

D2307: Phase 3A - Landscape Specification

26 August 2016

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Revision 01 -15 03 17 - Q24 Clause 117a

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

110B KT1 PROPRIETARY PRECAST CONCRETE COUNTRYSIDE KERBS

- Standard: To BS EN 1340.
- Manufacturer: Tobermore or equal and approved.
- - Product reference: Contractor's choice.
- Recycled content: Submit proposals.
- Designations: Countryside Kerb' or similar.
- Size (width x height x length): 145 x 255 x 915 mm.
- Special shapes:
 - Transition kerbs to footway crossings ;
 - Dropper kerbs to footway crossings;
 - Quadrant kerbs;
 - Internal radius kerbs; and
 - External radius kerbs.
- Finish: Exposed aggregate.
- Colour: Silver Grey..
- Bedding: Cement mortar.
- Joints generally: Dry, 2-3 mm gap.
- Sealant movement joints: Not required.
- Accessories: None.
 - Upstand: 125mm

110C KT1A PROPRIETARY PRECAST CONCRETE COUNTRYSIDE KERBS

- Standard: To BS EN 1340.
- Manufacturer: Tobermore or equal and approved.
- - Product reference: Contractor's choice.
- Recycled content: Submit proposals.
- Designations: Countryside Kerb' or simila.
- Size (width x height x length): 145 x 255 x 915 mm.
- Special shapes:
 - Transition kerbs to footway crossings ;
 - Dropper kerbs to footway crossings;
 - Quadrant kerbs;
 - Internal radius kerbs; and
 - External radius kerbs.
- Finish: Exposed aggregate.
- Colour: Silver Grey.
- Bedding: Cement mortar.
- Joints generally: Dry, 2-3 mm gap.
- Sealant movement joints: Not required.
- Accessories: None.
 - Upstand: Flush

110D KT2 PROPRIETARY PRECAST CONCRETE EDGINGS

- Standard: To BS EN 1340.
- Manufacturer: Marshalls.
- - Product reference: PCC Pin Kerb, flat top.
- Recycled content: Contractor's choice.
- Designations: EF Edging, flat top.
- Size (width x height x length): 50 x 150 x 915 mm.
- Special shapes: -.
- Finish: As cast.
- Colour: Natural.
- Bedding: Fresh concrete races.
- Joints generally: Dry, 2-3 mm gap.
- Sealant movement joints: Not required.
- Accessories: None.
- Upstand: Flush

LAYING

510 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat, accurate and without spalling. Form neat junctions.
 - Long units (450 mm and over) minimum length after cutting: 300 mm.
 - Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete 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.

530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

- Standard: To BS 8500-2.
- Designated mix: Not less than GEN0 or Standard mix ST1.
- Workability: Very low.

545 PROPRIETARY BEDDING BS 7533, part 4 compliant paving mortar

- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Bed thickness: 25-30 mm.

550 KERB DOWELS

- Dowels: Steel bar to BS 4482.
 - Size: 12 mm diameter, 150 mm long.
- Installation of dowels: Vertically into foundation while concrete is plastic.
 - Centres: To suit holes in kerbs.
 - Projection: 75 mm.
- Grouting of holes in kerbs: Filled with 1:3 cement:sand mortar finished flush.

- 560 HAUNCHING DOWELS
- Dowels: Steel bar to BS 4482.
 - Size: 12 mm diameter, 150 mm long.
 - Installation of dowels: Vertically into foundation while concrete is plastic.
 - Centres: 450 mm.
 - Distance from back face of kerb: 50 mm.
 - Projection: 75 mm.
 - Haunching: Rectangular cross section, cast against formwork, fully enclosing and protecting dowels.
- 570 CHANNELS
- Installation: To an even gradient, without ponding or backfall.
 - Lowest points of channels: 6 mm above drainage outlets.
- 600 RADIUS KERBS/CHANNELS
- Usage: Radii of 15 m or less.
- 610 ANGLE KERBS
- Usage: Internal and external 90° changes of direction.
 - Cutting of mitres: Not permitted.
- 620 ACCURACY
- Deviations (maximum):
 - Level: ± 6 mm.
 - Horizontal and vertical alignment: 3 mm in 3 m.
- 625 REGULARITY OF PAVED SURFACES
- Maximum undulation of (non-tactile) paving surface: 3 mm.
 - Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
 - Difference in level between adjacent units (maximum):
 - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
 - Recessed, filled joints: 2 mm.
 - Recess depth (maximum): 5 mm.
 - Unfilled joints: 2 mm.
 - Sudden irregularities: Not permitted.
- 630 NARROW MORTAR JOINTS
- 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.
- 640 TOOLED MORTAR JOINTS
- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
 - Joint width: 6 mm.

Q20
Granular sub-bases to roads/pavings

Q20 Granular sub-bases to roads/pavings

To be read with Preliminaries/ General conditions.

- 110 THICKNESSES OF SUB-BASE/ SUBGRADE IMPROVEMENT LAYERS
- Thicknesses: See sections:
 - Q25 Slab/brick/sett/cobble pavings..
- 140 EXCAVATION OF SUBGRADES
- Final excavation to formation or subformation level: Carry out immediately before compaction of subgrade.
 - Soft spots and voids: Give notice.
 - Old drainage and service trenches: Excavate to remove soft or damaged material, then backfill with specified granular sub-base material and compact..
 - Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.
- 145 PREPARATION AND COMPACTION OF SUBGRADES
- Timing: Immediately before placing sub-base.
 - Soft or damaged areas: Obtain instructions.
 - Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ pavings when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.
- 170 GEOTEXTILE FILTER/ SEPARATOR MEMBRANE below sub-base in all vehicular areas
- Manufacturer: Contractor's choice .
 - Product reference: non woven geotextile having;
 - Permeability of 0.35m/s
 - CBR puncture resistance of 1500N min
 - Effective opening size of 110 micron .
 - Jointing: 300 mm overlap .
 - Protect from:
 - Exposure to light, except during laying (maximum five hours).
 - Contaminants.
 - Materials listed as potentially deleterious by geotextile manufacturer.
 - Damage, until fully covered by fill.
 - Wind uplift, by laying not more than 15 m before covering with fill.
 - Preparation: Remove humps and sharp projections and fill hollows before laying.
- 180 NOTICE
- Give notice: After preparation and compaction of subgrades and On completion of compaction of sub-base..
 - Period of notice: 2 working days.
- 200 SUBGRADE IMPROVEMENT LAYER (CAPPING)
- Material: To Highways Agency 'Specification for highway works', table 6/1, Class 6F3.
 - Standard: Placed and compacted to Highways Agency 'Specification for highway works', table 6/1, clauses 612 and 613.3, 613.8, 613.9, 613.10 and 613.13.

- 210 HIGHWAYS AGENCY TYPE 1 UNBOUND MIXTURE FOR SUB-BASE
- Material: Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.
 - Recycled aggregate: Permitted.
- 220 FROST SUSCEPTIBLE GRANULAR MATERIAL
- Definition (non frost susceptible material): To Highways Agency 'Specification for highway works' clause 801.8.
 - Depth of frost susceptible material below final surface of paving (minimum): 450 mm.
 - Testing: Test materials used if required and supply certificates.
- 230 PLACING GRANULAR MATERIAL GENERALLY
- Preparation: Loose soil, rubbish and standing water removed.
 - Structures, membranes and buried services: Ensure stability and avoid damage.
- 240 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS
- General: Spread and levelled in layers. As soon as possible thereafter compact each layer.
 - Standard: To Highways Agency 'Specification for highway works' clause 802.
 - At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.
- 310 ACCURACY
- Permissible deviation from required levels, falls and cambers (maximum):
 - Subgrades:
 - Roads and parking areas: +20 -30 mm.
 - Footways and recreation areas: $\pm$ 20 mm.
 - Sub-bases:
 - Roads and parking areas: +10 -30 mm.
 - Footways and recreation areas: +5 -10 mm.
- 330 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.
- 340 PROTECTION
- Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
 - Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.

Q24

Interlocking brick/block roads/pavings

Q24 Interlocking brick/block roads/pavings

To be read with Preliminaries/ General conditions

TYPES OF PAVING

110B PT6 CONVENTIONAL CONCRETE BLOCK PAVING TO ROADS

- Subgrade improvement layer: To Engineer's specification.
 - Compacted thickness: To Engineer's specification.
- Geotextile: To Engineer's specification.
 - Manufacturer: To Engineer's specification.
 - Product reference: To Engineer's specification.
- Granular sub-base: To Engineer's specification.
 - Compacted thickness: To Engineer's specification.
- Laying course:
 - Material: In accordance with BS 7533-3.
 - Category: IB.
 - Method of screeding, in accordance with BS 7533-3: Contractor's choice of compaction or uncompacted.
 - Nominal thickness after compaction: 50 mm.
- Blocks: To BS EN 1338.
 - Manufacturer: Marshalls.
 - Product reference: Tegula Block Paving or similar and approved .
 - Sizes: 160 x 240 x 80 mm.
 - Special blocks: None.
 - Arrises: Unchamfered.
 - Colour/ Finish: Brindle.
 - Recycled content: Contractor's choice.
 - Requirements: -.
 - Freeze/ thaw resistance: Class 3.
 - Abrasion resistance: Class 4.
 - Slip/ Skid resistance: PTV to BS 7976-2 of 45.
- Jointing:
 - Material: In accordance with BS 7533-3.
 - Joint width: 2-5 mm.
- Sealer/ Stabilizer: Required.
- Setting out:
 - Bond: Stretcher.
 - Features: -.
- Accessories: None.

117A PT2 PERMEABLE CONCRETE BLOCK PAVING - PARTIAL INFILTRATION - TO CAR PARKING BAYS

- Subgrade improvement layer: To Engineer's specification.
 - Compacted thickness: To Engineer's specification.
- Water collection system: To Engineer's specification.
 - Manufacturer: To Engineer's specification.
 - Product reference: To Engineer's specification.
- Geotextile below granular sub-base: To Engineer's specification.
- Granular sub-base: To Engineer's specification.
 - Compacted thickness: To Engineer's specification.
- Geotextile below laying course:
 - Manufacturer: To Engineer's specification.
 - Product reference: To Engineer's specification.
- Laying course:
 - Material: To Engineer's specification.
 - Compaction: In accordance with BS 7533-3. Determine by trial the depth of loose bedding material needed to ensure specified bedding course thickness after final compaction of paving.
 - Nominal thickness after compaction: To Engineer's specification.
- Blocks: To BS EN 1338.
 - Manufacturer: Marshalls.
 - Product reference: Tegula Priora PV6455160 or similar and approved.
 - Sizes: 240 x 160 x 80mm.
 - Special blocks: None.
 - Spacer nibs: Required.
 - Arrises: Unchamfered.
 - Colour/ Finish: Traditional.
 - Recycled content: Contractor's choice.
 - Requirements: -.
 - Freeze/ thaw resistance class: Class 3.
 - Abrasion resistance (mm): Class 4.
 - Slip/ Skid resistance: PTV to BS 7976-2 of 45.
- Jointing:
 - Material: Single size 5 mm washed aggregate.
 - Joint width: 6 mm.
 - Conventional sand jointing: Do not use.
- Setting out:
 - Bond: 90° herringbone.
 - Features: -.
- Accessories: 160mm width header to parking bays.

EXECUTION

200 EXECUTION GENERALLY - CONCRETE BLOCK AND CLAY PAVER PAVING

- Standard: In accordance with BS 7533-3.

211 COLOUR BANDING

- General: Unless premixed by manufacturer, select blocks/ pavers/ setts vertically from at least 3 separate packs in rotation to avoid colour banding.

220 SAMPLES

- General: Before ordering, submit samples of concrete blocks/ pavers/ setts that are representative of colour and appearance.

240 ADVERSE WEATHER

- General: Do not use frozen materials or lay bedding on frozen or frost covered sub-bases.

- 452 PREPARED EXISTING AND NEW BOUND BASES (ROADBASES)
- Condition before placing laying course: Sound, clean, free from rutting or major cracking and cleared of sharp stones, projections or debris.
- 485 LAYING BLOCKS/ PAVERS/ SETTS
- Setting out: Start from an edge restraint.
 - Cutting: Cleanly, accurately and vertically, without spalling. Do not mark or damage visible surfaces.
 - Cut edges: Turn inwards where possible; do not position against edge restraints or other features.
 - In situ mortar or concrete infill: Do not use.
 - Compaction: Vibrate to produce thoroughly interlocked paving of even overall appearance with regular joints and accurate to line, level and profile. Do not mark or damage paving units, kerbs and adjacent work.
 - Concrete blocks and clay pavers: In accordance with BS 7533-3, Annex F, to site category required for laying course material.
- 500 REGULARITY OF PAVED SURFACES
- 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):
 - Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.
 - Difference in level between adjacent paving units (maximum): 2 mm.
 - Sudden irregularities: Not permitted.
- 505 REGULARITY OF PAVED SURFACES
- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
 - Joints between paving units or utility access covers:
 - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
 - Sudden irregularities: Not permitted.
- COMPLETION
- 600 SEALER/ STABILIZER FOR NEW BLOCKS AND SETTS
- Surface preparation: Ensure sand joints are completely dry and free from contamination and Sweep clear of loose sand before sealing.
 - Sealer/ Stabilizer:
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Application: To dry paving.
 - Method: Spray.
 - Number of coats: 1.
 - Coverage: 2 m²/litre.
- 615 COMPLETION OF PAVING
- Final compaction of the surface course: In accordance with BS 7533-3.
 - Vacuum cleaning machines: Not allowed.

Q25

Slab/brick/sett/cobble pavings

Q25 Slab/brick/sett/cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL

140A PT4 NATURAL STONE SETT PAVING SYSTEM TO ROADS

- Subgrade improvement layer: Highways Agency Type 1 unbound mixture, as section Q20.
 - Compacted thickness: Engineer to confirm requirement.
- Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
 - Compacted thickness: 150 mm.
- Base: Concrete to Engineers Specification.
 - Thickness: Engineer to confirm requirement.
- Laying course: Site mixed proprietary paving grade mortar 35N/mm²..
 - Accessories: Primer for underside of setts.
- Paving units: Natural stone setts.
- Jointing: Site mixed proprietary paving grade grout 40N/mm².
 - Bond: Stretcher bond in random courses.
- Accessories: None.

PRODUCTS

315A PT1 CONCRETE FLAGS TO FOOTPATHS

- Standard: To BS EN 1339.
 - Manufacturer: Marshalls.
Product reference: Saxon Textured Flag FL5030500 or equal and approved.
- Recycled content: Contractor's choice.
- Colour: Natural.
 - Finish: Exposed aggregate.
 - Nominal sizes: 400 x 400 x 65 mm.
- Arrises: Square.
- Water absorption and freeze/ thaw resistance class: 3.
- Bending strength class: -.
- Abrasion resistance class: -.
- Slip/ Skid resistance: greater than 45 wet..
- Breaking load class: -.

330A PT4 NATURAL STONE SETTS PAVING SYSTEM OVERRUN

- Standard: To BS EN 1342.
- Supplier: Marshalls or equal and approved.
 - Product reference: Despina flame textured Granite Setts.
 - Quarry: Submit proposals.
Petrographical description/ stone type: Granite.
- Finish: Flame textured .
- Sizes: Sawn to 100 x 225 x 80mm thick.
 - Plan dimension and thickness deviation: Class 2.
- Special setts: None.
 - Freeze/ thaw resistance class: F1
 - Compressive strength (MPa): 190.MPa.
 - Abrasion resistance (mm): <23mm.
 - Slip/ Skid resistance (USRV): greater than 45 wet.
 - Water absorption (% by mass): 2.5%.
- Surface treatment: None.

- 335A PT5 CONCRETE SETTS TO ROADS
- Manufacturer: Marshalls or equal and approved.
 - Product reference: Conservation Setts FL9906320.
 - Recycled content: Contractor's choice.
 - Colour: Charcoal.
 - Finish: Exposed aggregate.
 - Sizes: 150 x 150 x 100 mm.
 - Slip/ Skid resistance: PTV to BS 7976-2 of 45.
 - Integral accessories: None.
- 390 SAND FOR FLEXIBLE LAYING COURSE AND JOINTING OF CONCRETE FLAG PAVING -.
- Standard: To BS 7533-4, unbound construction laying course and jointing material.
 - Purity: Free from deleterious salts, contaminants, lime and cement.
 - Procurement: Obtain from one source and ensure consistent grading.
- 420 FINE AGGREGATE FOR LAYING COURSE OF CONCRETE SETT PAVING
- Material: Laying course sand to BS 7533-4.
- 425 FINE AGGREGATE FOR JOINTING CONCRETE SETT PAVING
- Material: Limestone dust, 3-4 mm down.
- 440 READY MIXED MORTAR PAVING GRADE MORTAR GROUT
- Type: Grout.
 - Standard/ Performance requirements: In accordance with BS 7533-4.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Consistency: Slurry.
- 445 READY MIXED FINE CONCRETE PAVING GRADE MORTAR FOR STONE AND CONCRETE SETTS
- Standard/ Performance requirements: In accordance with BS 7533-7.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Consistency: Moist mix.
- EXECUTION
- 610 MATERIAL SAMPLES
- Samples representative of colour and appearance of designated materials: Submit before placing orders.
 - Designated materials: All pavings.

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.

625 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.

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 OF PAVED SURFACES

- 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):
 - Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.
 - Precast concrete flags or natural stone slabs: 3 mm.
- Difference in level between adjacent paving units (maximum): 2 mm.
- Sudden irregularities: Not permitted.

637 REGULARITY OF PAVED SURFACES

- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
- Joints between paving units or utility access covers:
 - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

- 640 COLOUR BANDING
- General: Unless premixed by manufacturer, select from at least 3___ separate packs in rotation to avoid colour banding.
- 645 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:
 - Pedestrian traffic (minimum): 24 hours.
 - Vehicular traffic (minimum): 7 days.
 - Access: Restrict access to paved areas to prevent damage from site traffic and plant.
- 650 CEMENTITIOUS BASES AND SUB-BASES
- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.
- 655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE
- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
 - Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
 - Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
 - Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
 - Levels and falls: Accurate and within the specified tolerances.
 - Drainage outlets: Within 0-10 mm of the required finished level.
 - Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
 - Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.
- 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: 50 mm.
 - Joint width: 2-5 mm.
- 730 LAYING NATURAL STONE SETT PAVING
- Standard generally: In accordance with BS 7533-7.
 - Laying type: Rigid.
 - Laying and jointing method: Moist bed fine concrete with full depth slurry joint.
 - Laying course:
 - Target thickness after compaction: 40 mm.
 - Joint width (nominal): 6-10 mm,nominally 8mm..

735 LAYING CONCRETE SETT PAVING - MORTAR BEDDED

- Laying: Spread and level a bed of mortar. Individually lay and hammer down the setts so that tops are level, leaving joints open.
- Laying course:
 - Nominal thickness after compaction: 50 mm.
- Jointing: Fill joints and finish neatly. Clean mortar from face of setts before it sets.
- Joint width (nominal): 5 mm.
 - Recess mortar joints below sett surface by: 2 mm.

COMPLETION

915 COMPLETION OF PAVING WITH DRY SAND OR FINE AGGREGATE FILLED JOINTS

- Sand dressing: Leave a thin layer of dry jointing sand over the paving, sweep clean before practical completion.
- Final compaction of the surface course: In accordance with BS 7533-3.
- Vacuum cleaning machines: Not allowed.

Q28
Topsoil and soil ameliorants

Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

SYSTEM OUTLINE

105A CONTAINER PLANTING GROWING MEDIA SYSTEM FOR EXTERNAL CONTAINER PLANTING

- Composition:
 - Soil: Imported topsoil to BS 3882.
 - Ameliorants: to be confirmed by agronomist.
 - Accessories: Gel irrigation system.

135 PLANTING BED SOIL SYSTEM FOR FLOWERING SHRUBS

- Composition:
 - Topsoil: Imported topsoil to BS 3882.
 - Ameliorants: to be confirmed by agronomist.
 - Accessories: Gel irrigation system.

145 PLANT PIT BACKFILLING SOIL SYSTEM FOR FLOWERING SHRUB PITS

- Composition:
 - Topsoil: Imported topsoil to BS 3882.
 - Ameliorants: to be confirmed by agronomist.
 - Accessories: None.

155 MULCHING AND TOP DRESSING SYSTEM FOR SHRUB BEDS

- Composition:
 - Material: Organic Materials.

PRODUCTS

300 PREPARATION MATERIALS GENERALLY

- Purity: Free of pests and disease.
- Foreign matter: On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
- Contamination: 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 or planting media, do not use subsoil contaminated with the above materials.
- Objectionable odour: None.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

305 PERMITTED MATERIALS

Materials:

- Composted bark;
- Composted cocoa shell;
- Composted green/ food waste certified to PAS 100; and
- Spent mushroom compost.
- Give notice: before ordering or using.
- Declaration of compliance in accordance with BS EN 13650: Required.

310 MATERIALS NOT PERMITTED

- Materials:
 - Peat;
 - Products containing peat; and
 - River and canal dredgings.

315 IMPORTED TOPSOIL TO BS 3882 FOR ALL SOFT LANDSCAPE AREAS

- 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.
 - Grade: to be confirmed by agronomist.
- Source: Contractor's choice.
 - Product reference: Submit proposals.

345 AGGREGATES FOR PLANTING BEDS

- Source: Contractor's choice.
 - Product reference: Submit proposals.
- Reference, description and grading:
 - Sand: Not required.
 - Grit: 2-5mm horticultural grit.
 - Crushed materials: Not required.
 - Other aggregates or particles: Not Required.
- Recycled content: Submit proposals.

360 SANITIZED AND STABILIZED COMPOSTED MATERIALS CERTIFIED TO PAS 100 FOR PLANTING BEDS

- Standard: In accordance with PAS 100.
- Source: Contractor's choice.
 - Product reference: Submit proposals.
- 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): 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.
- Declaration of analysis: Submit.
- Additional analyses: Not required.
- Samples: Not required.

375 INDUSTRIAL BY-PRODUCTS FOR TOPSOIL MANUFACTURE

- Type: spent mushroom compost..
- Source: Contractor's choice.
 - Product reference: Submit proposals.

401 ORGANIC FERTILIZERS INCORPORATED INTO TOPSOIL AND MANUFACTURED TOPSOIL FOR ALL PLANTING AREAS INCLUDING LAWNS

- Manufacturer/ source: Contractor's choice.
 - Product reference: Submit proposals.
- Standard: In accordance with the Fertiliser Industry Assurance Scheme (FIAS).
- Purpose: General purpose fertilizer.
- Type: Sanitized and stabilized compost.
- Availability to plants: Slow release.

EXECUTION

610 TOPSOIL ANALYSIS

- Soil to be analysed:
 - Imported topsoil;
 - Manufactured topsoil; and
 - Topsoil stockpile.
- Soil analyst: Submit proposals..
- Samples: Collect in accordance with BS 3882.
- Submit:
 - Declaration of analysis:
 - Chemical analysis;
 - Contaminants;
 - Maximum stone content, stone size;
 - pH value;
 - Nutrient content;
 - Textural classification; and
 - Phytotoxic and CLEA elements.
 - Report detailing soil analyst's recommendations.

620 IMPORTING TOPSOIL

- Give notice: Before stripping topsoil for transfer to site.
 - Notice period: 5 days.

625 SAMPLE LOADS FOR IMPORTED TOPSOIL

- Deliver to site a sample load: of not less than 5 m³.
- Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - Notice period: 5 days.

630 DOCUMENTATION FOR IMPORTED TOPSOIL FOR ALL PLANTING BEDS AND LAWNS

- Timing: Submit at handover.
- Contents:
 - Full description of all soil components.
 - Record of source for all soil components.
 - Record drawings showing the location and depth of all soils by type and grade.
 - Declaration of analysis: in accordance with BS 3882, Annex E.
- Number of copies: Two.

- 635 DOCUMENTATION FOR COMPOST AND COMPOSTED MATERIALS FOR IMPORTED SOIL IMPROVERS
- Timing: Submit at handover.
 - Contents:
 - Full description of all compost components.
 - Record of source for all compost components.
 - Analyst's report for each test carried out.
 - Declaration of compliance: in accordance with PAS 100 and BSI PD CR 13456.
 - Quality Compost Protocol certification: Required.
 - Number of copies: Two.
- 640 DOCUMENTATION FOR PREPARATION MATERIALS FOR ORGANIC MATERIALS
- Timing: Submit at handover.
 - Contents:
 - Full description of all components.
 - Record of source for all components.
 - Analyst's report for each test carried out.
 - Supplier's declaration of compliance with BSI PD CR 13456.
 - Number of copies: Two.
- 650 NOTICE
- Give notice before:
 - Setting out.
 - Spreading topsoil.
 - Applying herbicide.
 - Applying fertilizer.
 - Visiting site during maintenance period.
 - Period of notice: 3 working days.
- 655 MECHANICAL TOOLS
- Restrictions: Do not use within 100 mm of tree and plant stems.
- 660 GRADING SUBSOIL
- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
 - Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - Areas of thicker topsoil: Excavate locally.
 - Avoid over compaction.
- 665 SUBSOIL SURFACE PREPARATION
- General: Excavate and/ or place fill to required profiles and levels, as section D20.
 - Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - Stones: Immediately before spreading topsoil, remove stones larger than 75 mm.
 - Remove from site: Arisings, contaminants and debris and Builders rubble.

- 670 INSPECTING FORMATIONS
- Give notice: Before spreading topsoil for lawn areas and planting beds.
 - Notice period: 7 days.
- 675 PREPARATION OF UNDISTURBED TOPSOIL
- Standard: In accordance with BS 4428.
 - Grading and cultivation: To suit cultivation operations specified in Q30.
 - Hard ground: Break up thoroughly.
 - Clearing: Remove visible roots and large stones with a diameter greater than 75 mm.
 - Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
 - Fallow period (minimum): One month.
 - Weed control: At appropriate times re-cultivate at fortnightly intervals to suppress weed growth.
- 680 SURPLUS TOPSOIL TO BE RETAINED
- Generally: Spread and level on site:
 - Locations: Any areas where topsoil is required for new planting.
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- 685 SURPLUS MATERIALS TO BE REMOVED
- Topsoil: Remove from site topsoil remaining after completion of all landscaping work.
 - Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.
- 690 TOPSOIL STORAGE HEAPS
- Location: Throughout the site.
 - Height (maximum): 2.0 m.
 - Width (maximum): 5.0 m.
 - Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
 - 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, by fencing and covering as appropriate.
- 700 GRADING OF TOPSOIL
- Topsoil condition: Reasonably dry and workable.
 - Contours: Smooth and flowing, with falls for adequate drainage.
 - Hollows and ridges: Not permitted.
 - Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
 - Give notice: If required levels cannot be achieved by movement of existing soil.
- 705 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.

710 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):
 - 150mm to areas to receive amenity grass;
 - 300mm to native shrub and hedge planting
 - 450mm to ornamental shrub and herbaceous planting
 - tree pit sizes to be confirmed by agronomist .
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 LOOSE TIPPING OF TOPSOIL

- General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

718 FINAL CULTIVATION FOR GRASS SEEDING

- Compacted topsoil: Break up to full depth.
- Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
- Depth: 75 mm.
- Particle size (maximum): 5 mm.
- Timing: After grading and fertilizing, and within a few days before seeding.
- Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: 25 mm above adjoining paving or kerbs and Minimum 150 mm below dpc of adjoining buildings.
- Undesirable material brought to the surface:
 - Remove visible weeds.
 - Remove roots and large stones with any dimension exceeding 30 mm.

718A FINAL CULTIVATION FOR PLANTING BEDS

- Compacted topsoil: Break up to full depth.
- Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
- Depth: 75 mm.
- Particle size (maximum): 5 mm.
- Timing: Within a few days before planting.
- Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: 25 mm above adjoining paving or kerbs and Minimum 150 mm below dpc of adjoining buildings.
- Undesirable material brought to the surface:
 - Remove visible weeds.
 - Remove roots and large stones with any dimension exceeding 30 mm.

- 720 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT
- Above adjoining paving or kerbs: 25 mm.
 - Below dpc of adjoining buildings: Not less than 150 mm.
 - Planting beds: Higher than adjoining grass areas by 25 mm.
 - Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
 - Sportsfields: To even levels and within the following permitted deviations:
 - From levels or gradients shown on drawings: ± 75 mm.
 - From line between boning rods 30 m apart: ± 25 mm.
 - Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
 - Adjoining soil areas: Marry in.
 - Thickness of turf or mulch: Included.
- 820 APPLYING GENERAL FERTILIZER SLOW RELEASE TO ALL PLANTING AREAS
- Application: Spread evenly, carefully incorporating below mulch materials.
 - Timing: Immediately before cultivation.
 - Application rate: 75 g/m².
 - Other requirements: None.
- 830 APPLYING TOP DRESSING TO ALL GRASSED AREAS EXCEPT WILDFLOWER MEADOWS
- Rate: 2 kg/m².
 - Timing: Apply prior to cultivation.
- 845 APPLYING LOOSE MULCH FOR PLANTING BEDS
- Timing: Immediately after planting.
 - Preparation: Ensure that soil is thoroughly moistened, applying water where necessary.
 - Coverage of mulch (minimum):
 - Planting beds (depth): 50 mm depth.
 - Trees: 50 mm depth.
 - Container planting: 50 mm depth.
 - Finished level of mulch: 30 mm below adjacent grassed or paved areas.

COMPLETION

- 905A APPLYING MAINTENANCE FERTILIZER TO PLANTING BEDS
- Time of year: March or April.
 - Application: Evenly spread, carefully incorporating below mulch materials.
 - Rate: To suit soil report recommendations..
- 920 APPLYING MULCH
- Timing: At end of the maintenance period.
 - Watering: Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.
 - Planting beds: Re-mulch.
 - Depth (minimum): 50 mm.
 - Trees: Remulch.
 - Depth (minimum): 50 mm.
 - Container planting: Remulch.
 - Depth (minimum): 50 mm.

Q30
Seeding/turfing

Q30 Seeding/turfing

GENERAL INFORMATION/REQUIREMENTS

- 115 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.
- 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

- 400A GT1 LAWN TURF FOR ALL GRASSED AREAS
- Supplier: 'Rolawn' or similar and approved..
 - Product reference: Medallion turf.
 - 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.
- Certification:
 - Standard: To BS 3969.
 - Declaration: Species mix, including percentage of specified species.

427A COMPOST DRESSING FOR TURF

Type: Sanitized and stabilized compost.

" Supplier: Contractor's choice.

- 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 5 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: Autumn or early winter.
- 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: None.
- Watering: Thoroughly water completed turf immediately after laying. Check that water has penetrated into the soil below.

PROTECTING/CUTTING

530 FIRST CUT OF GRASSED AREAS

- Timing: When grass is reasonably dry.
 - 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: 40 mm.
- Mower type: Cylinder.
- Arisings: Remove from site.

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 reseeding/ returfing.
- Timing of making good: The next suitable planting season.

620 MAINTAINING GENERAL GRASSED AREAS

- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
- 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: When instructed.

Q31
External planting

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS

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: Clear scrub to ground level by flail mowing and remove arisings; retain and protect trees indicated on drawings.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: none.

118 SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (except in 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.

120 CLIMATIC CONDITIONS

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

125 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.
- Wildflower plugs: Late August to mid November or March/ April.
- Aquatic plants: May/ June or September/ October.

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.

- 160 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: One week.
- 170 SOIL REQUIREMENTS
- Type
 - Planted beds: Planting bed soil system, as section Q28.
 - Tree pits, shrub pits and other backfilling: Plant pit backfilling soil system, as section Q28.
 - External container planting: Container planting growing media system, as section Q28.
 - Mulch applied after planting: Mulching and top dressing system, as section Q28.
- 200 PLANTS/ TREES - GENERAL
- 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: British provenance.
Definition: Origin and Provenance have the meaning given in the National Plant Specification.
- 215 PLANTS/ TREES - SPECIFICATION CRITERIA
- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.
- 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.

245 LABELLING AND INFORMATION

- General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
 - Full botanical name.
 - Total number.
 - Number of bundles.
 - Part bundles.
 - Supplier's name.
 - Employer's name and project reference.
 - Plant specification, in accordance with scheduled National Plant Specification categories.
- Additional information: Submit on request:
 - Country of origin;
 - Date supplied and consignment details or reference;
 - Impact of pest/ disease;
 - Name or designation of rootstock of budded or grafted plants;
 - Potting dates;
 - Propagation method and dates;
 - Pruning dates; and
 - Type of container.

255 PLANTS/ TREES RESERVED AT SUPPLIER'S PREMISES

- Types/ Species: As plant schedule.
- Predelivery inspection: Give notice.
- Labelling: Identify inspected plants/ trees as reserved for use on this project.

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.

265 PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To CPSE 'Handling and establishing landscape plants'.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- 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.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

401 REGULAR PLANT LAYOUT TO ALL PLANTING

- Spacing: In regular, staggered rows.
- Density: As plant schedule.

405 SHRUB PLANTING PITS

- Timing: Excavate 1-2 days (maximum) before planting.
- Sizes: 150 mm wider than roots when fully spread and 200 mm deep..
- Pit bottom improvement Break up to a depth of 150 mm, incorporating 25 g of slow release fertilizer per planting pit.

415 ANTIDESICCANT FOR CONIFERS/ EVERGREENS

- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
- Application: Dip before delivering to site. Spray soon after planting.
 - Do not apply in wet or frosty weather.
 - Ensure full coverage of underside of foliage.

420 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.
 - Base height: 600 mm above ground.
 - Extent: to be agreed.
 - Centres: 300 mm
 - Distance from wall: 25 mm.
- Fixings: Stainless steel screw eyes.
 - Centres: 1.5 m.

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.

480 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.
- Top dressing: Mulching and top dressing system, as section Q28.
 - Depth: 25-30 mm.

485 MULCHING PLANTING BEDS

- Material: Medium grade bark mulch.
 - Purity: Free of pests, disease, fungus and weeds.
 - Recycled content: 100% to BS EN ISO 14021.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 50 mm depth.
 - Finished level of mulch: 30 mm below adjacent grassed or paved areas.

PLANTING TREES

505 TREE PITS

- Sizes: As drawing D2307 L.402 / 403 & 409.
- 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 200 mm.
 - Treatment: Soil ameliorant worked into pit bottoms.
- Pit sides: Scarify.
- Backfilling material: Plant pit backfilling soil system, as section Q28.
- Accessories:
 - Tree pit drainage layer as drawing D2307 L.402 / 403 & 409;
 - Root barrier; and
 - Underground guying to BS 4043.

510 TREE PIT ROOT BARRIERS

- Locations: Wherever the installed rootball will be within 2.0 m of a building foundation or within 3.0 m of an existing underground service route.
- Manufacturer: Greenleaf.
 - Product reference: ReRoot 1000.
- Depth of top of root barrier below finished soil level: 25 mm.
- Installation: With sides vertical.

512A TREE PIT ACCESSORIES SILVA CELL SYSTEM

- Locations: As drawing D2307 L.402 & D2307 L.409.
- Manufacturer: Submit proposals.
 - Product reference: Deeproot Silva Cell system.
 - Accessories: Planting Soil as per Silva Cell specification.

515 TREE PIT DRAINAGE

- Depth of excavation: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - Depth: 200 mm.
- Drainage pipes:
 - Type: Perforated plastics.
 - Diameter: 100 mm.
 - Position: Lay around perimeter of pit within aggregate layer.
 - Discharge: Connection to Engineer's specification and detail.
- Geotextile filter:
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Position: Lay over aggregate before installing tree or backfill.
- Completed pits: Test for free drainage before planting.

525 SEMIMATURE TREES

- Standard: Prepare roots and transplant to BS 4043.
- Backfilling material: As clause 585.
- Support: Underground guying to BS 4043.
- Protection: Not required.

535 STAKING GENERALLY

- Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
 - Preservative treatment: Not required.
- Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
- Stake size (minimum): 50 mm diameter.

575 SHORT DOUBLE STAKING FOR STANDARD TREES WITHIN SOFT LANDSCAPING

- Staking: Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting.
 - Backfilling: Consolidate material around stakes.
- Height of stakes: Cut to approximately 600 mm above ground level.
- Cross bar: Flexible webbing within 25 mm of top of stake.
 - Firmly fix on windward side of tree and as close as possible to stem.
- Ties: Adjustable ties.
- Tying: Secure tree firmly but not rigidly to cross bar.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

710 MAINTENANCE

- Duration: Carry out the operations in the following clauses from completion of planting until practical completion.
- Frequency of maintenance visits: Fortnightly during growing season.

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: In accordance with an agreed defects rectification programme..

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.

750 PLANTING MAINTENANCE GENERALLY

- Weed control: Maintain weed free area around each tree and shrub.
 - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - Keep planting beds clear of weeds: by maintaining full thickness of mulch.
- 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.
 - Broken or missing items: Replace.
 - Rubbing: Prevent.
 - Ties: Adjust to accommodate growth.
 - Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - Frequency of checks: at each scheduled maintenance visit..
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
- Trees: Spray crown when in leaf during warm weather.
 - Timing: After dusk.
- Watering: to ensure plant establishment..

755 PLANTING MAINTENANCE - FERTILIZER

- Time of year: March or April.
- Fertilizer: Slow release.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
- Application: Evenly spread, carefully incorporating below mulch materials.
- Application rate: 50 g/m²

760 PLANTING MAINTENANCE - PRUNING

- General: Prune to promote healthy growth and natural shape.
 - Dead, dying, diseased wood and suckers: Remove.
 - Timing: In accordance with the agreed maintenance schedule.
 - Trees: Favour a single central leading shoot.
- Arisings: Remove.

780 MAINTENANCE INSTRUCTIONS

- General: Before end of the maintenance period, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year: Provide a schedule of any ongoing maintenance problems experienced during the rectification period.

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

130 REINSTATEMENT

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

190 LITTER

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

195 PROTECTION OF EXISTING GRASS

- General: Protect areas affected by maintenance operations using boards/tarpaulins. Do not place excavated or imported materials directly on grass.

197 CLEANLINESS

- Soil and arisings: 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.

211 MAINTENANCE OF GRASSED AREAS

- Standard: To BS 7370-3. Carry out maintenance appropriate to each category of turf, as follows:
 - Objectives: To BS 7370-3, table 6.
 - Programme: To BS 7370-3, clause 11.
 - Mowing methods: To BS 7370-3, table 3.

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.

- 225 TREE STEMS
- Precautions: Do not use mowing machinery closer than 100 mm to tree stems. Use nylon filament rotary cutters and other hand held mechanical tools carefully to avoid damage to bark.
- 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.
- 320 LEVELLING HOLLOWS AND BUMPS IN TURF
- Standard: To BS 7370-3, clauses 12.4 and 12.5.
- 380 REINSTATEMENT OF DAMAGED LAWNS
- Damaged turf: Remove to a depth of 40 mm.
 - Preparation: Cultivate substrate to a fine tilth.
 - Reinstatement: Contractor's choice of returfing or topsoiling and reseeding:
 - Returfing: Quality and appearance to match existing.
 - Reseeding: Fill with fine topsoil to BS 3882 multi purpose class, free from stones, debris and weeds. Reseed with a seed mix to match existing grass in quality and appearance.
 - Protection and watering: Provide as necessary to promote successful germination and/ or establishment.
- 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

- 502 ESTABLISHMENT OF NEW PLANTING - FERTILIZER
- Time of year: March or April.
 - Type: Organic.
 - Spreading: Spread evenly. Carefully lift and replace any mulch materials.
 - Application rate: As manufacturer's recommendations.
- 510 TREE STAKES AND TIES
- Inspection/ Maintenance times: As scheduled and immediately after strong winds.
 - Stakes:
 - Replace loose, broken or decayed stakes to original specification.
 - If longer than half of clear tree stem height, cut to this height in spring. Retie to tree firmly but not tightly with a single tie.
 - Ties: Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
 - Where chafing has occurred, reposition or replace ties to prevent further chafing.
 - Removal of stakes and ties: When instructed.
 - Fill stake holes with lightly compacted soil.

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.

540 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.
- 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.

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.

580 PRUNING FLOWERING SPECIES OF SHRUBS AND ROSES

- 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.

600 TRIMMING RAPIDLY ESTABLISHING HEDGES

- General: Allow to reach planned height as rapidly as possible.
 - Form: Trim back lateral branches moderately.

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.

635 REINSTATEMENT OF SHRUB/ HERBACEOUS AREAS

- Dead and damaged plants: Remove.
- Mulch/ matting materials:
 - Carefully move to one side and dig over the soil, leaving it fit for replanting.
 - Do not disturb roots of adjacent plants.
- Replacement plants:
 - Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
 - Additional requirements: None.
- Dressing: Slow release fertilizer:
 - Type: Organic.
 - Application rate: As manufacturer's recommendations.

- 645 WEED CONTROL GENERALLY
- Weed tolerance: At all times, weed cover less than 5% and no weed to exceed 100 mm high.
 - 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: Reinstate to original depth.
- 657 HERBICIDE TO KILL REGROWTH
- Type: Suitable foliar acting herbicide to kill regrowth.
 - Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.
- 665 WEED CONTROL WITH WINTER HERBICIDE
- 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 dead weeds.
- 670 WEED CONTROL WITH SUMMER HERBICIDE
- Type: Suitable foliar acting herbicide.
 - Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.
- 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.

TREE WORK

- 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 if unavoidable.
 - 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: 2.5 m above footpaths.
- 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.

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.

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.

HARD LANDSCAPE AREAS/FENCING

910 HARD SURFACES AND GRAVEL AREAS

- Herbicide: Apply a suitable foliar acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
- Hard surfaces: Remove litter, leaves and other debris.
- 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.
- Repairs to flexible bituminous pavings: In accordance with the original paving specification or BS 7370-2, clause 4.12.
- Stain removal: In accordance with BS 7370-2, table 4.

Q40
Fencing

Q40 Fencing

To be read with Preliminaries/ General conditions.

FENCING SYSTEMS

310A BT2 CLOSE BOARDED FENCING

- Manufacturer: Jacksons.
 - Product reference: Contractor's choice.
- Standard: To BS 1722-5, type PW 180A.
- Height: 1800 mm.
- Wood: Treated Softwood.
 - Treatment: To provide a 30 year service life.
 - Finish: Submit proposals.
- Boards/ rails: Softwood feather edged boards on rectangular rails.
- Posts: Wood.
- Centres of posts (maximum): 2.4 m.
- Method of setting posts: 300 mm square or round holes, 600 mm deep filled to not less than half the depth with concrete .
- Accessories: Single leaf gate and Wood gravel board.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.

GATES, POSTS AND STILES

570A G1 GATES

- Manufacturer: To match boundary type.
 - Product reference: Submit proposals.
- Sizes: Single/Double Leaf Gate.
- Posts: To match boundary type.
- Finish as delivered: To match boundary type.
- Fittings: to manufacturers specifications.
 - Finish: To match boundary type.
- Method of fixing: to manufacturers specification.
- Accessories: Locks, Hinges, Floor Locks, Fixings supplier by manufacturer.

EXECUTION

710 INSTALLATION GENERALLY

- Set out and erect:
 - Alignment: Straight lines or smoothly flowing curves.
 - Tops of posts: Following profile of the ground.
 - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
 - Fixings: All components securely fixed.

720 SETTING POSTS IN CONCRETE

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
- Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
- Admixtures: Do not use.
- Holes: Excavate neatly and with vertical sides.
- Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
- Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

760 NAILED WOOD RAILS

- Length (minimum): Two bays, with joints in adjacent rails staggered.
- Fixing: Nail each length of rail to each post with two 100 mm galvanized nails.
- Rails with split ends: Replace.

770 SITE CUTTING OF WOOD

- General: Kept to a minimum.
- Below or near ground level: Cutting prohibited.
- Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution recommended for the purpose by main treatment solution manufacturer.

780 MAKING GOOD GALVANIZED SURFACES

- Treatment of minor damage (including on fasteners and fittings): Low melting point zinc alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint to BS 4652.
- Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

790 SITE PAINTING

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

COMPLETION

910 CLEANING

- General: Leave the works in a clean, tidy condition.
- Surfaces: Clean immediately before handover.

920 FIXINGS

- All components: Tighten.
 - Timing: Before handover.

930 GATES

- Hinges, latches and closers: Adjust to provide smooth operation. Lubricate where necessary.
 - Timing: Before handover.

Q50
Site/street furniture/equipment

Q50 Site/street furniture/equipment

To be read with Preliminaries/ General conditions.

SITE AND STREET FURNITURE

330B FT2 ROTARY CLOTHES DRIER

- Manufacturer: Contractor's choice.
 - Product reference: Contractor's proposal for approval.
- Size: 50 m drying length.
 - Arms: 4.
- Method of fixing: Galvanized steel socket in concrete base.

INSTALLATION

510 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Concrete: Designated, not less than GEN 1.
- 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.

515 SETTING COMPONENTS IN CONCRETE

- Holes: 250 x 250 x minimum 300 mm deep.
- Components: Accurately positioned and securely supported.
- Concrete fill: Fully compacted as filling proceeds.
- Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
- Temporary component support: Maintain undisturbed for minimum 48 hours.

550 DAMAGE TO GALVANIZED SURFACES

- Minor damage in areas up to 40 mm² (including on fixings and fittings): Make good.
 - Material: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
 - Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

560 SITE PAINTING

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