

Exterior Architecture

VITA

St Johns T1

T1-EXA-G710-RP-XX-920

St Johns T1 Landscape Specification

C01

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E10

Mixing/casting/curing in situ concrete

Clauses

2 To be read with preliminaries/general conditions.

Concrete

101 Specification

1. Concrete generally: To BS 8500-2.
2. Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

Materials, batching and mixing

215 Ready-mixed concrete

1. Production plant: Currently certified by a body accredited by UKAS to BS EN ISO/IEC 17065 for product conformity certification of ready-mixed concrete.
2. Source of ready-mixed concrete: Obtain from one source if possible. Otherwise, submit proposals.
 - 2.1. Name and address of depot: Submit before any concrete is delivered.
 - 2.2. Delivery notes: Retain for inspection.
3. Declarations of nonconformity from concrete producer: Notify immediately.

315 Aggregates for exposed visual concrete

1. Limitations on contaminants: Free from absorbent particles which may cause 'popouts', and other particles such as coal and iron sulfide which may be unsightly or cause unacceptable staining.
2. Colour: Consistent.
3. Supply: From a single source and maintained throughout the contract.
4. Samples: Submit on request.

415 Admixtures

1. Calcium chloride and admixtures containing calcium chloride: Do not use.

Project testing/ certification - Not Used

Placing/ compacting/ curing and protecting

630 Premature water loss

1. Requirement: Prevent water loss from concrete laid on absorbent substrates.
 - 1.1. Underlay: Select from:
 - 1.1.1. Polyethylene sheet: 250 micrometres thick.
 - 1.1.2. Building paper: To BS 1521, grade B1F.
 - 1.2. Installation: Lap edges 150 mm.

640 Construction joints

1. Location of joints: 15mm expansion joint every approx. 3 x 3 meter surface to engineer's specification

2. **Preparation of joint surfaces:** Remove surface laitance and expose aggregate by lightly brushing and spraying. Joint surface to be clean and damp immediately before placing fresh concrete

650 Surfaces to receive concrete

1. **Cleanliness of surfaces immediately before placing concrete:** Clean with no debris, tying wire clippings, fastenings or free water.

680 Placing

1. **Records:** Maintain for time, date and location of all pours.
2. **Timing:** Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
3. **Temperature limitations for concrete:** 30°C (maximum) and 5°C (minimum), unless otherwise specified. Do not place against frozen or frost covered surfaces.
4. **Continuity of pours:** Place in final position in one continuous operation up to construction joints. Avoid formation of cold joints.
5. **Discharging concrete:** Prevent uneven dispersal, segregation or loss of ingredients or any adverse effect on the formwork or formed finishes.
6. **Thickness of layers:** To suit methods of compaction and achieve efficient amalgamation during compaction.
7. **Poker vibrators:** Do not use to make concrete flow horizontally into position, except where necessary to achieve full compaction under void formers and cast-in accessories and at vertical joints.

690 Compacting

1. **General:** Fully compact concrete to full depth to remove entrapped air. Continue until air bubbles cease to appear on the top surface.
 - 1.1. **Areas for particular attention:** Around reinforcement, under void formers, cast-in accessories, into corners of formwork and at joints.
2. **Consecutive batches of concrete:** Amalgamate without damaging adjacent partly hardened concrete.
3. **Methods of compaction:** To suit consistence class and use of concrete.

810 Curing generally

1. **Evaporation from surfaces of concrete:** Prevent, including from perimeters and abutments, throughout curing period.
 - 1.1. **Surfaces covered by formwork:** Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
 - 1.2. **Top surfaces:** Cover immediately after placing and compacting. If covering is removed for finishing operations, replace it immediately afterwards.
2. **Surface temperature:** Maintain above 5°C throughout the specified curing period or four days, whichever is longer.
3. **Records:** Maintain details of location and timing of casting of individual batches, removal of formwork and removal of coverings. Keep records on site, available for inspection.

811 Coverings for curing

1. **Sheet coverings:** Suitable impervious material.
2. **Curing compounds:** Selection criteria:
 - 2.1. **Curing efficiency:** Not less than 75% or for surfaces exposed to abrasion 90%.
 - 2.2. **Colouring:** Fugitive dye.
 - 2.3. **Application to concrete exposed in the finished work:** Readily removable without disfiguring the surface.

- 2.4. Application to concrete to receive bonded construction/ finish: No impediment to subsequent bonding.
- 3. Interim covering to top surfaces of concrete: Until surfaces are in a suitable state to receive coverings in direct contact, cover with impervious sheeting held clear of the surface and sealed against draughts at perimeters and junctions.

817 Curing class

- 1. Standard: To BS EN 13670 Curing class 1.

840 Protection

- 1. Prevent damage to concrete, including
 - 1.1. Surfaces generally: From rain, indentation and other physical damage.
 - 1.2. Surfaces to exposed visual concrete: From dirt, staining, rust marks and other disfiguration.
 - 1.3. Immature concrete: From thermal shock, physical shock, overloading, movement and vibration
 - 1.4. In cold weather: From entrapment and freezing expansion of water in pockets, etc.

Ω End of Section

E20

Formwork for in situ concrete

Clauses

2 To be read with preliminaries/ general conditions.

Generally/ preparation

110 Loadings

1. Requirement: Design and construct formwork to withstand the worst combination of the following:
 - 1.1. Total weight of formwork, reinforcement and concrete.
 - 1.2. Construction loads including dynamic effects of placing, compacting and construction traffic.
 - 1.3. Wind and snow loads.

Construction

310 Accuracy

1. General requirement for formwork: Accurately and robustly constructed to produce finished concrete in the required positions and to the required dimensions.
2. Formed surfaces: Free from twist and bow (other than any required cambers).
3. Intersections, lines and angles: Square, plumb and true.

320 Joints in forms

1. Requirements including joints in form linings and between forms and completed work
 - 1.1. Prevent loss of grout, using seals where necessary.
 - 1.2. Prevent formation of steps. Secure formwork tight against adjacent concrete.

Striking - Not Used

Formed finishes

620 Plain finish

1. Location: Surfaces to be brush finished
2. Finish: Even and dense. Arrange formwork panels in a regular pattern as a feature of the surface.
3. Permissible deviation of surfaces
 - 3.1. Sudden irregularities (maximum): 3 mm.
 - 3.2. Gradual irregularities (maximum): 3 mm, when measured from the underside of a 1 m straightedge, placed anywhere on surface.
4. Variations in colour
 - 4.1. Permitted: Those caused by impermeable formwork linings.
 - 4.2. Not permitted: Those caused by contamination or grout leakage.
5. Surface blemishes
 - 5.1. Permitted: Blowholes less than 5 mm in diameter and at an agreed frequency.
 - 5.2. Not permitted: Voids, honeycombing, segregation and other large defects.
6. Formwork tie holes: In a regular pattern and filled with matching mortar.

Ω End of Section

E40

Designed joints in in situ concrete

To be read with preliminaries/general conditions.

120 Construction/movement joints generally

1. Accuracy: Position and form joints accurately, straight, well-aligned and truly vertical or horizontal or parallel with setting out lines of the building.
2. Modifications to joint design or location: Submit proposals.
3. Placing concrete to form movement joints:
 - 3.1. Maintain effectiveness of joints. Prevent concrete entering joints or penetrating or impregnating compressible joint fillers.
 - 3.2. Do not place concrete simultaneously on both sides of movement joints.

210 Formed joints

1. Forms/ stop ends generally: Rigid and grout-tight.
2. Forms/ stop ends for projecting continuity reinforcement: To accommodate bars or fabric without temporary bending or displacement.

211 Formed joints in concrete wearing surfaces

1. Temporary forms: Square edged with a steel top surface.
2. Placing concrete: Compact thoroughly at edges to give level, closely abutted joints with no lipping.

230 Preparation of construction joints

1. Roughening of joint surfaces: Select from:
 - 1.1. Brushing and spraying: Remove surface laitance and expose aggregate finish while concrete is still green.
 - 1.2. Other methods: Submit proposals.
2. Condition of joint surfaces immediately before placing fresh concrete: Clean and damp.

420 Fabric tie strips

1. Standard: To BS 4483.
2. Cleanliness: Free from corrosive pitting, loose millscale, loose rust and contaminants which may adversely affect the fabric, concrete, or bond between the two.
3. Position: Width of the mesh strip centred on the joint.

520 Sheet joint filler

1. Description: For expansion joints
2. Manufacturer: Submit proposals
 - 2.1. Product reference: TBC
3. Joints finished with sealant: Leave sufficient space for sealant by using temporary formers.

Ω End of Section

E41

Worked finishes to in situ concrete

To be read with preliminaries/ general conditions.

150 Finishing

1. **Timing:** Carry out at optimum times in relation to setting and hardening of concrete.
2. **Prohibited treatments to concrete surfaces**
 - 2.1. Wetting to assist surface working.
 - 2.2. Sprinkling cement.

230 Brushed finish

1. **Surface on completion:** Light, even texture.

320 Trowelled finish

1. **Surface on completion:** Adjacent to building and kerbs, 50mm border. Uniform, smooth but not polished, free from trowel marks and blemishes, and suitable to receive specified flooring material.

530 Slip resistance testing of wearing surfaces

1. **Test:** To BS 7976-2 using a Transport Research Laboratory (TRL) Pendulum.
 - 1.1. **Timing:** Give adequate notice.
2. **Test results:** Submit, inclusive of slip resistance values (pendulum test value [PTV]), in the wet and dry states.

Ω End of Section

L37

External stair, ramps, handrail and balustrades systems

General

110 Stair systems

1. Description: TO NORTH WESTERN ENTRANCE
2. Type: Built in situ
3. Base/ Fabric: Precast concrete step units
4. Surface: Precast concrete step units
 - 4.1. Finish: Not required
5. Unobstructed width: As shown on drawing T1-EXA-G710-DE-XX-601
6. Accessories: 'Corduroy' hazard warning surface as section Q25, Handrail system

150 Handrail systems

1. Description: Handrails to steps
2. System manufacturer: Sterling Fabrication Services
3. Material: Stainless steel
 - 3.1. Cross section: As shown on drawing T1-EXA-G710-DE-XX-601
 - 3.2. Finish: Polyester powder-coated
4. Height (to upper surface of handrail)
 - 4.1. Above pitch line: 1100 mm
 - 4.2. Above landing: 1100 mm
5. Accessories: Powder coated steel cover plate

System performance - Not Used

Products

310 Precast concrete step unit

1. Description: Steps to North West Entrance
2. Manufacturer: Marshalls
 - 2.1. Product reference: Conservation Step Units
3. Standard: To BS EN 771-2 and -3.
4. Size
 - 4.1. Surface width: As shown on drawing T1-EXA-G710-DE-XX-601
 - 4.2. Going: 280 mm
 - 4.3. Rise: 150 mm
5. Colour: Silver grey
6. Finish: Conservation Textured
 - 6.1. Slip resistance value of integral tread - water wet (minimum): Not applicable
 - 6.2. Slip resistance value of integral nosing - water wet (minimum): Not applicable
 - 6.2.1. Colour of integral nosing: Black
7. Accessories: Visibility strip

Fabrication

510 Fabrication generally

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

Execution

610 Loading

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

620 Concrete foundations generally

1. **Standard:** To BS 8500-2. Final detail to engineer's specification
2. **Concrete:** Designated not less than GEN 1 or standard prescribed not less than ST2.
3. **Admixtures:** Do not use.
4. **Foundation holes:** Neat vertical sides.
5. **Depth of foundations, bedding, haunching:** Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

650 Installation generally

1. **Fasteners:** To section Z20.
2. **Structural members:** Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
3. **Temporary support:** Do not use finished work as temporary support or strutting for other work.
4. **Applied finishes:** Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

662 Adverse weather

1. **General:** Do not use frozen materials and do not lay on frozen surfaces.
2. **Working limits:** Do not lay blocks/ dressings:
 - 2.1. **Cement gauged mortars:** When the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of not less than 4°C when laid and work is thoroughly protected).
 - 2.2. **Hydraulic lime:sand mortars:** When the air temperature is at or below 5°C and falling or below 3°C and rising.
3. **Temperature of the work:** Maintain above freezing until mortar has fully set.
4. **Newly erected work:** Protect from precipitation; Prevent rapid drying in hot conditions.
5. **Remedial work:** Rake out and replace mortar damaged by frost.
 - 5.1. **Damaged work:** Rebuild.

670 Installation of tread inserts/ nosings

1. Treads: Fully cured, sound and level.
2. Fixing
 - 2.1. Location/ position: In accordance with BS 8300
 - 2.2. Fixings: As supplied
 - 2.2.1. Centres: As supplied

Completion - Not Used

Ω End of Section

Q10

Kerbs/ edgings/ channels/ paving accessories

Clauses

2 To be read with preliminaries/general conditions.

Types of kerbs/edgings and channels

110 Proprietary precast concrete

1. Description: Square channel
2. Standard: To BS EN 1340.
3. Manufacturer: Marshalls or similar approved
4. - Product reference: Square Channel
5. Recycled content: As supplied
6. Designations: CS1 Channel, square
7. Size (width x height x length): 125 x 150 x 914 mm
8. Special shapes: External radius kerbs as shown on drawings
9. Finish: As cast
10. Colour: Natural
11. Bedding: Cement mortar
12. Joints generally: Narrow mortar
13. Sealant movement joints: Not required
14. Accessories: None

110A Proprietary precast concrete: Conservation X Kerb

1. Description: Kerbs
2. Standard: To BS EN 1340.
3. Manufacturer: Marshalls
4. - Product reference: Conservation X Kerb
5. Recycled content: As supplied
6. Designations: EF Edging, flat top
7. Size (width x height x length): 145 x 255 x 915 mm
8. Special shapes: External radius kerbs as shown on drawings
9. Finish: As cast
10. Colour: Silver Grey
11. Bedding: Cement mortar
12. Joints generally: Narrow mortar
13. Sealant movement joints: Not required
14. Accessories: None

200 Special

1. Description: Planter edging
2. Manufacturer: Sterling Fabrication Services
 - 2.1. Product reference: Raised planter
3. Size: As shown in drawing T1-EXA-G710-DE-XX-701

4. Type/ Material: Bronze Interpon YX355F powder coat
5. Joints: As supplied

Roads/paving accessories/ marking/ demarcation - Not Used

Laying

510 Laying kerbs, edgings and channels

1. Cutting: Neat, accurate and without spalling. Form neat junctions.
 - 1.1. Long units (450 mm and over) minimum length after cutting: 300 mm.
 - 1.2. Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
2. 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.
3. 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

1. 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

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

547 Bedding/ Backing of units on fresh concrete races

1. Standard: To BS 7533-6.

560 Haunching dowels

1. Dowels: Steel bar to BS 4482. To engineer's specification
 - 1.1. Size: 12 mm diameter, 150 mm long.
2. Installation of dowels: Vertically into foundation while concrete is plastic.
 - 2.1. Centres: 450 mm.
 - 2.2. Distance from back face of kerb: 50 mm.
 - 2.3. Projection: 75 mm.
3. Haunching: Rectangular cross section, cast against formwork, fully enclosing and protecting dowels.

570 Channels

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

600 Radius kerbs/ channels

1. Usage: Radii of 15 m or less.

620 Accuracy

1. Deviations (maximum)

- 1.1. Level: ± 6 mm.
- 1.2. Horizontal and vertical alignment: 3 mm in 3 m.

625 Regularity of paved surfaces

- 1. Maximum undulation of (non-tactile) paving surface: 3 mm.
 - 1.1. Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- 2. Difference in level between adjacent units (maximum)
 - 2.1. Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
 - 2.2. Recessed, filled joints: 2 mm.
 - 2.2.1. Recess depth (maximum): 5 mm.
 - 2.3. Unfilled joints: 2 mm.
- 3. Sudden irregularities: Not permitted.

630 Narrow mortar joints

- 1. Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.
 - 1.1. Joint width: 3 mm.

Ω End of Section

Q21

In situ concrete roads/ pavings/ bases

Clauses

2 To be read with preliminaries/ general conditions.

Types of paving

110A Reinforced paving (designated concrete)

1. Description: Diamondcrete ra
2. Subgrade improvement layer: As section Q20
 - 2.1. Compacted thickness: 200 mm
3. Geotextile filter: To engineer's specification
4. Granular sub-base: To engineer's specification
5. Separation membrane: To engineer's specification
6. Concrete: To BS 8500-2.
 - 6.1. Designation: PAV1
 - 6.2. Fibres: As section E10
 - 6.3. Aggregate
 - 6.3.1. Size (maximum): 10mm
 - 6.3.2. Coarse recycled concrete aggregate: Not permitted.
 - 6.3.3. Additional aggregate requirements: None
 - 6.4. Consistence class: S1
 - 6.5. Additional mix requirements: None
7. Slab thickness (minimum): 200mm
8. Finish: Brushed
9. Reinforcement: refer to Engineer's details

110B Hardipave

1. Description: To service access
2. Subgrade improvement layer: As section Q20
 - 2.1. Compacted thickness: 40 mm
3. Geotextile filter: As section Q20
4. Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20
 - 4.1. Depth of Betumen: 60 mm
5. Separation membrane: Polyethylene sheet 125 micrometres thick, edges lapped 300 mm.
6. Concrete: To BS 8500-2.
 - 6.1. Designation: PAV1
 - 6.2. Fibres: As section E10
 - 6.2.1. Coarse recycled concrete aggregate: Not permitted.
 - 6.3. Consistence class: S1

General/ preparation

140 Ready-mixed concrete

1. **Production plant:** Currently certified by a body accredited by UKAS to BS EN ISO/IEC 17065 for product conformity certification.
2. **Source of ready-mixed concrete:** Obtain from one source if possible. Otherwise, submit proposals.
 - 2.1. **Name and address of depot:** Submit before any concrete is delivered.
 - 2.2. **Delivery notes:** Retain for inspection.
3. **Declarations of nonconformity from concrete producer:** Notify immediately.

145 Admixtures

1. **Calcium chloride and admixtures containing calcium chloride:** Do not use.

155 Project testing of concrete - general

1. **Testing:** To BS EN 206-1, annex B and BS 8500-1, annex B.
2. **Recording:** Maintain complete correlated records including:
 - 2.1. Concrete designation.
 - 2.2. Sampling, site tests, and identification numbers of specimens tested in the laboratory.
 - 2.3. Location of the parts of the structure represented by each sample.
 - 2.4. Location in the structure of the batch from which each sample is taken.
3. **Testing laboratory:** Accredited by UKAS or other national equivalent.
4. **Tests results**
 - 4.1. **Submission of reports:** Within one day of completion of each test.
 - 4.1.1. **Number of copies:** 1
 - 4.2. **Reports on site:** A complete set, available for inspection.
5. **Nonconformity:** Obtain instructions immediately

240 Sub-base preparation

1. **Surface:** Sound, free of debris, mud and soft spots, and suitably close textured.
2. **Levels and falls:** Within specified tolerances:
 - 2.1. **Vehicular areas:** ± 20 mm.
 - 2.2. **Pedestrian areas:** ± 12 mm.
 - 2.3. **Drainage outlets:** +0 to -10 mm of required finished level.
3. **Kerbs and edgings:** Complete, adequately bedded and haunched, and to required levels.

Laying concrete

310 Transporting concrete

1. **General:** Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability. Protect from heavy rain.
2. **Entrained air:** Anticipate effects of transport and placing methods in order to achieve specified air content.
3. **Placing:** Use suitable walkways and barrow runs for traffic over reinforcement and freshly placed concrete.

320 Laying concrete generally

1. **Timing:** Place as soon as practicable after mixing and while sufficiently plastic for full compaction. After discharge from the mixer do not add water or retemper.
2. **Temperature of concrete at point of delivery**
 - 2.1. In hot weather (maximum): 30°C.
 - 2.2. In cold weather (minimum): 5°C.
3. **Cold weather**
 - 3.1. Do not use frozen materials.
 - 3.2. Do not place concrete against frozen or frost covered surfaces.
 - 3.3. Do not place concrete when air temperature is below 3°C on a falling thermometer. Do not resume placing until rising air temperature has reached 3°C.
4. **Surfaces on which concrete is to be placed:** Free from debris and standing water.
5. **Placing in final position:** Place in one continuous operation up to construction joints.
 - 5.1. Do not place concrete simultaneously on both sides of movement joints.
6. **Spreading:** Spread and strike off with surcharge sufficient to obtain required compacted thickness.
7. **Adjacent work:** Form neat junctions and prevent damage. Keep clean all channels, kerbs, inspection covers, etc.

330 Compacting

1. **General:** Fully compact concrete to full depth (until air bubbles cease to appear on the surface) especially around reinforcement, cast-in accessories, into corners and at joints.
2. **Poker vibrators:** Do not use to make concrete flow into position. Do not allow to come into contact with fabric reinforcement.
3. **Wet formed joint grooves:** Rectify any irregularities by means of a vibrating float.
4. **Finish:** A dense, even textured surface free from laitance or excessive water.
 - 4.1. **Excess concrete:** Remove from top of groove formers.

340 Manhole cover and gully grating frames

1. **General:** Set frames in independent concrete slabs placed over, but slightly larger than, exterior of manhole shaft or gully pot and any concrete surround.
2. **Positioning of joints in main slab:** Set out so that manhole/ gully slabs are adjacent to a main transverse joint, wherever possible.
3. **Joints:** Separate the independent slabs from main slabs with 25 mm thick joint filler board. Set board 20 mm below top of slab to form a sealing groove.

350 Levels

1. **Lines and levels of finished surface:** Smooth and even, with regular falls to prevent ponding.
2. **Finished surfaces:** Within ± 6 mm of required levels (+6 or -0 mm adjacent to gullies and manholes).

360 Surface regularity

1. **General:** Where appropriate in relation to the geometry of the surface, the variation in gap under a 3 m straightedge (with feet) placed anywhere on the surface to be not more than 5 mm.
2. **Sudden irregularities:** Not permitted.

Joins

410 Joints generally

1. Layout: All joints to be accurately located, straight and well aligned.
2. Construction joints made at end of working day: Form as contraction joints.
3. Modifications to joint design or location: Submit proposals.
4. Temporary support: Prior to concreting, set formwork, dowel bars, tie bars, joint filler boards, sealing groove fillets and the like rigidly in position and support to prevent displacement. Maintain support until concrete has set.
5. Keep clean
 - 5.1. Do not allow concrete to enter gaps or voids in formwork or to render movement joints ineffective.
 - 5.2. Do not allow concrete to impregnate or penetrate materials used as compressible joint fillers.

Surface finish

530 Brushed finish

1. Direction: At right angles to longitudinal direction of the slab.
2. Texture depth: Approximately 1 mm with finished surface having an overall even texture.

Curing/ protection/ finishing

610 Curing

1. General: Immediately after completion of surface treatment prevent evaporation from surface and exposed edges of slabs for a minimum period of seven days.
2. Early curing
 - 2.1. Cover with waterproof sheeting held clear of surface. Seal against draughts at edges and junctions.
 - 2.2. Do not apply sprayed compounds or sheets in direct contact until surface is in a suitable state and will not be marked.
3. Coverings for curing: Contractor's choice of:
 - 3.1. Impervious sheet material.
 - 3.2. Resin based aluminized curing compound containing a fugitive dye and with an efficiency index of 90% when tested to BS 7542.
 - 3.3. Sprayed plastics film.

660 Protection

1. Prevent damage to concrete
 - 1.1. From rain, indentation, physical damage, dirt, staining, rust marks and other disfiguration.
 - 1.2. From thermal shock.
 - 1.3. In cold weather, from freezing expansion of water trapped in pockets, etc.
 - 1.4. By use as a building platform or for storing, mixing or preparing materials.

Ω End of Section

Q25

Slab/brick/sett/cobble pavings

Clauses

2 To be read with preliminaries/ general conditions.

General - Not Used

System performance - Not Used

Products

310 Natural stone slabs

1. Description: For pedestrian areas
2. Standard: To BS EN 1341.
3. Supplier: Blyth Marble
 - 3.1. Product reference:
4. Petrographical description/ stone type: Granite
5. Finish: Leather, Premium Black
6. Sizes: W 1375 x L 1987 x D 30mm
 - 6.1. Plan dimension deviation class: P1
 - 6.2. Diagonal deviation class: D1
 - 6.3. Thickness deviation class: T1
7. Arrises: Bevelled
8. Breaking strength: Class 4
9. Slip resistance: As supplied
10. Skid resistance: As supplied
11. Surface treatment: None

320A Tactile flags and slabs

1. Description: Blister paving flags
2. Standard: To DD CEN/TS 15209.
3. Material: Precast concrete
 - 3.1. Manufacturer: Marshalls
 - 3.1.1. Product reference: Blister Paving
4. Recycled content: Not applicable
5. Nominal sizes: 400 x 400 x 50 mm
6. Colour: Charcoal
7. Type of surface: Blister – type B1

390 Sand/ fine aggregate for unbound laying course and jointing of concrete flag paving

1. Description: To tactile paving areas
2. Standard: To BS 7533-4, unbound construction laying course and jointing material.
3. Purity: Free from deleterious salts, contaminants, lime and cement.
4. Procurement: Obtain from one source and ensure consistent grading.

440 Ready-mixed mortar

1. **Description:** To mortar joints between granite paving
2. **Type:** Grout
3. **Standard/ Performance requirements:** To be suitable for occasional service vehicle trafficking
4. **Manufacturer:** Steintic
 - 4.1. **Product reference:** Tuffbed
5. **Consistency:** Slurry

Execution

620 Adverse weather

1. **General**
 - 1.1. **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.
 - 1.2. **Frozen materials:** Do not use. Do not lay bedding on frozen or frost covered bases.
2. **Paving with mortar joints and/ or bedding**
 - 2.1. **Protect from frost damage, rapid drying out and saturation until mortar has hardened.**
3. **Paving laid and jointed in sand:**
 - 3.1. **Stockpiled bedding sand:** Protect from saturation.
 - 3.2. **Exposed areas of sand bedding and uncompacted areas of sand bedded paving:** Protect from heavy rainfall.
 - 3.3. **Saturated sand bedding:** Remove and replace, or allow to dry before proceeding.
 - 3.4. **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

1. **Appearance:** Smooth and even with regular joints and accurate to line, level and profile.
2. **Falls:** To prevent ponding.
3. **Bedding of paving units:** Firm so that rocking or subsidence does not occur or develop.
 - 3.1. **Bedding/ Laying course:** Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
4. **Slopes:** Lay paving units upwards from the bottom of slopes.
5. **Paving units:** Free of mortar and sand stains.
6. **Cutting:** Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

630 Levels of paving

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

670 Laying granular layer over existing bases

1. **Thickness** 270 mm.
2. **Compaction:** Laying granular sub-bases for vehicular areas, as section Q20

3. Blinding: As section Q20

Completion

915 Completion of paving with dry sand or fine aggregate filled joints

1. Sand dressing: Not required
2. Final compaction of the surface course: In accordance with BS 7533-3.
3. Vacuum cleaning machines: Not allowed.

Ω End of Section

Q28

Topsoil and soil ameliorants

Clauses

2 To be read with preliminaries/ general conditions.

System outline

105 Container planting growing media system

1. Description: Bespoke raised planter, Sterling Fabrication Services
2. Composition
 - 2.1. Soil: Imported topsoil to BS 3882
 - 2.2. Ameliorants: Organic materials and Fertilizer to be incorporated into topsoil
 - 2.3. Accessories: None

145 Planting pit backfilling topsoil system

1. Description: For tree pits
2. Composition
 - 2.1. Topsoil: Imported topsoil to BS 3882
 - 2.2. Ameliorants: Organic materials and Fertilizer
 - 2.3. Accessories: None

155 Mulching and top dressing system

1. Description: For all raised planters
2. Composition
 - 2.1. Material: 50mm mid dark-brown ornamental bark mulch by Cotswold or similar approved

Products

300 Preparation materials generally

1. Purity: Free of pests and disease.
2. 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.
3. Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - 3.1. Corrosive, explosive or flammable.
 - 3.2. Hazardous to human or animal life.
 - 3.3. Detrimental to healthy plant growth.
4. Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
5. Objectionable odour: None.
6. 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

1. Materials: Composted bark
2. Give notice: before ordering or using.

3. Declaration of compliance in accordance with BS EN 13650: Required

310 Materials not permitted

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

315 Imported topsoil to BS 3882

1. Description: For tree pits and raised planters
2. Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
3. Standard: To BS 3882.
4. Classification: Multipurpose
 - 4.1. Soil textural class to BS 3882, Figure 1: Sandy loam
5. Source: Submit proposals
 - 5.1. Product reference: Submit proposals

315 Imported subsoil to BS 8601

1. Description: For tree pits and raised planters
2. Quantity: Provide as necessary to make up any deficiency of subsoil existing on site and to complete the work.
3. Standard: To BS 8601.
4. Classification: Multipurpose
5. Source: Submit proposals
 - 5.1. Product reference: Submit proposals

Execution

605 Site investigation

1. Report: See section A11.

620 Importing topsoil

1. Give notice: Before stripping topsoil for transfer to site.
 - 1.1. Notice period: 14 days

630 Documentation for imported topsoil

1. Description: For tree pits and raised planters
2. Timing: Submit at handover.
3. Contents
 - 3.1. Full description of all soil components.
 - 3.2. Record of source for all soil components.
 - 3.3. Record drawings showing the location and depth of all soils by type and grade.
 - 3.4. Declaration of analysis: in accordance with BS 3882, clause 6 and Table 1.
4. Number of copies: One

650 Notice

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Spreading topsoil.

- 1.3. Applying herbicide.
- 1.4. Applying fertilizer.
- 1.5. Visiting site during maintenance period.
2. Period of notice: 2 weeks

655 Mechanical tools

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

670 Inspecting formations

1. Give notice: Before spreading topsoil for TO TREE PITS.
2. Notice period: 14 days

685 Surplus materials to be removed

1. Topsoil removal from site: Topsoil remaining after completion of all landscaping work
2. Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

700 Grading of topsoil

1. Topsoil condition: Reasonably dry and workable.
2. Contours: Smooth and flowing, with falls for adequate drainage.
 - 2.1. Hollows and ridges: Not permitted.
3. Give notice: If required levels cannot be achieved by movement of existing soil.

705 Handling topsoil

1. Standard: In accordance with BS 3882.
2. Aggressive weeds: Give notice and obtain instructions before moving topsoil.
3. Plant: Select and use plant to minimize disturbance, trafficking and compaction.
4. Contamination: Do not mix topsoil with:
 - 4.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 4.2. Other grades of topsoil.
5. Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
6. 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 on:

1. Description: For tree pits and raised planters
2. Standard: In accordance with BS 3882.
3. Temporary roads/ surfacing: Remove before spreading topsoil.
4. Layers
 - 4.1. Depth (maximum): 150 mm.
 - 4.2. Gently firm each layer before spreading the next.
5. Depth after firming and settlement: 300 mm
6. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 Loose tipping of topsoil

1. Standard: In accordance with BS 3882.

2. **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.

Completion

905 Applying maintenance fertilizer to soil

1. **Description:** To container planting
2. **Duration:** Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.
3. **Time of year:** March or April
4. **Application:** Evenly spread, carefully incorporating below mulch materials.
5. **Rate:** To manufacturer's recommendations

Ω End of Section

Q31 External planting

Clauses

2 To be read with preliminaries/general conditions.

General information/ requirements

112 Site clearance generally

1. **General:** Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. **Stones:** Remove those with any dimension exceeding 50 mm.
3. **Contamination:** Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. **Vegetation:** N/A
5. **Large roots:** Grub up and dispose of without undue disturbance of soil and adjacent areas.
6. **Additional requirements:** None

118 Soil conditions

1. **Soil for cultivating and planting:** Moist, friable and (except in aquatic/ marginal planting) not waterlogged.
2. **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

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

125 Times of year for planting

1. **Deciduous trees and shrubs:** Late October to late March.
2. **Conifers and evergreens:** September/ October or April/ May.
3. **Herbaceous plants (including marginal):** September/ October or March/ April.
4. **Container grown plants:** At any time if ground and weather conditions are favourable.
 - 4.1. **Watering and weed control:** Provide as necessary.
5. **Dried bulbs, corms and tubers:** September/ October.
6. **Colchicum (crocus):** July/ August.
7. **Green bulbs:** After flowering in spring.
8. **Wildflower plugs:** Late August to mid November or March/ April.
9. **Aquatic plants:** May/ June or September/ October.

130 Mechanical tools

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

145 Watering

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

160 Notice

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Applying herbicide.
 - 1.3. Applying fertilizer.
 - 1.4. Delivery of plants/ trees.
 - 1.5. Planting shrubs.
 - 1.6. Planting trees into previously dug pits.
 - 1.7. Visiting site during maintenance period.
2. Period of notice: Two weeks

170 Soil requirements

1. Type
 - 1.1. Planted beds: Planting bed soil system, as section Q28
 - 1.2. Tree pits, shrub pits and other backfilling: Plant pit backfilling soil system, as section Q28
 - 1.3. External container planting: Container planting growing media system, as section Q28
 - 1.4. Mulch applied after planting: Mulching and top dressing system, as section Q28

200 Plants/ Trees – general

1. Condition: Materially undamaged, sturdy, healthy and vigorous.
2. Appearance: Of good shape and without elongated shoots.
3. Hardiness: Grown in a suitable environment and hardened off.
4. Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
5. Budded or grafted plants: Bottom worked.
6. Root system and condition: Balanced with branch system.
 - 6.1. Standard: The National Plant Specification
7. Species: True to name.
8. Origin/ Provenance: Grown in the United Kingdom for at least one growing season, unless otherwise approved
9. Definition: Origin and Provenance have the meaning given in the National Plant Specification.

215 Plants/ Trees – specification criteria

1. Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification (available on CS Design Software Limited's website).

216 Plants/ Trees – specification criteria

1. Name, forms, dimensions and other criteria: To the relevant part of BS 3936.

235 Container grown plants/ Trees

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

245 Labelling and information

1. **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:
 - 1.1. Full botanical name.
 - 1.2. Total number.
 - 1.3. Number of bundles.
 - 1.4. Part bundles.
 - 1.5. Supplier's name.
 - 1.6. Employer's name and project reference.
 - 1.7. Plant specification, in accordance with scheduled National Plant Specification categories.
2. **Additional information:** Submit on request: - Country of origin;- Date supplied and consignment details or reference;- Potting dates;- Propagation method and dates; and- Pruning dates.

246 Labelling and information

1. **Standard:** To BS 3936.

255 Plants/ Trees reserved at supplier's premises

1. **Types/ Species:** As drawing 2236-EXA-XX-XX-DR-L-00200
2. **Predelivery inspection:** Give notice.
3. **Labelling:** Identify inspected plants/ trees as reserved for use on this project.

260 Plant/ Tree substitution

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

265 Plant handling, storage transport and planting

1. **Standard:** To CPSE 'Handling and establishing landscape plants'.
2. **Frost:** Protect plants from frost.
3. **Handling:** Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
4. **Plant packaging:** Coextruded polyethylene bags with black interior and white exterior
5. **Packaging of bulk quantities:** Pallets or bins sealed with polyethylene and shrink wrapped
6. **Planting:** Upright or well balanced with best side to front.

280 Treatment of tree wounds

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

290 Surplus material

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

Plant containers - Not Used

Preparation of planting beds/ planting materials

305 Weed control

1. Description: For invasive non-native weeds
2. Locations: All planting areas
3. General: Prevent weeds from seeding and perennial weeds from becoming established, by hand weeding.

Planting shrubs/ herbaceous plants/ bulbs

480 After planting

1. Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
2. 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.
3. Top dressing: Mulching and top dressing system, as section Q28
 - 3.1. Depth: 50 mm

Planting trees

500 Tree planting

1. Standard: Prepare trees and transplant in accordance with BS 8545

505 Tree pits

1. Sizes: To Green Blue Urban manufacturers drawing
2. Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. Excavated material: Separate topsoil and subsoil material and stockpile for backfilling
4. Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 150 mm.
 - 4.1. Treatment: Not required
5. Pit sides: Scarify.
6. Backfilling material: Excavated material from tree pit, installed to original soil profiles in accordance with BS 8545

510B Tree pit root barriers: (impermeable)

1. Locations: To Green Blue Urban manufacturers drawing
2. Manufacturer: GT Specifier or similar
 - 2.1. Product reference: GT Root Barrier 325 impermeable membrane or similar
3. Thickness: As supplied
4. Barrier depth: To Green Blue Urban manufacturers drawing
5. Foil liner: Not required.
6. Top of root barrier in relation to finished topsoil level: 25 mm above ground level
7. Installation: With sides vertical. Remove all sharp objects adjacent to barrier.

512A Tree pit irrigation and ventilation accessories

1. Locations: To all tree pits
2. Manufacturer: Green Blue Urban

- 2.1. **Product reference:** Rootrain Irrigation System
3. **Type:** Perforated plastics aeration/irrigation system
4. **Pipe diameter:** as supplied.
5. **Ring diameter:** As supplied.
6. **Inlet:** Black plastic with cap.
7. **Installation**
 - 7.1. **Pipe:** Lay in loop above root ball with slight fall away from inlet pipe. Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
 - 7.2. **Top cap of inlet:** Protruding slightly above finished surround level.
 - 7.3. **Backfill material:** Carefully compact in layers.

515 Tree pit drainage

1. **Locations:** To all tree pits
2. **Depth of excavation:** Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
3. **Aggregate layer:** Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - 3.1. **Depth:** 100mm.
4. **Geotextile filter**
 - 4.1. **Manufacturer:** GT Specifier or similar
 - 4.1.1. **Product reference:** GT Root Barrier 260 permeable membrane or similar
 - 4.2. **Position:** Lay over aggregate before installing tree or backfill.
5. **Completed pits:** Test for free drainage before planting.

520 Cellular structural soil system

1. **Locations:** All tree pits
2. **Manufacturer:** Green Blue Urban
 - 2.1. **Product reference:** To Green Blue Urban manufacturers drawings
3. **Geotextile membrane:** Install on top of soil system prior to installation of hard surfacing.
4. **Installation:** Ensure all void spaces are filled with lightly compacted growing medium prior to installation of further layers or sub-bases.

Woodland/ matrix/ buffer zone planting - Not Used

Protecting/ maintaining/ making good defects

710 Maintenance

1. **Duration:** Carry out the operations in the following clauses from completion of planting until the end of the rectification period.
2. **Frequency of maintenance visits:** In accordance with the agreed maintenance schedule

720 Failures of planting

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

740 Cleanliness

1. **Soil and arisings:** Remove from hard surfaces and grassed areas.
2. **General:** Leave the works in a clean tidy condition at completion and after any maintenance operations.

750 Planting maintenance generally

1. **Weed control:** Maintain weed free area around each tree and shrub.
 - 1.1. **Diameter (minimum):** The larger of 1 m or the surface of original planting pit.
 - 1.2. **Keep planting beds clear of weeds:** By hoeing, hand weeding and mulching.
2. **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.
3. **Precautions:** Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. **Firming up:** Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. **Trees:** Spray crown when in leaf during warm weather.
 - 5.1. **Timing:** After dusk.
6. **Tree accessories:** Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - 6.1. **Broken or missing items:** Replace.
 - 6.2. **Loose stakes:** Re-firm in the ground or replace as necessary to provide support to the tree.
 - 6.3. **Loose guys:** Re-firm anchor points and adjust as necessary to provide support to the tree.
 - 6.4. **Ties:** Adjust to accommodate growth and prevent constriction or abrasion.
 - 6.5. **Damage to bark:** Cut back neatly with sharp knife. Prevent further damage.
 - 6.6. **Frequency of checks:** As schedule.
7. **Watering:** As required for healthy establishment, depending on weather conditions

760 Planting maintenance – pruning

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

780 Maintenance instructions

1. **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

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

Ω End of Section

Q35 Landscape maintenance

Clauses

2 To be read with preliminaries/ general conditions.

Generally

110 Notice

1. Give notice before
 - 1.1. Application of herbicide.
 - 1.2. Application of fertilizer.
 - 1.3. Watering.
 - 1.4. Each site maintenance visit.
2. Period of notice: 7 days

130 Reinstatement

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

140 Control of mammalian pests

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

155 Watering

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

160 Water restrictions

1. 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.

190 Litter

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

197 Cleanliness

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

Grassed areas - Not Used

Flower beds/ seasonal beddings - Not Used

Shrubs/trees/hedges

500 Establishment of new planting

1. **Duration:** For duration of maintenance period - To be agreed
2. **Weed control**
 - 2.1. **Method:** Keep planting beds clear of weeds by maintaining full thickness of mulch.
 - 2.2. **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.
3. **Soil condition:** Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
4. **Watering:** Weekly during periods of drought in summer months or as required

515 Tree guy wires

1. **Inspection/ Maintenance times:** Annually and Immediately after strong winds
2. **Operations**
 - 2.1. Replace or resecure loose or missing guy wires.
 - 2.2. Adjust to suit stem growth and to provide correct and uniform tension.
3. **Removal:** Not required

520 Refirming of trees and shrubs

1. **Timing:** After strong winds, frost heave and other disturbances.
2. **Refirming:** Tread around the base until firmly bedded.
3. **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.

537 Nesting wild birds

1. **Survey:** Before starting hedge or tree work during the period of February to August (inclusive), carry out a survey by a qualified ecologist and submit report
2. **Accidental disturbance:** Report immediately.

540 Pruning generally

1. **Pruning:** In accordance with good horticultural and arboricultural practice.
 - 1.1. **Removing branches:** Do not damage or tear the stem or bark.
 - 1.2. **Wounds:** Keep as small as possible and cut cleanly back to sound wood.
 - 1.3. **Cutting:** Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - 1.4. **Larger branches:** Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
2. **Appearance:** Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well balanced natural appearance.
3. **Tools:** Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
4. **Disease or infection:** Give notice if detected.
5. **Growth retardants, fungicide or pruning sealant:** Do not use unless instructed.

545 Pruning of excessive overhang

1. **Timing:** As instructed
2. **Operations:** Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
3. **Special requirements:** None

550 Pruning of excessive height

1. **Timing:** As instructed
2. **Operations:** Remove excessive height As instructed.

555 Pruning trees and shrubs

1. **Standard:** To BS 7370-4.
2. **Special requirements:** None

620 Removal of dead plant material

1. **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.

630 Dead and diseased plants

1. **Removal:** Within 1 week of notification
2. **Replacement:** Within 2 weeks

645 Weed control generally

1. **Weed tolerance:** At all times, weed cover less than 5% and no weed to exceed 100 mm high
2. **Adjacent plants, trees and grass:** Do not damage.

650 Hand weeding

1. **General:** Remove weeds entirely, including roots.
2. **Disturbance:** Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
3. **Completion:** Rake area to a neat, clean condition.
4. **Mulch:** Reinstate to original depth.

680 Soil aeration

1. **Compacted soil surfaces**
 - 1.1. **Prick up:** To aerate the soil of root areas and break surface crust.
 - 1.2. **Size of lumps:** Reduce to crumb and level off.
 - 1.3. **Damage:** Do not damage plants and their roots.

685 Soil level adjustment

1. **Level of soil/mulch at edges of beds:** Reduce to 50 mm below adjacent grass or hard surface.
 - 1.1. **Arisings (if any):** Spread evenly over the bed.

690 Maintenance of loose mulch

1. **Thickness (minimum):** 50 mm
 - 1.1. **Top up:** Twice per year
2. **Mulch spill on adjacent areas:** Remove weeds and rubbish and return to planted area.

3. Weeding: Remove weeds growing on or in mulch by hand weeding.

695 Fertilizing established trees and shrubs

1. Time of year: During May or early June
2. Type of fertilizer: Slow release
3. Application: Spread evenly.
 - 3.1. Rate: As manufacturer's recommendations

700 Snow removal from shrubs/ trees

1. Standard: To BS 7370-4.
2. Plants subject to snow removal: All evergreens
3. Timing: Within 24 hours of snowfall

Tree work

810 Tree work generally

1. Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
2. Protection: Avoid damage to neighbouring trees, plants and property
3. Standards: To BS 3998 and Health & Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'.
4. Removing branches: Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
5. Appearance: Leave trees with a well balanced natural appearance.
6. Chain saw work: Operatives must hold a Certificate of Competence.
7. Tree work: To be carried out by an approved member of the Arboricultural Association.

815 Additional work

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

820 Prevention of wound bleeding

1. Standard: To BS 3998.

825 Prevention of disease transmission

1. Standard: To BS 3998.

830 Cleaning out and deadwooding

1. Remove
 - 1.1. Dead, dying, or diseased wood, broken branches and stubs.
 - 1.2. Fungal growths and fruiting bodies.
 - 1.3. Rubbish, windblown or accumulated in branch forks.
 - 1.4. Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
 - 1.5. Other unwanted objects, e.g. tree houses, swings.

835 Cutting and pruning generally

1. Tools: Appropriate, well maintained and sharp.

2. Final pruning cuts
 - 2.1. Chainsaws: Do not use on branches of less than 50 mm diameter.
 - 2.2. Hand saws: Form a smooth cut surface.
 - 2.3. Anvil type secateurs: Do not use.
3. Removing branches: Do not damage or tear the stem.
4. 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.
5. Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
6. Large branches: Remove only if unavoidable
 - 6.1. Remove in small sections and lower to ground with ropes and slings.
7. Dead branches and stubs: When removing, do not cut into live wood.
8. Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
9. Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

840 Crown reduction/ shaping

1. General: Cut back selectively to lateral or sublateral buds or branches to retain flowing branch lines without leaving stumps.
2. Operations: As schedule

845 Crown lifting

1. Clearances: Remove branch systems to give clearance.
 - 1.1. Height: As schedule
2. 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.

865 Bark damage

1. Wounds
 - 1.1. Do not attempt to stop sap bleeding.
 - 1.2. Bark: Remove ragged edges using a sharp knife.
 - 1.3. Wood: Remove splintered wood from deep wounds.
 - 1.4. Size: Keep wounds as small as possible.
2. Liquid or flux oozing from apparently healthy bark: Give notice.

Water areas - Not Used

Hard landscape areas/fencing

930 Graffiti removal

1. Method: Contractors Choice
2. Subsequent treatment: Not required
 - 2.1. Finish: Submit proposals.

Ω End of Section

Q50 Site/street furniture/equipment

Clauses

2 To be read with preliminaries/ general conditions.

Gates, barriers and parking controls

190 Bollards

1. Description: Fixed bollard for vehicle control
2. Manufacturer: Artform Urban Furniture Limited
 - 2.1. Product reference: Quick bollard
3. Material: Steel
 - 3.1. Finish as delivered: Polyester powder-coated, as section Z31
 - 3.2. Colour: Black Ral 9005
4. Height above ground: 1000 mm
5. Sectional size: 170 mm diameter
6. Top: Flat
7. Method of fixing: Root fixed in concrete base to engineer's specification in accordance with manufacturer's recommendations

Site and street furniture

210 Door barrier

1. Manufacturer: Broxap Street Furniture
 - 1.1. Product reference: Steel door barriers with cross bar
2. Type: N/A
3. Material: Stainless steel
 - 3.1. Finish: Polyester powder-coated, as section Z31
4. Accessories: None
5. Method of fixing: Fixed to ground with base plates bolted into concrete footing to Engineer's specification

262 Tree grilles

1. Description: To all tree pits
2. Manufacturer: Green Blue Urban
 - 2.1. Product reference: bespoke tree grilles
3. Material: Galvanised Steel
 - 3.1. Finish: Powder coated
 - 3.2. Colour: Black
4. Size: 1800mm outer diameter, 600mm inner diameter
5. Accessories/ Special requirements: N/A
6. Method of fixing: Fixed to concrete base as in Green Blue Urban manufacturers drawings

Installation

510 Concrete foundations generally

1. Standard: To BS 8500-2.
2. Concrete: To Engineers specification
3. Admixtures: Do not use.
4. Foundation holes: Neat vertical sides.
5. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

560 Site painting

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

Ω End of Section



Specification created using NBS Chorus