

Planit Northwest Ltd

Manchester Metropolitan University

MMU Public Realm - Phase 1

MMU Public Realm - Phase 1A

31-01-2023

Contents

C20 Demolition	1
D20 Excavating and filling	2
F21 Natural stone/ ashlar walling/ dressings	6
Q10 Kerbs/ edgings/ channels/ paving accessories	9
Q23 Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays.....	13
Q25 Slab/ brick/ sett/ cobble pavings	15
Q28 Topsoil and soil ameliorants.....	25
Q30 Seeding/ turfing	30
Q31 External planting	34
Q35 Landscape maintenance	43
Q40 Fencing	52
Q50 Site/ street furniture/ equipment.....	54
Z31 Powder coatings	63

C20 Demolition

General requirements

130 Groundworks

1. Old foundations, slabs and the like: Break out in locations and to the extents stated.
2. Contaminated material: Remove, and carry out remediation required by the Enforcing Authority.

150 Features to be retained

1. General: Keep in place and protect the following: Trees as described on 1958-PLA-01A-XX-DR-L-0008. Items described as being retained on site clearance plans: 1958-PLA-01A-XX-DR-L-0002, 1958-PLA-01A-XX-DR-L-0003 and 1958-PLA-01A-XX-DR-L-0004..

Services affected by deconstruction/ demolition

210 Services regulations

1. Work carried out to or affecting new and/ or existing services: Carry out in accordance with the byelaws and/ or regulations of the relevant Statutory Authority.

220 Location of services

1. Services affected by deconstruction/ demolition work: Locate and mark positions.
2. Mains services marking: Arrange with the appropriate authorities for services to be located and marked.
 - 2.1. Marking standard: In accordance with National Joint Utilities Group 'Guidelines on the positioning and colour coding of underground utilities' apparatus'.

270 Services to be retained

1. Damage to services: Give notice, and notify relevant service authorities and/ or owner/ occupier regarding damage arising from deconstruction/ demolition.
2. Repairs to services: Complete as directed, and to the satisfaction of the service authority or owner.

Deconstruction/ demolition work

450 Site condition at completion

1. Debris: Clear away and leave the site in a tidy condition.
2. Other requirements: All paving areas should be free of mortar stain.

Materials arising

520 Recycled materials

1. Materials arising from deconstruction/ demolition work: Can be recycled or reused elsewhere in the project, subject to compliance with the appropriate specification and in accordance with any site waste management plan.
2. Evidence of compliance: Submit full details and supporting documentation.
 - 2.1. Verification: Allow adequate time in programme for verification of compliance.

Ω End of Section

D20

Excavating and filling

Generally/the site

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. To engineer's specification

Clearance/excavating

164 Tree roots

1. Protected area: Do not cut roots within precautionary protection area.
 - 1.1. Size of area: Refer to drawing 1958-PLA-01A-XX-DR-L-0007
2. Excavation in protected area
 - 2.1. Method: By hand
 - 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: Not required
5. Backfill: As dug material, enriched with amelioration as section Q31

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

170 Removing small trees, shrubs, hedges and roots

1. Identification: Clearly mark trees to be removed.
2. Small trees, shrubs and hedges: Cut down.
3. Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
4. Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.

175 Felling large trees

1. Definition: Girth over 600 mm.
2. Identification: Clearly mark trees to be removed.
3. Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.
4. Felling: As close to the ground as possible.
5. Stumps: Remove by stump grinding
6. Work near retained trees: Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.

180 Chipping and shredding

1. **General:** Permitted, remove arisings from site

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 300 mm.
 - 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.
5. **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 as defined by BS 3882, Annex N2.

244 Excavations adjacent to existing foundations

1. **Prior to commencing excavation**
 - 1.1. Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
 - 1.2. Allow for inspection of trial pits.
 - 1.3. Allow time for amendment of details if required.
 - 1.3.1. **Time period:** 5 working days
2. **Backfill material to new excavation:** To Engineer's specification.

270 Foundations generally

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

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.

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

410 Excavated topsoil storage

1. **Storage:** Stockpile in temporary storage heaps submit proposals .

415 Excavated topsoil removal

1. **General:** Remove excess from site.

420 Topsoil storage heaps

1. **Location:** Submit proposals
2. **Standard:** To BS 3882.
3. **Height (maximum):** 1500mm
4. **Protection**
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination.

421 Topsoil storage heap treatment

1. **Treatment:** Treatment: herbicide application and sow with deep rooting grass .

441 Surplus subsoil

1. **Excavated material:** Stockpile in temporary storage heaps.
2. **Retained material:** Spread and level surplus subsoil on site.
 - 2.1. **Locations:** Submit proposals
 - 2.2. **Protected areas:** Do not raise soil level within root spread of trees that are to be retained.
3. **Remaining material:** Remove from site.

450 Water

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

454 Ground water level, springs or running water

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

457 Pumping

1. **General:** Do not disturb excavated faces or stability of adjacent ground or structures.
2. **Pumped water:** Discharge without flooding the site or adjoining property.
3. **Sumps:** Construct clear of excavations. Fill on completion.
 - 3.1. **Locations:** submit proposals if required.

Filling - Not Used

Bioremediation - Not Used

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

Ω End of Section

F21

Natural stone/ ashlar walling/ dressings

Types of walling/ dressings

119 Sanstone boundary wall [Ref S23]

1. **Description:** New sections of sandstone faced boundary wall to All Saints Park.
2. **Stone:** To BS EN 771-6.
 - 2.1. **Name (traditional):** Refer to drawing 1958-PLA-01A-XX-DR-L-4000
Stone Type: Sandstone

Size: To match existing boundary wall (approx 300-500mm above FFL) Measurements to be take on site.

Material: Reclaimed sandtone bricks with natural cleft finish - to be measured on site.

Drawings should be submitted for approval once constructed. To include sandstone coping unit to match existing.

NOTES:
 - 1) Walls NOT to be washed down with chemicals.
 - 2) Reclaimed stones to be taken down one by one, cleaned and used to re-build the wall.
 - 3) Suggested stone mason - Mather and Ellis. .
 - 4) Final dimensions to be measured and agreed during construction phase.
 - 2.2. **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.
3. **Mortar:** To match existing boundary wall. Submit samples.
4. **Bond:** Stretcher
5. **Other requirements:** Refer to section Q40 for information on associated wrought iron railings.

General production

240 Stone samples

1. **Submit:** Labelled samples of dressed stone or arrange for samples which represent the range of variation in appearance to be inspected.
 - 1.1. **Timing:** Before placing orders.

250 Cutting and dressing of stone

1. **Timing:** After seasoning but before delivery to site.
2. **Accuracy**
 - 2.1. **Exposed and joint surfaces:** Square, true planes free from hollow or rough areas.
 - 2.2. **Dimensions:** Maintain specified joint widths.
3. **Orientation for natural bed of stones:** Appropriate to properties of stones and positions in walling/ dressings.

260 Identification of stone units

1. **Marking:** Clearly and indelibly on concealed faces to indicate the natural bed and position in the finished work.

270 Inspection of stone units

1. Give notice: Before despatch to site, at appropriate stages of production.

280 Sand samples

1. Submit: Representative samples for approval of colour and grading.
 - 1.1. Timing: Before placing orders.

Laying and jointing

300 Reference panels

1. General: Complete areas of specified walling types and obtain approval of appearance before proceeding further.
2. Walling type
 - 2.1. Location:
 - 2.2. Size:
 - 2.3. Features:

315 Adverse weather

1. General: Do not use frozen materials or lay on frozen surfaces.
2. Air temperature: Do not lay stones:
 - 2.1. In cement gauged mortars: At or below 3°C and falling or below 1°C and rising.
 - 2.2. In hydraulic lime:sand mortars: At or below 5°C and falling or below 3°C and rising.
3. Temperature of walling during curing: Above freezing until mortar 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.

325 Laying generally

1. Stone selection: Do not use units with damaged faces or arrises.
2. Accuracy
 - 2.1. Courses: Level and true to line.
 - 2.2. Faces, angles and features: Plumb.
 - 2.3. Setting out: Achieve satisfactory junctions and joints with adjoining or built-in elements and components.
3. Absorbent stones: Dampen in warm weather to reduce suction. Do not soak.
4. Mortar joints
 - 4.1. Laying: Full bed of mortar with all joints and voids filled.
 - 4.2. Temporary distance pieces: Lead or stainless steel. Remove when mortar is sufficiently strong.
 - 4.3. Appearance: Neat and consistent.
5. Cleanliness: Keep facework clean. Rubbing and other abrasive or chemical cleaning methods to remove marks and stains not permitted.

330 Walling below ground level

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

340 Putlog scaffolding

1. Use: Not permitted.

350 One piece sills/ Thresholds

1. Bed joints: Leave open except under:
 - 1.1. End bearings.
 - 1.2. Masonry mullions.
2. Pointing on completion: Mortar to match adjacent work.

360 Openings

1. Method of forming: Rigid templates, accurately fabricated to the required size.

370 Joggle joints

1. General: Fill with bedding mortar. Tamp to expel air.

390 Pointing

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

410 Support of existing work

1. Joint above inserted lintel or masonry: Fully consolidated with semidry mortar to support existing structure.

Ω End of Section

Q10

Kerbs/ edgings/ channels/ paving accessories

Types of kerbs/edgings and channels

112 Precast concrete [type E6]

1. Description: Conservation kerb (to MCC specification)
2. Standard: To BS EN 1340.
3. Size (width x height x length): 255mm(W)x205mm(H)x1000mm(L)
4. Special shapes: Transition, dropper and radius kerbs as required.
5. Bedding: To engineer's specification
6. Joints generally: Butt jointed to engineer's specification

120 Stone [type E1]

1. Description: Natural stone flush channel [type E1]
2. Standard: To BS EN 1343.
3. Supplier: Hardscape or similar approved
4. Refer to drawing: 1958-PLA-01A-XX-DR-L-1001
5. Stone type: Portuguese Granite
6. Size (width x height): 200mm (W) x 1000 mm (L) units
7. Size (depth): 200mm (D) to engineer's specification
8. Freeze/ Thaw resistance: Resistant
9. Colour: Figueiredo
10. Finish: Bush hammered
11. Arrises: None
12. Bedding: To engineer's specification
13. Joints generally: Butt jointed to engineer's specification
14. Sealant movement joints: To engineer's specification. Colour: to match stone - submit proposals.
15. Accessories: None

120A Stone [type E2]

1. Description: Natural stone kerb edge [type E2]
2. Standard: To BS EN 1343.
3. Supplier: Hardscape or similar approved
4. Refer to drawing: 1958-PLA-01A-XX-DR-L-1001
5. Stone type: Portuguese Granite
6. Size (width x height): 300mm (W) 1000 mm (L) units. 5mm bullnose to exposed edges.
7. Size (depth): 250mm (D) x to engineer's specification. Laid 125mm upstand.
8. Freeze/ Thaw resistance: Resistant
9. Colour: Silva Preta venato
10. Finish: Bush hammered
11. Arrises: None
12. Bedding: To engineer's specification
13. Joints generally: Butt jointed to engineer's specification
14. Sealant movement joints: To engineer's specification. Colour: to match stone - submit proposals.

15. Accessories: None

120B Stone [type E4]

1. Description: Natural stone interpretive channel [type E4]
2. Standard: To BS EN 1343.
3. Supplier: Hardscape or similar approved
4. Refer to drawings: 1958-PLA-01A-XX-DR-L-1001 and 1958-PLA-01A-XX-DR-L-5009
5. Stone type: Portuguese Granite
6. Size (width x height): 500mm (W) 1000 mm (L) units.
7. Size (depth): 200mm (D) x to engineer's specification. Laid flush.
8. Freeze/ Thaw resistance: Resistant
9. Colour: Silva Preta venato
10. Finish: Bush hammered
11. Arrises: None
12. Bedding: To engineer's specification
13. Joints generally: Butt jointed to engineer's specification
14. Sealant movement joints: To engineer's specification. Colour: to match stone - submit proposals.
15. Accessories: Allowance for Etched and Sand-Blasted 'proud' design and bronze inlays as per drawing 1958-PLA-01A-XX-DR-L-5009.

120C Stone [type E5]

1. Description: Natural stone raised planter edge [type E5]
2. Standard: To BS EN 1343.
3. Supplier: Hardscape or similar approved
4. Refer to drawings: 1958-PLA-01A-XX-DR-L-1001 and 1958-PLA-01A-XX-DR-L-5010
5. Stone type: Portuguese Granite
6. Size (width x height): 200mm (W) 1000 mm (L) units.
7. Size (depth): 250mm (D) x to engineer's specification. Laid 100mm upstand.
8. Freeze/ Thaw resistance: Resistant
9. Colour: Silva Preta venato
10. Finish: Bush hammered
11. Arrises: None
12. Bedding: To engineer's specification
13. Joints generally: Butt jointed to engineer's specification
14. Sealant movement joints: To engineer's specification. Colour: to match stone - submit proposals.
15. Accessories: Allowance for Etched and Sand-Blasted 'proud' design as per 1958-PLA-01A-XX-DR-L-5010.

160A Granite Pin Kerb [type E3]

1. Description: Portuguese granite pin kerb edging
2. Supplier: Hardscape or similar approved
3. Refer to drawings: 1958-PLA-01A-XX-DR-L-1001
4. Size (width x height): 50mm(W) x 150mm (H) x 1000mm (L) to include radii specials where required
5. Colour: Figueriredo
6. Finish: Bush hammered

7. **Fixing:** To engineer's specification in accordance with manufacturer's installation instructions.
8. **Joints generally:** Butt jointed to engineer's specification

180 Drainage channel gratings [type D1]

1. **Manufacturer:** ACO
 - 1.1. **Product reference:** ACO freestyle
2. **Size:** 135mm (W)
3. **Cover gratings:** 'Nest' design - heelsafe
 - 3.1. **Fixings:** to engineer's specification
 - 3.2. **Loading grade** to BS EN 124-1: D400
 - 3.3. **Finish/ Colour:** ATec corrosion resistant coating

250 Material samples

1. **Samples representative of colour and appearance of designated materials:** Submit before placing orders.
 - 1.1. **Designated materials:** Stone kerbs, channels and steel edging.

Roads/paving accessories/ marking/ demarcation

305 Tree grilles and surrounds [Type 1]

1. **Manufacturer:** ASF architectural street furnishings or similar approved
 - 1.1. **Product reference:** Resi-bond tree grille
2. **Size:** 2000mm (W) x 2000mm (L)
3. **Material:** Stainless steel, grade 316
4. **Accessories:** Allow for integrated aperture for irrigation unit and uplighter

305A Tree grilles and surrounds [Type 2]

1. **Manufacturer:** ASF architectural street furnishings or similar approved
 - 1.1. **Product reference:** Laser Cut Tree Grille
2. **Size:** 3000mm diameter
3. **Material:** Stainless steel, grade 316
4. **Finish:** Allowance for bespoke laser cut design
5. **Accessories:** Allow for integrated aperture for irrigation unit and uplighter

305B Tree grilles and surrounds [Type 3]

1. **Manufacturer:** ASF architectural street furnishings or similar approved
 - 1.1. **Product reference:** Max pave tree grille
2. **Size:** 2000mm (W) x 2000mm (L)
3. **Material:** Stainless steel, grade 316
4. **Accessories:** Allow for integrated aperture for irrigation unit and uplighter

Laying

510 Laying kerbs, edgings and channels

1. **Cutting:** Neat, accurate and without spalling. Form neat junctions.
 - 1.1. **Long units (450 mm and over)** minimum length after cutting: 300 mm.

- 1.2. **Short units minimum length after cutting:** The lower of one third of their original length or 50 mm.
2. **Bedding of units:** Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
3. **Securing of units:** After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

520 Adverse weather

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

600 Radius kerbs/ channels

1. **Usage:** Radii of 15 m or less.

620 Accuracy

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

625 Regularity of paved surfaces

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

640 Tooled mortar joints

1. **Jointing:** Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
 - 1.1. **Joint width:** 6 mm.

Ω End of Section

Q23

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

Types of surfacing

225 Proprietary resin bound chippings type [P7a]

1. Manufacturer: SureSet Permeable Paving
 - 1.1. Web: www.sureset.co.uk
 - 1.2. Email: direct@sureset.co.uk
2. Product reference: Resin Bound Natural Aggregate Paving
3. Aggregate
 - 3.1. Size: 6 mm
 - 3.2. Depth: 20mm to engineer's specification
 - 3.3. Colour: Winter bronze
4. Description: Pedestrian use only
5. Sample: 1m2 sample panel to be approved by Landscape Architect
6. Application: Thoroughly mixed and uniformly spread.
 - 6.1. Spreading rate: to manufacturer's recommendation,.
 - 6.2. Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use.

225A Proprietary resin bound chippings type [P7b]

1. Manufacturer: SureSet Permeable Paving
 - 1.1. Web: www.sureset.co.uk
 - 1.2. Email: direct@sureset.co.uk
2. Product reference: Resin Bound Natural Aggregate Paving
3. Aggregate
 - 3.1. Size: 6 mm
 - 3.2. Depth: 20mm to engineer's specification
 - 3.3. Colour: Winter bronze
4. Description: Vehicular use
5. Sample: 1m2 sample panel to be approved by Landscape Architect
6. Application: Thoroughly mixed and uniformly spread.
 - 6.1. Spreading rate: to manufacturer's recommendation,.
 - 6.2. Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use.

Laying

315 Materials

1. Compatibility: Chippings suitable for use with respective binders/ emulsions/ resin/ epoxy.

320 Samples

1. Submit: Representative samples of all aggregate.

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.

350 Cold weather working

1. Frozen materials: Do not use.
2. Freezing conditions: Do not lay pavings.
3. Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.
4. Other dressings or overlays: As manufacturers' recommendations.

360 Drainage falls

1. To engineer's specification:

390 Protection from traffic and plant

1. Paved areas: Restrict access to prevent damage.

Completion - Not Used

Ω End of Section

Q25

Slab/ brick/ sett/ cobble pavings

General

110 Natural stone slab paving system

1. Subgrade improvement layer: To engineer's specification
2. Granular sub-base: To engineer's specification
3. Base: To engineer's specification
4. Laying course: High strength bedding mortar as per clause 440
5. Paving units: Natural Stone Slabs P1a and P1b
6. Jointing: As per clause 440A
 - 6.1. Width: 8mm to engineer's specification
 - 6.2. Bond: Stretcher bond
7. Accessories: Sealer/ stabilizer as per clause 465

140 Natural stone sett paving system

1. Subgrade improvement layer: To engineer's specification
2. Granular sub-base: To engineer's specification
3. Base: To engineer's specification
4. Laying course: High strength bedding mortar as per clause 440
5. Paving units: Natural stone setts P2
6. Jointing: As per clause 440A
 - 6.1. Width: 8mm to engineer's specification
 - 6.2. Bond: Stretcher bond
7. Accessories: Sealer/ stabilizer as per clause 465

System performance - Not Used

Products

310 Natural stone slabs [type P1a]

1. Description: Natural stone paving slabs [category 5] Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. Standard: To BS EN 1341.
3. Supplier: Hardscape or similar approved
 - 3.1. Product reference: Portuguese Granite
 - 3.2. Colour: Mix - 50% Cathedral, 50% Figueiredo
4. Finish: Bush hammered
5. Sizes: W: 250 x L: 500mm
6. Depth: D: 90mm to engineer's specification
7. Breaking strength: In accordance with To BS EN 1341, to engineer's specification.
8. Slip resistance: In accordance with To BS EN 1341, to engineer's specification.
9. Skid resistance: In accordance with To BS EN 1341, to engineer's specification.
10. Surface treatment: None

310A Natural stone slabs [type P1b]

1. **Description:** Natural stone paving slabs [category 6 on concrete] Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. **Standard:** To BS EN 1341.
3. **Supplier:** Hardscape or similar approved
 - 3.1. **Product reference:** Portuguese Granite
 - 3.2. **Colour:** Mix - 50% Cathedral, 50% Figueiredo
4. **Finish:** Bush hammered
5. **Sizes:** W: 250 x L: 500mm
6. **Depth:** D: 65mm to engineer's specification
7. **Breaking strength:** In accordance with To BS EN 1341, to engineer's specification.
8. **Slip resistance:** In accordance with To BS EN 1341, to engineer's specification.
9. **Skid resistance:** In accordance with To BS EN 1341, to engineer's specification.
10. **Surface treatment:** None

310A Natural stone slabs [type P1c]

1. **Description:** Natural stone paving slabs [category 4 on concrete] Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. **Standard:** To BS EN 1341.
3. **Supplier:** Hardscape or similar approved
 - 3.1. **Product reference:** Portuguese Granite
 - 3.2. **Colour:** Mix - 50% Cathedral, 50% Figueiredo
4. **Finish:** Bush hammered
5. **Sizes:** W: 250 x L: 500mm
6. **Depth:** D: 40mm to engineer's specification
7. **Breaking strength:** In accordance with To BS EN 1341, to engineer's specification.
8. **Slip resistance:** In accordance with To BS EN 1341, to engineer's specification.
9. **Skid resistance:** In accordance with To BS EN 1341, to engineer's specification.
10. **Surface treatment:** None

310A Natural stone slabs [type P1d]

1. **Description:** Natural stone paving slabs [category 4] Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. **Standard:** To BS EN 1341.
3. **Supplier:** Hardscape or similar approved
 - 3.1. **Product reference:** Portuguese Granite
 - 3.2. **Colour:** Mix - 50% Cathedral, 50% Figueiredo
4. **Finish:** Bush hammered
5. **Sizes:** W: 250 x L: 500mm
6. **Depth:** D: 70mm to engineer's specification
7. **Breaking strength:** In accordance with To BS EN 1341, to engineer's specification.
8. **Slip resistance:** In accordance with To BS EN 1341, to engineer's specification.
9. **Skid resistance:** In accordance with To BS EN 1341, to engineer's specification.
10. **Surface treatment:** None

310B Natural stone special [type SP1]

1. **Description:** Natural stone shared cycle special paving unit. Refer to 1958-PLA-01A-XX-DR-L-1000 and 1958-PLA-01A-XX-DR-L-5007
2. **Standard:** To BS EN 1341.
3. **Supplier:** Hardscape or similar approved
 - 3.1. **Product reference:** Portuguese Granite
 - 3.2. **Colour:** Silva Preta venato
4. **Finish:** Bush hammered with bespoke water jet detailing
5. **Sizes:** (W) 500mm x (L) 510mm
6. **Depth:** D: 90mm to engineer's specification
7. **Breaking strength:** In accordance with To BS EN 1341, to engineer's specification.
8. **Slip resistance:** In accordance with To BS EN 1341, to engineer's specification.
9. **Skid resistance:** In accordance with To BS EN 1341, to engineer's specification.
10. **Surface treatment:** None

320 Tactile flags and slabs

1. **Description:** Tactile paving to Cavendish Street cycle crossing. Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. **Standard:** To DD CEN/TS 15209.
3. **Material:** To MCC specification. Refer to S278 drawings.
4. **Nominal sizes:** 400mm x 400mm
5. **Colour:** red

330 Natural stone setts [Type P2]

1. **Description:** Natural stone sett paving. Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. **Standard:** To BS EN 1342.
3. **Supplier:** Hardscape or similar approved.
 - 3.1. **Product reference:** Portuguese granite
4. **Colour : Mix:**
33% Figueiredo (flamed),
33% Figueiredo (bush hammered),
33% Cathedral (bush hammered)
5. **Finish:** Bush Hammered/Flamed
6. **Sizes:** W: 125 x L: 250 mm
7. **Depth:** D: 90mm to engineer's specification
8. **Slip resistance:** In accordance with To BS EN 1341, to engineer's specification.
9. **Skid resistance:** In accordance with To BS EN 1341, to engineer's specification.
10. **Surface treatment:** none

330A [IN ABEYANCE] Natural stone setts [Type P3]

1. **Description:** Natural stone sett paving. Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. **Standard:** To BS EN 1342.
3. **Supplier:** Hardscape or similar approved.
 - 3.1. **Product reference:** Portuguese granite
4. **Colour :** Cathedral
5. **Finish:** Bush Hammered

6. **Sizes:** W: 100 x L: 100 mm
7. **Depth:** D: 50mm to engineer's specification
8. **Laying:** Stack bond
9. **Slip resistance:** In accordance with To BS EN 1341, to engineer's specification.
10. **Skid resistance:** In accordance with To BS EN 1341, to engineer's specification.
11. **Surface treatment:** none

330B Natural stone setts [Type P6]

1. **Description:** Natural stone flag paving. Refer to drawing 1958-PLA-01A-XX-DR-L-1000.
2. **Standard:** To BS EN 1342.
3. **Supplier:** Marshalls or similar approved.
 - 3.1. **Product reference:** Scoutmoor
4. **Colour :** Greyish buff
5. **Sizes:** 300mm (W) x random lengths 300-450mm
6. **Depth:** D: 75mm to engineer's specification
7. **Laying:** Stretcher bond
8. **Slip resistance:** In accordance with To BS EN 1341, to engineer's specification.
9. **Skid resistance:** In accordance with To BS EN 1341, to engineer's specification.
10. **Surface treatment:** none

435 Primer for underside of flags and slabs

1. **Description:** High performance bonding and priming mortar suitable for natural stone and pre-cast concrete paving units used in bound/rigid construction in commercial and public realm projects.
2. **Manufacturer:** Steintec
 - 2.1. **Product reference:** Tuffbond priming mortar

440 Ready-mixed bedding mortar

1. **Manufacturer:** Steintec
 - 1.1. **Web:** www.tuffbau.com
 - 1.2. **Email:** info@tuffbau.com
2. **Product reference:** tuffbed 2-Pack High Performance Low Carbon Bedding Mortar
3. **Colour:** Mid grey
4. **Description:** Technical characteristics:

Working temperature: 2–30°C.

Typical compressive strength: 14 days at 20°C: ~25 N/mm²; 28 days at 20°C: ~35 N/mm².

Adhesion strength: ~1 N/mm² (without tuffbond); ~2 N/mm² (with tuffbond).

Flexural strength: 7 N/mm².

Modulus of elasticity: 14 000–18 000 N/mm² (application-dependent).

Permeability (to EN 12697-19): 8.5 x 10⁻⁴ m/s.

- In accordance with EN 13813: 2002:

Compressive strength: C35.

Flexural strength: F4 (4.5–7.0 N/mm²).

Reaction to fire: A1-fl.

5. **Thickness:** To engineer's specification. Target depth to be 30 mm.
Thickness: Maximum range 20 mm minimum to 70 mm maximum.
6. **Laying:** Follow manufacturer's instructions for mixing and laying
Contact:

Steven Burton B.Eng (Hons) GMICE
Technical Director
SteinTec, 1 Northwick Road, Canvey Island, Essex, SS8 0PU
phone 0203 598 9800
fax 01708 860 893
mobile 07748 652 206
email: steven.burton@tuffbau.com
website: www.tuffbau.com

- All work must be carried out on the side of the unlaied face, at no time shall operatives stand, work or rest materials on freshly laid paving.
 - The surface of the roadbase or supporting structure must be thoroughly cleaned.
 - The surface of the concrete slab or supporting structure is to be coated with "SteinTec tuffbond" PRIMING MORTAR to a minimum thickness of 1.5 mm immediately prior bedding mortar being laid. Priming mortar may be applied by brushing on.
 - Bedding mortar must not be laid in advance of more than 1 row of paving elements.
 - Bedding mortar must be laid to a surcharge height of not less than 6 mm.
 - The underside of paving elements is to be coated with "SteinTec tuffbond" priming mortar to a minimum thickness of 1.5 mm immediately prior to sett being placed on bedding mortar. Priming mortar may be applied by brushing on or by dipping the paving elements into a shallow receptacle containing priming mortar.
 - Priming mortar shall not be applied more than one minute prior to paving elements being laid upon bedding mortar.
 - Paving elements to be positioned firmly to line and level immediately, thereafter not to be disturbed.
- Cleaning of paving elements during laying:
- All mortar contamination must be removed from the surface of freshly laid paving immediately, using clean water and a sponge.
- Cleaning of areas of freshly laid paving following laying:
- Areas of freshly laid paving to be thoroughly rinsed with clean water at the end of a working shift.

440A Ready-mixed jointing mortar

1. **Manufacturer:** Steintec
 - 1.1. **Web:** www.tuffbau.com
 - 1.2. **Email:** info@tuffbau.com
 2. **Product reference:** SteinTec "tufftop" jointing mortar.
 3. **Colour:** Mid grey
 4. **Laying:** Follow manufacturer's instructions for mixing and laying
- Contact:
Steven Burton B.Eng (Hons) GMICE
Technical Director
SteinTec, 1 Northwick Road, Canvey Island, Essex, SS8 0PU
phone 0203 598 9800
fax 01708 860 893
mobile 07748 652 206
email: steven.burton@tuffbau.com
website: www.tuffbau.com

- **Preparation:**
 - Joints must be clean and clear of all foreign matter - The area to be jointed must be thoroughly soaked with clean water and maintained in a wet condition until jointing mortar is applied.
- **Consistency of mortar:**
 - Mix to a free flowing liquid slurry grout.
- **Jointing:**
 - Freshly mixed mortar is spread over the surface and forced into joints using a suitable rubber/neoprene squeegee. - Mortar is allowed to settle in joints and fresh mortar is drawn across

the surface repeatedly until joints are full and settlement has ceased.

- Water may be applied to the surface at any time in the form of a fine spray, to prevent drying of the mortar on the surface.
- Cleaning of setts following jointing:
- Excess mortar is removed using a suitable rubber/neoprene squeegee.
- Water is applied to the surface in the form of a fine spray, taking care not to disturb the mortar in the joints, until the surface is wet. - Water and excess water is removed using a suitable rubber/neoprene squeegee.
- Process repeated: Water is applied to the surface in the form of a fine spray, taking care not to disturb the mortar in the joints, until the surface is wet.
- Process repeated: Water and excess water is removed using a suitable rubber/neoprene squeegee.
- The surface is maintained in a damp condition by periodic application of water in the form of a fine spray.
- The surface may be rinsed clear with clean water after sufficient time has elapsed for joint mortar to have become sufficiently stable to resist action of cleaning.

5. **Protection for freshly jointed setts:**
- Freshly jointed areas must be protected from vehicular traffic until bedding mortar has gained not less than 20 N/mm² compressive strength and jointing mortar has gained not less than 25 N/mm². Mortar cubes for testing shall be cured on site in unprotected conditions.
 - Materials storage: Do not overload pavings with stacks of materials until the quarantine period for vehicular trafficking has passed. • Pedestrian trafficking may be permitted on the next day following jointing.
 - Materials storage: Do not overload pavings with stacks of materials until the quarantine period for vehicular trafficking has passed.
 - Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.

455 Joint filler for movement joints

1. **Description:** To engineer's specification
2. **Type:** Compressible rubber or plastics compatible with specified sealant
3. **Manufacturer:** Submit proposals
 - 3.1. **Product reference:** Submit proposals

460 Joint breaker barriers for movement joints

1. **Description:** To engineer's specification
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:** Submit proposals

465 Sealant for movement joints

1. **Description:** To engineer's specification
2. **Sealant**
 - 2.1. **Type:** Silicone to BS EN 14188-2
 - 2.2. **Manufacturer:** Ottoseal, or Illbruck.
 - 2.2.1. **Product reference:** S70 or FA800 with primer
 - 2.3. **Colour:** TBC - submit samples

Execution

610 Material samples

1. **Samples representative of colour and appearance of designated materials:** Submit before placing orders.

- 1.1. Designated materials: All pavings

615 Control samples

1. Sample areas: Complete as part of the finished work.
 - 1.1. Types of paving: All Natural stone slab paving and Natural stone sett paving
 - 1.2. Location: tbc
 - 1.3. Size (minimum): 3.0 x 3.0 m
 - 1.4. Included features: Cutting to base of bollards, channels, kerbs, junction with building facade
2. Approval of appearance and surface: Obtain before proceeding.

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.

635 Regularity of paved surfaces

1. 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)

- 1.1. Precast concrete flags or natural stone slabs: 3 mm.
2. Difference in level between adjacent paving units (maximum): 2 mm.
3. Sudden irregularities: Not permitted.

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):
 - 4.2. Vehicular traffic (minimum):
5. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

650 Cementitious bases and sub-bases

1. 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

1. Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
2. 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.
3. Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
4. Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
5. Levels and falls: Accurate and within the specified tolerances.
6. Drainage outlets: Within 0-10 mm of the required finished level.
7. Features in unbound paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
8. Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

690 Reclaimed natural stone [Type P9]

1. **Description:** Reclaimed yorkstone to be relaid in new location
2. **Location/ Access:** Existing paved areas around All Saints Park.
3. **Lifting/ Storage/ Protection:** Store in a secure compound
4. **Preparation:** Remove all traces of old mortar pointing. Submit samples of cleaned slabs. Landscape architect to complete visual inspection of quality prior to lifting and post lifting to approve quality and quantity of reclaimed paving slabs.

690A Reclaimed natural stone [Type P5]

1. **Description:** Reclaimed yorkstone to be relaid to new levels in same location.
2. **Location/ Access:** Existing paved area outside Arts and Humanities entrance.
3. **Lifting/ Storage/ Protection:** Store in a secure compound
4. **Preparation:** Remove all traces of old mortar pointing. Clean using mild detergent solution Submit samples of cleaned slabs. Landscape architect to complete visual inspection of quality prior to lifting and post lifting to approve quality and quantity of reclaimed paving slabs.

795 Sealant movement joints in mortar-bedded units

1. **Spacing:**
2. **Extent of joints:**
3. **Joint filler:** Compressible cellular rubber or plastics compatible with specified sealant. Build in as work proceeds.
 - 3.1. **Joint width:**
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.

800 Applying sealer/ stabilizer to blocks and setts

1. **Surface preparation:** Sweep clear and remove cementitious and other stains before application
2. **Application:** To dry paving.
3. **Product Reference:** Weiss Stain Protect Profi, or equal and approved
4. **Supplier :** Steintec
5. **Method:** To manufacturer's recommendations
6. **Number of coats:** 1
7. **Coverage:** Assume 15m² per litre

Completion

930 Slip resistance testing

1. **Surfaces to be tested:** All natural stone paving
 - 1.1. **Surface condition:** Dry and wet
2. **Timing:** Two weeks prior to handover, but after initial cleaning.
3. **Period of notice (minimum):** 3 working days.
4. **Test standard:** To BS 7976.
 - 4.1. **Testing authority:** An approved laboratory.
 - 4.2. **Witnessing/ Certification:** Arrange for tests to be witnessed/ certified by: Contract administrator.

4.3. **Report:** Submit.

4.3.1.**Format:** As required under BS 7976.

Ω End of Section

Q28

Topsoil and soil ameliorants

System outline

135 Planting bed soil system

1. Description: To all areas excluding tree pits
2. Composition
 - 2.1. Topsoil: Imported topsoil to BS 3882
 - 2.2. Ameliorants: Submit design and cost proposals
 - 2.3. Accessories: Subsoil layer

145 Plant pit backfilling soil system

1. Description: For all tree pits
2. Composition
 - 2.1. Topsoil: Imported topsoil to BS 3882
 - 2.2. Ameliorants: Submit design and cost proposals
 - 2.3. Accessories: Subsoil layer

155 Mulching and top dressing system

1. Description: FOR ALL PLANTED AREAS EXCLUDING RAIN GARDEN
2. Composition
 - 2.1. Material: Medium grade bark mulch
Purity: Free of pests, disease, fungus and weeds.

Preparation: Clear all weeds. Water soil thoroughly.

Bark mulch shall be pine based with a maximum of 15% larch, less than 5 % wood, medium grade, particle size range 5-65mm.

All bark shall be not less than 2 months old and shall have a maximum manganese content of 300 parts per million. •

Coverage: 75 mm depth.

Finished level of mulch: 20 mm below adjacent grassed or paved areas.

155 Soil Depths

1. Description: FOR ALL PLANTED AREAS
2. Composition
 - 2.1. Material: Soil depths shall be as follows (made up of imported soils as specified):
 - semi mature tree pits in soft landscape 300mm topsoil over 600mm subsoil
 - semi-mature tree pits in hard landscape Refer to separate details
 - shrub beds 250mm topsoil over 200mm subsoil
 - hedge planting 300mm topsoil over 300mm subsoil
 - amenity grass (seed or turf) 200mm topsoil over 150mm subsoil

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.

310 Materials not permitted

1. **Materials:** Products containing peat

315 Imported topsoil to BS 3882

1. **Description:** FOR PLANTING BEDS AND TREES
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
5. **Source:** Submit proposals

Execution

605 Site investigation

1. **Report:** See section

610 Topsoil analysis

1. **Soil to be analysed:** Imported and site won topsoil
2. **Soil analyst:** Soil analyst: Tim O'Hare Associates LLP. Howbery Park, Wallingford, Oxfordshire, OX10 8BA. T 01491 822653. F 01491 822 644. www.toha.co.uk.
3. **Samples:** Collect in accordance with BS 3882.
4. **Submit**
 - 4.1. **Declaration of analysis:** In accordance with BS 3882, clause 6 and Table 1.
 - 4.2. **Additional analysis:** Chemical analysis
 - 4.3. Report detailing soil analyst's recommendations.

620 Importing topsoil

1. **Give notice:** Before stripping topsoil for transfer to site.
 - 1.1. Notice period: 7 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:** 7 days

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 Grading subsoil for:

1. **Description:** PLANTED AND GRASSED AREAS
2. **Standard:** In accordance with BS 8601.
3. **General:** Grade to smooth flowing contours to achieve specified finished levels of topsoil.
Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
4. **Areas of thicker topsoil:** Excavate locally.
5. **Avoid compaction.**
6. **Excess subsoil:** Remove.

670 Inspecting formations

1. **Give notice:** Before spreading topsoil for planting beds and lawn areas.
2. **Notice period:** 7 days

680 Surplus topsoil to be retained

1. **Generally:** Spread and level on site:
 - 1.1. **Locations:** Any areas where topsoil is required for new planting
 - 1.2. **Protected areas:** Do not raise soil level within root spread of trees that are to be retained.

685 Surplus materials to be removed

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

690 Topsoil storage heaps

1. **Location:** Submit proposals
2. **Height (maximum):** 2.0 m
3. **Width (maximum):** 4.0 m
 - 3.1. **Formation:** Loose tip and shape from the side only, without running machinery on the heap at any time.
4. **Protection**
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination, by fencing and covering as appropriate.

700 Grading of topsoil

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

705 Handling topsoil

1. **Standard:** In accordance with BS 3882.
2. **Aggressive weeds:** Give notice and obtain instructions before moving topsoil.
3. **Plant:** Select and use plant to minimize disturbance, trafficking and compaction.
4. **Contamination:** Do not mix topsoil with:
 - 4.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 4.2. Other grades of topsoil.
5. **Multiple handling:** Keep to a minimum. Use or stockpile topsoil immediately after stripping.
6. **Wet conditions:** Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall, or when the moisture content is greater than the plastic limit.

710 Spreading topsoil on:

1. **Description:** GRASSED AREAS, ORNAMENTAL PLANTING BEDS
2. **Standard:** In accordance with BS 3882.
3. **Temporary roads/ surfacing:** Remove before spreading topsoil.
4. **Layers**
 - 4.1. **Depth (maximum):** 150 mm.
 - 4.2. Gently firm each layer before spreading the next.
5. **Crumb structure:** Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 Loose tipping of topsoil

1. **Standard:** In accordance with BS 3882.
2. **General:** Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

718 Final cultivation

1. **Compacted topsoil:** Break up to full depth.
2. **Tilth:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.

3. Depth: 450 mm
4. Particle size (maximum): 15 mm
5. Timing: Within a few days before planting
6. Weather and ground conditions: Suitably dry.
7. Surface: Leave regular and even.
8. Levels: As per Planit's levels drawings
9. Undesirable material brought to the surface
 - 9.1. Remove visible weeds.
 - 9.2. Remove roots and large stones with any dimension exceeding 20 mm.

720 Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: 25 mm above
2. Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
3. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
4. Adjoining soil areas: Marry in.
5. Thickness of turf or mulch: Included.

820 Applying general fertilizer

1. Description: To planted areas
2. Application: Spread evenly, carefully incorporating below mulch materials.
 - 2.1. Timing: Immediately before cultivation.
 - 2.2. Application rate: 75 g/m²
 - 2.3. Other requirements: Slow release to a depth of 150mm. Apply 5-10 days before planting.

845 Applying loose mulch

1. Timing: Immediately after planting
2. Preparation: Clear all weeds
3. Coverage of mulch (minimum)
 - 3.1. Planting beds (depth): 75 mm depth
4. Finished level of mulch: 10 mm below adjacent grassed or paved areas

Completion - Not Used

Ω End of Section

Q30

Seeding/ turfing

General information/requirements

115 Seeded and turfed areas

1. **Growth and development:** Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
2. **Appearance:** A closely knit, continuous ground cover of even density, height and colour.

120 Climatic conditions

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

145 Watering

1. **Quantity:** Wet full depth of topsoil.
2. **Application:** Even and without displacing seed, seedlings or soil.
3. **Frequency:** As necessary to ensure the establishment and continued thriving of all seeding/turfing.

150 Water restrictions

1. **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

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Applying herbicide.
 - 1.3. Applying fertilizer.
 - 1.4. Preparing seed bed.
 - 1.5. Seeding or turfing.
 - 1.6. Visiting site during maintenance period.
2. Period of notice: 3 working days

170 Setting out

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

Preparation - Not Used

Seeding

310 Grass seed

1. **Description:** Existing grassed areas to be made good
2. **Mixture:** EG22 - Strong lawn grass mixture
Supplier :Emorsgate seeds or similar approved
3. **Application rate:** 25 g/m²

312 Wildflower turf

1. Description: Bespoke Wildflower turf
2. Supplier: Wildflower Turf Ltd
 - 2.1. Mixture reference: WFT-Bespoke

319 Quality of seed

1. Freshness: Produced for the current growing season.
2. Certification: Blue label certified varieties.
 - 2.1. Standard: EC purity and germination regulations.
 - 2.2. Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
3. Samples of mixtures: Submit when requested.

Turfing

405 Cultivated turf

1. Description: Olympic pro turf
2. Supplier: Professional lawns ltd
3. Seed mixture: A blend of grasses including 15-30% of fine leaved ryegrass and 15% smooth stalked meadowgrass. The remainder of the mixture is made up from strong and slender creeping red fescue and chewings fescue.

420 Delivery and storage

1. Timing: Lay turf with minimum possible delay after lifting. If delay occurs, lay turf out on topsoil and keep moist.
2. Frosty weather or waterlogged ground: Do not lift turf.
3. Delivery: Arrange to avoid need for excessive stacking.
4. Stacking height (maximum): 1 m.
5. Dried out or deteriorated turf: Do not use.
6. Certification
 - 6.1. Standard: To BS 3969.

423 Inspection of turf

1. Description: FOR ALL GRASSED AREAS
2. Sampling method: To BS 3969.
3. Give notice: Before lifting turf.
 - 3.1. Period of notice: 2 weeks

430 Turfing generally

1. Time of year: To be agreed
2. Timing of laying
 - 2.1. Spring and summer: Within 18 hours of delivery.
 - 2.2. Autumn and winter: Within 24 hours of delivery.
3. Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
4. Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
5. Jointing: Laid with broken joints, well butted up. Do not stretch turf.

6. **Edges:** Whole turfs, trimmed to a true line.
7. **Adjusting levels:** Remove high spots and fill hollows with fine soil.
8. **Consolidating:** Lightly and evenly firm as laying proceeds to ensure full contact with substrate. Do not use rollers.
9. **Dressing,** brushed well in to completely fill all joints:
10. **Watering:** Thoroughly water completed turf immediately after laying. Check that water has penetrated into the soil below.

450 Trimming turf

1. **Newly planted tree pits:** Neatly cut away around individual trees.
 - 1.1. **Diameter:** 800 mm
 - 1.2. **Tree pit surface:** Respread existing mulch

Protecting/cutting

510 Protective fencing

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

530 First cut of grassed areas

1. **Timing:** When grass is reasonably dry.
 - 1.1. **Height of initial growth:** 40-75 mm
2. **Preparation**
 - 2.1. **Debris and litter:** Remove.
 - 2.2. **Stones and earth clods larger than 25 mm in any dimension:** Remove
3. **Height of first cut:** 25 mm
4. **Mower type:** Contractor's choice
5. **Arisings:** Remove from site

Maintenance

610 Failures of seeding/ turfing

1. **Duration:** Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. **Defective materials or workmanship:** Areas that have failed to thrive.
 - 2.1. **Exclusions:** Theft or malicious damage.
3. **Method of making good:** Recultivation and reseeding/ returfing.
4. **Timing of making good:** Submit proposals

620 Maintaining

1. **Duration:** Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. **Preparation:** Before each cut remove all litter and debris.
3. **Cutting:** As and when necessary to a height of 25 mm.
 - 3.1. **Arisings:**

4. **Bulb planting areas:** Do not cut until bulb foliage has died down.
5. **Trimming:** All edges.
 - 5.1. **Arisings:** Remove.
6. **Weed control:** Substantially free of broad leaved weeds.
 - 6.1. **Method:** Application of a suitable selective herbicide.
7. **Stones brought to the surface:** Remove regularly.
 - 7.1. **Size:** Exceeding 25 mm in any dimension.
8. **Areas of settlement:** Make good.
9. **Watering:**

650 Maintaining grassed areas with perennial wildflowers

1. **Duration:** Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. **Preparation:** Before each cut remove all litter and debris.
3. **Height and frequency of cut in first growing season**
 - 3.1. **Time of first cut:** To supplier's recommendations
 - 3.2. **Height of first cut:** To supplier's recommendations
4. **Trimming:** All edges.
 - 4.1. **Arisings:** Remove.

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
3. **Contamination:** Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. **Large roots:** Grub up and dispose of without undue disturbance of soil and adjacent areas.

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.

146 Watering

1. **Quantity:** Wet full depth of topsoil.
2. **Application:** Even and without damaging or displacing plants or soil.
3. **Frequency:**

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: One week

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.
7. **Species:** True to name.
8. **Origin/ Provenance:**
9. **Definition:** Origin and Provenance have the meaning given in the National Plant Specification.

215 Plants/ Trees – specification criteria

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

216 Plants/ Trees – specification criteria

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

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:** Trees to be prepared for containerization as follows: If required due to out of season planting (late April to late September).
 - All trees to be rootballed stock only from nursery source.
 - Bareroot stock will not be accepted.
 - The trees shall be placed in rigid UPVC airpots, of sufficient strength to support the weight of the tree and of appropriate size to allow the root system to develop over the contract growing period. The container sizes shall be as follows:

20-25 cm girth = min 350 litre rigid UPVC container
25-30 cm girth = min 350 litre rigid UPVC container
30-35 cm girth = min 500 litre rigid UPVC container
35-40 cm girth = min 750 litre rigid UPVC container
40-45 cm girth = 1500 litre rigid UPVC container

- The trees are not to be moved for any reason other than to their final location whilst containerised.
- A method statement is to be provided with the tenders for the installation of the single/multiple containers required. The main contractor is to make available a site for the temporary tree installation and will provide protection/fencing whilst the trees are being stored.
- The containerized trees shall be placed on a gravel bed and securely supported by overhead cables which shall be sheathed in rubber to prevent chaffing of the trunk.
- The containers/trees shall be spaced sufficiently apart as to prevent crowding/touching of crowns and allow each tree crown to develop a uniform shape and size.
- The gravel areas shall be located adjacent to hard surfaced access roads to enable the trees to be loaded when required onto suitable road transport, irrespective of ground conditions.
- The trees shall be linked to an automatic irrigation system. Ensure that sufficient water is applied to the trees to promote healthy growth.
- The tree planting compost to be used in the containers/tree pits shall consist of the following mix:
62.5% Fibrous organic tree planting compost
25% Medium bark
12.5% Horticultural grit
with an Slow Release Base fertiliser 4.536 kg/m³ consisting of:
5.3% Nitrogen by volume
7.7% Phosphate by volume
10% Potash by volume
Trace elements
6.5 pH value

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.

246 Labelling and information

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

248 Approved Tree Suppliers

1. **Approved suppliers:** All trees and shall be obtained from one of the sources identified in the categories listed below. If alternatives are submitted then they will be done so at time of tender, photographs and details will also be provided.
 - Landscape architect to be invited to check and tag all plant material.

(A) Bruns Pflanzen-Export GmbH & Co. KG
Johann-Bruns-Allee 1 26160
Bad Zwischenahn, Germany
Telephone: +49 4403 601-0
Fax: +49 4403 601-135
E-Mail: info[at]bruns[dot]de

(B) H.Lorberg Baumschulerzeugnisse GmbH&Co.KG
Zachower Str. 4, 14669 Ketzin, Germany
Tel: +49 33233 840
Web: <http://www.lorberg.com>

(C) Van Der Berk
+31 413 480 492 / +31 (0)6 2305 0767
www.vdberk.co.uk
<http://kto.vdberk.nl/signature/adres.png>
Donderdonk 4, 5492 VJ, Sint-Oedenrode

255 Plants/ Trees reserved at supplier's premises

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

260 Plant/ Tree substitution

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

265 Plant handling, storage transport and planting

1. **Standard:** To CPSE 'Handling and establishing landscape plants'.
2. **Frost:** Protect plants from frost.
3. **Handling:** Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
4. **Plant packaging:**
5. **Packaging of bulk quantities:**
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.

285 Protection of existing grass

1. General: Protect areas affected by planting operations using boards/ tarpaulins.
 - 1.1. Excavated or imported material: Do not place directly on grass.
 - 1.2. Duration: Minimum period.

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

300 Herbicide

1. Type: A type recommended for the purpose in the current list of Agricultural Chemicals Approved Scheme/Pesticides Register.
Prevent weeds from seeding and perennial weeds from becoming established, by applying a suitable herbicide.
2. Timing: Allow period of time to elapse as recommended by manufacturer before cultivation.

305 Weed control

1. Locations: Whole site
2. General: Prevent weeds from seeding and perennial weeds from becoming established, by contractor's choice of herbicide.

Planting shrubs/ herbaceous plants/ bulbs

400 Random plant layout

1. Description: TO ALL BEDS
2. Spacing: As per Planit's softworks information
3. Density: As plant schedule

415 Antidesiccant for conifers/ Evergreens

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Contractor's choice
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. Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
2. Backfilling: Finely broken soil. Lightly firm to existing ground level.
3. Naturalized planting in existing grassed areas

- 3.1. **Scattering:** Random. Plant bulbs/ corms/ tubers where they fall.
- 3.2. **Planting:** Neatly remove a plug of turf and replace after planting.

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:**
 - 3.1. **Depth:**

Planting trees

505 Tree pits - in hard landscape

1. **Sizes:** Refer to 1958-PLA-01A-XX-DR-L-6000
2. **Tree pits:**
 - Prepare roots and transplant to BS 4043 unless specified otherwise.
 - **Orientation:** Before lifting, mark north side of trees. Orientation is to be the same when replanted on site unless otherwise stated by Landscape Architect.
 - Landscape Architect to be present for all tree planting
 - **Tree pits:** Refer to Softworks Details drawing 1958-PLA-01A-XX-DR-L-6000
 - Break up bottom of pit to a depth of 250mm.
 - **Support:** underground staking as per clause Q31/535J. All semi-mature trees shall be secured by this method unless otherwise agreed in advance with the landscape architect.
 - **Drainage:** As clause Q31/515J
 - **Root irrigation:** refer to clause Q31/512J
 - **Protection:** Wrap trunks and lower branches with hessian strips or straw ropes and leave on for at least two summers.
 - **Sloping ground:** Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
 - **Pit sides:** Scarify.
 - **Backfilling of subsoil layer:** refer to Section Q28, all relevant clauses.
 - **Backfilling of enhanced topsoil layer:** refer to clause Q28/356J and other relevant clauses with Section Q28.
 - Soils to be compacted in layers of max. 300mm to between 2.0-2.5 Mpa.
 - Allow for measurement of compaction with a penetrometer.

510 Tree pit root barriers

1. **Locations:** Refer to 1958-PLA-01A-XX-DR-L-0006. Wherever the installed rootball will be within 2.0 m of a vertical structure
2. **Manufacturer:** Green blue urban or similar approved
 - 2.1. **Product reference:** ReRoot 2000
3. **Top of root barrier in relation to finished topsoil level:** 50 mm below ground level
4. **Installation:** With sides vertical. Remove all sharp objects adjacent to barrier.

512 Tree pit irrigation and ventilation accessories [in hard]

1. **Locations:** To all tree pits adjacent paved areas
2. **Manufacturer:** Green Blue Urban
 - 2.1. **Product reference:**
 - Arborvent 150 double inlet aeration system with cast inlets - 2no per tree. Fitted to RootSpace Airflow inlet RRARBV150A.
 - Irrigation system c/w cast inlet RRHYDR1A RootRain Hydrogrille to be integrated within tree grille and connected to perforated irrigation pipe as follows:

- Lay 60mm pipe around root ball, trimming to ensure snug fit and insert ends into tee section supplied.
- Pipe should circuit the rootball approximately 300mm below finished levels.
- Backfill tree ensuring that the pipe is connected to the vented cap integrated within tree grille.

512A Tree pit irrigation and ventilation accessories [in soft]

1. **Locations:** To all tree pits in soft
2. **Manufacturer:** Green Blue Urban
 - 2.1. **Product reference:** RootRain Urban irrigation system:
 - Lay 80mm pipe around root ball, trimming to ensure snug fit and insert ends into tee section supplied.
 - Pipe should circuit the rootball approximately 300mm below finished levels.
 - Backfill tree ensuring that the vented grid inlet finishes approximately 50mm proud of finished levels.

515 Tree pit drainage

1. **Locations:** To all tree pits
2. **Depth of excavation:** Increase from specified size to allow for aggregate layer, with base slightly falling to outlet. Excavate trial pits at tree pit locations to full depth of pit - Fill with water to establish drainage capabilities. Refer to percolation test note on detail drawings 1958-PLA-01B-XX-DR-L-6001.

If ground conditions are found to be compacted and not draining, allow for active drainage to all tree pits within hard and soft landscape are
3. **Aggregate layer:** Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - 3.1. **Depth:** 200 mm
4. **Drainage pipes**
 - 4.1. **Type:** Perforated plastics
 - 4.2. **Position:** Lay around perimeter of pit within aggregate layer.
 - 4.3. **Discharge:** Connect to soakaway to engineer's specification
5. **Completed pits:** Test for free drainage before planting.

520 Cellular structural soil system

1. **Locations:** To all tree pits adjacent paved areas. Refer to 1958-PLA-01A-XX-DR-L-6000
2. **Manufacturer:** Green Blue Urban or similar approved.
 - 2.1. **Product reference:** Rootspace Cell Modules
 - Minimum 25m3 volume
 - General installation and load bearing requirements to be in accordance with manufacturer's recommendations.
3. **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:

1. **Description:** ALL TREES
2. **Manufacturer:** Platypus (or similar & approved)
 - 2.1. **Product reference:** Plati-mat anchoring system
3. **Installation:** Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.

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: Fortnightly during growing season

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

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:
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:
7. Watering:

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: As appropriate to the species
 - 1.3. Trees: Favour a single central leading shoot.
2. Arisings: Remove.

780 Maintenance instructions

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

790 Final mulching

1. **Timing:** At end of the maintenance period.
2. **Watering:** Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
3. **Planting beds:** Remulch.
4. **Depth (minimum):** 75 mm
5. **Trees:** Remulch.
6. **Depth (minimum):** 75 mm

Ω End of Section

Q35

Landscape maintenance

Generally

105 Maintenance objectives

1. **Aims:** REFER TO THE MANAGEMENT AND MAINTENANCE PLAN FOR DETAILS OF ALL EXTERNAL WORKS MAINTENANCE OBJECTIVES.
 - This maintenance specification is for Soft Landscape works during the defects liability period and should be seen as a minimum requirement.
 - The long term maintenance of the Soft Landscape works following the defects liability period will be covered by a separate contract to be developed and agreed with the client
 - Location: All Soft Landscape works delivered under this contract.
 - Duration: The full duration of the defects liability period unless agreed otherwise.

110 Notice

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

130 Reinstatement

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

155 Watering

1. **Application:** Do not damage or loosen plants.
2. **Compacted soil:** Loosen or scoop out, to direct water to rootzone.
3. **Frequency:** As necessary for the continued thriving of all planting.

160 Water restrictions

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

170 Disposal of arisings

1. **General:** Unless specified otherwise, dispose of arisings as follows:
 - 1.1. Biodegradable arisings: Remove to recycling facility
 - 1.2. Grass cuttings: Remove to recycling facility
 - 1.3. Tree roots and stumps: Remove from site
 - 1.4. Shrub and tree prunings: Remove to recycling facility
 - 1.5. Litter and nonbiodegradable arisings: Remove from site

190 Litter

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

195 Protection of existing grass

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

197 Cleanliness

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

Grassed areas

210 Maintenance of grassed areas

1. **General:** Maintain turf in a manner appropriate to the intended use.
2. **Soil and grass**
 - 2.1. **Condition:** Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
 - 2.2. **Waterlogging and compaction:** Prevent.
 - 2.3. **Damage:** Repair trampling, abrasion or scalping.
3. **Ornamental lawns:** Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
 - 3.1. **Edges:** Neat and well defined, in clean straight lines or smooth flowing curves.
4. **Litter and fallen leaves:** Remove regularly to maintain a neat appearance.

211 Maintenance of grassed areas

1. **Standard:** To BS 7370-3. Carry out maintenance appropriate to each category of turf, as follows:
 - 1.1. **Objectives:** To BS 7370-3, Table 6.
 - 1.2. **Programme:** To BS 7370-3, clause 11.
 - 1.3. **Mowing methods:** To BS 7370-3, Table 3.

220 Grass cutting generally

1. **Before mowing:** Remove litter, rubbish and debris.
2. **Finish:** Neat and even, without surface rutting, compaction or damage to grass.
3. **Edges:** Leave neat and well defined. Neatly trim around obstructions.
4. **Adjoining hard areas:** Sweep clear and remove arisings.
5. **Drought or wet conditions:** Obtain instructions.

225 Tree stems

1. **Precautions:** Do not use mowing machinery closer than 100 mm to tree stems. Use nylon filament rotary cutters and other hand held mechanical tools carefully to avoid damage to bark.

226 Tree stems

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

235 Bulbs and corms in grassed areas

1. **Before flowering:** Do not cut.

- Interval between end of flowering and start of grass cutting (minimum):

Flower beds/ seasonal beddings

460 Beds of perennials or perennials and annuals

- Plant supports: Stake and tie plants using bamboo canes.
 - 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.

490 Thinning by removal of surplus plants

- Plants to be thinned:
- Standard: BS 7370-4, clause 3.5.17.1.
- Timing: Thin when foliage of adjacent plants has begun to touch.
- Roots
 - Disturbance to adjacent plants: Minimize.
 - Soil: Refill holes with topsoil to leave an even graded surface.
 - Mulch: Maintain mulch as original specification.
- Adjacent plants: Make good any minor damage immediately.
- Plants for retention: Select plants with a strong healthy habit.

Shrubs/trees/hedges

500 Establishment of new planting

- Duration: Two full growing seasons from the date of planting
- Weed control
 - Method: Keep planting beds clear of weeds by hoeing and screefing and 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 required

502 Establishment of new planting – fertilizer

- Time of year: March or April.
- Type: Slow release
- Spreading: Spread evenly.
 - Application rate: 120 g/m²

510 Tree stakes and ties

1. Inspection/ Maintenance times:
2. Stakes
 - 2.1. Replace loose, broken or decayed stakes to original specification.
 - 2.2. 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.
3. Ties: Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
 - 3.1. Where chafing has occurred, reposition or replace ties to prevent further chafing.
4. Removal of stakes and ties:
 - 4.1. Fill stake holes with lightly compacted soil.

515 Tree guy wires

1. Inspection/ Maintenance times: In spring
2. Operations
 - 2.1. Replace or resecure loose or missing guy wires.
 - 2.2. Adjust to suit stem growth and to provide correct and uniform tension.
3. Removal: When instructed

520 Refirming of trees and shrubs

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

525 Tree guards

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

530 Tree shelters

1. Loose or defective shelters: Adjust, refix or replace to original specification and to prevent chafing.
2. Removal:

535 Tree grilles

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

540 Pruning generally

1. Pruning: In accordance with good horticultural and arboricultural practice.
 - 1.1. Removing branches: Do not damage or tear the stem or bark.
 - 1.2. Wounds: Keep as small as possible and cut cleanly back to sound wood.
 - 1.3. Cutting: Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - 1.4. Larger branches: Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
2. Appearance: Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well-balanced natural appearance.

3. **Tools:** Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
4. **Disease or infection:** Give notice if detected.
5. **Growth retardants, fungicide or pruning sealant:** Do not use unless instructed.

545 Pruning of excessive overhang

1. **Timing:** Annually
2. **Operations:** Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.

555 Pruning trees and shrubs

1. **Standard:** To BS 7370-4.

575 Pruning ornamental shrubs

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

580 Pruning flowering species of shrubs and roses

1. **Time of year**
 - 1.1. **Winter flowering shrubs:** Spring.
 - 1.2. **Shrubs flowering between March and July:** Immediately after the flowering period.
 - 1.3. **Shrubs flowering between July and October:** Back to old wood in winter.
 - 1.4. **Rose bushes:** Early spring to encourage basal growths and a balanced, compact habit.

600 Trimming rapidly establishing hedges

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

605 Trimming slowly establishing hedges

1. **Operations**
 - 1.1. **Timing:** Cut back hard in June and September to encourage bushy growth down to ground level.
 - 1.2. **Form:** Allow to reach planned dimensions only by gradual degrees, depending on growth rate and habit.

620 Removal of dead plant material

1. **Operations:** At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.

635 Reinstatement of shrub/ herbaceous areas

1. **Dead and damaged plants:** Remove.
2. **Mulch/ matting materials**
 - 2.1. Carefully move to one side and dig over the soil, leaving it fit for replanting.
3. Do not disturb roots of adjacent plants.
4. **Replacement plants**
 - 4.1. **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.

4.2. Additional requirements:

5. Dressing: Slow release fertilizer:

5.1. Type:

5.2. Application rate:

645 Weed control generally

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

650 Hand weeding

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

675 Digging over

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

680 Soil aeration

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

685 Soil level adjustment

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

690 Maintenance of loose mulch

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

695 Fertilizing established trees and shrubs

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

705 Winter leaf removal

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

Tree work

810 Tree work generally

1. **Identification:** Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
2. **Protection:**
3. **Standard:** To BS 3998.
4. **Removing branches:** Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
5. **Appearance:** Leave trees with a well-balanced natural appearance.
6. **Chain saw work:** Operatives must hold a Certificate of Competence.
7. **Tree work:** To be carried out by an approved member of the Arboricultural Association.

815 Additional work

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

820 Prevention of wound bleeding

1. **Standard:** To BS 3998.

825 Prevention of disease transmission

1. **Standard:** To BS 3998.

830 Cleaning out and deadwooding

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

835 Cutting and pruning generally

1. **Tools:** Appropriate, well maintained and sharp.
2. **Final pruning cuts**
 - 2.1. **Chainsaws:** Do not use on branches of less than 50 mm diameter.
 - 2.2. **Hand saws:** Form a smooth cut surface.
 - 2.3. **Anvil type secateurs:** Do not use.
3. **Removing branches:** Do not damage or tear the stem.
4. **Wounds:** Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
5. **Cutting:** Cut at a fork or at the main stem to avoid stumps wherever possible.
6. **Large branches:**
 - 6.1. Remove in small sections and lower to ground with ropes and slings.
7. **Dead branches and stubs:** When removing, do not cut into live wood.

8. **Unsafe branches:** Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
9. **Disease or fungus:** Give notice if detected. Do not apply fungicide or sealant unless instructed.

840 Crown reduction/ shaping

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

845 Crown lifting

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

850 Crown thinning

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

855 Cutting tree roots

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

860 Removing trees, shrubs and hedges

1. **Standard:** To BS 3998.
2. **Existing services:** Check for below and above ground services. Give notice if they may be affected.
3. **Shrubs and smaller trees:** Cut down and grub up roots.
4. **Tree stumps**
 - 4.1. **Treatment:**
 - 4.2. **Removal by winching:** Give notice. Do not use other trees as supports or anchors.
5. **Protection:**

6. **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.
7. **Filling holes**
 - 7.1. **Material:** Use as-dug material and/ or imported soil as required.
 - 7.2. **Finishing:** Consolidate and grade to marry in with surrounding ground level.

865 Bark damage

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

870 Cavities in trees

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

Water areas - Not Used

Hard landscape areas/fencing - Not Used

Ω End of Section

Q40 Fencing

Fencing systems

370 Wrought iron Railings

1. **Description:** Wrought iron railings to new sections of All Saints Park boundary wall. Refer to 1958-PLA-01A-XX-DR-L-4000. [Ref S23]
2. **Standard:** Traditional blacksmith's methods.
 - 2.1. **Documentation:** Submit certification of training and experience.
 - 2.2. **Membership:**
3. **Samples:** Submit on request an executed piece of work carried out by the proposed blacksmith.
4. **Materials:** Best quality true wrought iron.
 - 4.1. **Steel or other substitutes:** Not permitted.
 - 4.2. **Consistency:** Tough, ductile and fibrous in character and of even texture.
 - 4.3. **Submit:** Invoices or certificate of authenticity to confirm provenance, on request.
5. **Workmanship**
 - 5.1. **Ornamental work:** Carefully forged, hand wrought and incised where required to produce the design and effect desired.
 - 5.2. **Free ornament:** Forged from substantial iron and forge welded where connected to other ironwork.
 - 5.3. **Accuracy:** Substantially framed together and closely fitted.
 - 5.4. **Cast parts:** Not permitted other than as indicated on the approved design drawings.
6. **Electric welding:** Not permitted.
7. **Joints:** Neatly tenoned and riveted or forge welded.
8. **Method of fixing:** To engineer's specification.

Gates, posts and stiles

580 Wrought iron Gates

1. **Description:** Wrought iron Gates to All Saints Park.
Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7023 [Ref S22]
2. **Standard:** Traditional blacksmith's methods.
 - 2.1. **Documentation:** Submit certification of training and experience.
3. **Samples:** Submit on request an executed piece of work carried out by the proposed blacksmith.
4. **Materials:** Best quality true wrought iron.
 - 4.1. **Steel or other substitutes:** Not permitted.
 - 4.2. **Consistency:** Tough, ductile and fibrous in character and of even texture.
 - 4.3. **Submit:** Invoices or certificate of authenticity to confirm provenance, on request.
5. **Workmanship**
 - 5.1. **Ornamental work:** Carefully forged, hand wrought and incised where required to produce the design and effect desired.
 - 5.2. **Free ornament:** Forged from substantial iron and forge welded where connected to other ironwork.
 - 5.3. **Accuracy:** Substantially framed together and closely fitted.
 - 5.4. **Cast parts:** Not permitted other than as indicated on the approved design drawings.

6. Electric welding: Not permitted.
7. Joints: Neatly tenoned and riveted or forge welded.
8. Method of fixing: To engineer's specification.
9. Accessories: Locking mechanism (TBC by client)
Drop bolt and holder

Accessories - Not Used

Execution - Not Used

Completion

910 Cleaning

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

920 Fixings

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

930 Gates

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

Ω End of Section

Q50

Site/ street furniture/ equipment

Gates, barriers and parking controls

190 Fixed Bollards

1. Description: Fixed Bollard. For locations refer to 1958-PLA-01A-XX-DR-L-4000 [Ref S9]
2. Manufacturer: ATG access or similar approved.
 - 2.1. Product reference: 114 1000 Static Bollard
3. Material: Grade 316 Stainless steel
 - 3.1. Finish as delivered: Brushed
 - 3.2. Colour: None
4. Height above ground: 1000 mm
5. Sectional size: 114 mm diameter
6. Top: Flat
7. Method of fixing: To engineer's specification.

192 Semi-automatic drop bollard

1. Description: Semi-automatic bollard. For locations refer to 1958-PLA-01A-XX-DR-L-4000 [Ref S10]
2. Manufacturer: ATG access or similar approved
 - 2.1. Product reference: 114 1000 Semi-Automatic Bollard
3. Material: Grade 316 Stainless steel
 - 3.1. Finish as delivered: Brushed
 - 3.2. Colour: None
4. Height above ground: 1000mm
5. Sectional size: 114 mm diameter
6. Special features: Recess provided under the top lid for lifting purposes.
7. Method of fixing: To engineer's specification.

192A Automatic drop bollard

1. Description: Automatic bollard. For locations refer to 1958-PLA-01A-XX-DR-L-4000 [Ref S10b]
2. Manufacturer: ATG access or similar approved
 - 2.1. Product reference: VP200 automatic bollard
3. Material: Grade 316 Stainless steel
 - 3.1. Finish as delivered: Brushed
 - 3.2. Colour: None
4. Height above ground: 900mm
5. Sectional size: 186 mm diameter
6. Special features: Yellow reflective bands.
7. Method of fixing: To engineer's specification.
8. Accessories : Refer to electrical engineer's specification for control box, light control and intercom.

Site and street furniture

210 Cycle stands

1. **Description:** Refer to 1958-PLA-01A-XX-DR-L-4000 [Ref S8] for locations.
2. **Manufacturer:** Marshalls
 - 2.1. **Product reference:** Sheffield cycle stand
3. **Type:** Single stands
4. **Material:** Grade 316 Stainless steel
 - 4.1. **Finish:** Brushed
 - 4.2. **Colour:** None
5. **Accessories:** None
6. **Method of fixing:** Root fixed to engineer's specification

220 Wall edge Bench [TYPE S2a]

1. **Description:** Bespoke wall edge bench with a high back. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7003.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Wall edge bench, high back.
3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.
 - 3.1. **Finish:** Powder coated steel frame and end panels.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** 5000mm (L) x 1505mm (H) x 695mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 2no per bench. Finish to match frame.
Stainless steel anti-skate fins - 3 no per bench
Integrated lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.
6. **Method of fixing:** Mechanically fixed to concrete slab to engineer's details. All visible steel elements to be powder coated matching legs.

220A Wall edge Bench [TYPE S2b]

1. **Description:** Bespoke wall edge bench with a low back. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7003.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Wall edge bench, low back.
3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.
 - 3.1. **Finish:** Powder coated steel frame and end panels.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** 5000mm (L) x 1505mm (H) x 695mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 3no per bench. Finish to match frame.
Stainless steel anti-skate fins - 4 no per bench

Integrate lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.

6. **Method of fixing:** Mechanically fixed to concrete slab to engineer's details. All visible steel elements to be powder coated matching legs.

220B Tree Surround Bench [TYPE S1] Bench 1

1. **Description:** Bespoke tree surround bench. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7014.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Tree surround bench - Bench 1
3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.
 - 3.1. **Finish:** Powder coated steel frame and end panels.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** 4240mm (L) x 960mm (H) x 2600mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 2no per bench. Finish to match frame.
Stainless steel anti-skate fins - 6 no per bench
Integrated lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.
6. **Method of fixing:** Mechanically fixed to concrete pad foundations to engineer's details. All visible steel elements to be powder coated matching legs.

220C Tree Surround Bench [TYPE S1] Bench 2

1. **Description:** Bespoke tree surround bench 2. Consisting of two units. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7015.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Tree surround bench - Bench 2
3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.
 - 3.1. **Finish:** Powder coated steel frame and end panels.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** Unit 1 - 4240mm (L) x 960mm (H) x 1367-2245mm (W)
Unit 2 - 4240mm (L) x 960mm (H) x 2584mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 4no unit 1, 2 no unit 2.
Finish to match frame.
Stainless steel anti-skate fins - 6 no per bench unit.
Integrated lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.
6. **Method of fixing:** Mechanically fixed to concrete pad foundations to engineer's details. All visible steel elements to be powder coated matching legs.

220D Tree Surround Bench [TYPE S1] Bench 3

1. **Description:** Bespoke tree surround bench 3. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7016.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield

t. 07384 795 314
e. Ben@woodscape.co.uk

2.1. **Product reference:** Tree surround bench - Bench 3

3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.

3.1. **Finish:** Powder coated steel frame and end panels.

3.2. **Colour:** Mars 2525 Sable - YX355F

4. **Size:** 4240mm (L) x 960mm (H) x 2600-4248mm (W)

5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 2 no per bench. Finish to match frame.

Stainless steel anti-skate fins - 6 no per bench.

Integrated lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.

6. **Method of fixing:** Mechanically fixed to concrete pad foundations to engineer's details. All visible steel elements to be powder coated matching legs.

220E Tree Surround Bench [TYPE S1] Bench 4

1. **Description:** Bespoke tree surround bench 4. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7017.

2. **Manufacturer:** Woodscape Ltd. or similar approved.

Contact: Ben Schofield

t. 07384 795 314

e. Ben@woodscape.co.uk

2.1. **Product reference:** Tree surround bench - Bench 4

3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.

3.1. **Finish:** Powder coated steel frame and end panels.

3.2. **Colour:** Mars 2525 Sable - YX355F

4. **Size:** 4240mm (L) x 960mm (H) x 1373-6450mm (W)

5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 4 no per bench. Finish to match frame.

Stainless steel anti-skate fins - 6 no per bench.

Integrated lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.

6. **Method of fixing:** Mechanically fixed to concrete pad foundations to engineer's details. All visible steel elements to be powder coated matching legs.

220F Tree Surround Bench [TYPE S1] Bench 5

1. **Description:** Bespoke tree surround bench 5. Consisting of two units. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7018.

2. **Manufacturer:** Woodscape Ltd. or similar approved.

Contact: Ben Schofield

t. 07384 795 314

e. Ben@woodscape.co.uk

2.1. **Product reference:** Tree surround bench - Bench 2

3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.

3.1. **Finish:** Powder coated steel frame and end panels.

3.2. **Colour:** Mars 2525 Sable - YX355F

4. **Size:** Unit 1 - 4240mm (L) x 960mm (H) x 1367-2245mm (W)

Unit 2 - 4240mm (L) x 960mm (H) x 2584mm (W)

5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 4no unit 1, 2 no unit 2. Finish to match frame.

Stainless steel anti-skate fins - 6 no per bench unit.

Integrated lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.

6. **Method of fixing:** Mechanically fixed to concrete pad foundations to engineer's details. All visible steel elements to be powder coated matching legs.

220G Tree Surround Bench [TYPE S1] Bench 6

1. **Description:** Bespoke tree surround bench. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7019.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Tree surround bench - Bench 6
3. **Material:** FSC certified hardwood timber. Hot dip galvanised and powder coated steel frame.
 - 3.1. **Finish:** Powder coated steel frame and end panels.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** 4240mm (L) x 960mm (H) x 2600mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 2no per bench. Finish to match frame.
Stainless steel anti-skate fins - 6 no per bench
Integrated lighting to engineer's specification. Top wooden panel to be removable to allow for access to lighting strip.
6. **Method of fixing:** Mechanically fixed to concrete pad foundations to engineer's details. All visible steel elements to be powder coated matching legs.

225 Park Bench [TYPE S6]

1. **Description:** Bespoke timber bench. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7006.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Park bench
3. **Material:** FSC certified hardwood timber on hot dip powder coated steel frame and legs.
 - 3.1. **Finish:** Powder coated steel frame and legs.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** 2500 (L) x 960mm (H) x 695mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 2 no per bench. Finish to match frame.
Stainless steel anti-skate fins - 1 no per bench.
6. **Method of fixing:** Mechanically fixed to concrete pad foundation. To engineer's details.

225A Feature Circular Bench [TYPE S5]

1. **Description:** Bespoke timber bench. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7007.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Feature circular bench

3. **Material:** FSC certified hardwood timber on hot dip powder coated steel frame and legs.
 - 3.1. **Finish:** Powder coated steel frame and legs.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** 3000mm (Dia) x 450-900mm (H) x 450-800mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 2 no per bench. Finish to match frame.
6. **Method of fixing:** Mechanically fixed to concrete slab. To engineer's details.

225B Memorial garden bench [TYPE S7]

1. **Description:** Bespoke timber bench. Type A and Type B. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7020.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
 - 2.1. **Product reference:** Memorial garden bench
3. **Material:** FSC certified hardwood timber on hot dip powder coated steel frame and legs.
 - 3.1. **Finish:** Powder coated steel frame and legs.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** Type A - 2975mm (L) x 450-850mm (H) x 540mm (W)
Type B - 5530mm (L) x 450-850mm (H) x 540mm (W)
5. **Accessories/ Special requirements:** Folded steel Armrests with timber top, 2 no per bench. Finish to match frame.
6. **Method of fixing:** Mechanically fixed to concrete pad foundations. To engineer's details.

226 Platform Bench [TYPE S3]

1. **Description:** Bespoke timber bench. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7004.
2. **Manufacturer:** Streetlife or similar approved.
Contact: Stefanie Leitner
t. 020 30 20 1509 (UK)
e. sleitner@streetlife.nl
 - 2.1. **Product reference:** Solid terrace (bespoke size)
3. **Material:** FSC certified hardwood timber on hot dip powder coated steel frame and legs.
 - 3.1. **Finish:** Powder coated steel frame and ends.
 - 3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** Type A - 10000-17520mm (L) x 460-920mm (H) x 1666-2274mm (W)
5. **Accessories/ Special requirements:** Stainless steel anti skate fins. 1 every 1500mm on front edges of bench.
6. **Method of fixing:** Mechanically fixed to concrete foundations. To engineer's details.

226A Retaining Bench [TYPE S12]

1. **Description:** Retaining bench to front of Arts and Humanities Building. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7022.
2. **Manufacturer:** Bench top -
Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk

Stone plinth - Hardscape or similar approved.

2.1. **Product reference:** Retaining bench.

3. **Material:** Bench top - FSC certified hardwood timber on hot dip powder coated steel frame. Mars 2525 Sable - YX355F

Bench plinth - Portuguese granite, Cathedral, bush hammered.

4. **Size:** 5990mm (L) x 300-500mm (W) x 340-540 mm (H)
5. **Method of fixing:** Mechanically fixed to concrete foundations. To engineer's details.

230 Work Tables and benches [TYPE S4]

1. **Description:** Bespoke work tables and benches. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7005.
2. **Manufacturer:** Woodscape Ltd. or similar approved.
Contact: Ben Schofield
t. 07384 795 314
e. Ben@woodscape.co.uk
2.1. **Product reference:** Work tables and benches.
3. **Material:** FSC certified hardwood timber on hot dip powder coated steel frame and legs.
3.1. **Finish:** Powder coated steel frame and legs.
3.2. **Colour:** Mars 2525 Sable - YX355F
4. **Size:** Table - 755mm (H) x 1080mm (W) x 2500mm (L)
Benches - 450mm (H) x 430mm (W) x 2500mm (L)
5. **Method of fixing:** Mechanically fixed to concrete foundations to engineer's details.

340 Bespoke memorial garden feature [Type S13]

1. **Description:** Corten steel memorial garden feature. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7021.
2. **Material:** Corten steel, 10mm thick. Bespoke Laser cut design. To include internal light diffusion sheet. Strip lighting to engineer's details.
3. **Finish:** Pre-weathered and sealed.
4. **Approximate size:** 850-1250mm (H) x 288-565mm (W) x 50mm (D)
5. **Method of fixing:** Mechanically fixed to concrete foundation to engineer's details.

340A Bespoke interpretation sign [Type S21] Sign A

1. **Description:** Corten steel memorial interpretation sign. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7025.
2. **Material:** Folded corten steel sheet, 10mm thick. Bespoke Laser cut design. HPL panel with printed design.
3. **Finish:** Pre-weathered and sealed.
4. **Approximate size:** 1100mm (H) x 250mm (W)
5. **Method of fixing:** Mechanically fixed to concrete pad foundation to engineer's details.

340B Bespoke interpretation sign [Type S21] Sign B

1. **Description:** Corten steel viewfinder sign. Refer to drawings 1958-PLA-01A-XX-DR-L-4000 and 1958-PLA-01A-XX-DR-L-7026.
2. **Material:** Box corten steel frame, printed acrylic panel with hidden fixings.
3. **Finish:** Pre-weathered and sealed.
4. **Approximate size:** 1730mm (H) x 800mm (W)

5. Method of fixing: Mechanically fixed to concrete pad foundation to engineer's details.

Installation

510 Concrete foundations generally

1. Standard: To BS 8500-2.
2. Concrete:
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:
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.

520 Setting in earth

1. Holes: As small as practicable.
2. Components being fixed: Accurately positioned and securely supported.
3. Buried depth (minimum):
4. Earth refill: Well rammed as filling proceeds.

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.

540 Building in to masonry walls

1. Components being built in: Accurately positioned and securely supported. Set in mortar and pointed neatly to match adjacent walling.
2. Temporary support: Maintain for 48 hours (minimum) and prevent disturbance.

545 Erection of timber and prefabricated structures

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

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.

560 Site painting

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

Ω End of Section

Z31

Powder coatings

To be read with preliminaries/ general conditions.

120 Powder coating materials

1. **Selected manufacturer:** Submit details before commencement of powder coating including:
 - 1.1. Name and contact details.
 - 1.2. Details of accreditation schemes.
 - 1.3. Technical data of product including current Agrément certificates.

210 Working procedures

1. Comply with the follow following standards.
 - 1.1. **Aluminium components:** To BS 6496 or BS EN 12206-1.
 - 1.2. **Steel components:** To BS EN 13438.
 - 1.3. **Safety standards:** To British Coatings Federation 'Code of safe practice: Powder coating. Application of coating powders by electrostatic spraying'.
 - 1.4. **Health and safety guidance:** Health and Safety Executive 'Reducing risk associated with using coating powders - employers' web page.

220 Powder coating applicators

1. **Applicator requirements**
 - 1.1. Approved by powder coating manufacturer.
 - 1.2. Currently certified to BS EN ISO 9001.
 - 1.3. Comply with quality procedures, guarantee conditions, standards and tests required by powder coating manufacturer.
 - 1.4. **Selected applicator:** Submit details before commencement of powder coating including:
 - 1.4.1. Name and contact details.
 - 1.4.2. Details of accreditation schemes.

225 Guarantees

1. **Powder coating manufacturer and applicator guarantees**
 - 1.1. Submit sample copies before commencement of powder coating.
 - 1.2. Submit signed project specific copies on completion of work.

230 Control samples

1. **Sequence:** Prior to ordering materials for the works, obtain approval of appearance for:
 - 1.1. **Powder coated samples:** Of various grades and forms of background metal to be used, showing any colour, texture and gloss variation.
 - 1.2. **Fabrication samples:** Showing joint assembly, how powder coating is affected and how any cut metal edges are finished and protected.
 - 1.3. Where manual application is required, controlled samples should be coated and inspected for colour and gloss stability.
2. **Samples to include the following information**
 - 2.1. Product reference.
 - 2.2. Colour.
 - 2.3. Reference number.

- 2.4. Name.
- 2.5. Gloss level.

235 Independent inspection at plant

1. **Requirement:** Contractors/ suppliers of the following designated components must commission an approved Independent Inspection Authority to carry out acceptance inspections to confirm that powder coating application complies with this specification.
 - 1.1. **Designated components:**
2. **Acceptance inspections:** Carry out for each variation of colour and finish of each component work package at applicator's plant prior to any fabrication of units, in accordance with the following:
 - 2.1. Where three or more production runs are required for application of coatings, not less than three acceptance inspections must be carried out in accordance with BS 6001-1, general inspection level 2, with an acceptance quality limit of 1%.
 - 2.2. Where less than three production runs are required for application of coatings, one acceptance inspection must be carried out in accordance with BS 6001-2, with a limiting quality of 5% where the probability of acceptance is 10%.
3. **Components failing inspection:** Reprocess or replace and reinspect.
4. **Inspection reports:** Independent Inspection Authority must submit copies.

240 Qualicoat quality assurance system

1. **Requirement:** Powder and coating application to the following designated components is to be tested and approved in accordance with the Qualicoat system.

250 Component design

1. **Condition of components to be powder coated**
 - 1.1. To comply with relevant recommendations of BS 4479-1, -3, and -4.
 - 1.2. Of suitable size to fit plant capacity.
 - 1.3. Of suitable thickness to withstand oven curing.

310 Pretreatment of aluminium components

1. **Condition of components to be pretreated**
 - 1.1. Free from corrosion and damage.
 - 1.2. All welding and jointing completed and finish off as specified.
 - 1.3. Free from impurities including soil, grease and oil.
 - 1.4. Suitable for and compatible with the pretreatment process.
2. **Conversion coating requirements**
 - 2.1. **Chromate system:** To BS 6496 or BS EN 12206-1.
 - 2.2. **Chromate-free system:** To BS EN 12206-1. Submit details before using.
3. **Rinsing requirements:** Use demineralized water. Drain and dry.

320 Pretreatment of steel components

1. **Condition of components to be pretreated**
 - 1.1. Free from corrosion and damage.
 - 1.2. All welding and jointing completed and finish off as specified.
 - 1.3. Free from impurities including soil, grease and oil.
 - 1.4. Suitable for and compatible with the pretreatment process.
2. **Conversion coating requirements:** To BS EN 13438.

3. **Rinsing requirements:** Use demineralized water. Drain and dry.

330 Pretreatment for protection in aggressive environments

1. Minimum thickness of 60 microns across significant and/ or primary surfaces.
2. Minimum thickness of 25 microns on non-significant and/ or secondary faces ensuring a coherent film layer.
3. All cut edges, drilled holes and mitres to be fully sealed.
4. **Cleaning and maintenance:** Carried out once every three to twelve months (dependent on proximity to pollutant).

430 Extent of powder coatings

1. **Application:** To visible component surfaces, and concealed surfaces requiring protection. Coated surfaces will be deemed 'significant surfaces' for relevant BS 6496 or BS EN 13438 performance requirements.

435 Application of powder coatings

1. **Surfaces to receive powder coatings:** Free from dust or powder deposits.
2. **Powder colours:** Obtain from one batch of one manufacturer.
3. **Commencement of powder coating:** To be continuous from pretreatment.
4. **Components to be installed on site in order of application.**
5. **Jig points:** Not visible on coated components.
6. **Curing:** Controlled to attain metal temperatures and hold periods recommended by powder coating manufacturer.
7. **Stripping and recoating of components:** Only acceptable by prior agreement of powder coating manufacturer. Stripping, pretreatment and powder coating are to be in accordance with manufacturer's requirements.
8. **Overcoating of components:** Not acceptable.

440 Performance and appearance of powder coatings

1. **For aluminium components**
 - 1.1. **Standard:** To BS 6496 or BS EN 12206-1.
2. **For steel components**
 - 2.1. **Standard:** To BS EN 13438.
3. **Visual inspection after powder coating:** Significant surface viewing distances to be as specified in the relevant Standard, unless specified otherwise.
4. **Colour and gloss levels:** To conform with approved samples.

450 Aluminium alloy fabrications

1. **Units may be assembled**
 - 1.1. Before powder coating.
 - 1.2. From components powder coated after cutting to size.
 - 1.3. Where approved, from components powder coated before cutting to size.
2. **Exposure of uncoated background metal:** Not acceptable.
3. **Assembly sealants:** Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

460 Steel fabrications

1. **Unit assembly:** Wherever practical, before powder coating.

2. **Exposure of uncoated background metal:** Not acceptable.
3. **Assembly sealants:** Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

470 Fixings

1. **Exposed metal fixings:** Powder coat together with components, or coat with matching repair paint system applied in accordance with the powder coating manufacturer's recommendations.

480 Damaged components – repair or replacement

1. **Before delivery to site:** Check all components for damage to powder coatings. Replace damaged components.
2. **Site damage:** Submit proposals for repair or replacement.

510 Protection

1. **Powder coated surfaces of components:** Protect from damage during handling and installation, or by subsequent site operations.
2. **Protective coverings must be**
 - 2.1. Resistant to weather conditions.
 - 2.2. Partially removable to suit building in and access to fixing points.
3. **Protective tapes in contact with powder coatings must be**
 - 3.1. Low tack, self adhesive and light in colour.
 - 3.2. Applied and removed in accordance with tape and powder coating manufacturers' recommendations. Do not use solvents to remove residues as these are detrimental to the coating.
4. **Inspection of protection:** Carry out monthly. Promptly repair any deterioration or deficiency.

520 Protection in hazardous locations

1. Minimum thickness of 60 microns across significant and/ or primary surfaces.
2. Minimum thickness of 25 microns on non-significant and/ or secondary faces ensuring a coherent film layer.
3. All cut edges, drilled holes and mitres to be fully sealed.
4. **Cleaning:** Carried out once every three to twelve months (dependent on proximity to pollutant).

535 Documentation

1. **Submit the following information for each batch of powder coated components**
 - 1.1. Supplier.
 - 1.2. Trade name.
 - 1.3. Colour.
 - 1.4. Type of powder.
 - 1.5. Method of application.
 - 1.6. Batch and reference number.
 - 1.7. Statutory requirements.
 - 1.8. Test certificates.
 - 1.9. Maintenance instructions.

540 Completion

1. **Protection:** Remove any protective coverings.

2. **Cleaning and maintenance of powder coatings:** Carry out in accordance with procedures detailed in powder coating manufacturer and applicator guarantees.

Ω End of Section



Specification created using NBS Chorus