

LANDSCAPE WORKS & LANDSCAPE MAINTENANCE SPECIFICATION

Rosemount , Northern Cross.



Landscape Report

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To be read in conjunction with the associated landscape drawings listed below and design report
Landscape Chapter / subsection of architectural design report, arboricultural assessment, Landscape Visual Impact Assessment and ecology report.

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The scope of the information provided in this report is for planning purposes only.

The following information has been issued as a part of a planning application submission to Dublin City Council July 2022

Introduction: Landscape design rationale

** note this section should be read in conjunction with the landscape drawings 487_WS_15_00_01, 02, 03, 04 05,6, & 7.. Where referenced these are related to the landscape drawings.*

Introduction and landscape strategy

The proposed development lies within an emerging residential area of medium density within a business park setting. To the north of the proposed development a second residential development by a separate applicant is proposed. This proposed development lies south of the future Dublin City Council linear park along the River Mayne Corridor. The neighbouring proposed development provides a permeable link through to the future Mayne River linear park. It is the intention of this proposed development to enhance the permeability of pedestrian and cycleway amenity linkage to the developing townland areas of Balgriffen.

Two heritage features of regional importance align the future proposed linear park along the Mayne River corridor in close proximity to the proposed developments. These include Belcamp College Bridge and Washington Memorial Tower; nineteenth and eighteenth century (respectively) within the landscape.

The proposed pedestrian and cycle access route to the proposed future linear park is punctuated by pocket plaza within this proposal. This public square fronts onto a café retail unit where a public art proposed within a water feature provides restful and a focal point to the proposed public realm. Public seating surrounds the proposed public square where a feature specimen tree silver maple hybrid provides autumnal colour. A native tree lined street to the east with flowering native cherries and oak specimens are interspersed with public seating along the proposed street.

Architectural lighting with unlight benches up lit trees in formal spaces articulate way finding. Feature public lighting provide a safe environment for the pedestrian and cycle user. The street is terminated with an opening where public seating within a planted medium. A stepped approach is proposed to link to the northern proposed public open space of a playground and formal lawn area. Further to the west as the public street turns the main permeable link to the proposed link to the future linear park provides universal access. A bespoke sculptural bench and table provides a nodal point to around the shared central green garden space between the two proposed developments.

To the west of the proposed pedestrian link visitor or public bicycle parking is proposed set within natural stone paving. This area is coved with a feature entrance canopy. Climbing plants are proposed along the structural elements of the proposed canopy within the planted areas integrated between the two proposed developments. The understory planting is scaled upwards to provide central shrub layer down to front of border herbaceous perennials in order that the proposed planting between the public realm on either side of the proposed developments is integrated.

Screening small multi-stem specimen trees are proposed along the eastern extent of the building planted margin. This provides a small scale where the human scale seating elements are located. The proposed multi-stem specimens allow for screening to the

ventilation grills proposed but the scale of the trees permits passive surveillance from the windows above. To the west a similar approach of a gentle planted berm provides the growing medium for a organic planted line of mixed multi-stem and standard small specimen trees. These provide winter, summer and autumnal interest along the public footpath whilst softening the building edge of the proposed developments as well as screening ventilation grills. To the southern corner of the proposed development a permeable surface of natural stone paviors set in hoggin is proposed. A specimen flowering multi-stem dogwood flanks a reclining bespoke bench within the public realm. A formal architectural colonnade leads from this point to the proposed office entrance. Punctuation points of entrance are flanked by formal topiary of box leaved holly set in buff hoggin. From this formal colonnade the foyer to the proposed development is accessed. A vista is made toward the ground floor sculpture and water garden. Here shade tolerant planting of small multi-stem trees form the bounded edge to a dramatic waterfall feature which plunges from the upper level waterlily pond. The semi-public stairs travel behind the waterfall feature to alight onto the upper courtyard garden.

The first floor courtyard centres around a calm waterlily pond which reflects multi stem ornamental multi-stem Japanese maples and dogwoods interspersed with art sculptures. A line of formal box pleached limes frame the upper courtyard. A central *Acer x freemanii* Autumn blaze creates a brilliant red autumnal colour contrasted by the formal lime trees yet complimented by the multi-stem Japanese maples and dogwoods. Seating within the contemplative courtyard garden is located around a pergola which serves as a privacy screen from residents viewing from above creating verdant planes of waterlily pond , pergola and underplanting zones. Low hedging and underplanting create a buffer or privacy zone to the courtyard garden between the private open space and apartment units.

Located on the fourth floor, an active play garden where play spaces are interspersed within a garden setting. Wind tolerant multi-stem trees of ironwood , junberry, crab apples and dogwoods frame the play spaces serving nought to 8 year old and alternative spaces for older children. An external canopy with seating is located centrally within the play garden, set back from the parapet line, where rainy day play can be enjoyed by resident children. A climbing frame for rambling climbing plants is integrated into the external play den canopy. Multi-sensory smell can be enjoyed from these plants. Fruiting crab apples provide interest for bird and insect life on the play garden. Permeable bark mulch wet pour rubber set within the soft planted zones extend from the natural stone paved pathway leading from the central core areas.

A resident's lounge garden is located on the opposing side with external canopies allowing for all weather seating. Planting to the perimeter and centrally on this roof garden frames and encloses the resident's garden. The layered terraced approach provides an intensive green roof infrastructure which compliments visual and active semi-public needs.

Throughout high quality surface treatment is proposed with natural stone paving of varying sizes to create diversity and a clear sense of wayfinding for the public. The primary objective is to provide active use of the public realm with retail use and seating punctuating the journey towards the future linear park along the River Mayne corridor. Green infrastructure mainly of native species seeks to

enhance the biodiverse corridor of the River Mayne whilst aiming to increase pedestrian and cycle connectivity to this recreational amenity.

Taking in charge and standard applied to landscape for proposed development:

The proposed landscape works are to be taken in charge by the building estate and **not** by the local authority. Notwithstanding that the proposed development is not taken in charge the standards for landscape maintenance shall be no less than that set out in 'Guidelines for Open Space Development and Taking in Charge' (2009) as defined by Dublin City Council.

Although not proposed to be taken in charge this application notes Dublin City Council requirements for open space of specific relevance to this proposed development from 'Guidelines for Open Space Development and Taking in Charge' (2009) :

1.4

'The plan should indicate the location and configuration of public open space in the context of the overall development. This plan should detail the existing features/attributes of the designated open space including circulation/access topography, levels, boundaries, views and vistas and existing buildings etc. Important wildlife habitats (including trees, hedgerows and wetlands), historic landscape/listed features present on the site, should also be indicated on the drawing.'

'A detailed written specification for the proposed works shall be provided. This should cover all aspects of the open space works to be carried out. The specification shall be unique to the site and shall not take the form of a standard document. The landscape consultant shall satisfy the Council that the contractor(s) carrying out site works are aware of the specification and are complying with it in full.'

'The proposed location of underground/overground services should be subject to agreement with the Council. Overground services such as unit sub-stations, free-standing cabinets and mini-pillars etc. will not, under normal circumstances, be permitted on public open space. The principle of sustainable urban systems (SUD's) should be adopted in the treatment of surface water drainage.'

'A detailed maintenance programme is an essential part of a landscape plan. In general the developer will be responsible for the maintenance of the public open space for an eighteen-month period after the completion of all works. During this time the developer will be responsible for all maintenance works to the open space including the replacement of dead plant material, the cutting of grassed areas, trimming of hedges, replacement and repair of fencing/railings, watering, litter control, fertilising, etc.'

'The landscape consultant will be responsible for ensuring that the correct depth of topsoil and subsoil exists within the grass verges of the estate. The Council may require the digging of a number of random trial pits to confirm the depth of topsoil provided. The Council may reject and require replacement of topsoil if it is found to be inferior, compacted, or containing spoil/debris from roadworks.'

The landscape and maintenance specification below sets out the particulars pertaining to the above.

Landscape design strategy:

The criteria of this proposed application contains the following landscape features:

- A publicly accessible civic space at ground floor with legible permeability to adjacent proposed development.
- Communal playgrounds for residents.
- Proposed new street on a north south axis as well as east west along the northern extent of the proposed development providing new and enhance connectivity for pedestrian and cycle users should a future connection to the Mayne River corridor be developed as a civic amenity greenway.
- Improvement of biodiverse value in accordance with national pollinator plan.

The landscape application aims to:

- improve connectivity for pedestrian and cyclists
- to give a clear distinction between semi-communal and public realm
- to increase SUDS infrastructure using green infrastructure through infiltration, filtration and detention measures where required.
- to enhance the biodiverse value of the site by connecting to the existing green corridor of the Mayne River vegetated zone.
- enhance orientation of the peri-urban development through the alignment and organisation through permeable interventions within a proposed new neighbourhood public realm.
- respond to the requirement of enhanced public realm within the receiving environment.
- clear definition between commercial ,residential 'home-zones' and public realm.
- introduce amenities to enhance the sustainable community value of the proposed development.
- define areas of different character to respond to residential and public realm requirements.

Works specification:**Stages of Landscape Implementation to be factored into construction schedule:**

- a) Protection of trees and hedges to be retained.
- b) Cordoning off areas of site that shall not be disturbed.
- c) General Site Clearance.
- d) Topsoil/Subsoil stripping and storage.
- e) Drainage Works
- f) Grading of Subsoil and Topsoil
- g) General landscape 'hard works'; Formwork, edging, drainage lines.
- h) Establishment of sub base and laying paving.
- i) Planting stage.
- j) Planting establishment stage.
- k) Defects and replacements stage.
- l) General Maintenance.

Note: All landscape items shall be undertaken within the main building contract. Soft landscape defects liability will be defined separately to the main contract defects liability period. The date for practical completion of the building may not accord with the date for practical completion of the soft landscape items and is set out in stage K below. Planting implementation times will be dependant upon the construction commencement. Maintenance is required during the defects liability period for soft landscape works i.e. those pertaining to trees, shrubs, herbaceous perennials and grassed areas. This shall be set out within the tender documentation for the soft landscape. All imported soil shall be the responsibility of the soft landscape contractor.

STAGE A – Protection of trees and hedges to be retained

Any tree/hedge protection will be carried out in accordance with BS 5837:2012. Hedges to be retained shall be cut back to size and form as directed by the landscape architect and or arborist.

Hedge adjustments – all hedge cutting to be carried out to BS3998:2010 and within period of time set out under the Irish Wildlife Acts from 1st March to 31st August.

Any arboricultural requirements pertaining to existing trees as directed by the planning authority. A qualified arborist is to be consulted on site during any tree surgery or hedge trimming. Notice to be given to landscape architect and arborist prior to commencement of works.

STAGE B – Cordoning off areas of site that shall not be disturbed.

Barriers and/or ground protection etc as detailed in BS 5837:2012 and as per any arboricultural report. All such works shall be carried out prior to any development on site. This is to ensure the survival of any trees/hedges at construction stage.

STAGE C – General Site Clearance REQUIREMENTS

SITE CLEARANCE GENERALLY

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with largest dimension exceeding 600mm.
- Contamination: Substances injurious to plant growth including subsoil, rubble, fuel, and lubricants.
- Vegetation: shown on drawings using suitable no residual herbicide.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: Apply a suitable no residual herbicide to any areas with regrowth of undesirable weeds.

SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (accepting aquatic/ marginal planting) not waterlogged.
- Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

CLIMATIC CONDITIONS

- General: Carry out the work while soil and weather conditions are suitable. Do not plant during periods of frost or strong winds.

MECHANICAL TOOLS

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

CONTRACTOR NOTICE

- Give notice before:
- Setting out.
- Applying herbicide.)
- Visiting site prior to clearance period.
- Period of notice: Provide 3 days notice to give the Landscape Architect/ Contract Administrator the opportunity to be present.

STAGE D – Stripping and Storage of Topsoil and Subsoil

Topsoil should be carefully stripped and stockpiled in reasonably dry conditions where possible, to avoid unnecessary compaction and damage to the soil structure. The two soil types should be stacked and stored separately. Topsoil heaps should not exceed 3m in height and 6m in width, and used within 12 months. If greater time is needed ten precautions and remedial procedures shall have to be carried out as per BS. 3882:2015. While soils are stacked they should be seeded with perennial rye grass seed mixture to control the spread of weeds. This layer of vegetation can be removed by the application of herbicide 2 weeks before spreading the soil.

► The recycled topsoil shall **ONLY** be applied as a topsoil layer in the formation subgrade material under imported soil. All new planting zones as per growing medium specification appendix. .

► Soil analysis test results shall be submitted in advance of stripping and storage of topsoil for review by LA if proposed as fill within the proposed development. In the event that the top soil is deemed unsuitable for recycling due to contamination ,poor soil structure, texture and composition of soil and or contains invasive species recycled soil use as sub-grade material is not permitted.

STAGE E – Drainage Work

Drainage works to constructed in accordance with British Standard 4428;1989.

- Storm water drainage Channels and access as per detailed by Delap and Waller consulting engineers to bituminous roads. All public realm paved areas to be ACO Brick Slot drains as per paving pattern illustrated on landscape masterplan.

STAGE F – Grading Subsoil & Topsoil

General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.

Areas of thicker topsoil: Excavate locally.

TOPSOILING

To be read with Preliminaries/ General conditions refer to soil specification and planting plan where imported soil is required 487_15_01.

GRADING SUBSOIL

General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.

Areas of thicker topsoil: Excavate locally see detail landscape sections plan 489_15_04 to 6 & and growing medium specification..

IMPORTED TOPSOIL (TO BS 3882:2015)

Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work. Zones of 1.1m depth topsoil for tree pits or trenches in all planted areas illustrated to all planted areas on 487_15_01,04,05,06 and growing medium specification.

Additional topsoil required on site, must adhere to BS 3882:2015; 'Specification for Topsoil'. Refer to soil specification and planting plan on landscape masterplan where imported soil is required to all planted areas. Note it is unknown whether the existing soil is suitable for horticultural purposes. Therefore all areas where proposed new planting is required shall receive imported soil to LA specification.

Grade: Grade free draining sandy loam as per soil specification at appendix A.

Source: To approval and supplied by soft landscape contractor or subcontractor responsible for planting.

Submit: Declaration of analysis including information detailing each of the relevant parameters given in BS 3882:2015

NOTICE OF IMPORTING TOPSOIL

Give notice: Before stripping topsoil for transfer to site.

Notice period: 5 days.

SAMPLE LOAD OF IMPORTED TOPSOIL

General: Deliver to site a sample load of not less than 5 m³.

Give notice: Allow inspection before making further deliveries to site.

Retain for comparison with subsequent loads.

Notice period: 3 days.

CONTAMINATION

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.

Subsoil: In areas to receive topsoil, do not use subsoil contaminated with the above materials.

Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.

Submit to LA-Soil analysis to be provided where contamination is suspected,

HANDLING TOPSOIL

Aggressive weeds: Give notice and obtain instructions before moving topsoil.

Plant: Select and use plant to minimize disturbance, trafficking and compaction.

Contamination: Do not mix topsoil with:

Subsoil, stone, hardcore, rubbish or material from demolition work.

Other grades of topsoil.

Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit as defined by BS 3882, Annex A.

SPREADING TOPSOIL

Temporary roads/surfacing: Remove before spreading topsoil.

Layers: Depth (maximum): 150 mm.

Gently firm each layer before spreading the next.

Depths after firming and settlement (minimum) Grass areas: 100-150mm according to use. Planted areas: 450mm.

Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

Above adjoining paving or kerbs: 30 mm.

Below dpc of adjoining buildings: Not less than 150 mm.

Shrub areas: Higher than adjoining grass areas by 100 mm.

Within root spread of existing trees; Unchanged.

Adjoining soil areas: Marry in.

Thickness of turf or mulch: Included.

STAGE G – General landscape 'hard works'

- ▶ Retaining walls: As per detail architectural site section drawings and landscape architectural drawings 487_15_04,05 to 06 inclusive.
- ▶ Step formwork
 - Concrete generally: To BS EN 206-1:2013 and BS 8500-2:2015.
 - Finish: Smooth floated finish; Even, with no ridges or steps.
- ▶ Perma-Loc edging where required 'Bricklock' for paved areas also as required where kerb is not used.
 - Concrete generally: To BS EN 206-1:2013 and BS 8500-2:2015.
- ▶ Path Edging/Kerbing
 - Flamed finish granite edging kerbs.
 - Manufacturer: TBC
 - Product reference: granite.
 - Size (width x height x length): as per schedule below at appendix A
 - Finish: Flamed to and 1 no sides with others sawn
 - Colour: as per material specification drawing 489_WS_15_10 and appendix A below.
 - Joints: Mortar, 3 mm (minimum) gap. Jointing mortar Steintec or E/A

Other requirements: Concrete foundation C20: AS clause 530. 300x150 mm on concrete
Upstands or as per structural engineers detail.

► Bound sub-base to all natural stone paving to be Steintec Tuffbed to BS7533-101 or E/A. Bedding depths as per manufacturers recommendations to achieve conformity with BS 7533-101. All requisite bedding mortar Steintec Tuff bond,(priming mortar) and Tuff top jointing mortar to be installed with all natural stone paving.

► Boundary treatment: Refer to drawing 487 _15_04 Boundary Treatment and all cross referenced landscape architectural site sections.

► Paving and sub-base all natural stone paving on bound subbase , semi public open spaces and pathways and kerbing as per 487 _15_01 and schedule below at appendix A:

► Landscape features cladding to retaining walls:

Stone cladding to all raised planters unless indicated on landscape masterplan as Corten steel cladding to podium planters as per drawing 487_15_04,05&06.

Bespoke pergolas, benches, seating and communal open space BBQ area refer to specification at Appendix A.

STAGE H – Establishment of sub base and laying paved areas. All paved areas to receive bound sub-base and jointing mortar where proprietary Steintec mortar is identified in Appendix A manufactures installation specification to be adhered t.

► Paving Laying Generally

Cutting: Neat, accurate and without spalling. Form neat junctions.

Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or, where clause 547 applies, on a race of fresh concrete.

Securing of units: After bedding has set, secured with a continuous haunching of concrete or, backing concrete cast monolithically with fresh concrete race.

► Adverse Weather

Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

► Concrete for Foundations, Races & Haunching to drainage Channel Units.

Standard: To BS 8500-1, -2 and BS EN 206-1.

Designated mix: Not less than Standard mix ST5.

Workability: Very low.

Bedding/ Backing of Units on fresh concrete bases.

Standard: To BS 7533-6:1999, clause 4.2.

► Laying Generally

Cutting: Neat, accurate and without spalling. Form neat junctions.

Bedding of units: Positioned true to line and levelled along top and front faces.

► Adverse Weather

Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

► Paving Accuracy

Deviations (maximum):

Level: ± 6 mm.

Horizontal and vertical alignment: 3 mm in 3 m.

► Narrow Mortar All paving units to be bound and jointing mortar as below:

Manufacturer: Steintec Tufftop to BS7533-101, Table 12, for Type 25 and Type 40 jointing mortars.

Jointing: Ends of units buttered with bedding mortar as laying proceeds.

Joints completely filled, tightly butted and surplus mortar removed immediately.

Joint width: 3 mm.

Colour: Natural Grey, Mid Grey, Dark Grey, Beige to match paving slab. LA to approve jointing mortar colour.

► Narrow Sand Joints

Jointing: after finish of laying:

Silica jointing sand swept into joints, watered in, left to dry and sand swept in again

Joint width: 3 mm.

► Control of Water Run off

Flood all paved areas and control that water run-off is sufficient

► Granular sub-bases to natural stone paved areas: ALL NATURAL STONE PAVED AREAS TO BE BOUND SUB-BASE

Steintec / Tuffbed or E/A

THICKNESSES OF SUB-BASE/ SUBGRADE IMPROVEMENT LAYERS

Thicknesses: as per manufacturers recommendations for Tuffbed or E/A or

For 80 mm paving slabs use 30 mm sand base

For 60 mm paving slabs use 50 mm sand base

GRANULAR MATERIAL – CRUSHED ROCK

Quality: Free from excessive dust, well graded, all pieces less than 75

mm in any direction, fines removed

Filling: Spread and levelled in 150 mm maximum layers, each layer thoroughly compacted.

PLACING GRANULAR MATERIAL GENERALLY

Preparation: Loose soil, rubbish and standing water removed.

Structures, membranes and buried services: Ensure stability and avoid damage.

LAYING GRANULAR SUB-BASES

General: Spread and levelled.

Compaction:

Timing: As soon as possible after laying.

Method: By roller or other suitable means, adequate to resist subsidence or deformation of the sub-base during construction and of the completed paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place. At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.

ACCURACY

Permissible deviation (maximum) from required levels, falls and cambers:

Roads	Footways	
Parking areas	Recreation areas	
Subgrade	+20 mm	±20 mm
- 30 mm		
Sub-base	±20mm	±12mm

BLINDING

Material: Gravel 0/32 mm

Finish: Close, smooth, compacted surface, laid to drainage falls, finish 110 mm under finished gund level.

COLD WEATHER WORKING

Frozen materials: Do not use.

Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after

thawing.

PROTECTION

Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.

Subgrades and sub-bases: Prevent damage from construction traffic, construction operations and inclement weather.

STAGE I – Planting establishment stage.

► Lawn turf establishment

Seeding/ turfing

GENERAL INFORMATION/ REQUIREMENTS

SEEDED AND TURFED AREAS

Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.

Appearance: A closely knit, continuous ground cover of even density, height and colour.

CLIMATIC CONDITIONS

General: Carry out the work while soil and weather conditions are suitable.

WATERING

Quantity: Wet full depth of topsoil.

Application: Even and without displacing seed, seedlings or soil.

Frequency: As necessary to ensure the establishment and continued thriving of all seeding/ turfing.

WATER RESTRICTIONS

Timing: If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/ turfing until instructed. If seeding/ turfing has been carried out, obtain instructions on watering.

NOTICE

Give notice before:

- Setting out.
- Applying herbicide.
- Applying fertilizer.
- Preparing seed bed.

- Seeding or turfing.
 - Visiting site during maintenance period.
- Period of notice: 3 days.

SETTING OUT

Boundaries of seeding/ turfing areas: Mark clearly.

PREPARATION

PREPARATION MATERIALS

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

Certification: Submit certificate giving supply source, content analysis, confirmation of suitability for purpose and confirmation of absence of harmful substances:

PEAT

Peat or products containing peat: Do not use.

CULTIVATION

Compacted topsoil: Break up to full depth.

Soil ameliorant/ Conditioner/ Fertilizer: Fully incorporate into topsoil to a depth of 150mm.

Tilth: Reduce top 100 mm of topsoil to a tilth suitable for blade grading, particle size 10 mm (maximum).

Material brought to the surface: Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.

GRADING

Topsoil condition: Reasonably dry and workable.

Contours: Smooth and flowing, with falls for adequate drainage.

Remove minor hollows and ridges.

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.

FERTILIZER

Types: Apply both:

Superphosphate with a minimum of 18% water soluble phosphoric acid.

A sulfate 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.

SEEDING

GRASS SEED

Mixture: pro Turf 24 hardwearing landscape mixture

Supplier reference: Goldcrop limited, Centre Park Road, Cork;

www.goldcrop.ie or E/A

Rate of application: 90 kg/acre.

Wildflower meadow mix by 'Design by Nature' refer to planting schedule for planting mix and rate of application if required.

SOWING

General: Establish good seed contact with the root zone to promote healthy, consistent growth.

Method: Spread seed evenly at the specified rate(s) applied in two equal sowing in transverse direction.

- Lightly harrow or rake.
- On light soils roll and cross roll after seeding using a light weight roller.

PROTECTION/ CUTTING

First Cut of Grassed areas:

- Timing: When grass reaches 60 mm high and is reasonably dry.
- Preparation: Before cutting, remove debris, litter, and stones and earth clods larger than 25 mm in any dimension

Time of Year for Tree and Shrub Planting

TIMES OF YEAR FOR PLANTING

- Deciduous trees and shrubs: Late October to late March.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants (including aquatic and marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering and weed control is provided.
- Dried bulbs, corms and tubers: September/ October.
- Colchicum (crocus): July/ August.
- Green bulbs: After flowering in spring.
- Wildflower plugs: Late August to mid November or March/ April.
- Aquatic and marginal plants: May/ June or September/ October.

► Tree Planting

TREE PITS

Refer to tree pit drawings- 487_15_01, 04 & 05, 06, and as required for ROOTSPACE system by Greenblue , as per tree support system drawing 489_15_WS_09 for trees in natural ground.

NB. Concrete protective surround required to rootdirector for cellular pits. 150mm thick and as per depth of rootdirector.

Accessories: As per drawing Tree section details and as required for ROOTSPACE system by Greenblue , as per tree support system drawing.

Sizes: as per root volume 487 _00_01 & 06 and details stated above.

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 150mm.

Pit sides: Scarify.

Backfilling material: Imported topsoil incorporating slow release fertilizer at rate of 30g/m² refer also to growing medium specification for tree pits here at Appendix A.

BACKFILLING MATERIAL

Composition: It is envisaged that all soil to receive imported soil as per soil specification unless soil analysis results prove suitable. Previously prepared mixture of topsoil excavated from pit and additional topsoil may only be used if deemed and approved by LA as suitable. Assume imported soil as per specification.

► Perennial and Shrub Planting

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS PLANT LAYOUT – RANDOM PLANTING APPEARANCE

Spacing: Evenly, avoiding straight lines.

Density: As scheduled.

SHRUB PLANTING PITS

Timing: Excavate 1-2 days (maximum) before planting.

Sizes: 150mm wider than roots when fully spread and 200 mm deeper.

Pit bottom improvement: Break up to a depth of 150 mm.

Backfilling material: Topsoil incorporating slow release fertiliser at a rate of 30g/m².

Bark mulch required to all planter beds min 50mm deep. Depths are as per tree pits (1.1m deep) as planting is proposed as underplanting save for hedge over lawn. In that instance refer to drawing 489_15_WS_07.

PLANTING BULBS/ CORMS/ TUBERS

Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.

Backfilling: Finely broken soil. Lightly firm to existing ground level.

Naturalized planting in existing grassed areas:

Scattering: Random. Plant bulbs/ corms/ tubers where they fall.

Planting: Neatly remove a plug of turf and replace after planting.

PLANTING AQUATIC/ MARGINAL PLANT PLUGS

Handling: Keep plants watered and in shade until planted. Do not allow to dry out.

Preparation: Remove coarse weeds etc. from planting sites.

Root barrier membrane below soil: Do not puncture.

Planting: Into a hole to suit plug size and shape. Create a cleft at bottom of hole to improve rooting. Gently firm plant into hole to ensure good root hold into substrate.

BACKFILLING MATERIAL

Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required. Ba

AFTER PLANTING

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.

► Bulb planting

To British Standard 4428:1989

Season of planting dependent on bulb type.

► Watering – Establishment period & during 18 month defects liability period

Quantity: Wet full depth of topsoil.

- Application: Even and without damaging or displacing plants or soil.
- Frequency: Water as necessary to ensure the establishment and continued thriving of all planting.
- Irrigation system: Irrigation system required to all planted areas on podium. Frequency and rate of volume as agreed with LA/ Soft landscape contractor and or soft landscape maintenance contractor.
- Watering bags required for all trees during establishment phase of 18mths.

STAGE J – Planting Establishment.

SHRUBS/ TREES/ HEDGES ESTABLISHMENT OF NEW PLANTING

During the initial establishment of newly planted trees and shrubs, carry out maintenance of planted areas as followed: Weed control: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of original planting pit. Keep planting beds clear of weeds, by maintaining full thickness of mulch as specified fork over beds as necessary to keep soil loose, with gentle cambers and no hollows, taking care not to reduce depth or effect of mulch.

Only spray crown of trees when in leaf during warm weather and when necessary. Carry out in the evening. Preferably no use of herbicide weed by hand.

PRUNING GENERALLY

Pruning: In accordance with good horticultural and arboricultural practice.

Removing branches: Do not damage or tear the stem.

Wounds: Keep as small as possible and cut cleanly back to sound wood.

Cutting: Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.

Larger branches: Prune neither flushes nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.

Appearance: Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well balanced natural appearance.

Tools: Use clean sharp secateurs, hand saws or other approved tools.

Trim off ragged edges of bark or wood with a sharp knife.

Disease or infection: Give notice if detected.

Growth retardants, fungicide or pruning sealant: Do not use unless instructed.

WATERING

Irrigation system required for podium areas. Supply by irrigation specialist. 70L slow release Tree hydration/ Gator bags required for each tree including those on podium for establishment phase. Water regime of no irrigated places will depend on weather conditions during establishment phase. 18month defects liability phase where maintenance is required. Watering of all new planting shall be the responsibility of the soft landscape contractor for the establishment phase of 18months post planting. Typically for establishing trees a watering regime where no irrigation system is deployed as a guide may be as follows: * Soft landscape to monitor and reduce / increase watering regime if necessary depending on microclimate and weather conditions prevalent in the establishment phase.

Year	Amount	Frequency
YEAR 1		
First month of planting	Trunks smaller than 2" (5 cm): 1 gallon per inch of trunk diameter. Trunks larger than 2" (5cm): 2 gallons per inch of trunk diameter.	Water three (3) times a week over the root ball.
Second month of planting	Trunks smaller than 2" (5 cm): 1 gallon per inch of trunk diameter. Trunks larger than 2" (5cm): 2 gallons per inch of trunk diameter.	Water two (2) times a week over the root ball.
Third month of planting	Trunks smaller than 2" (5 cm): 1 gallon per inch of trunk diameter. Trunks larger than 2" (5cm): 2 gallons per inch of trunk diameter.	Water once (1) per week over the root ball.

Fourth to ninth month of planting	<p>Trunks smaller than 2" (5 cm): 1 gallon per inch of trunk diameter.</p> <p>Trunks larger than 2" (5cm): 2 gallons per inch of trunk diameter.</p>	Water twice per month over the root ball.
YEAR 2		
Hottest months	<p>Trunks smaller than 2" (5 cm): 1 gallon per inch of trunk diameter.</p> <p>Trunks larger than 2" (5cm): 2 gallons per inch of trunk diameter.</p>	<p>Water twice per month over the root ball only.</p> <p>During a drought, water once weekly.</p>
Cooler months		Monitor and respond
Source Deep Root www.deeproot . Last accessed 24/07/2022		

FORMATIVE PRUNING OF YOUNG TREES

Standard: Type and timing of pruning operations to suit the plant species.

Time of year: Do not prune during the late winter/ early spring sap flow period.

Young trees up to 4 m high:

Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.

Remove duplicated branches and potentially weak or tight forks.

In each case, cut back to live wood.

Whips or feathered trees: Do not prune.

Operatives: Extensive pruning of young trees and any surgery to larger trees must be carried out by an approved member of the Arboricultural Association or other approved specialist.

PRUNING FLOWERING SPECIES OF SHRUBS

Time of year:

Winter flowering shrubs: Spring.

Shrubs flowering between March and July: Immediately after the flowering period.

Shrubs flowering between July and October: Back to old wood in winter.

Rose bushes: Early spring to encourage basal growths and a balanced, compact habit.

REMOVAL OF DEAD PLANT MATERIAL

Operations: At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.

STAGE K – Replacement & Defects

NOTE: Soft Landscape defects liability shall be a minimum of 18 months. Maintenance of all specified soft landscape material shall be required by the soft landscape contractor / main contractor for the duration of the ‘soft landscape defects liability’ period.

REINSTATEMENT OF SHRUB/HERBACEOUS AREAS

Remove dead and damaged plants as identified by Landscape Architect/Contract Administrator.

Carefully move any mulch/matting materials to one side and dig over soil, leaving it fit for replanting. Take care not to disturb roots of adjacent plants. Replace plants, using pits and plants to the original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.

Dress with SAI Enmag slow release fertilizer at 20g/m² or E/A.

Agree details of replacement plants with Landscape Architect before ordering.

HAND WEEDING

General: Remove weeds entire, including roots.

Disturbance: Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.

Completion: Rake area to a neat, clean condition.

Mulch: Reinstate to original depth.

WEED CUTTING BY HAND OR MACHINE

Undesirable grass, brambles and herbaceous growth: Cut down cleanly to a maximum height of 75mm.

HERBICIDE TO KILL REGROWTH limit to only minimal amounts/ Weed by hand in all but severe and persistent situations.

Type: Suitable foliar acting herbicide to kill regrowth.

Timing: Allow recommended period for herbicide to take effect before clearing arisings.

WEED CONTROL WITH WINTER HERBICIDE only where necessary. Limit use.

Type: Suitable residual soil acting herbicide.

Time of year: Unless otherwise agreed, complete before end of March.

Timing: Allow recommended period for herbicide to take effect before clearing arisings.

DIGGING OVER

General: Dig over beds. Do not damage existing plants, bulbs and roots.

Depth of dig (minimum): 100 mm.

Landscape Works & Landscape Maintenance Specification

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SOIL AERATION

Compacted soil surfaces:

Prick up: To aerate the soil of root areas and break surface crust.

Size of lumps: Reduce to crumb and level off.

Damage: Do not damage plants and their roots.

SOIL LEVEL ADJUSTMENT

Level of soil/mulch at edges of beds: Reduce to 50 mm below adjacent grass or hard surface.

Arisings (if any): Spread evenly over the bed.

WINTER LEAF REMOVAL

Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds.

Arisings: distribute evenly over planting beds.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS MAINTENANCE

Duration: Carry out the operations in the following clauses from completion of planting until the end of the defects liability period. (Minimum 18 month period to be included in tender requirements.)

Frequency of maintenance visits: Monthly during growing season.

FAILURES OF PLANTING

General: Plants/ trees/ shrubs that have failed to thrive (unless due to theft or malicious damage after completion) during period stated above, will be regarded as defects due to materials or workmanship not in accordance with the Contract. 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.

Timing of making good: Submit proposals.

CLEANLINESS

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.

PLANTING MAINTENANCE GENERALLY

Weed control: Maintain weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of original planting pit.

Keep planting beds clear of weeds, by hand weeding and hoeing until plants are established.

Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.

Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.

Staking: Check condition of stakes, ties, guys and guards. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark. Cut back any damaged bark. Tie loose climbers back to support.

- Frequency of checks: 3 months.
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.

Trees: Spray crown when in leaf during warm weather. Carry out in the evening.

PLANTING MAINTENANCE – FERTILIZER

Time of year: March or April, evenly spread SAI Enmag fertilizer, carefully incorporating below topsoil materials: 20 g per feathered, standard or larger tree.

PLANTING MAINTENANCE – PRUNING

General: Prune at appropriate times, to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape.

Prune trees to favour a single central leading shoot

STAGE L – General Maintenance

► Landscape Maintenance Schedule

SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (accepting aquatic/ marginal planting) not waterlogged.
- Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

CLIMATIC CONDITIONS

- General: Carry out the work while soil and weather conditions are suitable. Do not plant during periods of frost or strong winds.

MECHANICAL TOOLS

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

WATERING

- Quantity: Wet full depth of topsoil.
- Application: Even and without damaging or displacing plants or soil.
- Frequency: Water as necessary to ensure the establishment and continued thriving of all planting. Irrigation system required for all podium areas.

NOTICE

- Give notice before:
- Setting out.
- Applying herbicide.
- Applying fertilizer.
- Delivery of plants/ trees.
- Planting shrubs.
- Planting trees into previously dug pits.
- Watering.
- Visiting site during maintenance period.
- Period of notice: Provide 3 days notice to give the Landscape Architect/Contract Administrator the opportunity of being present.

NOTICE

- Give notice before:
- Application of herbicide.
- Application of fertilizer.
- Watering.
- Each site maintenance visit.
- Period of notice: 3 days.

REINSTATEMENT

Damage or disturbance to soil structure, planting, grass, fencing, hard landscaping, structures or buildings: Reinstate to original condition.

CONTROL OF MAMMALIAN PESTS

Specialist firms/Methods: employ only approved firms and methods.

WATERING also see above for watering during establishment phase.

- Supply: Potable mains water.
- Quantity: Wet full depth of topsoil.
- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: As necessary for the continued thriving of all planting.

DISPOSAL OF ARISINGS GENERALLY

Unless specified otherwise, dispose of arisings from all specifies operations by removing from site.

LITTER

Extraneous rubbish not arising from the contract work: Collect and remove from site.

CLEANLINESS

Soil and arisings: Remove from hard surfaces.

General: Leave the works in a clean, tidy condition at completion and after any maintenance operations.

TREE WORK

TREE WORK GENERALLY

Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.

Protection: Avoid damage to neighbouring trees, plants and property.

Standards: To BS 3998:2010 and Forestry and Arboriculture Training and

Safety Council Safety Guides.

Removing branches: Cut as shown in Arboricultural Association Leaflet

No 8 'Mature tree maintenance'. Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.

Appearance: Leave trees with a well balanced natural appearance.

Chain saw work: Operatives must hold a Certificate of Competence.

Tree work: To be carried out by an approved member of the Arboricultural Association.

ADDITIONAL WORK

Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.

PREVENTION OF WOUND BLEEDING

Standard: To BS 3998, clause 8.

PREVENTION OF DISEASE TRANSMISSION

Standard: To BS 3998, clause 9 and Appendix B.

CLEANING OUT AND DEADWOODING

Remove:

- Dead, dying, or diseased wood, broken branches and stubs.
- Fungal growths and fruiting bodies.

- Rubbish, wind blown or accumulated in branch forks.
- Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
- Other unwanted objects, e.g. tree houses, swings.
- Climbing plants as scheduled

CUTTING AND PRUNING GENERALLY

Tools: Appropriate, well maintained and sharp.

Final pruning cuts:

Chainsaws: Do not use on branches of less than 50 mm diameter.

Hand saws: Cut in one continuous operation to form a smooth cut surface.

Anvil type secateurs: Do not use.

- Removing branches: Do not damage or tear the stem.
- Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
- Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
- Large branches: only with approval of Contract Administrator/Landscape Architect.
- Remove in small sections and lower to ground with ropes and slings.
- Dead branches and stubs: When removing, do not cut into live wood.
- Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
- Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

CUTTING TREE ROOTS

- Excavating: Use hand tools only.
- Protected area: Do not cut roots within an area which is the larger of:
 - The branch spread of the tree.
 - An area with a radius of half the tree's height, measured from the trunk.
- Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.

CUTTING

- Cutting: Make clean smooth cuts with a hand saw.
- Wounds: Minimize. Avoid ragged edges.
- Finishing: Pare cut surfaces smooth with a sharp knife.
- Backfilling:

- Protection: Cover cut roots with clean sharp sand.
- Material: Backfill with original topsoil.

BARK DAMAGE

- Wounds:
- Do not attempt to stop sap bleeding.
- Bark: Gently remove ragged edges using a sharp knife.
- Wood: Remove splintered wood from deep wounds.
- Size: Keep wounds as small as possible.
- Liquid or flux oozing from apparently healthy barks: Give notice.

GRASSED AREAS

MAINTENANCE OF GRASSED AREAS

General: Maintain turf in a manner appropriate to the intended use.

Grass height: Maintain within range 40-50mm for mown paths, cut four times a year for wildflower meadows to a height of 50mm.

Soil and grass condition:

Condition: Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.

Waterlogging and compaction: Prevent.

Damage: Repair trampling, abrasion or scalping caused by mowing.

Ornamental turf and lawns: Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.

Edges: Neat and well defined, in clean straight lines or smooth flowing curves.

Litter and fallen leaves: Remove regularly to maintain a neat appearance.

MAINTENANCE OF GRASSED AREAS

Standard: To BS 7370-3:1991. Carry out maintenance appropriate to each category of turf, as follows:

Objectives: To BS 7370-3:1991, table 6.

Programme: To BS 7370-3:1991, clause 11.

Mowing methods: To BS 7370-3:1991 table 3.

GRASS CUTTING GENERALLY (exclusion zone biodiverse zone as per ecologist specification)

Before mowing: Remove litter, rubbish and debris.

Finish: Neat and even, without surface rutting, compaction or damage to grass.

Edges: Leave neat and well defined. Neatly trim around obstructions.

Adjoining hard areas: Sweep clear and remove arisings.

Drought or wet conditions: Obtain instructions.

MOWING

Location: all grass areas

Width (approximate): 150 mm.

Operations: Maintain by applying a suitable herbicide twice during the growing season.

LEAF REMOVAL

Operations: Remove fallen leaves.

Special requirements: by sweeping with a motorised vacuum sweeper or rotary brush sweeper.

MOWING LAWN

Grass height: maintain between 30 and 50mm with the exception of wildflower meadow.

Arisings: spread evenly.

ROLLING

Operations: Consolidate turf and reduce frost heave.

SPIKING

Operations: Aerate the soil and improve surface water penetration.

Depth: 100 mm into soil.

EDGES TO SEEDED AREAS

Location: Planting beds and around newly planted trees.

Timing: After seeded areas are well established.

Edges: Cut to clean straight lines or smooth curves. Draw back soil to permit edging.

Arisings: Remove.

RE-FORMING GRASS EDGES

Location: Planting beds, paths, manhole covers and the like.

Edges: Draw back soil and re-form edges to clean straight lines or smooth flowing curves, sloping slightly back from vertical.

RE-FORMING GRASS EDGES

Location: Planting beds, paths, manhole covers and the like.

Standard: To BS 7370-3:1991, clause 12.3.

LEVELLING HOLLOWES AND BUMPS IN TURF

Standard: To BS 7370-3:1991, clauses 12.4 and 12.5.

SELECTIVE HERBICIDE

Spray with a suitable selective herbicide.

Areas not to be sprayed: Wild flower or bulb and corm planted areas.

REINSTATEMENT OF WORN OR DAMAGED LAWNS

Worn or damaged areas: Make good by re-turfing or reseeding:

Re-turfing standard: To BS 7370-3:1991, Clause 12.2.

Reseeding standard: To BS 7370-3:1991, Clause 12.6.

Turf or seed: To match existing in appearance and quality.

Protection and watering: Provide as necessary to promote successful germination and/ or establishment.

Appendix A : (Part i) Planting Schedule

* to be read in conjunction with planting plans and landscape drawings in addition to the landscape visual impact assessment and ecologist report

Schedule of proposed trees

Tree species *n= native e*=evergreen	Specification xTr= number of transplantations
Af <i>Acer x freemanii</i> Autumn Blaze	35-40cm girth, wire rootballed, min 5m tall clear stem to 1.8m xTr:5
Au <i>Arbutus unedo</i> (Strawberry tree)	multi-stem umbrella 3m tall 1.5m wide, wire rootballed, xTr: 4 times, 4 stems 16cm girth each, 1.2m start crown height per stem.
Am ^l <i>Amelanchier lamarckii</i> 'Robin hill' (June berry)	35-40cm girth, wire rootballed, min 4m tall clear stem to 1.8m, xTr:4 times
Am ^l * <i>Amelanchier lamarckii</i> 'Robin hill' (June berry)	multi-stem solitary 2.5m tall 1.25m wide, wire rootballed, xTr: 4 times, 5 stems 10cm girth each, 60cm start height per stem
As ^f <i>Acer x freemanii</i> (Jeffersred)	80-90cm girth, wire rootballed, min 10m tall, clearstem up to 1.8m, xTr:9 times
Ca <i>Corylus avellana</i> (hazel) *n	25-30cm girth, rootballed, min 3.5m tall clear stem to 1.8m xTr:4 times
Cb <i>Carpinus betulus</i> (hornbeam)	35-40cm girth, feathered, wire rootballed, min 5m tall, clearstem up to 0.8m, xTr:4 times
Ck ^c <i>Cornus kousa</i> var. <i>chinensis</i> (Chinese dogwood)	multi-stem 3m tall, wire rootballed, umbrella shaped, xTr: 4times, 5 stems 16cm girth each, 1.25m start height per stem
Cn <i>Cornus nuttallii</i> 'Eddie's White Wonder'	multi-stem 3m tall, wire rootballed, umbrella shaped, xTr: 4times, 5 stems 16cm girth each, 1.25m start height per stem
Co ^L <i>Cydonia oblonga</i> 'Leskovacka' (quince 'Leskovacka')	multi-stem 3m tall 1.75m wide, wire rootballed, umbrella shaped, xTr: 4times, 5 stems 16cm girth each, 1.25m start height per stem
Hxl ^j <i>Hamamelis x intermedia</i> 'Jelena' (Witch hazel 'Jelena')	multi-stem solitary 2.5m tall 1.25m wide, wire rootballed, xTr: 4 times, 5 stems 10cm girth each, 60cm start height per stem
Ic <i>Ilex crenata</i> 'Dark Green' (box-leaved holly)	topiary ball, rootballed or containerized 1m Ø and height fully formed
Mk <i>Magnolia Kobus</i> (Kobus magnolia)	30-35cm girth, rootballed, min 4m tall clear stem to 1.8m xTr:4
Mtv ^S <i>Malus toringo</i> var. <i>sargentii</i>	multi-stem umbrella shaped min tall 2m wide, wire rootballed, xTr: 4 times, 6 stems 16cm girth each, 1m start height per stem/crown
Ms ^e <i>Malus sylvestris</i> 'Evereste' (crab apple 'Evereste')	25-30cm girth, rootballed, min 4m tall clear stem to 1.8m xTr:4
Msu <i>Magnolia</i> 'Susan'	multi-stem solitary 2.5m tall 1.25m wide, wire rootballed, xTr: 4 times, 5 stems 10cm girth each, 60cm start height per stem
Ms <i>Malus sylvestris</i> (crab apple) *n	25-30cm girth, rootballed, min 4.0m tall clear stem to 1.8m xTr 4 times
Pa <i>Parotia persica</i> (Persian ironwood)	multi-stem 3.5-4m tall 1.4-2m wide, rootballed, 4xtr, min 3 stems min 16cm girth per stem. Crown start height at 1.25m
Pp <i>Prunus padus</i> (bird cherry) *n	35-40cm girth, rootballed, min 4.5m tall clear stem to 1.8m
Pm <i>Pinus Mugo</i> (dwarf mountain pine) *e	multi-stem 2.5m tall, wire rootballed, umbrella shaped, xTr: 5 times, 3 stems 16cm girth each, 60cm start height per stem
Ps <i>Pinus sylvestris</i> (Scots pine) *n	35-40cm girth, wire rootballed, min 5m tall clear stem to 1.8m, xTr:5 times
Tc <i>Tillia cordata</i> (Lime)	35-40cm girth, box pleached, wire rootballed, min 5m tall clear stem to 1.8m, xTr:5 times. Box 2.5m min square formed head.
Qp <i>Quercus petraea</i> (sessile oak) - *n Irish grown NB not imported.	35-40cm girth, wire rootballed, min 5m tall clear stem to 1.8m, xTr:5 times
Qr <i>Quercus robur</i> , (English oak) - *n Irish grown NB not imported.	35-40cm girth, wire rootballed, min 5m tall clear stem to 1.8m, xTr:5 times
Sa <i>Sorbus aucuparia</i> (Rowan) *n	35-40cm girth, wire rootballed, min 5m tall clear stem to 1.8m, xTr:5 times

Proposed planting or underplanting

Mix Type 1 : Predominant native boundary and underplanting:

Hedging: *Crataegus monogyna* (hawthorn) *Ilex aquifolium* (holly) 1.8m tall, wire rootballed
Sambucus nigra (elder), *Viburnum opulus* (guelder rose)

Shrubs back of border: *Callicarpa bodinieri* var. *giraldii* 'Profusion' (purpleberry 'Profusion') *Daphne oleoides* (olive leaved daphne) *Exochorda* x *macrantha* 'The Bride' *Fatsia japonica* (Japanese aralia) *Fothergilla gardenii* 'Blue Mist' *Hydrangea paniculata* (paniculate hydrangea) *Hydrangea arborescens* 'Annabelle' *Mahonia aquifolium* 'Apollo' (Oregon grape 'Apollo')
Hebe 'Sapphire'

Front of Border planting: *Aquilegia vulgaris* 'White Star' *Astilbe chinensis* var. *pumila* (dwarf Chinese astilbe) *Astilbe* 'Feuer' (x *arendsii*) *Asplenium scolopendrium* *Blechnum spicant* *e *Campanula persicifolia* (fairy bellflower) *e *Cornus canadensis* *Dryopteris dilatata* *e *Epimedium* 'Flowers of Sulphur' *Erythronium californicum*, 'White Beauty', *Gallium odoratum*, *Geranium dalmaticum* *e *Helleborus niger* (Christmas rose) *Liriope muscari* 'Big Blue' (big blue lilyturf) *e *Lulzula sylvatica* (woodrush) *e *Myrrhis odorata* *Tradescantia* (Andersoniana Group) 'Isis' (spider lilly) *Vinca minor* f. *alba* 'Gertrude Jekyll'

Climbers: *Clematis montana* var. *grandiflora* *Hedra helix* (Ivy) *e & n *Hydrangea anomala* subsp. *Petiolearis* (climbing hydrangea) *Jasminum officinale* (jasmine) *Lonicera japonica* 'Halliana' * *Lonicera periclymenum* (honey suckle) *n/d *Parthenocissus tricuspidata* (Boston Ivy) *Parthenocissus quinquefolia* (Virginia creeper) *Pileostegia viburnoides* (climbing hydrangea) *e *Schizophragma hydrangeoides* (Japanese hydrangea vine)

Appendix A : (Part ii) Growing medium

* to be read in conjunction with planting plans and landscape drawings and arboricultural information where trees are proposed for retention.

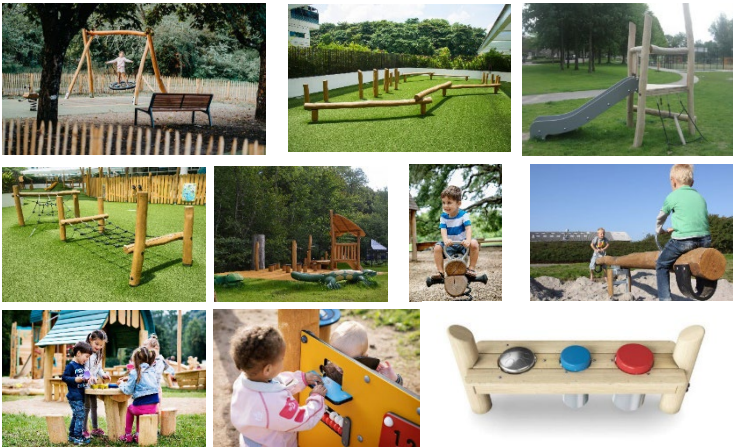
Growing medium SCHEDULE outline		
Item	Quantity / No./ depth	Specification
Growing medium	Description	
<p>Type 1: Podium areas mounded or in raised planter additional item required root barrier e.g. Re Root 1000 by Green leaf or EA for all edges to planted margins saive for raised planters . Dead man anchors needed and tree stake if site wind conditions require .Ref 487_15_01 for planting schedule & Tree pit details & 487__15_04,05&06</p>	<p>1.1m overall tree pit depth deep 1.1m deep refer to drawing for tree pit zones imported soil. Refer to planting plan drawing for tree pit zones. All planted medium to be imported soil as per specification.</p> <p>* NB Soil supplied, graded and installed by Soft Landscape Contractor. Soil data sheet to be approved by LA prior to installation on site.Sub soil only used if grading required below 1.1m topsoil. Subsoil to be imported soil also supplied, graded and installed by Soft Landscape Contractor</p>	<p>Top soil IMPORTED 1.1M DEEP: to BS 3882:2015 Multipurpose topsoil, : pH 6.0-7.5, Soil texture friable: Sandy Loam 55% sand, 30% silt and 15% clay,Maximum coarse fragment content 2mm,20mm,50mm % m/m 30,10,0. Plant nutrient content/Carbon:nitrogen ratio/Electrical conductivity/Potentially phytotoxic elements/Visible contaminants/Sharps: as per 'multipurpose topsoil' subsection table 1, Bark mulch 75mm deep to top surface.</p> <p>Subsoil IMPORTED AS REQUIRED BELOW TOPSOIL : Multipurpose subsoil to BS8601:2013, pH. 6-7.5, Soil texture: Sandy Loam texture 55% sand, 30% silt and 15% clay,ESP <15 , Potentially phytotoxic elements for soil pH <6.0, other contaminants :<0.25 plastics, sharps/zero in 1 kg air-dried soil,</p> <p>maximum weight: saturated growing medium as per structural enginners requirements. Soil particulars may be expanded clay or light weight growing medium which conforms to the above specification. Example of light weight growing medium supplier is : Landtech Soils or E/A. Note typically 18kn/m3 saturated weight. Structural slab to account for growing medium saturated weight & live and dead loads of trees/ planting.</p>

<p>Type 2: Tree pit of feature tree in real ground with Rootspace Cells by Greenleaf or E/A min 2 cells deep 600mm+400mm for extent of tree trench as per detail. Additional item required root barrier e.g. Re Root 1000 by Green leaf or EA to perimeter of tree pit . Dead man anchors needed and tree stake if site wind conditions require .</p>	<p>1.1m overall tree pit depth deep refer to drawing for tree pit zones . refer to drawing for tree pit drawing 487_15_06. * please refer to cellular zones min 2 cells deep filled with soil as per this spec. NB Soil supplied, graded and installed by Soft Landscape Contractor. Soil data sheet to be approved by LA prior to installation on site.Sub soil only used if grading required below 1.1m topsoil. Subsoil to be imported soil also supplied, graded and installed by Soft Landscape Contractor</p>	<p>Top soil IMPORTED TO FILL CELLS 600MM+400MM: to BS 3882:2015 Multipurpose topsoil, : pH 6.0-7.5, Soil texture friable: Sandy Loam 55% sand, 30% silt and 15% clay,Maximum coarse fragment content 2mm,20mm,50mm % m/m 30,10,0. Plant nutrient content/Carbon:nitrogen ratio/Electrical conductivity/Potentially phytotoxic elements/Visible contaminants/Sharps: as per 'multipurpose topsoil' subsection table 1, Bark mulch 75mm deep to top surface. Subsoil IMPORTED AS REQUIRED DEPTH BELOW CELLS : Multipurpose subsoil to BS8601:2013, pH. 6-7.5, Soil texture: Sandy Loam texture 55% sand, 30% silt and 15% clay,ESP <15 , Potentially phytotoxic elements for soil pH <6.0, other contaminants :<0.25 plastics, sharps/zero in 1 kg air-dried soil,</p>
<p>Type 3: Trees in real ground as per planting plan with additional item required root barrier e.g. Re Root 1000 by Greenleaf or EA to perimeter of all planted areas. Ref 487__15_01 Tree pit details & 487_15_04.</p>	<p>1.1m overall tree pit depth deep refer to drawing for tree pit zones on planting plan. NB Soil supplied, graded and installed by Soft Landscape Contractor. Soil data sheet to be approved by LA prior to installation on site.Sub soil only used if grading required below 1.1m topsoil. Subsoil to be imported soil also supplied, graded and installed by Soft Landscape Contractor</p>	<p>Top soil IMPORTED: 1.1M DEEP BS 3882:2015 Multipurpose topsoil, : pH 6.0-7.0, Soil texture friable: Sandy Loam 55% sand, 30% silt and 15% clay,Maximum coarse fragment content 2mm,20mm,50mm % m/m 30,10,0. Plant nutrient content/Carbon:nitrogen ratio/Electrical conductivity/Potentially phytotoxic elements/Visible contaminants/Sharps: as per 'multipurpose topsoil' subsection table 1, Bark mulch 75mm deep to top surface. Subsoil: Multipurpose subsoil to BS8601:2013 IMPORTED AS REQUIRED DEPTH BELOW TREE PIT pH. 6.0-7.5, Soil texture: Sandy Loam texture 55% sand, 30% silt and 15% clay,ESP <15 , Potentially phytotoxic elements for soil pH <6.0, other contaminants :<0.25 plastics, sharps/zero in 1 kg air-dried soil,</p>

END part ii

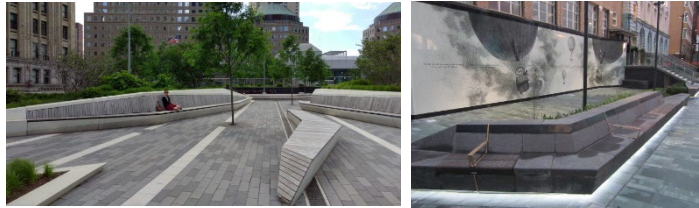

Appendix A : (Part iii) Street furniture/ Play equipment /External architectural lighting/Paving

NB: Play equipment schedule outlined below is a PERFORMANCE SPECIFICATION only as play equipment is a specialist and detailed design item. Named items / brands are to indicate programmatic requirements for 3 no. play spaces as illustrated on landscape masterplan documentation.


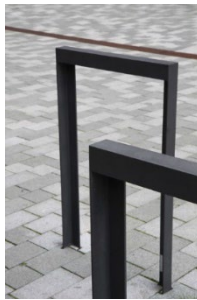





Play Equipment SCHEDULE			
Description	Quantity / m2 / M linear xerci	Specification	Precident image
Play equipment: 1 no playgournd level 4. Refer to landscape masterplan.	As indicated on specification.	Toddler-12+ year All play equipment to be provided with RC structural footing as determined by Structural Engineer Series Nature play by Kompan or E/A Manufacturer: Kompan <ul style="list-style-type: none"> • NRO906 Robina Bird nest swing Item 1no. <ul style="list-style-type: none"> • NRO831 Balance net 1no. • NRO810 Wobble bridge 1no. • NRO821 Balance posts with rope 1no. • NRO871 Balance beam. 1no. • NRO703 Play hut and stairway /slide. 1no. • NRO1003 Play tower with slide. • NRO105 Entry Seesaw 2 people 1no. , • NRO105 Mule Springer 1no. Play den area/ canopy: • PERCUSSION MUSIC PANEL NRO602 1no. • NRO212 kids seat and poles • NRO616 PLAY PANEL 4 – SCHOOL . To EN1176 Playground equipment 	

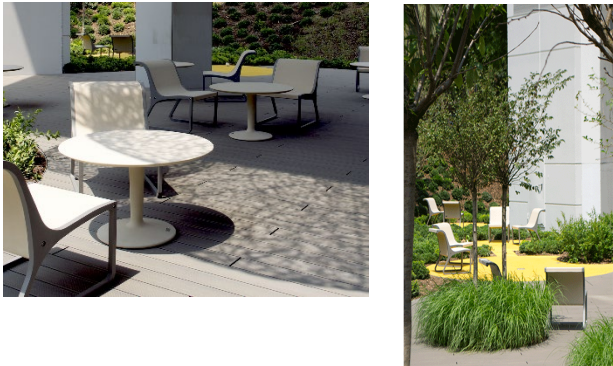

		standard RoSPA risk assessment and inspection required on an annual basis and at implementation phase.
Fitness equipment G.F. public realm	1no.	Cross fit exercise frame 'Core Twist' by Kompan or E/A.





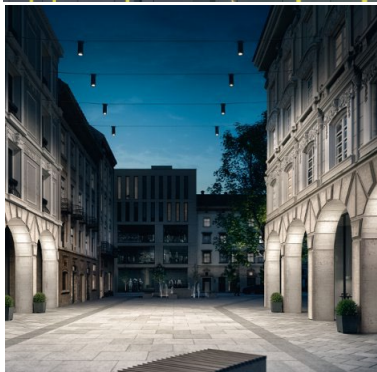
External Furniture SCHEDULE			
Description	Quantity / m2 / M linear length	Specification	Precident image
Integrated planter benches & table	6no. Of varying lengths and profiles one no curved south west area. 1 no linear bench with external work/ breakout table public realm.	Integrated stone clad bench to planters 3no. Refer to detail drawing 387__15_01. Concealed LED down wash luminaire integrated into bench. Integrated bench with stone capping. 1 no linear bench with external work/ breakout table public realm northern public realm area.	
Free standing benches public realm	6no.	Metal framed bench with polished concrete surface by Escofet or E/A. ref Levit	

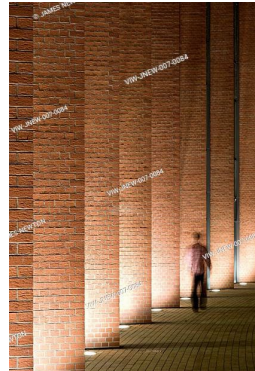


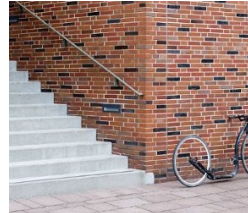

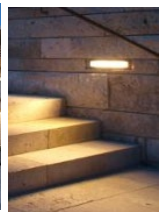


Picnic tables and seating Semi Communal area	3no. 1 table 3 stools 1 bench per set.	concrete bench , stool and table with hardwood timber surface by Escofet Marina or E/A. 1 table 3 stools 1 bench per set.	
Seating elements individual: Pocket plaza	6no.	Informal seating elements, FSC certified timber 90x30mm hardwood treated timber. Factory finished GALCO painted galvanised steel frame to selected RAL colour. Bolt fixed at base to concrete footing in public zone. Steel cladding panels may be employed in lieu of timber battens. Free standing in residential secured areas. Removable with bolt fixture where on Irish Water wayleave. (i.e. no chemical bolt fixings).	






As required where landscape elements such as benches, trees or bike stands are spaced at such a distance as it is determined that car migration onto footpath zone may be compromised.	6no.	Painted rectangular bollard with ope in the centre as illustrated. To match profile of bike stands. Mmcite Lot	
Surface bicycle parking rails. Through out the scheme.	14	Colour charcoal grey, Painted 35mm SHS profile. 1.2m tall. M.M.Cite LotLimit bike stands.	  
Pergola	4No.	Location over car park ramp g.f., play terrace , level 1 and level 7 terrace: Painted Steel SHS pergola post and beam frame with stainless tension wire frame on posts and over post and beam frame for support for climbing plants. On play terrace solid with zinc cladding with circular ope 1.5m diameter. Integrated LED batten lighting surface mounted to beam structure. On level 7 roof terrace part solid as per play terrace and part climbing tension wire	  



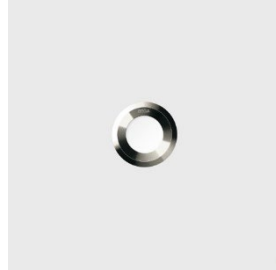

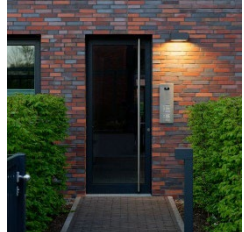
		system as per standard pergola on level 1 and over car park ramp.	
Bistro style external table and chairs: Roof Terraces.	4 no sets	Cast aluminium framed chairs with cast concrete seating element. Option for fixture to footing where in public areas. Removeable where required for use in public square and or roof terrace. Escofet ref Concret chairs and tables or E/A.	
External armchair / modular sofa configuration level 7 roof terrace.	Chair: 14no. Coffee table small 3no. Rectangular 3no.	Colour 'Space Grey' aluminium. Ref Jet stream 2 by Les Jardins or E/A roof terrace . Modular units with coffee tables.	


BBQ area roof terrace	1no.	Bespoke polished concrete BBQ area with integrated sink and BBQ and kitchenette.	
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External lighting SCHEDULE			
Description	Quantity / m2 / M linear lenth	Specification	
Public lighting unit	12no.	BEGA Light building element 84126K3 3000K Colour graphite. Or similar approved	 
Catenery lighting to pocket plaza where fixed to building on one side and to one no pole. (Supplier ECI lighting)	3no. & 1no. Pole	Pendant luminaire 84 405 K3 3000K colour graphite. Or similar approved . Pole colour graphite.	

Inground wall wash/ façade lighting to articulate building along colonade and integrate with paving pattern.	20	In-ground luminaire Bega 84 278 K3 3000k	
Pole luminaire to illuminate public squares 2no. Supplier ECI lighting	8	Bega Light building element 84126K3 3000K Colour graphite. Or similar approved	 
Recessed wall light to playground Bega.	8	Recessed wall luminaire brick light dimension/ rectangular Bega Recessed luminaire 33 019 K3 or similar approved	  
Bench underlighting public realm/ squares	12 no. benches length dependent on bench	LED luminaire liniLED® Connect Diffuse (IP68+/IP69K) or equal approved integrated into bench	 

Pergola lighting / surface mounted to I section beams to illuminate under pergola. (supplier ECI lighting)	TBC to specialist detail.	388 01 32 N warm white 3000K , IP 65, B-LINER 6532 IP (Delta lighting)	 
Pergola illumination	TBC to specialist detail.	388 01 32 N warm white 3000K , IP 65, B-LINER 6532 IP (Delta lighting)	As above
Tree uplighters in planter beds to feature trees: with adjustable angle and positioning	23	Light Up Earth: by iGuzzini supplier General lighting. IP68 min. 3000k or similar approved	 
Tree uplighters inground	8	In-ground luminaire 84 453 K3 by Bega (ECI lighting) or similar approved	

LED waterfeature luminaire	TBC	*power supply required. Part of waterfeature specialist specification/ scope	 
Step lighting GF to upper terrace to comply with building regulations min 100 lmns. Circular to fit step with small diameter. Bega (Supplier ECI lighting)		Recessed luminaire 33 831 K3 3000k by Bega (ECI lighting)	
Surface wall mounted lighting down wash to give ambient lighting level on roof terraces.	21	Wall washer 33 388 K3 colour graphite by Bega (ECI lighting)	 

Bollard luminaires planters roof terraces	33	Bollard 84 219 K3 by Bega (ECI lighting)	
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Paving surfaces:		
Paving/ Surface treatment refer to key drawing 489_15_1 Material quality, paving types key and street furniture	487_15_00_10 Material quality, paving types key and street furniture	<p>Paving type 1 (P1 ref 01 on drawing): Granite paving 600x900, 400x300, 150x300 in black and silver gray banding to public realm plaza and street. Flamed finished. 80mm deep in trafficable area for fire and emergency services. 40mm deep in non trafficable areas. Bound sub-base Steintec Tuffbed, Tuffbond and Tufftop bedding mortar, priming and jointing mortar.</p> <p>Paving type 2 (P2 ref 05 on drawing): Universal entrance and universal set down area, public realm area with granite setts 200x200mmx100mm deep 80mm deep contrasting pixelated black and silver grey sets. Flamed finished. Silver grey granite kerbs 300x300mm flush. Paving on bound subbase refer to specification. Silver grey / black mix on roof terraces in</p>

		<p>communal open space. Bound sub-base Steintec Tuffbed, Tuffbond and Tufftop bedding mortar, priming and jointing mortar.</p> <p>Paving type 3 (P3 ref 23 on drawing) 400x150x40mm buff granite paving unit set in hoggin with reclining bespoke bench to pocket public realm area. 50mm joints in compacted hoggin (using Ballylusk grit, sand and clay mix colour buff).</p> <p>Paving type 4 Level 0,1,4 & 7 courtyard and or roof terraces (ref 30 on drawing): Natural stone paving in black and silver grey granite. Mixed sizes. 400x200, 300x600, 900x300 40mm, deep setts 200x200x80mm. Flamed finished. Sawn finish all other sides. .5mm joints. on bound subbase refer to Steintec Tuffbond. and jointing mortar. Bound sub-base Steintec Tuffbed, Tuffbond and Tufftop bedding mortar, priming and jointing mortar.</p> <p>Play surface: 100mm deep rubber mulch on MOT type 1 on drainage board. Permeable subgrade on drainage board. Colour Forest Green</p> <p>Kerb types: a) 100x200 flush kerbs granite pedestrian areas, sawn all four sides. Top flamed finished. b) 300x300 flush kerbs granite, sawn all four sides. Top flamed finished. roadways c) 300x300 raised kerb footpaths along carriage ways, sawn finish all sides. Top flamed leading edge bullnose</p>
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		<p>d) transition kerbs : Granite flamed finish top surface, flush where meeting footpath. Bullnose on raised profile.</p> <p>No facets permitted. Kerbs to be ordered to radii.</p> <p>Tactile paving:</p> <p>Inset into paving units for flags and stainless steel tactile strips to sett units.</p> <p>*All natural stone surfacing to (BS 7533-7) on bound sub-base: Natural stone setts flamed finished bound Steintec Tuffbed min depth 40mm with 'Tuffbond' primer mortar. Jointing mortar Steintec 'Tufftop' ; colour of mortar to be approved by landscape</p> <p><i>*integrated/recessed manhole and and service covers required throughout for paved areas. Aco Brick slot drains and chambers Reason in the interest of quality of paved surface.</i></p>
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End part iii