

CRANFORD PARK, LONDON
Landscape Specification
FOR TENDER

Rev T2

Changes to Specification Since Last Submission

Revision T2

[illegible]

Table of Contents

Title	Page
C20 Demolition	3
D20 Excavating and filling	5
F10 Brick/ block walling	10
F21 Natural stone/ashlar walling/dressings	11
F30 Accessories/sundry items for brick/block/stone walling	13
M60 Painting/clear finishing	14
N91 External signage and interpretation	15
Q10 Kerbs/ edgings/ channels/ paving accessories	16
Q22 Asphalt roads/ pavings	21
Q23 Gravel/ Hoggin/ Woodchip/ Resin bound roads/ paving/ overlays	24
Q24 Interlocking brick/block roads/pavings	27
Q25 Slab/brick/sett/cobble pavings	29
Q26 Special surfacings/ pavings for sport/ general amenity	35
Q28 Topsoil and soil ameliorants	37
Q30 Seeding/turfing	41
Q31 External planting	44
Q41 Barriers/ guardrails	52
Q50 Site/street furniture/equipment	53
Q52 Play and sports equipment	56
R12 Below ground drainage systems	61
R13 Land drainage	62
V91 Electrical systems - landscape	63
Z11 Purpose made metalwork	64
Z12 Preservative/ fire retardant treatment	66
Z21 Mortars	67

Cranford Park

Z22	Sealants	69
Z31	Powder coatings	70

C20 Demolition

To be read with Preliminaries/ General conditions

GENERAL REQUIREMENTS

120 EXTENT OF DECONSTRUCTION/ DEMOLITION

- General: Subject to retention requirements specified elsewhere, deconstruct/ demolish structures down to ground level. Break up and dig out foundations as necessary to allow for re-instatement of surface finishes in accordance with the proposals.

130 GROUNDWORKS

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

140 BENCH MARKS

- Unrecorded bench marks and other survey information: Give notice when found. Do not remove marks or destroy the fabric on which they are found.

150 FEATURES TO BE RETAINED

- General: Keep in place and protect the following: Cellar foundations, garden walls, ha-ha, boundary structures, paving materials unless stated for removal, street furniture unless stated for removal., trees noted on drawings: protect in accordance with BS 5837.

SERVICES AFFECTED BY DECONSTRUCTION/ DEMOLITION

210 SERVICES REGULATIONS

- 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

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

230 SERVICES DISCONNECTION ARRANGED BY CONTRACTOR

- General: Arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment owned by those authorities prior to starting deconstruction/ demolition.

DECONSTRUCTION/ DEMOLITION WORK

310 WORKMANSHIP

- Standard: Demolish structures in accordance with BS 6187.
- Operatives:
 - Appropriately skilled and experienced for the type of work.
 - Holding, or in training to obtain, relevant CITB Certificates of Competence.
- Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of deconstruction/ demolition to be used.

320 GAS OR VAPOUR RISKS

- Precautions: Prevent fire and/ or explosion caused by gas and/ or vapour from tanks, pipes, etc.

330 DUST CONTROL

- General: Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris.
- Lead dust: Submit method statement for control, containment and clean-up regimes.

340 HEALTH HAZARDS

- Precautions: Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

350 ADJOINING PROPERTY

- Temporary support and protection: Provide. Maintain and alter, as necessary, as work proceeds. Do not leave unnecessary or unstable projections.
- Defects: Report immediately on discovery.
- Damage: Minimize. Repair promptly to ensure safety, stability, weather protection and security.
- Support to foundations: Do not disturb.

360 STRUCTURES TO BE RETAINED

- Extent: Refer to drawings 50027501-CBA-1-GF-DR-L-0101 - 0104 and Architectural & Engineering drawings for historic core area and General Arrangement dwgs for remainder of the park.
- Parts which are to be kept in place: Protect.
- Interface between retained structures and deconstruction/ demolition: Cut away and strip out with care to minimize making good.

370 PARTLY DEMOLISHED STRUCTURES

- General: Leave in a stable condition, with adequate temporary support at each stage to prevent risk of uncontrolled collapse. Make secure outside working hours.
- Temporary works: Prevent overloading due to debris.
- Access: Prevent access by unauthorized persons.

410 UNFORESEEN HAZARDS

- Discovery: Give notice immediately when hazards such as unrecorded voids, tanks, chemicals, are discovered during deconstruction/ demolition.
- Removal: Submit details of proposed methods for filling, removal, etc.

450 SITE CONDITION AT COMPLETION

- Debris: Clear away and leave the site in a tidy condition.
- Other requirements: None.

MATERIALS ARISING**510 CONTRACTOR'S PROPERTY**

- Components and materials arising from the deconstruction/ demolition work: Property of the Contractor except where otherwise provided.
- Action: Remove from site as work proceeds where not to be reused or recycled for site use.

D20 Excavating and filling

To be read with Preliminaries/General conditions

CLEARANCE/EXCAVATING

164 TREE ROOTS

- Protected area: Do not cut roots within precautionary protection area.
 - Size of area: Branch spread of the tree.
- Excavation in protected area:
 - Method: By hand.
 - Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
- Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
- Cutting:
 - Make clean smooth cuts with no ragged edges.
 - Pare cut surfaces smooth with a sharp knife.
 - Treatment of cut roots: Not required.
- Backfill: As dug material, enriched with amelioration as section Q31.

168 SITE CLEARANCE

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

170 REMOVING SMALL TREES, SHRUBS, HEDGES AND ROOTS

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

170A REMOVING SMALL TREES, SHRUBS, HEDGES AND ROOTS

- Identification: Clearly mark trees to be removed.
- Small trees, shrubs and hedges: Cut down.
- Roots: Do not disturb, apply herbicide to stumps.
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.

175A FELLING LARGE TREES

- Definition: Girth over 600 mm.
- Identification: Clearly mark trees to be removed.
- Safety: Comply with HSE/ Arboriculture and Forestry Advisory Group safety leaflets.
- Felling: As close to the ground as possible.
- Stumps: Remove mechanically to a minimum depth of 300 mm below ground level. Cut tree trunks of felled trees for use within proposed play area, ref. dwg 50027501-CBA-1-GF-DR-L-3010, PE-13 and PE-14. Length of PE-13 to be suitable for sitting at heights of 400 - 450mm; PE-14 tree trunks to be between 2-3m long. Arrange as dwg 3010 and as directed by Contrac Administrator..
- 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

- General: Permitted, spread arisings on site in areas designated.

220 STRIPPING TOPSOIL

- 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.
- Depth:
 - Remove to an average depth of 100 mm.
 - Give notice where the depth of topsoil is difficult to determine.
- Handling: Handle topsoil for reuse or sale in accordance with clause 225.
- Around trees: Do not remove topsoil from below the spread of trees to be retained.
- Site storage: Keep separate from excavated sub-soil.

221 TREATING TOPSOIL

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

225 HANDLING TOPSOIL

- Standard: To BS 3882.
- Aggressive weeds:
 - Species: Included in the Weeds Act, section 2 or the Wildlife and Countryside Act, Schedule 9, part II.
 - Give notice: Obtain instructions before moving topsoil.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
 - Oil, fuel, cement or other substances harmful to plant growth.
 - Other classifications of topsoil.
- Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

244 EXCAVATIONS ADJACENT TO EXISTING FOUNDATIONS

- Prior to commencing excavation:
 - Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
 - Allow for inspection of trial pits.
 - Allow time for amendment of details if required.
- Backfill material to new excavation: to Engineer's comment .

250 PERMISSIBLE DEVIATIONS FROM FORMATION LEVELS

- Beneath mass concrete foundations: ± 25 mm.
- Beneath ground bearing slabs and r.c. foundations: ± 15 mm.
- Embankments and cuttings: ± 50 mm.
- Ground abutting external walls: ± 50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.

255 ACCURACY - LINEAR DIMENSIONS

- Permissible deviations from linear dimensions generally: ± 10 mm .

270 FOUNDATIONS GENERALLY

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

290 FOUNDATIONS IN MADE UP GROUND

- Depth: Excavate down to a natural formation of undisturbed subsoil.
- Discrepancy: Give notice if this is greater or less than depth given.

310 UNSTABLE GROUND

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

320 RECORDED FEATURES

- Recorded foundations, beds, drains, manholes, etc: Break out and seal drain ends.
- Contaminated earth: Remove and disinfect as required by local authority.

330 UNRECORDED FEATURES

- 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

- Generally: Remove walls, roads, foundations, disused services, drains, manholes and the like to minimum depth.
- Minimum depth below finished levels:
 - Grass, ground cover and perennial planting: 500 mm.
 - Shrub planting: 750 mm.
 - Within 2 m of tree planting: 1000 mm.
- 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**

- Storage: Stockpile in temporary storage heaps as clause Q28 .

420 TOPSOIL STORAGE HEAPS

- Location: as clause Q28.
- Standard: To BS 3882.
- Height (maximum): as clause Q28.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination.

441 SURPLUS SUBSOIL

- Excavated material: Stockpile in temporary storage heaps.
- Retained material: Spread and level surplus subsoil on site.
 - Locations: To be agreed with Main Contractor .
 - Protected areas: Do not raise soil level within root spread of trees that are to be retained.
- Remaining material: Remove from site.

450 WATER

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

454 GROUND WATER LEVEL, SPRING OR RUNNING WATER

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

FILLING

500 PROPOSED FILL MATERIALS

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

510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - Frozen or containing ice.
 - Organic.
 - Contaminated or noxious.
 - Susceptible to spontaneous combustion.
 - Likely to erode or decay and cause voids.
 - With excessive moisture content, slurry, mud or from marshes or bogs.
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - Unacceptable, class U2 as defined in the Highways Agency 'Specification for highway works', clause 601.

520 FROST SUSCEPTIBILITY

- General: Except as allowed below, fill must be non frost-susceptible as defined in Highways Agency 'Specification for Highway Works', clause 801.8.
- Test reports: If the following fill materials are proposed, submit a laboratory report confirming they are non frost- susceptible:
 - Fine grained soil with a plasticity index less than 20%.
 - Coarse grained soil or crushed granite with more than 10% retained on a 0.063 mm sieve.
 - Crushed chalk.
 - Crushed limestone fill with average saturation moisture content in excess of 3%.
 - Burnt colliery shale.
- Frost-susceptible fill: May only be used:
 - At depths below the finished ground surface greater than: 450 mm.
 - Within the external walls of buildings below spaces that will be heated. Protect from frost during construction.
 - Where frost heave will not affect structural elements.

525 TESTING OF SUITABILITY OF FILL MATERIALS BEFORE START OF FILLING

- Laboratory: UKAS/ NAMAS accredited laboratory.
- Submit report to: Structural engineer (two copies).
 - Timing: 21 days before starting filling.
- Samples: Deliver to laboratory as required.
 - Additional requirements: Also deliver 25 kg samples to offices of structural engineer. On request, collect and dispose.
- Tests: As directed.
- Frequency: Submit with tender proposed rate and frequency of testing to demonstrate continuing compliance of imported or reprocessed fill with specified properties.

530 PLACING FILL

- Surfaces of excavations and areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
- Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
- Adjacent structures, membranes and buried services:
 - Do not overload, destabilise or damage.
 - Submit proposals for temporary support necessary to ensure stability during filling.
 - Allow 14 days (minimum) before backfilling against in situ concrete structures.
- Layers: Place so that only one type of material occurs in each layer.
- Earthmoving equipment: Vary route to avoid rutting.

535 COMPACTION GENERALLY

- General: Compact fill not specified to be left loose as soon as possible after placing.
- After compaction: Surface of each layer must be well closed, showing no movement under compaction plant, and without cracks, holes, ridges, loose material and the like.
- Defective areas: Remove and recompact to full thickness of layer using new material.

540 BENCHING IN FILL

- Adjacent areas: If, during filling the difference in level between adjacent areas of filling exceeds 600 mm, cut into edge of higher filling to form benches 600 mm minimum width and height equivalent to depth of a layer of compacted filling.
- New filling: Spread and compact to ensure maximum continuity with previous filling.

550 GEOTEXTILE SHEET

- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
- Type: Contractor's choice.
- Polymer type: Contractor's choice.
- Recycled content: Contractor's choice.
- Jointing: 300 mm overlap.
- Preparation of subgrade: Before laying sheet, remove humps and sharp projections. Fill hollows.
- Protect from:
 - Exposure to light.
 - Contaminants.
 - Materials listed as potentially deleterious by geotextile manufacturer.
 - Wind uplift.

610 COMPACTED FILLING FOR LANDSCAPE AREAS

- Fill: Material capable of compaction by light earthmoving plant.
- Filling: Layers not more than 200 mm thick. Lightly compact each layer to produce a stable soil structure.

615 LOOSE TIP FILLING FOR LANDSCAPE AREAS

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

F10 Brick/ block walling

To be read with Preliminaries/ General conditions.

TYPES OF WALLING

- 110 CLAY FACING BRICKWORK (P7b to New Retaining Wall, ref dwg 50027501-CBA-1-GF-DR-L-3506)
- Bricks: To BS EN 771-1.
 - Manufacturer: Submit proposals.
 - Product reference: Submit proposals, colour and type to match new cafe building brick facade.
 - Recycled content: No requirement.
 - Special shapes: none.
 - Mortar: As section Z21.
 - Standard: to match Architect's specification for cafe facade.
 - Mix: to match Architect's specification for cafe facade.
 - Additional requirements: None.
 - Bond: To match new cafe facade.
 - Joints: To match new cafe facade.
 - Features: To match new cafe facade.

WORKMANSHIP GENERALLY

- 500A LAYING GENERALLY
- To match architects details and specification for new cafe brick facade.
- 750 COLOUR CONSISTENCY OF MASONRY UNITS
- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
 - Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
 - Finished work: Free from patches, horizontal stripes and racking back marks.
- 760 APPEARANCE
- Brick/ block selection: Do not use units with damaged faces or arrises.
 - Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
 - Quality control: Lay masonry units to match relevant reference panels.
 - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
 - Coursing: Evenly spaced using gauge rods.
 - Lifts: Complete in one operation.
 - Methods of protecting facework: Submit proposals.
- 830 CLEANLINESS
- Facework: Keep clean.
 - Mortar on facework: Allow to dry before removing with stiff bristled brush.
 - Removal of marks and stains: Rubbing not permitted.

F21 Natural stone/ashlar walling/dressings

To be read with Preliminaries/ General conditions.

TYPES OF WALLING/ DRESSINGS

110A NATURAL STONE P6c Stone Coping to Retaining Wall, ref dwg 50027501-CBA-1-GF-DR-L-3506 .

- Stone: To BS EN 771-6.
 - Name (traditional): to match paving P6b.
 - Petrological family: Sandstone.
 - Colour: to match paving P6b.
 - Origin: to match paving P6b.
 - Finish: to match paving P6b.
 - Supplier: submit proposals.
 - Unit dimension tolerances: D2, 392mm x 600mm to be confirmed on site. Allow for 30mm overhang with drip rices to underside.
 - Compressive strength:
 - Mean value (minimum): Submit proposals.
 - Characteristic value (minimum): Submit proposals.
 - Category: to supplier's recommendation.
 - Open porosity: to supplier's recommendation.
 - Additional requirements: None.
 - 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.
- Mortar: As section Z21.
 - Standard: Submit proposals.
 - Mix: Submit proposals.
 - Sand: Submit proposals.
 - Additional requirements: Colour to match mortar on P6b paving.
- Bond: Stack.
- Joints: Flush.
 - Width: 5 mm.
 - Pointing: As clause 390.
- Other requirements: Dowel fixing to Engineer's details.

GENERAL/ PRODUCTION

LAYING AND JOINTING

315 ADVERSE WEATHER

- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature: Do not lay stones:
 - In cement gauged mortars: At or below 3°C and falling or below 1°C and rising.
 - In hydraulic lime:sand mortars: At or below 5°C and falling or below 3°C and rising.
- Temperature of walling during curing: Above freezing until mortar hardened.
- Newly erected walling: Protect at all times from:
 - Rain and snow.
 - Drying out too rapidly in hot conditions and in drying winds.

325 LAYING GENERALLY

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

390 POINTING

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

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

- 7 PERPEND JOINT WEEP HOLES
 - Form: Open clear perpend joint.
 - Locations: Through outer leaf, immediately above base of cavity, at cavity trays, stepped dpcs and over openings. 75 mm above top of cavity fill at base of cavity.
 - Provision: At not greater than 1000 mm centres and not less than two over openings.
- 26A WALL TIES For Facing Brick to Retaining Wall
 - to Engineer's details.
- 48 DAMP PROOF COURSE
 - Manufacturer: Submit proposals .
 - Product reference: Submit proposals .

M60 Painting/clear finishing

- 18A SPECIAL COATING For Parking Bay incl. Disabled Parking Bay Delineation (P12 & P13)
- Manufacturer: Contractor's choice.
 - Product reference: Submit proposal.
 - Surfaces: Car paring road surface.
 - Preparation: To manufacturer's recommendations.
 - Initial coats: To manufacturer's recommendations.
 - Number of coats: To manufacturer's recommendations.
 - Undercoats: To manufacturer's recommendations.
 - Number of coats: To manufacturer's recommendations.
 - Finishing coats: To manufacturer's recommendations.
 - Number of coats: To manufacturer's recommendations.
 - Slip resistance value - water wet (minimum): Suitable for external road surfacing.
 - Finishing coats: [To manufacturer's recommendations].
 - Number of coats: [To manufacturer's recommendations].
 - Requirements: Set out car park delineation and disabled parking bay markings as shown on dwg 50027501-CBA-1-GF-DR-L-3004 and in accordance with BS 8300.

N91 External signage and interpretation

SIGNAGE OUTLINE

- 100 All signage and wayfinding to be advised by client and to be coordinated with Landscape Architect.
Mass concrete footings for signage to Contractor's design.

Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS**112 PRECAST CONCRETE Standard Kerb (K1)**

- Standard: To BS EN 1340.
- Recycled content: Contractor's choice.
- Designations: BN Standard Concrete Kerb.
- Size (width x height x length): 125 x 255mm.
- Special shapes: 90 deg angles, radius kerbs.
- Finish: As cast.
- Colour: Grey.
- Bending strength: Class 1.
- Weathering resistance: as manufacturer's recommendation for proposed location.
- Abrasion resistance: as manufacturer's recommendation for proposed location.
- Slip/ skid resistance: No requirement.
- Bedding: Cement mortar.
- Joints generally: Dry, 2-3 mm gap.
- Sealant movement joints: Not required.
- Accessories: None.

112A PRECAST CONCRETE Flush Kerb (K2)

- Standard: To BS EN 1340.
- Recycled content: Contractor's choice.
- Designations: BN Concrete Kerb.
- Size (width x height x length): 125 x 150mm.
- Special shapes: none.
- Finish: As cast.
- Colour: Grey.
- Bending strength: Class 1.
- Weathering resistance: as manufacturer's recommendation for proposed location.
- Abrasion resistance: as manufacturer's recommendation for proposed location.
- Slip/ skid resistance: No requirement.
- Bedding: Cement mortar.
- Joints generally: Dry, 2-3 mm gap.
- Sealant movement joints: Not required.
- Accessories: None.

112B PRECAST CONCRETE Concrete Edging (E2)

- Standard: To BS EN 1340.
- Recycled content: Contractor's choice.
- Designations: FT Concrete Edging.
- Size (width x height x length): 50x 150 x 914mm.
- Special shapes: none.
- Finish: As cast.
- Colour: Grey.
- Bending strength: Class 1.
- Weathering resistance: as manufacturer's recommendation for proposed location.
- Abrasion resistance: as manufacturer's recommendation for proposed location.
- Slip/ skid resistance: No requirement.
- Bedding: Cement mortar.
- Joints generally: Dry, 2-3 mm gap.
- Sealant movement joints: Not required.
- Accessories: None.

120 STONE Kerb (K3)

- Standard: To BS EN 1343.
- Supplier: Contractor's choice.
- Types: Bullnosedl.
- Stone type: Natural Sandstone -colour: Buff to match paving P6 & P6a
Free from vents, cracks, fissures or defects which may adversely affect strength or durability.
Product must be CE marked by manufacturer to confirm compliance with British Standards.
- Size (width x height): 125 x 300 mm.
- Freeze/ Thaw resistance: Resistant.
- Special shapes: Radius kerbs as required to match shape on dwg 50027501-CBA-1-GF-DR-L-3001.
- Finish: Diamond sawn.
- Bedding: concrete footing to Engineer's details.
- Joints generally: Narrow mortar.
- Sealant movement joints: Not required.
- Accessories: None.

120A STONE Kerb (K4)

- Standard: To BS EN 1343.
- Supplier: Contractor's choice.
- Types: Bullnosedl.
- Stone type: Natural Sandstone -colour: Buff to match paving P6 & P6a
Free from vents, cracks, fissures or defects which may adversely affect strength or durability.
Product must be CE marked by manufacturer to confirm compliance with British Standards.
- Size (width x height): 125 x 300 mm.
- Freeze/ Thaw resistance: Resistant.
- Special shapes: Radius kerbs and external 90 deg angle as required to match shape on dwg 50027501-CBA-1-GF-DR-L-3001.
- Finish: Diamond sawn.
- Bedding: concrete footing to Engineer's details.
- Joints generally: Narrow mortar.
- Sealant movement joints: Not required.
- Accessories: None.

- 120B STONE Kerb (K5)
- Standard: To BS EN 1343.
 - Supplier: Contractor's choice.
 - Types: Bullnosedl.
 - Stone type: Natural Sandstone -colour: Buff to match paving P6 & P6a
Free from vents, cracks, fissures or defects which may adversely affect strength or durability.
Product must be CE marked by manufacturer to confirm compliance with British Standards.
 - Size (width x height): 125 x 255 mm.
 - Freeze/ Thaw resistance: Resistant.
 - Special shapes: none.
 - Finish: Diamond sawn.
 - Bedding: concrete footing to Engineer's details.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: Not required.
 - Accessories: None.
- 170A LINEAR SLOT DRAINAGE CHANNEL SYSTEMS Slot Drain (D3), ref dwg 50027501-CBA-1-GF-DR-L-3001 & 3501
- Manufacturer: Contractor's choice.
 - Product reference: Brickslot; Submit proposals.
 - Bore: To Engineer's details.
 - Finish: Galvanised Steel.
 - Colour: Galvanised.
 - Accessories: To Engineer's details.
 - Bedding: To Engineer's details.
 - Joints generally: To Engineer's details.
- 200A SPECIAL Aluminium Edging (E3)
- Manufacturer: Kinley Systems or similar and equivalent.
 - Product reference: (E3b) ExcelEdge AluExcel, rigid.
 - Size: 100mm.
 - Type/ Material: Aluminium.
 - Finish: Mill.
 - Colour: Natural.
 - Accessories: Fixings to manufacturer's recommendations, internal and external corners.
 - Bedding: To manufacturer's recommendations.
 - Joints: To manufacturer's recommendations.
- 250 MATERIAL SAMPLES
- Samples representative of colour and appearance of designated materials: Submit before placing orders.
 - Designated materials: Stone kerbs clause 120, 120A, 120B; Aluminium edging clause 200; Linea Slot Drainage clause 170A .
- 315 TRAFFIC CALMING HUMPS
- Manufacturer: Contractor's Choice.
 - Product reference: Submit proposal.
 - Material: Submit proposal.
 - Finish and colour: Matt black.
 - Method of fixing: Submit proposal.
 - Accessories: Thermoplastic paint markings.

LAYING**510 LAYING KERBS, EDGINGS AND CHANNELS**

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

520 ADVERSE WEATHER

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

530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

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

540 CEMENT MORTAR BEDDING

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

547 BEDDING/BACKING OF UNITS ON FRESH CONCRETE RACES

- Standard: To BS 7533-6.

580 DRAINAGE CHANNEL SYSTEMS

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

600 RADIUS KERBS/CHANNELS

- Usage: Radii of 15 m or less.

610 ANGLE KERBS

- Usage: Internal and external 90° changes of direction.
- Cutting of mitres: Not permitted.

625 REGULARITY OF PAVED SURFACES

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

650 SEALANT MOVEMENT JOINTS

- Joint filler: Compressible cellular rubber or plastics compatible with specified sealant.
- Filler installation: Built in as work proceeds, extending through haunching and foundation. Filler positioned accurately to fully support sealant at the recommended depth below exposed faces of units.
- Joint width: 10 mm.
- Sealant: Contractor's choice.
 - Colour: Colour match to kerbs and paving.
- Sealant application: As section Z22.

Q22 Asphalt roads/ pavings

To be read with Preliminaries/ General conditions.

TYPES OF PAVING

- 154 HOT ROLLED ASPHALT PAVING P4c & P11 for Vehicular Areas
- Standard: To BS EN 13108-4.
 - Subgrade improvement layer: to Engineer's details.
 - Compacted thickness: to Engineer's details.
 - Granular sub-base: to Engineer's details.
 - Compacted thickness: to Engineer's details.
 - Base: Hot rolled asphalt to BS EN 13108-4.
 - Compacted thickness: 75 mm.
 - Binder course: Hot rolled asphalt to BS EN 13108-4.
 - Compacted thickness: to Engineer's details.
 - Surface course:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Type: Submit proposals.
 - Compacted thickness: As surfacing manufacturer's recommendations.
 - Reclaimed content:
 - Standard: To BS EN 13108-8.
 - Value (maximum): Contractor's choice.
- 175A PROPRIETARY PEDESTRIAN PAVING (P8) Resin Bound Porous Stone Aggragate Paving
- Subgrade improvement layer: To Engineer's details.
 - Compacted thickness: To Engineer's details.
 - Granular sub-base: To Engineer's details.
 - Compacted thickness: To Engineer's details.
 - Binder course: To BS EN 13108-1, Contractor's choice.
 - Paving grade: Contractor's choice.
 - Compacted thickness: Contractor's choice.
 - Laying/ Compaction: To BS 594987.
 - Surface course:
 - Manufacturer: Addagrip or sim. and approved.
 - Product reference: Addaset Porous Surfacing.
 - Aggregate: Submit proposal
 - Size: 6mm
 - Colour: Buff
 - Compacted thickness: To manufacturer's recommendations.
 - Laying/ Compaction: To manufacturer's recommendations .
- 180A SURFACE TREATMENT TO EXISTING PAVING (P10) Existing Car Park - Replacement of Surface Course
- Base: Existing asphalt.
 - Preparation:
 - Remove existing surface course and base course
 - Cut out depressions, fill to match existing base and compact.
 - Surface to receive dressing: Clean and dry. All patching complete.
 - Binder: To Engineer's details
 - Finish: As clause 154.
 - Slip/ skid resistance: Submit proposals.

180B SURFACE TREATMENT TO EXISTING PAVING (P10) Existing Car Park - Repair of Surface Course

- Base: Existing asphalt.
- Preparation:
 - Cut out depressions, fill to match existing base and compact.
- Surface to receive dressing: Clean and dry. All patching complete.
- Binder: To Engineer's details
- Finish: As clause 154.
 - Slip/ skid resistance: Submit proposals.

PREPARATORY WORK/ REQUIREMENTS

220 BITUMINOUS MATERIALS GENERALLY

- Suppliers names: Submit.
 - Timing (minimum): Two weeks before starting work.
- Test certificates: At the time of delivery for each manufacturing batch submit certificate:
 - Confirming compliance with this specification and the relevant standard.
 - Stating full details of composition of mix.

230 SAMPLES

- Submit: Resin Bound Porous Stone Aggregate Paving, clause 175A.

250 ABUTMENTS

- Vertical edges of manholes, gullies, kerbs and other abutments: Clean and paint with a thin uniform coating of Contractor's choice.
- Finishing: Tamp surface around projections.
 - Level: Flush or not more than 3 mm above projections.

LAYING

310 LAYING GENERALLY

- Preparation: Remove all loose material, rubbish and standing water.
- Adjacent work: Form neat junctions. Do not damage.
- Channels, kerbs, inspection covers etc: Keep clean.
- New paving:
 - Keep traffic free until it has cooled to prevailing atmospheric temperature.
 - Do not allow rollers to stand at any time.
 - Prevent damage.
 - Lines and levels: With regular falls to prevent ponding.
 - Overall texture: Smooth, even and free from dragging, tearing or segregation.
 - State on completion: Clean.

320 ADVERSE WEATHER

- Frozen materials: Do not use.
- Suspend laying:
 - During freezing conditions
 - If the air temperature reaches 0°C, or in calm dry conditions -3°C, on a falling thermometer.
 - Hot rolled asphalt: During periods of continuous or heavy rain or if there is standing water on the base.

330 LEVELS

- Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, clause 5.2.

351 CONTRACTOR'S USE OF PAVEMENTS

- Preparation for final surfacing:
 - Timing: Defer laying until as late as practicable.
 - Immediately before laying final surfacing: Clean and make good the base/ binder course.
Allow to dry.
 - Adhesion: Contractor's choice.
Application rate: As manufacturer's recommendation.
Accuracy: Uniform, without puddles.
 - Finishing: Allow emulsion to break completely before applying surface.

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

To be read with Preliminaries/ General conditions.

TYPES OF SURFACING

- 130A FINE HOGGIN Self Binding Aggregate Paving to pedestrian and shared cycle routes (P9)**
- Subgrade improvement layer: to Engineer's details.
 - Compacted thickness: to Engineer's details.
 - Granular sub-base: to manufacturer's recommendation, laid to camber prior to the application of the surface course. Weed suppressant membrane installed underneath subbase layer, to manufacturer's recommendation and Engineer's details.
 - Compacted thickness: to manufacturer's recommendation.
 - Surface course: Naturally occurring fine hoggin consisting of sand and gravel, with minimum clay content required to bind the material together, and with no large lumps of clay.
 - Supplier: Grundon or sim. and approved
 - Product: Coxwell self-binding path gravel or sim. and approved.
 - Compacted thickness: to manufacturer's recommendation.
 - Completion: Compact to produce a firm, regular surface, stable in use.
- 180A BONDED CHIPPINGS FOR VEHICULAR AREAS (P4a) Bitumen Bonded Gravel Surface Dressing to Existing Asphalt Road**
- Subgrade improvement layer: Submit proposals.
 - Compacted thickness: Submit proposals.
 - Granular sub-base: Submit proposals.
 - Compacted thickness: Submit proposals.
 - Blinding layer: Clean angular stone chippings:
 - Size: Graded 19-32 mm.
 - Thickness: 50 mm.
 - Base course:
 - Binder: Cold bitumen emulsion to BS 434-1, class A1 60.
 - Chippings: To BS EN 13043, nominal size 10 mm.
 - Application: Uniformly spray binder at a rate of 4-5.5 L/m². Cover with clean chippings at a rate of 75 m²/t and compact.
 - Consolidation: Before application of surface course, allow surface to dry and consolidate.
 - Surface course:
 - Slip/ skid resistance: Submit proposals.
 - Binder: Cold bitumen emulsion to BS 434-1, class A1 60.
 - Chippings: To BS EN 13043, nominal size 6 mm.
 - Colour: Buff.
 - Application: Uniformly spray binder at a rate of 2 L/m². Cover with clean chippings. Provide 100-105% shoulder to shoulder coverage to BS 598-1 and compact.
 - 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. Do not crush chippings.
 - Completion: Before trafficking, remove excess chippings.

180B BONDED CHIPPINGS FOR VEHICULAR AREAS (P4b) Bitumen Bonded Gravel Surface Dressing to New Asphalt Road

- Subgrade improvement layer: Submit proposals.
 - Compacted thickness: Submit proposals.
- Granular sub-base: Submit proposals.
 - Compacted thickness: Submit proposals.
- Blinding layer: Clean angular stone chippings:
 - Size: Graded 19-32 mm.
 - Thickness: 50 mm.
- Base course:
 - Binder: Cold bitumen emulsion to BS 434-1, class A1 60.
 - Chippings: To BS EN 13043, nominal size 10 mm.
 - Application: Uniformly spray binder at a rate of 4-5.5 L/m². Cover with clean chippings at a rate of 75 m²/t and compact.
 - Consolidation: Before application of surface course, allow surface to dry and consolidate.
- Surface course:
 - Slip/ skid resistance: Submit proposals.
 - Binder: Cold bitumen emulsion to BS 434-1, class A1 60.
 - Chippings: To BS EN 13043, nominal size 6 mm.
Colour: Buff.
 - Application: Uniformly spray binder at a rate of 2 L/m². Cover with clean chippings. Provide 100-105% shoulder to shoulder coverage to BS 598-1 and compact.
- 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. Do not crush chippings.
- Completion: Before trafficking, remove excess chippings.

310A TIMBER EDGING

- Softwood board:
 - Size: 200 x 50 mm.
 - Fixing: Galvanized nails into softwood pegs.
- Softwood pegs:
 - Size: 50 x 50 x 450 mm long.
 - Fixing: Drive into ground.
 - Centres: 1200 mm.
- Preservative treatment: As section Z12 and WPA Commodity Specification C4, with 15 year desired service life.
- Accessories: Cut edging on inside of radius to achieve smooth radius curves.

320 SAMPLES

- Submit: Representative samples of Fine Hoggin, clause 130A.

340 LAYING GENERALLY

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

350 COLD WEATHER WORKING

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

390 PROTECTION FROM TRAFFIC AND PLANT

- Paved areas: Restrict access to prevent damage.

Q24 Interlocking brick/block roads/pavings

To be read with Preliminaries/ General conditions

TYPES OF PAVING

- 110 CONVENTIONAL CONCRETE BLOCK PAVING P5b
- Subgrade improvement layer: To Engineer's details.
 - Compacted thickness: To Engineer's details
 - Granular sub-base: To Engineer's details.
 - Compacted thickness: To Engineer's details.
 - Geotextile: To Engineer's details.
 - Manufacturer: To Engineer's details.
 - Product reference: To Engineer's details.
 - Laying course:
 - Material: In accordance with BS 7533-3.
 - Category: To Engineer's details.
 - Method of screeding, in accordance with BS 7533-3: To Engineer's details.
 - Nominal thickness after compaction: To Engineer's details.
 - Blocks: To BS EN 1338.
 - Requirements: Slip/skid resistance suitable for external pedestrian paving.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Sizes: 200 x 100 x 60mm.
 - Special blocks: none.
 - Colour/ Finish: to match existing P5a paving.
 - Recycled content: As manufactured.
 - Jointing:
 - Material: In accordance with BS 7533-3.
 - Joint width: 2-5 mm.
 - Sealer/ Stabilizer: Not required.
 - Setting out:
 - Bond: Herringbone to match existing P5a paving.
 - Features: Mortar bedded edge restraint .
 - Accessories: none.

EXECUTION

- 200 EXECUTION GENERALLY - CONCRETE BLOCK AND CLAY PAVER PAVING
- Standard: In accordance with BS 7533-3.
- 220 SAMPLES
- General: Before ordering, submit samples of concrete blocks/ pavers/ setts that are representative of colour and appearance.
- 240 ADVERSE WEATHER
- General: Do not use frozen materials or lay bedding on frozen or frost covered sub-bases.

485 LAYING BLOCKS/ PAVERS/ SETTS

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

505 REGULARITY OF PAVED SURFACES

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

COMPLETION**615 COMPLETION OF PAVING**

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

Q25 Slab/brick/sett/cobble pavings

To be read with Preliminaries/ General conditions.

- 110 NATURAL STONE SLAB PAVING SYSTEM P6, P6a, P6b, P14a
- Subgrade improvement layer: Not required.
 - Compacted thickness: Not applicable.
 - Granular sub-base: to Engineer's details.
 - Compacted thickness: to Engineer's details.
 - Base: mortar bedding to other's specification.
 - Thickness: 30mm.
 - Laying course: Ready-mixed mortar.
 - Accessories: Primer for underside of flags or slabs.
 - Paving units: Natural Sandstone slabs as Q25.310.
 - Jointing: Ready mixed mortar, Colour: Submit proposal to match stone colour.
 - Bond: As drawings.
 - Accessories: Sealer/ stabilizer.
- 135 RIGID BRICK PAVING OVERLAY SYSTEM To P7 Paving
- Existing base: Ref dwgs 50027501-CBA-1-GF-DR-L-3001, 3002 & 3502.
 - Preparation: Planing and repairs.
 - Paving units: Clay Pavers as clause 325.
 - Bedding and jointing: Ready-mixed mortar.
 - Bond: As drawings.
 - Movement joints: Submit proposals.
 - Locations: Submit proposals.
 - Accessories: None.
- 180A GRASS REINFORCING PAVING SYSTEM (P17) To Temporary Car Parking
- Design: Complete the design for the overflow/event car parking including an assessment of ground conditions, drainage and surface levels.
 - Performance criteria: Grass reinforcement to be suitable for regular car parking and vans including event grass parking.
 - Installation: Ground preparation and installation to be carried out in accordance with the manufacturer's recommendation.
 - Requirements: Trafficking to be restricted following installation until grass has thoroughly established through the grass reinforcement material. Contractor to submit manufacturer's installation recommendations with submission of proposed product.
 - Accessories: In accordance with manufacturer's recommendation.
 - Advisory signage to be provide while exposed mesh may be present to warn of potential slip hazards and reduce traction in wet or frosty conditions.
 - Timber bollards BO_3.

PRODUCTS

310 NATURAL STONE SLABS Flag Paving (P6)

- Standard: To BS EN 1341.
- Supplier: Contractor's choice.
 - Product reference: Submit proposals.
 - Quarry: Contractor's choice.
- Stone type: Sandstone; Colour: Submit proposal to match P2.
- Finish: Sawn.
- Sizes: 100mm wide x 150, 200, 250mm long; 200mm wide x 200, 300, 400mm long; 300mm wide x 300, 400, 500mm long
Thickness: 75mm.
 - Plan dimension deviation class: P2.
 - Diagonal deviation class: D2.
 - Thickness deviation class: T2.
- Arrises: Square.
- Freeze/ thaw resistance class: Submit proposals.
- Flexural strength (MPa): Submit proposals.
- Abrasion resistance (mm): Submit proposals.
- Slip/ Skid resistance (USRV): wet PTV greater than 36.
- Water absorption (% by mass): Submit proposals.
- Petrographical description: Sandstone.
- Surface treatment: Sealant to supplier's recommendation.

310A NATURAL STONE SLABS Flag Paving P6a

- Standard: To BS EN 1341.
- Supplier: Contractor's choice.
 - Product reference: Submit proposals.
 - Quarry: Contractor's choice.
- Stone type: Sandstone; Colour: Submit proposal to match P2.
- Finish: Sawn.
- Sizes: 900 x 450mm, 470 x 450mm
Thickness: 75mmk.
 - Plan dimension deviation class: P1.
 - Diagonal deviation class: D1.
 - Thickness deviation class: T2.
- Arrises: Square.
- Freeze/ thaw resistance class: Submit proposals.
- Flexural strength (MPa): Submit proposals.
- Abrasion resistance (mm): Submit proposals.
- Slip/ Skid resistance (USRV): wet PTV greater than 36.
- Water absorption (% by mass): Submit proposals.
- Petrographical description: Submit proposals.
- Surface treatment: Sealant to supplier's recommendation.

310B NATURAL STONE SLABS Flag Paving P6b

Standard: To BS EN 1341.

- Supplier: Contractor's choice.
 - Product reference: Submit proposals.
 - Quarry: Contractor's choice.
- Stone type: Sandstone; Colour: Submit proposal to match P2.
- Finish: Sawn.
- Sizes: 100mm wide x 150, 200, 250mm long;
200mm wide x 200, 300, 400mm long;
300mm wide x 300, 400, 500mm long;
Thickness: 50mm.
 - Plan dimension deviation class: P1.
 - Diagonal deviation class: D1.
 - Thickness deviation class: T2.
- Arrises: Square.
- Freeze/ thaw resistance class: Submit proposals.
- Flexural strength (MPa): Submit proposals.
- Abrasion resistance (mm): Submit proposals.
- Slip/ Skid resistance (USRV): wet PTV greater than 36.
- Water absorption (% by mass): Submit proposals.
- Petrographical description: Submit proposals.
- Surface treatment: Sealant to supplier's recommendation.

320 TACTILE FLAGS AND SLABS Tactile Blister Paving (P14a)

- Standard: To DD CEN/TS 15209.
- Material: Natural Sandstone to match P6b.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
- Recycled content: Not applicable.
- Nominal sizes: 400 x 400 X 50mm.
- Colour: to match P6b.

320A TACTILE FLAGS AND SLABS Tactile Blister Paving (P14b)

- Standard: To DD CEN/TS 15209.
- Material: Concrete.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
- Recycled content: Not applicable.
- Nominal sizes: 400 x 400 X 65mm.
- Colour: Natural.

325 BRICKS (P7 & P7a) Clay Paver

- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
- Recycled content: Submit proposals.
- Sizes: 200 x 100 x 53 mm.
- Special shapes: Submit proposals.
- Finish: Smooth .
- Slip/ Skid resistance: wet PTV greater than 36 .
- Colour: to match new cafe brick facade and P7b.

390 SAND FOR FLEXIBLE LAYING COURSE AND JOINTING OF CONCRETE FLAG PAVING

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

- 420 FINE AGGREGATE FOR LAYING COURSE OF CONCRETE SETT PAVING
- Material: as manufacturer's details.

- 425 FINE AGGREGATE FOR JOINTING CONCRETE SETT PAVING
- Material: as manufacturer's details.

- 435 PRIMER FOR UNDERSIDE OF FLAGS AND SLABS
- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.

- 440 READY MIXED MORTAR FOR STONE PAVING
- Type: Contractor's choice.
 - Standard/ Performance requirements: In accordance with BS 7533-7.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Consistency: Contractor's choice.

- 455 JOINT FILLER FOR MOVEMENT JOINTS STONE PAVING
- Type: Submit proposal.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposal.

EXECUTION

- 610 MATERIAL SAMPLES
- Samples representative of colour and appearance of designated materials: Submit before placing orders.
 - Designated materials: All pavings.

- 615 CONTROL SAMPLES
- Sample areas: Complete as part of the finished work.
 - Types of paving: Natural stone slab paving P6, P6a, P6b, Brick Paving 7 & 7a.
 - Location: To be agreed on site.
 - Size (minimum): 1.5 x 1.5 m.
 - Included features: Edging.
 - Approval of appearance and surface: Obtain before proceeding.

- 620 ADVERSE WEATHER
- General:
 - Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
 - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
 - Paving with mortar joints and/ or bedding:
 - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
 - Paving laid and jointed in sand:
 - Stockpiled bedding sand: Protect from saturation.
 - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
 - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
 - Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

625 LAYING PAVINGS - GENERAL

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

637 REGULARITY OF PAVED SURFACES

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

640 COLOUR BANDING

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

645 PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arrises, or previously laid paving.
- Mortar bedded pavings: Keep free from traffic after laying:
 - Pedestrian traffic (minimum): 4 days.
 - Vehicular traffic (minimum): 10 days.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.

650 CEMENTITIOUS BASES AND SUB-BASES

- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE

- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
- Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
- Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
- Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
- Levels and falls: Accurate and within the specified tolerances.
- Drainage outlets: Within 0-10 mm of the required finished level.
- Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
- Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

715 LAYING FLAG AND SLAB PAVING - MORTAR LAYING COURSE AND JOINTING

- Standard generally: In accordance with BS 7533-4.
- Flag installation and cutting: To Interpave 'Concrete flag paving'.
- Laying course:
 - Nominal thickness: 30 mm before laying paving slabs.
- Laying and jointing: Contractor's choice.
- Joint width (nominal): 5 mm.

725 LAYING RIGID BRICK PAVING

- Standard generally: In accordance with Brick Development Association Design Note 8.
- Bedding and jointing method: Simultaneous bedding and jointing with stiff plastic mortar.
- Cement slurry: Apply thin slurry (1-3 mm) of neat cement or 1:1 cement:soft sand over the freshly laid mortar bed immediately prior to laying bricks.
- Laying: Wet bricks as necessary (but do not soak), butter joint faces and press down firmly to give a level surface with 10 mm regular joints.
- Nominal thickness of bed: 25-30 mm.
- Joint profile: Flush.

Q26 Special surfacings/ pavings for sport/ general amenity

To be read with Preliminaries/ General conditions.

IMPACT ATTENUATING SURFACINGS FOR PLAY AREAS**300 EXTENT OF IMPACT ATTENUATING SURFACING**

- General: Lay to the impact areas shown in the relevant parts of BS EN 1176.

320A WOODCHIP SURFACING (P18)

- Type: Wood chip generated from chipping of felled tree branches.
Application: Spread evenly across existing woodland ground, ref. dwg 50027501-CBA-1-GF-DR-L-3010.
Contractor to stockpile site-won woodchip for inspection before spreading and agree extent of distribution with Contract administrator before commencing works.

340A RUBBER MAT AND TILE SURFACING (P16) Grass Saver Matting

- Sub-base: As dwg 50027501-CBA-1-GF-DR-L-3012.
 - Thickness: As drawing.
- Base: As dwg 50027501-CBA-1-GF-DR-L-3012.
 - Thickness: As drawing.
- Surface course: Impact attenuating EPDM rubber mats and/ or tiles.
 - Standard: To BS 7188.
 - Manufacturer: Contractor's choice.
Product reference: Submit proposals.
 - Colour: Black.
 - Critical fall height when tested to BS EN 1177: As required to satisfy critical fall heights across the play area.
- Submit:
 - Resistance to abrasive wear, slip resistance, resistance to indentation and ease of ignition: Evidence of testing to BS 7188.
 - Critical fall height: Evidence of testing to BS EN 1177.

360A IN SITU SYNTHETIC SURFACING (P15) Rubber Bonded Mulch Safety Surfacing

Sub-base: To manufacturer's recommendation.

- Thickness: To manufacturer's recommendation.

- Base: To manufacturer's recommendation, Contractor to submit proposals for review.

- Thickness: To manufacturer's recommendation, Contractor to submit proposals for review.

- Surface course: Wet pour, in situ laid polyurethane bound EPDM rubber crumb surface.

- Standard: To BS 7188.

- Manufacturer: RTC Safety Surfaces Limited or sim. and approved.

Product reference: Rubber bonded mulch.

- Colour: Brown and Red Mix.

- Critical fall height when tested to BS EN 1177: As required to satisfy critical fall height for all equipment across the play area.

- Health and safety:

Substance known to be toxic or carcinogenic on skin contact or released as vapour or dust during normal use: Not permitted.

- Submit:

- Resistance to abrasive wear, slip resistance, resistance to indentation and ease of ignition: Evidence of testing to BS 7188.

- Critical fall height: Evidence of testing to BS EN 1177.

- Accessories: Timber edging E1

COMPLETION**920 PLAY SURFACE TESTING**

- Standard: To BS EN 1177 and BS 7188, where applicable.

- Testing body: A United Kingdom Accreditation Service (UKAS) independent laboratory.

- Timing: Within ten days of completing the surfacing works.

- Test results: Submit.

930 DOCUMENTATION

- Standard: To BS EN 1176-1.

- Submission requirements:

- Name and contact details of installer.

- Date of installation.

- Name and contact details of manufacturer.

- Type/ description/ reference of products used.

- Manufacturer's recommended inspection and maintenance procedures to maintain safety and impact attenuating performance.

Manufacturer's recommended cleaning and maintenance methods, where relevant.

940 LABELLING

- Signs: Provide permanent labelling in approved locations on all types of surfacing stating: Manufacturer's name and contact details.

Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

PRODUCTS

300 PREPARATION MATERIALS GENERALLY

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

310 MATERIALS NOT PERMITTED

- Materials: Products containing peat.

315A IMPORTED TOPSOIL TO BS 3882 All Planting Areas

- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- Standard: To BS 3882.
- Classification: Multipurpose.
 - Grade: Within the parameters of 'sandy loam' textural class.
- Source: Submit proposals.
 - Product reference: Submit proposals.

360 SANITIZED AND STABILIZED COMPOSTED MATERIALS CERTIFIED TO PAS 100 For existing areas of planting that are being cleared of vegetation and then re-planted

- Standard: In accordance with PAS 100.
- Source: Contractor's choice.
 - Product reference: Submit proposals.
- Horticultural parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter content (minimum): 25%.
 - Grading (air dried samples): 99% passing 25 mm screen, and 90% passing 10 mm screen mesh aperture.
 - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.

- 390 FERTILIZERS TO BE INCORPORATED INTO TOPSOIL AND MANUFACTURED TOPSOIL FOR ALL NEW AND REPLACEMENT PLANTING AREAS
- Type: Slow release fertilizer.
 - Source: Contractor's choice.
 - Product reference: Contractor's choice.
- 400 MAINTENANCE FERTILIZERS FOR ALL NEW AND REPLACEMENT PLANTING AREAS
- Type: Maintenance fertilizer.
 - Source: Contractor's choice.
 - Product reference: Contractor's choice.

EXECUTION

- 610 TOPSOIL ANALYSIS
- Soil to be analysed: Imported topsoil.
 - Soil analyst: Qualified Independent Soil Scientist.
 - Samples: Collect in accordance with BS 3882.
 - Submit:
 - Declaration of analysis:
 - Source name and location
 - Date and sampling
 - Visual examination
 - Certificate of Analysis
 - Interpretation of all results with comments on the suitability of the soil for the proposed landscape scheme.
 - Report detailing soil analyst's recommendations.
- 625 SAMPLE LOADS FOR IMPORTED TOPSOIL
- Deliver to site a sample load: of not less than 5 m³.
 - Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - Notice period: 7 days.
- 655 MECHANICAL TOOLS
- Restrictions: Do not use within 100 mm of tree and plant stems.
- 660 GRADING SUBSOIL
- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
 - Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - Areas of thicker topsoil: Excavate locally.
 - Avoid over compaction.

665 SUBSOIL SURFACE PREPARATION

- General: Excavate and/ or place fill to required profiles and levels, as section D20.
- Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
- Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
- Remove from site: Arisings, contaminants and debris.

670 INSPECTING FORMATIONS

- Give notice: Before spreading topsoil for planting beds.
- Notice period: 7 days.

675 PREPARATION OF UNDISTURBED TOPSOIL

- Standard: In accordance with BS 4428.
 - Grading and cultivation: To suit cultivation operations specified in Q30.
- Hard ground: Break up thoroughly.
- Clearing: Remove visible roots and large stones with a diameter greater than 100 mm.
- Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
- Fallow period (minimum): Three months.
 - Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.

680 SURPLUS TOPSOIL TO BE RETAINED

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

690 TOPSOIL STORAGE HEAPS

- Location: Submit location for approval.
- Height (maximum): 1.0 m.
- Width (maximum): 3.0 m.
 - Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination, by fencing and covering as appropriate.

695 CULTIVATION

- Compacted topsoil: Break up to full depth.
- Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
 - Depth: 150 mm.
 - Particle size (maximum): 20 mm.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: to meet existing surrounding levels.
- Undesirable material brought to the surface: Remove visible weeds, roots and large stones with any dimension exceeding 100 mm.
- Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

700 GRADING OF TOPSOIL

- Topsoil condition: Reasonably dry and workable.
- Contours: Smooth and flowing, with falls for adequate drainage.
 - Hollows and ridges: Not permitted.
- Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
- Give notice: If required levels cannot be achieved by movement of existing soil.

705 HANDLING TOPSOIL

- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
- Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.

710 SPREADING TOPSOIL

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

805 APPLYING SOIL AMELIORANT TO ALL PLANTING AREAS

- Type: As recommended by the Landscape Contractor for successful plant establishment.
- Locations: All new planting areas.
- Fully incorporate into topsoil to a depth of 400 mm.
- Application: Spread evenly.
 - Timing: Apply prior to cultivation.
 - Rate: Submit proposals.
- Timing: Prior to cultivation.
- Other requirements: None.

820 APPLYING GENERAL FERTILIZER TO ALL NEW AND REPLACEMENT PLANTING AREAS

- Locations: Ornamental shrub beds.
- Application: Spread evenly, carefully incorporating below mulch materials.
 - Timing: Immediately before cultivation.
 - Application rate: as manufacturer's recommendations.
 - Other requirements: none.

Q30 Seeding/turfing

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/REQUIREMENTS**115 SEEDED AND TURFED AREAS**

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

120 CLIMATIC CONDITIONS

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

145 WATERING

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

150 WATER RESTRICTIONS

- Timing: If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/turfing until instructed. If seeding/turfing has been carried out, obtain instructions on watering.

170 SETTING OUT

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

PREPARATION**210 HERBICIDE FOR ALL GRASSED AREAS**

- Type: Suitable for suppressing perennial weeds.
- Timing: Allow fallow period before cultivation.
 - Duration: As manufacturer's recommendation.

212 SEED BED CLEANING BEFORE SOWING ALL GRASSED AREAS

- Operations: As seed supplier's recommendations..

SEEDING**311 GRASS SEED SHADE**

- Supplier: Emorsgate Seeds or sim. and approved.
 - Mixture reference: Shade Tolerant Lawn Grass Mixture (EG23).
- Application rate: 30g/sqm.

311A GRASS SEED GENERAL

- Supplier: Emorsgate Seeds or sim. and approved.
 - Mixture reference: Strong Lawn Grass Mixture with Clover (EG22C).
- Application rate: 30g/ sqm.

319 QUALITY OF SEED FOR ALL GRASSED AREAS

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

335 GRASS SOWING SEASON

- Grass seed generally: April to June or August to October.

350 TURF EDGING TO SEEDED AREAS Ref dwg 50027501-CBA-1-GF-DR-L-4003

- Standard: To BS 3969, with no perennial ryegrass.
 - Seed mix: Similar to seeded area.
- Timing: Before sowing.
- Preparation: Rake back a 750 mm wide margin around prepared seed beds.
 - Level of seed bed: Married in with turf.
- Placement: Single row laid end to end and trimmed to a line.
- Watering: On completion.

TURFING

400 CULTIVATED TURF All Turf Areas

- Supplier: Lindum Turf or sim. and approved..
 - Product reference: Lindum LT2 Low Maintenance Turf.
- Properties of soil used for turf production: supplier's standard.

420 DELIVERY AND STORAGE

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

430 TURFING GENERALLY

- Time of year: To be agreed.
- Timing of laying:
 - Spring and summer: Within 18 hours of delivery.
 - Autumn and winter: Within 24 hours of delivery.
- Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
- Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
- Jointing: Laid with broken joints, well butted up. Do not stretch turf.
- Edges: Whole turfs, trimmed to a true line.
- Adjusting levels: Remove high spots and fill hollows with fine soil.
- Consolidating: Lightly and evenly firm as laying proceeds to ensure full contact with substrate. Do not use rollers.
- Dressing, brushed well in to completely fill all joints: Contractor's choice.
- Watering: Thoroughly water completed turf immediately after laying. Check that water has penetrated into the soil below.

PROTECTING/CUTTING**510 PROTECTIVE FENCING**

- Fencing type: Chestnut pale fencing to BS 1722-4.
 - Height: 0.9 m.
- Erection: On completion of seeding/ turfing.
- Removal: After grass is well established. Fencing will remain the property of the Contractor.

530 FIRST CUT OF GRASSED AREAS

- Timing: When grass is reasonably dry.
 - Height of initial growth: 50 mm.
- Preparation:
 - Debris and litter: Remove.
 - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 40 mm.
- Mower type: Contractor's choice.
- Arisings: Remove from site.

590 CLEANLINESS

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

MAINTENANCE**610 FAILURES OF SEEDING/TURFING**

- Duration: Carry out the following operations from completion of seeding/ turfing until: End of defects period.
- Defective materials or workmanship: Areas that have failed to thrive.
 - Exclusions: Theft or malicious damage.
- Method of making good: Recultivation and reseeding/ returfing.
- Timing of making good: The next suitable planting season.

620 MAINTAINING GRASS SEED AND TURFED AREAS

- Duration: Carry out the following operations from completion of seeding/ turfing until: End of defects period.
- Maximum height of growth at any time: 50 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 35 mm.
 - Arisings: Remove.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
 - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
 - Method: Application of a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
 - Size: Exceeding 25 mm in any dimension.
- Areas of settlement: Make good.
- Watering: As required to ensure good plant establishment and continued growth.

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS

112A SITE CLEARANCE GENERALLY

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with any dimension exceeding 50 mm.
- Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Vegetation: as clause 605.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: Existing shrub and hedging to be examined by a qualified person to check that there are no nesting birds present, as it is an offence under the Wildlife & Countryside Act 1981 to damage or destroy the nest of any wild bird while it is in use or being built .

118 SOIL CONDITIONS

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

120 CLIMATIC CONDITIONS

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

125A TIMES OF YEAR FOR PLANTING

- Deciduous trees and shrubs: Late October to late March.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants (including marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable.
 - Watering and weed control: Provide as necessary.
- Dried bulbs, corms and tubers: September/ October.
- Colchicum (crocus): July/ August.
- Green bulbs: After flowering in spring.
- Wildflower plugs: Late August to mid November or March/ April.
- Willow poles for willow play structures: November - March only.
- Aquatic plants: May/ June or September/ October.

145 WATERING

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

150 WATER RESTRICTIONS

- General: If water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.

160 NOTICE

- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Delivery of plants/ trees.
 - Planting shrubs.
 - Planting trees into previously dug pits.
 - Watering.
 - Visiting site during maintenance period.
- Period of notice: One week.

165 PREPARATION, PLANTING AND MULCHING MATERIALS

- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Certification of source, analysis, suitability for purpose and absence of harmful substances: Submit.
 - Certified materials: Sanitized and stabilized compost.
 - Give notice before ordering or using.

200 PLANTS/ TREES - GENERAL

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Budded or grafted plants: Bottom worked.
- Root system and condition: Balanced with branch system.
 - Standard: The National Plant Specification.
- Species: True to name.
- Origin/ Provenance: Contractor's choice.
Definition: Origin and Provenance have the meaning given in the National Plant Specification.

215 PLANTS/ TREES - SPECIFICATION CRITERIA

- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.

235 CONTAINER GROWN PLANTS/ TREES

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

245 LABELLING AND INFORMATION

- General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
 - Full botanical name.
 - Total number.
 - Number of bundles.
 - Part bundles.
 - Supplier's name.
 - Employer's name and project reference.
 - Plant specification, in accordance with scheduled National Plant Specification categories.
- Additional information: Submit on request: Country of origin.

255A PLANTS/ TREES RESERVED AT SUPPLIER'S PREMISES

- Types/ Species: Trees.
- Predelivery inspection: Give 1 week's notice.
- Labelling: Identify inspected plants/ trees as reserved for use on this project.

260 PLANT/ TREE SUBSTITUTION

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

265 PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To HTA 'Handling and establishing landscape plants'.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Plant packaging: Contractor's choice.
- Packaging of bulk quantities: Contractor's choice.
- Planting: Upright or well balanced with best side to front.

280 TREATMENT OF TREE WOUNDS

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

285 PROTECTION OF EXISTING GRASS

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

290 SURPLUS MATERIAL

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

PLANT CONTAINERS

- 292A PREFABRICATED PLANT CONTAINERS (PL-1 Cube)
- Manufacturer: IOTA, www.iotagarden.com or sim. and approved.
 - Product reference: Cube.
 - Material: 2mm Corten.
 - Dimensions/ Shape: Refer to dwg 50027501-CBA-1-GF-DR-L-3001 & 3505.
 - Lining: Waterproofing as clause 298A, Insulation as clause 299.
 - Accessories: 2 nr linked reservoir tanks per cube plater, installed to manufacturer's recommendation.
 - Requirements: Submit shop drawings for approval.
- 292B PREFABRICATED PLANT CONTAINERS (PL-2a-d Bespoke)
- Manufacturer: IOTA, www.iotagarden.com or sim. and approved.
 - Product reference: PlanterLine Modular.
 - Material: 2mm Corten.
 - Dimensions/ Shape: Refer to dwg 50027501-CBA-1-GF-DR-L-3001 & 3505.
 - Lining: Waterproofing as clause 298A, Insulation as clause 299.
 - Accessories: None.
 - Requirements: Submit shop drawings for approval.
- 292C PREFABRICATED PLANT CONTAINERS (PL-3 Bespoke)
- Manufacturer: Kinley Systems or sim. and approved.
 - Product reference: Perimeta Planterline Bespoke.
 - Material: 3mm Corten.
 - Dimensions/ Shape: Refer to dwg 50027501-CBA-1-GF-DR-L-3001 & 3505.
 - Lining: Waterproofing as clause 298A, Insulation as clause 299.
 - Accessories: Concrete foundation to manufacturer's recommendation.
 - Requirements: Submit shop drawings for approval.
- 298A WATERPROOFING TO ALL RAISED PLANTERS
- Material: Manufacturer's standard.
 - Base protection: Manufacturer's standard
- 299 INSULATION TO METAL PLANTERS:
- Polystyrene insulation to planter manufacturer's recommendations.

PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

- 375 CULTIVATION
- Compacted topsoil: Break up to full depth.
 - Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm.
 - Depth: 150 mm.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
 - Surface: Leave regular and even.
 - Levels: As sections Q28 and detail planter drawings.
 - Undesirable material brought to the surface: Remove visible weeds, roots and large stones with any dimension exceeding 100 mm.
 - Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS**405 SHRUB PLANTING PITS**

- Timing: Excavate 2 days (maximum) before planting.
- Sizes: Wide enough to accommodate roots when fully spread and 75 mm deeper than root system, Refer to dwg 50027501-CBA-1-GF-DR-L-4501.
- Pit bottom improvement Break up to a depth of 200 mm.
- Backfilling material: Shrub planting backfilling material.

420 CLIMBING PLANTS

- Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
 - Branches: Lightly secured to supports.
- Climber supports: Timber or bamboo support pole to be directed against wall.
 - Base height: As drawing 50027501-CBA-1-GF-DR-L-4501.
 - Extent: n/a.
 - Centres: 1 per plant
 - Distance from wall: 50027501-CBA-1-GF-DR-L-4501.
- Fixings: none.
 - Centres: n/a.

471 NATURALIZED HEDGES

- Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

472A FENCING SUPPORT FOR NEW HEDGES (F1, F3)

- Type: Timber post and general pattern wire mesh.
- Standard: To BS 1722-2.
- Height: F1 900 mm, F3 450mm.
- Timing: Before planting hedge.
- Support: Lightly secure hedge plants to fence wires at appropriate intervals.

476 SHRUB, HERBACEOUS AND BULB BACKFILLING MATERIAL FOR NEW AND REPLACEMENT PLANTING AREAS

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required:
- Ameliorant/ Conditioner: As section Q28.
 - Application rate: As section Q28.
- Fertilizer: As section Q28.
 - Application rate: As section Q28.

480 AFTER PLANTING

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.
- Top dressing: Mulching as clause 485.
 - Depth: 50 - 75 mm.

485 MULCHING PLANTING BEDS

- Material: Medium grade bark mulch.
 - Purity: Free of pests, disease, fungus and weeds.
 - Recycled content: None permitted.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 50-75mm mm depth.
- Finished level of mulch: 30 mm below adjacent grassed or paved areas or as shown on detail planter drawings.

PLANTING TREES

505 TREE PITS

- Sizes: 500 mm wider than the root ball and as dwg 50027501-CBA-1-GF-DR-L-4501.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 200 mm.
 - Treatment: none.
- Pit sides: Scarify.
- Backfilling material: Topsoil and Subsoil s Q28.
- Accessories: Staking as clause 545, Irrigation/Aeration as clause 512H. Mulching as clause 590.

512H TREE PIT ACCESSORIES Irrigation pipe to Standard trees

- Locations: Ornamental tree planting in soft planting areas.
- Manufacturer: Greenleaf or sim.
 - Product reference: RootRain Metro, RRM3A, 2.5m pipe length.
- Type: Irrigation system.

545 LONG SINGLE STAKING FOR ALL TREES

- Staking: Position stake close to tree on windward side and drive vertically at least 300 mm into bottom of pit before planting.
 - Backfilling: Consolidate material around stake.
- Height of stakes: Cut off just below lowest branch of tree.
- Ties: Contractor's choice.
- Tying: Secure tree firmly but not rigidly to stake with at least two ties. Use three ties if necessary to prevent tree touching stake.
 - Position: Top tie within 25 mm of top of stake and lower tie approximately halfway down.

590 MULCHING TREES

- Material: Medium grade bark mulch.
 - Purity: Free of pests, disease, fungus and weeds.
 - Recycled content: None permitted.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: In a circular area of 500 mm radius measured from the tree stem.
- Finished level of mulch: 50 mm below adjacent grassed or paved areas.

605A EXISTING VEGETATION/ WEED CLEARANCE

- Surface vegetation clearance: Refer to dwgs 50027501-CBA-1-GF-DR-L-0301- 0304.
- Arisings: As clause 617A 618A & 618B.

617A REMOVING TREES

- Identification: Clearly mark trees and hedges to be removed.
- Work near retained trees: Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Arisings: Shred arisings on site and distribute in landscape areas to be advised by client. Tree trunks: Cut down and move to location as advised by client.
- Tree stumps: Grind tree stumps and roots to a minimum depth of 300 mm below ground level.

618A REMOVING UNDERGROWTH AND HEDGE PLANTING BELOW AND IN CLOSE PROXIMITY TO EXISTING TREES

- Identification: Clearly identify areas of vegetation to be cut down.
- Work near retained trees: Cut down vegetation carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Arisings: Shred arisings on site and distribute in landscape areas to be advised by client.
- Roots: Cut as close to ground as possible and kill with a suitable herbicide immediately after felling.

618B REMOVING UNDERGROWTH AND HEDGE PLANTING AWAY FROM EXISTING TREES

- Identification: Clearly identify areas of vegetation to be cut down.
- Work near retained trees: Cut down vegetation carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Arisings: Shred arisings on site and distribute in landscape areas to be advised by client.
- Roots: Remove mechanically to a minimum depth of 300 mm below ground level.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS**710 MAINTENANCE**

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period.
- Frequency of maintenance visits: Contractor's choice.

720 FAILURES OF PLANTING

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

730 PROTECTIVE FENCING

- Fencing type: General pattern wire mesh fencing, submit proposal.
 - Height: 900 mm.
- Erection: On completion of planting.
- Removal: Fencing will remain the property of the Contractor. Remove and refill post holes following acceptance of plant establishment.

740 CLEANLINESS

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

750A PLANTING MAINTENANCE GENERALLY

- Weed control: Maintain weed free area around each tree and shrub.
 - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - Keep planting beds clear of weeds: By use of approved non-residual herbicides.
- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards.
 - Broken or missing items: Replace.
 - Rubbing: Prevent.
 - Ties: Adjust to accommodate growth.
 - Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - Frequency of checks: Contractor's choice.
- Firming up: Gently firm loosened soil around shrubs. Straighten leaning shrubs.
- Watering: As required to ensure good plant establishment and plant health up to practical completion and to end of defects period.

790 FINAL MULCHING

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

Q41 Barriers/ guardrails

To be read with Preliminaries/ General conditions.

TYPES OF BARRIERS/ GUARDRAILS

240 HANDRAIL SYSTEMS (HR-1 & HR-2)

- System manufacturer: Contractor's choice.
- Material: mild steel, galvanised.
 - Cross section: 50027501-CBA-1-GF-DR-L-3506.
 - Finish: Powder coated RAL 7016 Anthracite Grey .
- Height above ground surface (to upper surface of handrail):
 - Upper handrail: 900mm - 1000 mm, refer to dwg 50027501-CBA-1-GF-DR-L-3506.
 - Lower handrail: Not applicable.
- Accessories: Contractor to complete the design incl. fixings and submit shop drawings for approval.

PERFORMANCE/ INSPECTION/ TESTING

INSTALLATION

430 ERECTION GENERALLY

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

480 CONCRETE FOUNDATIONS FOR POSTS

- Excavations: To have vertical sides. Dispose of all arisings. Blind excavation bottoms with a 50 mm layer of concrete.
- Concrete mix: To BS 8500-2, Designated mix not less than GEN 4 or Standard mix not less than ST5. Do not use admixtures.
- Placing concrete: Fill holes to the specified depth and fully compact. Do not backfill for at least four days.
- Temporary support to posts: Provide for a at least four days after placing concrete.

490 DAMAGE REPAIR TO GALVANIZED SURFACES

- Areas of repair: Minor damage, including fixings and fittings.
 - Total area of repair not to exceed 0.5% of total surface area.
 - Each area not to exceed 1000 mm².
- Renovation: Use low melting point zinc alloy repair rods or powders or at least two coats of zinc-rich paint to BS 4652.

510 PREPARATION FOR SITE PAINTING

- Preparation and application: As soon as possible after installation of barriers/ guardrails.

Q50 Site/street furniture/equipment

To be read with Preliminaries/ General conditions.

GATES, BARRIERS AND PARKING CONTROLS

- 190 BOLLARDS (BO-1) Fixed
- Manufacturer: Woodscape or sim. and equivalent, www.woodscape.co.uk.
 - Product reference: Fixed Hardwood Timber Bollard.
 - Material: FSC Certified Hardwood.
 - Finish as delivered: Shape: Square, Width: 150mm, Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Height above ground: 1000 mm.
 - Special features: 25mm reflective band, Top profile: Weathered (short pyramid).
 - Method of fixing: Mass concrete foundation to contractor's design.
- 190A BOLLARDS (BO-3) Fixed To Temp Car Parking
- Manufacturer: Woodscape or sim. and equivalent, www.woodscape.co.uk.
 - Product reference: Fixed Hardwood Timber Bollard.
 - Material: FSC Certified Hardwood.
 - Finish as delivered: Shape: Square, Width: 100mm, Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Height above ground: 500 mm.
 - Special features: 25mm reflective band, Top profile: Flat.
 - Method of fixing: To manufacturer's recommendations.
- 192 COLLAPSIBLE/ TELESCOPIC BOLLARDS BO-2 Hinge-Down
- Manufacturer: Woodscape or sim. and equivalent, www.woodscape.co.uk.
 - Product reference: Hinge-down Hardwood Timber Bollard.
 - Material: FSC Certified Hardwood.
 - Finish as delivered: Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Height above ground: 1000mm.
 - Special features: 25mm reflective band. Fire brigade packlock and key.
 - Method of fixing: Mass concrete foundation to contractor's design.

SITE AND STREET FURNITURE

- 210A CYCLE STANDS (CS)
- Manufacturer: mmcite or sim. and equivalent.
 - Product reference: STE310 Edgetyre.
 - Material: Galvanised steel.
 - Finish: Galvanised steel with powder paint finish.
 - Colour: RAL 7016 Anthracite Grey.
 - Number of stands: As dwg 50027501-CBA-1-GF-DR-L-3001.
 - Accessories: Protective belt of heavy duty rubber in upper part of bicycle stand.
 - Method of fixing: Base plate bolted to concrete base below paving finishes and to manufacturer's recommendation. Ensure paving finishes conceal concrete foundations..

220 BENCHES (B-2)

- Manufacturer: Public Spaces or sim. and equivalent www.publicspaces.eu.
 - Product reference: Elegance single bench with backrest.
- Material: Seat: FSC French Oak Wood.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
- Size: 1.5 m long.
- Accessories/ Special requirements: Note.
- Method of fixing: On concrete base to manufacturer's details.

220A BENCHES (B-3 Picnic Bench/Table)

- Manufacturer: Sustainable Furniture UK Ltd www.sustainable-furniture.co.uk.
 - Product reference: MX-RP-HD Heavy Duty recycled plastic picnic bench.
- Material: Steel and Timber.
 - Finish: As manufactured.
 - Colour: brown.
- Size: 1500mm (L) x 1300mm (W) x 78mm (H).
- Accessories/ Special requirements: None.
- Method of fixing: On concrete base to manufacturer's recommendation.

INSTALLATION**510 CONCRETE FOUNDATIONS GENERALLY**

- Standard: To BS 8500-2.
- Concrete: Contractor's design.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

515 SETTING COMPONENTS IN CONCRETE

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

530 PRESERVATIVE TREATED TIMBER

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

545 ERECTION OF TIMBER AND PREFABRICATED STRUCTURES

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

550 DAMAGE TO GALVANIZED SURFACES

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

560 SITE PAINTING

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

Q52 Play and sports equipment

To be read with Preliminaries/ General conditions.

GENERAL

115 PLAYGROUND To Pleasure Garden

- Equipment: As dwg 50027501-CBA-1-GF-DR-L-3010, 3011, 3012.
 - System manufacturer: As specified below.
- Surfacing: As dwg 50027501-CBA-1-GF-DR-L-3010, 3012 and impact absorbing surfacing as section Q26 .
- Containment: Mounding, Hedging and Fencing as 50027501-CBA-1-GF-DR-L-3010, 3012 & 4501, Site-won tree trunks as clause D20.175A.
- Accessories: Seating as dwg 50027501-CBA-1-GF-DR-L-3010 and section Q50, planting as section Q30 & Q31..

PRODUCTS

330 CLIMBING FRAME PE-2)

- Standard: To BS EN 1176-1.
 - Manufacturer: Timberplay or sim. and approved.
 - Product reference: Climbing Structure 09, 6.51009.
 - Age range: Manufacturer's standard.
 - Type: Manufacturer's standard.
 - Materials: Wood.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Plan size: Manufacturer's standard.
 - Height: Manufacturer's standard.
 - Features: Manufacturer's standard.
 - Method of fixing: Manufacturer's standard.
- Accessories: Impact absorbing surfacing as dwg 50027501-CBA-1-GF-DR-L-3010 and section Q26 and in accordance with manufacturer's guidance.

355 IMAGINATIVE PLAY STRUCTURE Horse Cart (PE-3)

- Standard: To BS EN 1176-1.
 - Manufacturer: Timberplay or sim. and approved.
 - Product reference: Horse Cart, 4.2414.
 - Age range: Manufacturer's standard.
 - Components: Manufacturer's standard.
 - Materials: Wood.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Highest platform height: Manufacturer's standard.
 - Features: Manufacturer's standard.
 - Method of fixing: Manufacturer's standard.
- Accessories: Impact absorbing surfacing as dwg 50027501-CBA-1-GF-DR-L-3010 and section Q26 and in accordance with manufacturer's guidance.

355A IMAGINATIVE PLAY STRUCTURE Horse (PE-6)

- Standard: To BS EN 1176-1.
 - Manufacturer: Timberplay or sim. and approved.
 - Product reference: Horse, 4.2413.
 - Age range: Manufacturer's standard.
 - Components: Manufacturer's standard.
 - Materials: Wood.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Highest platform height: Manufacturer's standard.
 - Features: Manufacturer's standard.
 - Method of fixing: Manufacturer's standard.
- Accessories: Impact absorbing surfacing as dwg 50027501-CBA-1-GF-DR-L-3010 and section Q26 and in accordance with manufacturer's guidance.

355B IMAGINATIVE PLAY STRUCTURE Willow Dome - Small (PE-9) Ref dwg 50027501-CBA-1-GF-DR-L-3010 & 3012

- Standard: To BS EN 1176-1.
- Manufacturer: Hand Made Places/broxap or sim. and approved, www.handmadeplaces.co.uk.
 - Product reference: Willow Dome, SKU: BX/HMP 550005.
- Age range: Manufacturer's standard.
- Components: Manufacturer's standard.
- Materials: Live willow plant.
 - Finish: None.
 - Colour: Manufacturer's standard.
- Highest platform height: For dimension refer to dwg above.
- Features: Dome to be constructed with 1 nr entrances and 1 'window' openings at heigher level.
- Method of fixing: Manufacturer's standard.

355C IMAGINATIVE PLAY STRUCTURE Stepping Logs (PE-10)

- Standard: To BS EN 1176-1.
- Manufacturer: Timberplay or sim. and approved.
 - Product reference: Stepping Logs, 6.82003 .
- Age range: Manufacturer's standard.
- Components: Manufacturer's standard.
- Materials: Wood.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
- Highest platform height: 400mm.
- Features: Manufacturer's standard.
- Method of fixing: Manufacturer's standard.

355D IMAGINATIVE PLAY STRUCTURE Stepping Logs (PE-11)

- Standard: To BS EN 1176-1.
- Manufacturer: Timberplay or sim. and approved.
 - Product reference: Stepping Logs, 6.82003 .
- Age range: Manufacturer's standard.
- Components: Manufacturer's standard.
- Materials: Wood.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
- Highest platform height: 300mm.
- Features: Manufacturer's standard.
- Method of fixing: Manufacturer's standard.

355E IMAGINATIVE PLAY STRUCTURE Willow Tunnel (PE-7) Ref dwg 50027501-CBA-1-GF-DR-L-3010 & 3012

- Standard: To BS EN 1176-1.
- Manufacturer: Hand Made Places/broxap or sim. and approved, www.handmadeplaces.co.uk.
 - Product reference: Willow Tunnel, SKU: BX/HMP 550004.
- Age range: Manufacturer's standard.
- Components: Manufacturer's standard.
- Materials: Live willow plant.
 - Finish: None.
 - Colour: Manufacturer's standard.
- Highest platform height: For dimension refer to dwgs above, tunnel length: 8m.
- Features: Tunnel to be constructed with 1 nr additional tunnel opening at half way point.
- Method of fixing: Manufacturer's standard.

355F IMAGINATIVE PLAY STRUCTURE Willow Dome - Large (PE-1) Ref dwg 50027501-CBA-1-GF-DR-L-3010 & 3012

- Standard: To BS EN 1176-1.
- Manufacturer: Hand Made Places/broxap or sim. and approved, www.handmadeplaces.co.uk.
 - Product reference: Willow Dome, SKU: BX/HMP 550005.
- Age range: Manufacturer's standard.
- Components: Manufacturer's standard.
- Materials: Live willow plant.
 - Finish: None.
 - Colour: Manufacturer's standard.
- Highest platform height: For dimension refer to dwg above.
- Features: Dome to be constructed with 2 nr entrances and 2 'window' openings at heigher level.
- Method of fixing: Manufacturer's standard.

360A NON-STANDARD PLAY STRUCTURE Boulders (PE-12)

- Standard: To BS EN 1176-1.
- Materials: Glacial Boulders - submit proposals.
 - Finish: Free from rough edges & cracks.
- Size: varies, typically LxWxD 1100mm x 850mm x 600mm.
- Height: 350 - 500mm.
- Method of fixing: As dwg 50027501-CBA-1-GF-DR-L-3012. Contractor to complete the design of concrete footing and dowel fixing for approval.
- Requirement: Contractor to provide photographs of selected boulders for approval prior to delivery. Placement of boulders to be carried out with the Landscape Architect on site.

390 ROCKING EQUIPMENT Jumping Disc (PE-5)

- Standard: To BS EN 1176-1 and -6.
 - Manufacturer: Timberplay or sim. and approved.
 - Product reference: Jumping Disc, 6.06.
 - Age range: Manufacturer's standard.
 - Type: Wobble board.
 - Number of seats: n/a.
 - Materials: Manufacturer's standard.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Features: Manufacturer's standard.
 - Method of fixing: Manufacturer's standard.
- Accessories: Impact absorbing surfacing as dwg 50027501-CBA-1-GF-DR-L-3010 and section Q26 and in accordance with manufacturer's guidance.

- 420 SLIDE To Earth Mound (PE-4)
- Standard: To BS EN 1176-1 and -3.
 - Manufacturer: Timberplay or sim. and approved.
 - Product reference: Stainless steel slide, 3.642.
 - Age range: Manufacturer's standard.
 - Format: Manufacturer's standard.
 - Materials: Stainless steel.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Deck height: Manufacturer's standard.
 - Slide width: Manufacturer's standard.
 - Method of fixing: Manufacturer's standard.
- Accessories: Impact absorbing surfacing as dwg 50027501-CBA-1-GF-DR-L-3010 and section Q26 and in accordance with manufacturer's guidance.
- 440 SWINGING EQUIPMENT Nest Swing (PE-8)
- Standard: To BS EN 1176-1 and -2.
 - Manufacturer: Timberplay or sim. and approved.
 - Product reference: Nest Swing, 6.14520.
 - Age range: Manufacturer's standard.
 - Type: Manufacturer's standard.
 - Frame: Manufacturer's standard.
 - Bays: Manufacturer's standard.
 - Materials: Manufacturer's standard.
 - Finish: Manufacturer's standard.
 - Colour: Manufacturer's standard.
 - Height: Manufacturer's standard.
 - Seats: Nest.
 - Materials: Manufacturer's standard.
 - Ground clearance: Manufacturer's standard.
 - Features: Manufacturer's standard.
 - Method of fixing: Manufacturer's standard.
- Accessories: Impact absorbing surfacing as dwg 50027501-CBA-1-GF-DR-L-3010 and section Q26 and in accordance with manufacturer's guidance.

EXECUTION

- 710 PLAY EQUIPMENT INSTALLATION GENERALLY
- Standard: To manufacturer's written instructions provided in accordance with BS EN 1176-1.
- 720 CONCRETE FOUNDATIONS GENERALLY
- Standard: To BS 8500-2.
 - Concrete: Designated, not less than GEN 1 or Standard prescribed, not less than ST2.
 - Admixtures: Do not use.
 - Foundation holes: Neat vertical sides.
 - Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.
- 730 SETTING COMPONENTS IN EARTH
- Holes: As small as practicable.
 - Components being fixed: Accurately positioned and securely supported.
 - Buried depth (minimum): 600 mm.
 - Earth refilling: Well rammed as filling proceeds.

740 PRESERVATIVE TREATED TIMBER

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

750 DAMAGE TO GALVANIZED SURFACES

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

COMPLETION**910 INSPECTION**

- Standard: To BS EN 1176-1 and in accordance with equipment manufacturer's maintenance and inspection instructions.
- Timing: 2 weeks prior to date when work is expected to be practically complete.
- Period of notice (minimum): 3 working days.

920 CLEANING

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

930 TESTING

- Standard: To BS EN 1176-1.

940 LABELS

- Standard: To BS EN 1176-1.
- Labels: Provide permanent labelling on all types of play equipment.
- Location: Where visible when erected on site.

950 DOCUMENTATION

- Standard: To BS EN 1176-1.
- Contents:
 - Copies of test reports.
 - General product information.
 - Installation information.
 - Inspection and maintenance information.
- Number of copies: 1.
- Submission: 2 weeks prior to date when work is expected to be practically complete.

970 OPERATING TOOLS

- Tools: Supply tools required for operation, maintenance and cleaning purposes.

R12 Below ground drainage systems

To be read with Preliminaries/ General conditions.

GENERAL

- 115 NOTE
Below Ground Drainage Systems to Engineer's details.

PRODUCTS

- 471 ACCESS COVERS AND FRAMES ALL NEW MANHOLE AND INSPECTION CHAMBERS AND REPLACEMENT COVERS FOR EXISTING MANHOLE LOCATIONS
- Standard: To BS EN 124.
 - Types: Recessed covers to receive paving infill.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Material: Steel.
 - Finishes: Hot-dip galvanized.
 - Sizes: to be confirmed on site.
 - Loading grades to BS EN 124: Submit proposals.
 - Edging trims: Stainless steel.
 - Accessories: Solid steel corner lifting bosses.

R13 Land drainage

To be read with Preliminaries/General conditions.

V91 Electrical systems - landscape

To be read with Preliminaries/ General conditions.

- 10 NOTE
External lighting to Engineer's details.

Z11 Purpose made metalwork

To be read with Preliminaries/ General conditions.

PRODUCTS

310 MATERIALS GENERALLY

- Grades of metals, section dimensions and properties: To appropriate British Standards. When not specified, select grades and sections appropriate for the purpose.
- Prefinished metal: May be used if methods of fabrication do not damage or alter appearance of finish, and finish is adequately protected.
- Fasteners: To appropriate British Standards and, unless specified otherwise, of same metal as component being fastened, with matching coating or finish.

FABRICATION

515 FABRICATION GENERALLY

- Contact between dissimilar metals in components: Avoid.
- Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
 - Moving parts: Free moving without binding.
- Corner junctions of identical sections: Mitre.

520 COLD FORMED WORK

- Profiles: Accurate, with straight arrises.

527 WELDING HANDRAILS.

- Welding procedures:
 - Method and standard: Submit proposals.
 - Welding Procedure Specification (WPS): Submit proposals.
- Preparation:
 - Joint preparation: Clean thoroughly.
 - Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
- Jointing:
 - Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
 - Dissimilar metals: Submit proposals.
 - Strength requirements: Welds to achieve design loads.
 - Heat straightening: Submit proposals.
 - Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
 - Tack welds: Use only for temporary attachment.
 - Jigs: Provide to support and restrain members during welding.
 - Filler plates: Submit proposals.
 - Lap joints: Minimum 5 x metal thickness or 25 mm, whichever is greater.
 - Weld terminations: Clean and sound.

FINISHING**710 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK**

- Standard: To BS EN ISO 8501-3.
 - Preparation grade: Submit proposals.
- Butt joints: Smooth, and flush with adjacent surfaces.
- Fillet joints: Neat.
- Grinding: Grind smooth where indicated on drawings.

745 PREPARATION FOR APPLICATION OF COATINGS

- General: Complete fabrication, and drill fixing holes before applying coatings.
- Paint, grease, flux, rust, burrs and sharp arrises: Remove.

780 GALVANIZING

- Standard: To BS EN ISO 1461.
- Preparation:
 - Vent and drain holes: Provide in accordance with BS EN 14713-1 and -2. Seal after sections have been drained and cooled.
 - Components subjected to cold working stresses: Heat treat to relieve stresses before galvanizing.
 - Welding slag: Remove.
 - Component cleaning: To BS EN ISO 8501-3.
 - Grade: Submit proposals.

Z12 Preservative/ fire retardant treatment

To be read with Preliminaries/ General conditions.

120 COMMODITY SPECIFICATIONS

- Standard: In accordance with the Wood Protection Association (WPA) publication 'Industrial wood preservation specification and practice'.

130 PRESERVATIVE TREATMENT SOLUTION STRENGTHS/ TREATMENT CYCLES

- General: Select to achieve specified service life and to suit treatability of specified wood species.

610 MAKING GOOD TO PRESERVATIVE TREATMENT ON SITE

- Preservative solution: Compatible with off-site treatment.
- Application: In accordance with preservative manufacturer's recommendations.

Z21 Mortars

To be read with Preliminaries/ General conditions.

CEMENT GAUGED MORTARS

120 SAND FOR SITE MADE CEMENT GAUGED MASONRY MORTARS

- Standard: To BS EN 13139.
- Grading: 0/2 (FP or MP).
 - Fines content where the proportion of sand in a mortar mix is specified as a range (e.g. 1:1: 5-6):
 - Lower proportion of sand: Use category 3 fines.
 - Higher proportion of sand: Use category 2 fines.
- Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

160 CEMENTS FOR MORTARS

- Cement: To BS EN 197-1 and CE marked.
 - Types:
 - Portland cement, CEM I.
 - Portland limestone cement, CEM II/A-L or CEM II/A-LL.
 - Portland slag cement, CEM II/B-S.
 - Portland fly ash cement, CEM II/B-V.
 - Strength class: 32.5, 42.5 or 52.5.
- White cement: To BS EN 197-1 and CE marked.
 - Type: Portland cement, CEM I.
 - Strength class: 52.5.
- Sulfate resisting Portland cement:
 - Types:
 - To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
 - To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
 - Strength class: 32.5, 42.5 or 52.5.
- Masonry cement: To BS EN 413-1 and CE marked.
 - Class: MC 12.5.

180 ADMIXTURES FOR SITE MADE CEMENT GAUGED MORTARS

- Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
- Other admixtures: Submit proposals.
- Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

190 RETARDED READY TO USE CEMENT GAUGED MASONRY MORTARS

- Standard: BS EN 998-2.
- Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.
 - Type: CL 90S.
- Pigments for coloured mortars: To BS EN 12878.
- Time and temperature limitations: Use within limits prescribed by mortar manufacturer.
 - Retempering: Restore workability with water only within prescribed time limits.

210 MAKING CEMENT GAUGED MORTARS

- Batching: By volume. Use clean and accurate gauge boxes or buckets.
 - Mix proportions: Based on dry sand. Allow for bulking of damp sand.
- Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
 - Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
- Working time (maximum): Two hours at normal temperatures.
- Contamination: Prevent intermixing with other materials.

Z22 Sealants

To be read with Preliminaries/General conditions.

EXECUTION

610 SUITABILITY OF JOINTS

- Presealing checks:
 - Joint dimensions: Within limits specified for the sealant.
 - Substrate quality: Surfaces regular, undamaged and stable.
- Joints not fit to receive sealant: Submit proposals for rectification.

620 PREPARING JOINTS

- Surfaces to which sealant must adhere:
 - Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
 - Clean using materials and methods recommended by sealant manufacturer.
- Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.
- Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.
- Protection: Keep joints clean and protect from damage until sealant is applied.

630 APPLYING SEALANTS

- Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.
- Environmental conditions: Do not dry or raise temperature of joints by heating.
- Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.
- Sealant profiles:
 - Butt and lap joints: Slightly concave.
 - Fillet joints: Flat or slightly convex.
- Protection: Protect finished joints from contamination or damage until sealant has cured.

Z31 Powder coatings

To be read with Preliminaries/ General conditions.

210 WORKING PROCEDURES

- Comply with the follow following standards.
 - Aluminium components: To BS 6496 or BS EN 12206-1.
 - Steel components: To BS EN 13438.
 - Safety standards: To British Coatings Federation 'Code of safe practice - Application of thermosetting powder coatings by electrostatic spraying'.

250 COMPONENT DESIGN

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

310 PRETREATMENT OF ALUMINIUM COMPONENTS

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

320 PRETREATMENT OF STEEL COMPONENTS

- Condition of components to be pretreated:
 - Free from corrosion and damage.
 - All welding and jointing completed and finish off as specified.
 - Free from impurities including soil, grease, oil.
 - Suitable for and compatible with the pretreatment process.
- Conversion coating requirements: To BS EN 13438.
- Rinsing requirements: Use demineralized water. Drain and dry.

430 EXTENT OF POWDER COATINGS

- 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

- Surfaces to receive powder coatings: Free from dust or powder deposits.
- Powder colours: Obtain from one batch of one manufacturer.
- Commencement of powder coating: To be continuous from pretreatment.
- Jig points: Not visible on coated components.
- Curing: Controlled to attain metal temperatures and hold periods recommended by powder coating manufacturer.
- 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.
- Overcoating of components: Not acceptable.

440 PERFORMANCE AND APPEARANCE OF POWDER COATINGS

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

460 STEEL FABRICATIONS

- Unit assembly: Wherever practical, before powder coating.
- Exposure of uncoated background metal: Not acceptable.
- Assembly sealants: Compatible with powder coatings. Obtain approval of colour if sealants are visible after fabrication.

470 FIXINGS

- 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/ REPLACEMENT

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

510 PROTECTION

- Powder coated surfaces of components: Protect from damage during handling and installation, or by subsequent site operations.
- Protective coverings: Must be:
 - Resistant to weather conditions.
 - Partially removable to suit building in and access to fixing points.
- Protective tapes in contact with powder coatings: Must be:
 - Low tack, self adhesive and light in colour.
 - 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.
- Inspection of protection: Carry out monthly. Promptly repair any deterioration or deficiency.

540 COMPLETION

- Protection: Remove.
- Cleaning and maintenance of powder coatings: Carry out in accordance with procedures detailed in powder coating manufacturer and applicator guarantees.



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