

50035 Barnsley Public Realm – Master Landscape Specification

STATUS:

COMMENT AND APPROVAL

Document: BBTC_IBI_N1_L_SPC_1	IBI Group
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Rev A specification updates, 15.05.18

Q10/120 – height of kerb added Q25/310 – unit dims amended Q25/310B – product and depth dims

Q25/310D – step dims and colour band material Q25/315 – unit dims and colour mix

Q25/315A – unit dims and colour mix Q25/320 – unit dims

Q25/320A – unit dims Q25/330 – unit dims depth

Q25/335 – unit dims and colour mix Q41/240 – manufacturer and product name Q41/220A – dims and detail

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Q10/120D – K5 flush granite kerb added

Q10/120E – T1 flush granite trim added

Q10/120F – T2 flush granite sett trim added

Q10/120G – T3 flush granite sett trim added

Q10/120H – T4 flush yorkstone added

Q25/310 – clause updated

Q25/310E – P17 yorkstone setts added

Q50/220A – clause updated

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F30 – clause updated

L37 – clause added

Q10 – clause added

Q26 – clause updated

Q50 – clause updated

V91 – clause added

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Q10 / 120K – clause added

L37 – clause updated

Q26 – clause updated

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F10 / 110B – clause added

F10 / 110C – clause added

F10 / 110D – clause added

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Q10 / 120E – clause unit depth updated

Q25 / 310H – clause material, finish and unit
size updated

Q25 / 310G – clause unit size updated

Q25 / 310C – clause material, finish and unit
size updated

Q25 / 310I – clause finish and unit size
updated

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L37 / 160 – clause updated

L37 / 160A – clause added

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Q10 / 120A – clause updated

Q25 / 310B – clause updated

Q25 / 310G – clause updated

Q25 / 310K – clause added

Q25 / 310L – clause added

Q26 / 350A – clause updated

Q30 / 311 – clause added

Q25 / 311A – clause added

Q31 / 505 – clause updated

Q31 / 505A – clause added

Q31 / 505B – clause added

Q31 / 510 – clause omitted

Q31 / 510A – clause added

Q31 / 526 – clause amended

Q41 / 135 – clause added

Q50 / 190A – clause added

Q50 / 220A – clause updated

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F10 / 110 – clause removed

F10 / 110A – clause updated

F10/110E – clause added

L37/160 – clause updated

Q10/ 120P – clause added

Q10/ 120Q – clause added

Q10/ 120R – clause added

Q10/ 120N – clause added

Q10/ 120O – clause added

Q25/ 310J – clause removed

Q25/ 315C – clause added

Q50/ 190B – clause added

Q50/ 190C – clause added

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Q25 / 330A Updated

Q25 / 310D Updated

F10 / 110F Added

Q10 / 120S Added

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Q30 / 311B Added

Q40 / 220A Added

Q40 / 310A Added

Q40 / 350A Added

Q40 / 370 Added

Q40 / 370A Added

Q50 / 190D Added

Q50 / 194A Added

Q50 / 196B Added

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F

Masonry

F10

Brick/ block walling

F10 Brick/ block walling

To be read with Preliminaries/ General conditions.

TYPES OF WALLING**110A GRANITE STONE FACING STONE CLAD WALL REF: W2**

- Bricks: To BS EN 771-1.
 - Manufacturer: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Mid-Grey Kobra.
 - Recycled content: unknown.
 - Special shapes: As shown on drawings.
 - Additional requirements:
 - step walls
vertical face - 300- 800mm (H) x 590mm (W) x 40mm (D)
top coping - 590mm (L) x 320mm (W) x 50mm (D)
 - ramp wall
vertical face - 300-800mm (H) x 590mm (W) x 40mm (D)
top coping - 590mm (L) x 320mm (W) x 50mm (D)
 - Wall adjoining ZB from top of steps
vertical face - 300-800mm (H) x 590mm (W) x 40mm (D)
top coping - 590mm (L) x 505mm (W) x 50mm (D)
refer to drawing BBTC-IBI-N1-L-G700-DT-00-17.
- Bond: As shown on drawings.
- Joints: As shown on drawings.
- Features: cropped finish to all visible vertical faces of wall, flamed finish to top surface and all exposed sides of copings..

110B GRANITE STONE FIXING WALL TYPE 2 FIXING

Refer to drawing BBTC-IBI-N1-L-G700-DT-00-17

Stone slabs to BS EN 1469:

- Face dimensions: [300-800mm (H) x 590mm (W)].
- Thickness (d): [40mm].

- Supplier: [Hardscape or equal approved

Ben Bevan

email: bb@hardscape.co.uk

Hardscape Products Ltd

01204 590 666

07894 344 688].

- Quality: Free from vents, cracks, fissures, discolouration, or other defects deleterious to strength, durability or appearance. Before delivery to site, season thoroughly, dress and work in accordance with shop drawings prepared by supplier.

Fixings: [As determined by clauses 110C and 305].

Joints:

- Type: [Sealant filled].
- Bond pattern: [Stack bond]
- Width (nominal): [To engineers details].
Cavity width (nominal): [To engineers details].
- Air gap: [To engineers details].
Cavity barriers: [To engineers details].
Thermal insulation: [Not required].
Vapour control layer/ Waterproofing: [Not required].

110C FIXINGS WALL TYPE 2

Standard: To BS 8298-1 and -2.

Designer/ Supplier: [Halfen or equal approved].

Type: [Secretly fixed].

Fixing: [Horizontal and vertical anchoring as engineers details]

Material: [Stainless steel to BS EN 10088 grade 1,4301 (304 S16).].

Dimensions: Not less than recommended by manufacturers.

Extent of adjustment: To accommodate support structure/ background and cladding fabrication/installation tolerances.

Method of fixing to backing wall: [To engineers details].

110D INTEGRITY OF CLADDING WALL TYPE 2/ WALL TYPE 3

Requirement: Determine sizes and thickness of slabs/ panels, sizes, number and spacing of fixings, configuration and location of support systems and incorporation of accessories to ensure the cladding system will resist factored dead, imposed and design live loads, and accommodate deflections and thermal movements without damage.

Wind loads: Calculate to BS 6399-2 Standard Method appropriate to location, exposure, height, building shape, and size, taking account of existing and known future adjacent structures.

- Basic wind speed (Vb): [To engineers details].
- Altitude factor (Sa): [To engineers details].
- Direction factor (Sd): [To engineers details].
- Seasonal factor (Ss): 1.
- Probability factor (Sp): 1.
- Terrain and building factor (Sb): [To engineers details].
- External and internal size effect factors (Ca): 1.
- External pressure coefficients (Cpe): As determined from BS 6399-2, clauses 2.4 and 2.5.
- Internal pressure coefficients (Cpi): As determined from BS 6399-2, clause 2.6.
- Dominant opening: [To engineers details] .
- Hard body impact loads to BS 8200:
- Location and category: [To engineers details].
- Soft body impact loads to BS EN 14019:
- Location and classification: [To engineers details].
- Temporary imposed loads: [To engineers details].

110E GRANITE STONE FACING STONE CLAD WALL REF: W3

- Bricks: To BS EN 771-1.
 - Manufacturer: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Mid-Grey Kobra.
 - Recycled content: unknown.
 - Special shapes: None.
 - Additional requirements: vertical face - 300 - 650mm (H) x 590mm (W) x 40mm (D)
Coping to NBS Q10/120P Refer to drawing BBTC-IBI-N1-L-G700-DT-00-21.
- Bond: As shown on drawings.
- Joints: As shown on drawings.
- Features: Flamed finish to all visible vertical faces of wall, flamed finish to top surface.

110F GRANITE STONE FACING STONE CLAD WALL REF: W4

- Bricks: To BS EN 771-1.
 - Manufacturer: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Mid-Grey Kobra.
 - Recycled content: unknown.
 - Special shapes: As shown on drawings.
 - Additional requirements:
Walls as adjacent steps as per BBTC_IBI_N3_L_G700_PL_00_19
vertical face - 800mm (H) x 590mm (W) x 40mm (D)
top coping - 850mm (L) x 590mm (W) x 50mm (D) Cropped finish to top surface.
Refer to drawing BBTC_IBI_N3_L_G700_DT_00_17.
- Bond: As shown on drawings.
- Joints: As shown on drawings.
- Features: Flamed finish to all exposed surfaces of cladding. Flamed finish to all exposed surfaces of coping. Cropped finish to top surface.

395 DAMP PROOF COURSE BRICKWORK

- Bricks to BS EN 771-1.
 - Manufacturer: to engineers details.
 - Product reference: to match building brick.
 - Type: HD.
 - Water absorption: to engineers details.
 - Net dry density: to engineers details.
 - Freeze/ Thaw category: F2.
 - Active soluble salts content category: S2.
 - Additional requirements: to engineers details.
- Mortar: As section Z21.
 - Standard: to engineers details.
 - Mix: to engineers details.
 - Additional requirements: to engineers details.
- Bond: Half lap stretcher.
- Joints: to engineers details.

WORKMANSHIP GENERALLY**430 CONDITIONING OF CLAY AND CALCIUM SILICATE BRICKS AND CLAY BLOCKS**

- Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
- Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

500 LAYING GENERALLY

- Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
- AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
- Clay block joints:
 - Thin layer mortar: Lay blocks on a full bed.
 - Interlocking perpend: Butted.
- Bond where not specified: Half lap stretcher.
- Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

635 JOINTING

- Profile: Consistent in appearance.

690 ADVERSE WEATHER

- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature requirements: Do not lay bricks/ blocks:
 - In cement gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
 - In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising.
 - In thin joint mortar glue when outside the limits set by the mortar manufacturer.
- Temperature of walling during curing: Above freezing until hardened.
- Newly erected walling: Protect at all times from:
 - Rain and snow.
 - Drying out too rapidly in hot conditions and in drying winds.

ADDITIONAL REQUIREMENTS FOR FACEWORK**710 THE TERM FACEWORK**

- Definition: Applicable in this specification to all brick/ block walling finished fair.
 - Painted facework: The only requirement to be waived is that relating to colour.

745 MASONRY SAMPLE PANELS

- Sampling frequency: A panel for each type and delivery of masonry unit.
- Selection of masonry units: Reasonably representative of the average quality of the whole order to be delivered .
- Panel types: As clause 740.

750 COLOUR CONSISTENCY OF MASONRY UNITS

- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
- Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
- Finished work: Free from patches, horizontal stripes and racking back marks.

760 APPEARANCE

- Brick/ block selection: Do not use units with damaged faces or arrises.
- Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
- Quality control: Lay masonry units to match relevant reference panels.
 - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
 - Coursing: Evenly spaced using gauge rods.
- Lifts: Complete in one operation.
- Methods of protecting facework: Submit proposals.

830 CLEANLINESS

- Facework: Keep clean.
- Mortar on facework: Allow to dry before removing with stiff bristled brush.
- Removal of marks and stains: Rubbing not permitted.

F22

Cast stone ashlar walling/dressings

F22 Cast stone ashlar walling/dressings

To be read with Preliminaries/General conditions.

STRUCTURAL REQUIREMENTS

104 STRUCTURAL DESIGN PROVIDED

- Description: Reinforced concrete retaining wall faced with brick to match building, clad with cast stone to match colour of building cladding units.
- Requirements:
 - Generally: To engineers requirements.
 - Additional requirements: None.
- Workmanship supervision and control: As required by the designated code of practice for T o engineers requirements.
- Production/ Execution records: Not required.

TYPES OF WALLING

110 CAST STONE BRICK WALL COPINGS

- Cast stone units:
 - Manufacturer: Haddonstone or equal approved.
 - Product reference: To approval.
 - Absorption: To BS 1217 to be confirmed by manufacturer.
 - Compressive strength:
 - Average cube strength (minimum): to be confirmed by manufacturer.
 - Single cube strength (minimum): to be confirmed by manufacturer.
 - Finish: Matching sample.
 - Colour: Portland stone.
- Mortar: As section Z21.
 - Mix: to engineers details.
 - Sand: to engineers details.
- Bond: As drawings.
- Joints: Flush.
 - Width: to engineers details.
 - Pointing: As clause 535.
- Other requirements: Size: 225mm x 50mm either side of glass balustrade. Glass balustrade to be fixed into wall concrete structure.

GENERAL REQUIREMENTS

220 CONTROL SAMPLES

- Required samples: After finalization of design, one each of the following components: coping and brick samples.
- Approval of appearance: Obtain before manufacture of remaining units.
- Identification and storage location: Clearly label and retain at factory for comparison with production units.

255 COMPRESSIVE STRENGTH

- Cube strength: Sampling to BS 1217. Testing to BS EN 12390-1, 2 and 3 as appropriate, with compaction and curing representative of the methods used in production of the cast stone components.

300 REINFORCEMENT

- Non structural reinforcement: Include to resist shrinkage and handling stresses.
- Carbon steel reinforcement: To BS 4449 and BS 4483 as appropriate.
 - Cutting and bending: To BS 8666.
- Galvanized reinforcement: Galvanizing to BS EN ISO 1461 after cutting.
- Stainless steel reinforcement: To BS 6744, designation 1.4301.
 - Cutting and bending: To BS 8666.
- Condition at time of placement: Clean, free of corrosive pitting, loose materials and substances which adversely affect the reinforcement, mix, or bond between the two.
- Fixing: Accurate and secure. Prevent intrusion of wire or clips into the cover.

305 BED JOINT REINFORCEMENT

- Standard: To BS EN 845-3.

312 COVER TO REINFORCEMENT

- General: Minimum cover to reinforcement:
 - Carbon steel:
 - 40 mm: External faces (exposed to weather).
 - 30 mm: Internal faces (protected from weather).
 - Galvanized steel:
 - 30 mm: External faces (exposed to weather).
 - 20 mm: Internal faces (protected from weather).
 - Austenitic stainless steel:
 - 10 mm or 2 x bar diameter: All faces (select the greater of the two).
 - Other materials/ coatings: Submit proposals including minimum cover.

340 MIXES GENERALLY

- Constituent materials and mix design: Achieve constant colour and texture for each finish type.
- Aggregates for facing mixes: Free from particles which may cause 'popouts', or unsightly marking or staining.
- Total chloride ion content (maximum): Cl 0.40.
- Admixtures containing calcium chloride: Do not use.

360 CASTING AND CURING

- Compaction: Thorough.
- Protection: Prevent premature drying out during curing period.
- Immature components: Prevent distortion from movement, vibration, overloading, physical shock, rapid cooling and thermal shock.
- Delivery to site: Not until at least 14 days after casting.

370 QUALITY OF FINISHES

- Appearance standard: As established by samples.

LAYING AND JOINTING**410 REFERENCE PANELS**

- General: Prepare as follows and obtain approval of appearance before proceeding:
 - Location: As agreed with client.
 - Size: As agreed with client.
 - Features: As agreed with client.

430 ADVERSE WEATHER

- General: Do not use frozen materials and do not lay on frozen surfaces.
- Temperature: Do not lay blocks/ dressings:
 - - In 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 walling is thoroughly protected).
 - - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
- Freezing conditions: Maintain temperature of the work above freezing until mortar has fully set.
- Precipitation: Protect newly erected walling against rain and snow by covering when precipitation occurs and at all times when work is not proceeding.
- Hot and dry conditions: Prevent newly erected masonry from drying out too rapidly.
- Remedial work: Rake out and replace mortar damaged by frost and where instructed, rebuild damaged work.

450 WALLING/ DRESSINGS BELOW GROUND LEVEL

- Extent of facework below finished level of adjoining ground or external works level (minimum): 150 mm.

535 POINTING

- Joint preparation: Rake out to depth of 7–10 mm as work proceeds. Remove debris. Dampen surface.
- Mortar application: Neat and consistent.

F30

Accessories/sundry items for brick/block/stone walling

F30 Accessories/sundry items for brick/block/stone walling

- 26 WALL TIES TO ALL BRICK WALLS
- Type: to engineers details .
 - Standard: to engineers details .
 - Manufacturer: to engineers details .
 - Product reference: to engineers details .
 - Material/ finish: to engineers details .
 - Sizes: to engineers details .
 - End types: to engineers details .
- 66 INSTALLATION OF HORIZONTAL DPCS
- Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
 - Width: At least full width of masonry leaf. Edges of dpc not covered with mortar or projecting into cavity.
 - Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
 - Overall finished joint thickness: As close to normal as practicable.
 - Ground level dpcs joint with damp proof membrane: Continuous and effectively sealed.
 - Low level dpcs in external walls: Install not less than 150 mm above adjoining finished ground level.
 - Sill dpcs form and placement: In one piece and turned up at the back when the sill is in contact with inner leaf.
 - Dpcs crossing cavity: Provide support to prevent sagging.
- 74 INSTALLATION OF VERTICAL DPCS
- Form: In one piece wherever possible.
 - Joints: Upper part overlapping lower not less than 100 mm.
 - Dpcs to jambs of openings: Fully lap behind cavity tray/ lintel at head and over horizontal dpc at sill. Project not less than 25 mm into cavity and maintain full contact with frames.
 - Fixing of jamb dpcs to back of built in timber frames: Secure using galvanized clout nails or staples.

F31

Precast concrete sills/lintels/copings/features

F31 Precast concrete sills/lintels/copings/features

- 5 DESIGNATED CONCRETE PRECAST COPINGS
- Concrete: Designated to BS 8500-2: As manufacturers specification .
 - Reinforcement: As manufacturers specification .
 - Cover to reinforcement (nominal): As manufacturers specification .
 - Finish to visible faces: smooth, cropped to front face .
 - Other requirements: None .
- 20 MOULDS
- Permissible fabrication and operating tolerances: Length 0 to +6 mm, other dimensions ± 3 mm.
- 25 REINFORCEMENT
- Carbon steel reinforcement: As appropriate to BS 4449, BS 4482 and BS 4483.
 - Cutting and bending: To BS 8666.
 - Fixing: Accurate and secure.
 - Method: Wire tying, approved steel clips or tack welding if permitted.
 - Concrete cover: Maintain free of tying wire or clips.
 - Cover spacers on visible faces: Not permitted.
- 30 CASTING AND CURING
- Placement of concrete: Thoroughly compact.
 - Immature components: Avoid movement, vibration, overloading, physical shock, rapid cooling and thermal shock.
 - Protection from weather: Do not expose panels to direct sunlight and drying winds until at least five days after casting.
- 32 CUTTING
- Cutting of precast concrete components: Not permitted.
- 35 CONDITIONS FOR SEPARATE FACING AND BACKING MIXES
- Difference in cement content: Not greater than 80 kg/m³.
 - Thickness of facing mix (minimum): 10 mm greater than nominal maximum aggregate size, and not less than 25 mm.
 - Location of reinforcement: Not less than 20 mm away from the interface between mixes.
 - Compaction of facing and backing mix: Carry out to create monolithic construction.
- 40 LAYING
- Mortar for bedding and jointing: As section Z21.
 - Type: To engineers details.
 - Mix: To engineers details.
 - Bedding components: On full bed of mortar.
 - Bedding one piece sills/ thresholds: Leave clear of mortar except at end bearings and beneath masonry mullions.
 - On completion: Point with mortar to match adjacent work.

L

Windows/ Doors/ Stairs

L37

**External stair, ramps, handrail and balustrades
systems**

L37 External stair, ramps, handrail and balustrades systems**GENERAL**

- 150 HANDRAIL SYSTEMS ALL STEPS REF: HR1
- System manufacturer: Submit design and cost proposals.
 - Material: Austenitic stainless steel.
 - Cross section: As drawing.
 - Finish: Stainless steel.
 - Height (to upper surface of handrail):
 - Above pitch line: As drawing BBTC-IBI-N1-L-G700-DT-00-17.
 - Above landing: As drawing BBTC-IBI-N1-L-G700-DT-00-17.
 - Accessories: Integral lighting, as section V91.
- 160 BALUSTRADE SYSTEMS TO TOP OF W2 & W3 WALL TYPES
- System manufacturer: Contractor's Choice.
 - Guarding:
 - Material: Glazed panels with stainless steel D clamps. Stainless steel top rail..
 - Finish: As Above.
 - Rail:
 - Cross section: As per manufacturer's details.
 - Material: Glass/Stainless Steel.
 - Finish: As manufactured.
 - Height (to upper surface of rail):
 - Above pitch line: As drawing BBTC_IBI_N1_L_G700_DT_00_17 and BBTC_IBI_N1_L_G700_DT_00_21.
 - Above landing: As above.
 - Accessories: n/a.

FABRICATION

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

EXECUTION

- 610 LOADING
- Site activities: Restrict, to ensure that design loads are not exceeded, or submit proposals for temporary supports.
- 620 CONCRETE FOUNDATIONS GENERALLY
- Standard: To BS 8500-2.
 - Concrete: Designated not less than GEN 1 or standard prescribed not less than ST2.
 - Admixtures: Do not use.
 - Foundation holes: Neat vertical sides.
 - Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

650 INSTALLATION GENERALLY

- Fasteners: To section Z20.
- Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
- Temporary support: Do not use finished work as temporary support or strutting for other work.
- 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

- General: Do not use frozen materials and do not lay on frozen surfaces.
- Working limits: Do not lay blocks/ dressings:
 - 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).
 - Hydraulic lime:sand mortars: When the air temperature is at or below 5°C and falling or below 3°C and rising.
- Temperature of the work: Maintain above freezing until mortar has fully set.
- Newly erected work: Protect from precipitation; Prevent rapid drying in hot conditions.
- Remedial work: Rake out and replace mortar damaged by frost.
 - Damaged work: Rebuild.

COMPLETION

N

Furniture/Equipment

N91

External signage and interpretation

N91 External signage and interpretation

PRODUCTS

- 330 TACTILE SYMBOLS CORDUROY TACTILE STRIPS TO STEP LOCATIONS REF: P21
- Manufacturer: Urbanfinish or equal approved.
 - Product reference: Part M Corduroy Hazard Warning treatment.
 - Material: Stainless steel.
 - Surface: Non-reflective with maximum gloss factor of 15% when tested to BS 2782-5 or BS EN ISO 2813.
 - Layout and dimensions: As drawing BBTC IBI N4 L G700 DT 00 0?.
 - Characters and symbols: none.
 - Position: n/a.
 - Characters: Raised 1-1.5 mm with stroke width that allows both sides of the character to be felt with the fingers at a single pass.
 - Colour: n/a.
 - - Size: n/a.
 - Background colour: n/a.
 - Inserts: n/a.
 - Manufacturing process: Manufacturer's standard.
 - Accessories: Fixing: as manufacturer's recommendations. Stainless steel strips to be 20mm wide x 6mm high round fittings from ground level, spaced at 50mm, with anti-slip, as per guidance notes given in accordance with DDA / Part M Regulations.

MATERIALS

- 455 STAINLESS STEEL FOR CORDUROY TACTILE STRIPS
- Standards:
 - Properties of stainless steels: To BS EN 10088-1.
 - Grade: As manufacturer's specification.
 - Finish: As manufacturer's specification.
 - Bars, rods and sections for general purposes: To BS EN 10088-3. Stainless steels.
 - Sheet/ plate and strip for general purposes: To BS EN 10088-2.
 - Component thickness: As manufacturer's specification.
 - Perimeters: As manufacturer's specification.
 - Additional requirements: None.

EXECUTION/ ERECTION/ INSTALLATION**610 FIXING SIGNS GENERALLY**

- Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.
- Installation: To BS 559.
 - Secure, plumb and level.
- Strength of fasteners: Sufficient to support all live and dead loads.
- Fasteners and/ or adhesives: As section Z20.
- Fasteners for external signs: Corrosion resistant material or with a corrosion resistant finish. Isolate dissimilar metals to avoid electrolytic corrosion.
- Fixings showing on surface of sign: Must not detract from the message being displayed.
- Temporary support: Do not subject members to non-design loadings.
- Protection of users:
 - Fasteners for signs must not have sharp edges or protrusions that would cause injury to users.
 - Fasteners for tactile/ Braille signs must not have protrusions that would cause confusion to users.

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

- 110 PROPRIETARY PRECAST CONCRETE KERBS Ref:K6
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls or equal approved.
 - - Product reference: 125mm upstand half battered concrete kerb to match existing.
 - Recycled content: To manufacturers specification.
 - Designations: HB1 Kerb, half battered.
 - Size (width x height x length): To match existing.
 - Special shapes: Dropper kerbs DL1 and DR1 to footway crossings and Dropper kerbs DL2 and DR2 to footway crossings - ref: DK, flush Half Battered kerbs - ref: K9.
 - Finish: To manufacturers specification.
 - Colour: To manufacturers specification.
 - Bedding: To engineers details.
 - Joints generally: To engineers details.
 - Sealant movement joints: To engineers details.
 - Accessories: None.
- 110A PROPRIETARY PRECAST CONCRETE PCC PIN KERB Ref:PK
- Standard: To BS EN 1340.
 - Manufacturer: Contractor's choice.
 - - Product reference: PCC Pin Kerb.
 - Recycled content: To manufacturers specification.
 - Designations: EF Edging, flat top.
 - Size (width x height x length): 50 x 150 x 915 mm.
 - Special shapes: none.
 - Finish: To manufacturers specification.
 - Colour: To manufacturers specification.
 - Bedding: To engineers details.
 - Joints generally: To engineers details.
 - Sealant movement joints: To engineers details.
 - Accessories: None.

115 PRECAST CONCRETE SAFETY KERBS

- Manufacturer: Brett Landscaping and Building Products or similar approved
Contact: Jamie Gledhill
Sileby Road
Barrow-upon-Soar
Loughborough
Leicestershire
LE12 8LX
mob: 07484 000825
e-mail: gledhill@brett.co.uk.
 - Product reference: Trief Kerb.
- Size: 380mm x 415mm x 914mm.
- Special shapes:
 - External radius kerbs;
 - Large left and right hand drop kerbs to half batter; and
 - Small left and right hand drop kerbs to half batter.
- Finish: As cast.
- Colour: Natural.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.

120 STONE Ref: K1 Flush granite kerb

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite.
- Size (width x height): 300 (w) x random lengths 600-900mm x 150mm (h).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: None.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120A STONE Ref: K2 Granite kerb 125mm high upstand

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Upstand kerb.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Granite.
- Size (width x height): 300 (w) x random lengths 600-900mm x 275mm (h).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: left and right sided transition kerbs, ref DK-1, DK-1a, DK-2, DK2-a as dwg BBTC-IBI-N1-L-G700-DT-0041.
- Finish: Black, flamed.
- Arrises: 15mm bullnose to front top edge.
- Bedding: to engineers details.
- Joints generally: to engineers details.
- Sealant movement joints: to engineers details.
- Accessories: none.

120B STONE Ref: K3 Granite Upstand Kerb 150mm (h)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Upstand.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Kobra Granite or equal approved.
- Size (width x height): 300mm (w) x 300mm (d) x Random Lengths (600-900mm).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: 15mm bullnose to front top edge.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120C STONE Ref: K4 Granite Upstand Kerb 50mm (h)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite or equal approved.
- Size (width x height): 300mm (w) x 150 (d) x Random Lengths 300-900mm.
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Crystal Black, flamed.
- Arrises: 15mm bullnose to front top edge.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120D STONE Ref: K5 Flush yorkstone trim

- Standard: To BS EN 1343.
- Supplier: Marshalls or equal approved
Scott Cain
Project Consultant
Commercial Sales
Marshalls
Scott.Cain@marshalls.co.uk
M 07583 098 069
W marshalls.co.uk.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: York stone.
- Size (width x height): 215 (w) x 210mm (l) x 63mm (d).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Wire diamond sawn.
- Arrises: None.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120E GRANITE STONE TRIM Ref: T1 Flush Granite trim

- Standard: To BS EN 1343.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite.
- Size (width x height): 500 (w) x 500mm x 63mm depth tbc on-site.
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: None.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120F GRANITE SETT TRIM Ref: T2 Flush double row granite sett trim

- Standard: To BS EN 1343.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite.
- Size (width x height): 100 (w) x 100mm x 100mm (d).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: None.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120G GRANITE SETT TRIM Ref: T3 Flush single row granite sett trim

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite.
- Size (width x height): 100 (w) x 100mm x ??mm (d).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: None.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120H YORKSTONE TRIM Ref: T4 Flush yorkstone trim

- Standard: To BS EN 1343.
- Supplier: Marshalls or equal approved
Scott Cain
Project Consultant
Commercial Sales
Marshalls
Scott.Cain@marshalls.co.uk
M 07583 098 069
W marshalls.co.uk.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Yorkstone.
- Size (width x height): 320 (w) x 210mm x 63mm (d).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Wire diamond sawn.
- Arrises: None.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120K YORKSTONE TRIM Ref: T5 Flush yorkstone trim

- Standard: To BS EN 1343.
Supplier: Marshalls or equal approved
Scott Cain
Project Consultant
Commercial Sales
Marshalls
Scott.Cain@marshalls.co.uk
M 07583 098 069
W marshalls.co.uk.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Yorkstone.
- Size (width x height): 425 (w) x 210mm x 63mm (d).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Wire diamond sawn.
- Arrises: None.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120L STONE Ref: K7 Granite Upstand Kerb 6mm (h)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite or equal approved.
- Size (width x height): 300mm (w) x 150 (d) x Random Lengths 600-900mm.
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Crystal Black, flamed.
- Arrises: 6mm bullnose to front top edge.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120M STONE Ref: K8 Granite Upstand Kerb 25mm (h)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Flush.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite or equal approved.
- Size (width x height): 300mm (w) x 150 (d) x Random Lengths 600-900mm.
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Crystal Black, flamed.
- Arrises: 6mm bullnose to front top edge.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120N STONE Ref: K3S1 Special Granite Upstand Kerb (h)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Upstand.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Kobra Granite or equal approved.
- Size (width x height): 300mm (w) x 650mm (d) x Random Lengths (600-900mm).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: 15mm bullnose to front top edge to both sides.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: linear recess to full length of kerb front face to fit LED light strip, size 22mm x 30mm deep (TBC). Lighting specified by others.

120O STONE Ref: K3S2 Special Granite Upstand Kerb

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Upstand.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Kobra Granite or equal approved.
- Size (width x height): 300mm (w) x 300mm (d) x Random Lengths (600-900mm).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: 15mm bullnose to front top edge to both sides.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: linear recess to full length of kerb front face to fit LED light strip, size 22mm x 30mm deep (TBC). Lighting specified by others.

120P STONE Ref: Kerb Coping to Wall W3 200mm (h)

- Standard: To BS EN 1343.
 - Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Types: Upstand - to be used as coping.
 - Tolerances on batter: No requirement.
 - Stone type: Kobra Granite or equal approved.
 - Size (width x height): 300mm (w) x 200mm (d) x Random Lengths (600-900mm).
 - Tolerances on overall width and height (nominal): N/A.
 - Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
 - Special shapes: N/A.
 - Finish: Flamed to all exposed sides.
 - Arrises: 15mm bullnose to front top edge to both sides. Note at opening to terraces, end piece to also have bullnose finish.
 - Bedding: To engineers details.
 - Joints generally: To engineers details.
 - Sealant movement joints: To engineers details.
 - Accessories: None.
- Refer to BBTC_IBI_N1_L_G700_DT_00_21 for full details,

120Q STONE Ref: K10 Rill 3 Water Feature

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: As detailed on BBTC_IBI_N1_L_G700_DT_00_29.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Crystal Black Granite or equal approved.
- Size (width x height): 300mm (w) x 100(d) x Random Lengths 600-900mm.
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Crystal Black, flamed. Flamed to exposed sides..
- Arrises: 15mm bullnose to front top edge to both sides.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120R STONE Ref: K11 Kerb Coping to Wall W3 To ZB 350mm (h)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Upstand - to be used as coping.
 - Tolerances on batter: No requirement.
- Stone type: Kobra Granite or equal approved.
- Size (width x height): 300mm (w) x 350mm (d) x Random Lengths (600-900mm).
 - Tolerances on overall width and height (nominal): N/A.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: N/A.
- Finish: Flamed to all exposed sides.
- Arrises: 15mm bullnose to front top edge to both sides. Note at opening to terraces, end piece to also have bullnose finish.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120S STONE Ref: W5 Wall Type 5: Solid Granite)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Upstand.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Kobra Granite or equal approved.
- Size (width x height): 300mm (w) x 600mm (d) x 1000 (l).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: 15mm bullnose to front top edge to both sides. Note: flamed finish to all exposed sides.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

120T STONE Ref: K12 Granite Upstand Kerb 400mm (h)

- Standard: To BS EN 1343.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Types: Upstand.
 - Tolerances on batter: to be confirmed by approved stone supplier.
- Stone type: Kobra Granite or equal approved.
- Size (width x height): 300mm (w) x 400mm (d) x Random Lengths (600-900mm).
 - Tolerances on overall width and height (nominal): to be confirmed by approved stone supplier.
- Freeze/ Thaw resistance: to be confirmed by approved stone supplier.
- Special shapes: to be confirmed by approved stone supplier.
- Finish: Flamed.
- Arrises: 15mm bullnose to front top edge. All exposed sides to have flamed finish including exposed end piece.
- Bedding: To engineers details.
- Joints generally: To engineers details.
- Sealant movement joints: To engineers details.
- Accessories: None.

170 LINEAR SLOT DRAINAGE CHANNEL SYSTEMS

- Manufacturer: refer to project engineers details.
 - Product reference: refer to project engineers details.
- Bore: refer to project engineers details.
- Finish: IBI to advise in due course.
- Colour: IBI to advise in due course.
- Accessories: refer to project engineers details.
- Bedding: refer to project engineers details.
- Joints generally: refer to project engineers details.

180 DRAINAGE CHANNEL SYSTEMS WITH GRATINGS

- Manufacturer: refer to project engineers details.
 - Product reference: refer to project engineers details.
- Size: refer to project engineers details.
- Type of fall: refer to project engineers details.
- Finish: IBI to advise in due course.
- Colour: IBI to advise in due course.
- Accessories: refer to project engineers details.
- Bedding: refer to project engineers details.
- Joints generally: refer to project engineers details.
- Cover gratings: refer to project engineers details.
 - Fixings: refer to project engineers details.
 - Loading grade to BS EN 124: refer to project engineers details.
 - Finish/ Colour: refer to project engineers details.

190 CARRIAGEWAY KERB AND DRAINAGE CHANNEL SYSTEMS

- Manufacturer: refer to project engineers details.
 - Product reference: refer to project engineers details.
- Finish: IBI to advise in due course.
- Colour: IBI to advise in due course.
- Accessories: refer to project engineers details.
- Bedding: refer to project engineers details.
- Vertical joints: refer to project engineers details.
- Horizontal joints/Bond: refer to project engineers details.

200 SPECIAL EDGINGS 'METAL' TO LAWNS

- Manufacturer: Everedge of equal approved
PO Box 333
Market Drayton
Shropshire
TF9 4WL
Tel: 01453 731717
enquiries@everedge.co.uk.
 - Product reference: Halestem.
- Size: as supplied.
- Type/ Material: Metal as supplied.
 - Finish: powder coated .
 - Colour: grey.
- Accessories: as necessary / supplied by manufacturer.
- Bedding: to manufacturers /project engineers details.
- Joints: na.

250 MATERIAL SAMPLES

- Samples representative of colour and appearance of designated materials: Submit before placing orders.
 - Designated materials: Stone edgings .

ROADS/PAVING ACCESSORIES/MARKING/DEMARCATIION**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.

570 CHANNELS

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

580 DRAINAGE CHANNEL SYSTEMS

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

590 DRAINAGE CHANNEL SYSTEMS WITH BUILT IN FALL

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

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.

Q22

Asphalt roads/ pavings

Q22 Asphalt roads/ pavings

To be read with Preliminaries/ General conditions.

TYPES OF PAVING

110 ASPHALT CONCRETE PAVING VEHICULAR GRADE TARMAC REF: P16

- Standard: to project engineers details.
- Subgrade improvement layer: to project engineers details.
 - Compacted thickness: to project engineers details.
- Geotextile: to project engineers details.
 - Manufacturer: to project engineers details.
 - Product reference: to project engineers details.
- Granular sub-base: to project engineers details.
 - Compacted thickness: to project engineers details.
- Base: to project engineers details.
 - Paving grade: to project engineers details.
 - Compacted thickness: to project engineers details.
- Binder course: to project engineers details.
 - Paving grade: to project engineers details.
 - Compacted thickness: to project engineers details.
- Surface course: to project engineers details.
 - Paving grade: to project engineers details.
 - Slip/ Skid resistance: to project engineers details.
 - Compacted thickness: to project engineers details.
- Reclaimed content:
 - Standard: To BS EN 13108-8.
 - Value (maximum): to project engineers details.
- Surface treatment: to project engineers details.
- Other requirements: to project engineers details.

110A ASPHALT CONCRETE PAVING PEDESTRIAN GRADE TARMAC REF: P22

- Standard: to project engineers details.
- Subgrade improvement layer: to project engineers details.
 - Compacted thickness: to project engineers details.
- Geotextile: to project engineers details.
 - Manufacturer: to project engineers details.
 - Product reference: to project engineers details.
- Granular sub-base: to project engineers details.
 - Compacted thickness: to project engineers details.
- Base: to project engineers details.
 - Paving grade: to project engineers details.
 - Compacted thickness: to project engineers details.
- Binder course: to project engineers details.
 - Paving grade: to project engineers details.
 - Compacted thickness: to project engineers details.
- Surface course: to project engineers details.
 - Paving grade: to project engineers details.
 - Slip/ Skid resistance: to project engineers details.
 - Compacted thickness: to project engineers details.
- Reclaimed content:
 - Standard: To BS EN 13108-8.
 - Value (maximum): to project engineers details.
- Surface treatment: to project engineers details.
- Other requirements: to project engineers details.

140 HOT ROLLED ASPHALT PAVING WITH CHIPPINGS. REF: P13

- Standard: to project engineers details.
- Subgrade improvement layer: to project engineers details.
 - Compacted thickness: to project engineers details.
- Geotextile: to project engineers details.
 - Manufacturer: to project engineers details.
 - Product reference: to project engineers details.
- Granular sub-base: to project engineers details.
 - Compacted thickness: to project engineers details.
- Base: to project engineers details.
 - Paving grade: to project engineers details.
 - Compacted thickness: to project engineers details.
- Binder course: to project engineers details.
 - Paving grade: to project engineers details.
 - Compacted thickness: to project engineers details.
- Surface course: ensure surface course has inclusion of BUFF CHIPPINGS (chippings sample and example image to be supplied to project landscape architect to confirm suitability before any order is made).
 - Paving grade: to project engineers details.
 - Slip/ Skid resistance: to project engineers details.
 - Compacted thickness: to project engineers details.
- Reclaimed content:
 - Standard: To BS EN 13108-8.
 - Value (maximum): to project engineers details.
- Surface treatment: to project engineers details.
- Other requirements: to project engineers details.

Q23

**Gravel/ Hoggins/ Woodchip/ Resin bound roads/ paving/
overlays**

Q23 Gravel/ Hoggin/ Woodchip/ Resin bound roads/ paving/ overlays

To be read with Preliminaries/ General conditions.

TYPES OF SURFACING

- 160 LOOSE GRAVEL P28 To Service Yard
- Subgrade improvement layer: To Eng Details.
 - Compacted thickness: As per Engineer's Details.
 - Geotextile: As per Engineer's Details.
 - Manufacturer: Submit proposals.
 - Product reference: Limestone Gravel 20mm guage or similar approved.
 - Granular sub-base: As per Engineer's Details.
 - Compacted thickness: As per Engineer's Details.
 - Blinding to sub-base: As per Engineer's Details.
 - Gravel: Loose laid and raked to uniform thickness.
 - Type: Limestone Gravel 20mm guage or similar approved.
 - Source: Contractor's choice.
 - Colour: Buff.
 - Size: 20mm guage.
 - Thickness: To Engineer's detail.

LAYING

- 320 SAMPLES
- Submit: Representative samples of gravel.
- 340 LAYING GENERALLY
- Channels, gullies, etc: Keep clear.
 - Finished surfaces:
 - Lines and levels: To prevent ponding.
 - Overall texture: Even.
 - State at completion: Clean.
- 350 COLD WEATHER WORKING
- Frozen materials: Do not use.
 - Freezing conditions: Do not lay pavings.
 - Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.
 - Other dressings or overlays: As manufacturers' recommendations.
- 360 DRAINAGE FALLS
- Sealed surfaces:
 - Falls and cross falls (minimum): 1:40.
 - Camber (minimum): 1:50.
 - Unsealed surfaces (minimum): 1:30.
- 370 LAYING GRANULAR SURFACES IN VEHICULAR AREAS
- Permissible deviation from required levels, falls and cambers (maximum): $\pm 20\text{mm}$.
 - General: Spread and level in 150 mm maximum layers. As soon as possible compact each layer.
 - Dry weather: Lightly water layers during compaction.

380 LAYING GRANULAR SURFACES IN PEDESTRIAN AREAS

- Permissible deviation from required levels, falls and cambers (maximum): ± 12 mm.
- General: Spread and level in 100 mm maximum layers. As soon as possible, compact each layer.
- Dry weather: Lightly water layers during compaction.

Q25

Slab/brick/sett/cobble pavings

Q25 Slab/brick/sett/cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL**SYSTEM PERFORMANCE****PRODUCTS****305 GRANULAR MATERIAL FOR LAYER OVER EXISTING BASES**

- Material: to be confirmed by project engineer.

310 NATURAL STONE SLABS Yorkstone Flags REF P5

- Standard: To BS EN 1341.
- Supplier: Marshalls or equal approved
Scott Cain
Project Consultant
Commercial Sales
Marshalls
Scott.Cain@marshalls.co.uk
M 07583 098 069
W marshalls.co.uk.
 - Product reference: Scoutmoor (Blue/Grey Yorkstone).
 - Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: wire diamond sawn.
- Sizes:
 - o 320mm (l) x 210mm (w) x 63mm (d)
 - o 650mm (l) x 430mm (w) x 63mm (d)
 - o RL (870-1200mm) x 650mm (w) x 63mm (d) .
 - Plan dimension deviation class: to be confirmed by approved stone supplier .
 - Diagonal deviation class: to be confirmed by approved stone supplier .
 - Thickness deviation class: to be confirmed by approved stone supplier .
- Arrises: to be confirmed by approved stone supplier .
- Breaking strength: to be confirmed by approved stone supplier .
- Slip resistance: to be confirmed by approved stone supplier .
- Skid resistance: to be confirmed by approved stone supplier .
- Surface treatment: to be confirmed by approved stone supplier Bond - stretcher .

310A GRANITE FLAGS Granite Paving: REF P7

- Standard: To BS EN 1341.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Yellow Rock – Bush Hammered finish).
 - Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: hammered.
Sizes: 300mm (W) x Random Length x 63mm depth (200 to 600mm).
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier
Bond - stretcher.

310B COVERED ARCADE NATURAL STONE PAVING Sandstone Flags REF P8

- Standard: To BS EN 1341.
Supplier: Marshalls or equal approved
Scott Cain
Project Consultant
Commercial Sales
Marshalls
Scott.Cain@marshalls.co.uk
M 07583 098 069
W marshalls.co.uk.
 - Product reference: Cambrian Sandstones – Thornlake flamed, Thornlake blasted, Brownridge blasted & Laurel Bank blasted.
 - Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: diamond sawn.
Sizes: 600mm (L) x 150mm (W) x 50mm (D) - (Marshall to confirm depth) .
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier
Bond - stretcher.

310C BASE OF WATER RILLS STONE FLAGS Granite Flags REF P11

- Standard: To BS EN 1341.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Granite "Yellow Rock"), .
 - Quarry: approved stone supplier to confirm.
 - Petrographical description/ stone type: approved stone supplier to confirm.
 - Finish: bush hammered.
 - Sizes: 300 x 200 x 50mm and see drawing BBTC-IBI-N1-L-G700-DT-00-27, 28 and 29.
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
 - Arrises: to be confirmed by approved stone supplier.
 - Breaking strength: to be confirmed by approved stone supplier.
 - Slip resistance: to be confirmed by approved stone supplier.
 - Skid resistance: to be confirmed by approved stone supplier.
 - Surface treatment: to be confirmed by approved stone supplier
- Bond - stretcher.

310D NATURAL STONE STEPS REF S1 - see drawing BBTC_IBI_N3_L_G700_DT_00_05 & 17

- Standard: To BS EN 1341.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Product reference: Solid granite step units - Mid Grey (Kobra) Granite with 55mm Magma contrasting strip to nosing.
- Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: flamed.
- Sizes: See drawing BBTC_IBI_N3_L_G700_DT_00_05 Elevation F-F:
 - Bottom Step: 400mm (w) x 230mm (D) x 1035mm (L)
 - Middle & Top Step: 400mm (W) x 140mm (D) x 1035mm (L)
 See drawing BBTC_IBI_N3_L_G700_DT_00_05 Elevation G-G:
 - Bottom Step: 400mm (w) x 230mm (D) x 1144mm (L)
 - Top Step: 400mm (W) x 140mm (D) x 1144mm (L)
 See drawing BBTC_IBI_N3_L_G700_DT_00_17 Section A-A:
 - Bottom Step: 400mm (w) x 230mm (D) x 515 / 1035mm (L)
 - Top Step: 400mm (W) x 140mm (D) x 515 / 1035mm (L)
 See Drawing BBTC_IBI_N3_L_G-700-DT-00-18 Elevation A - A and Elevation B - B
 - Bottom step 400mm (w) x 230mm (D) x 1144mm (L)
 - Top Step: 400mm (W) x 150mm (D) x 1144mm (L)
 See Drawing BBTC_IBI_N3_L_G-700-DT-00-21 Elevation B - B
 - Bottom step 400mm (w) x 230mm (D) x 991mm (L)
 - Top Step: 400mm (W) x 140mm (D) x 1144mm (L).
- Plan dimension deviation class: to be confirmed by approved stone supplier.
- Diagonal deviation class: to be confirmed by approved stone supplier.
- Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier

310E YORKSTONE SETTS Yorkstone setts REF P17

- Standard: To BS EN 1341.
- Supplier: Marshalls or equal approved
Scott Cain
Project Consultant
Commercial Sales
Marshalls
Scott.Cain@marshalls.co.uk
M 07583 098 069
W marshalls.co.uk.
 - Product reference: Scoutmoor (Blue/Grey Yorkstone).
 - Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: wire diamond sawn.
- Sizes: 100mm (l) x 100mm (w) x 63mm (d).
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier
Bond - stretcher.

310F WATER FEATURE STEPPING STONES Granite Flags REF P18

- Standard: To BS EN 1341.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Mid-Grey (Kobra), .
 - Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: flamed top, cropped all visible sides.
- Sizes: varies - see drawing BBTC-IBI-N1-L-G700-DT-00-25.
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier
Bond - stretcher.

310G WATER WEIR FEATURE Granite Flags REF P9

- Standard: To BS EN 1341.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Product reference: Mid-Grey (Kobra), .
- Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: cropped NOTE Exposed face of steps on the weir to be flamed finish.
- Sizes: 800mm long x 300mm x 100mm - see drawing BBTC-IBI-N1-L-G700-DT-00-26.
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier.

310H NATURAL STONE SLABS Granite Flags REF P20

- Standard: To BS EN 1341.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 68.
- Product reference: Granite 'Yellow Rock').
- Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: bush hammered.
- Sizes:
 - o 320mm (l) x 210mm (w) x 63mm (d)
 - o 650mm (l) x 430mm (w) x 63mm (d)
 - o RL (870-1200mm) x 650mm (w) x 63mm (d) .
- Plan dimension deviation class: to be confirmed by approved stone supplier .
- Diagonal deviation class: to be confirmed by approved stone supplier .
- Thickness deviation class: to be confirmed by approved stone supplier .
- Arrises: to be confirmed by approved stone supplier .
- Breaking strength: to be confirmed by approved stone supplier .
- Slip resistance: to be confirmed by approved stone supplier .
- Skid resistance: to be confirmed by approved stone supplier .
- Surface treatment: to be confirmed by approved stone supplier Bond - stretcher .

310I WATER RILL 1 FEATURE Granite Flags REF P10

- Standard: To BS EN 1341.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Product reference: Mid-Grey (Kobra), .
- Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: cropped on top visible surface, units laid on edge, see drawing BBTC-IBI-N1-L-G700-DT-00-27.
- Sizes: 300x100x50mm - see drawing BBTC-IBI-N1-L-G700-DT-00-27.
- Plan dimension deviation class: to be confirmed by approved stone supplier.
- Diagonal deviation class: to be confirmed by approved stone supplier.
- Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier.

310J NATURAL STONE STEPS REF S2 - see drawing BBTC IBI N3 L G700 DT 00 21

- Standard: To BS EN 1341.
- Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
- Product reference: Solid granite step units - Mid Grey (Kobra) Granite with 55mm Magma contrasting strip to nosing.
- Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: flamed.
- Sizes: See drawing BBTC_IBI_N3_L_G700_DT_00_21 Elevation A - A:
- Bottom Step: 400mm (w) x 250mm (D) x 492 / 991mm (L)
- Middle & Top Step: 400mm (W) x 160mm (D) x 492 / 991mm (L).
- Plan dimension deviation class: to be confirmed by approved stone supplier.
- Diagonal deviation class: to be confirmed by approved stone supplier.
- Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: to be confirmed by approved stone supplier
- .

310K WEIR 1A : RILL 2 Granite "Mid Grey Kobra"

- Standard: To BS EN 1341.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Granite "Mid Grey Kobra"), .
 - Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: bush hammered.
- Sizes: 170mm w (base), 50mm (top), 185mm h, 600mm (l) and see drawing BBTC-IBI-N1-L-G700-DT-00-28.
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: bush hammered.

310L WEIR 1B : RILL 2 Granite "Mid Grey Kobra"

- Standard: To BS EN 1341.
Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Granite "Mid Grey Kobra"), .
 - Quarry: approved stone supplier to confirm.
- Petrographical description/ stone type: approved stone supplier to confirm.
- Finish: bush hammered.
- Sizes: 145mm w (base), 50mm (top), 100mm h, 745mm (l) and see drawing BBTC-IBI-N1-L-G700-DT-00-28.
 - Plan dimension deviation class: to be confirmed by approved stone supplier.
 - Diagonal deviation class: to be confirmed by approved stone supplier.
 - Thickness deviation class: to be confirmed by approved stone supplier.
- Arrises: to be confirmed by approved stone supplier.
- Breaking strength: to be confirmed by approved stone supplier.
- Slip resistance: to be confirmed by approved stone supplier.
- Skid resistance: to be confirmed by approved stone supplier.
- Surface treatment: bush hammered.

315 CONCRETE FLAGS Natural Coated Concrete Flags: REF P4 - Footpath Edges Area

- Standard: To BS EN 1339.
 - Manufacturer: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
Product reference: Kellen.
- Recycled content: unknown.
- Colour: as below and as supplied to site.
 - Finish: as manufactured.
 - Nominal sizes:
 - 200mm x 400mm/600mm x 80mm – Stretcher Bond
 - " 30% Grigio Breccia (50% 400mm (L) & 50% 600mm (L)
 - " 49% Magma Light Breccia (50% 400mm (L) & 50% 600mm (L)
 - " 21% Magma Light Sferio (50% 400mm (L) & 50% 600mm (L) .
- Arrises: tbc with approved paving supplier .
- Water absorption and freeze/ thaw resistance class: tbc with approved paving supplier .
- Bending strength class: tbc with approved paving supplier .
- Abrasion resistance class: tbc with approved paving supplier .
- Slip/ Skid resistance: tbc with approved paving supplier .
- Breaking load class: tbc with approved paving supplier Stretcher Bond - Butt Jointed .

315A CONCRETE FLAGS Natural Coated Concrete Flags: REF P12 - Gateway Zones

- Standard: To BS EN 1339.
 - Manufacturer: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
Product reference: Kellen.
- Recycled content: unknown.
- Colour: as below and as supplied to site.
 - Finish: as below and as supplied to site.
 - Nominal sizes:
 - 100mm x 300mm x 80mm – Herringbone
 - " 70% Magma Light Breccia
 - " 30% Magma Light Sferio .
- Arrises: tbc with approved paving supplier .
- Water absorption and freeze/ thaw resistance class: tbc with approved paving supplier .
- Bending strength class: tbc with approved paving supplier .
- Abrasion resistance class: tbc with approved paving supplier .
- Slip/ Skid resistance: tbc with approved paving supplier .
- Breaking load class: tbc with approved paving supplier Stretcher Bond .

315B CONCRETE FLAGS Market Gate Car Park Paving: REF P19

- Standard: To BS EN 1339.
 - Manufacturer: Marshall's or equal approved.
 - Product reference: La Linia.
 - Recycled content: unknown.
Colour: two colours of grey - Mid grey / Light grey to match existing.
 - Finish: textured to match existing.
 - Nominal sizes: 600 x 300 x 80 to match existing.
 - Arrises: tbc with approved paving supplier.
 - Water absorption and freeze/ thaw resistance class: tbc with approved paving supplier.
 - Bending strength class: tbc with approved paving supplier.
 - Abrasion resistance class: tbc with approved paving supplier.
 - Slip/ Skid resistance: tbc with approved paving supplier.
 - Breaking load class: tbc with approved paving supplier
- Stretcher Bond .

315C CONCRETE FLAGS Service yard maintenance strip: REF P23

- Standard: To BS EN 1339.
 - Manufacturer: Marshall's or equal approved.
 - Product reference: Standard Pimple Paving FL1200500.
 - Recycled content: unknown.
Colour: Natural.
 - Finish: Pimple finish as manufactured.
 - Nominal sizes: 900 x 600 x 50mm.
 - Arrises: tbc with approved paving supplier.
 - Water absorption and freeze/ thaw resistance class: tbc with approved paving supplier.
 - Bending strength class: tbc with approved paving supplier.
 - Abrasion resistance class: tbc with approved paving supplier.
 - Slip/ Skid resistance: tbc with approved paving supplier.
 - Breaking load class: tbc with approved paving supplier
- Stack Bond .

320 TACTILE FLAGS AND SLABS REF: P2 PAVING TYPE P2

- Standard: To DD CEN/TS 15209.
- Material: Granite tactile blister paving.
 - Manufacturer: Hardscape or equal approved
 - Ben Bevan
 - email: bb@hardscape.co.uk
 - Hardscape Products Ltd
 - 01204 590 666
 - 07894 344 688.
 - Product reference: crystal black.
- Recycled content: 0.
- Nominal sizes: 400mm (L) x 400mm (W) x 65mm (D).
- Colour: crystal black.
- Type of surface: blister flamed.

320A TACTILE FLAGS REF: P1 PAVING TYPE 1

- Standard: To DD CEN/TS 15209.
- Material: Granite tactile hazard warning corduroy paving.
 - Manufacturer: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
Product reference: crystal black.
- Recycled content: 0.
- Nominal sizes: 400mm (L) x 400mm (W) x 65mm (D).
- Colour: crystal black.
- Type of surface: corduroy flamed.

330 NATURAL STONE SETTS Granite Setts REF: P6

- Standard: To BS EN 1342.
 - Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: Kobra, Silver Grey Granite, .
 - Quarry: tbc with approved paving supplier.
Petrographical description/ stone type: tbc with approved paving supplier.
 - Finish: Cropped.
 - Sizes: 100mm (w) x 100mm (l) x 63mm (d).
 - Plan dimension and thickness deviation: tbc with approved paving supplier.
 - Special setts: tbc with approved paving supplier.
 - Tolerances on undercut of sides: tbc with approved paving supplier.
 - Tolerances on hewn and coarse textured face irregularities: tbc with approved paving supplier.
 - Breaking strength: tbc with approved paving supplier.
 - Slip resistance: tbc with approved paving supplier.
 - Skid resistance: tbc with approved paving supplier.
 - Surface treatment: tbc with approved paving supplier
- Bond - Stack.

330A FAN PATTERN NATURAL STONE SETTS Granite Setts REF: P14

- Standard: To BS EN 1342.
 - Supplier: Hardscape or equal approved
Ben Bevan
email: bb@hardscape.co.uk
Hardscape Products Ltd
01204 590 666
07894 344 688.
 - Product reference: 20% Magma flamed, 40% Yellow Rock bush hammered & 40% Barleycorn flamed
Sawn top and bottom, split sides with textured top face .
 - Quarry: tbc with approved paving supplier.
Petrographical description/ stone type: tbc with approved paving supplier.
 - Finish: Flamed.
 - Sizes: 100mm (w) x 100mm (l) x 100mm (d).
Note: First two rows of granite setts within fan pattern to be 90 x 90mm. 8% of total allowance for one fan.
 - Plan dimension and thickness deviation: tbc with approved paving supplier.
 - Special setts: tbc with approved paving supplier.
 - Tolerances on undercut of sides: tbc with approved paving supplier.
 - Tolerances on hewn and coarse textured face irregularities: tbc with approved paving supplier.
 - Breaking strength: tbc with approved paving supplier.
 - Slip resistance: tbc with approved paving supplier.
 - Skid resistance: tbc with approved paving supplier.
 - Surface treatment: tbc with approved paving supplier
- Bond - Stack.

330B NATURAL STONE SETTS TO MATCH EXISTING Granite Setts REF: P15

- Standard: To BS EN 1342.
Supplier: Marshalls or equal approved
Scott Cain
Project Consultant
Commercial Sales
Marshalls
Scott.Cain@marshalls.co.uk
M 07583 098 069
W marshalls.co.uk.
 - Product reference: assumed Scoutmoor Yorkstone .
 - Quarry: tbc with approved paving supplier.
Petrographical description/ stone type: to match existing and tbc with approved paving supplier.
- Finish: to match existing and tbc with approved paving supplier.
- Sizes: to match existing and tbc with approved paving supplier.
 - Plan dimension and thickness deviation: to match existing and tbc with approved paving supplier.
- Special setts: to match existing and tbc with approved paving supplier.
 - Tolerances on undercut of sides: to match existing and tbc with approved paving supplier.
 - Tolerances on hewn and coarse textured face irregularities: to match existing and tbc with approved paving supplier.
 - Breaking strength: to match existing and tbc with approved paving supplier.
- Slip resistance: to match existing and tbc with approved paving supplier.
- Skid resistance: to match existing and tbc with approved paving supplier.
- Surface treatment: to match existing and tbc with approved paving supplier.

335 CONCRETE SETTS Natural Coated Concrete Setts REF: P3 - Central Vehicular Area
Manufacturer: Hardscape or equal approved

Ben Bevan

email: bb@hardscape.co.uk

Hardscape Products Ltd

01204 590 666

07894 344 688

- Product reference: Kellen .
- Recycled content: tbc with approved paving supplier.
- Colour: as below and as supplied to site.
- Finish: as below and as supplied to site.
- Sizes:
 - 100mm x 200/300mm x 80mm – Stretcher Bond
 - " 35% Grigio Breccia (50% 200mm (L) & 50% 300mm (L)
 - " 35% Tagenta c Breccia (50% 200mm (L) & 50% 300mm (L)
 - " 21% Magma Light Breccia (50% 200mm (L) & 50% 300mm (L)
 - " 9% Magma Light Sferio (50% 200mm (L) & 50% 300mm (L) .
- Slip/ Skid resistance: tbc with approved paving supplier .
- Integral accessories: none .

370 CEMENT FOR SITE MIXED MORTAR to be confirmed by project engineer

- Standard: As section Z21.

375 SAND/ FINE AGGREGATE FOR SITE MIXED MORTAR to be confirmed by project engineer

- Standard: To BS EN 12620, designations:
 - Flag and slab paving laying course: to be confirmed by project engineer.
 - Flag and slab paving jointing: to be confirmed by project engineer.
 - Concrete sett paving laying course and jointing: to be confirmed by project engineer.
 - Rigid brick paving laying course and jointing: to be confirmed by project engineer.
 - Precast concrete and grass or gravel paving: to be confirmed by project engineer.

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): to be confirmed by others.
 - Vehicular traffic (minimum): to be confirmed by others.
- 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.

660 DRAINAGE HOLES IN EXISTING BASES

- Location: Impervious layers of existing road/ paving.
- Drainage: Form regular grid of holes, through base and any additional build up, down to sub-base:
 - Spacing in both directions: to be confirmed by project engineer.
 - Minimum clear opening: to be confirmed by project engineer.
 - Do not weaken or excessively disturb road/ paving.
- Completion: Remove jagged or protruding edges. Fill voids with to be confirmed by project engineer Ram down to form flush smooth surface.

665 PLANING AND REPAIRS TO EXISTING BASES

- Existing macadam/ asphalt surfaces: Plane to required levels.
- Repairs: to be confirmed by project engineer.
- Building up existing surfaces to required levels: to be confirmed by project engineer.

670 LAYING GRANULAR LAYER OVER EXISTING BASES

- Thickness to be confirmed by project engineer.
- Compaction: to be confirmed by project engineer.
- Blinding: to be confirmed by project engineer.

675 LAYING GEOTEXTILE SHEET EDGING STRIPS

- Location: Immediately below sand laying course, abutting features which interrupt the laying course, including:
 - Perimeters/ Edge restraints/ Kerbs.
 - Other types of paving.
 - Drainage fittings, e.g. channels and manholes.
- Edge detail: Turn sheet up to a height not less than thickness of sand bedding to form an upstand fitted neatly against features.
- Width: to be confirmed by project engineer.
- Jointing: Lap by to be confirmed by project engineer.

680 LAYING GEOTEXTILE SHEET PATCHES OVER DRAINAGE HOLES

- Laying: Lay geotextile patches on the base, centred over each hole.
 - Size of patch: to be confirmed by project engineer.

- 685 LAYING GEOTEXTILE SHEET OVERLAYS
- Location: Immediately below sand bedding course.
 - Laying: Fit neatly at edge restraints and other features that interrupt sand bedding course, e.g. drainage fittings, channels, manholes and kerbs.
 - Edge detail: Turn sheet up to form an upstand against features, height not less than thickness of sand bedding.
 - Width: to be confirmed by project engineer.
 - Jointing: Lap by to be confirmed by project engineer.
- 695 SITE MIXED MORTAR to be confirmed by project engineer
- Mix: to be confirmed by project engineer.
 - Consistency: to be confirmed by project engineer.
 - Admixtures: to be confirmed by project engineer.
- 700 SITE MIXED FINE CONCRETE to be confirmed by project engineer
- Standard: In accordance with BS 7533-7.
- 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: to be confirmed by project engineer.
 - Joint width: 2-5 mm.
- 715 LAYING FLAG AND SLAB PAVING - MORTAR LAYING COURSE AND JOINTING
- Standard generally: In accordance with BS 7533-4.
 - Flag installation and cutting: To Interpave 'Concrete flag paving'.
 - Laying course:
 - Nominal thickness: to be confirmed by project engineer.
 - Laying and jointing: to be confirmed by project engineer.
 - Joint width (nominal): to be confirmed by project engineer.
- 730 LAYING NATURAL STONE SETT PAVING
- Standard generally: In accordance with BS 7533-7.
 - Laying type: Rigid.
 - Laying and jointing method: to be confirmed by project engineer.
 - Laying course:
 - Target thickness after compaction: to be confirmed by project engineer.
 - Joint width (nominal): to be confirmed by project engineer.
- 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: to be confirmed by project engineer.
 - Jointing: Fill joints and finish neatly. Clean mortar from face of setts before it sets.
 - Joint width (nominal): to be confirmed by project engineer.
 - Recess mortar joints below sett surface by: to be confirmed by project engineer.
- 740 LAYING CONCRETE SETT PAVING - FINE AGGREGATE BEDDING AND JOINTING
- Laying: to be confirmed by project engineer.
 - Jointing: to be confirmed by project engineer.
- 750 LAYING NATURAL STONE COBBLE PAVING
- Bedding, laying, jointing and completion: In accordance with BS 7533-7 and -10.

795 SEALANT MOVEMENT JOINTS IN MORTAR BEDDED UNITS

- Spacing: to be confirmed by project engineer.
- Extent of joints: to be confirmed by project engineer.
- Joint filler: Compressible cellular rubber or plastics compatible with specified sealant. Build in as work proceeds.
 - Joint width: to be confirmed by project engineer.
- Barrier (joint breaker): As recommended by sealant manufacturer. Position filler and barrier accurately to fully support sealant at recommended distance from exposed faces of units.
- Sealant:
 - Application: As section Z22.

800 APPLYING SEALER/ STABILIZER TO BLOCKS AND SETTS

- Surface preparation: to be confirmed by project engineer.
- Application: To dry paving.
 - Method: to be confirmed by project engineer.
 - Number of coats: to be confirmed by project engineer.
 - Coverage: to be confirmed by project engineer.

810 PEDESTAL INSTALLATION

- Surface to accept pedestals: Clean and free of debris.
- Setting out: Mark centre-point of pedestal on substrate surface, with perpendicular guidelines to ensure square layout.
 - Orientation: Align parallel with adjacent features.
 - Spacing: To suit paving material and dimensions.
- Movement tolerance at perimeter of paver system (maximum): 5 mm.

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

- Sand dressing: to be confirmed by project engineer.
- Final compaction of the surface course: In accordance with BS 7533-3.
- Vacuum cleaning machines: Not allowed.

930 SLIP RESISTANCE TESTING

- Surfaces to be tested: all proposed surfacing.
 - Surface condition: Dry.
- Timing: As agreed with contract administrator.
- Period of notice (minimum): 3 working days.
- Test standard: To BS 1134.
 - Testing authority: A UKAS accredited laboratory.
 - Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: Contract administrator.
 - Report: Submit.
 - Format: As required under BS 1134.

Q26

Special surfacings/ pavings for sport/ general amenity

Q26 Special surfacings/ pavings for sport/ general amenity

To be read with Preliminaries/ General conditions.

IMPACT ABSORBING SURFACINGS FOR PLAY AREAS**350A SYNTHETIC GRASS SURFACING REF G1 GRASS TYPE 1**

- Sub-base: To engineers details.
 - Thickness: To engineers details.
- Base: To engineers details.
 - Thickness: To engineers details.
 - Permeable Geotextile membrane: [To manufacturers specification]
- Impact absorbing layer: EPDM rubber mats and/ or tiles.
 - Standard: To BS 7188.
 - Manufacturer: Perfectly Green OEA.
 - Product reference: To manufacturers specification.
 - Critical fall height when tested to BS EN 1177: To manufacturers specification.
 - Submit:
 - Resistance to indentation and ease of ignition: Evidence of testing to BS 7188.
- Surface course: Synthetic grass surface.
 - Standard: To BS 7044-4.
 - Manufacturer: Perfectly Green OEA.
 - Product reference: Lagonda.
 - Health and safety:
 - Substance known to be toxic or carcinogenic on skin contact or released as vapour or dust during normal use: Not permitted.
 - Ignitability:
 - Radius of ignition to BS 4790 (maximum): 35 mm.
 - Uniformity:
 - Level difference (maximum): 2 mm.
 - Separation at joints (maximum): 2 mm.
- Submit:
 - Critical fall height: Evidence of testing to BS EN 1177.
 - Additional: Artificial grass to be wrapped over and down timber edging and fixed with galvanised nails to prevent lifting. At intersections between individual grass lengths, joining tape, laid on top of the membrane, and glue to be used to fix pieces in place, all to manufacturers installation instruction.

ASSOCIATED ACCESSORIES**410 FLUSH EDGING TO SURFACING TYPE Q26/ 350A**

- Material: Hardwood boards.
 - Size: 150 mm x 38 mm.
 - Fixings: As manufacturers recommendations.
 - Pegs: 50 mm x 50 mm x 450 mm long.
 - Centres: 1200 mm.
- Treatment: As section Z12 and equivalent to the Wood Protection Association (WPA) Commodity Specification C3.
 - Type: To provide a 40 year service life.

410A FLUSH EDGING TO SURFACING TYPE Q10/ 200

- Material: Steel edging.
 - Size: 150 mm x 38 mm.
 - Fixings: TBC.
 - Pegs: 50 mm x 50 mm x 450 mm long.
 - Centres: 1200 mm.
- Treatment: As section Z12 and equivalent to the Wood Protection Association (WPA) Commodity Specification C3.
 - Type: TBC.

COMPLETION**930 DOCUMENTATION**

- General: For all types of surfacing, provide the following:
 - Name and contact details of installer.
 - Date of installation.
 - Name and contact details of manufacturer.
 - Type/ description/ reference of products used.
 - Manufacturer's recommended inspection and maintenance procedures to maintain safety and impact absorbing performance.
 - Manufacturer's recommended cleaning and maintenance methods, where relevant.

Q28

Topsoil and soil ameliorants

Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

SYSTEM OUTLINE

- 135 PLANTING BED SOIL SYSTEM FOR FLOWERING SHRUBS
- Composition:
 - Topsoil: Imported topsoil to BS 3882.
 - Ameliorants: Organic materials.
 - Accessories: Mycorrhizal inoculant.
- 145 PLANT PIT BACKFILLING SOIL SYSTEM FOR FLOWERING SHRUB PITS
- Composition:
 - Topsoil: Imported topsoil to BS 3882.
 - Ameliorants: Organic materials.
 - Accessories: Mycorrhizal inoculant.
- 155 MULCHING AND TOP DRESSING SYSTEM FOR SHRUB BEDS
- Composition:
 - Material: bark mulch. .

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: Bark.
 - Give notice: before ordering or using.
 - Declaration of compliance in accordance with BS EN 13650: Required.
- 310 MATERIALS NOT PERMITTED
- Materials: Peat.

315 IMPORTED TOPSOIL TO BS 3882 FOR PLANTING BEDS

- 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.
 - Soil textural class to BS 3882, Figure 1: Sandy loam.
- Source: Contractor's choice.
 - Product reference: Contractor's choice.

380 MYCORRHIZAL INOCULANT to all planting areas

- Manufacturer: PlantWorks Limited or equal approved
Unit 930 Cornforth Drive
Kent Science Park
Sittingbourne, Kent ME9 8PX

Telephone: +44 (0) 1795 411527.

- Product reference: Rootgrow.

EXECUTION**610 TOPSOIL ANALYSIS**

- Soil to be analysed: Imported topsoil.
- Soil analyst: contractors choice.
- Samples: Collect in accordance with BS 3882.
- Submit:
 - Declaration of analysis: In accordance with BS 3882, clause 6 and Table 1.
 - Additional analysis: Not required.
 - 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 5 kg.
- 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 PLANTING BEDS

- 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, clause 6 and Table 1.
- Number of copies: Two.

- 640 DOCUMENTATION FOR PREPARATION MATERIALS FOR IMPORTED SOIL IMPROVERS
- 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.
- 670 INSPECTING FORMATIONS
- Give notice: Before spreading topsoil for planting beds.
 - Notice period: 7 days.
- 680 SURPLUS TOPSOIL TO BE RETAINED
- Generally: Spread and level on site:
 - Locations: As directed by Contract Administrator.
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- 690 TOPSOIL STORAGE HEAPS
- Location: Contractor's choice.
 - Height (maximum): 1.0 m.
 - Width (maximum): 2.0 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.
 - Give notice: If required levels cannot be achieved by movement of existing soil.

705 HANDLING TOPSOIL

- Standard: In accordance with BS 3882.
- 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 ON ORNAMENTAL PLANTING BEDS

- Standard: In accordance with BS 3882.
- Temporary roads/ surfacing: Remove before spreading topsoil.
- Layers:
 - Depth (maximum): 150 mm.
 - Gently firm each layer before spreading the next.
- Depth after firming and settlement: 450 mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 LOOSE TIPPING OF TOPSOIL

- Standard: In accordance with BS 3882.
- 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 PLANTING BEDS

- Compacted topsoil: Break up to full depth.
- Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
- Depth: 450 mm.
- Particle size (maximum): 2-8 mm.
- Timing: Within a few days before planting.
- Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: as drawing.
- 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

- In relation to adjoining paving, kerbs or hard surfaces: As drawing.
- In relation to dpc of adjoining buildings: Not less than 150 mm below.
- In relation to adjacent grass areas: 50 mm below.
- 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.

845 APPLYING LOOSE MULCH FOR PLANTING BEDS

- Timing: after planting.
- Preparation: Ensure that soil is thoroughly moistened, applying water where necessary.
- Coverage of mulch (minimum):
 - Planting beds (depth): 75 mm depth.
 - Trees: 50 litres per tree position, 75 mm depth.
 - Container planting: 75 mm depth.
- Finished level of mulch: 50 mm below adjacent grassed or paved areas.

Q30

Seeding/turfing

Q30 Seeding/turfing

To be read with Preliminaries/General conditions.

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.

PREPARATION

212 SEED BED CLEANING BEFORE SOWING ALL GRASSED AREAS

- Operations: As seed supplier's recommendations..

250 SOIL REQUIREMENTS

- Type:
 - Seeded areas: Soil for grass swards, as section Q28.
 - Turfed areas: Soil for grass swards, as section Q28 .
 - Reinforced grass areas: Soil for grass swards, as section Q28.

SEEDING

311 GRASS SEED FOR ALL GRASSED AREAS

- Supplier: Emorsgate Seeds or equal approved.
 - Mixture reference: EG22 Strong Lawn Grass Mixture.
- Application rate: As supplier's recommendations.

- 311A GRASS SEED REF G3: TO THE REAR OF ZC
- Supplier: Emorsgate Seeds or equal approved.
 - Mixture reference: EN1 Special Pollen and Nectar Meadow Mixture.
 - Application rate: As supplier's recommendations.
- 311B GRASS SEED REF G4: TO SERVICE YARD
- Supplier: Germinal Seeds or equal approved.
 - Mixture reference: A18 Road Verge and Embankments .
 - Application rate: As supplier's recommendations.
- 319 QUALITY OF SEED FOR ALL GRASSED AREAS
- Freshness: Produced for the current growing season.
 - Certification: Blue label certified varieties.
 - Standard: EC purity and germination regulations.
 - Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
 - Samples of mixtures: Submit when requested.
- 330 SOWING
- General: Establish good seed contact with the root zone.
 - Method: Manually broadcast, raked and rolled.
 - Distribution: 2 equal sowings at right angles to each other.
- 335 GRASS SOWING SEASON
- Grass seed generally: April to October.
- 340 PRE-EMERGENT HERBICIDE FOR ALL GRASSED AREAS
- Standard: Pesticide Safety Directorate approved.
 - Application rate: In accordance with manufacturer's written recommendation.
 - Timing: Immediately after sowing.
- 350 TURF EDGING TO SEEDED AREAS ADJCENT TO FOOTPATH
- Standard: To BS 3969, with no perennial ryegrass.
 - Seed mix: Similar to seeded area.
 - Timing: Before sowing.
 - Preparation: Rake back a 750 mm wide margin around prepared seed beds.
 - Level of seed bed: Married in with turf.
 - Placement: Single row laid end to end and trimmed to a line.
 - Watering: On completion.

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: 50 mm.
 - Mower type: Contractor's choice.
 - Arisings: Remove from site.

565A TIMBER/ PLASTICS EDGINGS

- Material: Hardwood board.
 - Size: 250 mm x 50 mm.
- Fixings: Nailed.
 - Pegs: 50 mm x 50 mm x 450 mm long.
 - Centres: 1200 mm.
 - Installation height: Flush.
- Curved boards: Closely spaced vertical grooves cut in the back to achieve smooth flowing lines.
- Preservative treatment: As section Z12 and Wood Protection Association commodity specification C4.
 - Type: To provide a 30 year service life.

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: the end of the rectification period.
- Defective materials or workmanship: Areas that have failed to thrive.
 - Exclusions: Theft or malicious damage.
- Method of making good: Recultivation and reseedling/ 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: 75 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 50 mm.
 - Arisings: Remove.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
 - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
 - Method: Application of a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
 - Size: Exceeding 25 mm in any dimension.
- Areas of settlement: Make good.
- Watering: As clause 145.

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.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: N/A.

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: Three working days.

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: min 75mm depth.

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 relevant parts of BS 3936.
- Species: True to name.
- Origin/ Provenance: As plant schedule.
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 (available on CS Design Software Limited's website).

216 PLANTS/ TREES - SPECIFICATION CRITERIA

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

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: type of container.
- 246 LABELLING AND INFORMATION
- Standard: To BS 3936.
- 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.
- 275 PERMANENT IDENTIFICATION OF PLANTS
- Location: As plant schedule.
 - Labels: Black plastics 75 mm x 100 mm with white weatherproof lettering attached to tree trunks at 1.5 m from ground level.
 - Wording: Genus, species, variety and common name.
- 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.
- 285 PROTECTION OF EXISTING GRASS
- General: Protect areas affected by planting operations using boards/ tarpaulins.
 - Excavated or imported material: Do not place directly on grass.
 - Duration: Minimum period.

290 SURPLUS MATERIAL

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

PLANT CONTAINERS**PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS**

300 HERBICIDE TO CLEAR EXISTING VEGETATION

- Locations: All planting areas.
- Type: Suitable for suppressing perennial weeds.
- Timing: Allow fallow period before cultivation.
 - Duration (minimum): One week.

385 MULCH MATTING/ GEOTEXTILE FABRIC TO ALL BEDS

- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Type: contractors choice.
- Recycled content: Submit proposals.
- Timing: Lay before planting.
- Watering: Water soil thoroughly before laying.
- Laying: In close contact with soil surface. Lap or butt joints as recommended by manufacturer, with no gaps.
- Planting: Cut neat slits or flaps. Refit closely around plant stems.
- Overlay: Mulching planting beds and trees.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

401 REGULAR PLANT LAYOUT TO ALL BEDS

- Spacing: As plant schedule .
- 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: Contractor's choice.
- 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.

435 CLIMBING PLANTS USED AS GROUND COVER

- Planting:
 - Canes or other supports: Remove.
 - Arrangement: Spread stems.
- Fixing: Pinned to ground to ensure good contact.

445 PLANTING BULBS/ CORMS/ TUBERS

- Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
- Backfilling: Finely broken soil. Lightly firm to existing ground level.
- Naturalized planting in existing grassed areas:
 - Scattering: Random. Plant bulbs/ corms/ tubers where they fall.
 - Planting: Neatly remove a plug of turf and replace after planting.

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: 50 mm.

PLANTING TREES**500 TREE PLANTING**

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

502 ANTIDESICCANT FOR CONIFERS/ EVERGREENS

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

505 TREE PITS

- Sizes: As drawing detail BBTC IBI N3 L G700 DT 00 03.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Excavated material: Remove arisings.
- Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 100 mm.
 - Treatment: Soil ameliorant worked into pit bottoms.
- Pit sides: Scarify.
- Backfilling material: Topsoil, as section Q28.

505A TREE PITS PHASE 2 WORKS - REAR OF ZC

- Sizes: As drawing detail BBTC-IBI-N1-L-G700-DT-00-43.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Excavated material: Remove arisings.
- Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 150 mm.
 - Treatment: Backfill to 175mm depth with no fines broken stone or clean gravel drainage layer with Terram 1000 membrane laid over the top..
- Pit sides: Scarify.
- Backfilling material: 85% approved topsoil, 15% peat free compost, approved slow release fertilizer to the top 450mm of the tree pit only. Subsoil should be tested to make sure that it is freely draining and of a sandy structure. If this is not the case, Greenblueurban Rootspace Rootsoil 20 should be used..

505B TREE PITS PHASE 2 WORKS - MAIN SQUARE

- Sizes: As drawing detail BBTC-IBI-N1-L-G700-DT-00-32.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Excavated material: Remove arisings.
- Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 150 mm.
 - Treatment: Backfill to 175mm depth with no fines broken stone or clean gravel drainage layer with Terram 1000 membrane laid over the top..
- Pit sides: Scarify.
- Backfilling material: 85% approved topsoil, 15% peat free compost, approved slow release fertilizer to the top 450mm of the tree pit only. Subsoil should be tested to make sure that it is freely draining and of a sandy structure. If this is not the case, Greenblueurban Rootspace Rootsoil 20 should be used..

510A TREE PIT ROOT BARRIERS PHASE 2 WORKS - MAIN SQUARE AND REAR OF ZC

- Locations: As drawing detail BBTC-IBI-N1-L-G700-DT-00-32 and BBTC-IBI-N1-L-G700-DT-00-43.
 - Manufacturer: GreenBlue Urban.
 - Product reference: Re- root 1000
 - Thickness: as manufactured.
 - Barrier depth: as manufactuered.
 - Foil liner: Not required .
 - Top of root barrier in relation to finished topsoil level: 50 mm below ground level.
 - Installation: With sides vertical. Remove all sharp objects adjacent to barrier.
- Locations: Wherever the installed rootball will be within 3m of an existing underground service routes/adjacent hard surfacing.

512 TREE PIT IRRIGATION AND VENTILATION ACCESSORIES

- Locations: as located on GA's.
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Type: Perforated plastics irrigation pipe with inlet.
- Pipe diameter: 50 mm.
- Ring diameter: submit proposals.
- Inlet: Black plastics, with cap.
- Installation:
 - 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.
 - Top cap of inlet: Protruding slightly above finished surround level.
 - Backfill material: Carefully compact in layers.

512A TREE PIT IRRIGATION AND VENTILATION ACCESSORIES PHASE 2 WORKS - MAIN SQUARE AND REAR OF ZC

- Locations: As drawing detail BBTC-IBI-N1-L-G700-DT-00-43.
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Type: Perforated plastics irrigation pipe with inlet.
- Pipe diameter: 50 mm.
- Ring diameter: submit proposals.
- Inlet: Black plastics, with cap.
- Installation:
 - 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.
 - Top cap of inlet: Protruding slightly above finished surround level.
 - Backfill material: Carefully compact in layers.

515 TREE PIT DRAINAGE

- Locations: all proposed trees.
- 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: to be confirmed based on green blue urban tree pit detail and tree / rootball specification confirmation.
- Drainage pipes:
 - Type: to engineers details.
 - Diameter: to engineers details.
 - Position: Lay around perimeter of pit within aggregate layer.
 - Discharge: to engineers details.
- Geotextile filter:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Position: Lay over aggregate before installing tree or backfill.
- Completed pits: Test for free drainage before planting.

520 CELLULAR STRUCTURAL SOIL SYSTEM

- Locations: refer to IBI General Arrangements Drawing & DT 00 03.
- Manufacturer: as above.
 - Product reference: as above.
- Geotextile membrane: as above.
- Installation: Ensure all void spaces are filled with lightly compacted growing medium prior to installation of further layers or sub-bases.

- 526 UNDERGROUND GUYING FOR tree pit details.
 Manufacturer: Green Blue Urban or similar approved.
 - Product reference: Anchorplate.
 • Anchoring system: as above.
 • Installation: Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.
- 535 TREE STAKES
 • Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
 - Preservative treatment: To provide a 20 year service life.
 • Stake size (minimum): 65mm diameter.
 • Stake length (minimum): 1200mm.
- 550 DOUBLE STAKING FOR TREE PITS TO THE REAR OF ZC
 • Staking:
 - Position: Either side of tree position and perpendicular to wind direction.
 - Driving: Vertically at least 300 mm into bottom of pit before planting.
 - Backfilling: Consolidate material around stake.
 - Firming: Sufficiently firm to prevent movement of the rootball/ rootstock.
 • Height of stakes: Cut off at approximately one third of the height of the clear stem of tree.
 • Horizontal bracing: Timber cross bar, 75 mm x 38 mm x 900 mm.
 - Fixing: Firmly fix using nails on windward side of tree and as close as possible to the stem without making contact with the bark. Position cross bar horizontally and 25 mm from top of stakes. .
 • Ties: Adjustable butyl ties - Contractor's choice.
 • Tying: Secure tree firmly but not rigidly to cross bar. Prevent tree from touching cross bar using spacer blocks or cushions if required.
 • Nails for fixing ties, belts and webbing: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
 • Nails for fixing cross bars: To BS 1202-1, galvanized round wire, minimum 75 mm long and 3.75 mm gauge.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

- 710 MAINTENANCE
 • Duration: Carry out the operations in the following clauses from completion of planting until BC.
 • Frequency of maintenance visits: TBC.
- 720 FAILURES OF PLANTING
 • Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
 - Exclusions: Theft or malicious damage after completion.
 - Rectification: Replace with equivalent plants/ trees/ shrubs.
 • Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
 • Timing of making good: During the next suitable planting season.
- 740 CLEANLINESS
 • Soil and arisings: Remove from hard surfaces and grassed areas.
 • General: Leave the works in a clean tidy condition at completion and after any maintenance operations.

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: TBC.
- 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.
- 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.
- Tree accessories: Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - Broken or missing items: Replace.
 - Loose stakes: Re-firm in the ground or replace as necessary to provide support to the tree.
 - Loose guys: Re-firm anchor points and adjust as necessary to provide support to the tree.
 - Ties: Adjust to accommodate growth and prevent constriction or abrasion.
 - Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - Frequency of checks: TBC.
- Watering: As necessary.

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): 75 mm.
- Trees: Remulch.
 - Depth (minimum): 75 mm.

Q35

Landscape maintenance

Q35 Landscape maintenance

To be read with Preliminaries/ General conditions.

GENERALLY

110 NOTICE

- Give notice before:
 - Application of herbicide.
 - Application of fertilizer.
 - Watering.
 - Each site maintenance visit.
- Period of notice: 7 days.

130 REINSTATEMENT

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

155 WATERING

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

160 WATER RESTRICTIONS

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

170 DISPOSAL OF ARISING

- General: Unless specified otherwise, dispose of arisings as follows:
 - Biodegradable arisings: Remove to recycling facility.
 - Grass cuttings: Not required.
 - Tree roots and stumps: Remove from site.
 - Shrub and tree prunings: Remove to recycling facility.
 - Litter and nonbiodegradable arisings: Remove from site.

180 CHIPPING OR SHREDDING

- General: Not permitted on site.

181 MECHANICAL EQUIPMENT

- General: Minimize.
- Prohibited equipment: TBC.
- Timing: Use of mechanical equipment allowed between the hours of 10:00 am and 4:00 pm only.

190 LITTER

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

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.

FLOWER BEDS/ SEASONAL BEDDINGS

450 PLANTING BEDS OF ANNUALS

- Clearance: Remove previous season's bedding, including all bulbs, litter and debris.
- Preparation: Dig over beds using a spade or hand held mechanical cultivator:
 - Annual weeds: Bury.
 - Perennial weeds: Carefully dig out.
- Fertilizer: Either in autumn or spring spread and incorporate Organic fertilizer .
 - Application rate: As manufacturer's recommended rate.
- Annual bedding plants:
 - Standard: To BS 3936-7.
 - Setting out: Plant out To approved layout, including edging plants, main layer, specimen or pot plants, corms, bulbs or tubers.
- Watering: Keep plants watered as necessary before planting out and water in after planting.
- Failed planting: Replant as necessary any plants, or areas of plants, that have failed to thrive.

460 BEDS OF PERENNIALS OR PERENNIALS AND ANNUALS

- Plant supports: Stake and tie plants using submit proposals.
 - Length: To suit plant height.
 - Maintain throughout the growing season.
- Gaps in planting: Refill by replanting.
- Watering:
 - New plants: Before and after planting out.
 - Ongoing: As necessary for the continued thriving of all planting.
- Operations at end of growing season:
 - Trim: Older flowering stems of herbaceous perennials.
 - Remove: Redundant plant supports, litter, debris and arisings.
 - Cultivate: Fork over the soil, taking care not to cause undue disturbance to plants.
 - Top dress: Apply sanitized and stabilized compost top dressing.

470 FLOWER BEDS GENERALLY

- Operations:
 - Remove: Dead flower heads, fallen leaves, litter and debris.
 - Weeds: Thoroughly hand weed.
 - Cultivate: Lightly hoe.
 - Trim: Clip grass edges.
- Fungicide: Contractor's choice.
- Insecticide: Contractor's choice.

SHRUBS/TREES/HEDGES

500 ESTABLISHMENT OF NEW PLANTING

- Duration: One year.
- Weed control:
 - Method: Keep planting beds clear of weeds by maintaining full thickness of mulch.
 - Area: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
- Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
- Watering: As appropriate to determine good establishment.

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.

515 TREE GUY WIRES

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

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.

525 TREE GUARDS

- Loose or defective guards: Adjust, refix or replace to original specification and to prevent chafing.

535 TREE GRILLES

- Operations: Lift grilles, remove weeds, adjust levels as necessary and lightly compact. Refit grilles, refill interstices and lightly compact to correct level.
- - Material for making up levels and refilling: Horticultural grit.

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.

- 545 PRUNING OF EXCESSIVE OVERHANG
- Timing: As instructed.
 - Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
 - Special requirements: None.
- 555 PRUNING TREES AND SHRUBS
- Standard: To BS 7370-4.
 - Special requirements: Growth retardants not permitted.
- 570 FORMATIVE PRUNING OF YOUNG TREES
- Standard: Type and timing of pruning operations to suit the plant species.
 - Time of year: Do not prune during the late winter/ early spring sap flow period.
 - Young trees up to 4 m high:
 - Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.
 - Remove duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
 - Whips or feathered trees: Do not prune.
 - Operatives: Member of the Arboricultural Association.
- 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.
- 605 TRIMMING SLOWLY ESTABLISHING HEDGES
- Operations:
 - Timing: Cut back hard in June and September to encourage bushy growth down to ground level.
 - Form: Allow to reach planned dimensions only by gradual degrees, depending on growth rate and habit.
- 620 REMOVAL OF DEAD PLANT MATERIAL
- Operations: At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.
- 630 DEAD AND DISEASED PLANTS
- Removal: As soon as possible.
 - Replacement: In the next suitable planting season.

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: Contractor's choice.
 - 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.

655 WEED CUTTING BY HAND OR MACHINE

- Undesirable grass, brambles and herbaceous growth: Cut down cleanly to a maximum height of 25 mm.
- Herbicides: Do not use.

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.

675 DIGGING OVER

- General: Dig over beds. Do not damage existing plants, bulbs and roots.
 - Depth of dig (minimum): 100 mm.

680 SOIL AERATION

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

685 SOIL LEVEL ADJUSTMENT

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

690 MAINTENANCE OF LOOSE MULCH

- Thickness (minimum): 75 mm.
 - Top up: TBC.
- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
- Weeding: Remove weeds growing on or in mulch by hand weeding.

700 SNOW REMOVAL FROM SHRUBS/ TREES

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

705 WINTER LEAF REMOVAL

- Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds.
- Arisings: Remove to recycling facility.

TREE WORK**810 TREE WORK GENERALLY**

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

815 ADDITIONAL WORK

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

820 PREVENTION OF WOUND BLEEDING

- Standard: To BS 3998.

825 PREVENTION OF DISEASE TRANSMISSION

- Standard: To BS 3998.

830 CLEANING OUT AND DEADWOODING

- Remove:
 - Dead, dying, or diseased wood, broken branches and stubs.
 - Fungal growths and fruiting bodies.
 - Rubbish, wind blown or accumulated in branch forks.
 - Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
 - Other unwanted objects, e.g. tree houses, swings.
 - Climbing plants as schedule ???.

835 CUTTING AND PRUNING GENERALLY

- Tools: Appropriate, well maintained and sharp.
- Final pruning cuts:
 - Chainsaws: Do not use on branches of less than 50 mm diameter.
 - Hand saws: Form a smooth cut surface.
 - Anvil type secateurs: Do not use.
- Removing branches: Do not damage or tear the stem.
- Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
- Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
Large branches: Remove only with prior approval.
 - 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.

840 CROWN REDUCTION/ SHAPING

- General: Cut back selectively to lateral or sublateral buds or branches to retain flowing branch lines without leaving stumps.
- Operations: with prior approval.

845 CROWN LIFTING

- Clearances: Remove branch systems to give clearance.
 - Height: with prior approval.
- Removing branches: Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.

850 CROWN THINNING

- Removing branches: Remove inward growing, crossing, rubbing, dead and damaged branches.
- Thinning: Selectively remove secondary and small live branch growth evenly throughout the crown.
 - Quantity: TBC.
- Cutting: Make no cuts of more than 50 mm diameter.
 - Branches: Cut back to lateral or sublateral buds or branches without leaving stumps.
- Appearance: Leave a uniform and well balanced structure of branches and foliage.

855 CUTTING TREE ROOTS

- Excavating: Use hand tools only.
- Protected area: Do not cut roots within an area which is the larger of:
 - The branch spread of the tree.
 - An area with a radius of half the tree's height, measured from the trunk.
- Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.
- Cutting:
 - Cutting: Make clean smooth cuts with a hand saw.
 - Wounds: Minimize. Avoid ragged edges.
 - Finishing: Pare cut surfaces smooth with a sharp knife.
- Backfilling:
 - Protection: Cover cut roots with clean sharp sand.
 - Material: Backfill with original topsoil.

860 REMOVING TREES, SHRUBS AND HEDGES

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

865 BARK DAMAGE

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

870 CAVITIES IN TREES

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

WATER AREAS**895 CLEARANCE OF WATERCOURSES**

- Clearance: Remove litter, debris, accumulated silt and excessive vegetation causing an obstruction.
- Frequency: TBC.
- Time of year: As instructed.
- Method: Submit proposals.
 - Access: From one bank only.
 - Position: At least 1 m from the top of the bank.
- Phasing: As instructed.

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

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

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.

930 GRAFFITI REMOVAL

- Method: submit proposals.
- Subsequent treatment: Not required.
 - Finish: n/a.

Q40
Fencing

Q40 Fencing

To be read with Preliminaries/ General conditions.

FENCING SYSTEMS

220A STEEL FENCING Kee Klamp Fencing - KK1

- Manufacturer: Kee Safety Ltd or equal approved
Cradley Business Park
Overend Road
Cradley Heath
West Midlands
B64 7DW
Tel: +44 (0) 1384 632 188..
 - Product reference: Contractor's Choice.
- Standard: To BS 1722-8, type To BS 1722-8, type to be confirmed by manufacturer..
- Height: In line with Engineer's details for making good of existing wall. Total height of barrier to be no less than 1100mm and to be base plate fixed to top of wall.
- Posts and bars:
 - Corner/ End posts: Circular hollow section..
 - Intermediate bars/ Joiner posts: horizontal circular hollow section as manufacturer's standard details..
 - Finish: Hot dip galvanized to BS EN ISO 1461..
Colour: Contractor's Choice.
 - Centres of posts (maximum):
 - Joiner posts: 6 m.
 - Intermediate posts: 1 m.
- Method of setting posts:
 - Intermediate/ Joiner posts: Driven.
 - End and corner posts: Set in rammed earth to a minimum depth of to Engineer's Detail.
- Accessories: None.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-8.

310A STEEL AND TIMBER FENCING F4

- Manufacturer: Jackson's Fencing.
 - Product reference: Euroguard Combi Fencing or similar approved.
- Standard: To BS 1722-5, type As manufactured to bs en 10244-2:2009 Class A.
- Height: 2070mm.
- Wood: As manufactured.
 - Treatment: Powder coated to BS EN 13438.
 - Finish: Colour to match Network Rail boundary.
- Boards/ rails: As manufactured.
- Posts: 80 x 60mm.
- Centres of posts (maximum): 3054mm as per Manufacturer's recommendations.
- Method of setting posts: To Engineer's Details.
- Accessories: None.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.

350A STEEL PALISADE FENCING Fence Type F5 - Service Yard

- Manufacturer: Contractor's Choice.
 - Product reference: Contractor's Choice.
- Standard: To BS 1722-12, type GP18.
- Height: 2100mm.
- Pales: To match existing Network Rail boundary..
- Pale tops: To match existing Network Rail boundary..
 - Finish: To match existing Network Rail boundary..
 - Colour: To match existing Network Rail boundary..
- Fixings: Bolted.
- Centres of posts (maximum): 2.75 m.
- Method of setting posts:
 - Holes: Submit proposals.
 - Embedded length: As per Engineer's recommendations..
 - Completely filled to ground level with concrete.
- Bottom of fencing: To match existing..
- Accessories: None.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-12.

GATES, POSTS AND STILES**570 GATES**

- Manufacturer: GT1 Palisade Gate to match Q40/350A In Service Yard.
 - Product reference: Contractors Choice.
- Sizes: 1200mm wide/2100mm high Single leaf.
- Posts: As manufactured.
- Finish as delivered: As manufactured.
- Fittings: As manufactured.
 - Finish: To match fence Q40/350A.
- Method of fixing: To Engineer's Detail.
- Accessories: Lockable to client's requirements.

570A GATES

- Manufacturer: GT1 Palisade Gate to match Q40/350A In Service Yard.
 - Product reference: Contractors Choice.
- Sizes: 6756mm wide (total width) (To be confirmed by Fabricator). 2100mm high. Double leaf.
- Posts: As manufactured.
- Finish as delivered: As manufactured.
- Fittings: As manufactured.
 - Finish: To match fence Q40/350A.
- Method of fixing: To Engineer's Detail.
- Accessories: Lockable to client's requirements.

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.

740 SETTING POSTS IN EARTH

- Holes: Excavated neatly, with vertical sides and as small as practicable to allow refilling.
- Filling: Position posts/ struts and replace excavated material, well rammed as filling proceeds.

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.

Q41

Barriers/ guardrails

Q41 Barriers/ guardrails

To be read with Preliminaries/ General conditions.

TYPES OF BARRIERS/ GUARDRAILS

- 130 PROTECTIVE BARRIERS Guard rail to Highway Ref: GU1
- Standard: To BS 6180.
 - Height above datum: To match existing.
 - Material/ Protection: Steel, galvanized to BS EN ISO 1461 after fabrication or to match existing.
 - Surface finish: Galvanised.
 - Colour/ Texture: To match existing.
 - Minimum film thickness: To match existing.
 - Fixings/ Foundations: To engineers details.
 - Other requirements: Submit proposals.
- 135 PROPRIETARY PROTECTIVE BARRIERS ZC Rear Service Space Ref: GU2
- Standard: To BS 6180.
 - Manufacturer: Delta Balustrades or similar approved.
 - Product reference: Orbis.
 - Height above datum: 1100 mm.
 - Material/ Protection: Stainless steel.
 - Surface finish: Ultra.
 - Colour/ Texture: n/a.
 - Minimum film thickness: n/a.
 - Fixings/ Foundations: Root fixed into concrete wall.
 - Other requirements: Vertical supports at 2 m minimum centres. Tubular size TBC to suit engineers loading drawings. Horizontal mid rails required..
- 240 HANDRAIL SYSTEMS HR1
- System manufacturer: Logic or equal approved
Micah Johnston - Street Furniture Consultant
Telford Road
Middlesbrough
TS3 8BL
mj@logic-sf.co.uk
01642 373400.
 - Material: Stainless steel. Product reference: Bespoke.
 - Cross section: -.
 - Finish: Submit design and cost proposals.
 - Height above ground surface (to upper surface of handrail):
 - Upper handrail: tbc.
 - Lower handrail: -.
 - Accessories:
 - BS 8300-1:2018.

INSTALLATION

- 410 WORK ON OR ADJACENT TO HIGHWAYS
- Requirement: Comply with the Department for Transport's 'Safety at street works and road works. A code of practice'. Retain a copy of this document on site at all times during the course of the works.

420 ALIGNMENT

- Erection: Fences/ barriers to present a flowing alignment. Tops of posts to follow ground profile.
- Tolerance: ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.

430 ERECTION GENERALLY

- Protection: Coat all internal and external surfaces of aluminium and steel posts below and up to 150 mm above ground level, with two coats of bituminous paint to BS 6949 type 2, unless other applied surface finish is specified.
- Prevention of electrolytic corrosion: Isolate dissimilar metals.
- Steel components: Do not drill, cut or weld after galvanizing.

450 ERECTION OF VEHICLE SAFETY FENCES

- Standard: To BS 7669-3.
- Erector requirements:
 - Operate Quality Management System, certified by a United Kingdom Accreditation Service (UKAS) independent laboratory.
 - Comply with the 'Sector scheme 2B Supply, installation, maintenance and repair of road restraint systems'.
 - Hold valid registration card, issued by National Fencing Training Authority, for types of fences to be erected.
- Completion: Before handover, check fixings for tightness without overstressing.

Q50

Site/street furniture/equipment

Q50 Site/street furniture/equipment

To be read with Preliminaries/ General conditions.

GATES, BARRIERS AND PARKING CONTROLS

190 BOLLARDS REF: B1

- Manufacturer: Furnitubes or equal approved
www.furnitubes.com
3Rd Floor, Meridian
www.furnitubes.House, Royal Hill, Greenwich, London SE10 8RD
020 8378 3200.
 - Product reference: Zenith bollard.
- Material: stainless steel grade 316.
 - Finish as delivered: silver as supplied.
 - Colour: silver as supplied.
- Height above ground: 900.
- Sectional size: 115mm dia. .
- Top: Mitred top with yellow contrasting/reflective band.
- Special features: none.
- Method of fixing: root fixed.

190A DOOR BARRIER DB

- Manufacturer: Broxap Ltd.
Rowhurst Industrial Estate
Chesterton
Newcastle-under-Lyme
Staffordshire, ST5 6BD
01782 564411.
 - Product reference: BX14/DB.
- Material: stainless steel grade G316.
 - Finish as delivered: silver as supplied.
 - Colour: silver as supplied.
- Height above ground: 1020mm.
- Diameter tube : 42mm .
- Special features: none.
- Method of fixing: root fixed.

190B BOLLARDS REF: B3SY (Service Yard)

- Manufacturer: Marshalls or equal approved..
 - Product reference: RB101.
- Material: Steel.
 - Finish as delivered: As manufactured.
 - Colour: RAL 9005.
- Height above ground: 1200mm.
- Sectional size: 168mm dia. .
- Top: Straight with amber contrasting/reflective band.
- Special features: none.
- Method of fixing: root fixed to manufacturers and project engineers details.
Note: Client to confirm level of 'impact protection' / anti ram necessary for this situation in line with Highway Engineer recommendations.

190C BOLLARDS REF: B4SY (Service Yard)

- Manufacturer: Marshalls or equal approved..
 - Product reference: RB101.
- Material: Steel.
 - Finish as delivered: As manufactured.
 - Colour: RAL 9005.
- Height above ground: 1200mm.
- Sectional size: 139mm dia. .
- Top: Straight with amber contrasting/reflective band.
- Special features: TO BE LIFT OUT AND LOCKABLE.
- Method of fixing: root fixed to manufacturers and project engineers details.
Note: Client to confirm level of 'impact protection' / anti ram necessary for this situation in line with Highway Engineer recommendations.

190D HVM BOLLARDS REF BS1: Static HVM Bollards

- Manufacturer: Contractor's Choice - Marshalls or equal approved..
 - Product reference: RhinoGuard Terra Bollards.
- Material: Steel.
 - Finish as delivered: Stainless.
 - Colour: None.
- Height above ground: As specialist manufacturers details.
- Sectional size: As specialist manufacturers details.
- Top: straight.
- Special features: none.
- Method of fixing: Shallow mount as manufacturers details.
Note: Specialist manufacturer to advise on level of 'impact protection' / anti ram necessary for this situation to determine final bollard specification

194A RETRACTING BOLLARDS REF SFB1: Automatic Rising HVM Bollards

- Manufacturer: Contractor's choice - Marshalls or similar approved.
 - Product reference: RhinoGuard Terra Bollards.
- Type: Electronic.
- Material: Steel.
 - Finish as delivered: Stainless Steel.
 - Colour: None.
- Height above ground: As specialist manufacturers details.
- Special features: TBA.
- Supply: To engineers details.
- Controllers: To engineers details.
- Method of fixing: Shallow Mount as Manufacturer's standard.
Note: Specialist manufacturer to advise on level of 'impact protection' / anti ram necessary for this situation to determine final bollard specification

196A REMOVABLE BOLLARDS REF: B2

- Manufacturer: Furnitubes or equal approved
www.furnitubes.com
3Rd Floor, Meridian [
www.furnitubes.House, Royal Hill, Greenwich, London SE10 8RD
020 8378 3200.
- Product reference: Zenith.
- Material: Stainless steel grade 316.
 - Finish as delivered: as supplied.
 - Colour: as supplied.
- Height above ground: 900mm.
- Sectional size: 115mm dia. .
- Top: -.
- Special features: Removable.
- Method of fixing: to manufacturers recommendations and engineers details.

196B REMOVABLE BOLLARDS REF SB2: Static Removable HVM Bollards

- Manufacturer: Contractors Choice - Marshalls or similar approved.
 - Product reference: RhinoGuard Terra bollards.
- Material: Steel.
 - Finish as delivered: Stainless.
 - Colour: n/a.
- Height above ground: As specialist manufacturers details.
- Sectional size: As specialist manufacturers details.
- Top: straight.
- Special features: TBC.
- Method of fixing: Shallow mount as Manufacturers standard.
Note: Specialist manufacturer to advise on level of 'impact protection' / anti ram necessary for this situation to determine final bollard specification

SITE AND STREET FURNITURE**210A CYCLE STANDS CS1**

- Manufacturer: Furnitubes or equal approved
www.furnitubes.com
3Rd Floor, Meridian
www.furnitubes.House, Royal Hill, Greenwich, London SE10 8RD
020 8378 3200 .
- Product reference: Fin cycle stand.
- Type: Single stands.
- Material: stainless steel.
 - Finish: grade 316.
 - Colour: silver, as supplied.
- Accessories: None.
- Method of fixing: root fixed to manufacturers recommendations & engineers details.

- 220A BENCHES Be1 and associated W1 wall
 Drawings: BBTC IBI N3 L G700 DT 00 01, BBTC IBI N1 L G700 DT 00 05, BBTC IBI N3 L G700 DT 00 09, BBTC IBI N3 L G700 DT 00 12, BBTC IBI N3 L G700 DT 00 14, BBTC IBI N3 L G700 DT 00 19, BBTC IBI N3 L G700 DT 00 33, BBTC IBI N3 L G700 DT 00 35
- Manufacturer: Hardscape or equal approved
 Ben Bevan
 Hardscape Products Ltd
 01204 590 666
 07894 344 688.
 - Product reference: Bespoke.
 - Material:
 W1
 - o Kobra granite (Mid grey colour)
 - o Cropped front and back face finish
 - o Flamed finish to top
 Be1
 - o Tropical hardwood (Opepe Hardwood – Class 1, natural finish, pencil round edges
 - o 75(w) x 90mm (d) x RL profile timber slats
 - o Stainless steel arms – 75mm (w) x 10mm (thickness) .
 - Finish: as above .
 - Colour: as above / supplied .
 - Size: as above .
 - Accessories/ Special requirements: central stainless steel support to all armrests. Angled timber backrests as drawings above .
 - Method of fixing: to engineers details .
- 220B BENCHES Be2a & Be2b
- Manufacturer: Marshalls OEA
 Dominic Renney
 Specification Manager (Marshalls Street Furniture)
 m: 07973 949 331
 e: dominic.renney@marshalls.co.uk.
 - Product reference: Natural elements.
 - Material: Steel and timber.
 - Finish: Timber: FSC redwood timber coated with water based stain 'rustic brown'
 Steel: powder coated 'Corten Fossil' including decorative laser cut pattern as supplied.
 - Colour: As manufactured.
 - Size: manufacturers standard sizes.
 - Accessories/ Special requirements: Be2a - concave bench, Be2b - convex bench.
 - Method of fixing: to manufacturers and engineers details (Root fixing preferable but seats form / design may only allow for base plating).
- 225A SEATS Se1
- Manufacturer: Furnitubes or equal approved
 www.furnitubes.com
 3Rd Floor, Meridian
 www.furnitubes.House, Royal Hill, Greenwich, London SE10 8RD
 020 8378 3200 .
 - Product reference: Zenith Zen 6.
 - Material: Timber and steel.
 - Finish: satin polished.
 - Colour: as manufactured.
 - Size: 1830mm (l) 540mm (w) x 350mm (b/g) x 780mm (a/g).
 - Accessories/ Special requirements: Additional arms.
 - Method of fixing: Root fixed.

225B SEATS Se2

Manufacturer: Marshalls or equal approved

Dominic Renney

Specification Manager (Marshalls Street Furniture)

m: 07973 949 331.

- Product reference: Marshalls 'Natural Elements' standalone seat ..
- Material: Timber and steel.
 - Finish:
 - Timber: FSC redwood timber coated with water based stain 'rustic brown'
 - Steel: powder coated 'Corten Fossil' including decorative laser cut pattern as supplied.
 - Colour: as above / supplied.
- Size: L 1640 mm, W 500 mm, H 899 mm.
- Accessories/ Special requirements: 4no. armrests and 2no. lit up end panels.
- Method of fixing: to manufacturers and engineers details (Root fixing preferable but seats form / design may only allow for base plating).

225C RAISED PLANTER Ref: RPL1

Manufacturer: Marshalls or equal approved

Dominic Renney

Specification Manager (Marshalls Street Furniture)

m: 07973 949 331.

- Product reference: Marshalls 'Natural Elements' standalone planter.
- Material: Steel.
 - Finish:
 - Timber: FSC redwood timber coated with water based stain 'rustic brown'
 - Steel: powder coated 'Corten Fossil' including decorative laser cut pattern as supplied.
 - Colour: as above / supplied.
- Size: Manufacturers standard size.
- Accessories/ Special requirements: None.
- Method of fixing: to manufacturers and engineers details (Root fixing preferable but seats form / design may only allow for base plating).

240A LITTER BINS LB1

- Manufacturer: Broxap Ltd. or equal approved

Rowhurst Industrial Estate

Chesterton

Newcastle-under-Lyme

Staffordshire, ST5 6BD

Tel: 01782 564411 or 0844 800 4085

e-mail: enquiries@broxap.com.

- Product reference: Derby Standard Litter Bin - BX45 2550-S.
- Material: Stainless steel.
 - Finish: As manufactured.
 - Colour: None.
- Accessories/ Special requirements: Capacity 120L. Barnsley logo, fibreglass liner.
- Method of fixing: to manufacturers recommendations & engineers details.

240B LITTER BINS LB2

- Manufacturer: Marshalls or equal approved
Dominic Renney
Specification Manager (Marshalls Street Furniture)
m: 07973 949 331
e: dominic.renney@marshalls.co.uk.
 - Product reference: Natural elements standalone Litter Bin.
- Material: Timber and Steel.
 - Finish:
 - Timber: FSC redwood timber coated with water based stain 'rustic brown'
 - Steel: powder coated 'Corten Fossil' including decorative laser cut pattern as supplied.
 - Colour: as above / supplied.
- Accessories/ Special requirements: Capacity 90L. timber slats on top and sides. Stubber plate on top.
- Method of fixing: to manufacturers / engineers recommendations and details.

260 TREE GUARDS refer to drawing BBTC_IBI_N3_L_G700_DT_00_03 Typical Tree Pit Detail

- Manufacturer: as above.
 - Product reference: as above.
- Material: as above.
 - Finish: as above.
 - Colour: as above.
- Size: as above.
- Accessories/ Special requirements: as above.
- Method of fixing: as above.

262 TREE GRILLES refer to drawing BBTC_IBI_N3_L_G700_DT_00_03 Typical Tree Pit Detail

- Manufacturer: as above.
 - Product reference: as above.
- Material: as above.
 - Finish: as above.
 - Colour: as above.
- Size: as above.
- Accessories/ Special requirements: as above.
- Method of fixing: as above.

320A FINGER POST SIGN REF: FP1

- Manufacturer: IS GROUP or equal approved
Jac Lloyd - Jones // Account Manager
IS Group, Enterprise House Unit 1
Aber Park Industrial Estate
Flintshire, CH6 5EX
t 01352 792000
ddi 01352 792009
m 07717 663 981
www.is-group.co.uk.
- Product reference: WAY2GO Fingerpost .
- Height: from lowest finger to ground level min. 2400mm.
- Material: Internal 76mm S355 steel post, 89mm aluminium outer post, Aluminium flat top cap, painted RAL 7016 Semi Gloss // 2 part circular plate mounted at base of post, 316 Stainless steel, Shot Peened finish.
Aluminium extrusion Chevron style fingers (arrow end) painted RAL 7016 Semi Gloss with 5-7 year white vinyl to face // Fixed to Fingerpost assembly collar painted RAL 7016 Semi Gloss.
- Finish: as above.
- Colour: as above.
- Accessories: to be confirmed between approved fingerpost manufacturer and client / project design team.
- Method of fixing: to manufacturers recommendations and project engineers details
IMPORTANT NOTE: detailed coordination will be needed with preferred supplier re. finger post design and number of fingers & signage text / info etc .

INSTALLATION**510 CONCRETE FOUNDATIONS GENERALLY**

- Standard: To BS 8500-2.
- Concrete: to project engineers details.
- 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: to project engineers details.
- 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.

530 PRESERVATIVE TREATED TIMBER

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

545 ERECTION OF TIMBER AND PREFABRICATED STRUCTURES

- Checking: 5 days (minimum) before proposed erection date, check foundations, holding down bolts, etc.
- Inaccuracies or defects in prepared bases or supplied structures: Report immediately. Obtain instructions before proceeding.

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.

V

Electrical supply/power/lighting systems

V91

Electrical systems - landscape

V91 Electrical systems - landscape

To be read with Preliminaries/ General conditions.

GENERAL

PRODUCTS

303 PRODUCT STANDARDS AND APPROVALS GENERALLY

- Standards: To BS 7671.
- Cables: BASEC approved.

340 LUMINAIRES FOR ROAD AND STREET LIGHTING STANDARD COLUMN LIGHTING

- Standard: To Highways Agency Specification for highway works volume 1.
- Approval: Kitemark certified.
- Photometric performance: To BS EN 13032-1.
- Manufacturer: to lighting consultants details.
- Product reference: to lighting consultants details.
- Ingress protection to BS EN 60529: to lighting consultants details.
- Material: to lighting consultants details.
- Finish and colour: to lighting consultants details.
- Mounting: to lighting consultants details.
- Type: to lighting consultants details.
- Lamp: to lighting consultants details.
- Wattage: to lighting consultants details.
- Colour temperature: to lighting consultants details.
- Controlgear: to lighting consultants details.
- Accessories: to lighting consultants details.

345A FLOODLIGHTS TO GLASSWORKS SQUARE REF: LC1

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: Thorn Lighting or equal approved.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345B IN-GROUND TREE UPLIGHTS TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345C HANDRAIL DOWNLIGHTS TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345D BOLLARD LIGHTING TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345E WATER FEATURE LIGHTING TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345F WATER RILL LIGHTING TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345G STEP LIGHTING TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345H TREE CANOPY LIGHTING TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

345I LED IN-GROUND UPLIGHTING TO BASE OF WALL TYPE 1 UNITS IN GLASSWORKS SQ TO GLASSWORKS SQUARE REF: XX

- Standard: To BS EN 60598-2-5.
 - Approval: Kitemark certified.
 - Photometric performance: To BS EN 13032-1.
 - Manufacturer: to lighting consultants details.
 - Product reference: Altis Area Floodlight.
 - Ingress protection to BS EN 60529: to lighting consultants details.
 - Body material: to lighting consultants details.
 - Finish and colour: to lighting consultants details.
 - Lens: to lighting consultants details.
 - Mounting: to lighting consultants details.
 - Type: to lighting consultants details.
 - Lamp: to lighting consultants details.
 - Wattage: to lighting consultants details.
 - Colour temperature: to lighting consultants details.
 - Spill lighting control: to lighting consultants details.
 - Controlgear: to lighting consultants details.
 - Accessories: to lighting consultants details.
- Lighting Consultant: Steve Anderson

EXECUTION**605 ELECTRICAL INSTALLATION GENERALLY**

- Standard: To BS 7671.

COMPLETION**910 INSPECTION AND TESTING**

- Standards: To BS 7671 and To Highways Agency 'Specification for highway works Volume 1'.
- Notice before commencing tests (minimum): 24 h.
- Certificates: Submit.
 - Number of copies: to clients requirements.

915 CLEANING

- Electrical equipment: Clean immediately before handover.

930 DOCUMENTATION

- Timing: Submit at completion.
- Contents:
 - Full technical description of each system installed.
 - Manufacturers' operating and maintenance instructions for fittings and apparatus including relamping instructions for luminaire types. Identify hazardous lamps that require specialist disposal.
 - Recommended frequency of testing and inspection, both for electrical safety, and for matters such as the corrosion and security of lighting columns and luminaire fixings.
 - Manufacturers' guarantees and warranties.
 - Record drawings showing circuits and their ratings, underground cable routes and locations of fittings and apparatus.
 - List of normal consumable items and their sources.

Z

Building fabric reference specification

Z20

Fixings and adhesives

Z20 Fixings and adhesives

To be read with Preliminaries/ General conditions.

PRODUCTS

340 MASONRY FIXINGS

- Light duty: Plugs and screws.
- Heavy duty: Expansion anchors or chemical anchors.

EXECUTION

610 FIXING GENERALLY

- Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
- Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
- Appearance: Fixings to be in straight lines at regular centres.