

HTA Design LLP

Reading Borough Council

Wensley Road, Reading

Landscape Specification

STAGE 4 - FOR INFORMATION

D

17-09-2021

Regeneration of Wensley Road estate in western Reading comprising 46 new-build dwellings, reconfigured car parking and redesigned central amenity and play space.

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D20

Excavating and filling **UNCHANGED**

Generally/the site

145 Variations in ground water level

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

150 Existing services, features and structures

1. Services: See section A12 for locations.
2. Site features to be retained: See section A12 for details.
3. Structures: See section A34 for details of protection.

Clearance/excavating

164 Tree roots

1. Protected area: Do not cut roots within precautionary protection area.
 - 1.1. Size of area: Refer to Arboriculturist's Tree Protection plan
2. Excavation in protected area
 - 2.1. Method: By hand
 - 2.2. Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
3. Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
4. Cutting
 - 4.1. Make clean smooth cuts with no ragged edges.
 - 4.2. Pare cut surfaces smooth with a sharp knife.
 - 4.3. Treatment of cut roots: Not required
5. Backfill: As dug material, enriched with amelioration as section Q31

168 Site clearance

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

170 Removing small trees, shrubs, hedges and roots

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

175 Felling large trees

1. Definition: Girth over 600 mm.
2. Identification: Clearly mark trees to be removed.
3. Safety: Comply with Forest Industry Safety Accord safety leaflets.
4. Felling: As close to the ground as possible.

5. **Stumps:** Remove mechanically to a minimum depth of 300 mm below ground level; Obtain approval before removing by winching. Do not use other trees as supports or anchors
6. **Work near retained trees:** Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.

180 Chipping and shredding

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

220 Stripping topsoil

1. **General:** Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on drawings.
2. **Depth**
 - 2.1. Remove to an average depth of 150 mm.
 - 2.2. Give notice where the depth of topsoil is difficult to determine.
3. **Handling:** Handle topsoil for reuse or sale in accordance with clause 225.
4. **Around trees:** Do not remove topsoil from below the spread of trees to be retained.
5. **Site storage:** Keep separate from excavated sub-soil

221 Treating topsoil

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

225 Handling topsoil

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

250 Permissible deviations from formation levels

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

270 Foundations generally

1. **Give notice if**
 - 1.1. A natural bearing formation of undisturbed subsoil is not obtained at the depth shown on the drawings.

- 1.2. The formation contains soft or hard spots or highly variable material.

285 Steps in foundation formations

1. Depth of formation below ground level (minimum)
 - 1.1. Existing ground level: As drawings RBC-WLR_HTA_L_XX_00_DR_2900 and RBC-WLR_HTA_L_XX_00_DR_8905
 - 1.2. Finished ground level: As drawing RBC-WLR_HTA_L_XX_00_DR_1902 and 1903
2. Step dimensions
 - 2.1. Distance between steps (minimum): To contractor's proposals
 - 2.2. Height of step (maximum): To contractor's proposals
 - 2.3. Length of overlap (minimum): To contractor's proposals

290 Foundations in made up ground

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

310 Unstable ground

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

330 Unrecorded features

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

370 Underground structures in landscape areas

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

Disposal of materials

450 Water

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

454 Ground water level, spring or running water

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

457 Pumping

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

Filling

500 Proposed fill materials

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

510 Hazardous, aggressive or unstable materials

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

525 Testing of suitability of fill materials before start of filling

1. **Laboratory:** UKAS accredited laboratory
2. **Submit report to:** Structural engineer (two copies)
 - 2.1. **Timing:** 21 days before starting filling
3. **Samples:** Deliver to laboratory as required.
4. **Tests:** For material excavated from the site to be tested to assess suitability for reuse as build-up to play area mounds, especially if contaminated.
5. **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

1. **Surfaces of excavations and areas to be filled:** Free from loose soil, topsoil, organic material, rubbish and standing water.
2. **Freezing conditions:** Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.

3. **Adjacent structures, membranes and buried services**
 - 3.1. Do not overload, destabilise or damage.
 - 3.2. Submit proposals for temporary support necessary to ensure stability during filling.
 - 3.3. Allow 14 days (minimum) before backfilling against in situ concrete structures.
4. **Layers:** Place so that only one type of material occurs in each layer.
5. **Earthmoving equipment:** Vary route to avoid rutting.

535 Compaction generally

1. **General:** Compact fill not specified to be left loose as soon as possible after placing.
2. **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.
3. **Defective areas:** Remove and recompact to full thickness of layer using new material.

540 Benching in fill

1. **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.
2. **New filling:** Spread and compact to ensure maximum continuity with previous filling.

550 Geotextile sheet for Geocells and Tree Pits with Soil Cells

1. **Manufacturer:** Geosynthetics
 - 1.1. **Product reference:** Treetex
2. **Type:** Nonwoven
3. **Polymer type:** Polypropylene
4. **Jointing:** To manufacturer's recommendations
5. **Preparation of subgrade:** Before laying sheet, remove humps and sharp projections. Fill hollows
6. **Protect from**
 - 6.1. Exposure to light.
 - 6.2. Contaminants.
 - 6.3. Materials listed as potentially deleterious by geotextile manufacturer.
 - 6.4. Wind uplift.

571 Geocells

1. **Manufacturer:** Geosynthetics
 - 1.1. **Product reference:** Cellweb TRP 100mm depth with Treetex geotextile separation membrane
2. **Size of cells (length x width x thickness):** As supplied; cell height 100mm
3. **Preparation of subgrade:** Before laying geocells, remove humps and sharp projections, and fill hollows
4. **Fixing/ Connecting:** to manufacturer's recommendations
 - 4.1. **Centres:** to manufacturer's recommendations

610 Compacted filling for landscape areas

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

617 Type 1 unbound mixture

1. Fill To 'Specification for highway works', clauses 801 and 803:
 - 1.1. Crushed rock (other than argillaceous rock).
 - 1.2. Coarse crushed concrete aggregate.
 - 1.3. Recycled aggregates.
 - 1.4. Crushed non-expansive slag to clause 801.2.
 - 1.5. Well-burned non-plastic colliery shale.
2. Filling: To 'Specification for highway works', clause 802.

700 Backfilling around foundations

1. Under oversite concrete and pavings: Hardcore as clause 710.
2. Under grassed or soil areas: Material excavated from the trench, laid and compacted in 300 mm maximum layers.

Bioremediation - Not Used

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

Ω End of Section

F10

Brick/ block walling **UNCHANGED**

Types of walling

110 Clay facing brickwork - RW1, RW2

1. Description: to retaining walls
2. Bricks: To BS EN 771-1.
 - 2.1. Manufacturer: to match architectural specification
 - 2.1.1. Product reference: to match architectural specification
 - 2.2. Recycled content: to match architectural specification
 - 2.3. Special shapes: to match architectural specification
3. Mortar: As section Z21.
 - 3.1. Standard: To BS EN 998-2
4. Bond: to match architectural specification
5. Joints: to match architectural specification
6. Features: Precast concrete coping as clause F31/5

Testing

410 Compressive strength of mortar for each walling type

1. Testing authority: A UKAS Accredited laboratory
2. Test method: To BS EN 1015-11.
3. Preliminary tests procedure As follows:
 - 3.1. Specimens
 - 3.1.1. Number of specimens: 6.
 - 3.1.2. Type: 40 x 40 x 160 mm prism.
 - 3.1.3. Preparation: At least six weeks before walling commences.
 - 3.2. Specimen testing: Half of specimens at 7 days. Remainder at 28 days.
 - 3.2.1. Retarded mixes: Extend curing periods to include retardation period.
 - 3.3. Response to result: If mean compressive strength at 28 days is not within the range given below repeat tests with more suitable sand or next higher mortar class.
4. Site tests procedure: As follows.
 - 4.1. Number of specimens: Six per 150m² of walling or per storey whichever the more frequent.
 - 4.2. Specimen types: As preliminary test, but prepared during construction.
 - 4.3. Specimen testing: Half of specimens at 7 days. Remainder at 28 days.
 - 4.3.1. Retarded mixes: Extend curing periods to include retardation period.
5. Required test mean compressive strength at 28 days (N/mm²) To be within the following range:
 - 5.1. Walling type: F10/110
 - 5.1.1. Preliminary tests minimum (N/mm²): to engineer's requirements
 - 5.1.2. Preliminary tests maximum (N/mm²): to engineer's requirements
 - 5.1.3. Site tests minimum (N/mm²): to engineer's requirements
 - 5.1.4. Site tests maximum (N/mm²): to engineer's requirements
6. Results: Submit.

415 Fresh mortar cement content

1. **Test method:** BREMORTEST in accordance with Building Research Establishment Information Paper 8/89
2. **Test specimens:** Test mortar for the following wall types: F10/ 110 .
3. **Results:** Submit.

Workmanship generally

430 Conditioning of clay bricks and blocks

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

460 Mortar designations

1. **Mix proportions** For a specified designation select a mix from the following:
 - 1.1. **Designation (i) (BS EN 998-2 M12 equivalent)**
 - 1.1.1.1:0-¼:3 (Portland cement:lime:sand with or without air entraining additive).
 - 1.1.2.1:3 (Portland cement:sand and air entraining additive).
 - 1.2. **Designation (ii) (BS EN 998-2 class M6 equivalent)**
 - 1.2.1.1½:4-5 (Portland cement:lime:sand with or without air entraining additive).
 - 1.2.2.1:3 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.2.3.1:2½-3½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.2.4.1:3-4 (Portland cement:sand and air entraining additive).
 - 1.3. **Designation (iii) (BS EN 998-2 class M4 equivalent)**
 - 1.3.1.1:1:5-6 (Portland cement:lime:sand with or without air entraining additive).
 - 1.3.2.1:3½-4 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.3.3.1:4-5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.3.4.1:5-6 (Portland cement:sand and air entraining additive).
 - 1.4. **Designation (iv) (BS EN 998-2 class M2 equivalent)**
 - 1.4.1.1:2:8-9 (Portland cement:lime:sand with or without air entraining additive).
 - 1.4.2.1:4½ (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.4.3.1:5½-6½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.4.4.1:7-8 (Portland cement:sand and air entraining additive).
2. **Batching:** Mix proportions by volume.
3. **Mortar type:** Continuous throughout any one type of masonry work.

500 Laying generally

1. **Mortar joints:** Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
2. **AAC block thin mortar adhesive and gypsum block adhesive joints:** Fill vertical joints. Lay blocks on a full bed.
3. **Clay block joints**
 - 3.1. **Thin layer mortar:** Lay blocks on a full bed.

- 3.2. Interlocking perpend: Butted.
- 4. Bond where not specified: Half lap stretcher.
- 5. Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

520 Accuracy

- 1. Courses: Level and true to line.
- 2. Faces, angles and features: Plumb.
- 3. Permissible deviations
 - 3.1. Position in plan of any point in
 - 4. relation to the specified building
 - 5. reference line and/ or point at
 - 6. the same level ± 10 mm.
 - 6.1. Straightness in any 5 m length ± 5 mm.
 - 6.2. Verticality up to 3 m height ± 10 mm.
 - 6.3. Verticality up to 7 m height ± 14 mm.
 - 6.4. Overall thickness of walls ± 10 mm.
 - 6.5. Level of bed joints up to 5 m
 - 7. (brick masonry) ± 11 mm.
 - 7.1. Level of bed joints up to 5 m
 - 8. (block masonry) ± 13 mm.

560 Coursing brickwork

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

561 Coursing brickwork with existing

- 1. Gauge: Line up with existing brick courses.

580 Laying frogged bricks

- 1. Single frogged bricks: Frog uppermost.
- 2. Double frogged bricks: Larger frog uppermost.
- 3. Frog cavity: Fill with mortar.

585 Laying cellular bricks

- 1. Orientation: Cavities downward.

615 Brickwork to receive asphalt dpc

- 1. Substrate: Mortar bed finished flush, smooth and level.

620 Block bonding new walls to existing

- 1. Pocket requirements Formed as follows:
 - 1.1. Width: Full thickness of new wall.
 - 1.2. Depth (minimum): 100 mm.
 - 1.3. Vertical spacing
 - 1.3.1. Brick to brick: 4 courses high at 8 course centres.
 - 1.3.2. Block to block: Every other course.
- 2. Pocket joints: Fully filled with mortar.

635 Jointing

1. **Profile:** Consistent in appearance.

645 Accessible joints not exposed to view

1. **Jointing:** Struck flush as work proceeds.

665 Pointing

1. **Description:** to walling type F10/110
2. **Joint preparation:** Remove debris. Dampen surface.
3. **Mortar:** As section Z21.
 - 3.1. **Standard:** To BS EN 998-2
4. **Profile:** to match architectural specification

690 Adverse weather

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

Additional requirements for facework

710 The term facework

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

730 Brick/ Concrete block samples

1. **General:** Before placing orders with suppliers submit for approval of appearance labelled samples of the following: facing bricks .
2. **Selection of samples:** Representative of the range in variation of appearance.

760 Appearance

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

780 Ground level

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

790 Putlog scaffolding

1. **Use:** Not permitted in facework.

800 Toothed bond

1. **New and existing facework in same plane:** Bond together at every course to achieve continuity.

830 Cleanliness

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

Ω End of Section

F31

Precast concrete sills/ lintels/ copings/ features **UNCHANGED**

Clauses

5 Designated concrete precast

1. **Description:** Copings. Sizes as drawing RBC-WLR_HTA_L_XX_00_DR_8905
2. **Concrete:** Designated to BS 8500-2: RC30.
3. **Reinforcement:** None
4. **Cover to reinforcement (nominal):** None
5. **Finish to visible faces:** Lightly acid etched; colour to match architectural lintels; all exposed edges to have 15mm arrises
6. **Other requirements:** Colours to be confirmed through sample submissions

20 Moulds

1. **Permissible fabrication and operating tolerances:** Length 0 to +6 mm, other dimensions ± 3 mm.

30 Casting and curing

1. **Placement of concrete:** Thoroughly compact.
2. **Immature components:** Avoid movement, vibration, overloading, physical shock, rapid cooling and thermal shock.
3. **Protection from weather:** Do not expose panels to direct sunlight and drying winds until at least five days after casting.

32 Cutting

1. **Cutting of precast concrete components:** Not permitted.

35 Conditions for separate facing and backing mixes

1. **Difference in cement content:** Not greater than 80 kg/m³.
2. **Thickness of facing mix (minimum):** 10 mm greater than nominal maximum aggregate size, and not less than 25 mm.
3. **Location of reinforcement:** Not less than 20 mm away from the interface between mixes.
4. **Compaction of facing and backing mix:** Carry out to create monolithic construction.

40 Laying

1. **Mortar for bedding and jointing:** As section Z21.
2. **Bedding components:** On full bed of mortar.
3. **Bedding one piece sills/ thresholds:** Leave clear of mortar except at end bearings and beneath masonry mullions.
 - 3.1. **On completion:** Point with mortar to match adjacent work.

Ω End of Section

L37

External stair, ramps, handrail and balustrades systems

UNCHANGED

General

150 Handrail R1

1. Description: to steps
2. System manufacturer: Submit design and cost proposals
3. Material: galvanised mild steel
 - 3.1. Cross section: 25mm x40mm hollow section handrail
 - 3.2. Finish: Colourgalv RAL 7016 Anthracite Grey
4. Height (to upper surface of handrail)
 - 4.1. Above pitch line: 900mm
 - 4.2. Above landing: 900mm
5. Accessories: None
6. Drawings:: As drawing RBC-WLR_HTA_L_XX_00_DR_8905

System performance - Not Used

Products

310 Precast concrete step unit - ST1

1. Description: Precast concrete step unit with exposed granite aggregate and integrated nosing delineation strip
2. Manufacturer: Tobermore
 - 2.1. Product reference: Granite Step Unit
3. Standard: To BS EN 771-2 and -3.
4. Size
 - 4.1. Surface width: 1000mm
 - 4.2. Going: 350 and 400mm (top step)
 - 4.3. Rise: 150mm
5. Colour: Silver
6. Finish: Exposed aggregate
 - 6.1. Slip resistance value of integral tread - water wet (minimum): Rz of 20 µm to BS 1134 PTV of 49 to BS 7976
 - 6.2. Slip resistance value of integral nosing - water wet (minimum): PTV of 49 to BS 7976
 - 6.2.1. Colour of integral nosing: Black

Fabrication

510 Fabrication generally

1. Design: Complete the detailed design and obtain approval prior to commencing fabrication.
2. Shop drawings: Submit.
3. Structural calculations: Submit.
4. Frameworks: Assemble and brace, including temporary members required for installation.

5. Contact between dissimilar metals: Avoid.
6. Fixings: Fully bolt together. Tighten bolts.
7. Temporary support: Do not subject members to non-design loadings.

Execution

620 Concrete foundations generally

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

630 Setting components in concrete

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

662 Adverse weather

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

Completion

910 Inspection

1. Timing: Two weeks after request by contract administrator
2. Period of notice (minimum): 3 working days.

915 Slip resistance testing

1. Surfaces to be tested: L37/ 310.
 - 1.1. Surface condition: Dry and wet
2. Timing: As agreed with contract administrator
3. Period of notice (minimum): 3 working days.
4. Test standard: To BS 7976
 - 4.1. Testing authority: A UKAS accredited laboratory

- 4.2. Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: Contract administrator.
- 4.3. Report: Submit.
 - 4.3.1.Format: As required under BS 7976

920 Documentation

- 1. Contents
 - 1.1. Copies of structural design calculations/ test reports.
- 2. General product information.
 - 2.1. Installation information.
 - 2.2. Inspection and maintenance reports.
- 3. Number of copies: two
- 4. Submission: Two weeks after request by contract administrator

Ω End of Section

N91

External signage and interpretation **UNCHANGED**

Signage outline

120 Bespoke signage system

1. **Description:** Directional/Wayfinding and Interpretative Signage
2. **Function:** Direction; Interpretation; Wayfinding
3. **Sign type:** Directional Sign FT8a and Interpretation Sign FT8b. As drawing RBC-WLR_HTA_L_XX_00_DR_8903
4. **Products/ Integral features:** Posts for external signs
5. **Materials:** Aluminium Vitreous enamel
6. **Electrical supplies:** Not required

System performance

205 Design of signage systems

1. **Description:** to engineer's requirements
2. **Design:** Complete detailed design and submit before commencing work.
3. **Proposals:** Submit drawings, schedules, technical information, calculations and manufacturer's literature before commencing work.

210 External signage generally

1. **Signage systems generally:** Complete to BS 559, including components, inserts, accessories and fixings necessary to complete the system.
2. **External signage:** To BS 559, clause 6.1.
3. **Content:** Signs including facing information, components, inserts, accessories and fixings necessary to complete the system.
4. **Wind loads:** To BS EN 1991-1-4.

215 Design life

1. **Description:** Directional/Wayfinding and Interpretative Signage
2. **Duration:** 10 years
 - 2.1. Subject to reasonable wear and tear.
3. **Environment:** Road and Park
4. **Condition of use:** Subject to regular maintenance.

Products

305 Signage products generally

1. **Materials:** To BS 559.
2. **Colorimetric and photometric properties:** To BS ISO 3864-4.
3. **Fabricated letters:** To BS 559, clause 6.6.
4. **Fixings:** To BS 559, clause 6.11 and section Z12.

310 Posts for external signs - Directional Sign FT8a

1. **Description:** Directional Sign

2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:** Submit proposals
3. **Material:** 12mm thick aluminium panel
4. **Size:** As drawing RBC-WLR_HTA_L_XX_00_DR_8903
5. **Finish:** Powder coated as section Z31
6. **Colour:** RAL 7016
7. **Base:** Galvanized steel plates secured by collar and bolts
8. **Method of setting post to ground or base:** Base plate secured with bolts onto concrete foundation

311 Posts for external signs - Directional Sign FT8B

1. **Description:** Interpretation Sign
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:** Submit proposals
3. **Material:** 12mm thick aluminium panel
4. **Size:** Size and profile as drawing RBC-WLR_HTA_L_XX_00_DR_8903
5. **Finish:** Powder coated as section Z31
6. **Colour:** RAL 7016
7. **Base:** Galvanized steel plates with welded gusset and secured by bolts
8. **Method of setting post to ground or base:** Base plate secured with bolts onto concrete foundation
9. **Accessories:** Timber backing board chemically bonded to vitreous enamel try and aluminium panel

Materials

410 Aluminium

1. **Description:** Directional/Wayfinding and Interpretative Signage
2. **Standards:** To relevant parts of BS EN 515 and BS EN 12020-2.
 - 2.1. **Mechanical properties of extruded rod/ bar, tube and profiles:** To BS EN 755-2.
 - 2.2. **Tolerances on dimensions and form of seamless tubes:** To BS EN 755-7.
 - 2.3. **Profiles, tolerances on dimensions and form:** To BS EN 755-9.
 - 2.4. **Structural members:** In accordance with BS EN 1999-1-1.
 - 2.5. **Aluminium sheet:** To BS EN 573-3.
3. **Alloy, temper and thickness:** Suitable for the application and specified finish.
4. **Component thickness:** 12mm
5. **Perimeters:** Radiused corners
6. **Finish:** Polyester powder coated, as section Z31

465 Vitreous enamel

1. **Description:** To Interpretation Sign FT8b
2. **Standards**
 - 2.1. **Zinc and zinc alloys:** To BS EN 1179.
3. **Base material:** Aluminium
4. **Finish:** Opaque
5. **Component thickness:** 2 mm
6. **Perimeters:** Radiused corners
7. **Additional requirements:** Backing board as drawing RBC-WLR_HTA_L_XX_00_DR_8903

Fabrication

505 Signage samples

1. Sign type: FT8a and FT8b
 - 1.1. Action: Submit labelled samples.
 - 1.2. Conformity: Retain samples on site for the duration of the Contract or until instructed to remove.
 - 1.3. Delivered product: To conform with labelled samples.

Execution/ erection/ installation

605 Method of fixing signs

1. Description: Signs FT8a and FT8b
2. Method of fixing As drawing RBC-WLR_HTA_L_XX_00_DR_8903.

610 Fixing signs generally

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

Completion

905 Inspection of signs

1. Standard for timber structures: In accordance with BS EN 1995-1-1.
2. Timing: Two weeks after request by contract administrator
3. Period of notice (minimum): Three working days.
4. Maintenance inspection: Check and tighten fixings 6-8 weeks after completion of structure.
5. Access: Provide access for inspection and maintenance of luminaires and other technologies.

910 Testing of signs and structures

1. Standard for testing timber structures: In accordance with BS EN 1995-1-1.
2. Evaluation of conformity for road traffic signs: To BS EN 12899-1, section 10.

920 Documentation

1. Submit
 - 1.1. Copies of structural design calculations/ test reports.

- 1.2. General product information.
- 1.3. Installation information.
- 1.4. Inspection and maintenance reports.
- 1.5. Manufacturer's maintenance instructions.
- 1.6. Guarantees, warranties, test certificates, record schedules and log books.
2. **Number of copies:** two
3. **Submission:** Two weeks after request by contract administrator

Ω End of Section

Q10

Kerbs/ edgings/ channels/ paving accessories **UNCHANGED**

Types of kerbs/edgings and channels

110 Proprietary precast concrete 100mm up stand kerb E1

1. Manufacturer: Tobermore
 - 1.1. Web: www.tobermore.co.uk
 - 1.2. Email: sales@tobermore.co.uk
2. Product reference: Country Kerb
3. Size: 255 x 145 x 915 mm
4. Finish: Granite Aggregate
5. Accessories: As required

110 Proprietary precast concrete flush kerb E2

1. Manufacturer: Tobermore
 - 1.1. Web: www.tobermore.co.uk
 - 1.2. Email: sales@tobermore.co.uk
2. Product reference: Country Kerb
3. Size: 255 x 145 x 915 mm
4. Finish: Granite Aggregate
5. Accessories: As required

110 Proprietary precast concrete dropper kerb E3

1. Manufacturer: Tobermore
 - 1.1. Web: www.tobermore.co.uk
 - 1.2. Email: sales@tobermore.co.uk
2. Product reference: Country Kerb
3. Size: 255 x 145 x 915 mm
4. Finish: Granite Aggregate
5. Accessories: As required

110 Proprietary precast concrete edging E5

1. Manufacturer: Tobermore
 - 1.1. Web: www.tobermore.co.uk
 - 1.2. Email: sales@tobermore.co.uk
2. Product reference: Country Edge
3. Size: 150 x 75 x 900 mm
4. Finish: Granite Aggregate

200 Aluminium Edging - E4

1. Description: Flush aluminium edging to resin bound gravel and bound rubber mulch surfaces as shown on general arrangements. Used in areas with typical pavement makeup.
2. Manufacturer: Kinley
 - 2.1. Product reference: AluExcel 100mm Flexible

3. Size: 100mm
4. Type/ Material: Aluminium
 - 4.1. Finish: Natural
 - 4.2. Colour: Natural
5. Accessories: As per manufacturer's recommendations
6. Bedding: As drawing RBC-WLR_HTA_L_XX_00_DR_8902

Roads/paving accessories/ marking/ demarcation

305 Recessed Tree Grilles

1. Manufacturer: Green Blue Urban
 - 1.1. Product reference: Castle 15A
2. Size: 1500 x1500mm
3. Material: Galvanized steel
4. Finish: Gavanised
5. Colour: Natural
6. Bedding/ fixing: As drawing RBC-WLR_HTA_L_XX_00_DR_8930
7. Accessories: Irrigation ports and covers

Laying

510 Laying kerbs, edgings and channels

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

520 Adverse weather

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

530 Concrete for foundations, races and haunching

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

540 Cement mortar bedding

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

547 Bedding/backing of units on fresh concrete races

1. Standard: To BS 7533-6.

550 Kerb dowels

1. Dowels: Steel bar to BS 4482.
 - 1.1. Size: 12 mm diameter, 150 mm long.
2. Installation of dowels: Vertically into foundation while concrete is plastic.
 - 2.1. Centres: To suit holes in kerbs.
 - 2.2. Projection: 75 mm.
3. Grouting of holes in kerbs: Filled with 1:3 cement:sand mortar finished flush.

560 Haunching dowels

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

570 Channels

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

580 Drainage channel systems

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

590 Drainage channel systems with built in fall

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

600 Radius kerbs/ channels

1. Usage: Radii of 15 m or less.

610 Angle kerbs

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

620 Accuracy

1. Deviations (maximum)
 - 1.1. Level: ± 6 mm.

- 1.2. Horizontal and vertical alignment: 3 mm in 3 m.

625 Regularity of paved surfaces

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

630 Narrow mortar joints

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

640 Tooled mortar joints

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

641 Tooled coloured mortar joints

1. Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and raked out to a depth of 10 mm for pointing.
 - 1.1. Joint width: 6 mm.
2. Pointing: Joints refilled and tooled to a neat flush profile.
 - 2.1. Pointing mortar: 1:3 cement:sand.
 - 2.2. Pigment colour: Select from list

650 Sealant movement joints

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

Ω End of Section

Q22

Asphalt roads/ pavings **UNCHANGED**

Types of paving

140 PT3 - Bitmac - Hot rolled asphalt paving

1. Description: to roads and car parks - refer to General Arrangments
2. Standard: Reading Borough City Council Highways Design Guide
3. Subgrade improvement layer: To Engineer's Specification
 - 3.1. Compacted thickness: To Engineer's Specification
4. Geotextile: Sheet
 - 4.1. Manufacturer: Submit proposals
 - 4.1.1. Product reference: Submit proposals
5. Granular sub-base: To Engineer's Specification
 - 5.1. Compacted thickness: To Engineer's Specification
6. Base: To Engineer's Specification
 - 6.1. Paving grade: Not applicable
 - 6.2. Compacted thickness: To Engineer's Specification
7. Binder course: To Engineer's Specification
 - 7.1. Paving grade: Not applicable
 - 7.2. Compacted thickness: To Engineer's Specification
8. Surface course: To Engineer's Specification
 - 8.1. Paving grade: Not applicable
 - 8.2. Slip/ Skid resistance: PTV to BS 7976-2 of 49 (water) wet
 - 8.3. Compacted thickness: To Engineer's Specification
9. Reclaimed content
 - 9.1. Standard: To BS EN 13108-8.
 - 9.2. Value (maximum): Submit proposals
10. Surface treatment: 10 mm uncoated chippings
11. Other requirements

180 Surface treatment to existing paving

1. Description: to roads and footpaths
2. Base: existing asphalt
3. Preparation: Cut out depressions, fill to match existing surface and compact.
4. Surface to receive dressing: Clean and dry. All patching complete.
5. Binder: Submit proposals
6. Finish: To match existing
 - 6.1. Slip/ skid resistance: Submit proposals

Preparatory work/ requirements

220 Bituminous materials generally

1. Suppliers' names: Submit.
 - 1.1. Timing (minimum): Two weeks before starting work.

2. **Test certificates** At the time of delivery for each manufacturing batch submit certificate:
 - 2.1. Confirming compliance with this specification and the relevant standard.
 - 2.2. Stating full details of composition of mix.

240 Acceptance of surfaces

1. **Surface:** Sound, clean and suitably close textured.
2. **Level tolerances:** To BS 594987.
3. **Kerbs and edgings:** Complete, adequately bedded and haunched and to the required levels.

250 Abutments

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

Laying

310 Laying generally

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

320 Adverse weather

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

330 Levels

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

350 Contractor's use of pavements

1. **Before use**
 - 1.1. **Timing:** allow newly laid sections to cool before trafficking.
 - 1.2. **Open-grained surface:** Fill with 0/4 mm size coated grit. Remove surplus.
 - 1.3. **Finish:** Uncoated chipping and binder surface treatment.
2. **Preparation for final surfacing**

- 2.1. Timing: Defer laying until as late as practicable.
- 2.2. Immediately before laying final surfacing: Clean and make good the base/ binder course. Allow to dry.
- 2.3. Adhesion: Submit proposals
 - 2.3.1. Application rate: As manufacturer's recommendation
 - 2.3.2. Accuracy: Uniform, without puddles.
- 2.4. Finishing: Allow emulsion to break completely before applying surface.

360 Uncoated chippings for surface treatment

1. Chippings: Clean aggregate to BS EN 13043 and PD 6682-2, size 2.8/6.3, grading category Gc85/15.
 - 1.1. Type/ Source: White spar
2. Binder
 - 2.1. Cutback bitumen to BS EN 12591 or bitumen emulsion to BS 434-1.
 - 2.2. Do not use cut-back bitumen at temperatures below 15°C.
 - 2.3. Do not use modified binders without prior approval.
3. Application
 - 3.1. Binder application rate: In accordance with TRL Road Note 39. Adjust rate for modified binders in accordance with manufacturer's instructions.
 - 3.2. Coverage: 100–105% shoulder to shoulder to BS 598-1.
 - 3.3. Compaction: Roll. Do not crush chippings.
4. Completion
 - 4.1. Before trafficking, remove excess chippings.
 - 4.2. Carry out further removal of loose chippings disturbed by traffic as necessary.

Completion

390 Documentation

1. Standard: BS EN 13108-4
 - 1.1. Declaration of conformity: Submit.
2. Number of copies: 2
3. Submission: Two weeks prior to date when Contractor expects work to be complete

395 Slip resistance testing

1. Surfaces to be tested: Q22/140
 - 1.1. Surface condition: Dry and wet
2. Timing: As agreed with contract administrator
3. Period of notice (minimum): 3 working days.
4. Test standard: To BS 7976-2
 - 4.1. Testing authority: A UKAS accredited laboratory
 - 4.2. Report: Submit.
 - 4.2.1. Format: As required under BS 7976

Ω End of Section

Q23

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

UNCHANGED

Types of surfacing

110 Self binding gravel

1. Description: to internal aperture of recessed tree grilles
2. Subgrade improvement layer: Not required
3. Geotextile: Not required
4. Granular sub-base: Not required
5. Blinding to sub-base: Not required
6. Surface course: Self binding gravel
 - 6.1. Type: CEDEC
 - 6.2. Source: CED of Castle Cary
 - 6.3. Colour: Gold
 - 6.4. Size: As supplied
 - 6.5. Compacted thickness: As drawing RBC-WLR_HTA_L_XX_00_DR_8930
7. Completion: Lightly compact to produce a firm, regular surface, with final level flush with top of recessed tree grille

225 PT5 - Proprietary resin bound gravel

1. Description: to footpath
2. Subgrade improvement layer: As drawing RBC-WLR_HTA_L_XX_00_DR_8930
3. Geomembrane: Not required
 - 3.1. Manufacturer: Submit proposals
 - 3.1.1. Product reference: Submit proposals
4. Granular sub-base: Type 1 unbound mixture, as section Q20
 - 4.1. Compacted thickness: Varies; refer to drawing RBC-WLR_HTA_L_XX_00_DR_8930
5. Water collection: Not required
6. Geotextile: Sheet
 - 6.1. Manufacturer: Submit proposals
 - 6.1.1. Product reference: Submit proposals
7. Base course: Asphalt binder course, as drawing RBC-WLR_HTA_L_XX_00_DR_8930
8. Surface course
 - 8.1. Manufacturer: Addagrip Terraco Ltd
 - 8.1.1. Product reference: Addaset Resin Bound Porous Decorative Surfacing
 - 8.2. Slip/ skid resistance: PTV to BS 7976-2 of 49 (water) wet
 - 8.3. Binder: As per manufacturer's recommendations
 - 8.4. Chippings: 6mm
 - 8.4.1. Colour: Dorset Gold
 - 8.5. Aggregate size: 6mm
9. Application: Thoroughly mixed and uniformly spread.
 - 9.1. Spreading rate: To manufacturer's recommendations

- 9.2. Thickness: To manufacturer's recommendations
- 9.3. Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use.

Laying

315 Materials

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

320 Samples

1. Submit: Representative samples of all aggregates.

340 Laying generally

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

350 Cold weather working

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

360 Drainage falls

1. Sealed surfaces
 - 1.1. Falls and cross falls (minimum): 1:40.
 - 1.2. Camber (minimum): 1:50.
2. Unsealed surfaces (minimum): 1:30.

380 Laying granular surfaces in pedestrian areas

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

390 Protection from traffic and plant

1. Paved areas: Restrict access to prevent damage.

Completion

400 Slip resistance testing

1. Surfaces to be tested:
 - 1.1. Surface condition:
2. Timing:
3. Period of notice (minimum): 3 working days.
4. Test standard:

- 4.1. Testing authority:
- 4.2. Witnessing/ Certification: Arrange for tests to be witnessed/ certified by:
- 4.3. Report: Submit.
- 4.4. Format:

Ω End of Section

Q24

Interlocking brick/ block roads/ pavings **UNCHANGED**

Types of paving

110 Pre cast concrete block paver - PT1

1. Subgrade improvement layer: To Engineer's specification
 - 1.1. Compacted thickness: To Engineer's specification
2. Geotextile: To Engineer's specification
 - 2.1. Manufacturer: To Engineer's specification
 - 2.1.1. Product reference: To Engineer's specification
3. Granular sub-base: To Engineer's specification
 - 3.1. Compacted thickness: To Engineer's specification
4. Laying course
 - 4.1. Material: In accordance with BS 7533-3.
 - 4.1.1. Category: To Engineer's specification
 - 4.2. Method of screeding, in accordance with BS 7533-3: To Engineer's specification
 - 4.3. Nominal thickness after compaction: To Engineer's specification
5. Blocks: To BS EN 1338.
 - 5.1. Manufacturer: Marshalls
 - 5.1.1. Product reference: Tegula
 - 5.2. Sizes: 160 x 240 x 80mm
 - 5.3. Special blocks: As required
 - 5.4. Arrises: As supplied
 - 5.5. Colour/ Finish: Pennant Grey, Charcoal, and Burnt Ochre
 - 5.6. Recycled content: As supplied
 - 5.7. Requirements: To Engineer's specification
 - 5.7.1. Freeze/ thaw resistance: To Engineer's specification
 - 5.7.2. Abrasion resistance: To Engineer's specification
 - 5.7.3. Slip/ Skid resistance: To Engineer's specification
6. Jointing
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.2. Joint width: 2-5 mm.
7. Sealer/ Stabilizer: To Engineer's specification
8. Setting out
 - 8.1. Bond: Footpaths: stretcher
Carriageways and crossings with ramps: 90 degree herringbone
Demarcations to parking bays: stretcher and soldier.
Refer to typical detail drawing RBC-WLR_HTA_L_XX_00_DR_8901
9. Accessories: As required
10. Notes: Utilise in-board cutting to ensure that no unit less than a 1/3rd of original size is laid.

110 Pre cast concrete block paver - PT1 P

1. Subgrade improvement layer: To Engineer's specification
 - 1.1. Compacted thickness: To Engineer's specification

2. Geotextile: To Engineer's specification
 - 2.1. Manufacturer: To Engineer's specification
 - 2.1.1. Product reference: To Engineer's specification
3. Granular sub-base: To Engineer's specification
 - 3.1. Compacted thickness: To Engineer's specification
4. Laying course
 - 4.1. Material: In accordance with BS 7533-3.
 - 4.1.1. Category: To Engineer's specification
 - 4.2. Method of screeding, in accordance with BS 7533-3: To Engineer's specification
 - 4.3. Nominal thickness after compaction: To Engineer's specification
5. Blocks: To BS EN 1338.
 - 5.1. Manufacturer: Tobemore
 - 5.1.1. Product reference: Tegula Priora
 - 5.2. Sizes: 120 x 240 x 80mm
 - 5.3. Special blocks: As required
 - 5.4. Arrises: As supplied
 - 5.5. Colour/ Finish: Pennant Grey, Charcoal, and Burnt Ochre
 - 5.6. Recycled content: As supplied
 - 5.7. Requirements: To Engineer's specification
 - 5.7.1. Freeze/ thaw resistance: To Engineer's specification
 - 5.7.2. Abrasion resistance: To Engineer's specification
 - 5.7.3. Slip/ Skid resistance: To Engineer's specification
6. Jointing
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.2. Joint width: 2-5 mm.
7. Sealer/ Stabilizer: To Engineer's specification
8. Setting out
 - 8.1. Bond: Footpaths: stretcher
Carriageways and crossings with ramps: 90 degree herringbone
Demarcations to parking bays: stretcher and soldier.
Refer to typical detail drawing RBC-WLR_HTA_L_XX_00_DR_8901
9. Accessories: As required
10. Notes: Utilise in-board cutting to ensure that no unit less than a 1/3rd of original size is laid.

111 Pre cast concrete block paver - PT2

1. Subgrade improvement layer: To Engineer's specification
 - 1.1. Compacted thickness: To Engineer's specification
2. Geotextile: To Engineer's specification
 - 2.1. Manufacturer: To Engineer's specification
 - 2.1.1. Product reference: To Engineer's specification
3. Granular sub-base: To Engineer's specification
 - 3.1. Compacted thickness: To Engineer's specification
4. Laying course
 - 4.1. Material: In accordance with BS 7533-3.
 - 4.1.1. Category: To Engineer's specification

- 4.2. Method of screeding, in accordance with BS 7533-3: To Engineer's specification
- 4.3. Nominal thickness after compaction: To Engineer's specification
- 5. Blocks: To BS EN 1338
 - 5.1. Manufacturer: Tobemore
 - 5.1.1. Product reference: Artro
 - 5.2. Sizes: 55 x 220 x 80mm
 - 5.3. Special blocks: As required
 - 5.4. Arrises: As supplied
 - 5.5. Colour/ Finish: Platinum
 - 5.6. Recycled content: As supplied
 - 5.7. Requirements: To Engineer's specification
 - 5.7.1. Freeze/ thaw resistance: To Engineer's specification
 - 5.7.2. Abrasion resistance: To Engineer's specification
 - 5.7.3. Slip/ Skid resistance: To Engineer's specification
- 6. Jointing
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.2. Joint width: 2-5 mm.
- 7. Sealer/ Stabilizer: To Engineer's specification
- 8. Setting out
 - 8.1. Bond: 90 degree herringbone.
Refer to typical detail drawing RBC-WLR_HTA-L_DR_8901 and 8908
- 9. Accessories: As required
- 10. Notes: Utilise in-board cutting to ensure that no unit less than a 1/3rd of original size is laid.

130 Natural stone paving - PT4

- 1. Subgrade improvement layer: To Engineer's specification
 - 1.1. Compacted thickness: To Engineer's specification
- 2. Granular sub-base: To Engineer's specification
 - 2.1. Compacted thickness: To Engineer's specification
- 3. Geotextile: To Engineer's specification
 - 3.1. Manufacturer: To Engineer's specification
 - 3.1.1. Product reference: To Engineer's specification
- 4. Laying course
 - 4.1. Material: In accordance with BS 7533-7, clause 5.1.1.1.
 - 4.2. Compaction: In accordance with BS 7533-7, clauses 8.4.1 and 11.1 and Annex E.
 - 4.3. Nominal thickness after compaction: To Engineer's specification
- 5. Setts
 - 5.1. Standard: To BS EN 1342.
 - 5.2. Supplier:
 - 5.2.1. Product reference: Caithness Stone
 - 5.3. Sizes: 80mm depth x 50-150mm width 300-850mm lengths
 - 5.4. Special setts: As required
 - 5.5. Colour/ Finish: As supplied
 - 5.6. Requirements:
 - 5.6.1. Petrographical description/ stone type: Caithness Stone

- 5.6.2. Plan dimension and thickness deviation: Class 2
- 5.6.3. Tolerances on undercut of sides: Class 2
- 5.6.4. Tolerances on hewn and coarse textured face irregularities: Class 2
- 5.6.5. Slip resistance: To Engineer's specification
- 5.6.6. Skid resistance: To
- 6. Method of cutting sett sides: Diamond sawn.
- 7. Jointing
 - 7.1. Material: In accordance with BS 7533-7, clause 5.2.1.1.
 - 7.2. Joint width: 12-25 mm.
- 8. Setting out:
 - 8.1. Bond: Traditional horonizing to random pattern refer to typical detail drawing RBC-WLR_HTA_L_XX_00_DR_8901
 - 8.2. Features: As required
- 9. Sealer/ Stabilizer: As required
- 10. Accessories: As required

160 Hard landscaping materials specification

- 1. Minimum BRE 'Green Guide to Specification' online rating:

Execution

200 Execution generally - concrete block and clay paver paving

- 1. Standard: In accordance with BS 7533-3.

205 Execution generally - natural stone paving

- 1. Standard: In accordance with BS 7533-7, as relevant to flexible (non-rigid) laying and construction.
- 2. Subgrade, sub-base and roadbase presentation: Tight and dense surface, to prevent loss of laying course material into it during construction and use.
- 3. Joint filling: Do not work in damp conditions. Top joints up at the earliest opportunity.

211 Colour banding

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

220 Samples

- 1. General: Before ordering, submit samples of blocks/ pavers/ setts that are representative of colour and appearance.

230 Control samples

- 1. General: Carry out sample area of finished work:
 - 1.1. Location:
 - 1.2. Size (minimum):
 - 1.3. Features to be included:
- 2. Give notice: When ready for inspection.
- 3. Timing: Obtain approval of appearance before proceeding.

240 Adverse weather

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

325 Drainage holes in existing bases

1. **Location:** Impervious layers of existing road/ paving.
2. **Drainage Form** regular grid of holes, through base and any additional build up, down to sub-base:
 - 2.1. **Spacing in both directions:**
 - 2.2. **Minimum clear opening:**
 - 2.3. Do not weaken or excessively disturb road/ paving.
3. **Completion**
 - 3.1. Remove jagged or protruding edges.
 - 3.2. Fill holes with Ram down to form flush smooth surface.

335 Planing and repairs to existing bases

1. **Existing macadam/ asphalt surfaces:** Plane to required levels.
2. **Repairs:**
3. **Building up to required levels:**

350 Granular layer over existing bases

1. **Material:**
2. **Thickness:**
3. **Compaction:**
4. **Blinding:**

385 Mortar bedded

1. **Description:**
2. **Foundation**
 - 2.1. **Size:**
 - 2.2. **Concrete:** As section E10
3. **Bedding**
 - 3.1. **Thickness:** 10 mm minimum to 40 mm maximum.
 - 3.2. **Mortar:** As section Z21
4. **Laying:** Bed units on foundation, and secure with continuous mortar haunching.
 - 4.1. Keep exposed faces clean and free from mortar.
5. **Jointing:**

420 Tooled joints in mortar bedded units

1. **Jointing:** Butter ends of units with bedding mortar as work proceeds, to fill joints.
 - 1.1. **Joint width:**
 - 1.2. **Finish:** Tool to a neat flush profile.

425 Tooled coloured joints in mortar bedded units

1. **Jointing:** Butter ends of units with bedding mortar as work proceeds, to completely fill joints.
 - 1.1. **Joint width:**
2. **Pointing:** Rake out to 10 mm depth and point with 1:3 cement:sand mortar with pigment.

2.1. Colour:

430 Sealant movement joints in mortar bedded units

1. Spacing:
2. Extent of joints:
3. Joint filler: Compressible cellular rubber or plastics compatible with specified sealant. Build in as work proceeds.
 - 3.1. Joint width:
4. Barrier (joint breaker): As recommended by sealant manufacturer. Position filler and barrier accurately to fully support sealant at recommended distance from exposed faces of units.
5. Sealant:
 - 5.1. Colour:
 - 5.2. Application: As section Z22.

440 Laying geotextile edging strip for conventional paving

1. Location: Immediately below laying course, abutting features that interrupt the laying course, including:
 - 1.1. Perimeters, edge restraints and kerbs.
 - 1.2. Other types of paving.
 - 1.3. Drainage fittings, e.g. channels and manholes.
2. Width:
3. Jointing:
4. Edge detail: Turn sheet up to form an upstand fitted neatly against features.
 - 4.1. Height (minimum): Thickness of sand laying course.

445 Laying geotextile patches over drainage holes for conventional paving

1. General: Lay geotextile patches on the base, centred over each hole.
 - 1.1. Size of patches:

450 Laying geotextile sheet for conventional paving

1. Location: Immediately below laying course.
2. Jointing:
3. Laying: Fit neatly at edge restraints and other features that interrupt the sand laying course, e.g. drainage fittings, channels, manholes and kerbs.
 - 3.1. Edge detail: Turn sheet up to form an upstand against features.
 - 3.1.1. Height (minimum): Thickness of sand laying course.

451 Laying geotextile sheet for permeable paving

1. Jointing:

452 Prepared existing and new bound bases (roadbases)

1. Condition before placing laying course: Sound, clean, free from rutting or major cracking and cleared of sharp stones, projections or debris.

485 Laying blocks/ pavers/ setts

1. Setting out: Start from an edge restraint.

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

490 Laying permeable paving

1. **General:**

495 In situ surrounds to obstructions

1. **Locations:**
2. **Material:**
3. **Shape and size:** Rectangular, 100 mm (minimum) all round obstruction.
4. **Thickness (minimum):** Combined depth of blocks/ pavers/ setts and sand laying course.
5. **Colour:**
6. **Timing:** Lay and allow to cure in advance of laying blocks/ pavers/ setts.

500 Regularity of paved surfaces

1. **Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface)**
 - 1.1. **Precast concrete paving blocks and clay pavers for flexible pavements:** 10 mm.
2. **Difference in level between adjacent paving units (maximum):** 2 mm.
3. **Sudden irregularities:** Not permitted.

505 Regularity of paved surfaces

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

Completion

600 Sealer/ Stabilizer for new blocks and setts

1. **Surface preparation:**
2. **Sealer/ Stabilizer**
 - 2.1. **Manufacturer:**
 - 2.1.1. **Product reference:**
 - 2.2. **Application:** To dry paving.

- 2.2.1.Method:
- 2.2.2.Number of coats:
- 2.2.3.Coverage:

605 Cleaning/ Sealer/ Stabilizer for existing blocks and setts

- 1. Surface preparation:
- 2. Cleaner
 - 2.1. Manufacturer:
 - 2.1.1.Product reference:
- 3. Sealer/ Stabilizer
 - 3.1. Manufacturer:
 - 3.1.1.Product reference:
 - 3.2. Application: After thorough cleaning, apply to dry paving.
 - 3.2.1.Method:
 - 3.2.2.Number of coats:
 - 3.2.3.Coverage:

610 Gun applied joint sealer

- 1. Manufacturer:
 - 1.1. Product reference:
- 2. Joint preparation:
- 3. Application:

615 Completion of paving

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

620 Slip resistance testing

- 1. Surfaces to be tested:
 - 1.1. Surface condition:
- 2. Timing:
- 3. Period of notice (minimum): 3 working days.
- 4. Test standard:
 - 4.1. Testing authority:
 - 4.2. Witnessing/ Certification: Arrange for tests to be witnessed/ certified by:
 - 4.3. Report: Submit.
 - 4.3.1.Format:

Ω End of Section

Q25

Slab/ brick/ sett/ cobble pavings **UNCHANGED**

General - Not Used

System performance - Not Used

Products

315 Concrete flags - PT8

1. Description: Stepping Stone
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: Tobermore
 - 2.1.1. Product reference: Textured Flag
3. Colour: Buff
 - 3.1. Finish: Textured
 - 3.2. Nominal sizes: 600 x 600 x 50mm depth
4. Arrises: Square Chamfered

320 Tactile flags and slabs - PT10 Corduroy

1. Description: Corduroy Hazard Warning Slabs to top and bottom of steps
2. Standard: To DD CEN/TS 15209.
3. Material: Precast Concrete Precast concrete
 - 3.1. Manufacturer: Tobermore
 - 3.1.1. Product reference: Corduroy Hazard Warning
4. Nominal sizes: 400 x 400 x 60mm depth
5. Colour: Buff
6. Type of surface: Rib – type R1
7. Cutting: Utilise inboard cutting to ensure no turn-out units are less than 1/2 original size.
8. Laying: Lay to illustrated stack bond at 90 degrees and 400mm away from the hazard. Full end units should be located at each end of the row of hazard warning units where it extends into a footway. All in accordance with 'Guidance on the use of tactile paving surfaces' www.dft.gov.uk
9. Joints: Regularised 6mm joints fully flush filled with 3/1 sand cement dry mix. Fully tamped into joint, top up and repeat as required to achieve full depth

321 Tactile flags and slabs - PT11 Blister

1. Description: Blister Hazard Warning Slabs to pedestrian crossings at roads
2. Standard: To DD CEN/TS 15209.
3. Material: Precast Concrete
 - 3.1. Manufacturer: Tobermore
 - 3.1.1. Product reference: Blister Hazard Warning
4. Nominal sizes: 400 x 400 x 60mm depth
5. Colour: Buff
6. Type of surface: Rib – type R1 Blister – type B1
7. Cutting: Utilise inboard cutting to ensure no turn-out units are less than 1/2 original size

8. **Laying:** Lay to illustrated stack bond at 90degrees and 150mm away from the hazard. Depths of tactsiles vary; 800mm at crossings away from junctions and 1200mm at crossings by junctions. All in accordance with 'Guidance on the use of tactile paving surfaces' www.dft.gov.uk
9. **Joints:** Regularised 6mm joints fully flush filled with 3/1 sand cement dry mix. Fully tamped into joints, top up and repeat as required to achieve full depth.

365 Geotextile sheet

1. **Description:** - BELOW LAYING COURSE
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:** Submit proposals
3. **Recycled content:** Submit proposals

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

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

420 Sand/ fine aggregate for laying course of concrete sett paving

1. **Material:** Sand/ fine aggregate for laying courses to BS 7533-4

Execution

610 Material samples

1. **Samples representative of colour and appearance of designated materials:** Submit before placing orders.
 - 1.1. **Designated materials:** All pavings

615 Control samples

1. **Sample areas:** Complete as part of the finished work.
 - 1.1. **Types of paving:** PT2 (Precast concrete paver), PT4 (Horonizing), Parking Bay
 - 1.2. **Location:** to be agreed
 - 1.3. **Size (minimum):** 2.5 x 5m
 - 1.4. **Included features:** Edging; Kerb; Cutting to base of light column
2. **Approval of appearance and surface:** Obtain before proceeding.

620 Adverse weather

1. **General**
 - 1.1. **Temperature:** Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
 - 1.2. **Frozen materials:** Do not use. Do not lay bedding on frozen or frost covered bases.
2. **Paving with mortar joints and/ or bedding**
 - 2.1. **Protect from frost damage, rapid drying out and saturation until mortar has hardened.**
3. **Paving laid and jointed in sand/ fine aggregate**
 - 3.1. **Stockpiled laying course sand/ fine aggregate:** Protect from saturation.
 - 3.2. **Exposed areas of unbound laying course and uncompacted areas of unbound paving:** Protect from heavy rainfall.

- 3.3. Saturated unbound laying course: Remove and replace, or allow to dry before proceeding.
- 3.4. Laying dry sand/ fine aggregate jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

625 Laying pavings - general

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

630 Levels of paving

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

635 Regularity of paved surfaces

1. Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface)
 - 1.1. Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.
 - 1.2. Precast concrete flags or natural stone slabs: 3 mm.
2. Difference in level between adjacent paving units (maximum): 2 mm.
3. Sudden irregularities: Not permitted.

640 Colour banding

1. General: Unless premixed by manufacturer, select from at least 3 to 5 separate packs in rotation to avoid colour banding.

645 Protection

1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

650 Cementitious bases and sub-bases

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

655 Condition of sub-bases/ bases before spreading laying course

1. Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.

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

755 Laying precast concrete and grass paving

1. **Laying:** Tamp down into lightly compacted laying course.
 - 1.1. **Nominal thickness of laying course after compaction:**
2. **Filling:** Allow to settle and refill level with surface.

Completion

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

1. **Sand dressing:** Leave a thin layer of dry jointing sand/ fine aggregate over the paving, sweep clean before practical completion
2. **Final compaction of the surface course:** In accordance with BS 7533-3.
3. **Vacuum cleaning machines:** Not allowed.

930 Slip resistance testing

1. **Surfaces to be tested:** All
 - 1.1. **Surface condition:** Dry and wet
2. **Timing:** As agreed with contract administrator
3. **Period of notice (minimum):** 3 working days.
4. **Test standard:** To BS 7976-2
 - 4.1. **Testing authority:** A UKAS accredited laboratory
 - 4.2. **Witnessing/ Certification:** Arrange for tests to be witnessed/ certified by: Contract administrator.
 - 4.3. **Report:** Submit.
 - 4.3.1. **Format:** As required under BS 7976

Ω End of Section

Q26

Special surfacings/ pavings for sport/ general amenity

UNCHANGED

Sports surfacing

150 Suitability of base/ sub-base

1. Preparation Before starting work ensure the following:
 - 1.1. Accuracy: Base/ sub-base will permit specified flatness/ regularity of finished surfacing.
 - 1.2. Falls/ camber: Accurately incorporated in the base/ sub-base.

Impact attenuating surfacings for play areas

300 Extent of impact attenuating surfacing

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

301 Extent of impact attenuating surfacing

1. General: Lay impact attenuating surfacing as indicated on drawings.

360 In situ synthetic surfacing - PT6 TigerMulch

1. Sub-base: As drawing RBC-WLR_HTA_L_XX_00_DR_8902
 - 1.1. Thickness: 150 mm
2. Surface course: polyurethane bound mulch surface
 - 2.1. Standard: To BS EN 1177.
 - 2.2. Manufacturer: TigerMulch
 - 2.2.1. Product reference: TigerMulch
 - 2.3. Colour: Earth Tone; Beige; and, Grey - refer to general arrangements for locations
 - 2.4. Critical fall height when tested to BS EN 1177: Varies according to play equipment.
 - 2.5. Health and safety
 - 2.5.1. Substance known to be toxic or carcinogenic on skin contact or released as vapour or dust during normal use: Not permitted.
3. Submit
 - 3.1. Resistance to abrasive wear, slip resistance, resistance to indentation and ease of ignition: Evidence of testing to BS 7188.
 - 3.2. Critical fall height: Evidence of testing to BS EN 1177.

Associated accessories

410 Flush edging to surfacing type Q26/360 - Rubber Kerb Cap

1. Description: Kerb Cap System Edge details as per manufacturer's recommendations. To prevent pests from burrowing under substrate
2. Material: Timber gravel board with supporting pegs and rubber kerb cap
 - 2.1. Size: As per manufacturer's recommendations
 - 2.2. Fixings: As per manufacturer's recommendations
 - 2.3. Pegs: As per manufacturer's recommendations
 - 2.4. Centres: As per manufacturer's recommendations

Execution - Not Used

Completion

920 Play surface testing

1. **Standard:** To BS EN 1177 and BS 7188, where applicable.
2. **Testing body:** A United Kingdom Accreditation Service (UKAS) independent laboratory.
3. **Timing:** Within ten days of completing the surfacing works.
4. **Test results:** Submit.

930 Documentation

1. **Standard:** To BS EN 1176-1.
2. **Submission requirements**
 - 2.1. Name and contact details of installer.
 - 2.2. Date of installation.
 - 2.3. Name and contact details of manufacturer.
 - 2.4. Type/ description/ reference of products used.
 - 2.5. Manufacturer's recommended inspection and maintenance procedures to maintain safety and impact attenuating performance.
3. Manufacturer's recommended cleaning and maintenance methods, where relevant.

Ω End of Section

Q28

Topsoil and soil ameliorants **UNCHANGED**

System outline

135 Naturally occurring topsoil system

1. Description: TO ALL PLANTED AREAS
2. Composition
 - 2.1. Topsoil: Imported topsoil to BS 3882
 - 2.2. Ameliorants: Sanitized and stabilized compost and fertilizer to be incorporated into topsoil
 - 2.3. Accessories: None

145 Plant pit backfilling soil system

1. Description: TO SHRUB AND HERBACEOUS PLANTING
2. Composition
 - 2.1. Topsoil: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required
 - 2.2. Ameliorants: Sanitized and stabilized composted materials
 - 2.3. Application Rate:: To manufacturer's/supplier's recommendations
 - 2.4. Fertilizer:: Slow release.
 - 2.5. Application Rate: : To manufacturer's/supplier's recommendations

146 Tree pit backfilling material

1. Composition
 - 1.1. Topsoil: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required
 - 1.2. Ameliorants: Sanitized and stabilized composted materials
 - 1.3. Application Rate:: To manufacturer's/supplier's recommendations
 - 1.4. Fertilizer:: Slow release.
 - 1.5. Application Rate: : To manufacturer's/supplier's recommendations

147 Tree pit with soil cells backfilling material

1. Description: to tree pits with soil cells
2. Composition
 - 2.1. Topsoil: Rootsoil 20 as supplied by GreenBlue Urban
 - 2.2. Ameliorants: Sanitized and stabilized composted materials None
 - 2.3. Application Rate:: To manufacturer's/supplier's recommendations
 - 2.4. Fertilizer:: None
 - 2.5. Application Rate: : To manufacturer's/supplier's recommendations

155 Mulching planting beds

1. Composition
 - 1.1. Material: FSC certified, matured British conifer bark with nominal particle size 5-35mm with <5% dust and fines and <10% wood content, pH between 4.5-5.5, not treated with methyl bromide or any other additives. Eg: Melcourt Industries 'Spruce Ornamental' or equal approved.

- 1.2. **Purity::** Free of pests, disease, fungus and weeds.
- 1.3. **Recycled Content:** : Submit proposals
2. **Preparation:** : Clear all weeds. Water soil thoroughly
3. **Coverage:** : 50mm depth
4. **Finished level of mulch::** 30mm below adjacent grassed or paved areas.

156 Mulching trees

1. **Composition**
 - 1.1. **Material:** FSC certified, matured British conifer bark with nominal particle size 5-35mm with <5% dust and fines and <10% wood content, pH between 4.5-5.5, not treated with methyl bromide or any other additives. Eg: Melcourt Industries 'Spruce Ornamental' or equal approved.
 - 1.2. **Purity::** Free of pests, disease, fungus and weeds.
 - 1.3. **Recycled Content:** : Submit proposals
2. **Preparation:** : Clear all weeds. Water soil thoroughly
3. **Coverage:** : 50mm depth
4. **Finished level of mulch::** 30mm below adjacent grassed or paved areas.

Products

300 Preparation materials generally

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

310 Materials not permitted

1. **Materials:** Peat, products containing peat and river and canal dredgings

315 Imported topsoil to BS 3882

1. **Description:** Refer to soiling plan 1902
2. **Quantity:** Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
3. **Standard:** To BS 3882:2015
4. **Classification:** Multipurpose
 - 4.1. Soil textural class to BS 3882, Figure 1: Sandy loam.
5. **Source:** Locally sourced and compatible with the existing topsoil/subsoil
 - 5.1. **Product reference:** Contractor's choice

6. **Texture::** Medium texture, reasonably free of stones (maximum size in any dimension 50mm) free from contamination, subsoil, weeds, seeds, roots and any other foreign matter.
7. **Submit::** Declaration of analysis in accordance with BS 3882 Annex E.
8. **Subsoil::** Subsoil to be well broken up before topsoiling to ensure free drainage. Report any drainage issues prior to proceeding
9. **Reaction: :** to BS 1377-3%: pH 6.0-8.5
10. **Organic Matter::** 5-10%
11. **Nutrient Content::** Minimum index values for nitrogen, phosphorus, potassium and magnesium to be as for BS 3882 multipurpose topsoil.
12. **Crumb Structure::** Made up of discernible crumbs.
13. **Stones::** Size in any dimension (maximum) 50mm. Stone content by dry weight (maximum) 5%

316 Imported subsoil to BS 8601:2013

1. **Description:** Refer to soiling plan 1902
2. **Quantity:** For use in lower section of tree and shrub pits. Provide as necessary to make up any deficiency of subsoil existing on site and to complete the work.
3. **Standard:** To BS 8601:2013
4. **Classification:** Naturally occurring, free draining, multipurpose subsoil capable of supporting plant growth
5. **Texture::** To BS 8601:2013
6. **Source:** Contractor to submit proposals. Locally sourced and compatible with the existing topsoil/subsoil
 - 6.1. **Product reference:** Contractor's choice
7. **pH::** 5.0-8.5
8. **Nutrient Content: :** Minimum index values for nitrogen, phosphorus, potassium and magnesium. to be as BS 8602-2013
9. **Crumb Structure: :** Made up of discernible crumbs
10. **Stones::** Size in any dimension (maximum) 50mm

360 Sanitized and stabilized composted materials certified to PAS 100

1. **Description:** ALL PLANTED AREAS
2. **Standard:** In accordance with PAS 100
3. **Source:** Contractor's choice
 - 3.1. **Product reference:** Contractor's choice
4. **Horticultural parameters**
 - 4.1. **pH (1:5 water extract):** 7.0-8.7.
 - 4.2. **Electrical conductivity (maximum, 1:5 water extract):** 200 mS/m.
 - 4.3. **Moisture content (m/m of fresh weight):** 35-55%.
 - 4.4. **Organic matter content (minimum):** 25%
 - 4.5. **Grading (air dried samples):** 99% passing 25 mm and 90% passing 10 mm screen mesh apertures
 - 4.6. **Carbon:Nitrogen ratio (maximum):** 20:1.
5. **Texture:** Friable.
6. **Objectionable odour:** Not permitted.
7. **Declaration of analysis:** Submit.
8. **Additional analyses:** Not required
9. **Samples:** Not required

401 Organic fertilizers

1. Description: ALL PLANTED AREAS
2. Manufacturer/ source: Contractor's choice
 - 2.1. Product reference: Contractor's choice
3. Standard: In accordance with the Fertilizer Industry Assurance Scheme (FIAS)
4. Purpose: Establishment fertilizer General purpose fertilizer
5. Type: Sanitized and stabilized compost
6. Availability to plants: Slow release

Execution

610 Topsoil analysis

1. Soil to be analysed: Imported topsoil
2. Soil analyst: Contractors Choice
3. Samples: Collect in accordance with BS 3882. Collect in accordance with BS 3882.
4. Submit
 - 4.1. Declaration of analysis: In accordance with BS 3882, Annex E
 - 4.2. Additional analysis: Chemical analysis, Chemical contaminants, Phytotoxic and CLEA elements, Potentially toxic elements (PTEs), Electrical conductivity, maximum stone size, pH value, and textural classification
 - 4.3. Report detailing soil analyst's recommendations.

615 Testing of materials

1. Material to be analysed: Imported subsoil
2. Laboratory: Contractor's choice
3. Samples: Collect in accordance with BS 3882
4. Submit
 - 4.1. Declaration of analysis: Chemical analysis, chemical contaminants, maximum stone content and stone size, nutrient content, pH value, phytotoxic and CLEA elements and textural classification
 - 4.2. Report detailing analyst's recommendations.

620 Importing topsoil

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

625 Sample loads

1. Description: FOR IMPORTED TOPSOIL AND SUBSOIL
2. Deliver to site a sample load: of 5 kg
3. Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - 3.1. Notice period: 5 days

630 Documentation for imported topsoil

1. Description: ALL PLANTED AREAS
2. Timing: Submit at handover.
3. Contents

- 3.1. Full description of all soil components.
- 3.2. Record of source for all soil components.
- 3.3. Record drawings showing the location and depth of all soils by type and grade.
- 3.4. Declaration of analysis: in accordance with BS 3882, Annex E
4. Number of copies: Two

650 Notice

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Spreading topsoil.
 - 1.3. Applying herbicide.
 - 1.4. Applying fertilizer.
 - 1.5. Visiting site during maintenance period.
2. Period of notice: 1 week

655 Mechanical tools

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

660 Grading subsoil for

1. Description: All planted areas
2. Standard: In accordance with BS 8601:2013
3. General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
4. Loosening: : Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen to a depth of 300mm. Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen to a depth of 450mm. Rock and chalk subgrades: Lightly scarify to promote free drainage
5. Areas of thicker topsoil: Excavate locally.
6. Avoid compaction.
7. Excess subsoil: Remove.

665 Subsoil surface preparation for

1. Description: All planted areas
2. Standard: In accordance with BS 3882.
3. General: Excavate and/ or place fill to required profiles and levels, as section D20.
4. Loosening
 - 4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth:
 - 4.1.1. Light and noncohesive subsoils: 300 mm
 - 4.1.2. Stiff clay and cohesive subsoils: 450 mm
 - 4.1.3. Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - 4.2. Wet conditions: Do not loosen subsoils. Do not loosen subsoils.
5. Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
6. Remove from site: Arisings, contaminants and debris and builders rubble

685 Surplus materials to be removed

1. Topsoil removal from site: Topsoil remaining after completion of all landscaping work

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

690 Topsoil storage heaps

1. Location: To be agreed
2. Height (maximum): 1.5 m
3. Width (maximum): 5.0 m
 - 3.1. Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
4. Protection
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination, by fencing and covering as appropriate.

700 Grading of topsoil

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

705 Handling topsoil

1. Standard: In accordance with BS 3882.
2. Aggressive weeds: Give notice and obtain instructions before moving topsoil.
3. Plant: Select and use plant to minimize disturbance, trafficking and compaction.
4. Contamination: Do not mix topsoil with:
 - 4.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
 - 4.2. Other grades of topsoil.
5. Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
6. Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall, or when the moisture content is greater than the plastic limit less 3% to BS 1377-2

710 Spreading topsoil on

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

715 Loose tipping of topsoil

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

718 Final cultivation

1. Compacted topsoil: Break up to full depth.
2. Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
3. Depth: 450 mm
4. Particle size (maximum): 2-8 mm
5. Timing: Within a few days before planting
6. Weather and ground conditions: Suitably dry.
7. Surface: Leave regular and even.
8. Levels: As drawings
9. Undesirable material brought to the surface
 - 9.1. Remove visible weeds.
 - 9.2. Remove roots and large stones with any dimension exceeding 50 mm.

720 Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: 20mm above.
2. In relation to dpc of adjoining buildings: Not less than 150 mm below.
3. In relation to adjacent grass areas: 25 mm above
4. Seeded areas: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
5. Sportsfields: To even levels and within the following permitted deviations:
6. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
7. Adjoining soil areas: Marry in.
8. Thickness of turf or mulch: Included.

810 Applying compost

1. Description: All planting areas
2. Application rate for trees and shrubs: In accordance with manufacturers written instructions
 - 2.1. Timing: Apply prior to cultivation.
3. Application rate for planters: In accordance with manufacturers written instructions
 - 3.1. Timing: Apply prior to cultivation.
4. Other requirements: Submit 5kg sample before ordering

820 Applying general fertilizer Slow release

1. Description: All planting areas
2. Application: Spread evenly, carefully incorporating below mulch materials.
 - 2.1. Timing: Immediately before cultivation.
 - 2.2. Application rate: In accordance with manufacturers written instructions
 - 2.3. Other requirements: None

Completion

905 Applying maintenance fertilizer to soil

1. Description: All planted areas
2. Time of year: March or April
3. Application: Evenly spread, carefully incorporating below mulch materials.

4. **Rate:** In accordance with manufacturers written instructions

Ω End of Section

Q30

Seeding/ turfing **UNCHANGED**

General information/requirements

115 Seeded and turfed areas

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

120 Climatic conditions

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

145 Watering

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

150 Water restrictions

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

160 Notice

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

Preparation

210 Herbicide

1. **Description:** FOR LAWNS FOR ALL GRASSED AREAS
2. **Type:** Suitable for suppressing perennial weeds.
3. **Timing:** Allow fallow period before cultivation.
 - 3.1. **Duration:** As manufacturer's recommendation

212 Seed bed cleaning before sowing

1. **Description:** ALL GRASSED AREAS
2. **Operations:** Kill pernicious weeds with selective contact herbicide.

250 Soil requirements

1. Type
 - 1.1. Seeded areas: Soil for grass swards, as section Q28
 - 1.2. Turfed areas: Soil for grass swards, as section Q28

Seeding

310 Grass seed

1. Description: to private gardens
2. Mixture: EG22c - Strong Lawn Grass Mixture with Clover. Suggested supplier: Emorsgate Seeds or similar approved
3. Application rate: 25 g/m²

319 Quality of seed

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

330 Sowing

1. General: Establish good seed contact with the root zone.
2. Method: Manually broadcast, raked and rolled
 - 2.1. Distribution: 2 equal sowings at right angles to each other and diagonally to main axis

335 Grass sowing season

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

Turfing - Not Used

Protecting/cutting

530 First cut of grassed areas

1. Timing: When grass is reasonably dry.
 - 1.1. Height of initial growth: 75 mm
2. Preparation
 - 2.1. Debris and litter: Remove.
 - 2.2. Stones and earth clods larger than 25 mm in any dimension: Remove
3. Height of first cut: 50 mm
4. Mower type: Contractor's choice
5. Arisings: Remove from site

590 Cleanliness

1. Soil and arisings: Remove from hard surfaces.

2. **General:** Leave the works in a clean, tidy condition at Completion and after any maintenance operations.

Maintenance

610 Failures of seeding/turfing

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

Ω End of Section

Q31

External planting **UNCHANGED**

General information/ requirements

112 Site clearance generally

1. **General:** Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. **Stones:** Remove those with any dimension exceeding 50 mm.
3. **Contamination:** Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. **Vegetation:** Clear scrub to ground level by flail mowing and remove arisings; retain and protect trees indicated on drawings
5. **Large roots:** Grub up and dispose of without undue disturbance of soil and adjacent areas.
6. **Additional requirements:** Existing trees to be retained to be protected in accordance with Arboriculturalist's method statement and in accordance with BS 5837:2012

113 Planting Generally

1. All planting to be undertaken in accordance with Sections 4.7.3 to 4.7.5 of the approved Arboriculture Method Statement

118 Soil conditions

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

120 Climatic conditions

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

125 Times of year for planting

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

130 Mechanical tools

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

145 Watering

1. **Quantity:** Wet full depth of topsoil.

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

150 Water restrictions

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

160 Notice

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

200 Plants/ trees - general

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

215 Plants/ trees - specification criteria

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

216 Plants/ trees - specification criteria

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

225 Bulbs/ Corms/ Tubers

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

4.3. Temperature: 18-21°C.

235 Container grown plants/ Trees

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

245 Labelling and information

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

246 Labelling and information

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

260 Plant/ Tree substitution

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

265 Plant handling, storage transport and planting

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

280 Treatment of tree wounds

1. **Cutting:** Keep wounds as small as possible.
 - 1.1. Cut cleanly back to sound wood using sharp, clean tools.

- 1.2. Leave branch collars. Do not cut flush with stem or trunk.
- 1.3. Set cuts so that water will not collect on cut area.
2. Fungicide/ Sealant: Do not apply unless instructed.

285 Protection of existing grass

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

290 Surplus material

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

Plant containers - Not Used

Preparation of planting beds/ planting materials

300 Herbicide

1. Description: TO CLEAR OVERGROWN BEDS
2. Locations: All planting areas
3. Type: Suitable for suppressing perennial weeds.
4. Timing: Allow fallow period before cultivation.
 - 4.1. Duration (minimum): As manufacturer's recommendation

305 Weed control

1. Description: FOR INVASIVE NON-NATIVE WEEDS
2. Locations: All planting areas
3. General: Prevent weeds from seeding and perennial weeds from becoming established, by cultivating.

Planting shrubs/ herbaceous plants/ bulbs

400 Random plant layout

1. Description: To Shrub planting and bulb planting
2. Spacing: Random groups of 9-23 plants of the same species, avoiding straight lines. Refer to planting plans
3. Density: As plant schedule

401 Regular plant layout

1. Description: To all beds
2. Spacing: Refer to detailed planting plans
3. Density: As plant schedule

405 Shrub planting pits

1. Timing: Excavate 1-2 days (maximum) before planting.
2. Sizes: 300x300x300mm with bottom broken up to 150mm depth
3. Pit bottom improvement Break up to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m².

415 Antidesiccant for conifers/ Evergreens

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

445 Planting bulbs/ Corms/ Tubers

1. **Depth:** Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
2. **Backfilling:** Finely broken soil. Lightly firm to existing ground level.

470 Formal hedges

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

471 Naturalized hedges

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

472 Fencing support for new hedges

1. **Type:** Timber post and general pattern wire mesh, as section Q40
2. **Timing:** Before planting hedge.
3. **Support:** Lightly secure hedge plants to fence wires at appropriate intervals.

473 Timber edging to hedges in play area

1. **Type:** pressure treated softwood timber edge between hedge planting and soft planting areas
2. **Size:** 38x150mm
3. **Fixing:** pegged at 500mm centres with 50x50x450 stakes
4. **Supplier:** to contractor's choice

480 After planting

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

Planting trees

500 Tree planting

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

502 Antidesiccant for conifers/ Evergreens

1. **Manufacturer:** Submit proposals
 - 1.1. **Product reference:** Submit proposals
2. **Application:** Dip or thoroughly spray before delivering to site. Spray again soon after planting.

- 2.1. Do not apply in wet or frosty weather.
- 2.2. Ensure full coverage of underside of foliage.

505 Tree pits

1. **Sizes:** Minimum size 1.5m x 1.5m or equivalent x 750mm and pit bottom broken up to a depth of 300mm (or as shown on drawings)
2. **Sloping ground:** Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. **Excavated material:** Remove arisings
4. **Pit bottoms:** Excavate with slightly raised centre: Break up base to a depth of 300 mm.
 - 4.1. **Treatment:** Soil ameliorant worked into pit bottoms
5. **Pit sides:** Scarify.
6. **Backfilling material:** Topsoil, and subsoil as section Q28

510 Tree pit root deflector

1. **Locations:** To tree pits with recessed tree grilles
2. **Manufacturer:** GreenBlue Urban Ltd
 - 2.1. **Product reference:** RootDirector RD1400A
3. **Installation:** To manufacturers details

511 Tree pit root barriers

1. **Manufacturer:** GreenBlue Urban Ltd
 - 1.1. **Web:** www.greenblue.com
 - 1.2. **Email:** enquiries@greenblueurban.com
2. **Product reference:** ReRoot Root Barriers
3. **Type:** RER1000
4. **Roll depth:** 1000 mm to be confirmed by Engineer's
5. **Locations:** Wherever the installed rootball will be within 2 m of a building foundation/foundation of built structure and /or will be within 3 m of an existing underground service route including tree pits within both hard surfacing and soft landscaping
6. **Thickness:**
7. **Barrier depth:** 1000 mm
8. **Top of root barrier in relation to finished topsoil level:** 25 mm below ground level
9. **Installation:** With sides vertical. Remove all sharp objects adjacent to barrier.

512 Tree pit irrigation and ventilation accessories

1. **Manufacturer:** GreenBlue Urban Ltd
 - 1.1. **Web:** www.greenblue.com
 - 1.2. **Email:** enquiries@greenblueurban.com
2. **Product reference:** RootRain Civic or sized as required to fit rootball
3. **Type:** RRCIVIC2A
4. **Locations:** To all tree pits
5. **Type:** Perforated plastics irrigation pipe with inlet
6. **Inlet:** Cast aluminium
7. **Installation**

- 7.1. **Pipe:** Lay in loop above root ball with slight fall away from inlet pipe. Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
- 7.2. **Top cap of inlet:** Protruding slightly above finished surround level.

513 Tree pit irrigation and ventilation accessories

1. **Manufacturer:** GreenBlue Urban Ltd
 - 1.1. **Web:** www.greenblue.com
 - 1.2. **Email:** enquiries@greenblueurban.com
2. **Product reference:** Arborvent
3. **Locations:** To all tree pits in hard surfacing
4. **Type:** Perforated plastics irrigation pipe with inlet
5. **Inlet:** Cast aluminium

515 Tree pit drainage

1. **Locations:** TO ALL TREE PITS
2. **Depth of excavation:** Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
3. **Aggregate layer:** Clean pea gravel or broken stone, with no fines, graded 40 to 20 mm.
 - 3.1. **Depth:** refer to drawing 8930 for details
4. **Drainage pipes**
 - 4.1. **Type:** Perforated plastics
 - 4.2. **Diameter:** Submit proposals
 - 4.3. **Position:** Lay around perimeter of pit within aggregate layer.
 - 4.4. **Discharge:** to Engineer's details
5. **Geotextile filter**
 - 5.1. **Position:** Lay over aggregate before installing tree or backfill.
6. **Completed pits:** Test for free drainage before planting.

520 Cellular structural soil system

1. **Locations:** Refer to soiling plan RBC-WLR-HTA-L_DR_1920 and RBC-WLR-HTA-L_DR_1921
2. **Manufacturer:** GreenBlue Urban
 - 2.1. **Product reference:** Rootspace 600
3. **Geotextile membrane:** Install on top of structural soil system prior to installation of hard surfacing, as section D20
4. **Installation:** Ensure all void spaces are filled with lightly compacted growing medium ROOTSOIL 20 as supplied by Green Blue Urban, prior to installation of further layers or sub-bases.

526 Underground guying

1. **Description:** ALL TREES
2. **Manufacturer:** Green Max
 - 2.1. **Product reference:** Bio Root Ball Anchoring
3. **Anchoring system:** Dead Man 3 no drive-in anchors
4. **Installation:** Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.

580 Tree pit surfacing - bound aggregate

1. **Surfacing material:** Self-binding gravel, as section Q23

2. **Area:** Central aperture of recessed tree grilles
3. **Collar:** Install protective tree collar around base of tree prior to installing surfacing. Allow clearance for tree growth.

Woodland/ matrix/ buffer zone planting

665 Setting out

1. **Distance between trees:** As drawings 1910,1920,1931 and 1941

680 Setting out

1. **Planting density:** As plant schedule
2. **Layout:** Random groups of no less than 3 or more than 7 of the same species, ensuring that no three plants are aligned in any one direction.

Protecting/ maintaining/ making good defects

710 Maintenance

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

720 Failures of planting

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

740 Cleanliness

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

750 Planting maintenance generally

1. **Weed control:** Maintain weed free area around each tree and shrub.
 - 1.1. **Diameter (minimum):** The larger of 1 m or the surface of original planting pit.
 - 1.2. **Keep planting beds clear of weeds:** By maintaining full thickness of mulch
2. **Planted areas:** Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
3. **Precautions:** Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. **Firming up:** Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. **Trees:** Spray crown when in leaf during warm weather.
 - 5.1. **Timing:** After dusk.
6. **Tree accessories:** Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - 6.1. **Broken or missing items:** Replace.
 - 6.2. **Loose guys:** Re-firm anchor points and adjust as necessary to provide support to the tree.

- 6.3. **Ties:** Adjust to accommodate growth and prevent constriction or abrasion.
- 6.4. **Damage to bark:** Cut back neatly with sharp knife. Prevent further damage.
- 6.5. **Frequency of checks:** As maintenance schedule 1701
- 7. **Watering:** As maintenance schedule 1701 / as required for healthy establishment, depending on weather conditions As required for healthy establishment, depending on weather conditions

760 Planting maintenance - pruning

- 1. **General:** Prune to promote healthy growth and natural shape.
 - 1.1. **Dead, dying, diseased wood and suckers:** Remove.
 - 1.2. **Timing:** As appropriate to the species
 - 1.3. **Trees:** Favour a single central leading shoot.
- 2. **Arisings:** Remove.

790 Final mulching

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

Ω End of Section

Q40

Fencing **UNCHANGED**

Fencing systems

140 General pattern wire mesh fencing within hedge

1. Standard: To BS 1722-2.
2. Height: 1050mm
3. Mesh: 2 ply 31mm mesh fitted to line wires with galvanised clips at 500mm centres. Mesh buried 150mm into ground.
4. Posts and struts: Square sawn wood
 - 4.1. Treatment: Pressure treated softwood
5. Maximum centres of posts
 - 5.1. Straining posts: 150 m in straight runs, corners, changes of direction and acute variations in level. Connections to steel posts where fence meets Railing type R3 at ends of runs. Refer to drawing RBC-WLR_HTA_L_XX_00_DR_8905
 - 5.2. Intermediate posts: 1.5 m.
6. Method of setting posts and struts
 - 6.1. Straining posts: As drawing RBC-WLR_HTA_L_XX_00_DR_8930
 - 6.2. Intermediate posts: Driven to a minimum depth of 600 mm
7. Accessories: As drawing RBC-WLR_HTA_L_XX_00_DR_8930
8. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-2.

340 Steel vertical bar fencing (fall protection) - R2

1. Manufacturer: Contractor's choice
2. Standard: To BS 1722-9.
3. Height: 1100mm
4. Verticals: 80x10mm flat steel bars to form frame sides; 35x8mm flat steel bars to form infill uprights
5. Centres of verticals: 100mm
6. Posts: 80x15mm flat steel bar to form support post
 - 6.1. Finish: Polyester powder-coated, as section Z31
 - 6.1.1.Colour: RAL 7016 Anthracite Grey
7. Centres of posts (maximum): 1.81 m.
8. Method of setting posts/ stays/ legs: As drawing RBC-WLR_HTA_L_XX_00_DR_8905
9. Accessories: Anti-vandal fixings between panels, as drawing RBC-WLR_HTA_L_XX_00_DR_8905
10. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-9.

341 Steel vertical bar fencing (fall protection) - R3

1. Manufacturer: Contractor's choice
2. Standard: To BS 1722-9.
3. Height: 1050mm
4. Verticals: 80x10mm flat steel bars to form frame sides; 35x8mm flat steel bars to form infill uprights
5. Centres of verticals: 92mm

6. **Posts:** 40x40x3mm RHS galvanised mild steel with fully welded end caps
 - 6.1. **Finish:** Polyester powder-coated, as section Z31
 - 6.1.1. **Colour:** RAL 7016 Anthracite Grey generally; posts to gates G1/G2 to be RAL 1007 to match gate colour.
7. **Centres of posts (maximum):** 1.87 m.
8. **Method of setting posts/ stays/ legs:** As drawing RBC-WLR_HTA_L_XX_00_DR_8905
9. **Accessories:** Anti-vandal fixings between panels, as drawing RBC-WLR_HTA_L_XX_00_DR_8905. Gates G1 and G2
10. **Conformity:** Submit manufacturer's and installer's certificates, to BS 1722-9.

Gates, posts and stiles

570 Gate G1 - single leaf pedestrian gate

1. **Manufacturer:** Contractor's choice
2. **Sizes:** As drawing RBC-WLR_HTA_L_XX_00_DR_8905
3. **Posts:** 40X40X3mm RHS galvanised mild steel with fully welded end caps
4. **Finish as delivered:** Polyester powder-coated, as section Z31; RAL 1007
5. **Fittings:** Fully enclosed self closing gate mechanism; stopping plate with rubber band to contact point to avoid damage to adjacent fence
 - 5.1. **Finish:** Polyester powder-coated, as section Z31; RAL 1007
6. **Method of fixing:** As drawing RBC-WLR_HTA_L_XX_00_DR_8905

571 Gate G2 - double leaf pedestrian/maintenance access gate

1. **Manufacturer:** Contractor's choice
2. **Sizes:** As drawing RBC-WLR_HTA_L_XX_00_DR_8905
3. **Posts:** 40X40X3mm RHS galvanised mild steel with fully welded end caps
4. **Finish as delivered:** Polyester powder-coated, as section Z31; RAL 1007
5. **Fittings:** Fully enclosed self closing gate mechanism; stopping plate with rubber band to contact point to avoid damage to adjacent fence; sliding bolt lock and receptor tube for drop bolt in both open and closed positions.
 - 5.1. **Finish:** Polyester powder-coated, as section Z31; RAL 1007
6. **Method of fixing:** As drawing RBC-WLR_HTA_L_XX_00_DR_8905

Accessories - Not Used

Execution

710 Installation generally

1. **Set out and erect**
 - 1.1. **Alignment:** Straight lines or smoothly flowing curves.
 - 1.2. **Tops of posts:** Following profile of the ground.
 - 1.3. **Setting posts:** Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
 - 1.4. **Fixings:** All components securely fixed.

715 Competence

1. **Operatives:** Contractors must employ competent operatives.
2. **Qualifications:** Submit certification of training.

2.1. NHSS Sector Scheme 2A sub categories: (a)

720 Setting posts in concrete

1. **Standard:** To BS 8500-2.
2. **Mix:** Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
3. **Alternative mix for small quantities:** 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
4. **Admixtures:** Do not use.
5. **Holes:** Excavate neatly and with vertical sides.
6. **Filling:** Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
7. **Backfilling of holes not completely filled with concrete:** Excavated material, well rammed and consolidated.

740 Setting posts in earth

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

750 Driven posts

1. **Damage to heads:** Minimize.
 - 1.1. **Repair:** Neatly finish post tops after installation.

770 Site cutting of wood

1. **General:** Kept to a minimum.
2. **Below or near ground level:** Cutting prohibited.
3. **Treatment of surfaces exposed by minor cutting and drilling:** Two flood coats of solution recommended for the purpose by main treatment solution manufacturer.

780 Making good galvanized surfaces

1. **Treatment of minor damage (including on fasteners and fittings):** 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.
2. **Thickness:** Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

790 Site painting

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

Completion

910 Cleaning

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

920 Fixings

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

930 Gates

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

Ω End of Section

Q50

Site/ street furniture/ equipment **UNCHANGED**

Gates, barriers and parking controls

190 Bollards - FT6a

1. Manufacturer: Marshalls
 - 1.1. Product reference: Rhino RB101 Steel Static Bollard
2. Material: Steel
 - 2.1. Finish as delivered: Polyester powder-coated, as section Z31
 - 2.2. Colour: RAL 7016 - Anthracite Grey
3. Height above ground: 1000 mm
4. Sectional size: 168 mm diameter
5. Top: Domed
6. Method of fixing: Root fixed, to manufacturers recommendations

192 Collapsible/ telescopic bollards - FT6b

1. Description:
2. Manufacturer: Marshalls
 - 2.1. Product reference: Rhino RT/R14 Jumbo Telescopic Bollard with Lift Assist
3. Material: Stainless Steel
 - 3.1. Finish as delivered: Polyester powder-coated, as section Z31
 - 3.2. Colour: RAL 7016 - Anthracite Grey
4. Height above ground: 850 mm
5. Sectional size: 114 mm diameter
6. Method of fixing: To manufacturer's specification

Site and street furniture

220 Benches with Backrest - FT1

1. Manufacturer: Streetlife
 - 1.1. Product reference: Drifter
2. Material: Timber and steel
 - 2.1. Finish: Timber as supplied, steel Polyester powder-coated, as section Z31
 - 2.2. Colour: RAL 7016 Anthracite Grey
3. Size: 3000mm x 300mm
4. Accessories/ Special requirements: as required
5. Method of fixing: As drawing RBC-WLR-HTA-L_DR_8904

221 Double Beam Bench - FT2

1. Manufacturer: Streetlife
 - 1.1. Product reference: Drifter
2. Material: Timber and steel
 - 2.1. Finish: Timber as supplied, steel Polyester powder-coated, as section Z31
 - 2.2. Colour: RAL 7016 Anthracite Grey

3. Size: 2000mm x 620mm
4. Accessories/ Special requirements: as required
5. Method of fixing: As drawing RBC-WLR-HTA-L_DR_8904

225 Timber Cube - FT4

1. Manufacturer: Woodscape
 - 1.1. Product reference: Cube Seat
2. Material: Timber and Steel
 - 2.1. Finish: Timber as supplied, steel Polyester powder-coated, as section Z31
 - 2.2. Colour: RAL 7016 Anthracite Grey
3. Size: 450mm x 450mm
4. Accessories/ Special requirements: As required
5. Method of fixing: As drawing RBC-WLR-HTA-L_DR_8904

230 Solid Beam Picnic Set - FT3

1. Manufacturer: Streetlife
 - 1.1. Product reference: Drifter
2. Material: Timber and Steel
 - 2.1. Finish: Timber as supplied, steel Polyester powder-coated, as section Z31
 - 2.2. Colour: RAL 7016 Anthracite Grey
3. Size: As drawing RBC-WLR-HTA-L_DR_8904
4. Accessories/ Special requirements: As required
5. Method of fixing: As drawing RBC-WLR-HTA-L_DR_8904

240 Litter bins - FT5

1. Manufacturer: Streetlife
 - 1.1. Product reference: Box Bin Extra Slim
2. Material: Steel
 - 2.1. Finish: As supplied Polyester powder-coated, as section Z31
 - 2.2. Colour: RAL7016 Anthracite Grey
3. Accessories/ Special requirements: Rain Cover; Lock; Solid panel option(ie laser cut decorative pattern option not permitted)
4. Method of fixing: As drawing RBC-WLR-HTA-L_DR_8904

Installation

510 Concrete foundations generally

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

520 Setting in earth

1. Holes: As small as practicable.

2. Components being fixed: Accurately positioned and securely supported.
3. Buried depth (minimum): 600 mm
4. Earth refill: Well rammed as filling proceeds.

530 Preservative treated timber

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

550 Damage to galvanized surfaces

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

560 Site painting

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

Ω End of Section

Q52

Play and sports equipment **UNCHANGED**

General

115 Playground - P1

1. Description: Play Space
2. Equipment: Stone Boulder
 - 2.1. System manufacturer: Contractor's choice
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

116 Playground - P2

1. Description: Play Space
2. Equipment: Climbing Ropes
Ref: 6.51800
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

117 Playground - P3

1. Description: Play Space
2. Equipment: Larch Timber Stepping Logs with steel feet
Ref:
S6.82006 is 600 mm high above finished level
S6.82005 is 500 mm high above finished level
S6.82004 is 400 mm high above finished level
S6.82003 is 300 mm high above finished level
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
 - 2.2. Quantity:: Toddler Play Area: 70no of S6.82003 (300mm above ground)
5+ Play Area: 80no total (25no of each product)
3. New Item:
4. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
5. Containment: As drawing RBC-WLR-HTA-L_DR_1900
6. Accessories: As drawing required

119 Playground - P4

1. Description: Play Space
2. Equipment: Rotating Balancing Beam
Ref: 6.51500
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900

5. Accessories: As drawing required

120 Playground - P6

1. Description: Play Space
2. Equipment: Climbing Structure 02
Ref: 6.51002 Larch with steel feet
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

121 Playground - P8

1. Description: Play Space
2. Equipment: Tarzan Swing
Ref: 7.64200
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

122 Playground - P9

1. Description: Play Space
2. Equipment: Jumping Disc
Ref: 6.06000
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

123 Playground - P10

1. Description: Play Space
2. Equipment: Balancing Blocks with steel end frames
Ref: 6.51701
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8940
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

124 Playground - P11

1. Description: Play Space
2. Equipment: Toddler's Twin Swing - Special
Ref: 6.12720
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay

3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8941
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

125 Playground - P12

1. Description: Play Space
2. Equipment: Small Children Slide; 1m wide
Ref: 3.63300
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8941
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

126 Playground - P13

1. Description: Play Space
2. Equipment: Toddler See-Saw
Ref: 6.11700
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8941
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

127 Playground - P20

1. Description: Play Space
2. Equipment: Bespoke outdoor climbing/traversing wall
 - 2.1. System manufacturer: King Kong Climbing Walls (or equivalent approved)
Tel: 017687 79959
www.climbingwall.co.uk
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8942
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required
6. Notes: Design completion requires civils and structural input. Design intent to be handed to specialist contractor. ROSPA to be present on site when setting out handholds

128 Playground - P7

1. Description: Play Space
2. Equipment: Example 15; Open slide; Right Curve; Attachment height (level change between surfaces = 2.00m)
 - 2.1. System manufacturer: Richter-Spielgerate GMBH as supplied by Timberplay
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_2901
4. Containment: As drawing RBC-WLR-HTA-L_DR_1900
5. Accessories: As drawing required

129 Playground - P5

1. Description: Play Space
- HTA Design LLP
17-09-2021

2. **Equipment:** Scrambling steps formed from large flat boulders, varying in size and of an irregular shape. Remove all arrises after installation. 20mm bedding mortar (to match stone colour) to insitu concrete stepped foundation. Contractor to submit proposals/samples of stones and mortar. Refer to details RBC-WLR-HTA-L_DR_8943
 - 2.1. **System manufacturer:** Contractor's choice;
3. **Containment:** As drawing RBC-WLR-HTA-L_DR_1900
4. **Accessories:** As drawing required

130 Playground - P21

1. **Description:** Play Space
2. **Equipment:** Medium Spinner
Ref: 6.26401
 - 2.1. **System manufacturer:** Richter-Spielgerate GMBH as supplied by Timberplay
3. **Surfacing:** As drawing RBC-WLR-HTA-L_DR_8942
4. **Containment:** As drawing RBC-WLR-HTA-L_DR_1900
5. **Accessories:** As drawing required

165 Trim trail - P14

1. **Description:** Central Space
2. **Equipment:** Timber pull-up bars
Ref: JPS19-S,
 - 2.1. **System manufacturer:** Proludic Ltd
3. **Surfacing:** As drawing RBC-WLR-HTA-L_DR_8941
4. **Containment:** As drawing RBC-WLR-HTA-L_DR_8941
5. **Accessories:** As required

166 Trim trail - P15

1. **Description:** Central Space
2. **Equipment:** Timber monkey bars
Ref: JPS21-S,
 - 2.1. **System manufacturer:** Proludic Ltd
3. **Surfacing:** As drawing RBC-WLR-HTA-L_DR_8941
4. **Containment:** As drawing RBC-WLR-HTA-L_DR_8941
5. **Accessories:** As required

167 Trim trail - P16

1. **Description:** Central Space
2. **Equipment:** Timber push-up bars
Ref: JPS17-S,
 - 2.1. **System manufacturer:** Proludic Ltd
3. **Surfacing:** As drawing RBC-WLR-HTA-L_DR_8941
4. **Containment:** As drawing RBC-WLR-HTA-L_DR_8941
5. **Accessories:** As required

168 Trim trail - P17

1. **Description:** Central Space

2. Equipment: Wave Bar
Ref: 081400MS
 - 2.1. System manufacturer: Lappset
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8941
4. Containment: As drawing RBC-WLR-HTA-L_DR_8941
5. Accessories: As required

169 Trim trail - P18

1. Description: Central Space
2. Equipment: Hand Roll Wheel
Ref: 081455MS
 - 2.1. System manufacturer: Lappset
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8941
4. Containment: As drawing RBC-WLR-HTA-L_DR_8941
5. Accessories: As required

170 Trim trail - P19

1. Description: Central Space
2. Equipment: Shoulder Arch
Ref: 081400MS
 - 2.1. System manufacturer: Lappset
3. Surfacing: As drawing RBC-WLR-HTA-L_DR_8941
4. Containment: As drawing RBC-WLR-HTA-L_DR_8941
5. Accessories: As required

System performance

210 Design

1. Design: Complete the design of the P5 - Scrambling steps; P7 - Open slide; P20 - Climbing Wall.
2. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

Products - Not Used

Execution

710 Play equipment installation generally

1. Standard: To manufacturer's written instructions provided in accordance with BS EN 1176-1.

720 Concrete foundations generally

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

725 Setting components in concrete

1. Holes: Refer to drawings

2. **Components:** Accurately positioned and securely supported.
3. **Concrete fill:** Fully compacted as filling proceeds.
4. **Concrete foundations exposed to view:** Finished to weathering profile to shed water and trowel smooth.
5. **Temporary component support:** Maintain undisturbed for minimum 48 hours.

730 Setting components in earth

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

740 Preservative treated timber

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

750 Damage to galvanized surfaces

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

760 Site painting

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

Completion

910 Inspection

1. **Standard:** To BS EN 1176-1
2. **Timing:** 2 weeks after request by contract administrator
3. **Period of notice (minimum):** 3 working days.

920 Cleaning

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

930 Testing

1. **Standard:** To BS EN 1176-1.

950 Documentation

1. **Standard:** To BS EN 1176-1
2. **Contents**
 - 2.1. Copies of test reports.
 - 2.2. General product information.
 - 2.3. Installation information.
 - 2.4. Inspection and maintenance information.
3. **Number of copies:** Two

4. **Submission:** 2 weeks prior to date when work is expected to be practically complete

970 Operating tools

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

Ω End of Section

V91

Electrical systems - landscape **UNCHANGED**

General - Not Used

System performance

245 Design and lighting calculations

1. Lighting calculations
 - 1.1. Type: Computer generated point calculations.
2. Submit the following
 - 2.1. Luminaire layout drawings.
 - 2.2. Luminaire photometric data including flux fraction ratios and polar intensity curves.
 - 2.3. Lamp technical information.
 - 2.4. Maintenance factor calculations, including proposals for luminaire maintenance and lamp replacement.
 - 2.5. Reflectance values used for all wall, ceiling and floor surfaces.
 - 2.6. Isolux contour plots for all relevant working planes, horizontal and vertical.
 - 2.7. Schedule of design and calculated maintained average illuminance values.
 - 2.8. Schedule of design and calculated uniformity values.

Products

303 Products standards and approvals generally

1. Standard: In accordance with BS 7671.
2. CE marking: Required.
3. Cables: BASEC approved.

305 Particular product standards

1. Mineral insulated copper sheathed cables: To BS EN 60702-1.
 - 1.1. Mineral insulated copper sheathed cable terminations: To BS EN 60702-2.
2. Cable distribution cabinets: BS EN 61439-1 and -5.
3. Trunking and ducting: To BS EN 50085-1.
4. Luminaires: To BS EN 60598-1.
5. Safety isolating transformers: To BS EN 61558-2.1.
6. Lighting columns
 - 6.1. Aluminium: To BS EN 40-6.
 - 6.2. Steel: To BS EN 40-5.
7. Discharge lamp controlgear: To BS EN 60923 and BS EN 61347-2-9 or to BS EN 62386-101, -102, and -203.
8. High frequency fluorescent lamp controlgear: To BS EN 60929 and BS EN 61347-2-3 or to BS EN 62386-101, -102, and -201.
9. LED module controlgear: To BS EN 61347-2-13 or to BS EN 62386-101, -102, and BS EN IEC 62386-207.
10. Low voltage halogen lamp dimmable digital addressable lighting interface (DALI) controlgear: To BS EN 62386-101, -102, and -204.

11. Incandescent lamp digital addressable lighting interface (DALI) controlgear: To BS EN 62386-101, -102 and -205.
12. Lamps
 - 12.1. Compact fluorescent lamps: To BS EN 60901 and BS EN 61199.
 - 12.2. High pressure mercury lamps: To BS EN 60188 and BS EN 62035.
 - 12.3. High pressure sodium lamps: To BS EN 62035.
 - 12.4. Light emitting diode (LED) modules to BS EN 62031.
 - 12.5. Metal halide lamps: To BS EN 62035.
 - 12.6. Tubular fluorescent lamps: Single-capped: To BS EN 60901 and BS EN 61199.
 - 12.7. Tubular fluorescent lamps: Double-capped: To BS EN 60081 and BS EN 61195.
 - 12.8. Tungsten halogen lamps: To BS EN 60432-2 and BS EN 60357.
13. Incandescent (tungsten filament) lamps: To BS EN 60432-1.
14. Photoelectric control units: To BS 5972.
15. Time switches: BS EN 60730-1 and BS EN 60730-2-7.
 - 15.1. Approval: BEAB.
16. Underground cable marker tape: To BS EN 12613.
17. Underground concrete cable protection covers: To BS 2484.

335 Luminaires generally

1. Standard: To BS EN 60598-1.

341 Luminaires for Central Space

1. Description: Central play space
2. Manufacturer: To M+E Engineers specification
 - 2.1. Product reference: To M+E Engineers specification

365 Lighting columns

1. Standards: To BS EN 40-1, -2, -3-3, and -6
2. Manufacturer: To M+E Engineers specification
 - 2.1. Product reference: To M+E Engineers specification

Execution

675 Installing luminaires and lamps generally

1. Location: To lighting Engineers layout and specification; see typical details of lamppost integration within hard and soft landscaping drawing 8903
2. Orientation: To lighting Engineers layout and specification

Completion

870 Inspection and testing of external lighting

1. Switching: Check correct operation of photoelectric control units, time switches and other switching devices over at least one switching cycle.
2. Orientation: Adjust luminaires to achieve optimal performance.

880 Documentation

1. Timing: Submit at completion.

2. Contents

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

890 Maintenance

1. Servicing and maintenance: Undertake.

- 1.1. Duration: In accordance with manufacturer's requirements/specifications

Ω End of Section

Z11

Purpose made metalwork **UNCHANGED**

To be read with preliminaries/ general conditions.

310 Materials generally

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

320 Steel long and flat products

1. Hot rolled structural steels (excluding structural hollow sections and tubes): To BS EN 10025-1.
2. Fine grain steels, including special steels: To BS EN 10025-3 and -4.
3. Steels with improved atmospheric corrosion resistance: To BS EN 10025-5.

340 Hot rolled steel plate, sheet and strip

1. Flat products, high yield strength for cold forming: To BS EN 10149-1, -2 and -3.
2. Carbon steel sheet and strip for cold forming: To BS EN 10111.
3. Narrow strip, formable steel and steel for general engineering purposes: To BS 1449-1.8 and BS 1449-1.14.

350 Cold rolled steel plate, sheet and strip

1. Steel sections: To BS EN 10162.
2. Flat products, high yield strength micro-alloyed steels for cold forming: To BS EN 10268.
3. Carbon steel flat products for cold forming: To BS EN 10130 and BS EN 10131.
4. Uncoated carbon steel narrow strip for cold forming: To BS EN 10139 and BS EN 10140.
5. Narrow strip steel for general engineering purposes: To BS EN 10132-1, -2, and -3.
6. Carbon steel flat products for vitreous enamelling: To BS EN 10209.

360 Coated steel flat products

1. Hot dip zinc coated carbon steel sheet and strip for cold forming: To BS EN 10346 and BS EN 10143.
2. Hot dip zinc coated structural steel sheet and strip: To BS EN 10143 and BS EN 10346.
3. Hot dip zinc-aluminium (za) coated sheet and strip: To BS EN 10346.
4. Hot dip aluminium-zinc (az) coated sheet and strip: To BS EN 10346.
5. Organic coated flat products: To BS EN 10169.

370 Steel structural hollow sections (SHS)

1. Non alloy and fine grain steels, hot finished: To BS EN 10210-1 and -2.
2. Non-alloy and fine grain steels, cold formed welded: To BS EN 10219-2.
3. Weather resistant steels, hot finished: To BS 7668.

380 Other steel sections

1. Equal flange tees: To BS EN 10055.

2. Equal and unequal angles: To BS EN 10056-1 and -2.
3. Wire, carbon steel for general engineering purposes: To BS 1052.
4. Wire and wire products, general: To BS EN 10218-2.
5. Tubes
 - 5.1. Seamless circular: To BS EN 10297-1.
 - 5.2. Seamless cold drawn: To BS EN 10305-1.
 - 5.3. Welded and cold sized square and rectangular: To BS EN 10305-5.
 - 5.4. Welded circular: To BS EN 10296-1.
 - 5.5. Welded cold drawn: To BS EN 10305-2.
 - 5.6. Welded cold sized: To BS EN 10305-3.

400 Stainless steel products

1. Chemical composition and physical properties: To BS EN 10088-1.
2. Sheet, strip and plate: To BS EN 10088-2.
3. Semi-finished products bars, rods and sections: To BS EN 10088-3.
4. Wire: To BS EN 1088-3.
5. Tubes
 - 5.1. Welded circular: To BS EN 10296-2.
 - 5.2. Seamless circular: To BS EN 10297-2.

Fabrication

515 Fabrication generally

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

520 Cold formed work

1. Profiles: Accurate, with straight arrises.

525 Adhesive bonding

1. Preparation of surfaces of metals to receive adhesives
 - 1.1. Degrease.
 - 1.2. Abrade mechanically or chemically etch.
 - 1.3. Prime: To suit adhesive.
2. Adhesive bond: Form under pressure.

527 Welding

1. Welding procedures
 - 1.1. Method and standard: Metal arc welding to BS EN 1011-1 and -2.
2. Preparation
 - 2.1. Joint preparation: Clean thoroughly.
 - 2.2. Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
3. Jointing

- 3.1. **Joints:** Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
- 3.2. **Dissimilar metals:** Not applicable
- 3.3. **Strength requirements:** Welds to achieve design loads.
- 3.4. **Heat straightening:** Submit proposals
- 3.5. **Complex assemblies:** Agree priority for welding members to minimize distortion caused by subsequent welds.
- 3.6. **Tack welds:** Use only for temporary attachment.
- 3.7. **Jigs:** Provide to support and restrain members during welding.
- 3.8. **Filler plates:**
- 3.9. **Lap joints:** Minimum 5 x metal thickness or 25 mm, whichever is greater.
- 3.10. **Weld terminations:** Clean and sound.

555 Brazing

1. **Standard:** To BS EN 14324.
2. **Testing**
 - 2.1. **Destructive testing:** To BS EN 12797.
 - 2.2. **Nondestructive testing:** To BS EN 12799.

610 Testing

1. **Description:** Welds to balustrading
2. **Testing standard:** BS 499-1
3. **Welding records and test results:** Submit 2 copies.

Finishing

710 Finishing welded and brazed joints visible in complete work

1. **Standard:** To BS EN ISO 8501-3.
2. **Butt joints:** Smooth, and flush with adjacent surfaces.
3. **Fillet joints:** Neat.
4. **Grinding:** Grind smooth where indicated on drawings.

780 Galvanizing

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

790 Vitreous enamelling

1. **Standard:** To BS EN ISO 28722.
2. **Substrate metal:** Steel to BS EN 10209.

Completion

910 Documentation

1. Submit
 - 1.1. Manufacturer's maintenance instructions.
 - 1.2. Guarantees, warranties, test certificates, record schedules and log books.

920 Completion

1. Protection: Remove.
2. Cleaning and maintenance: Carry out in accordance with procedures detailed in fabricators' guarantees.

Ω End of Section

Z31

Powder coatings **UNCHANGED**

To be read with preliminaries/ general conditions.

120 Powder coating materials

1. Manufacturer: Obtain from one only of the following: Contractor's choice.
2. **Selected manufacturer** Submit details before commencement of powder coating including:
 - 2.1. Name and contact details.
 - 2.2. Details of accreditation schemes.
 - 2.3. Technical data of product including current Agrément certificates.

210 Working procedures

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

220 Powder coating applicators

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

225 Guarantees

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

230 Control samples

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

- 2.3. Reference number.
- 2.4. Name.
- 2.5. Gloss level.

235 Independent inspection at plant

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

240 Qualicoat quality assurance system

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

250 Component design

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

310 Pretreatment of aluminium components

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

320 Pretreatment of steel components

- 1. **Condition of components to be pretreated**
 - 1.1. Free from corrosion and damage.
 - 1.2. All welding and jointing completed and finish off as specified.
 - 1.3. Free from impurities including soil, grease and oil.

- 1.4. Suitable for and compatible with the pretreatment process.
2. Conversion coating requirements: To BS EN 13438.
3. Rinsing requirements: Use demineralized water. Drain and dry.

330 Pretreatment for protection in aggressive environments

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

430 Extent of powder coatings

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

435 Application of powder coatings

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

440 Performance and appearance of powder coatings

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

450 Aluminium alloy fabrications

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

460 Steel fabrications

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

470 Fixings

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

480 Damaged components - repair or replacement

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

510 Protection

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

520 Protection in hazardous locations

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

535 Documentation

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

540 Completion

1. **Protection:** Remove any protective coverings.
2. **Cleaning and maintenance of powder coatings:** Carry out in accordance with procedures detailed in powder coating manufacturer and applicator guarantees.

Ω End of Section



Specification created using NBS Chorus