perennial planting.
4. Layer of fine grade bark mulch, min depth 50mm level of bark mulch to be a min. of 25mm below the adjacent hard surface. Ensure bark mulch direct contact with branches/ stems of shrubs/perennials.
5. Undisturbed sub grade.
6. Subsoil at base of planting pit broken up, min. depth 150mm.

GRASS AREAS



1. Where possible backfill with nutrient rich, free draining in situ topsoil, min. 150mm depth. Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter. Only use imported topsoil if suitable in situ soils are not available. Imported topsoil to be to BS 3882:2015; general purpose grade.
2. Undisturbed sub grade.
3. Subsoil at base of planting pit broken up, min. depth 150mm.

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HEDGE PLANTING DETAIL

NOTES

1. All timber as per specification.
2. Straining posts to be 100mm square, 1.0m long, pointed and treated with an appropriate preservative.
3. Intermediate posts are to be 75mm diameter, 1.0m long, pointed and treated with timber preservative.
4. Wires are to be fixed by means of galvanised straining eyebolts through posts at all changes of direction and ends of runs, and by being fixed to intermediate stakes with galvanised staples.

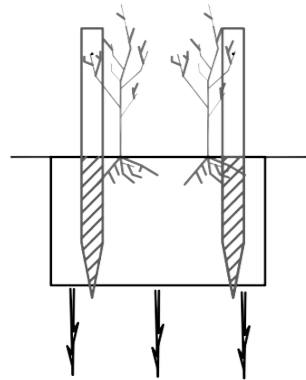
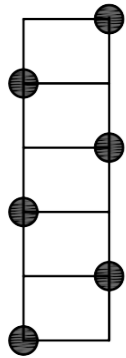
Clipped Hedge Establishment

Excavate trench 750mm wide x 450 mm deep.
Rip sides and open base drainage. Backfill with approved (imported if necessary) topsoil incorporating plant compost at 20litres per m2. Supply and plant hedging at 6 plants per linear metre in 2 offset rows 300mm between rows.

Finish with 50mm depth fine grade well composed bark mulch.

Planting should ideally be in the autumn when the soil is warm after the summer and damp from autumn rain.

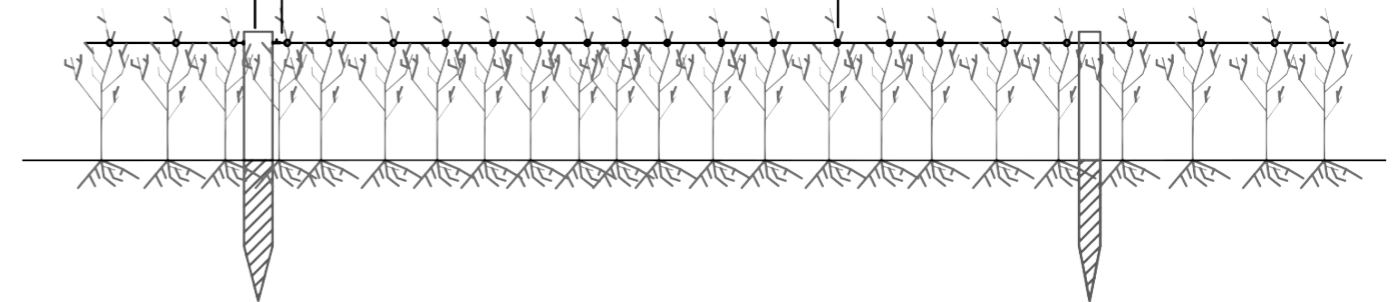
(refer to maintenance requirements and to plant schedule for species size and mix)



Straining posts to be located at ends, all changes of direction, and at intervals not greater than 70m in straight runs.

Wires fixed to posts at either end of runs with galvanised Straining Eye Bolts.

Hedge plants fixed to line wire with plastic wire ties



Straining posts 100mm square

Intermediate stake 75mm diameter