LANDSCAPE WORKS &
LANDSCAPE MAINTENANCE SPECIFICATION

Balscadden Road , Howth, Co. Dublin

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The scope of the information provided in this report is for planning only.
The following information has been issued as a part of a planning application to An Bord Pleanála February 2022

Landscape Report

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To be read in conjunction with the associated landscape drawings listed below and design report
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Introduction: Landscape design rationale

** note this section should be read in conjunction with the landscape drawings 486_WS_15_00_01, 02, 03 , 04 & 05,6,7,8 & 10-22. Where referenced these are related to the landscape drawings.*

Introduction

South of Howth Harbour as the land rises toward Howth Head along Abbey Street the proposed development is located adjacent to the 1930s Public Library and Howth Health Centre. An existing informal publicly accessibly dirt track passes through the site, adjacent to Howth Martello Tower that exits onto Balscadden Road in close proximity to the stepped approach to Balscadden Bay Beach. The landscape proposal seeks to address the green infrastructure criteria in line with Fingal County Council's Development plan. The aim of the landscape proposal is to enhance permeability in careful consideration of routeways, to increase biodiverse criteria by the inclusion native costal tolerant plant selection. Existing natural and built heritage views and character to be respected where bounded proximity or wider views exist. The proposed soft landscape aims to set the proposed mainly residential development into the landscape. Hard and soft landscape material selection is to take due cognisance of those contained within the Special Amenity Area Order for the coastal margins of Howth Head. Balscadden bay beach is a well utilised recreational area with educational importance for geological interest which the landscape proposals aim to support. The mechanisms or conceptual framework to enhance the public realm for these aims are elaborated upon in the landscape design statement report. A brief explanation of the built and natural heritage near the site which have influenced this conceptual framework are outlined in the landscape design statement report.

Taking in charge:

The proposed landscape works are to be taken in charge by the building estate and **not** by the local authority. Not withstanding that the proposed development is not taken in charge the standards for landscape maintenance shall be no less than that set out in Appendix 10 Public Open Space Taking in Charge Specification 2020 Fingal County Council.

Landscape design strategy:

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

- A publicly accessible civic space & panoramic viewpoint
- Public Art feature
- Proposed new street providing new and enhance connectivity for pedestrian an cycle users between Balscadden Bay Beach and Church Street.
- Secondary enhanced public pedestrian route way linking the Martello Tower, Church Street to Balscadden Road.
- Biodiverse refuge to the south east of the proposed development.
- Significant native tree species section within boundary tree planting proposal.

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 the introduction of a green corridors
-enhance orientation of the urban development through the alignment and organisation through permeablity a new street and public pathway.
-respond to the requirement of enhanced public realm adjacent to the seashore.
-clear definition between commercial ,residential 'home-zones' and public realm.
- introduce amenities to enhance the sustainable community value of the proposed development.
-create amenities of different character to respond to residential and public realm requirements.

Proposed landscape strategy:

The proposed development seeks to provide public amenity which references the natural and built heritage of Howth whilst providing new pedestrian an cycleway permeability. High quality public realm is proposed with public art and recreational amenity. Given the special interest of Balscaden bay for geological interest the public art and amenity is to provide some educational value. It is hoped to contribute to character of Howth to provide amenity to the public and safe and high quality landscape amenity for residents also for sustainable growth of community in Howth. Planting is proposed to contribute to the biodiverse and landscape character of Howth with carful consideration to the siting of planted boundaries and urban tree planting. The proposed landscape treatment of the proposed new street offers an opportunity to increase connectivity between the retail and services area of Howth to the amenity area of Balcadden bay which can be utilized by all members of the public as well as the residential community of the proposed development.

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.) *NOTE HERBACIDE FREE ZONE to the south east refer to ecology report. NO HERBACIDES TO BE USED IN THIS AREA. All vegetation to be cleared by hand under the conditions set out by the ecologist.)
- 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.
NOTE where ecologist require **a herbicide free zone**, stripping of soil shall be in accordance with the conditions set out in the ecologist report (ie. Biodiverse zone highlighted on proposed planting plan 486_WS_15_00_03. For biodiverse zone as set out in ecologist report and on proposed planting plan it is intended that the top 300mm of topsoil is to be redistributed following correct handling as set out in BS.3882:2015. No herbicides are permitted to use on this stored soil or upon regrading.
►The recycled topsoil for the biodiverse zone **ONLY** shall be applied as a topsoil layer in the formation of the regraded embankment over the imported soil. Maximum depth to 300mm.
► A method statement shall be provided by the main contractor to the LA and ecologist for the stripping storage and redistribution of soil within this biodiverse zone. Reason: biodiverse zone to have seed regeneration of native and local provenance.
►Soil analysis test results shall be submitted in advance of stripping and storage of topsoil for review by LA and ecologist. 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: revert to imported soil specification and specifics set out in planting specification for the designated biodiverse area.

STAGE E – Drainage Works

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

►Drainage Channels and access as per detailed by Waterman Moylan consulting enginners.

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 486_WS_15_00_03.
GRADING SUBSOIL
General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
Areas of thicker topsoil: Excavate locally see planting plan 486_WS_15_00_03 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 tenches noted on 486_WS_15_00_03 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 where imported soil is required 486_WS_15_00_03. 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 m^3.
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 345_WS_05_03 to 08 inclusive and landscape architectural drawings 345_WS_15_00_07 & 08.
► 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): 486_WS_15_00_04.
Finish: Flamed to and 1 no sides with others sawn
Colour: as per material specification drawing 486_WS_15_00_04.
Joints: Mortar, 3 mm (minimum) gap.Jointing mortar for vehicular areas Steintec or E/A
Other requirements: Concrete foundation C20: AS clause 530. 300x150 mm on concrete Upstands or as per structural engineers detail.

►Resin bound gravel: Public pathway north side of proposed development. 486_WS_15_00_04.
Resin bound permeable surface by Sureset or E/A,hand applied and trowelled 10mm aggregate ,24mm deep on A70mm depth of AC10 open surf asphalt
concrete max100/150 open to BSEN13108-1:2006 on geotextile layer on 175mm depth of well compacted Type3 granular subbase to SHW clause805 on geotextile layer on subgrade. Surecell base with gravel in fill for path areas near existing trees or as required by arborist.

►Boundary walls: Refer to drawing 486_WS_15_00_10- 18 Boundary Treatment A0 and all cross referenced architectural site sections.

►Access road and public squares , semi public open spaces and pathways and kerbing as per 486_WS_15_00_04:
Flamed finish granite paving & edging kerbs.
Manufacturer: TBC
Product reference: granite.
Size (width x height x length): As per drawing mm.
Finish: Flamed to and 1 no sides with others sawn
Colour: As indicated on material specification drawing 486_WS_15_00_04.

Flamed finish setts 486_WS_15_00_04:
Manufacturer: TBC
Product reference: granite.
Size (width x height x length): 80x80x100mm
Finish: Flamed top and other 5 sides sawn
Colour: As per material specification 486_WS_15_00_04.

Flamed mixed flag paving public open spaces including footpaths:
Manufacturer: TBC
Product reference: granite.
Size (width x height x length): depth min 80mm deep vehicular trafficked 40mm pedestrian only area, flag dimensions: as per drawing 486_WS_15_00_04
Finish: Flamed top and other 5 sides sawn
Colour: as per drawing 486_WS_15_00_04

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►Permeable paving:
paving to ESB substation entrance:
Manufacturer: Escofet
Product reference: Redes and Checkerblock

Size (width x height x length):
600x600x100 mm.

►Landscape features cladding to retaining walls:
Natural stone cladding to podium planters as per drawing 486_WS_15_00_04 materials specification.
Bespoke Corten steel clad masonry retaining walls are proposed to Balscadden road.

STAGE H - Establishment of sub base and laying paved areas. All paved areas to receive bound sub-base and jointing mortar.

►Paving Laying GenerallyQ10/Laying GernarallyLay
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 WeatherQ10/Adverse WeatherA
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 FoundationsQ10/C, 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 Q10/Beddingon fresh concrete races.
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.

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► 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 hardwareing landscape mixture
Supplier abd 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.

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.

REINFORCED GRASS:
'Manufacturer: Escofet
Product reference: Redes and Checkerblock or E/A to vehicular traversed areas i.e at ESB substation.

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 drawing Typical Tree section - Details 01 & 02, and as required for ROOTSPACE system by Greenblue , as per tree support system drawing.
NB. Concrete protective surround required to rootdirector. 150mm thick and as per depth of rootdirector.
Accessories: As per drawing Typical Tree section - Details 01 & 02 and as required for ROOTSPACE system by Greenblue , as per tree support system drawing

Sizes: 75 mm deeper than root system and wide enough to accommodate roots when fully spread.
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: Improved topsoil incorporating slow release fertilizer at rate of 30g/m2 refer also to growing medium specification for tree pits.

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 as required if deemed and approved by LA as suitable. Refer also to ecologist requirements in ecologist specification for biodiverse zone.

►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.

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.

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 liablity 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.

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.

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.

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
- 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 HOLLOWS 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 : Planting Schedule

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

Job Name: Balscadden Bay , Howth. Document No.: 486_15_01page 1 Job No.: **486**	**Planting Schedule , Specification and Density.**		
note : xtr= no. of times trees transplacted.	**PLANNING**		
Tree Species	Specification	Comment	No./Density (per msq)
Acer saccharum (sugar maple)	Clear stem 1.8m min, 50-60cm girth. Rootballed 5xtr. Min 4.5m tall,	Located in shelted courtyard/ shade tolerant	1
Arbutus unedo (Strawberry Tree)	Mulitstem min 3 breaks from base, min 2m tall, Rootballed 4xtr, 2m spread	Native coastal tolerant, Seward side and also in locations to manage ventilation ope screening.	34
Acer Palmatum (Japanese Maple)	Multistem min 3 breaks from base, min 2m tall,Rootballed 4xtr, 2m spread	Located in sheltered courtyard/ shade tolerant	4
Cornus kousa	Multi min 3 breaks from base, min 2m tall,Rootballed 4xtr, 2m spread	Located in sheltered courtyard/ shade tolerant	5
Corylus avellana (Hazel)	Clear stem 1.8m min, 30-35cm girth. Rootballed 5xtr. Min 3m tall, 2m spread	Native moderate coastal tolerance. Located primarily in sheltered boundary locations	2
Crataegus monogyna (Hawthorn)	Multistem min 3 breaks from base, min 2.5m tall, Rootballed 4xtr, 2m spread	Native, hardy, Costal tolerant	7
Elaeagnus x ebbingei (Mouseberry)	Clear stem 1.8m min, 30-35cm girth. Rootballed 4xtr. Min 2.5m tall	Coastal tolerant	1

Hippophae salicifolia 'Streetwise' (sea buckthron)	Clear stem 1.8m min, 30-35cm girth. Rootballed 5xtr. Min 4.5m tall	Coastal tolerant	11
Juniperus communis (Common Juniper)	Clear stem 1.8m min, 30-35cm girth. Rootballed 5xtr. Min 2m tall	Native Coastal tolerant located to seaward embankment	4
Malus sylvestris 'Evereste' (Crab apple 'Evereste')	Clear stem 1.8m min, 30-35cm girth. Rootballed 5xtr. Min 4m tall	Native moderate coastal tolerance. Located in sheltered boundary locations	11
Pinus mugo 'Pumilio' (Dwarf Mountain Pine)	Mulitstem min 3 breaks from base, min 1.2m tall, Rootballed 3xtr,1m spread	Shrub, coastal tolerant this cultivar is low to permit view to and from the proposed public amenity space.	29
Pinus mugo (Mountain Pine)	Mulitstem min 3 breaks from base, min 2m tall, Rootballed 3xtr,	Small tree, coastal tolerant this small tree	9
Pinus nigra (Austrian Pine)	Clear stem 1.8m min, 30-35cm girth. Rootballed 5xtr. Min 4.5m tall	coastal tolerant, seaward facing	19
Populus tremula (aspen)	Clear stem 1.8m min, 30-35cm girth. Rootballed 4xtr. Min 4.5m tall	Native coastal tolerant	3
Prunus avium (Wild cherry)	Clear stem 1.8m min, 30-35cm girth. Rootballed 4xtr. Min 4.5m tall	Native moderate coastal tolerant,Located in sheltered areas.	2
Pyrus calleryana 'Chanticleer' (Callery pear 'Chanticleer')	Clear stem 1.8m min, 30-35cm girth. Rootballed 4xtr. Min 4.5m tall	Urban tolerant narrow habit street tree set back from coastal portion of proposed development	13
Quercus petraea (sessile oak)	Clear stem 1.8m, 20-25cm girth, Irish grown specimen 30-35cm girth. Rootballed Min 4.5m tall	Native oak, must be Irish grown on phytosanitary grounds, moderately coastal tolerant placed in sheltered locations.	1
Quercus robur (English oak)	Clear stem 1.8m, 20-25cm girth, Irish grown specimen 30-35cm girth. Rootballed Min 4.5m tall	Native oak, must be Irish grown on phytosanitary grounds, moderately coastal tolerant placed in sheltered locations.	3

Sorbus aria 'Majestica' (Whitebeam Majestica)	Clear stem 1.8m min, 30-35cm girth. Rootballed 4xtr. Min 4m tall	Coastal ,Tolerant Native tree located set somewhat back from front coastal line	9
Sorbus aucuparia (Rowen)	Clear stem 1.8m min, 30-35cm girth. Rootballed 4xtr. Min 3.5m tall	Native hardy tree, modestly costal tolerant species , located in sheltered area of propsed development.	3
Tilia tomentosa (Silver Linden, European White Lime)	Clear stem 1.8m min, 30-35cm girth. Rootballed 4xtr. Min 4.5m tall	Urban tolerant and coastal tolerant street tree set back from coastal portion of proposed development	5
Total trees			**176**
HEDGING:			
Hedge type 1:			
Buxus sempervirens (common box)	Rootballed, bushy specimen min 600mm high	Hedge type 1Sheltered courtyard setting to lawn games areas and private terraces privacy strips to inner courtyard.	500 centres linear
Elaeagnus × ebbingei	Rootballed, bushy specimen min 1.8mm high	Exposed areas to salt and coast in public realm near retaining wall.	600 centres linear
Hedge type 2:			
Corylus avellana (hazel)	1/6 hedgerow Rootballed bushy specimen min 1.8m tall * all from same lot	hardy dense habit, native and source of food for wildlife.	staggard hedge 500 centres
Crataegus monogyna (hawthorn)	1/6 hedgerow Rootballed bushy specimen min 1.8m tall * all from same lot	hardy,dense habit, thorny, native and source of food for wildlife	staggard hedge 500 centres
Hedra helix (Ivy)	P9 or larger pot	hardy native climbing evergreen, self clinging plant, source of food for wildlife.	staggard hedge 500 centres
Ilex aquifolium (holly)	1/6 hedgerow Rootballed bushy specimen min 1.8m tall * all from same lot	hardy,dense evergreen habit, spikey, native and source of food for wildlife	1no. every 3m within hedgerow
Lonicera periclymenum (honey suckle)	5L pot	hardy scrambling native hedgrow plant , attractive scented twining shrub and source of food for wildlife	1no. every 3m within hedgerow
Rosa canina 'alba' (dog rose 'alba')	1/5 hedgerow Rootballed bushy specimen min 0.6m tall * all from same lot	hardy native hedgrow shrub , attractive flowers and thorny and source of food for wildlife	staggard hedge 500 centres

Sambucus nigra (elder)	1/6 hedgerowRootballed bushy specimen min 1.8m tall * all from same lot	hardy native hedgrow plant , native and source of food for wildlife	staggard hedge 500 centres
Viburnum opulus (guelder rose)	1/6 hedgerowRootballed bushy specimen min 1.8m tall * all from same lot	hardy native hedgrow plant , attractive flowers and source of food for wildlife	staggard hedge 500 centres
Grass area to front of embankment	Grass flower meadow mixture to wide margins: 'Biodiverse wildflower meadow mixture Ref WF02 @ 1.5g/m2or as otherwise directed by supplier with integrated grass mix 50% 1.5g/m2 as pre mixed by 'Design by Nature' . Required min seed mixture 1.1KG of Native Sourced Irish Wildflower Seed Mixture, without added 'Grass Seeds'. Plus 1.1kg of grass seed mixed into mixture (rate of sowing for grass is also 1.5 grams per square metre).Special mixture of bents and fescues by Design by Nature. Please note, use perennial rye grass with wildflowers is not permitted.	front of margin wildflower grass mix. Low maintenance where grass margin pertains.	
Hedge type 3:			
Olearia traversii	rootballed 1.8m tall, bushy specimen	retaining wall edges.	500 centres linear
Planting mix 3: Amenity lawn			
Amenity lawn :40% Perennial ryegrass 40% - Strong Creeping Red Fescue 20% Chewings fescue	Sowing rate 30 - 40g per m2 25 - 35g per m2	Amenity lawn to games areas.	Sowing rate 30 - 40g per m2 25 - 35g per m2
Planting mix 1: Underplanting to raised courtyard planters.	Specification.	Sheltered courtyard setting.	No.
Clematis macropetala	2L pot	climber near pergola/ ramp	1 per climbing frame post

Cornus canadensis (creeping dogwood)	2L pot	underplanting perennial	*3 /msq*
Fatsia japonica	10L pot, bushy specimen		1/2.5msq
Gallium odoratum (sweet woodruff)	2L pot	underplanting perennial	*3 /msq*
Hydrangea anomala subsp. *Petiolaris* (climbing hydrangea)	2L pot	climber near retaining wall.	1 per climbing frame post
Liriope muscari (big blue lilyturf)	2L pot	underplanting perennial	*3 /msq*
Lonicera japonica 'Halliana' (honeysuckle)	2L pot	climber near pergola/ ramp	1 per climbing frame post
Luzula nivea (snow rush)	5L pot	underplanting perennial	5/msq
Polystichum setiferum 'Pulcherrimum Bevis' (soft shield fern)	5L pot	underplanting perennial	2/msq
Solanum crispum 'Glasnevin'	2L pot	climber near pergola/ ramp	1 per climbing frame post
Vinca Major 'Alba' (greater periwinkle)	2L pot	underplanting perennial	3/msq
Rosa 'Claire Austin'	6L pot, min 3 breaks lwr third.	shrub climbing rose	1/msq
Rosa 'rushing stream'	6L pot ,min 3 breaks lwr third.	ground cover rose	1/msq
Rudbeckia fulgida var. deamii (late summer)	18	2L pot	3/msq
*Allium '*Globemaster'	large good quality flowering blub	seasonal bulb	6/msq
Narcissus 'Thalia'	large good quality flowering blub	seasonal bulb	6/msq
Narcissus papyraceus	large good quality flowering blub	seasonal bulb	6/msq
Tulipa 'Blue Heron' *late	large good quality flowering blub	seasonal bulb	10/msq
Tulipa Purissima (White Emperor) *Fosteriana mid	large good quality flowering blub	seasonal bulb	10/msq
Tulipa 'White Triumphator' *late	large good quality flowering blub	seasonal bulb	10/msq
Planting mix 2 Watergarden/ Sculpture garden courtyard			
Acanthus mollis (bears breaches)	2L pot	shade tolerant	1/msq
Asplenium scol. Angustifolia	2L pot	shaded but sheltered garden.	3/msq
Campanula persicifolia (fairy bellflower)	2L pot	shade tolerant	4/msq
Dryopteris championii	2L pot	shaded but sheltered garden.	1.5/msq
Filipendula purpurea(purple meadowsweet)	2L pot	shade tolerant	3/msq
Geranium phaeum 'Lily Lovell'	2L pot	shade tolerant	3.3/msq

Helleborus niger (Christmas rose)	2L pot	shaded but sheltered garden.	3.3/msq
Iris 'Flight of Butterflies' (early summer)	2L pot	shaded but sheltered garden.	3.3/msq
Matteuccia struthiopteris (osterich fern)	2L pot	shaded but sheltered garden.	0.5/msq
Nymphaea alba (white water lilly)	Large mature specimen ready to flower (June-Oct) within initial planting season	shaded but sheltered garden.	0.7/msq
Phyllostachys bissetii	10L pot	coastal tolerant bamboo . Located in sheltered courtyard garden area.	600mm centres linear
Polystichum setiferum 'Pulcherrimum Bevis' (soft shield fern)	5L pot	shaded but sheltered garden.	2/msq
Pulmonaria 'Blue Ensign' (lungwort)	2L pot	shade tolerant	3/msq
Sarcococca hookeriana var. humilis (dwarf sweet box)	10L pot min 500mm high	shade tolerant	600mm centres linear
Vinca Major 'Alba' (greater periwinkle)	2L pot	shaded but sheltered garden.	3/msq
Planting mix 3 : Bundary underplanting / edge of border			
Callicarpa bodinieri var. *giraldii* 'Profusion' *(purpleberry 'Profusion')*	10L pot, bushy specimen		specimen shrub
Daphne oleoides (olive leaved daphne)	10L pot, bushy specimen		specimen shrub
Exochorda × *macrantha* 'The Bride'	10L pot, bushy specimen		specimen shrub
Fatsia japonica (Japanese aralia)	20L pot min 800mm high		specimen shrub
Fothergilla gardenii 'Blue Mist'	5L pot		2/msq
Hydrangea paniculata (paniculate hydrangea)	5L pot		0.5/msq
Hydrangea arborescens 'Annabelle'	5L pot		0.5/msq
Mahonia aquifolium 'Apollo' (Oregon grape *'Apollo')*	10L pot, bushy specimen min 500mm high.		0.5/msq
Hebe 'Sapphire'	5L pot		0.5/msq
Front of Border planting:			2.5/msq
Aquilegia vulgaris 'White Star'	2L pot		3/msq
Astilbe chinensis var. pumila (dwarf Chinese astilbe)	2L pot		3/msq
Astilbe 'Feuer' (× *arendsii*)	2L pot		3/msq

Asplenium scolopendrium	2L pot		2/msq
*Blechnum spicant *e*	2L pot		3/msq
*Campanula persicifolia (fairy bellflower)*e*	2L pot		3/msq
Cornus canadensis	2L pot		3/msq
*Dryopteris dilatata *e*	2L pot		0.6/msq
Epimedium 'Flowers of Sulphur'	1L pot		2.5/msq
Erythronium californicum 'White Beauty'	1L pot		4/msq
Gallium odoradum	1L pot		10/msq
*Geranium dalmaticum *e*	2L pot		4/msq
*Helleborus niger (*Christmas rose)	2L pot		3/msq
Liriope muscari 'Big Blue' (big blue lilyturf) **e*	1L pot		3/msq
Lulzula sylvatica (woodrush) *e	2L pot		3/msq
Myrrhis odorata	2L pot		2/msq
Tradescantia (Andersoniana Group) 'Isis' (spider lilly)	2L pot		3/msq
Vinca minor f.alba 'Gertrude Jekyll'	1L pot		3/msq
Planting mix type4 & 5 seaward side & 7 (street)			
Liriope muscari (lilyturf)	2L pot		*3 /msq*
Agapanthus (African lily)	2L pot		2/msq
Armeria maritima (sea thrift)	2L pot bushy specimen		*3 /msq*
Astilbe 'Fanal' (× arendsii) (summer)	2L pot		3/msq
Calamagrostis Karl Foerster	5L pot bushy specimen		1/msq
Crambe maritima (sea kale)	5L pot bushy specimen		2/msq
Crocosmia lucifer	5L pot bushy specimen		2/msq
Dierama pulcherrimum	5L pot bushy specimen		2/msq
Echinops ritro 'Veitch's Blue' (Globe thistle)	2L pot bushy specimen		2.5/msq
Eryngium amethystinum(amethyst sea holly)	5L pot bushy specimen		4/msq
Helianthemum 'Wisley White' (rock rose 'Wisley White)	5L pot bushy specimen		3/msq
Hydrangea macrophylla	5L pot bushy specimen		0.5/msq

Hylotelephium spectabile	2L pot bushy specimen		3/msq
Lavandula angustifolia Hidcote	5L pot bushy specimen		2.5/msq
Nepeta x *faassenii*	5L pot bushy specimen		3/msq
Rudbeckia fulgida var. deamii	5L pot bushy specimen		3/msq
Rosmarinus officinalis Prostratus	5L pot bushy specimen		2.5/msq
Sarcococca hookeriana var. humilis (dwarf sweet box)	5L pot		0.8/msq
Silene uniflora (Sea campion)	2L pot bushy specimen		7/msq
Stipa tenuissima	5L pot bushy specimen		3/msq
Verbascum bombyciferum	5L pot bushy specimen		2/msq
Yucca filamentosa	5L pot bushy specimen		1/msq
Planting mix 6 sedum capping to retaining wall.			
Bauder biodiverse wildflower and sedum mix extensive green roof system or equal approved by ecologist		to top of retaining wall element.	
Planting mix type 8 : Privacy planting to residential units.			
Euonymus europaeus	10L-pot bushy speciemen	Shrub areas privacy areas where it does not obscure glazing.	800mm centres linear hedge
Escallonia 'Red Dream'	10L-pot bushy speciemen	Compact coastal tolerant variety.	800mm centres linear hedge
Olearia traversii	10L-pot bushy speciemen	Hedging element clipped to 600mm high	600mm centres linear hedge
Osmanthus delavayi	10L-pot bushy speciemen	specimen shrub	0.3/msq
Juniperus communis 'Green Carpet'	5L pot	low spreading shrub	1/msq
Pittosporum tobira	10L-pot bushy speciemen	Shrub areas privacy areas where it does not obscure glazing.	0.7/msq
Allium 'Globemaster'	large good quality flowering blub	seasonal bulb	6/msq
Narcissus 'Thalia'	large good quality flowering blub	seasonal bulb	6/msq
Narcissus papyraceus	large good quality flowering blub	seasonal bulb	6/msq
Tulipa Purissima (White Emperor) *Fosteriana mid	large good quality flowering blub	seasonal bulb	10/msq

Tulipa 'White Triumphator' *late	large good quality flowering blub	seasonal bulb	10/msq
Tulipa 'Blue Heron' *late	large good quality flowering blub	seasonal bulb	10/msq
		END	

Appendix B : Growing medium

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

Job Name: Balscadden Road Howth		
Document No.: 48_01	**Growing medium Schedule**	PLUS ARCHITECTURE
Job No.: **486**		
Growing medium SCHEDULE outline		
Plant	Quantity / No./ depth	Specification 1 (within planting season Nov-March ** applicable to trees and shrubs only*)
Trees Types		
a. Semi Mature tree type 1 *Small / Medium specimen tree*	refer to tree schedule	refer to tree schedule
b.*Semi Mature tree type 2 large* specimen tree	refer to tree schedule	refer to tree schedule
c.Semi Mature tree type 3 extra large specimen tree	refer to tree schedule	refer to tree schedule
Growing medium	**Description**	

Type 1: *Podium areas mounded or in raised planter additional item required root barrier e.g. Re Root 1000 by Green leaf or EA as per detail 486_WS_15_00_15,21&22 . Dead man anchors needed and tree stake if site wind conditions require as per drawing 486_WS_15_00_15,21&22 & 486_WS_15_00_06.*	1.1m overall tree pit depth deep 1.1m deep refer to drawing for tree pit zones imported soil. Refer to drawing for tree pit zones 486_WS_15_00_15 to22. All planted medium to be imported soil as per specification. * 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**	**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, **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, **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.

Type 2: Tree Trenches 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 as per detail 486_WS_15_00_15-22 . Dead man anchors needed and tree stake if site wind conditions require as per drawing 486_WS_15_00_15,21&22 & 486_WS_15_00_06.	1.1m overall tree pit depth deep refer to drawing for tree pit zones . refer to drawing for tree pit zones 486_WS_15_00_15-22. * 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**	**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, **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, 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.

Type 3: *Trees in real ground embankment/parkland/ boundary areas as per planting plan 486_WS_15_00_03 with additional item required root barrier e.g. Re Root 1000 by Greenleaf or EA.*	1.1m overall tree pit depth deep refer to drawing for tree pit zones. **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**	**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, **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,
Type 4: *Amenity lawn or mounding areas as per planting plan 486_WS_15_00_03*	650mm overall depth for amenity lawn/bed as noted on drawing deep refer to drawing for tree pit zones. **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 650mm topsoil. Subsoil to be imported soil also supplied, graded and installed by Soft Landscape Contractor**	**Top soil IMPORTED: 650mm DEEP** 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, **Subsoil: Multipurpose subsoil to BS8601:2013 IMPORTED AS REQUIRED DEPTH BELOW PLANTING MEDIUM** 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,

Type 5: Biodiverse zone	300mm existing topsoil to be recycled and used as top dressing to embankment on regrading as per landscape specification. Balance of tree pit zones ie.800mm to be imported soil. If however topsoil following soil analysis tests proves to be contaminated or unsuitable for horticultural purposes then top soil to be imported as per soil type 3.	Top soil 300mm existing seedbank soil . Stripping, storage and handeling as per landscape specification. Remainder of soil depth to 1.1m depth as per soil type 3. If top soil max 300mm depth is unsuitable revert to soil type 3 specification.

Appendix C: External Schedule * *to be read in conjunction landscape drawings*

Job Name:Balscaden Rd. Job No.: **486**	**External Fixtures & Furniture Schedule**	
External furniture SCHEDULE		
Description	Quantity / m2 / M linear length	Specification & precedent image as per materials specification.
Ground Floor		
Lighting	As indicated	**Public lighting** ○Escofet Bali light with double, alternate or building mounted. Soft white LED luminaire . or E/A **Landscape architectural lighting** ○Bega inground tree uplighters 2 per street tree / public realm tree, feature trees in semi public areas for 50no trees. and to uplight Escofet petra features as well as all seating furniture bays ref Bega inground luminarie 77 177 K3 stainless steel adjustable lens warm white light or E/A ○ Lyx Pathway light BNL 900 corten colour finish or E/A public realm 50no. ○ Bega step and path lumination within soft landscape areas 50no. or E/A semi public area. Colour graphite ref 84 218 K3 soft white luminaire. ○Bega building facade uplighting as required ref 77 001 K4 soft white light ○ Bespoke entrance canopy and courtyard canopy with integrated luminaires on lighting poles /downlit to M&E specification. ○LiniLED Aeris concealed linear lighting to underlighting to all public furniture benches , courtyard benches. ○Waterfeature lighting elements submersible IP rating to M&E waterfeature specialist. ○33 880 K3 Recessed luminaire steps / inclined surfaces. Bega or E/A 30no or as required. ○24 063 K3 Bega or E/A recessed wall mounted lighting raised planters as required to illuminate pathways in semi public open space.

		All lighting in accordance with BCT Lighting Guidelines (BCT, 2018): *All luminaires used should lack UV/IR elements to reduce impact.* *LED luminaires should be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.* *A warm white spectrum (<2700 Kelvins should be used to reduce the blue light component of the LED spectrum).Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to base,Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.Only luminaires with an upward light ratio of 0% and with good optical control should be used. Luminaires should be mounted on the horizontal, i.e. no upward tilt. Any external security lighting should be set on motion-sensors and short (1min) timers.*
Public ream furniture	As indicated	○ Escofet Petra S and L 4 No.S & 3no.L) ○ Castle tree grill CASTLE18A 1800x1800mm 5no. with Tree Guard 5no. with powder coated SKOP tree guard by Factory Furniture or E/A. Gravel mulch at base Ballylusk gravel 6mm. ○ Escofet Marina Bench ,table and 3 no stools 5no. sets ○ Security Line automatic bollards with stone mantle Hörman 4no. ○ MMCite bicycle stand Edgetyre 36no. or E/A. ○ Pysa Chair by Cyria or E/A 12no. ○ Mat 6no. RAL 7016 by STREETPARK or E/A ○ Escofet Concret table and chairs (14no. chairs 7 no tables) or E/A ○ Bench LINET 1 - UrbastyleU-Finish US -FINO - 00003-018 & US - FINO - 00012-034 6no. or E/A ○ Amop Synergies Amoplay Ping Pong Table

Play equipment	As indicated	**JUNIOR PLAYGROUND 0-6:** ○Play Den Teepee NO.2 Duncan and Grove or E/A 1no. item ○Planter Banch /Sand pit Lab23 Aveno or EA 1no. item ○ Amop Synergies Amoplay sand table & Play bench 3no. **Kompan A Nature Play Range:** ○Angles Water migrant with pump, splash table ref NRO508-0601 1no. item or EA ○Spinner plate with handles NRO110-0901 1no. unit or EA ○Doubleseat Springer Surface **OLDER CHILDRENS PLAYGROUND:** Kompan Nature Play Range: ○ Balance Posts with Rope ref NRO821 1no. item ○ Hammock ref NRO815 2no. item ○ Crawling Pyramid 1 No. ref NRO826-0801 ○ Climbing net brown 1no. unit ref NRO813-1011 ○ Balance Posts with Robe NR0821-090 **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 2 no. play spaces as illustrated on landscape masterplan documentation. The developer must provide a RoSPA (Royal Society for the Prevention of Accidents) inspection report or similar carried out and this document shall be submitted to the Parks and Green Infrastructure Division Fingal Councty Council prior to practical completion and commissioning of playground.

Wayfinding / Observation Lookout	As indicated	○ Totem Eudald I by Cyria or E/A 6no. ○ Totem Eudald II by Cyria or E/A 4no. ○ Omegon Sightseeing telescope Bonview 20x100 1no. Colour silver or as selected by LA 1no.
Art and water features	1no.	I no art feature. Design concept to be developed where artist to be paid for concept development. Brief for public art to be developed in accordance with the requirements of the heritage and arts officer of Fingal County Council or as otherwise directed by the planning authority. Initial themes which may be explored in the public art are matritime observation (Martello Tower) , Balscadden Bay geological features and the coastal environment with the former use of the foreshore as the ladies bathing area in the nineteenth and early twentieth centuries. The water feature proposed running east west is proposed as an exploration of the geological breccia fault line which is extant on the Balcadden bay rock face. This feature could encompass a storm water rill where there is an opportunity for a brief to be developed with the natural heritage officer in Fingal Co. Council to engage the public in this feature within the public realm. A semi public sculpture garden is located to the east of the proposed garden also with a rill water feature which connects to the proposed east west public art/ water feature. Three no. garden sculpture pieces are proposed for this semi public garden space.
Pergola	2 No.	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. Integrated LED batten lighting surface mounted to beam structure.
END		