

1372 Royal Free Hospital, Pears Building.

External Works Specification: Hard & Soft Specification

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D
Groundwork

D20
Excavating and filling

D20 Excavating and filling

To be read with Preliminaries/General conditions

GENERALLY/THE SITE

112J SITE INVESTIGATIONS

Refer to principle contractor for all available information. Limited information exists regarding the as built external works. Further investigations will be required to establish the makeup of pavements and installed drainage/service connections prior to works .

125B MATERIALS AND CONDITIONS

- Assess the nature of the work and the materials to be excavated. There is no guarantee that the materials and conditions encountered in site investigations will be found on other parts of the site.

126B LIABILITY

- Notwithstanding any approval or instructions given by the CA in respect of the excavation or any other matter or thing connected therewith, be responsible for taking the necessary safety precautions and for any damage, delay or costs arising from the operation.

153B EXISTING SERVICES

- Locations: Refer to clause 112J.

155B SITE FEATURES TO BE RETAINED

- Before starting work verify which existing fences, gates, walls, roads, paved areas and other site features are to be retained.

CLEARANCE/EXCAVATING

164 TREE ROOTS

- 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.
- Excavation in protected area:
 - Method: By hand.
 - Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
- Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
- Cutting:
 - Make clean smooth cuts with no ragged edges.
 - Pare cut surfaces smooth with a sharp knife.
 - Treatment of cut roots: proprietary sealer.
- Backfill: As dug material, enriched with phosphate fertilizer .

168J SITE CLEARANCE

- General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Chipping and shredding: not permitted
- Treatment: Do not use herbicide without approval.

170A REMOVING SMALL TREES, SHRUBS, HEDGES AND ROOTS

- Identification: Clearly mark trees to be removed.
- Small trees, shrubs and hedges: Cut down
- Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Voids: After cutting down and grubbing up roots of shrubs and trees fill voids with approved material.
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group Safety Guides.

177B TREES

- Erect protective fencing to BS 1722:Part 4 around existing trees and vegetation to be retained before the start of earthwork operations.
- Provide access through fencing where necessary. Do not store materials within fenced areas.
- Maintain fencing in good condition until Practical Completion or otherwise directed.

178J TREES

- Refer BS 5837:2012
- Protect the existing vegetation and trees that are to be retained.
- In addition to damage by site traffic and earthworks operations, protect against high level damage to trees by the assembly and use of machinery.
- If any roots or branches are in the way of operations, give notice immediately. Any tree surgery deemed necessary is to be carried out by an approved tree surgeon as directed.
- Burning on site is not permitted.

179J TREE ROOT PROTECTION

- In accordance with BS 5837:2012
- During trenching operations no tree roots in excess of 25 mm diameter are to be cut without approval. Where root cutting is authorised the roots shall be cut cleanly with a sharp knife and immediately painted with Arbrex.
- Where indicated, hand digging and tunnelling will be employed to avoid root cutting. Carefully backfill to eliminate voids.
- Where trenches have to be dug under the branch spread, they should only be allowed to remain open for the shortest possible period before completion of backfilling or lined with plastic sheets to reduce evaporation.
- Carry out excavation within spread of tree canopies by hand.
- Do not disturb existing ground levels under branch spread by either piling up material or cutting away soil.
- Do not compact the ground under branch spread of trees by storage of materials, passage of traffic, etc.
- Prevent contamination by oil, paint, common salt or other materials toxic to plants.
- Do not site cement silos or concrete mixers where dust could choke the breathing pores of leaves.
- Do not interrupt natural drainage to cause waterlogging that could kill trees.

220 STRIPPING TOPSOIL

- General: Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on drawings.
- Depth:
 - Remove to an average depth of completely above structural slab .
 - Give notice where the depth of topsoil is difficult to determine.
- Handling: Handle topsoil for reuse or sale in accordance with clause 225.
- Around trees: Do not remove topsoil from below the spread of trees to be retained.
- Site storage: Not required .

240 ADJACENT EXCAVATIONS

- Proximity: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto must be completed before the higher excavation is made.
- Angle of line from horizontal: 45°.

245B ADJACENT UNDERGROUND SERVICES EXCAVATIONS

- Set out underground services so that their excavations do not encroach below a line drawn at an angle of 45° from the horizontal from the nearest lower edge of building foundations. If this condition cannot be met, obtain instructions before proceeding.

250A PERMISSIBLE DEVIATIONS FROM FORMATION LEVELS

- Beneath mass concrete foundations: ±25 mm.
- Beneath ground bearing slabs and r.c. foundations: ±15 mm.
- Embankments and cuttings: ±50 mm.
- Ground abutting external walls: ±50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.
- Beneath road and car park construction: ±20 mm.

260 INSPECTING FORMATIONS

- Give notice: Make advance arrangements for inspection of formations for foundations and filling formations .
- Preparation: Just before inspection remove the last 150 mm of excavation. Trim to required profiles and levels, and remove loose material.
- Seal: Within 4 hours of inspection, seal formations with concrete.

270 FOUNDATIONS GENERALLY

- Give notice if:
 - A natural bearing formation of undisturbed subsoil is not obtained at the depth shown on the drawings.
 - The formation contains soft or hard spots or highly variable material.

310 UNSTABLE GROUND

- Generally: Ensure that the excavation remains stable at all times.
- Give notice: Without delay if any newly excavated faces are too unstable to allow earthwork support to be inserted.
- Take action: If instability is likely to affect adjacent structures or roadways, take appropriate emergency action.

320 RECORDED FEATURES

- Recorded foundations, beds, drains, manholes, etc: Break out and seal drain ends.
- Contaminated earth: Remove and disinfect as required by local authority.

330J UNRECORDED FEATURES NOT SHOWN ON PLAN

- Give notice If any unrecorded features are encountered including: foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches.
- All unrecorded features are to be recorded digitally and issued to the Client Representative upon their deiscovery.
- All unrecorded features that are retained following completion of works are to be digitally recorded within the relevant as-built drawings

DISPOSAL OF MATERIALS**415 EXCAVATED TOPSOIL REMOVAL**

- General: Remove from site.

420 TOPSOIL STORAGE HEAPS

- Location: as agreed on site .
- Height (maximum): 1 m .
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination.

421 TOPSOIL STORAGE HEAP TREATMENT

- Treatment: Apply a suitable herbicide at appropriate times to prevent seeding of weeds .

443B MATERIALS ARISING

- Remove from site.

450 WATER

- Generally: Keep all excavations free from water until:
 - Formations are covered.
 - Below ground construction are completed.
 - Basement structures and retaining walls are able to resist leakage, water pressure and flotation.
- Drainage: Form surfaces of excavations and fill to provide adequate falls.
- Removal of water: Provide temporary drains, sumps and pumping as necessary. Do not pollute watercourses with silt laden water.

454 GROUND WATER LEVEL/ RUNNING WATER

- Give notice: If it is considered that the excavations are below the water table.
- Springs/ Running water: Give notice immediately if encountered.

457 PUMPING

- General: Do not disturb excavated faces or stability of adjacent ground or structures.
- Pumped water: Discharge without flooding the site or adjoining property.
- Sumps: Construct clear of excavations. Fill on completion.
 - Locations: Submit proposals .

460 PERMANENT DRAINAGE SYSTEM

- Disposal of water from the excavations through system: Not permitted.

FILLING

500 PROPOSED FILL MATERIALS

- Refer to structural Engineers specification

510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- Refer to structural Engineers specification

520 FROST SUSCEPTIBILITY

- Refer to structural Engineers specification

525J TESTING OF SUITABILITY OF FILL MATERIALS BEFORE START OF FILLING

- Refer to structural Engineers specification

530A PLACING FILL

- Refer to structural Engineers specification

540 BENCHING IN FILL

- Refer to structural Engineers specification

545B REMOVE FROM SITE

- Refer to structural Engineers specification

550J GEOTEXTILE SHEET

- Refer to structural Engineers specification

620 SUBGRADE IMPROVEMENT LAYER (CAPPING)

- Refer to structural Engineers specification

730 BLINDING

- Refer to structural Engineers specification

Q

Paving/Planting/Fencing/Site furniture

Q10

Kerbs/edgings/channels/paving accessories

Q10 Kerbs/edgings/channels/paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS

120J STONE GRANITE KERBS

- Standard: To BS EN 1343.
- Supplier: Marshalls or equal and approved .
- Stone type: Granite, (refer below for details),
- Colour: Silver grey
- Finish: all exposed faces including ends of edge units to receive a fine picked finish, all ends to be jointed to be sawn and all faces abutting other surfacing materials and their bedding are to be carefully dressed to allow the specified joint widths. Dress kerbs once laid should it be necessary to remove any crumples or irregularities.
- Unit types and sizes:
 - Straight 20mm bullnosed, 150mm wide x 300mm deep x 900mm length
- Freeze/ Thaw resistance: Class 1 (resistant).
- Bedding: As to engineers specification .
- Joints generally: butt jointed.
- Other requirements: the cutting of mitre corners is not permitted, guardrails must be used.

To Engineers Specification /
Details

121J STONE GRANITE FLUSH KERBS

- Standard: To BS EN 1343.
- Supplier: Marshalls or equal and approved .
- Stone type: Granite, (refer below for details),
- Colour: Silver grey
- Finish: all exposed faces to receive a fine picked finish, all ends to be sawn and all faces abutting other surfacing materials and their bedding are to be carefully dressed to allow the specified joint widths. Dress kerbs once laid should it be necessary to remove any crumples or irregularities.
- Unit types and sizes:
 - Square, 150mm wide x 300mm deep x 900mm length
- Freeze/ Thaw resistance: Class 1 (resistant).
- Bedding: As to engineers specification .
- Joints generally: butt jointed.
- Other requirements: the cutting of mitre corners is not permitted.
- Transition kerbs to be included. All exposed edges to have a bullnosed corner.

To Engineers Specification /
Details

122J STONE PIN KERBS

- Standard: To BS EN 1343.
- Supplier: Marshalls or equal and approved .
- Stone type: Granite, (refer below for details),
- Colour: Silver grey
- Finish: all exposed faces to receive a fine picked finish, all ends to be sawn and all faces abutting other surfacing materials and their bedding are to be carefully dressed to allow the specified joint widths. Dress kerbs once laid should it be necessary to remove any crumples or irregularities.
- Unit types and sizes:
 - Square, 50mm wide x 300mm deep x 900mm length.
- Freeze/ Thaw resistance: Class 1 (resistant).
- Bedding: As to engineers specification .
- Joints generally: butt jointed.
- Other requirements: the cutting of mitre corners is not permitted.

To Engineers Specification /
Details

170J LINEAR SLOT DRAINAGE CHANNEL SYSTEMS

- Refer to structural Engineers specification

182J DRAINAGE GULLY WITH STAINLESS STEEL GRATINGS General

- Refer to structural Engineers specification

185J STEEL EDGING

- Refer to structural Engineers specification

216J CONTROL SAMPLE(S)

- Complete a 2 linear metre sample of each type of new kerb channel and edge, as part of the finished work, in an approved location and obtain approval of appearance before proceeding .

250J MATERIAL SAMPLES

- Samples representative of colour and appearance of designated materials: Submit and obtain approval before placing orders.
 - Designated materials: All Granite kerbs, channels and slot drains .
- Ensure that delivered materials match sample(s).

LAYING**510J LAYING KERBS, EDGINGS AND CHANNELS**

- Cutting: Neat, accurate and without spalling. Form neat junctions.
 - a minimum of 600mm unless agreed with CA.
- Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or with backing concrete cast monolithically.

520 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.

530J CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

- Standard: To BS 8500-2.
- To engineers-detail.

To Engineers Specification /
Details

570 CHANNELS

- Installation: To an even gradient, without ponding or backfall.
- Lowest points of channels: 6 mm above drainage outlets.

580 DRAINAGE CHANNEL SYSTEMS

- Installation: To an even gradient, without ponding or backfall. Commence laying from outlets.
- Silt and debris: Removed from entire system immediately before handover.
- Washing and detritus: Safely disposed without discharging into sewers or watercourses.

590 DRAINAGE CHANNEL SYSTEMS WITH BUILT IN FALL

- Installation: Top of channels level, installed in correct sequence to form an even gradient without ponding or backfall. Commence laying from outlets.
- Silt and debris: Removed from entire system immediately before handover.
- Washings and detritus: Safely disposed without discharging into sewers or watercourses.

600J RADIUS KERBS/CHANNELS

- Radial kerbs and channels should be created from radial units.
- For radii between 12m and 18m straight kerbs of 600mm length can be used.
- Joints to be 90° to carriageway. Ensure full 6mm joints are maintained as per Q10/640.

610 ANGLE KERBS

- Usage: Internal and external 90° changes of direction.
- Cutting of mitres: Not permitted.

620J ACCURACY

- Deviations (maximum):
 - Level: ± 3 mm.
 - Horizontal and vertical alignment: 3 mm in 3 m.

640J TOOLED MORTAR JOINTS

- Kerbs to be butt jointed.
- Any gaps to be filled in with suitable mortar. Joints completely filled and tooled to a neat flush profile.

650J MOVEMENT JOINTS

- All details to engineer's specification.

To Engineers Specification /
Details

Q25

Slab/ brick/ sett/ cobble pavings

To Engineers Specification /
Details

Q25 Slab/ brick/ sett/ cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL

- 110J NATURAL STONE SLAB PAVING SYSTEM FOR YORKSTONE PAVING - Terrace
Colonnade & Main Entrance
Granular sub-base: To engineers detail.
- Thickness: To engineers detail.
- Base: To engineers detail.
- Thickness: To engineers detail.
 - Laying course: Mortar as clause Q25/715J.
- Accessories: Primer as clause Q25/715J.
 - Paving units: Natural stone slabs as clauses Q25/310J.
 - Jointing: As clause Q25/715J.
- Bond: Stretcher Bond with min 150mm overlap.
- 115J NATURAL STONE SLAB PAVING SYSTEM FOR GRANITE SETTS - Rowland Hill Street
Granular sub-base: To engineers detail.
- Thickness: To engineers detail.
- Base: To engineers detail.
 - Laying course: Mortar as clause Q25/715J.
 - Accessories: Primer as clause Q25/715J.
 - Paving units: Natural stone slabs as clauses Q25/314J
 - Jointing: Mid Grey 5-7mm wide to clause Q25/715J.
- Bond: Stretcher Bond, varying overlap dimensions, Typical min 150mm, min 75mm overlap where smallest units installed.
- 120 CONCRETE FLAG PAVING SYSTEM UCL, Memorial Garden & North Courtyard
- Granular sub-base: To engineers detail.
- Thickness: To engineers detail.
 - Base: To engineers detail.
- Thickness: To engineers detail.
 - Laying course: Mortar as clause Q25/715J.
- Accessories: Primer as clause Q25/715J.
 - Paving units: Concrete flags / Setts as clause Q25/315J/316J/317J.
 - Jointing: As clause Q25/715J.
- Bond: As indicated on drawings .
 - Accessories: None .

SYSTEM PERFORMANCE

- 210J DESIGN - NATURAL STONE SLAB PAVING SYSTEM Over Existing Concrete Structure
- Design: Complete the design of the natural stone slab paving system in accordance with BS 7533-4.
 - Ground conditions: To engineers detail .
 - Performance criteria: Traffic Loading - To engineers detail .
 - Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
- 211J DESIGN - NATURAL STONE SLAB PAVING SYSTEM Over made ground
- Design: Complete the design of the natural stone slab paving system in accordance with BS 7533-4.
 - Ground conditions: To engineers detail .
 - Performance criteria: Traffic Loading - To engineers detail .
 - Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

PRODUCTS**305 GRANULAR MATERIAL FOR LAYER OVER EXISTING BASES**

- Material: To engineers detail.

To Engineers Specification /
Details

310J NATURAL STONE SLABS YORKSTONE - Terrace Colonnade & Main Entrance

- Standard: To BS EN 1341.
- Supplier: Marshalls Natural Stone (TEL: 0870 411 2266) or equal and approved) .
 - Product reference: Scoutmoor or equal.
- Stone type: Natural sedimentary stone from the English Pennines .
- Finish: Sawn.
- Sizes: 600mm wide x 63mm deep x random lengths (typically min 400mm, max 900mm) .
- Arrises: Square.
- Freeze/ thaw resistance class: F1.
- Flexural strength (MPa): min 20MPa .
- Abrasion resistance (mm): tbc.
- Slip/ Skid resistance (USRV): 75USRV .
- Water absorption (% by mass): 2.5%.
- Petrographical description: tbc.
- Movement joints: To engineers detail.

To Engineers Specification /
Details

314J NATURAL STONE SLABS GRANITE SETTS - Rowland Hill Street

- Standard: To BS EN 1341.
- Supplier: Marshalls Natural Stone (TEL: 0870 411 2266) or equal and approved
- Finish: Fine picked, exposed face, sawn sides
- Sizes: [240mm width x 160mm length, thickness to engineers detail. Colours as per below.

Granite Paving Mix

Dark Grey, Mix - 30%

Mid Grey, Mix - 40%

Light Grey, Mix - 30%

To Engineers Specification /
Details

- Surface Treatment: None.

Dark Grey

- Transverse/Flexural strength (MPa) (MEAN): 18.60
- Material Density (kg/m³): 2834 (typically)
- Abrasion resistance (mm): 16
- Slip/ Skid resistance (USRV): 55 Wet
- Water absorption (% by mass): 0.17

Mid Grey

- Transverse/Flexural strength (MPa) (MEAN): 17.33
- Material Density (kg/m³): 2810 (typically)
- Abrasion resistance (mm): 13.2
- Slip/ Skid resistance (USRV): 69 Wet
- Water absorption (% by mass): 0.2

Light Grey

- Material Density (kg/m³): 2651 (typically)
- Abrasion resistance (mm): 13.5
- Slip/ Skid resistance (USRV): 71 Wet
- Water absorption (% by mass): 0.2

- 315J CONCRETE SETTS Disabled Parking Bays
Standard: To BS EN 1339.
- Manufacturer: [Marshalls Natural Stone (TEL: 0870 411 2266) or equal and approved].
 - Product reference: [Tegula].
 - Colour: [Pennant Grey].
 - Nominal sizes: [80mm thick x 240mm width x 160mm length].
 - Transverse/Flexural strength (MPa) (MEAN): 3.6
 - Material Density (kg/m³): 2300 (typically)
 - Abrasion resistance (mm): 23
 - Slip/ Skid resistance (USRV): 45 Wet
- 316J CONCRETE SETTS General Areas
Standard: To BS EN 1339.
- Manufacturer: [Marshalls Natural Stone (TEL: 0870 411 2266) or equal and approved].
 - Product reference: [Tegula].
 - Colour: [Traditional].
 - Nominal sizes: [80mm thick x 240mm width x 160mm length].
 - Transverse/Flexural strength (MPa) (MEAN): 3.6
 - Material Density (kg/m³): 2300 (typically)
 - Abrasion resistance (mm): 23
 - Slip/ Skid resistance (USRV): 45 Wet
- 317J CONCRETE FLAGS UCL & Memorial Garden
Standard: To BS EN 1339.
- Manufacturer: [Marshalls Natural Stone (TEL: 0870 411 2266) or equal and approved].
 - Product reference: [Pallas].
 - Colour: [Mid grey granite].
 - Finish: [Smooth finish].
 - Nominal sizes: [80mm thick x 200mm width x 300mm length].
 - Arrises: [Chamfered].
 - Transverse/Flexural strength (MPa) (MEAN): 3.6
 - Material Density (kg/m³): 2300 (typically)
 - Abrasion resistance (mm): 23
 - Slip/ Skid resistance (USRV): 45 Wet
- 320J TACTILE SLABS To Top and Bottom of Stairs
- Standard: in accordance with BS8300, the DETR 'Guidance on the use of Tactile Paving Surfaces' and BS 7997 'Products for tactile paving surface indicators'.
 - Refer to General Arrangement plans (91)LP101-103 for locations
 - Material: Precast concrete.
 - Manufacturer: Marshalls Natural Stone (TEL: 0870 411 2266) or equal and approved .
 - Product reference: Tactile hazard warning flag paving
 - Nominal sizes: 50mm thick x 400mm x 400mm length .
 - Colour: Natural .
 - Finish: Textured
- Surface treatment: Corduroy Hazard warning paving surface etched into surface of stone.
Ribs spaced at 50mm centres installed at right angles to the direction of travel.
- 335J NATURAL STONE COBBLES
- Standard: To BS EN 1342.
 - Supplier: CED or equal and approved .
 - Product reference: Selected hard smooth, egg shaped beach stones, 100-75mm Scottish Beach Cobbles .
 - Bedding pattern: Close butt jointed, long axis of cobble in vertical orientation, top of cobbles consistent 35mm above level of bedding .
- 370 CEMENT FOR SITE MIXED MORTAR Where Required
- Standard: As section Z21.

375J SAND/ FINE AGGREGATE FOR SITE MIXED MORTAR WHERE REQUIRED

- Standard: To BS EN 12620, designations:
 - Flag and slab paving laying course: [GF85 0/4 (MP)].
 - Flag and slab paving jointing: [GF85 0/1 (MP)].
 - Concrete sett paving laying course and jointing: [GF85 0/4 (MP)].

390 SAND FOR FLEXIBLE LAYING COURSE AND JOINTING OF CONCRETE FLAG PAVING WHERE REQUIRED.

- Standard: To BS 7533-4, Table 4.
- Purity: Free from deleterious salts, contaminants, lime and cement.
- Procurement: Obtain from one source and ensure consistent grading.

EXECUTION**610J MATERIAL SAMPLES**

- Samples representative of colour and appearance of designated materials: Submit and obtain approval before placing orders.
 - Designated materials: All paving .

615 CONTROL SAMPLES

- Sample areas: Complete as part of the finished work.
 - Types of paving: All paving .
 - Location: To be chosen by Project Manager .
 - Size (minimum): 3.0 x 3.0 m.
 - Included features: Kerb, service cover and drainage channels / slots .
- Approval of appearance: Obtain before proceeding.

620 ADVERSE WEATHER

- General:
 - Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
 - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding:
 - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Paving laid and jointed in sand:
 - Stockpiled bedding sand: Protect from saturation.
 - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
 - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
 - Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

625J LAYING PAVINGS - GENERAL

- Appearance: Smooth and even with regular joints and accurate to line, level and profile.
- Falls: To prevent ponding.
- Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
 - Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
- Slopes: Lay paving units upwards from the bottom of slopes.
- Paving units: Free of mortar and sand stains.
- Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes. Cutting to be minimised as far as possible and in accordance with BS 7533 and BS 1341
- The original plan dimensions of granite setts should not be reduced by more than two thirds.

630 LEVELS OF PAVING

- Permissible deviation from specified levels:
 - Generally: ± 6 mm.
- Height of finished paving above features:
 - At gullies: +6 to +10 mm.
 - At drainage channels and kerbs: +3 to +6 mm.

635 REGULARITY

- Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 10 mm.
- Sudden irregularities: Not permitted.
- Difference in level between adjacent blocks/ pavers/ setts (maximum): 2 mm.

640J COLOUR BANDING

- General: Unless premixed by manufacturer, select from at least 3 separate packs in rotation to avoid colour banding.
- Stone within service covers shall be carefully selected to ensure that its colours blend with, and into, its surrounding paving.

645J PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arrises, or previously laid paving.
- Mortar bedded pavings: Keep free from traffic after laying until bedding mortar has gained not less than 20N/mm² compressive strength and jointing mortar has gained not less than 25 N/mm².
Pedestrian traffic may be permitted after 24 hours..
- Access: Restrict access to paved areas to prevent damage from site traffic and plant. Do not overload pavings with stacks of materials until the quarantine period for vehicular trafficking has passed.

710 LAYING FLAG AND SLAB PAVING - SAND LAYING COURSE AND JOINTING

- Standard: In accordance with BS 7533-4.
- Flag installation and cutting: To Interpave 'Concrete flag paving'.
- Laying course:
 - Nominal thickness after compaction: 30 mm with a tolerance of -10 to + 5 mm.
- Joint width: 2-5 mm.

715J LAYING SLAB PAVING - MORTAR LAYING COURSE AND JOINTING

- Standard generally: In accordance with BS 7533-4.

730J LAYING NATURAL STONE SETT PAVING

- Standard generally: In accordance with BS 7533 parts 7, 10 and 12.
- Sett installation and cutting: To BS7533 – 7 Clause 11.
- Laying type: fully rigid form of construction in accordance with BS7533 – 10

760 LAYING PRECAST CONCRETE AND GRAVEL PAVING

- Laying: Tamp down into lightly compacted laying course.
 - Nominal thickness of laying course after compaction: 25 mm.
- Filling: Allow to settle and refill level with surface.

795J SEALANT MOVEMENT JOINTS IN MORTAR BEDDED UNITS

- To engineers specification .

Q28

Topsoil and growing media

Q28 Topsoil and growing media

To be read with Preliminaries/ General conditions.

- 120 SITE INVESTIGATION
- Report: See section D20/112J..
- 205J EXCAVATE TREE PITS
- Set out tree pit locations and obtain approval before excavation.
 - Excavate tree pits to dimensions described in clause Q31/505J. Break up bottom of pits to a depth of 150mm.
 - Dispose of excavated subsoil by contractor.
- 207J BACKFILLING OF TREE PITS
- General: Backfill with topsoil from imported topsoil.
 - On completion clearly mark each tree pit with a stake or peg for later identification by the landscape subcontractor.
- 335 SURPLUS TOPSOIL TO BE REMOVED
- Generally: Remove from site as required.
- 340 IMPORTED TOPSOIL TO BS 3882
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
 - Standard: To BS 3882.
 - Classification: Multipurpose .
 - Source: Submit proposals .
 - Submit: Declaration of analysis in accordance with BS 3882, Annex E.
 - Additional analyses: Refer Q28/352B.
- 352B IMPORTED TOPSOIL ANALYSIS
- Obtain approval of a sample, with a report from an approved soil analyst of physical and chemical properties as below. Allow approximately 2 weeks from the submission of the sample for the results to be available. Samples for analysis shall be representative of soil being offered and ten equal samples shall be taken and well mixed and quartered. From this mixture 500 gms of soil shall be placed in a plastic bag, labelled with name and details of origin and sent to the analyst with a request for the following information:
 - Soil reaction and lime requirement
 - Electrical conductivity
 - Mechanical analysis
 - Soil texture
 - Stone content
 - Nutrient levels: Nitrogen, Available Phosphorus, Available Potassium, Available Magnesium
 - Organic matter
 - Recommendations for making good any deficiencies and fertilizer treatment related to the planting proposals.
 - The CA may ask for additional tests for toxicity, water holding capacity or mechanical composition.
 - Approved analysts are:
 Voelcker Consultants, Block A, Long Island House, 1-4 Warple Way, London W3 0RG (Tel: 020 8746 9550)
 The industrial Research and Technology Unit, 17 Antrim Road, Lisburn, Co Antrim BT28 3AL (Tel: 028 9262 3000)
 - A sample of topsoil (max 1 kg) shall be submitted to the CA together with the analyst's report. No topsoil shall be delivered to the site before the Contractor has received written approval of the sample.

- 395 PEAT
- Peat or products containing peat: Do not use.
- 650 NOTICE OF IMPORTING TOPSOIL
- Give notice: Before stripping topsoil for transfer to site.
 - Notice period: 7 days.
- 670 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.
- 680J TOPSOIL STORAGE HEAPS
- Topsoil is not to be stored on site.
- 690 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 or stockpile 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 less 3%, to BS 1377-2.
- 910J FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT
- Below adjoining paving or kerbs: 30 mm.
 - Below dpc of adjoining buildings: Not less than 150 mm.
 - Shrub areas: Higher than adjoining grass areas by NA.
 - Within root spread of existing trees: Unchanged.
 - Adjoining soil areas: Marry in.
 - Thickness of turf or mulch: Included.
- 920 DOCUMENTATION
- Timing: Submit at handover.
 - Contents:
 - Full description of all soil components.
 - Record of source for all soil components.
 - Analyst's report for each test carried out.
 - Record drawings showing the location and depth of all soils by type and grade.
 - Supplier's declaration of compliance with BS 3882.
 - Number of copies: 3.

Q30
Seeding/ turfing

Q30 Seeding/ turfing

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/REQUIREMENTS**115J 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.

120 CLIMATIC CONDITIONS

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

145 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.

150 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.

160 NOTICE

- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Preparing seed bed.
 - Seeding or turfing.
 - Visiting site during maintenance period.
- Period of notice: 1 week.

170 SETTING OUT

- Boundaries: Mark clearly.
- Delineation: In straight lines or smoothly flowing curves as shown on drawings.

TURFING**400 CULTIVATED TURF FOR LAWNS**

- Supplier: Rowlawn Medallion or equal and approved .
 - Product reference: Medallion.
- Properties of soil used for turf production: Well drained sandy loam .

420 DELIVERY AND STORAGE

- Timing: Lay turf with minimum possible delay after lifting. If delay occurs, lay turf out on topsoil and keep moist.
- Frosty weather or waterlogged ground: Do not lift turf.
- Delivery: Arrange to avoid need for excessive stacking.
- Stacking height (maximum): 1 m.
- Dried out or deteriorated turf: Do not use.

423 INSPECTION OF TURF

- Give notice: Before lifting turf for all grassed areas.

428 COMPOST DRESSING FOR TURF

- Type: Sanitized and stabilized compost.
- Supplier: Contractor to supply for approval.
 - Product reference: Submit proposals.
- Standard: To PAS 100.
- Horticultural parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter content (minimum): 25%.
 - Grading (air dried samples): 100% passing screen mesh aperture of 10 mm.
 - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Required.
- Declaration of analysis: Submit.
- Additional analyses: Not required.
- Samples: Supply 5 kg sample before ordering.
- Application rate: 2 kg/m².
- Timing: Apply prior to cultivation.

430 TURFING GENERALLY

- Time of year: To be agreed with Contract Administrator.
- Timing of laying:
 - Spring and summer: Within 18 hours of delivery.
 - Autumn and winter: Within 24 hours of delivery.
- Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
- Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
- Jointing: Laid with broken joints, well butted up. Do not stretch turf.
- Edges: Whole turfs, trimmed to a true line.
- Adjusting levels: Remove high spots and fill hollows with fine soil.
- Consolidating: Lightly and evenly firm as laying proceeds to ensure full contact with substrate. Do not use rollers.
- Dressing, brushed well in to completely fill all joints: As clause 248.
- Watering: Thoroughly water completed turf immediately after laying. Check that water has penetrated into the soil below.

PROTECTING/CUTTING**510 PROTECTIVE FENCING**

- Fencing type: Chestnut pale fencing to BS 1722-4.
 - Height: 1.1 m.
- Erection: On completion of seeding/ turfing.
- Removal: After grass is well established. Fencing will remain the property of the Contractor.

540 FIRST CUT OF ALL GRASSED AREAS

- Height of initial growth: 50 mm.
- Preparation:
 - Debris and litter: Remove.
 - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 50 mm.
- Mower type: Contractor's choice.
- Arisings: Remove from site or spread evenly over cut areas.

590 CLEANLINESS

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

MAINTENANCE**610 FAILURES OF SEEDING/TURFING**

- Duration: Carry out the following operations from completion of seeding/ turfing until: practical completion.
- Defective materials or workmanship: Areas that have failed to thrive.
 - Exclusions: Theft or malicious damage.
- Method of making good: Recultivation and reseeded/ returfing.
- Timing of making good: Submit proposals.

620 MAINTAINING LAWNS

- Duration: Carry out the following operations from completion of seeding/ turfing until: practical completion.
- Maximum height of growth at any time: 50 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 25 mm.
 - Arisings: Remove.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
 - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
 - Method: Application of a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
 - Size: Exceeding 25 mm in any dimension.
- Areas of settlement: Make good.
- Watering: As clause 145.

680 MAINTENANCE FERTILIZER FOR LAWNS

- Duration: Carry out the following operations from completion of seeding/ turfing until: practical completion.
- March application: 15:10:10 Spring turf fertilizer at 35 g/m².
- September application: 5:10:10 Autumn turf fertilizer at 50 g/m².

Q31

External planting

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS**110J SPECIALIST CONTRACTORS**

Tree planting and maintenance is to be undertaken by a specialist sub contractor

112 SITE CLEARANCE GENERALLY

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with any dimension exceeding 50 mm.
- Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Vegetation: NA.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: .

118J SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and 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.

120 CLIMATIC CONDITIONS

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

125J 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 marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable.
 - Watering and weed control: Provide as necessary.
- Dried bulbs, corms and tubers: September/ October.
- Colchicum (crocus): July/ August.
- Green bulbs: After flowering in spring.

130 MECHANICAL TOOLS

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

145 WATERING

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

150 WATER RESTRICTIONS

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

160J NOTICE

- Give notice before:
 - Setting out.
 - Delivery of plants/ trees.
 - Planting shrubs.
 - Planting trees into previously dug pits.
 - Period of notice: 2 weeks prior to visit.

165 PREPARATION, PLANTING AND MULCHING MATERIALS

- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Certification of source, analysis, suitability for purpose and absence of harmful substances: Submit.
 - Certified materials: soil ameliorant .
 - Give notice before ordering or using.

180J CHEMICALS GENERALLY

- Use only where specified or approved, and then only products on the current list of the latest Agricultural Chemicals Approval Scheme.
- Where work is near water, drainage ditches or land drains, comply with the Ministry of Agriculture, Fisheries and Food 'Code of Practice for the use of herbicides on weeds in water courses and lakes'.
- Observe all precautions recommended by the manufacturer and remove containers from site immediately they have been emptied or are no longer required.
- Apply chemicals at the manufacturer's recommended rates.
- Chemicals must only be applied by a certified operator in accordance with the latest Control of Pesticide Regulations, the Control of Substances Hazardous to Health Regulations and any relevant Code of Practice issued by the Ministry of Agriculture, Fisheries and Food and the Health and Safety Executive.

200J PLANTS/ TREES - GENERAL

Refer to BS8545:2014 Trees: From nursery to independence in the landscape - Recommendations. Tree installation to follow guidance provided within.

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Budded or grafted plants: Bottom worked.
- Root system and condition: Balanced with branch system.
 - Standard: The National Plant Specification .
- Species: True to name.
- Origin/ Provenance: As planting schedule .
Definition: Origin and Provenance have the meaning given in the National Plant Specification.
- The contractor shall check quantities of plants shown on drawings against quantities shown in the plant schedule and shall raise any discrepancies with the landscape architect at the time of tender.
- The contractor will be required to provide evidence of quantities and sizes of plants ordered from the approved nurseries in the form of the receipts or similar if requested by the CA

215 PLANTS/ TREES - SPECIFICATION CRITERIA

- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.

220B APPROVED SUPPLIERS

- The Contractor is to supply the following to the landscape architect before ordering:
 - a schedule of trees and plants indicating the supplier and origin at least 2 weeks before ordering.
 - a photographs of all plants and trees to be used adjacent a scale marker .

222J TREES FOR CONTAINERIZATION

Trees to be prepared for containerization are identified in soft landscape planting schedule SCH(94)L001.

- All trees to be rootballed stock only from nursery source.
- Bareroot stock will not be accepted. This material will not produce sufficient fibrous roots within the timescale of the contract growing period.
- The trees shall be placed in rigid UPVC or steel framed containers, of sufficient strength to support the weight of the tree and of appropriate size to allow the root system to develop over the contract growing period.
- The containerized trees shall be placed on a gravel bed and securely supported by overhead cables which shall be sheathed in rubber to prevent chaffing of the trunk.
- The containers shall be spaced sufficiently apart as to prevent crowding/touching of crowns and allow each tree crown to develop a uniform shape and size.
- The gravel areas shall be located adjacent to hard surfaced access roads to enable the trees to be loaded when required onto suitable road transport, irrespective of ground conditions.
- The trees shall be linked to an automatic irrigation system. Ensure that sufficient water is applied to the trees to promote healthy growth.
- The tree planting compost to be used in the containers shall consist of the following mix:

62.5% Fibrous organic tree planting compost
25% Medium bark
12.5% Horticultural grit

with a Slow Release Base fertiliser 4.536 kg/m³ consisting of:

5.3% Nitrogen by volume
7.7% Phosphate by volume
10% Potash by volume
Trace elements
6.5 pH value

- Include for regular inspections by the CA.

225 BULBS/ CORMS/ TUBERS

- Condition: Firm, entire, not dried out or shrivelled.
- Health: Free from pests, diseases and fungus.
- Handling: Remove from packaging immediately.
- Storage: Permitted only when necessary.
 - Location: Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
 - Duration: Minimum period.
 - Temperature: 18-21°C.

235 CONTAINER GROWN PLANTS/ TREES

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

246 LABELLING AND INFORMATION

- Standard: To BS 3936.

255J PLANTS/ TREES RESERVED AT SUPPLIER'S PREMISES

- Types/ Species: As planting schedule (SCH(94)L001).
- Predelivery inspection: All plants are to be made available for inspection by the landscape architect before supplying to site.
- Labelling: Identify inspected plants/ trees as reserved for use on this project (representative samples will not be acceptable).

260 PLANT/ TREE SUBSTITUTION

- Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
 - Price.
 - Difference from specified plants/ trees.
- Approval: Obtain before making any substitution.

265J PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To HTA 'Handling and establishing landscape plants'. Refer to BS8545:2014 Trees: From nursery to independence in the landscape - Recommendations. Tree installation to follow guidance provided within.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Plant packaging: Coextruded polyethylene bags with black interior and white exterior .
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped .
- Planting: Upright or well balanced with best side to front.

280 TREATMENT OF TREE WOUNDS

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

290 SURPLUS MATERIAL

- Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

To Engineers Specification /
Details

298J WATERPROOFING LINING

- Material: To engineers specification, as part of suspended slab waterproofing system .
- Base protection: To manufacturers recommendation or minimum clean horticultural sand, 25 mm thick .
- Installation of liner:
 - To Manufacturers recommendation

PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS**305 WEED CONTROL .**

- Locations: All planting areas.
- General: Prevent weeds from seeding and perennial weeds from becoming established, by hand weeding .

335J GENERAL FERTILIZER - SLOW RELEASE

- Locations: Planting beds and tree pits.
- Manufacturer: Scotts (Tel: +31 (0)418 655 700) or equal and approved.
 - Product reference: Enmag slow release fertilizer.
- Application: Mix evenly.
 - Timing: Immediately before cultivation.
 - Rate: As Q31/476J and Q31/586J.
- Additional requirements: fertilizer for containerised trees to be reviewed against the suppliers documented regime and adjusted as necessary.

341 PEAT

- Peat or products containing peat: Do not use.

357J SOIL AMELIORANT/ CONDITIONER GENERALLY

- Locations: To existing planting areas with proposed additional/remedial planting .
- Type: tbc following soil test results.
- Reference/ Description/ Grading: As Q31/476J and Q31/586J.
- Application: Mix evenly.
 - Timing: Apply prior to cultivation.

361J COMPOST TO TREE PITS

- Locations: refer to Planting Plans.
- Type: Sanitized and stabilized compost.
- Manufacturer/ Supplier: 'Treestart' Peat Free Compost by English Woodlands (TEL: 01435 862992) or equal and approved.
 - Product reference: Organix tree/shrub planting compost or equal and approved .
- Standard: To PAS 100.
- Horticulture parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter content (minimum): 25%.
 - Grading (air dried samples): 99% passing 25 mm screen, and 90% passing 10 mm screen mesh aperture.
 - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Required .
- Application: Mix evenly.
 - Timing: Apply prior to cultivation.
 - Rate: As Q31/476J and Q31/586J.
- Other requirements: none .

370J TOPSOIL FOR ROOT CELLS AND IMPORTED TOPSOIL

- Locations: As per planting areas shown on general arrangement drawings and planting plans
- Manufacturer/ Supplier: Bourne Amenity (01797 252 299) or equal and approved
- Product: TS1 High quality Sandy Loam to BS 3882 screened to 20mm.
- Do not use topsoil contaminated with subsoil, rubbish or other corrosive or hazardous materials.
- Visual examination: Brown, dry, friable sandy loam with a moderately developed fine to coarse granular structure. Very slightly stony, no observable deleterious materials, including foreign matter (brick, concrete, glass, metal, plastic) and roots or rhizomes of pernicious weeds including couch grass and Japanese knotweed).
- Storage and handling:

All soil that is delivered to site that is not being used immediately is to be stored where it will not become contaminated or waterlogged. All soil subject to storage is to be covered with tarpaulin.

401 REGULAR PLANT LAYOUT TO ALL BEDS

- Spacing: As drawings.
- Density: As planting schedule .

408J PLANTING GENERALLY

- Before planting remove any nonperishable containers and carefully prune any badly damaged roots.
- Dip bare-rooted shrubs and hedging plants in a 1: 3 solution of Alginate root dip .
- Plant upright or well balanced with best side to front. Carefully return excavated topsoil, packing around evenly spread roots or root ball and heel well in.
- Immediately after planting carefully cut back any damaged, dead or diseased branches and remove any weak, thin or malformed growth. Where and to the extent appropriate for the species cut back to encourage growth.

420J CLIMBING PLANTS

- Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
 - Branches: Lightly secured to supports.
- Climber supports: Stainless steel wire trellis system by S3i Group or equal and approved .
 - Base height: 600 mm above ground .
 - Extent: As wall detail.
 - Centres: 500 mm
 - Distance from wall: 25 mm.
- Fixings: To manufacturers detail .
 - Centres: To manufacturers detail .

445 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.

455 PLANTING WILD FLOWER PLUGS

- Handling: Keep plants watered and in shade until planted. Do not allow to dry out.
- Preparation: Remove brambles, coarse and invasive weeds from planting sites.
- Planting in grass: Close mow to approximately 50 mm. Remove arisings.
- Planting sites: Refer to drawings..
- 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.

470 FORMAL HEDGES

- Shrubs for hedges: Consistent in species, cultivar and clone to ensure a uniform hedge.
- Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

471 NATURALIZED HEDGES

- Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

480J AFTER PLANTING

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants without damaging roots, ensuring no hollows.
- Top dressing: Not required.
 - Depth: na.

485 MULCHING PLANTING BEDS

- Material: Bark Nuggets by Melcourt Industries Ltd. (Tel: +44 (0)1666 502711) or equal.
 - Purity: Free of pests, disease, fungus and weeds.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 50 mm depth.
- Finished level of mulch: 30 mm below adjacent edge restraint. Refer to detail drawings for levels below wall capping in raised planting areas .

PLANTING TREES**502J PLANTING TREES**

- Cut back any broken or damaged roots to sound growth.
- Plant trees upright, unless otherwise instructed, in centre of pit and at original soil depth.
- Root-balled trees: Firm backfilling material as clause 586J around root ball in 150 mm layers taking care not to disturb roots.

504J TREE PITS

- Sizes: As per detailed drawings.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: Where planted in made ground - slightly raised centre. Break up to a depth of 200 mm.
 - Treatment: Soil ameliorant worked into pit bottoms .
- Pit sides: Scarify if required.
- Backfilling material: Q31/586ATree backfilling material .
- Accessories: Refer to detail design drawings Greenleaf (tel: 0800 0187 797)
 - Aeration and watering pipe - Refer clause 513J
 - Geotextile membrane, to be laid between gravel drainage layer and sharp sand filter layer.
 - Tree anchors - see clause 512J
 - Root Barrier - see clause 510J.
- Ensure tree pits are free-draining before progressing with planting.

510J TREE PIT ROOT BARRIERS

- Locations: as required to protect adjacent services or basements.
- Manufacturer: Greenleaf (Tel. 0800 0187 797) or equal and approvedl .
 - Product reference: Reroot 1000.
- Installation: Subject to instruction, either:
 - installed To all raised / contained planting areas.
 - installed around perimeter of tree pits areas to protect side wall waterproofing from damage.
 - Joints to be sealed to prevent root ingress

512J TREE PIT ANCHORS

- Locations: To all trees. Refer to drawing (94)LP001.
- Manufacturer: Greenleaf (tel. 0800 0187 797 or equal and approved).
 - Product reference: SAS-DN Arboguy strap anchor root ball guying system. Eyebolts or deadmen anchors to be supplied by contractor .
- Type: Install to manufacturer recommendations .
- Sample: to be submitted
- Contractor to propose coordinated anchoring system with waterproofing system to ensure watertight system. Proposals to reviewed by engineer and landscape architect.

513J TREE PIT IRRIGATION PIPE

- Locations: To all trees as drawing (94)LP001.
- Manufacturer: Greenleaf (tel: 0800 0187 797) or equal and approved .
 - Product reference: RootRain Urban System .
- Type: Perforated plastic irrigation pipes, 60 mm diameter, in circle above and around sides of rootball with integrated fixed inlet .
- Sample: to be submitted

515J TREE PIT DRAINAGE

- Depth of excavation: Allow for aggregate and sand filter layer, with base slightly falling to outlet.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - Depth: 75mm.
- Filter Layer: sharp sand laid over aggregate before completing backfilling
 - Depth: 75mm
- Completed pits: Test for free drainage before planting.

586J TREE BACKFILLING MATERIAL

- Composition: Previously prepared mixture of compost, sand, ameliorant and topsoil excavated from pit with additional topsoil as required.
- Mix:
 - 70% topsoil as Q28
 - 20% planting compost as Q31/361
 - 10% coarse grained, washed river gravel with neutral PH
- Ameliorant/ Conditioner: As Q31/357.
 - Application rate: as required.
 - Fertilizer: Slow release.
 - Application rate: 50 g/m².
- Cut back any broken or damaged roots to sound growth. . .
- Plant trees upright, unless otherwise instructed, in centre of pit and at original soil depth.
- Root-balled trees: Firm backfilling material around root ball in 150 mm layers taking care not to disturb roots.

590 MULCHING TREES

- Material: Refer clause 485.
 - Purity: Free of pests, disease, fungus and weeds.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: refer clause 485.
- Finished level of mulch: refer clause 485.

592J PRUNING

- Remove damaged branches and, where directed, reduce the crown of new and existing trees by 10 % in such a manner as to retain their natural form and character.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS**710 MAINTENANCE**

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period (2 yrs from practical completion) TBC.
- Frequency of maintenance visits: In accordance with the agreed maintenance schedule .

720 FAILURES OF PLANTING

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

740 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.

790 FINAL MULCHING

- Timing: At end of the maintenance period.
- Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
- Planting beds: Remulch.
 - Depth (minimum): 50 mm.
- Trees: Remulch.
 - Depth (minimum): 50 mm.

Q35

Landscape maintenance

Q35 Landscape maintenance

To be read with Preliminaries/General conditions.

GENERALLY**105J MAINTENANCE OBJECTIVES**

- Carry out the operations within Q35 until the end of the defects liability period.

110 NOTICE

- Give notice before:
 - Application of herbicide.
 - Application of fertilizer.
 - Watering.
 - Each site maintenance visit.
- Period of notice: 5 days.

130J REINSTATEMENT

- Damage or disturbance to soil structure, planting, hard landscaping, structures or buildings: Reinstatement to original condition.

140 CONTROL OF MAMMALIAN PESTS

- Specialist firms: Submit proposals.
 - Method: Submit proposals.

155J WATERING

- Supply: Potable mains water, to areas not covered under automated irrigation systems .
- Quantity: Wet full depth of topsoil .
- Application: Do not damage or loosen plants.
- Compacted soil: NA.
- Frequency: As necessary for the continued thriving of all planting.

160 WATER RESTRICTIONS

- General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.

175 DISPOSAL OF ARISING

- General: Unless specified otherwise, dispose of arising as follows: Remove from site .

180 CHIPPING OR SHREDDING

- General: Not permitted on site.

197 CLEANLINESS

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

GRASSED AREAS**210 MAINTENANCE OF GRASSED AREAS**

- General: Maintain turf in a manner appropriate to the intended use.
- Soil and grass:
 - 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.
- Ornamental 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.

220 GRASS CUTTING GENERALLY

- 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.

226 TREE STEMS

- Precautions: Do not allow nylon filament rotary cutters and other mechanical tools closer than 100 mm to the stem of any tree.
 - Operations close to stems: Complete using hand tools.

250 LEAF REMOVAL

- Operations: Collect fallen leaves.
- Special requirements: Remove by hand raking .
- Disposal: Remove from site for recycling.

255 FIRST CUT OF LAWNS

- Height of initial growth: 75 mm.
- Preparation:
 - Debris and litter: Remove.
 - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 25 mm.
- Mower type: Contractor's choice.
- Arisings: Remove.

265 MOWING GENERAL AREAS

- Grass height: Maintain between 50 and 75 mm .
- Arisings: Remove .

310 RE-FORMING GRASS EDGES

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

320 LEVELLING HOLLOWES AND BUMPS IN TURF

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

330 SELECTIVE HERBICIDE

- Location: All lawns.
- Herbicide: Suitable for suppressing perennial weeds .
- Areas not to be sprayed: Desirable herbaceous plantings .

350 FERTILIZER - SPRING APPLICATION

- Type: Slow release.
- Application rate: 100 g/m².

360 FERTILIZER - AUTUMN APPLICATION

- Type: Slow release.
- Application rate: 100 g/m².

381 REINSTATEMENT OF WORN OR DAMAGED LAWNS

- Worn or damaged areas: Make good by returfing or reseeding:
 - Returfing standard: To BS 7370-3, Clause 12.2.
 - Reseeding standard: To BS 7370-3, 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.

SHRUBS/TREES/HEDGES**500 ESTABLISHMENT OF NEW PLANTING**

- Duration: Five years.
- Weed control:
 - Method: Keep planting beds clear of weeds by maintaining full thickness of mulch .
 - Area: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
- Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
- Trees: When in leaf, spray crowns during warm weather.
 - Timing: After dusk.
- Watering: Q31.

502 ESTABLISHMENT OF NEW PLANTING - FERTILIZER

- Time of year: March or April.
- Type: Enmag or equal.
- Spreading: Spread evenly. Carefully lift and replace any mulch materials.
 - Application rate: 100g per sq.m.

510J TREE ANCHORS

- Inspection/ Maintenance times: During scheduled maintenance .
- Anchors:
 - If the tree has moved from its vertical state, appropriate adjustments must be made to the anchors and all surface material reinstated to its original specification.
 - Replace broken anchors to original specification

515 TREE GUY WIRES

- Inspection/ Maintenance times: Immediately after strong winds.
- Operations:
 - Replace or resecure loose or missing guy wires.
 - Adjust to suit stem growth and to provide correct and uniform tension.
- Removal: When instructed .

520 REFIRMING OF TREES AND SHRUBS

- Timing: After strong winds, frost heave and other disturbances.
- Refirming: Tread around the base until firmly bedded.
- Collars in soil at base of tree stems, created by tree movement: Break up by fork, avoiding damage to roots. Backfill with topsoil and refirm.

540J PRUNING GENERALLY

- Pruning: In accordance with good horticultural and arboricultural practice.
 - Removing branches: Do not damage or tear the stem or bark.
 - 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 flush 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.
 - Formal hedge: Thin, trim and shape hedge appropriately to species, season, and stage of growth, maintaining installation levels and profile.
- 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.

545 PRUNING OF EXCESSIVE OVERHANG

- Timing: As instructed .
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
- Special requirements: Retain shape and general appearance of plant material .

555 PRUNING TREES AND SHRUBS

- Standard: To BS 7370-4.
- Special requirements: None.

570 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 .

575 PRUNING ORNAMENTAL SHRUBS

- General: Prune to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour.
- Suckers: Remove by cutting back level with the source stem or root.

580J PRUNING FLOWERING SPECIES OF SHRUBS AND ROSES

- Time of year:
Refer to SCH(94)L001
 - 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.

620 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.

625 CLIMBING PLANTS

- Pruning: Remove excess growth, to ensure that signs, light fittings, doors and windows are kept clear at all times.
- Insecure growth: Attach to supporting wires or structures using Stainless steel wire.
- Supporting structures: Check and repair as necessary.

630 DEAD AND DISEASED PLANTS

- Removal: As soon as possible .
- Replacement: to match size of adjacent or nearby plants of same species or match original specification, whichever is the greatest.

645 WEED CONTROL GENERALLY

- Weed tolerance: Weed to clear ground every four weeks.
- Adjacent plants, trees and grass: Do not damage.

650 HAND WEEDING

- General: Remove weeds entirely, 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: Reinststate to original depth.

680 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.

685 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.

690 MAINTENANCE OF LOOSE MULCH

- Thickness (minimum): 50 mm.
 - Top up: Annually .
- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
- Weeding: Remove weeds growing on or in mulch by hand weeding .

700 SNOW REMOVAL FROM SHRUBS/ TREES

- Standard: To BS 7370-4.
- Plants subject to snow removal: As instructed.
- Timing: Within 24 hours of snowfall .

TREE WORK**810J 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 and Health & Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'.
- Removing branches: Cut as Arboricultural Association Leaflet 'Mature tree management'. 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.
- Agree relocation positions / locations of trees to be removed.

- 815 ADDITIONAL WORK
- Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.
- 820 PREVENTION OF WOUND BLEEDING
- Standard: To BS 3998, clause 8.
- 825 PREVENTION OF DISEASE TRANSMISSION
- Standard: To BS 3998, clause 9 and Appendix B.
- 830J 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.
- 835 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: 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: Remove only with prior approval from CA .
 - 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.
- 845 CROWN LIFTING
- Clearances: Remove branch systems to give clearance.
 - Height: As recommended by BS 7370-4, clause 3.7.2.3.
 - Removing branches: Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.
- 850 CROWN THINNING
- Removing branches: Remove inward growing, crossing, rubbing, dead and damaged branches.
 - Thinning: Selectively remove secondary and small live branch growth evenly throughout the crown.
 - Quantity: 25 %.
 - Cutting: Make no cuts of more than 75 mm diameter.
 - Branches: Cut back to lateral or sublateral buds or branches without leaving stumps.
 - Appearance: Leave a uniform and well balanced structure of branches and foliage.

855 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.

860 REMOVING TREES, SHRUBS AND HEDGES

- Standards: To BS 3998, Appendix A and Health & Safety Executive (HSE)/ Arboricultural and Forestry Advisory Group Safety Leaflets.
- Existing services: Check for below and above ground services. Give notice if they may be affected.
- Shrubs and smaller trees: Cut down and grub up roots.
- Tree stumps:
 - Removal: Cut as close to ground as possible and kill by applying a suitable herbicide into drilled holes immediately after felling .
 - Removal by winching: Give notice. Do not use other trees as supports or anchors.
- Protection: Avoid damage to neighbouring trees, plants and property .
- Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Filling holes:
 - Material: Use as-dug material and/ or imported soil as required.
 - Finishing: Consolidate and grade to marry in with surrounding ground level.

865 BARK DAMAGE

- Wounds:
 - Do not attempt to stop sap bleeding.
 - Bark: 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 bark: Give notice.

867J WATERING OF TREES

- In event of irrigation system being disabled, water trees through installed watering system from an imported water source to ensure the continued thriving of all trees. The following guidance should be followed:
 - Semi-mature trees, first season summer watering requirements: 300 litres per month.

870 CAVITIES IN TREES

- Investigation: Remove rubbish and rotten wood. Probe the cavity to find the extent of any decay, and give notice.
- Water filled cavities: Do not drain.
- Sound wood inside cavities: Do not remove.
- Cavity openings: Submit proposals.

HARD LANDSCAPE AREAS/FENCING**900 SNOW CLEARANCE**

- Clearance: When instructed .
- Deicing: na.
 - Material: Grit.
 - Timing: When freezing precipitation is forecast .
 - Application rate: Spread evenly at a rate of As manufacturer's recommendations .

910J HARD SURFACES AND GRAVEL AREAS

- Herbicide: Not to be used
- Hard surfaces: Remove litter, leaves and other debris.
 - Annually pressure / steam clean pavement surfaces to remove accumulated grime
 - Ensure cleaning method does not damaging jointing
- Surface gutters and channels: Remove mud, silt and debris.
- Drainage gullies: Empty traps and flush clean.
- Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.
- Stain removal: In accordance with BS 7370-2, table 4.

920 FENCING

- Fences: Inspect and repair to maintain protection against intruders.

930 GRAFFITI REMOVAL

- Method: Pressure wash.
- Subsequent treatment: Not required.
 - Finish: na.

Q50

Site/ street furniture/ equipment

Q50 Site/ street furniture/ equipment

To be read with Preliminaries/ General conditions.

GATES, BARRIERS AND BOLLARDS**SITE AND STREET FURNITURE**

- 220 BENCHES Memorial Benches
- Manufacturer: 4memorial bench (www.4memorialbench.co.uk) .
 - Product reference: Classic 1.5m Memorial Bench .
 - Material: Teak.
 - Finish: As manufactured .
 - Colour: Natural .
 - Size: 1.5 m long .
 - Accessories/ Special requirements: Arm rests to each end. With a combination of carved inscription and inscribed plaques. Refer to drawings .
 - Method of fixing: Root, 300mm below ground, set in concrete base .
- 240J LITTER BINS General
- Manufacturer: mm cite www.mmcite.com or equal and approved .
 - Product reference: Prax - PRX115/116.
 - Material: Steel outer frame, panel made of wooden lamellas .
 - Finish: To manufacturers specification .
 - Colour: Timber - Teak.
 - Accessories/ Special requirements:
 - Ash trays are not permitted
 - Galvanized steel liner .
 - Method of fixing: Root, 300 mm below ground, set in concrete base .
 - Samples to be provided: 1 x full scale unit prior to procurement of finals. To be reviewed in parallel with other furniture elements to ensure finish colour consistency
- 263J TREE / SHRUB PLANTER -
- Manufacturer: Furnitubes International Ltd. www.furnitubes.com or equal and approved .
 - Product reference: Shrub Planters, 1000 x 500 x 500 high (with 30mm top lip)
Tree Planters, 1800 x 1800 x 1200 high (3mm thick with 100mm top lip all round) .
 - Construction: Zintec, Polyester Powder Coated, with adjustable feet at each corner.
 - Slats: [Iroko Legally Sourced timber, sanded finish]
 - Installation: [Bolt-down]

INSTALLATION

510J CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Mix: C32/40 refer Q21/118J.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

555J STEEL ACCESS COVER LIFTING KEYS

- Submit: Suitable lifting keys for each type of access cover.
 - Timing: At completion.

560 SITE PAINTING

- Timing: Prepare surfaces and apply finishes as soon as possible after fixing.

External decks, boardwalks and bridges

Q55 External decks, boardwalks and bridges

To be read with Preliminaries/ General conditions.

GENERAL

- 110 DECK UCL Garden
- Base preparation: Treat with suitable residual herbicide .
 - Structure, other than surfacing: To manufacturers detail .
 - Fasteners: To manufacturers detail .
 - Post setting: To manufacturers detail .
 - Surfacing: Deck boards - Hardwood, FSC approved timber decking. 4200mm x 145mm x 25mm Garapa hardwood timber decking by Russwood or equal and approved .
 - Method of attachment: To manufacturers detail .
 - Guarding: Not required .
 - Edge protection: Not required .
 - Accessories: To manufacturers detail .

PRODUCTS

- 305 TIMBER PROCUREMENT
- Timber (including timber for wood based products): Obtained from well managed forests and/ or plantations in accordance with:
 - The laws governing forest management in the producer country or countries.
 - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
 - Documentation: Provide either:
 - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
 - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
 - Certification scheme: Forest Stewardship Council (FSC) .
 - Other evidence: None .

FABRICATION

- 510 FABRICATION GENERALLY
- Design: Complete the detailed design and obtain approval prior to commencing fabrication.
 - Shop drawings: Submit.
 - Structural calculations: Submit.
 - Frameworks: Assemble and brace, including temporary members required for installation.
 - Contact between dissimilar metals: Avoid.
 - Fixings: Fully bolt together. Tighten bolts.
 - Temporary support: Do not subject members to non-design loadings.

EXECUTION

- 610 LOADING
- Site activities: Restrict, to ensure that design loads are not exceeded, or submit proposals for temporary supports.

620 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

660 PRESERVATIVE TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
- Heavily worked sections: Re-treat.

665 INSTALLATION GENERALLY

- Fasteners and methods of fixing: As section Z20.
- Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
- Temporary support: Do not use stairs, walkways or balustrades as temporary support or strutting for other work.