

Plincke Landscape Limited

UoM

Martin Harris Music Practice Suite

0626-PLI-00-ZZ-SP-L-0210

Hard and Soft Landscape Specification

Stage 4-Tender

P01

01-12-2022

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D20 Excavating and filling

Generally/the site

2 To be read with Preliminaries / General Conditions

1. All materials to be 'similar and approved by Contract Administrator' where alternatives provided.
2. Refer to Engineers drawings & specification for all vehicular accessible areas, access roads and parking areas, sub-base build-ups and concrete foundations / haunching.
3. Engineers specification takes precedence where duplication occurs.
4. Reference should be made to any ground investigation reports, any civil and structural specifications and all other Stage 4 specifications.

110 Site investigation

1. **Report:** Inspect prior to commencement of works. Where one is not available then the Principal Contractor must satisfy themselves as to any requirement.

145 Variations in ground water level

1. **Give notice:** If levels encountered are significantly different from levels in the site investigation report or previously measured.

150 Existing services, features and structures

1. **Services:** Refer to Engineers information for locations.
2. **Site features to be retained:** Refer to Engineers information for locations.
3. **Structures:** Refer to Engineers information for locations.

Clearance/excavating

164 Tree roots

1. **Protected area:** Do not cut roots within precautionary protection area.
 - 1.1. **Size of area:** Refer to JCA Ltd report 'Arboricultural Report to BS 5837:2012' 16034/ChC and Plincke drawing 0577-PLI-ZZ-GF-DR-L-0300.
2. **Excavation in protected area**
 - 2.1. **Method:** Refer to JCA Ltd report 'Arboricultural Report to BS 5837:2012' 16034/ChC.
 - 2.2. Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
3. **Outside protected area:** Give notice of roots exceeding 25 mm and do not cut without approval.
4. **Cutting**
 - 4.1. Make clean smooth cuts with no ragged edges.
 - 4.2. Pare cut surfaces smooth with a sharp knife.
 - 4.3. **Treatment of cut roots:** Refer to JCA Ltd report 'Arboricultural Report to BS 5837:2012' 16034/ChC.
5. **Backfill:** Refer to JCA Ltd report 'Arboricultural Report to BS 5837:2012' 16034/ChC.

166 Tree root barriers

1. **Trench:** Sever all roots.
 - 1.1. **Depth:** Sufficient to protect underground services or to prevent root growth across a property boundary.

2. **Root barrier:** Manufacturer: GreenBlue Urban.
www.greenblue.com; 0800 0187797.
Product reference: ReRoot 1000.
3. **Cutting roots:** As clause 164.
4. **Root barrier installation:** Full depth of excavation. Fit closely to trench wall nearest the tree.
5. **Backfill material:** As dug material excavated from trench.
6. **Backfilling:** Lay and compact thoroughly in layers not more than 300 mm thick.

168 Site clearance

1. **Timing:** Before topsoil stripping, if any.
2. **General:** Clear site of rubbish, debris and vegetation. Do not compact topsoil.
3. **Treatment:** Apply a suitable non-residual herbicide to areas to receive planting.

180 Chipping and shredding

1. **General:** Not permitted.

220 Stripping topsoil

1. **General:** Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on drawings.
2. **Depth**
 - 2.1. Remove to an average depth of - Refer to site investigation report. Where one is not available then the Principal Contractor must satisfy themselves as to any requirement..
 - 2.2. Give notice where the depth of topsoil is difficult to determine.
3. **Handling:** Handle topsoil for reuse or sale in accordance with clause 225.
4. **Around trees:** Do not remove topsoil from below the spread of trees to be retained.
5. **Site storage:** Keep separate from excavated sub-soil

221 Treating topsoil

1. **Treatment:** Apply a suitable translocated nonresidual herbicide.
2. **Timing:** Not less than two weeks before excavating topsoil.

225 Handling topsoil

1. **Standard:** To BS 3882.
2. **Aggressive weeds**
 - 2.1. **Species:** Notify the presence of species included in the Weeds Act, section 2, or the appropriate Wildlife and Countryside Act for the relevant jurisdiction.
 - 2.2. **Give notice:** Obtain instructions before moving topsoil.
3. **Contamination:** Do not mix topsoil with:
 - 3.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 3.2. Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
 - 3.3. Oil, fuel, cement or other substances harmful to plant growth.
 - 3.4. Other classifications of topsoil.
4. **Multiple handling:** Keep to a minimum. Use topsoil immediately after stripping.

250 Permissible deviations from formation levels

1. **Beneath mass concrete foundations:** ±25 mm.

2. Beneath ground bearing slabs and r.c. foundations: ± 15 mm.
3. Embankments and cuttings: ± 50 mm.
4. Ground abutting external walls: ± 50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.

310 Unstable ground

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

320 Recorded features

1. Recorded foundations, beds, drains, manholes, etc.: Refer to Engineers information.
2. Contaminated earth: Remove and disinfect as required by Local Authority.

330 Unrecorded features

1. **Give notice:** If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

370 Underground structures in landscape areas

1. **Generally:** Remove walls, roads, foundations, disused services, drains, manholes and the like to minimum depth.
2. Minimum depth below finished levels
 - 2.1. Grass, ground cover and perennial planting: 500 mm.
 - 2.2. Shrub planting: 750 mm.
 - 2.3. Within 2 m of tree planting: 1000 mm.
3. Walls and slabs remaining: In every 10 m² of wall or slab, make a drainage hole at least 600 mm diameter.

Disposal of materials - Not Used

Filling

500 Proposed fill materials

1. **Details:** Submit full details of proposed fill materials to demonstrate compliance with specification, including:
 - 1.1. Type and source of imported fill.
 - 1.2. Proposals for processing and reuse of material excavated on site.
 - 1.3. Test reports as required elsewhere.
2. **Timing:** At least 21 days before starting filling.

510 Hazardous, aggressive or unstable materials

1. **General:** Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - 1.1. Frozen or containing ice.
 - 1.2. Organic.
 - 1.3. Contaminated or noxious.

- 1.4. Susceptible to spontaneous combustion.
- 1.5. Likely to erode or decay and cause voids.
- 1.6. With excessive moisture content, slurry, mud or from marshes or bogs.
- 1.7. Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
- 1.8. Unacceptable, class U2 as defined in the 'Specification for highway works', clause 601.

Bioremediation - Not Used

'specification for highway works: earthworks specification' appendices - Not Used

Ω End of Section

F10 Brick/ block walling

Types of walling

110 Clay facing brickwork To external walls

1. Bricks: To BS EN 771-1.
 - 1.1. Manufacturer: Shackerley
 - 1.1.1. Product reference: Shackerley Austerrauch (HIRB 11)
 - 1.2. Special shapes: Brick on edge coping. Specials to corners/changes in direction. Solid stop ends to coping.
2. Mortar: Ref Architects spec
 - 2.1. Standard: To BS EN 998-2
 - 2.2. Mix: Designation (iii) as clause 460 with sulfate-resisting cement
 - 2.3. Additional requirements: Coloured mortar -colour TBC
3. Bond: Half-lap stretcher, with a t least 1 header course where above structural core element. Ref detail 0230.
4. Joints: Bucket handle
5. Features: Facing brick to structural concrete core (ref engineers detail). Sloping portion to follow step alignment.

385 Engineering brickwork

1. Description: Below ground level
2. Bricks: To BS EN 771-1.
 - 2.1. Manufacturer: Contractor's choice
 - 2.2. Mean compressive strength: Greater than or equal to 75 N/mm²
 - 2.3. Water absorption: Equal to or less than 4.5%
 - 2.4. Freeze/ thaw category: F2.
 - 2.5. Active soluble salts content category: S2.
 - 2.6. Additional requirements: None
3. Mortar: As section Z21.
 - 3.1. Standard: To BS EN 998-2
 - 3.2. Mix: 1:½:4½ cement:lime:sand, 6 N/mm² (class M6)
 - 3.3. Additional requirements: Durability: Freeze/ thaw resistance: Frost-resistant
4. Bond: Half-lap stretcher
5. Joints: Flush.

Testing - Not Used

Workmanship generally

430 Conditioning of clay bricks and blocks

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

460 Mortar designations

1. Mix proportions: For a specified designation select a mix from the following:

- 1.1. Designation (i) (BS EN 998-2 M12 equivalent)
 - 1.1.1.1:0-¼:3 (Portland cement:lime:sand with or without air entraining additive).
 - 1.1.2.1:3 (Portland cement:sand and air entraining additive).
- 1.2. Designation (ii) (BS EN 998-2 class M6 equivalent)
 - 1.2.1.1:½:4-5 (Portland cement:lime:sand with or without air entraining additive).
 - 1.2.2.1:3 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.2.3.1:2½-3½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.2.4.1:3-4 (Portland cement:sand and air entraining additive).
- 1.3. Designation (iii) (BS EN 998-2 class M4 equivalent)
 - 1.3.1.1:1:5-6 (Portland cement:lime:sand with or without air entraining additive).
 - 1.3.2.1:3½-4 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.3.3.1:4-5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.3.4.1:5-6 (Portland cement:sand and air entraining additive).
- 1.4. Designation (iv) (BS EN 998-2 class M2 equivalent)
 - 1.4.1.1:2:8-9 (Portland cement:lime:sand with or without air entraining additive).
 - 1.4.2.1:4½ (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.4.3.1:5½-6½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.4.4.1:7-8 (Portland cement:sand and air entraining additive).
2. **Batching:** Mix proportions by volume.
3. **Mortar type:** Continuous throughout any one type of masonry work.

500 Laying generally

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

520 Accuracy

1. **Courses:** Level and true to line.
2. **Faces, angles and features:** Plumb.
3. **Permissible deviations**
 - 3.1. **Position in plan of any point in relation to the specified building reference line and/ or point at the same level:** ± 10 mm.
 - 3.2. **Straightness in any 5 m length:** ± 5 mm.
 - 3.3. **Verticality up to 3 m height:** ± 10 mm.
 - 3.4. **Verticality up to 7 m height:** ± 14 mm.
 - 3.5. **Overall thickness of walls:** ± 10 mm.

3.6. Level of bed joints up to 5 m (brick masonry): ± 11 mm.

3.7. Level of bed joints up to 5 m (block masonry): ± 13 mm.

535 Height of lifts in walling using cement-gauged or hydraulic lime mortar

1. Quoins and advance work: Rack back.
2. Lift height (maximum): 1.2 m above any other part of work at any time.
3. Daily lift height (maximum): 1.5 m for any one leaf.

560 Coursing brickwork

1. Gauge: Four brick courses including bed joints to 300 mm.

635 Jointing

1. Profile: Consistent in appearance.

645 Accessible joints not exposed to view

1. Jointing: Struck flush as work proceeds.

690 Adverse weather

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

Additional requirements for facework

710 The term facework

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

750 Colour consistency of masonry units

1. Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
2. Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
3. Facing bricks should be blended on site from a minimum of three packs to ensure an even distribution of colour and texture variation.
4. Finished work: Free from patches, horizontal stripes and racking back marks.

760 Appearance

1. Brick/ block selection: Do not use units with damaged faces or arrises.
2. Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.

3. **Quality control:** Lay masonry units to match relevant reference panels.
 - 3.1. **Setting out:** To produce satisfactory junctions and joints with built-in features and components.
 - 3.2. **Coursing:** Evenly spaced using gauge rods.
4. **Lifts:** Complete in one operation.
5. **Methods of protecting facework:** Submit proposals.

780 Ground level

1. **Commencement of facework:** Not less than 150 mm below finished level of adjoining ground or external works level.

830 Cleanliness

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

Ω End of Section

L37

External stair, ramps, handrail and balustrades systems

General

150 Handrails To Steps

1. System manufacturer: Contractor's choice
2. Material: Stainless steel posts, warm to touch coating to handrails
 - 2.1. Cross section: Circular hollow section. As drawing 0230
 - 2.2. Finish: Grade 316 stainless steel
3. Height (to upper surface of handrail)
 - 3.1. Above pitch line: max 1000mm
 - 3.2. Above landing: max 1000mm
4. Accessories: Circular base plates 150mm dia. With recessed anchor bolt fixings. Ref drwg 0230.

160 Balustrade systems

1. System manufacturer: Contractor's choice
2. Guarding
 - 2.1. Material: 25mm dia S/S CHS bars. Ref drwg 0230
 - 2.2. Finish: Grade 316 stainless steel
3. Rail
 - 3.1. Cross section: 50MM Dia CHS. Warm to touch finish
 - 3.2. Material: Stainless steel
4. Height (to upper surface of rail)
 - 4.1. Above pitch line: 1100mm
 - 4.2. Above landing: 1100mm
5. Accessories: 150x150mm offset base plates/recessed bolts. Ref drwg 0230

System performance

220 Design

1. Description: Balustrade system
2. Inclusive design: Complete detailed design in accordance with Building Regulations (Eng) Approved Document M, volume 2
3. Structure and associated features: Complete the design to meet structural and safety requirements of BS 6180 and in accordance with BS 8300-2
4. Structural performance criteria
 - 4.1. Horizontal uniformly distributed line loads on balustrade or handrail (maximum): 0.74 kN/m
5. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

Products

310 Precast concrete step unit

1. Manufacturer: Hardscape
2. Standard: To BS EN 771-2 and -3.
3. Size

- 3.1. Surface width: 400mm
- 3.2. Going: 300mm
- 3.3. Rise: 150mm
- 4. Colour: Silver-grey to match Tagenta E paving
- 5. Finish: Exposed aggregate
 - 5.1. Slip resistance value of integral tread - water wet (minimum): PTV of 49 to BS 7976-2
 - 5.2. Slip resistance value of integral nosing - water wet (minimum): PTV of 49 to BS 7976-2
 - 5.2.1. Colour of integral nosing: Black
- 6. Accessories: Ref drawing L0230 for detail/fixing method

Fabrication

510 Fabrication generally

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

Execution

610 Loading

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

620 Concrete foundations generally

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

630 Setting components in concrete

- 1. Holes: Ref details on drwg 0230.
- 2. Components: Accurately positioned and securely supported.
- 3. Concrete fill: Compact as filling proceeds.
- 4. Concrete foundations exposed to view: Finished to weathering profile to shed water and trowel smooth.
- 5. Temporary component support: Maintain undisturbed for minimum 48 hours.

650 Installation generally

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

3. **Applied finishes:** Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

662 Adverse weather

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

Completion

910 Inspection

1. **Timing:** Give reasonable notice before covering up
2. **Period of notice (minimum):** 3 working days.

920 Documentation

1. **Contents**
 - 1.1. Copies of structural design calculations/ test reports.
2. **General product information.**
 - 2.1. Installation information.
 - 2.2. Inspection and maintenance reports.
3. **Number of copies:** Electronic -for O&M.
4. **Submission:** Prior to PC.

Ω End of Section

Q10

Kerbs/ edgings/ channels/ paving accessories

Types of kerbs/edgings and channels

2 To be read with Preliminaries / General Conditions

1. All materials to be 'similar and approved by Contract Administrator' where alternatives provided.
2. Refer to Engineers drawings & specification for all vehicular accessible areas, access roads and parking areas, sub-base build-ups and concrete foundations / haunching.
3. Engineers specification takes precedence where duplication occurs.
4. Reference should be made to any ground investigation reports, any civil and structural specifications and all other Stage 4 specifications.

170 Linear slot drainage channel systems Various-ref drwg 0120 and Engineers info

1. Manufacturer: Aco
 - 1.1. Product reference: Slot drain, Threshold drain
2. Bore: Refer to Engineers information.
3. Finish: Refer to Engineers information.
4. Colour: Refer to Engineers information.
5. Accessories: Refer to Engineers information.
6. Bedding: Refer to Engineers information.
7. Joints generally: Refer to Engineers information.

Roads/paving accessories/ marking/ demarcation

395 Road marking (thermoplastic)

1. Description:: Disabled bays-Bridgeford St
2. Standard: Road Safety Markings Association standard specification document for road marking and road studs (StanSpec).
3. Manufacturer: Contractor's choice.
 - 3.1. Product reference: Contractor's choice.
4. Colour: Yellow
5. Retroreflectivity to BS EN 1436: Class R2.
6. Notes:: Refer to items '1' and '2' in document 0577-PLI-ZZ-GF-RP-L-0980 for additional information.

Laying

510 Laying edgings and channels

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

520 Adverse weather

1. **Conditions:** Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

530 Concrete for foundations, races and haunching

1. **Standard:** To BS 8500-2.
2. **Designated mix:** Not less than GEN0 or Standard mix ST1.
3. **Workability:** Very low.
4. **Notes::** Refer to Engineers information.

540 Cement mortar bedding

1. **General:** To section Z21.
2. **Mix (Portland cement:sand):** 1:3.
 - 2.1. **Portland cement:** Class CEM I 42.5 to BS EN 197-1.
 - 2.2. **Sand:** to BS EN 12620, grade 0/4 or 0/2 (MP).
3. **Bed thickness:** 12-40 mm.
4. **Notes::** Refer to Engineers information.

580 Drainage channel systems

1. **Installation:** To an even gradient, without ponding or backfall. Commence laying from outlets.
2. **Silt and debris:** Removed from entire system immediately before handover.
3. **Washing and detritus:** Safely disposed without discharging into sewers or watercourses.
4. **Notes::** Refer to Engineers information.

590 Drainage channel systems with built in fall

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

620 Accuracy

1. **Deviations (maximum)**
 - 1.1. **Level:** ± 6 mm.
 - 1.2. **Horizontal and vertical alignment:** 3 mm in 3 m.

625 Regularity of paved surfaces

1. **Maximum undulation of (non-tactile) paving surface:** 3 mm.
 - 1.1. **Method of measurement:** Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
2. **Difference in level between adjacent units (maximum)**
 - 2.1. **Joints flush with the surface:** Twice the joint width (with 5 mm max difference in level).
 - 2.2. **Recessed, filled joints:** 2 mm.
 - 2.2.1. **Recess depth (maximum):** 5 mm.
 - 2.3. **Unfilled joints:** 2 mm.

3. Sudden irregularities: Not permitted.

650 Sealant movement joints

1. Joint filler: Compressible cellular rubber or plastics compatible with specified sealant.
2. Filler installation: Built in as work proceeds, extending through haunching and foundation. Filler positioned accurately to fully support sealant at the recommended depth below exposed faces of units.
3. Joint width: Refer to Engineers information.
4. Sealant: Refer to Engineers information.
 - 4.1. Colour: Refer to Engineers information.
5. Sealant application: As section Z22.

Ω End of Section

Q20

Granular sub-bases to roads/ pavings

To be read with preliminaries/ general conditions.

2 To be read with Preliminaries / General Conditions

1. All materials to be 'similar and approved by Contract Administrator' where alternatives provided.
2. Refer to Engineers drawings & specification for all vehicular accessible areas, access roads and parking areas, sub-base build-ups and concrete foundations / haunching.
3. Engineers specification takes precedence where duplication occurs.
4. Reference should be made to any ground investigation reports, any civil and structural specifications and all other Stage 4 specifications.

210 Highways agency Type 1 unbound mixture for sub-base

1. **Material:** Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.
 - 1.1. Recycled aggregate: Permitted

230 Placing granular material generally

1. **Preparation:** Loose soil, rubbish and standing water removed.
2. **Structures, membranes and buried services:** Ensure stability and avoid damage.

240 Laying granular sub-bases for vehicular areas

1. **General:** Spread and levelled in layers. As soon as possible thereafter compact each layer.
2. **Standard:** To Highways Agency 'Specification for highway works' clause 802.
3. **At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place:** Take particular care to compact fully.

310 Accuracy

1. Permissible deviation from required levels, falls and cambers (maximum)
 - 1.1. Subgrades
 - 1.1.1. Roads and parking areas: +20 -30 mm.
 - 1.1.2. Footways and recreation areas: ± 20 mm.
 - 1.2. Sub-bases
 - 1.2.1. Roads and parking areas: ± 10 mm
 - 1.2.2. Footways and recreation areas: ± 10 mm

340 Protection

1. **Sub-bases:** As soon as practicable, cover with subsequent layers, specified elsewhere.
2. **Subgrades and sub-bases:** Prevent degradation by construction traffic, construction operations and inclement weather.

Ω End of Section

Q23

Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays

Types of surfacing

160 Loose gravel

1. Description: To building edge ref detail 02 drwg 0230
2. Geotextile: Sheet-to enclose gravel at base/sides
 - 2.1. Manufacturer: Contractor's choice
3. Gravel: Loose laid and raked to uniform thickness.
 - 3.1. Type: Granite Chip
 - 3.2. Source: Contractor's choice
 - 3.3. Colour: Silver Grey
 - 3.4. Size: 12-14MM
 - 3.5. Thickness: 150MM

Laying

160 Metal Edging EM

1. System: : Kinley. Exceledge 'Urban'
 - 1.1. Size: 150mm DEPTH, Flexible. 3mm thk. Galvanised finish. Installed with 100mm upstand
 - 1.2. Fixing: Galvanised spikes as supplied, driven into ground. Metal spacers to join ends together.
2. Installation as manufacturers instructions and details on drawings 0230

340 Laying generally

1. Channels, gullies, etc: Keep clear.
2. Finished surfaces
 - 2.1. Lines and levels: To prevent ponding.
 - 2.2. Overall texture: Even.
 - 2.3. State at completion: Clean.

380 Laying granular surfaces in pedestrian areas

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

390 Protection from traffic and plant

1. Paved areas: Restrict access to prevent damage.

Completion - Not Used

Ω End of Section

Q24

Interlocking brick/ block roads/ pavings

Types of paving

2 To be read with Preliminaries / General Conditions

1. All materials to be 'similar and approved by Contract Administrator' where alternatives provided.
2. Refer to Engineers drawings & specification for all vehicular accessible areas, access roads and parking areas, sub-base build-ups and concrete foundations / haunching.
3. Engineers specification takes precedence where duplication occurs.
4. Reference should be made to any ground investigation reports, any civil and structural specifications and all other Stage 4 specifications.

110 Conventional concrete block paving BP1

1. Description: BP1 Block Paving Type 1
2. Subgrade improvement layer: Refer to Engineers information.
 - 2.1. Compacted thickness: Refer to Engineers information.
3. Geotextile: Refer to Engineers information.
 - 3.1. Manufacturer: Refer to Engineers information.
 - 3.1.1.Product reference: Refer to Engineers information.
4. Granular sub-base: Type 1 unbound mixture, as section Q20
 - 4.1. Compacted thickness: Refer to Engineers information.
5. Laying course
 - 5.1. Material: In accordance with BS 7533-3. BS 7533-101.
 - 5.1.1.Category: Refer to Engineers information.
 - 5.2. Method of screeding, in accordance with BS 7533-3: Compaction
 - 5.3. Nominal thickness after compaction: 30 mm
6. Blocks: To BS EN 1338.
 - 6.1. Manufacturer: Hardscape.
www.hardscape.co.uk.
01204 565500.
 - 6.1.1.Product reference: Kellen Brecchia
 - 6.2. Sizes: 200 x 100 x 80 mm.
 - 6.3. Special blocks: None.
 - 6.4. Arrises: Chamfered.
 - 6.5. Colour/ Finish: Tagenta 'D'.
 - 6.6. Recycled content: As manufactured.
 - 6.7. Requirements: As manufactured.
 - 6.7.1.Freeze/ thaw resistance: As manufactured.
 - 6.7.2.Abrasion resistance: As manufactured.
 - 6.7.3.Slip/ Skid resistance: As manufactured.
7. Jointing
 - 7.1. Material: In accordance with BS 7533-3.
 - 7.2. Joint width: 2-5 mm.
8. Sealer/ Stabilizer: Not required.

9. Setting out

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- 9.1. Bond: Stretcher.
- 9.2. Features: None.
- 10. Accessories: None.
- 11. Notes:: Refer to Engineers information for type and location of proposed build-ups i.e. flexible / rigid / unbound / bound.
Block paving to be laid on polymer modified mortar where immediately adjacent slot drain (SD).

110 Conventional concrete block paving BP2

- 1. Description: BP1 Block Paving Type 1
- 2. Subgrade improvement layer: Refer to Engineers information.
 - 2.1. Compacted thickness: Refer to Engineers information.
- 3. Geotextile: Refer to Engineers information.
 - 3.1. Manufacturer: Refer to Engineers information.
 - 3.1.1.Product reference: Refer to Engineers information.
- 4. Granular sub-base: Type 1 unbound mixture, as section Q20
 - 4.1. Compacted thickness: Refer to Engineers information.
- 5. Laying course
 - 5.1. Material: In accordance with BS 7533-3. BS 7533-101.
 - 5.1.1.Category: Refer to Engineers information.
 - 5.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information.
 - 5.3. Nominal thickness after compaction: Refer to Engineers information.
- 6. Blocks: To BS EN 1338.
 - 6.1. Manufacturer: Hardscape.
www.hardscape.co.uk.
01204 565500.
 - 6.1.1.Product reference: Kellen Liscio
 - 6.2. Sizes: 200 x 100 x 80 mm.
 - 6.3. Special blocks: None.
 - 6.4. Arrises: Chamfered.
 - 6.5. Colour/ Finish: Random mix.
Tagenta 'E'.
 - 6.6. Recycled content: As manufactured.
 - 6.7. Requirements: As manufactured.
 - 6.7.1.Freeze/ thaw resistance: As manufactured.
 - 6.7.2.Abrasion resistance: As manufactured.
 - 6.7.3.Slip/ Skid resistance: As manufactured.
- 7. Jointing
 - 7.1. Material: In accordance with BS 7533-3.
 - 7.2. Joint width: 2-5 mm.
- 8. Sealer/ Stabilizer: Not required.
- 9. Setting out
 - 9.1. Bond: Stretcher.
 - 9.2. Features: None.
- 10. Accessories: None.

11. **Notes::** Refer to Engineers information for type and location of proposed build-ups i.e. flexible / rigid / unbound / bound.
Block paving to be laid on polymer modified mortar where immediately adjacent slot drain (SD).

Execution

200 Execution generally – concrete block and clay paver paving

1. **Standard:** In accordance with BS 7533-101.

211 Colour banding

1. **General:** Unless premixed by manufacturer, select blocks/ pavers/ setts from at least 2 separate packs in rotation, to avoid colour banding.

230 Control samples

1. **General:** Carry out sample area of finished work:
 - 1.1. **Location:** To be agreed.
 - 1.2. **Size (minimum):** 2.0 x 2.0 m.
 - 1.3. **Features to be included:** Recessed manhole cover infill; Cutting to base of light column.
2. **Give notice:** When ready for inspection.
3. **Timing:** Obtain approval of appearance before proceeding.

240 Adverse weather

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

430 Sealant movement joints in mortar bedded units

1. **Spacing:** Refer to Engineers information,
2. **Extent of joints:** Refer to Engineers information.
3. **Joint filler:** Compressible cellular rubber or plastics compatible with specified sealant. Build in as work proceeds.
 - 3.1. **Joint width:** Refer to Engineers information.
4. **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.
5. **Sealant:** Refer to Engineers information.
 - 5.1. **Colour:** To match block colour.

485 Laying blocks/ pavers/ setts

1. **Setting out:** Start from an edge restraint.
2. **Cutting:** Cleanly, accurately and vertically, without spalling. Do not mark or damage visible surfaces.
3. **Cut edges:** Turn inwards where possible; do not position against edge restraints or other features.
4. **In situ mortar or concrete infill:** Do not use - alter bond pattern to avoid small pieces.
5. **Compaction:** Vibrate to produce thoroughly interlocked paving of even overall appearance with regular joints and accurate to line, level and profile. Do not mark or damage paving units, kerbs and adjacent work.
 - 5.1. **Concrete blocks and clay pavers:** In accordance with BS 7533-3, Annex F, to site category required for laying course material.

495 In situ surrounds to obstructions

1. **Locations:** Where not covered by drawings 0626-PLI-ZZ-GF-DR-L-0120 and 0626-PLI-ZZ-GF-DR-L-0230
2. **Material:** Polymer modified mortar.
3. **Shape and size:** Rectangular, 100 mm (minimum) all round obstruction.
4. **Thickness (minimum):** Combined depth of blocks/ pavers/ setts and sand laying course.
5. **Colour:** To match paving units.
6. **Timing:** Lay and allow to cure in advance of laying blocks/ pavers/ setts.

505 Regularity of paved surfaces

1. **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.
2. **Joints between paving units or utility access covers**
 - 2.1. **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).
 - 2.2. **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.
 - 2.3. **Unfilled joints:** difference in level between adjacent units to be no greater than 2 mm.
3. **Sudden irregularities:** Not permitted.

Completion

615 Completion of paving

1. **Final compaction of the surface course:** In accordance with BS 7533-101 and BS 7533-3.
2. **Vacuum cleaning machines:** Not allowed.

Ω End of Section

Q25 Slab/ brick/ sett/ cobble pavings

General

2 To be read with Preliminaries / General Conditions

1. All materials to be 'similar and approved by Contract Administrator' where alternatives provided.
2. Refer to Engineers drawings & specification for all vehicular accessible areas, access roads and parking areas, sub-base build-ups and concrete foundations / haunching.
3. Engineers specification takes precedence where duplication occurs.
4. Reference should be made to any ground investigation reports, any civil and structural specifications and all other Stage 4 specifications.

120 Concrete flag paving system

1. Description: C Corduroy tactile
2. Subgrade improvement layer: Refer to Engineers information.
 - 2.1. Compacted thickness: Refer to Engineers information.
3. Granular sub-base: Type 1 unbound mixture, as section Q20
 - 3.1. Compacted thickness: Refer to Engineers information.
4. Laying course: In accordance with BS 7533-101. Sand/ fine aggregate
 - 4.1. Accessories: None
5. Paving units: As clause Q25/320
6. Jointing: Narrow sand filled joints
 - 6.1. Bond: Stack.
7. Accessories: None.

System performance - Not Used

Products

320 Tactile flags and slabs

1. Description: C Corduroy Harzard warning
2. Standard: To DD CEN/TS 15209.
3. Material: Precast concrete
 - 3.1. Manufacturer: Marshalls
 - 3.1.1. Product reference: Harzard Warning Textured Natural
4. Nominal sizes: 400x400x50mm
5. Colour: Natural

Execution

620 Adverse weather

1. General
 - 1.1. Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
 - 1.2. Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
2. Paving with mortar joints and/ or bedding

- 2.1. Protect from frost damage, rapid drying out and saturation until mortar has hardened.
3. Paving laid and jointed in sand/ fine aggregate
 - 3.1. Stockpiled laying course sand/ fine aggregate: Protect from saturation.
 - 3.2. Exposed areas of unbound laying course and uncompacted areas of unbound paving: Protect from heavy rainfall.
 - 3.3. Saturated unbound laying course: Remove and replace, or allow to dry before proceeding.
 - 3.4. Laying dry sand/ fine aggregate jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

625 Laying pavings – general

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

630 Levels of paving

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

637 Regularity of paved surfaces

1. 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.
2. Joints between paving units or utility access covers
 - 2.1. 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).
 - 2.2. 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.
 - 2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

640 Colour banding

1. General: Unless premixed by manufacturer, select from at least 5 separate packs in rotation to avoid colour banding.

645 Protection

1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.

3. **Handling:** Do not damage paving unit corners, arrises, or previously laid paving.
4. **Mortar bedded pavings:** Keep free from traffic after laying:
 - 4.1. **Pedestrian traffic (minimum):** 7 days.
 - 4.2. **Vehicular traffic (minimum):** 14 days.
5. **Access:** Restrict access to paved areas to prevent damage from site traffic and plant.

795 Sealant movement joints in mortar-bedded units

1. **Spacing:** Refer to Engineers information.
2. **Extent of joints:** Refer to Engineers information.
3. **Joint filler:** Compressible cellular rubber or plastics compatible with specified sealant. Build in as work proceeds.
 - 3.1. **Joint width:** Refer to Engineers information.
4. **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.
5. **Sealant**
 - 5.1. **Application:** As section Z22.

Completion

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

1. **Sand dressing:** Leave a thin layer of dry jointing sand/ fine aggregate over the paving until opened to public access.
2. **Final compaction of the surface course:** In accordance with BS 7533-3.
3. **Vacuum cleaning machines:** Not allowed.

Ω End of Section

Q28

Topsoil and soil ameliorants

System outline

135 Planting bed soil system

1. **Description:** To all shrub / perennial planting areas.
2. **Composition**
 - 2.1. **Topsoil:** Imported topsoil to BS 3882 to clause Q28/315, to make up any deficiency of topsoil existing on site and to complete the work.
 - 2.2. **Ameliorants:** Dependent on the condition of the topsoil; to be established by soil analysis; if required use sanitized and stabilized composted materials to PAS 100 and clause Q28/360.
 - 2.3. **Accessories:** None.

145 Plant pit backfilling soil system

1. **Description:** To all tree pits.
2. **Composition**
 - 2.1. **Topsoil:** Imported topsoil to BS 3882 to clause Q28/315, to make up any deficiency of topsoil existing on site and to complete the work.
 - 2.2. **Ameliorants:** Dependent on the condition of the topsoil; to be established by soil analysis; if required use sanitized and stabilized composted materials to PAS 100 and clause Q28/360.
 - 2.3. **Accessories:** None.

155 Mulching and top dressing system

1. **Description:** To all shrub / perennial planting areas.
2. **Composition**
 - 2.1. **Material:** Sanitized and stabilized composted materials to PAS 100 and clause Q28/360.

Products

300 Preparation materials generally

1. **Purity:** Free of pests and disease.
2. **Foreign matter:** On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
3. **Contamination:** Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - 3.1. Corrosive, explosive or flammable.
 - 3.2. Hazardous to human or animal life.
 - 3.3. Detrimental to healthy plant growth.
4. **Subsoil:** In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
5. **Objectionable odour:** None.
6. **Give notice:** If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

305 Permitted materials

1. **Materials:** Composted green waste; Spent mushroom compost; Wood waste
2. **Give notice:** before ordering or using.

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

310 Materials not permitted

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

315 Imported topsoil to BS 3882

1. Description:

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

360 Sanitized and stabilized composted materials certified to PAS 100

1. Description:

To all shrub / perennial planting areas.
To all tree pits.
2. Standard: In accordance with PAS 100 and Compost Quality Protocol.
3. Source: Submit proposals.
 - 3.1. Product reference: Submit proposals.
4. Horticultural parameters
 - 4.1. pH (1:5 water extract): 6.0-9.0.
 - 4.2. Electrical conductivity (maximum, 1:5 water extract): 300 mS/m.
 - 4.3. Moisture content (m/m of fresh weight): 35-55%.
 - 4.4. Organic matter content (minimum): 30%.
 - 4.5. Grading (air dried samples): 99% passing 25 mm and 90% passing 10 mm screen mesh apertures.
 - 4.6. Carbon:Nitrogen ratio (maximum): 20:1.
5. Texture: Friable.
6. Objectionable odour: Not permitted.
7. Compost Certification Scheme certification: Required.
8. Declaration of analysis: Submit.
9. Additional analyses: Phytotoxic elements.
10. Samples: Supply 5 kg sample before ordering.

380 Mycorrhizal inoculant

1. Description: For tree pits.
2. Manufacturer: GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. Product reference: RootStart Mycorrhiza.

Execution

605 Site investigation

1. Report: See section D20.

620 Importing topsoil

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

625 Sample loads

1. Description: For imported topsoil.
2. Deliver to site a sample load: of not less than 5 m³
3. Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - 3.1. Notice period: 14 days.
4. Notes:: Sample load should come from proposed source and be reflective of same.

630 Documentation for imported topsoil

1. Description:

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

635 Documentation for compost and composted materials

1. Description: For ameliorants, mulching and top dressing system.
2. Timing: Submit at handover.
3. Contents
 - 3.1. Full description of all compost components.
 - 3.2. Record of source for all compost components.
 - 3.3. Analyst's report for each test carried out.
 - 3.4. Declaration of compliance: in accordance with PAS 100 and BSI PD CR 13456.
 - 3.5. Quality Compost Protocol certification: Required.
4. Number of copies: Two.

650 Notice

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

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

655 Mechanical tools

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

660 Imported subsoil for:

1. Description:

To all tree pits.

2. Standard: In accordance with BS 8601.
3. General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
4. Areas of thicker topsoil: Excavate locally.
5. Avoid compaction.
6. Excess subsoil: Remove.

665 Subsoil surface preparation for:

1. Description:

To all tree pits.

2. Standard: In accordance with BS 3882.
3. General: Excavate and/ or place fill to required profiles and levels, as section D20.
4. Loosening
 - 4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth
 - 4.1.1. Light and noncohesive subsoils: 450 mm.
 - 4.1.2. Stiff clay and cohesive subsoils: 450 mm.
 - 4.1.3. Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - 4.2. Wet conditions: Do not loosen subsoils.
5. Stones: Immediately before spreading topsoil, remove stones larger than 20 mm.
6. Remove from site: Arisings, contaminants and debris; Builders rubble.

670 Inspecting formations

1. Give notice: Before spreading topsoil for lawn areas; planting beds.
2. Notice period: 14 days.

705 Handling topsoil

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

6. **Wet conditions:** Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall, or when the moisture content is greater than the plastic limit.

720 Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: 25 mm above.
2. In relation to dpc of adjoining buildings: Not less than 150 mm below.
3. In relation to adjacent grass areas: 25 mm above.
4. **Seeded areas:** Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
5. **Sportsfields:** To even levels and within the following permitted deviations:
 - 5.1. From levels or gradients shown on drawings: ± 75 mm.
 - 5.2. From line between boning rods 30 m apart: ± 25 mm.
6. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
7. Adjoining soil areas: Marry in.
8. Thickness of turf or mulch: Included.

805 Applying soil ameliorant

1. **Description:**

To all shrub / perennial planting areas.
To all tree pits.
2. **Type:** Sanitized and stabilized composted materials to PAS 100 and clause Q28/360.
3. Fully incorporate into topsoil to a depth of 150 mm.
4. **Application:** Spread evenly.
 - 4.1. **Timing:** Apply prior to cultivation.
 - 4.2. **Rate:** To suit soil report recommendations.
5. **Timing:** Prior to cultivation.
6. **Other requirements:** None.
7. **Notes:** Dependent on the condition of the topsoil; to be established by soil analysis.

830 Applying top dressing

1. **Description:** To all shrub / perennial planting areas.
2. **Rate:** To manufacturer's / supplier's recommendations.
3. **Timing:** Apply prior to cultivation.

840 Applying mycorrhizal inoculant

1. **Description:** To all tree pits.
2. **Depth:** To manufacturer's / supplier's recommendations.

845 Applying loose mulch

1. **Description:** To all shrub / perennial planting areas.
To all tree pits.
2. **Timing:** Immediately after planting.
3. **Preparation:** Clear all weeds; Ensure that soil is thoroughly moistened, applying water where necessary.
4. **Coverage of mulch (minimum)**
 - 4.1. **Planting beds (depth):** 50 mm depth.

4.2. **Trees:** In a circular area of 500 mm radius measured from the tree stem.

Completion

905 Applying maintenance fertilizer to soil

1. **Description:**

To all shrub / perennial planting areas.

2. **Duration:** Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.

3. **Time of year:** To manufacturer's / supplier's recommendations.

4. **Application:** Evenly spread, carefully incorporating below mulch materials.

5. **Rate:** To manufacturer's / supplier's recommendations.

920 Applying mulch

1. **Timing:** At end of the rectification period.

2. **Watering:** Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.

3. **Planting beds:** Re-mulch.

3.1. **Depth (minimum):** 50 mm.

4. **Trees:** Remulch.

4.1. **Depth (minimum):** 50 mm.

Ω End of Section

Q31

External planting

General information/ requirements

112 Site clearance generally

1. **General:** Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. **Stones:** Remove those with any dimension exceeding 50 mm.
3. **Contamination:** Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. **Vegetation:** Clear surface vegetation in areas shown on drawings using suitable nonresidual herbicide.
5. **Large roots:** Grub up and dispose of without undue disturbance of soil and adjacent areas.
6. **Additional requirements:** Remove street furniture.

118 Soil conditions

1. **Soil for cultivating and planting:** Moist, friable and (except in aquatic/ marginal planting) not waterlogged.
2. **Frozen or snow covered soil:** Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

120 Climatic conditions

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

125 Times of year for planting

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

130 Mechanical tools

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

145 Watering

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

150 Water restrictions

1. **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

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

170 Soil requirements

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

200 Plants/ Trees – general

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

216 Plants/ Trees – specification criteria

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

225 Bulbs/ Corms/ Tubers

1. **Condition:** Firm, entire, not dried out or shrivelled.
2. **Health:** Free from pests, diseases and fungus.
3. **Handling:** Remove from packaging immediately.
4. **Storage:** Permitted only when necessary.
 - 4.1. **Location:** Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
 - 4.2. **Duration:** Minimum period.

4.3. Temperature: 18-21°C.

235 Container grown plants/ Trees

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

245 Labelling and information

1. **General:** Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
 - 1.1. Full botanical name.
 - 1.2. Total number.
 - 1.3. Number of bundles.
 - 1.4. Part bundles.
 - 1.5. Supplier's name.
 - 1.6. Employer's name and project reference.
 - 1.7. Plant specification, in accordance with scheduled National Plant Specification categories.
2. **Additional information:** Submit on request: Date supplied and consignment details or reference.

260 Plant/ Tree substitution

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

265 Plant handling, storage transport and planting

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

280 Treatment of tree wounds

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

290 Surplus material

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

Plant containers - Not Used

Preparation of planting beds/ planting materials - Not Used

Planting shrubs/ herbaceous plants/ bulbs

405 Shrub planting pits

1. Timing: Excavate 1-2 days (maximum) before planting.
2. Sizes: 150 mm wider than roots when fully spread and 300 mm deep.
3. Pit bottom improvement Not required - reuse excavated material where suitable, otherwise use imported topsoil to Q28 to address any deficiency.

415 Antidesiccant for conifers/ Evergreens

1. Manufacturer: Submit proposals.
 - 1.1. Product reference: Submit proposals.
2. Application: Dip before delivering to site. Spray soon after planting.
 - 2.1. Do not apply in wet or frosty weather.
 - 2.2. Ensure full coverage of underside of foliage.

445 Planting bulbs/ Corms/ Tubers

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

470 Formal hedges

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

480 After planting

1. Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
2. Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
3. Top dressing: Mulching and top dressing system, as section Q28.
 - 3.1. Depth: 50 mm.

Planting trees

500 Tree planting

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

502 Antidesiccant for conifers/ Evergreens

1. **Manufacturer:** Submit proposals.
 - 1.1. **Product reference:** Submit proposals.
2. **Application:** Dip or thoroughly spray before delivering to site. Spray again soon after planting.
 - 2.1. Do not apply in wet or frosty weather.
 - 2.2. Ensure full coverage of underside of foliage.

505 Tree pits

1. **Sizes:** Generally 3000 mm x 3000 mm x 900 mm deep, consisting of 450 mm topsoil to Q28 & BS 3882:2015 and 450 mm subsoil to Q28 & BS8601:2013.
2. **Sloping ground:** Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. **Excavated material:** Separate topsoil and subsoil material and stockpile for backfilling.
4. **Pit bottoms:** Excavate with slightly raised centre: Break up base to a depth of 150 mm.
 - 4.1. **Treatment:** Soil ameliorant worked into pit bottoms.
5. **Pit sides:** Scarify.
6. **Backfilling material:** Excavated material from tree pit, installed to original soil profiles in accordance with BS 8545.

510 Tree pit root barriers

1. **Locations:** Where adjacent services
2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. **Product reference:** ReRoot 1000.
3. **Thickness:** 1.0 mm.
4. **Barrier depth:** 1000 mm.
5. **Foil liner:** Not required.
6. **Top of root barrier in relation to finished topsoil level:** 50 mm below ground level.
7. **Installation:** With sides vertical. Remove all sharp objects adjacent to barrier.

512 Tree pit irrigation and ventilation accessories

1. **Locations:** To all trees.
2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. **Product reference:** RootRain Civic.
RRCIVIC1A to 20-25cm & 30-35cm girth trees.
RRCIVIC2A to 45-50cm girth trees.
3. **Type:** Perforated plastics irrigation / ventilation pipe with inlet.
4. **Pipe diameter:** 60 mm.
5. **Ring diameter:** To suit tree rootball.
6. **Inlet:** Black plastics, with aluminium cap.
7. **Installation**
 - 7.1. **Pipe:** Lay in loop above root ball with slight fall away from inlet pipe. Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
 - 7.2. **Top cap of inlet:** Protruding slightly above finished surround level.

7.3. Backfill material: Carefully compact in layers.

526 Underground guying for:

1. Description: To all trees.
2. Manufacturer: GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. Product reference: ArborGuy drive-In anchor.
SASMCB Medium anchor strap system with medium drive-in heavy-duty anchors for trees up to 25cm girth.
SASLCB Large anchor strap system with large drive-in heavy-duty anchors for trees up to 45cm girth.
3. Anchoring system: 3 no drive-in anchors.
4. Installation: Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.

576 Tree pit surfacing – loose fill

1. Surfacing material: Mulch, as section Q28.
2. Area: 500 mm radius circle.
3. Depth: 50 mm
4. Watering: Water soil thoroughly before laying.
5. Installation: Ensure the base of the tree stem is kept free from loose filled material.

Woodland/ matrix/ buffer zone planting - Not Used

Protecting/ maintaining/ making good defects

710 Maintenance

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

720 Failures of planting

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

740 Cleanliness

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

750 Planting maintenance generally

1. Weed control: Maintain weed free area around each tree and shrub.
 - 1.1. Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - 1.2. Keep planting beds clear of weeds: By maintaining full thickness of mulch.

2. **Planted areas:** Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
3. **Precautions:** Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. **Firming up:** Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. **Trees:** Spray crown when in leaf during warm weather.
 - 5.1. **Timing:** After dusk.
6. **Tree accessories:** Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - 6.1. **Broken or missing items:** Replace.
 - 6.2. **Loose stakes:** Re-firm in the ground or replace as necessary to provide support to the tree.
 - 6.3. **Loose guys:** Re-firm anchor points and adjust as necessary to provide support to the tree.
 - 6.4. **Ties:** Adjust to accommodate growth and prevent constriction or abrasion.
 - 6.5. **Damage to bark:** Cut back neatly with sharp knife. Prevent further damage.
 - 6.6. **Frequency of checks:** At each scheduled maintenance visit.
7. **Watering:** Contractor's choice.

760 Planting maintenance – pruning

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

780 Maintenance instructions

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

790 Final mulching

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

Ω End of Section

Q50 Site/ street furniture/ equipment

Gates, barriers and parking controls

2 To be read with Preliminaries / General Conditions

1. All materials to be 'similar and approved by Contract Administrator' where alternatives provided.
2. Refer to Engineers drawings & specification for all vehicular accessible areas, access roads and parking areas, sub-base build-ups and concrete foundations / haunching.
3. Engineers specification takes precedence where duplication occurs.
4. Reference should be made to any ground investigation reports, any civil and structural specifications and all other Stage 4 specifications.

Site and street furniture

225 Seats

1. Description: SE ref drwg 0130
2. Manufacturer: Bailey Street Scene
 - 2.1. Product reference: Greengate Seat
3. Material: FSC hardwood
 - 3.1. Finish: Planed. 3mm pencil fillets. Stained post install to UoM recommended system. Timber to be oiled / stained to match other campus furniture.
 - 3.2. Colour: Non-standard RAL colour to metalwork. TBA
4. Size: L : 1800mm x D : 550mm x H : 775mm
5. Accessories/ Special requirements: 90 degree unit ref drwg 0130
6. Method of fixing: Ref detail 07 drwg 0230 for intent.

230 Picnic Set

1. Description:: PB Picnic Set.
2. Manufacturer: Bailey Streetscene.
www.baileystreetscene.co.uk.
01625 855900.
 - 2.1. Product reference: Greengate Picnic Set
3. Frame material: Steel.
 - 3.1. Finish: Hot-dip galvanized to BS EN ISO 1461.
Polyester powder-coated to BS EN 13438:2013.
 - 3.2. Colour: Non-standard RAL TBA
4. Slat material: FSC hardwood.
 - 4.1. Finish: Planed. 3mm pencil fillets.
 - 4.2. Colour: Timber to be oiled / stained to match other campus furniture.
5. Size: 2040(l) x 1900(d) x 800(h) mm.
6. Accessories/ Special requirements: Stainless steel anti-skate angle.
Number / type to be agreed and retro-fitted.
7. Method of fixing: Surface mount through paving to concrete base 100 mm below paving surface.
8. Notes:: Top of bench set 510 mm above adjacent ground level.
Front face of bench set 150mm from front face of table.

242 Bins

1. **Description:** LT1 Recycling and Waste Bin
2. **Manufacturer:** AdvancedScape.
www.advancedscape.co.uk.
01952 216888
 - 2.1. **Product reference:** AdvanceR 4SS
3. **Material:** Steel.
 - 3.1. **Finish:** Hot-dip galvanized to BS EN ISO 1461.
Polyester powder-coated to BS EN 13438:2013.
 - 3.2. **Colour:** RAL 9006 'White Aluminium'
4. **Accessories/ Special requirements:** Graphics to denote 'General Waste', 'Paper & Card', 'Glass & Cans' and 'Plastic'.
University of Manchester' logo.
Twin front opening lockable doors, 4 x 100 litre galvanised steel liners, 4 x Posting Apertures & top opening flaps.
5. **Method of fixing:** Root, 300 mm below ground, set in concrete base.

Installation

510 Concrete foundations generally

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

515 Setting components in concrete

1. **Holes:** Refer to Engineers information.
2. **Components:** Accurately positioned and securely supported.
3. **Concrete fill:** Fully compacted as filling proceeds.
4. **Concrete foundations exposed to view:** Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
5. **Temporary component support:** Maintain undisturbed for minimum 48 hours.

530 Preservative treated timber

1. **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.
2. **Heavily worked sections:** Re-treat.

550 Damage to galvanized surfaces

1. **Minor damage in areas up to 40 mm² (including on fixings and fittings):** Make good.
 - 1.1. **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.
 - 1.2. **Thickness:** Sufficient to provide a zinc coating at least equal to the original layer.

Ω End of Section



Specification created using NBS Chorus