

L083401 Rev:C

Remington Road, Haringey

Landscape Specification

Prepared for:
Formation Design & Build

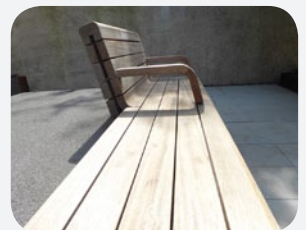
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Rev	Description	Date	By
A	Clauses Q23, Q24, Q25, Q50 & Q52 amended.	07/09/23	JD
B	Clause Q10/110s amended.	12/09/23	JD
C	Clause F10/110D, F22 & Q23 deleted. Clause F10/110E & F10/110F added.	30/11/23	JD

FOR TENDER



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**Landscape
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D20 Excavating and filling

Generally/the site

110 Site investigation

1. Report: Topographical Survey.

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.

Clearance/excavating

164 Tree roots

1. Protected area: Do not cut roots within precautionary protection area.
 - 1.1. Size of area: See Arboriculturist tree report.
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 phosphate fertilizer

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.

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. **Embankments and cuttings:** ± 50 mm.
2. **Ground abutting external walls:** ± 50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.

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

420 Topsoil storage heaps

1. Location: Agree with Contract Administrator (CA)
2. Standard: To BS 3882.
3. Height (maximum): 1200
4. Protection
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.
 - 4.3. Prevent compaction and contamination.

421 Topsoil storage heap treatment

1. Treatment: Apply a suitable herbicide at appropriate times to prevent seeding of weeds.

441 Surplus subsoil

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

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.

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.

550 Geotextile sheet - To Engineer's Specification

1. Protect from

571 Geocells

1. **Manufacturer:** GreenBlue Urban Ltd
 - 1.1. **Product reference:** Root Space system GBU1015
2. **Reference::** Refer drawing no L0834L01, L0834D01 and L0834D14
3. **Size of cells (length x width x thickness):** 500mm approx. x 500mm approx. x 600mm
4. **Preparation of subgrade:** As per Manufacturer's details
5. **Fixing/ Connecting:** As per Manufacturer's details
 - 5.1. **Centres:** As per Manufacturer's details
6. **Sundries:** As per Manufacturer's recommendation.
7. **Installation:** As per Manufacturer's recommendation.

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.

Bioremediation - Not Used

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

E10

Mixing/casting/curing in situ concrete: To Engineer's detail.

Concrete - Not Used

Materials, batching and mixing - Not Used

Project testing/ certification - Not Used

Placing/ compacting/ curing and protecting - Not Used

Ω End of Section

F10 Brick/ block walling

Types of walling

110 A Clay facing brickwork, 900mm high BRICK WALL - R2

1. **Description:** To 900mm high BRICK WALL - R2, Refer drawing no. L0834L01
2. **Bricks:** To BS EN 771-1.
 - 2.1. **Manufacturer:** To Architects specification
 - 2.1.1. **Product reference:** To Architects specification
3. **Mortar:** As section Z21.
 - 3.1. **Standard:** Not applicable
 - 3.2. **Mix:** To Architects specification
 - 3.3. **Additional requirements:** None
4. **Bond:** To Architects specification
5. **Joints:** To Architects specification
6. **Features:** Brick on edge coping and 600mm high vertical bar railing on top. Total height 1500mm. Brick piers on corners, Piers to have brick on edge copings.

110 C Clay facing brickwork, 900mm HIGH BRICK WALLS - R4

1. **Description:** R4 - 900mm HIGH BRICK WALLS. Refer drawing no. L0834L01
2. **Bricks:** To BS EN 771-1.
 - 2.1. **Manufacturer:** To Architects specification
 - 2.1.1. **Product reference:** To Architects specification
3. **Mortar:** As section Z21.
 - 3.1. **Standard:** Not applicable
 - 3.2. **Mix:** To Architects specification
 - 3.3. **Additional requirements:** None
4. **Bond:** To Architects specification
5. **Joints:** To Architects specification
6. **Features:** 900mm high brick wall with brick on edge coping.

110 E Clay facing brickwork, BRICK WALLS - R3

1. **Description:** R3 - 474mm to 175mm HIGH BRICK WALLS. Refer drawing no. L0834L01
2. **Bricks:** To BS EN 771-1.
 - 2.1. **Manufacturer:** Contractor's choice
 - 2.1.1. **Product reference:** Pale cream colour submit proposals
3. **Mortar:** As section Z21.
 - 3.1. **Standard:** Not applicable
 - 3.2. **Mix:** 1:3 masonry cement:sand
 - 3.3. **Additional requirements:** Coloured mortar to match bricks
4. **Bond:** Running bond
5. **Joints:** Bucket handle
6. **Features:** Double brick on edge coping.

7. Studs: Anti skateboarding studs to coping at 1000mm centres. See clause Q50/380.

110 F Clay facing brickwork, PLANTER BRICK WALLS - R6

1. Description: R6 - 474mm HIGH PLANTER BRICK WALLS. Refer drawing no. L0834L01
2. Bricks: To BS EN 771-1.
 - 2.1. Manufacturer: Contractor's choice
 - 2.1.1. Product reference: Pale cream colour submit proposals
3. Mortar: As section Z21.
 - 3.1. Standard: Not applicable
 - 3.2. Mix: 1:3 masonry cement:sand
 - 3.3. Additional requirements: Coloured mortar to match bricks
4. Bond: Running bond
5. Joints: Bucket handle
6. Features: Brick on edge coping.

Testing - Not Used

Workmanship generally

430 Conditioning of clay bricks and blocks

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

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. Overall thickness of walls ± 10 mm.
 - 6.4. Level of bed joints up to 5 m

7. (brick masonry) ± 11 mm.
- 7.1. Level of bed joints up to 5 m

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

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

560 Coursing brickwork

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

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.

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 BRICK FACED PLANTERS & PARAPET WALLS
2. Joint preparation: Remove debris. Dampen surface.
3. Mortar: As section Z21.

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

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.

830 Cleanliness

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

Ω End of Section

L37

External stair, ramps, handrail and balustrades systems

General

120 Ramp systems

1. Description: Refer to drawing L0834L01
2. Type: Built in situ
3. Base/ Fabric: To engineer's detail
4. Surface: P4 Paving
5. Minimum surface width: 1400mm
6. Gradients
 - 6.1. Going: Maximum 1:12
 - 6.2. Cross fall: Maximum 1:60
7. Accessories: Part M compliant handrail

150 Handrail systems

1. Description: Part M compliant timber top handrail to ramp
2. System manufacturer: Contractor's choice
3. Material: Hardwood handrail with Mild steel galvanised support
 - 3.1. Cross section: 50 mm minimum circular
4. Height (to upper surface of handrail)
 - 4.1. Above pitch line: To comply with Part M
 - 4.2. Above landing: To comply with Part M

System performance - Not Used

Products - Not Used

Fabrication

510 Fabrication generally

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

Execution

610 Loading

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

630 Setting components in concrete

1. Holes: 250 x 250 x minimum 300 mm deep
2. Components: Accurately positioned and securely supported.
3. Concrete fill: Compact as filling proceeds.
4. Concrete foundations exposed to view: Finished to weathering profile to shed water and trowel smooth.
5. Temporary component support: Maintain undisturbed for minimum 48 hours.

650 Installation generally

1. Fasteners: To section Z20.
2. Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
3. Temporary support: Do not use finished work as temporary support or strutting for other work.
4. Applied finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

662 Adverse weather

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

Completion

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: 2
4. Submission: Two weeks after request by contract administrator

Ω End of Section

M60

Painting/clear finishing

Coating systems

130 Gloss paint

1. **Description:** TO EXTERNAL GALVANISED STEEL RAILINGS
2. **Manufacturer:** Contractor's choice
 - 2.1. **Product reference:** Contractor's choice
3. **Surfaces:** Preprimed and sealed
 - 3.1. **Preparation:** Degrease and provide key
4. **Initial coats:** As recommended by manufacturer
5. **Undercoats:** As recommended by manufacturer
6. **Finishing coats:** Full gloss
 - 6.1. **Number of coats:** As recommended by manufacturer

Generally

215 Handling and storage

1. **Coating materials:** Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.
2. **Materials from more than one batch:** Store separately. Allocate to distinct parts or areas of the work.

220 Compatibility

1. **Coating materials selected by contractor**
 - 1.1. Recommended by their manufacturers for the particular surface and conditions of exposure.
 - 1.2. Compatible with each other.
 - 1.3. Compatible with and not inhibiting performance of preservative/fire-retardant pretreatments.

280 Protection

1. **'Wet paint' signs and barriers:** Provide where necessary to protect other operatives and general public, and to prevent damage to freshly applied coatings.

Preparation

400 Preparation generally

1. **Standard:** In accordance with BS 6150.
2. Refer to any pre-existing CDM Health and Safety File.
3. Refer to CDM Construction Phase Plan where applicable.
4. **Suspected existing hazardous materials:** Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.
5. **Preparation materials:** Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.
6. **Substrates:** Sufficiently dry in depth to suit coating.

7. Efflorescence salts: Remove.
8. Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.
9. Surface irregularities: Remove.
10. Joints, cracks, holes and other depressions: Fill flush with surface, to provide smooth finish.
11. Dust, particles and residues from preparation: Remove and dispose of safely.
12. Water based stoppers and fillers
 - 12.1. Apply before priming unless recommended otherwise by manufacturer.
 - 12.2. If applied after priming: Patch prime.
13. Oil based stoppers and fillers: Apply after priming.
14. Doors, opening windows and other moving parts
 - 14.1. Ease, if necessary, before coating.
 - 14.2. Prime resulting bare areas.

500 Preprimed steel

1. Areas of defective primer, corrosion and loose scale: Take back to bare metal. Reprime as soon as possible.

511 Galvanized, sherardized and electroplated steel

1. White rust: Remove.
2. Pretreatment: Apply one of the following:
 - 2.1. Mordant solution to blacken whole surface.
 - 2.2. Etching primer recommended by coating system manufacturer.

Application

711 Coating generally

1. Application standard: In accordance with BS 6150, clause 9.
2. Conditions: Maintain suitable temperature, humidity and air quality during application and drying.
3. Surfaces: Clean and dry at time of application.
4. Thinning and intermixing of coatings: Not permitted unless recommended by manufacturer.
5. Overpainting: Do not paint over intumescent strips or silicone mastics.
6. Priming coats
 - 6.1. Thickness: To suit surface porosity.
 - 6.2. Application: As soon as possible on same day as preparation is completed.
7. Finish
 - 7.1. Even, smooth and of uniform colour.
 - 7.2. Free from brush marks, sags, runs and other defects.

Ω End of Section

N91

External signage and interpretation

Signage outline

110 Signage

1. Description: Building related signage to architect's detail and highways related signage to highway engineer's detail to meet local authority requirements.

System performance - Not Used

Products - Not Used

Materials - Not Used

Fabrication - Not Used

Execution/ erection/ installation - Not Used

Completion - Not Used

Ω End of Section

Q10

Kerbs/ edgings/ channels/ paving accessories

Types of kerbs/edgings and channels

110 A Proprietary precast concrete Kerb - K1

1. Description: Refer drawing no L0834L01
2. Standard: To BS EN 1340.
3. Manufacturer: Tobermore
4. Product reference: Tobermore Fusion Dropper Centre Kerb
5. Size (width x height x length): 145mm x 145 mm x 915mm
6. Colour: Silver
7. Detail:: Laid flush

110 B Proprietary precast concrete Edging - K2

1. Description: Refer drawing no L0834L01
2. Standard: To BS EN 1340.
3. Manufacturer: Tobermore
4. Product reference: Fusion Edge
5. Size (width x height x length): 75mm x 150mm x 900mm
6. Colour: Silver
7. Detail:: Laid flush

110 C Proprietary precast concrete Kerb - K3

1. Description: Refer drawing no L0834L01
2. Standard: To BS EN 1340.
3. Manufacturer: Tobermore
4. Product reference: Fusion Kerb
5. Size (width x height x length): 145mm X 255mm X 915 mm
6. Colour: Silver
7. Detail:: Installed with minimum 100mm upstand

110 D Proprietary precast concrete Drop Kerb - K3-DK

1. Description: Refer drawing no L0834L01
2. Standard: To BS EN 1340.
3. Manufacturer: Tobermore
4. Product reference: Fusion Kerb Dropper
5. Size (width x height x length): 145mm X 255/150mm X 915 mm
6. Colour: Silver

110 E Proprietary precast concrete Kerb - K3-150

1. Description: Refer drawing no L0834L01
2. Standard: To BS EN 1340.
3. Manufacturer: Tobermore

4. Product reference: Fusion Kerb
5. Size (width x height x length): 145mm X 255mm X 915 mm
6. Colour: Silver
7. Detail: Installed with minimum 150mm upstand

170 Linear slot drainage channel systems. To Engineer's Specification.

200 Aluminium Edging - K4

1. Description: EDGING TO PLAY AREA, refer drawing L0834L01
2. Manufacturer: Kinley Systems
 - 2.1. Product reference: Aluexcel
3. Size: 50mm depth
4. Type/ Material: Aluminium
 - 4.1. Finish: Mill Aluminium
5. Accessories: Spiral fixing stakes
6. Bedding: Dry mix (sharp sand & cement)

Roads/paving accessories/ marking/ demarcation

305 Tree grilles and surrounds - TG

1. Manufacturer: Landmark Street Furniture
 - 1.1. Product reference: Stainless Steel Linear Grille, SKU: LMTP05/07/001
 - 1.2. Description: TG - Refer drawing no L0834L01, L0834D01 and L0834D14
2. Size: 1000mm x 1000mm
3. Material: Stainless Steel
4. Finish: Stainless Steel with Satin polish
5. Bedding/ fixing: To Manufacturer's detail

395 Road marking (thermoplastic)

1. Standard: Road Safety Markings Association standard specification document for road marking and road studs (StanSpec).
2. Manufacturer: To Engineer's Detail
 - 2.1. Product reference: To Engineer's Detail
3. Colour: To Engineer's Detail
4. Retroreflectivity to BS EN 1436: To Engineer's Detail

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 - To Engineer's Specification

540 Cement mortar bedding - To Engineer's Specification

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.

Ω End of Section

Q20

**Granular sub-bases to roads/ pavings - TO ENGINEER'S
DETAIL**

To be read with preliminaries/ general conditions. - Not Used

Ω End of Section

Q22

Asphalt roads/ pavings

Types of paving

110 Asphalt / Tarmac (T) - TO ENGINEER'S DETAILS

1. Description: Refer drawing no. L0834L01

Preparatory work/ requirements - Not Used

Laying - Not Used

Completion - Not Used

Ω End of Section

Q24

Interlocking brick/ block roads/ pavings

Types of paving

115 A Permeable concrete block paving – P1a

1. Description: Tobermore Tegula Hydropave block paving, refer drawing L0834L01
2. Subgrade improvement layer: To Engineer's detail
 - 2.1. Compacted thickness: To Engineer's detail
3. Geotextile below granular sub-base: To Engineer's detail
4. Granular sub-base: To Engineer's detail
 - 4.1. Compacted thickness: To Engineer's detail
5. Geotextile below laying course
 - 5.1. Manufacturer: To Engineer's detail
 - 5.1.1.Product reference: To Engineer's detail
6. Laying course
 - 6.1. Material: To Engineer's detail
 - 6.2. Nominal thickness after compaction: To Engineer's detail
7. Blocks: To BS EN 1338.
 - 7.1. Manufacturer: Tobermore
 - 7.1.1.Product reference: Tegula Hydropave block paving - permeable
 - 7.2. Sizes: 240mm x 120mm x 80mm
 - 7.3. Colour/ Finish: Bracken
8. Jointing
 - 8.1. Material: To Engineer's / Manufacturer's detail
 - 8.2. Joint width: To Engineer's / Manufacturer's detail
9. Setting out
 - 9.1. Bond: 90° herringbone

115 C Permeable concrete block paving – P1c

1. Description: Tobermore Tegula Hydropave block paving, refer drawing L0834L01
2. Subgrade improvement layer: To Engineer's detail
 - 2.1. Compacted thickness: To Engineer's detail
3. Geotextile below granular sub-base: To Engineer's detail
4. Granular sub-base: To Engineer's detail
 - 4.1. Compacted thickness: To Engineer's detail
5. Geotextile below laying course
 - 5.1. Manufacturer: To Engineer's detail
 - 5.1.1.Product reference: To Engineer's detail
6. Laying course
 - 6.1. Material: To Engineer's detail
 - 6.2. Nominal thickness after compaction: To Engineer's detail
7. Blocks: To BS EN 1338.

- 7.1. Manufacturer: Tobermore
 - 7.1.1. Product reference: Tegula Hydropave block paving - permeable
- 7.2. Sizes: 208mm x 173mm x 60mm/ 173mm x 173mm x 60mm/ 138mm x 173mm x 60mm
- 7.3. Colour/ Finish: Bracken
- 8. Jointing
 - 8.1. Material: To Engineer's / Manufacturer's detail
 - 8.2. Joint width: To Engineer's / Manufacturer's detail
- 9. Setting out
 - 9.1. Bond: Running bond

115 E Permeable concrete block paving – P3b

- 1. Description: Tobermore Tegula Hydropave block paving, refer drawing L0834L01
- 2. Subgrade improvement layer: To Engineer's detail
 - 2.1. Compacted thickness: To Engineer's detail
- 3. Geotextile below granular sub-base: To Engineer's detail
- 4. Granular sub-base: To Engineer's detail
 - 4.1. Compacted thickness: To Engineer's detail
- 5. Geotextile below laying course
 - 5.1. Manufacturer: To Engineer's detail
 - 5.1.1. Product reference: To Engineer's detail
- 6. Laying course
 - 6.1. Material: To Engineer's detail
 - 6.2. Nominal thickness after compaction: To Engineer's detail
- 7. Blocks: To BS EN 1338.
 - 7.1. Manufacturer: Tobermore
 - 7.1.1. Product reference: Tegula Hydropave block paving - permeable
 - 7.2. Sizes: 240mm x 160mm x 60mm/ 173mm x 173mm x 60mm
 - 7.3. Colour/ Finish: Cedar
- 8. Jointing
 - 8.1. Material: To Engineer's / Manufacturer's detail
 - 8.2. Joint width: To Engineer's / Manufacturer's detail
- 9. Setting out
 - 9.1. Bond: stack bond

Execution

200 Execution generally – concrete block and clay paver paving

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

211 Colour banding

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

240 Adverse weather

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

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:** To Engineer's detail
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.

505 Regularity of paved surfaces

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

Completion

615 Completion of paving

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

Ω End of Section

Q25 Slab/ brick/ sett/ cobble pavings

General - Not Used

System performance - Not Used

Products

315 Concrete flags - P4

1. Description: Tobermore textured flag Hydropave paving - permeable. Refer drawing no L0834L01
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: Tobermore
 - 2.1.1. Product reference: Hydropave Textured Flags
3. Colour: Charcoal
 - 3.1. Finish: Textured
 - 3.2. Nominal sizes: 450x450x65mm
4. Detail: laid in stack bond

320 Tactile flags and slabs - P6

1. Description: P6 - Part M complaint blister tactile paving at crossing. Refer drawing no L0834L01
2. Standard: To DD CEN/TS 15209.
3. Material:
 - 3.1. Manufacturer: Marshalls or similar
 - 3.1.1. Product reference: Blister tactile paving
4. Nominal sizes: 400x400mm Part M compliant, 2 rows minimum from the back of kerb
5. Colour: Buff

335 Concrete setts - P2

1. Description: P2 - Concrete setts. Refer drawing no L0834L01
2. Manufacturer: Tobermore
 - 2.1. Product reference: Fusion
3. Colour: Silver
4. Finish: Textured surface
5. Sizes: 100x100x80mm
6. Details: Laid in stack bond

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

1. Description: All bedding and jointing to Engineer's detail

Execution

620 Adverse weather

1. General

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

625 Laying pavings – general

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

630 Levels of paving

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

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.

637 Regularity of paved surfaces

1. **Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface):** 3 mm.
2. **Joints between paving units or utility access covers**

- 2.1. **Joints flush with the surface:** difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
- 2.2. **Recessed, filled joints:** difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
- 2.3. **Unfilled joints:** difference in level between adjacent units to be no greater than 2 mm.
3. **Sudden irregularities:** Not permitted.

640 Colour banding

1. **General:** Unless premixed by manufacturer, select from at least 3 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.

Completion

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

1. **Sand dressing:** To Engineer's detail
2. **Final compaction of the surface course:** In accordance with BS 7533-3.
3. **Vacuum cleaning machines:** Not allowed.

Ω End of Section

Q26

Special surfacings/ pavings for sport/ general amenity

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

360 In situ synthetic surfacing - Soft Fall Play surface - P5

1. Description: Soft Fall Play surface - wetpour for play area - permeable. Refer drawing no L0834L01
2. Base: To Manufacturer's details
 - 2.1. Thickness: To Manufacturer's details
3. Surface course: Wet pour, in situ laid polyurethane bound EPDM rubber crumb surface.
 - 3.1. Standard: To BS 7188.
 - 3.2. Manufacturer: Playtop or similar
 - 3.2.1. Product reference: Playtop wet pour surfacing
 - 3.3. Colour: Pearl/ Light grey/ Eggshell
 - 3.4. Critical fall height when tested to BS EN 1177: 0.8 m
 - 3.5. Health and safety
 - 3.5.1. Substance known to be toxic or carcinogenic on skin contact or released as vapour or dust during normal use: Not permitted.
4. Submit
 - 4.1. Resistance to abrasive wear, slip resistance, resistance to indentation and ease of ignition: Evidence of testing to BS 7188.
 - 4.2. Critical fall height: Evidence of testing to BS EN 1177.

Associated accessories - Not Used

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

System outline

125 Biodiverse roof growing media

1. Description: TO EXTENSIVE GREEN ROOF
2. Manufacturer: [Radmat Building Products Ltd](#)
3. Contact details
 - 3.1. Address: Holland House
Valley Way
Rockingham Road
Market Harborough
Leicestershire
LE16 7PS
 - 3.2. Telephone: [+44 \(0\)1858 410372](tel:+441858410372)
 - 3.3. Web: www.radmat.com
 - 3.4. Email: techenquiries@radmat.com
4. Product reference: GM40 Bio diverse substrate

155 Mulching and top dressing system

1. Description: To all trees and planting beds except grass lawn/turf
2. Composition
 - 2.1. Material: Bark Mulch. Rolawn (01904 757372) Pro Mulch or similar approved.

Products

300 Preparation materials generally

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

310 Materials not permitted

1. Materials: Products containing peat.

335 A Imported manufactured topsoil, custom mix

1. Description: For tree pits, planting beds and grass/turf.

2. **Quantity:** Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
3. **Source:** Submit proposals.
 - 3.1. **Product reference:** Submit proposals including soil report for approval.
4. **Soil textural class:** Sandy loam.
5. **Reaction,** to BS 1377-3: pH 5.5-8.
6. **Organic matter** to PD CR 13456: Minimum 5%
7. **Nutrient content:** Minimum index values for nitrogen, phosphorus, potassium and magnesium to be as for BS 3882 multipurpose topsoil.
8. **Crumb structure:** Made up of discernible crumbs.
9. **Stone size** in any dimension (maximum): 10mm

335 B EXISTING OR IMPORTED SUBSOIL To meet the requirements of BS8601

Execution

610 Topsoil analysis

1. **Soil to be analysed:** Imported topsoil
2. **Soil analyst:** Tim O'Hare Associates Tel:01491 822653 or Voelcker Consultants Tel: 02087469550, or equal and approved. Laboratory used to operate in accordance with MCERTS Performance Standard for Laboratories Undertaking the Chemical Testing of Soil.
3. **Samples:** Collect in accordance with BS 3882.
4. **Submit**
 - 4.1. **Declaration of analysis:** In accordance with BS 3882, clause 6 and Table 1.
 - 4.2. **Additional analysis:** Not required
 - 4.3. **Report** detailing soil analyst's recommendations.

620 Importing topsoil

1. **Give notice:** Before stripping topsoil for transfer to site.
 - 1.1. **Notice period:** 5 days

630 Documentation for imported topsoil

1. **Description:** For all planting 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, clause 6 and Table 1.
4. **Number of copies:** Two

655 Mechanical tools

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

660 Grading subsoil for:

1. **Description:** For planting areas.

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

665 Subsoil surface preparation for:

1. **Description:** For planting 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:** 300mm to ensure free draining.
 - 4.1.2. **Stiff clay and cohesive subsoils:** As necessary to ensure free draining.
 - 4.1.3. **Rock and chalk subgrades:** Lightly scarify to promote free drainage.
 - 4.2. **Wet conditions:** Do not loosen subsoils.
5. **Stones:** Immediately before spreading topsoil, remove stones larger than 20 mm.
6. **Remove from site:** Arisings, contaminants and debris.

675 Preparation of undisturbed topsoil

1. **Standard:** In accordance with BS 4428.
 - 1.1. **Grading and cultivation:** Category C
2. **Hard ground:** Break up thoroughly.
3. **Clearing:** Remove visible roots and large stones with a diameter greater than 10mm.
4. **Areas covered with turf or thick sward:** Plough or dig over to full depth of topsoil.
5. **Fallow period (minimum):** One month
 - 5.1. **Weed control:** At appropriate times treat with a suitable translocated nonresidual herbicide.

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:** Agree with Contract Administrator (CA)
2. **Height (maximum):** 1.5m if heap is to be maintained for a period exceeding 2 weeks.
3m for periods less than 2 weeks.
3. **Width (maximum):** 3m if heap is to be maintained for a period exceeding 2 weeks.
10m for periods less than 2 weeks.
 - 3.1. **Formation:** Loose tip and shape from the side only, without running machinery on the heap at any time.
4. **Protection**
 - 4.1. Do not place any other material on top of storage heaps.
 - 4.2. Do not allow construction plant to pass over storage heaps.

- 4.3. Prevent compaction and contamination, by fencing and covering as appropriate.

700 Grading of topsoil

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

705 Handling topsoil

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

710 Spreading topsoil on:

1. **Description:** For all planting 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:** Refer topsoil plan.
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. **Description:** For all planting areas.
2. **Compacted topsoil:** Break up to full depth.
3. **Tilth:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
4. **Depth:** 75 mm
5. **Particle size (maximum):** 2-8 mm
6. **Timing:** Within a few days before planting
7. **Weather and ground conditions:** Suitably dry.
8. **Surface:** Leave regular and even.
9. **Levels:** See Levels plan

10. Undesirable material brought to the surface

10.1. Remove visible weeds.

10.2. Remove roots and large stones with any dimension exceeding 10 mm.

720 Finished levels of topsoil after settlement

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

Completion

920 Applying mulch

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

Ω End of Section

Q30 Seeding/ turfing

General information/requirements

115 Seeded and turfed areas

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

120 Climatic conditions

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

145 Watering

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

150 Water restrictions

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

170 Setting out

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

Preparation

210 Herbicide

1. **Description:** 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:** As seed supplier's recommendations.

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
 - 1.3. **Reinforced grass areas:** Soil for grass swards, as section Q28

Seeding

310 Grass seed

1. Description: FOR ALL GRASSED AREAS, Refer drawing L0834L02 and L0834L02
2. Mixture: 35% Chewings fescue, 35% Slender red fescue, 20% Smooth stalked meadow grass, 10% Brown top bent
3. Application rate: 5-10 g/m²

312 Wildflower seed mixture

1. Description: FOR WILDFLOWER AREA
2. Supplier: Emorsgate Seeds or similar approved.
 - 2.1. Mixture reference: EM1 - Basic General Purpose Meadow Mixture
3. Origin of each species (as defined in Flora Locale's Code of practice for collectors, growers and suppliers of native flora): UK origin.
4. Application rate: 4 g/m².

319 Quality of seed

1. Description: FOR ALL GRASSED AREAS
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: To suit soil type, proposed usage, location and weather conditions during and after sowing
 - 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

340 Pre-emergent herbicide

1. Description: FOR ALL GRASSED AREAS
2. Standard: Pesticide Safety Directorate approved.
3. Application rate: In accordance with manufacturer's written recommendation.
 - 3.1. Timing: Immediately after sowing.

352 Edges to seeded areas

1. Description: ADJACENT TO PLANTING BEDS AND TREE PITS
2. Timing: After seeded areas are well established.
3. Edges: Clean straight lines or smooth curves.
 - 3.1. Mulch and soil: Draw back to permit edging.

4. Arisings: Remove.
5. Completion: Respread soil and mulch.

Turfing - Not Used

Protecting/cutting

530 First cut of grassed areas

1. Timing: When grass is reasonably dry.
 - 1.1. Height of initial growth: 50 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: 40 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: Agree with Contract Administrator

620 Maintaining

1. Description: GENERAL GRASSED AREAS
2. Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
3. Maximum height of growth at any time: 40mm
4. Preparation: Before each cut remove all litter and debris.
5. Cutting: As and when necessary to a height of 40mm.
 - 5.1. Arisings: Remove
6. Bulb planting areas: Do not cut until bulb foliage has died down.
7. Trimming: All edges.
 - 7.1. Arisings: Remove.
8. Weed control: Substantially free of broad leaved weeds.
 - 8.1. Method: Application of a suitable selective herbicide.
9. Stones brought to the surface: Remove regularly.

- 9.1. **Size:** Exceeding 10 mm in any dimension.
- 10. **Areas of settlement:** Make good.
- 11. **Watering:** As necessary.

Ω End of Section

Q31 External planting

General information/ requirements

112 Site clearance generally

1. **General:** Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. **Stones:** Remove those with any dimension exceeding 10 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:** None

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. **Wildflower plugs:** Late August to mid November or March/ April.

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.

170 Soil requirements

1. **Type**
 - 1.1. **Planted beds:** Planting bed soil system, as section Q28

- 1.2. Tree pits, shrub pits and other backfilling: Plant pit backfilling soil system, as section Q28
- 1.3. External container planting: Container planting growing media system, as section Q28
- 1.4. Mulch applied after planting: Mulching and top dressing system, as section Q28

200 Plants/ Trees – general

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

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.

246 Labelling and information

1. Standard: To BS 3936.

255 Plants/ Trees reserved at supplier's premises

1. Types/ Species: As plant schedule

2. Predelivery inspection: Give notice.
3. Labelling: Identify inspected plants/ trees as reserved for use on this project.

265 Plant handling, storage transport and planting

1. Standard: To CPSE 'Handling and establishing landscape plants'.
2. Frost: Protect plants from frost.
3. Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
4. Plant packaging: Black polyethylene bags
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 EXISTING VEGETATION
2. Locations: All planting areas
3. Type: Suitable for suppressing perennial weeds.
4. Timing: Allow fallow period before cultivation.
 - 4.1. Duration (minimum): Two weeks

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 contractor's choice of herbicide.

Planting shrubs/ herbaceous plants/ bulbs

405 Shrub planting pits

1. Timing: Excavate 1-2 days (maximum) before planting.
2. Sizes: 150 mm wider than roots when fully spread and 200 mm deep
3. Pit bottom improvement Break up to a depth of 150 mm, incorporating 25 g of slow release fertilizer per planting pit.

420 Climbing plants

1. Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
 - 1.1. Branches: Lightly secured to supports.
2. Climber supports: Stainless steel wire
 - 2.1. Base height: 450 mm above ground
 - 2.2. Extent: As drawing L0834D08
 - 2.3. Centres: 150 mm
 - 2.4. Distance from wall: 50 mm
3. Fixings: Stainless steel post
 - 3.1. Centres: 2 m

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.

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

505 Tree pits

1. Sizes: See Topsoil plan
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 200 mm.
 - 4.1. Treatment: Not required

5. Pit sides: Scarify.
6. Backfilling material: Topsoil, as section Q28

512 Tree pit irrigation and ventilation accessories

1. Locations: To all tree pits
2. Manufacturer: Greenleaf Tel:01424 433233; or equal and approved.
 - 2.1. Product reference: Root Rain Urban, installed in accordance with manufacturer's instructions.
3. Type: Perforated plastics ventilation pipe with inlet.
4. Pipe diameter: As manufactured.
5. Ring diameter: As manufactured.
6. Inlet: Black plastics, with cap
7. Installation
 - 7.1. Pipe: Lay in loop above root ball with slight fall away from inlet pipe. Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
 - 7.2. Top cap of inlet: Protruding slightly above finished surround level.
 - 7.3. Backfill material: Carefully compact in layers.

520 Cellular structural soil system

1. Locations: Refer the drawing L0834L01, Detail L0834D01 and L0834D02.
2. Manufacturer: GreenBlue Urban Ltd or similar approved.
 - 2.1. Product reference: RootSpace. GBU1015, 500x500x600mm high.
 - Rootsoil 20 as suggested by manufacturer's.
 - Twinwall - as suggested by manufacturer's.
 - Plastic open reinforcing mesh 20mm aperture laid below and sides of soil cells as suggested by manufacturer's.
 - 200mm minimum gravel layer wrapped in geotextile as suggested by manufacturer's.
3. Geotextile membrane: Install to manufacturer's written recommendations.
4. Installation: Ensure all void spaces are filled with lightly compacted growing medium prior to installation of further layers or sub-bases.

550 Double staking for

1. Description: ALL TREES
2. Staking
 - 2.1. Position: Either side of tree position and perpendicular to wind direction.
 - 2.2. Driving: Vertically at least 300 mm into bottom of pit before planting.
 - 2.3. Backfilling: Consolidate material around stake.
 - 2.4. Firming: Sufficiently firm to prevent movement of the rootball/ rootstock.
3. Height of stakes: Cut off to approximately 600 mm above ground level
4. Horizontal bracing: Timber cross bar, 100 mm x 38 mm x 1000 mm
 - 4.1. Fixing: Firmly fix using nails on windward side of tree and as close as possible to the stem without making contact with the bark. Position cross bar horizontally and 25 mm from top of stakes
5. Ties: Adjustable
6. Tying: Secure rubber belting around tree stem firmly without causing constriction or chafing

7. Nails for fixing ties, belts and webbing: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
8. Nails for fixing cross bars: To BS 1202-1, galvanized round wire, minimum 75 mm long and 3.75 mm gauge

Woodland/ matrix/ buffer zone planting

617 Removing trees and hedges

1. Identification: Clearly mark trees and hedges to be removed.
2. Work near retained trees: Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
3. Arisings: Remove.
4. Tree stumps: Remove mechanically to a minimum depth of 300 mm below ground level

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: Agree with CA

720 Failures of planting

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

740 Cleanliness

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

750 Planting maintenance generally

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

- 6.1. Broken or missing items: Replace.
- 6.2. Loose stakes: Re-firm in the ground or replace as necessary to provide support to the tree.
- 6.3. Loose guys: Re-firm anchor points and adjust as necessary to provide support to the tree.
- 6.4. Ties: Adjust to accommodate growth and prevent constriction or abrasion.
- 6.5. Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
- 6.6. Frequency of checks: Agree with CA
- 7. Watering: 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.

780 Maintenance instructions

- 1. General: Before end of the maintenance period, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year: Provide details of any special procedures to be carried out.

790 Final mulching

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

Ω End of Section

Q35 Landscape maintenance

Generally

105 Maintenance objectives

1. Location: All Planting
 - 1.1. Duration: Agree with Contract Administrator
2. Aims: Provide wildlife habitat and increase biodiversity and Enhanced landscape quality
3. Results: As scheduled

130 Reinstatement

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

155 Watering

1. Supply: Potable mains water
2. Quantity: Wet to field capacity
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: As necessary for the continued thriving of all planting.

160 Water restrictions

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

170 Disposal of arisings

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

180 Chipping or shredding

1. General: Not permitted on site.

190 Litter

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

195 Protection of existing grass

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

197 Cleanliness

1. Soil and arisings: Remove from hard surfaces.

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

Grassed areas

210 Maintenance of grassed areas

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

220 Grass cutting generally

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

225 Tree stems

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

226 Tree stems

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

265 Mowing general areas

1. **Grass height:** 50 and 75mm
2. **Arisings:** Remove

280 Cutting spring flowering wild flower meadows

1. **Times of year/ Frequency of cutting:** July, then monthly until October
2. **Height of cut:** 50 mm
3. **Arisings:** Remove

Flower beds/ seasonal beddings

460 Perennial planting

1. **Gaps in planting:** Refill by replanting.
2. **Watering**

- 2.1. **New plants:** Before and after planting out.
- 2.2. **Ongoing:** As necessary for the continued thriving of all planting.
3. **Operations at end of growing season**
 - 3.1. **Trim:** Older flowering stems of herbaceous perennials.
 - 3.2. **Remove:** Redundant plant supports, litter, debris and arisings.
 - 3.3. **Cultivate:** Fork over the soil, taking care not to cause undue disturbance to plants.

470 Planting beds generally

1. **Operations**
 - 1.1. **Remove:** Dead flower heads, fallen leaves, litter and debris.
 - 1.2. **Weeds:** Thoroughly hand weed.
 - 1.3. **Cultivate:** Lightly hoe.
 - 1.4. **Trim:** Clip grass edges.

Shrubs/trees/hedges

500 Establishment of new planting

1. **Duration:** 1 year
2. **Weed control**
 - 2.1. **Method:** Keep planting beds clear of weeds by maintaining full thickness of mulch.
 - 2.2. **Area:** Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
3. **Soil condition:** Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
4. **Watering:** Contractor's choice

510 Tree stakes and ties

1. **Inspection/ Maintenance times:** As scheduled and immediately after strong winds
2. **Stakes**
 - 2.1. Replace loose, broken or decayed stakes to original specification.
 - 2.2. If longer than half of clear tree stem height, cut to this height in spring. Retie to tree firmly but not tightly with a single tie.
3. **Ties:** Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
 - 3.1. Where chafing has occurred, reposition or replace ties to prevent further chafing.
4. **Removal of stakes and ties:** During spring when no longer required to support the tree
 - 4.1. Fill stake holes with lightly compacted soil.

520 Refirming of trees and shrubs

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

535 Tree grilles

1. **Operations:** Lift grilles, remove weeds, adjust levels as necessary and lightly compact. Refit grilles, refill interstices and lightly compact to correct level.

540 Pruning generally

1. **Pruning:** In accordance with good horticultural and arboricultural practice.
 - 1.1. **Removing branches:** Do not damage or tear the stem or bark.
 - 1.2. **Wounds:** Keep as small as possible and cut cleanly back to sound wood.
 - 1.3. **Cutting:** Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - 1.4. **Larger branches:** Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
2. **Appearance:** Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well-balanced natural appearance.
3. **Tools:** Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
4. **Disease or infection:** Give notice if detected.
5. **Growth retardants, fungicide or pruning sealant:** Do not use unless instructed.

555 Pruning trees and shrubs

1. **Standard:** To BS 7370-4.
2. **Special requirements:** None

570 Formative pruning of young trees

1. **Standard:** Type and timing of pruning operations to suit the plant species.
2. **Time of year:** Do not prune during the late winter/ early spring sap flow period.
3. **Young trees up to 4 m high**
 - 3.1. **Crown prune** by removing dead branches and reducing selected side branches by one third to preserve a well-balanced head and ensure the development of a single strong leader.
 - 3.2. **Remove duplicated branches** and potentially weak or tight forks. In each case cut back to live wood.
4. **Whips or feathered trees:** Do not prune.

575 Pruning ornamental shrubs

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

580 Pruning flowering species of shrubs and roses

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

600 Trimming rapidly establishing hedges

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

620 Removal of dead plant material

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

625 Climbing plants

1. **Pruning:** Remove excess growth, to ensure that signs, light fittings, doors and windows are kept clear at all times.
2. **Insecure growth:** Attach to supporting wires or structures using Stainless steel wire 1 mm diameter black plastics-coated steel wire.
3. **Supporting structures:** Check and repair as necessary.

630 Dead and diseased plants

1. **Removal:** As soon as possible
2. **Replacement:** In the next suitable planting season

645 Weed control generally

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

650 Hand weeding

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

690 Maintenance of loose mulch

1. **Thickness (minimum):** 50 mm
 - 1.1. **Top up:** Annually
2. **Mulch spill on adjacent areas:** Remove weeds and rubbish and return to planted area.
3. **Weeding:** Remove weeds growing on or in mulch by Hand-weeding.

Tree work

810 Tree work generally

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

815 Additional work

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

820 Prevention of wound bleeding

1. Standard: To BS 3998.

825 Prevention of disease transmission

1. Standard: To BS 3998.

835 Cutting and pruning generally

1. Tools: Appropriate, well maintained and sharp.
2. Final pruning cuts
 - 2.1. Chainsaws: Do not use on branches of less than 50 mm diameter.
 - 2.2. Hand saws: Form a smooth cut surface.
 - 2.3. Anvil type secateurs: Do not use.
3. Removing branches: Do not damage or tear the stem.
4. Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
5. Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.
6. Large branches: Remove only if unavoidable
 - 6.1. Remove in small sections and lower to ground with ropes and slings.
7. Dead branches and stubs: When removing, do not cut into live wood.
8. Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
9. Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

855 Cutting tree roots

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

865 Bark damage

1. Wounds
 - 1.1. Do not attempt to stop sap bleeding.

- 1.2. **Bark:** Remove ragged edges using a sharp knife.
- 1.3. **Wood:** Remove splintered wood from deep wounds.
- 1.4. **Size:** Keep wounds as small as possible.
2. **Liquid or flux oozing from apparently healthy bark:** Give notice.

Water areas - Not Used

Hard landscape areas/fencing

910 Hard surfaces and gravel areas

1. **Herbicide:** Apply a suitable foliar acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
2. **Hard surfaces:** Remove litter, leaves and other debris.
3. **Surface gutters and channels:** Remove mud, silt and debris.
4. **Drainage gullies:** Empty traps and flush clean.
5. **Gravel areas:** Rake over. Remove weeds, litter, leaves and debris, and level off.
6. **Repairs to flexible bituminous pavings:** In accordance with the original paving specification or BS 7370-2, clause 4.12.
7. **Stain removal:** In accordance with BS 7370-2, table 4.

Ω End of Section

Q37 Green roofs

General

130 Extensive green roof

1. Description: To Extensive Green Roof, refer drawing L0834L04
2. Growing medium: Green roof growing media system, as section Q28
 - 2.1. Depth: 120-150mm
3. Vegetation: Wildflower Plugs
4. Accessories: As drawing L0834L04

Performance

210 General design

1. Green roof and associated features: Complete the detailed design.
2. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

Products

320 Root barrier To Architect's Specification

335 Separation layer To Architect's Specification

350 Drainage layer

1. Description: To Extensive Green Roof, refer drawing L0834L04
2. Manufacturer: RadMat or similar
 - 2.1. Product reference: Radmat DM25 Drainage Board or similar

Execution

710 Installation generally

1. Preparation: Clear all surfaces of debris.
 - 1.1. Timing: After certification of waterproof membrane integrity.
 - 1.2. Surface condition: Visually inspect waterproof membrane, report any damage.
2. Faults in waterproof membrane: Report.
3. Contamination: Do not use materials detrimental to healthy plant growth.
4. Storage: Do not overload.
 - 4.1. Point loads: Avoid.
5. Outlets: Do not block.
 - 5.1. Outlet grilles: Installed.

720 Adverse weather

1. Unfinished work: Secure from damage and wind uplift.
2. Conditions: Do not install or work with frozen materials.

740 Root barrier installation - as per Manufacturer's and Engineer's details

755 Separation layer installation - as per Manufacturer's and Engineer's details

770 Drainage layer installation - as per Manufacturer's and Engineer's details

790 Growing medium installation

1. Handling: Minimize.
 - 1.1. Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
2. Layers
 - 2.1. Depth (maximum): 150 mm.
 - 2.2. Sequence: Gently firm each layer before spreading the next.

Completion

910 Inspection

1. Timing: Before handover.
 - 1.1. Give notice (minimum): 3 days.

920 Completion

1. General: Leave the works in a clean, tidy condition.
2. Surfaces: Clean immediately before handover.
3. Outlets: Clean and clear of obstructions.
4. Completed green roof: Protect from adjacent or high level working.

930 Documentation

1. Timing: Submit at handover.
2. Contents
 - 2.1. Growing medium declaration of analysis.
 - 2.2. Manufacturers' guarantees and warranties.
 - 2.3. Procedures for maintenance of the green roof.
 - 2.4. Record drawings showing the location of planting and associated features.
3. Number of copies: 3

Ω End of Section

Q40 Fencing

Fencing systems

310 Close boarded fencing 1800mm - F1

1. Reference: Refer drawing L0834L01
2. Manufacturer: Jacksons Fencing or similar approved
3. Height: 1800mm
4. Wood: Contractor's choice
 - 4.1. Treatment: To provide a 15-year service life
 - 4.2. Finish: None
5. Boards/ rails: Softwood feather edged boards on arris rails
6. Posts: Wood
7. Centres of posts (maximum): 2.4 m
8. Method of setting posts: 300 mm square or round holes, 600 mm deep filled to not less than half the depth with concrete
9. Accessories: Wood gravel board
10. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.

310 A Close boarded fencing 2500mm high - F4

1. Reference: Refer drawing L0834L01
 - 1.1. Product reference: Jacksons Fencing or similar approved
2. Height: 2500mm
3. Wood: Contractor's choice
 - 3.1. Treatment: To provide a 15-year service life
 - 3.2. Finish: None
4. Boards/ rails: Softwood feather edged boards on arris rails
5. Posts: Wood
6. Centres of posts (maximum): 2.4 m
7. Method of setting posts: As per engineer's details
8. Accessories: Wood gravel board
9. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-5.

340 Steel vertical bar fencing 1500mm high - F2

1. Manufacturer: Contractor's choice
 - 1.1. Reference: Refer drawing L0834L01
2. Standard: To BS 1722-9.
3. Height: 1500mm
4. Verticals: 12mm square bars
5. Centres of verticals: 99mm max.
6. Posts: RHS, 60 x 60 x 3 mm
 - 6.1. Finish: Hot-dip galvanized to BS EN ISO 1461 Primed ready for site painting
 - 6.1.1. Colour: RAL9005

7. Centres of posts (maximum): 2.0 m
8. Method of setting posts/ stays/ legs: As per manufacturer's/engineer's details.
9. Accessories: None
10. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-9.

340 A Steel vertical bar fencing 1800mm high - F6

1. Manufacturer: Contractor's choice
 - 1.1. Reference: Refer drawing L0834L01
2. Standard: To BS 1722-9.
3. Height: 1800mm
4. Verticals: 12mm square bars
5. Centres of verticals: 99mm max.
6. Posts: RHS, 60 x 60 x 3 mm
 - 6.1. Finish: Hot-dip galvanized to BS EN ISO 1461 Primed ready for site painting
 - 6.1.1. Colour: RAL9005
7. Centres of posts (maximum): 2.4m
8. Method of setting posts/ stays/ legs: As per manufacturer's/engineer's details.
9. Accessories: None
10. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-9.

Gates, posts and stiles

570 Gate - Steel vertical bar gate 1500mm high - F3

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: 1500mm high Mild Steel vertical bar gate, refer drawing L0834L01
2. Sizes: refer drawing L0834L01
3. Posts: to match the fencing F2
4. Finish as delivered: to match the fencing F2

Accessories

625 Additional wire trellis - F7

1. Description: 2000mm high Steel post and strained wire trellis structure, refer drawing L0834L01 and L0834D08
2. Manufacturer: Contractor's choice
3. Mesh size: Strained wires 150mm c/c
4. Posts: 50mm square hollow section 2000mm c/c
5. Height: 2000mm high
6. Bottom of mesh: 450mm refer drawing L0834L01 and L0834D08
7. Fixings: As per manufacturer's and engineer's details

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.

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.

730 Exposed concrete foundations

1. **Filling:** Compact until air bubbles cease to appear on the upper surface.
2. **Finishing:** Weathered to shed water and trowelled smooth.

760 Nailed wood rails

1. **Length (minimum):** Two bays, with joints in adjacent rails staggered.
2. **Fixing:** Nail each length of rail to each post with two 100 mm galvanized nails.
3. **Rails with split ends:** Replace.

765 Cleft wood rails

1. **Length (maximum):** 3.05 m.
2. **Fixing:** Rail end section shaped to adequately fill the post mortice. Nail each rail to each prick post with two galvanized nails.
3. **Rails with split ends:** Replace.

766 Arris rails

1. **Fixing**
 - 1.1. **Rail end section:** Shaped to adequately fill the post mortice or recess.
 - 1.2. **Recessed posts:** Rails bolted to each post.
 - 1.3. **Top rails:** Fixed at both ends using One 12 mm diameter wooden peg .
2. **Rails with split ends:** Replace.

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 - F3

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

Ω End of Section

Q50

Site/ street furniture/ equipment

Gates, barriers and parking controls

190 Bollards - Bo

1. Description: Refer drawing L0834L01
2. Manufacturer: Broxap Ltd
 - 2.1. Product reference: BX47 0076 75-REMOVABLE SOCKET
3. Material: Grade 304 Stainless steel
 - 3.1. Finish as delivered: As manufactured
4. Height above ground: 750mm
5. Sectional size: 76mm
6. Top: Flat
7. Method of fixing: Removable socket fixing

Site and street furniture

210 Cycle stands - CS

1. Manufacturer: Broxap
 - 1.1. Product reference: BXMW/MSTAND - Camden Stand
2. Type: Single stands
3. Material: Steel
 - 3.1. Finish: Hot-dip galvanized to BS EN ISO 1461
 - 3.2. Colour: None
4. Accessories: None
5. Method of fixing: Root, 300 mm below ground, set in concrete base

212 Cycle lockers - CS-E

1. Description: Secure cycle locker - See drawing L0834L01
2. Manufacturer: Cyclehoop
 - 2.1. Product reference: Bikehangar
3. Material: Steel
 - 3.1. Finish: As manufactured
 - 3.2. Colour: granite powder coating
4. Accessories: Internal ground fixed locking bracket
5. Method of fixing: Proprietary anchored bases

220 Benches - Se2

1. Description: Bespoke bench - Refer drawing L0834L01
2. Manufacturer: Langley Design
 - 2.1. Product reference: Sheffield - SBN307
3. Material: Wood, concrete & galvanised steel
 - 3.1. Slat Material: Douglas Fir

- 3.2. Metal finishes: Galvanised Steel
- 3.3. Supports: Concrete plinth
- 4. Size: Refer to drawing L0834D07
- 5. Accessories/ Special requirements: None
- 6. Method of fixing: Free Standing

225 Seating - Se1

- 1. Description: Timber topped bench, Refer drawing L0834L01
- 2. Manufacturer: Langley Design
 - 2.1. Product reference: Sheldon Bench, SBN 304
- 3. Material: Steel & Timber
 - 3.1. Finish: As manufactured
- 4. Size: (L) 1800mm x (W) 450mm x (H) 450mm
- 5. Accessories/ Special requirements: None
- 6. Method of fixing: As per Manufacturer's and Engineer's detail

380 Skateboard deterrent studs

- 1. Description:: To be fixed on top of K3-150, raised planter edges. See drawing L0834L01 for locations of planters.
- 2. Manufacturer: Landmark
 - 2.1. Product reference: Hemisphere Anti-Skate Studs SKU: 105-101
- 3. Material: 304 Grade Stainless Steel
- 4. Size:: 20mm high, 35mm diameter
- 5. Spacing:: 600mm centres
- 6. Method of fixing: Manufacturers recommendation

Installation

510 Concrete foundations generally

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

515 Setting components in concrete

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

530 Preservative treated timber

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

545 Erection of timber and prefabricated structures

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

550 Damage to galvanized surfaces

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

Ω End of Section

Q52

Play and sports equipment

General

115 Playground

1. Description: COMMUNAL PLAY AREAS. Refer drawing L834L01
2. Equipment: As shown on drawing L834L01
 - 2.1. System manufacturer: Contractor's choice
3. Surfacing: Amenity grass and wetpour soft play surface. Refer drawing L834L01
4. Containment: As shown on drawing L834L01
5. Accessories: As shown on drawing L834L01

System performance - Not Used

Products

360 Non-standard play structure - PL1

1. Description: Refer Drawing L0834L01
2. Reference: Timber stepping vertical logs of varying heights
3. Supplier: Playdale Playgrounds
4. Standard: To BS EN 1176-1.
5. Materials: Timber
 - 5.1. Finish: No sharp edges
6. Size: minimum 200mm, maximum 400mm diameter
7. Height: maximum 600mm above ground level.
8. Method of fixing: Set in concrete

360 B Non-standard play structure - PL4

1. Description: Adventure Trail – Single Balance Beam
2. Reference: Refer Drawing L0834L01
3. Supplier: Playdale Playgrounds
4. Standard: To BS EN 1176-1.
5. Materials: Timber
 - 5.1. Finish: No sharp edges
6. Height: 380mm above ground level.
7. Method of fixing: Set in concrete

360 C Non-standard play structure - PL5

1. Description: Refer Drawing L0834L01
2. Reference: Boulders
3. Supplier: Playdale Playgrounds
4. Standard: To BS EN 1176-1.
5. Materials: Caledonian Mixed Glacial Boulders
 - 5.1. Finish: No sharp edges

6. Size: minimum 400mm, maximum 800mm
7. Height: maximum 600mm
8. Method of fixing: Set in earth, 1/3 below ground level

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: 250 x 250 x minimum 300 mm deep
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. 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.

Completion

910 Inspection

1. Standard: To BS EN 1176-1
2. Timing: 2 weeks prior to date when work is expected to be practically complete
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.

940 Labels

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

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:** 3
4. **Submission:** 2 weeks prior to date when work is expected to be practically complete

Ω End of Section

Z11

Purpose made metalwork

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.

330 Steel plate, sheet and strip

1. Plates and wide flats, high yield strength steel: To BS EN 10025-6.

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.

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.

527 Welding

1. Description: TO ALL BESPOKE METALWORK
2. Welding procedures
 - 2.1. Method and standard: Metal arc welding to BS EN 1011-1 and -2.
 - 2.2. Welding Procedure Specification (WPS): Not required
3. Preparation
 - 3.1. Joint preparation: Clean thoroughly.
 - 3.2. Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
4. Jointing
 - 4.1. Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
 - 4.2. Strength requirements: Welds to achieve design loads.
 - 4.3. Tack welds: Use only for temporary attachment.
 - 4.4. Jigs: Provide to support and restrain members during welding.
 - 4.5. Lap joints: Minimum 5 x metal thickness or 25 mm, whichever is greater.
 - 4.6. Weld terminations: Clean and sound.

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.

745 Preparation for application of coatings

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

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.

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

Z12

Preservative/ flame-retardant treatment

To be read with preliminaries/ general conditions.

110 Treatment application

1. **Timing:** After cutting and machining timber, and before assembling components.
2. **Processor:** Licensed by manufacturer of specified treatment solution.
 - 2.1. **Operatives:** Must have completed the PCA training scheme
3. **Certification:** For each batch of timber provide a certificate of assurance that treatment has been carried out as specified.

120 Commodity specifications

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

130 Preservative treatment solution strengths/ treatment cycles

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

610 Making good to preservative treatment on site

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

Ω End of Section

Z20

Fixings and adhesives

Products

310 Fasteners generally

1. **Materials:** To have:
 - 1.1. Bimetallic corrosion resistance appropriate to items being fixed.
 - 1.2. Atmospheric corrosion resistance appropriate to fixing location.
2. **Appearance:** Submit samples on request.

320 Packings

1. **Materials:** Noncompressible, corrosion proof.
2. **Area of packings:** Sufficient to transfer loads.

330 Nailed timber fasteners

1. **Nails**
 - 1.1. **Steel:** To BS 1202-1 or BS EN 10230-1.
 - 1.2. **Copper:** To BS EN 1202-2.
 - 1.3. **Aluminium:** To BS 1202-3.

340 Masonry fixings

1. **Light duty:** Plugs and screws.
2. **Heavy duty:** Expansion anchors or chemical anchors.

350 Plugs

1. **Type:** Proprietary types to suit substrate, loads to be supported and conditions expected in use.

360 Anchors

1. **Types**
 - 1.1. **Expansion:** For use in substrate strong enough to resist forces generated by expansion of anchor.
 - 1.2. **Adhesive or chemical**
 - 1.2.1. For use in substrate where expansion of anchor would fracture substrate.
 - 1.2.2. For use in irregular substrate where expansion anchors cannot transfer load on anchor.
 - 1.3. **Cavity:** For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

370 Wood screws

1. **Type**
 - 1.1. Wood screws (traditional pattern).
 - 1.1.1. **Standard:** To BS 1210.
 - 1.2. Wood screws.
 - 1.2.1. **Pattern:** Parallel, fully threaded shank or twin thread types.
2. **Washers and screw cups:** Where required are to be of same material as screw.

380 Miscellaneous screws

1. Type: To suit the fixing requirement of the components and substrate.
 - 1.1. Pattern: Self-tapping, metallic drive screws, or power driven screws.
2. Washers and screw cups: Where required to be of same material as screw.

390 Adhesives

1. Standards
 - 1.1. Hot-setting phenolic and aminoplastic: To BS 1203.
 - 1.2. Thermosetting wood adhesives: To BS EN 12765.
 - 1.3. Thermoplastic adhesives: To BS EN 204.

410 Powder actuated fixing systems

1. Types of fastener, accessories and consumables: As recommended by tool manufacturer.

Execution

610 Fixing generally

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

620 Fixing through finishes

1. Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

630 Fixing packings

1. Function: To take up tolerances and prevent distortion of materials and components.
2. Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
3. Locations: Not within zones to be filled with sealant.

640 Fixing cramps

1. Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
2. Fasteners: Fix cramps to frames with screws of same material as cramps.
3. Fixings in masonry work: Fully bed in mortar.

650 Nailed timber fixing

1. Penetration: Drive fully in without splitting or crushing timber.
2. Surfaces visible in completed work: Punch nail heads below wrot surfaces.
3. Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

660 Screw fixing

1. Finished level of countersunk screw heads
 - 1.1. Exposed: Flush with timber surface.

- 1.2. Concealed (holes filled or stopped): Sink minimum 2 mm below surface.

670 Pelleted countersunk screw fixing

1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Pellets: Cut from matching timber, match grain and glue in to full depth of hole.
3. Finished level of pellets: Flush with surface.

680 Plugged countersunk screw fixing

1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Plugs: Glue in to full depth of hole.
3. Finished level of plugs: Projecting above surface.

690 Using powder actuated fixing systems

1. Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
2. Operatives: Trained and certified as competent by tool manufacturer.

700 Applying adhesives

1. Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
2. Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
3. Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Ω End of Section

Z21 Mortars

Cement gauged mortars

110 Cement gauged mortar mixes

1. **Specification:** Proportions and additional requirements for mortar materials are specified elsewhere.

120 Sand for site made cement gauged masonry mortars

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

160 Cements for mortars

1. **Cement:** To BS EN 197-1 and CE marked.
 - 1.1. **Types:** Portland cement, CEM I.
 - 1.1.1. **Portland limestone cement,** CEM II/A-L or CEM II/A-LL.
2. **Portland slag cement,** CEM II/B-S.
3. **Portland fly ash cement,** CEM II/B-V.
 - 3.1. **Strength class:** 32.5, 42.5 or 52.5.
4. **White cement:** To BS EN 197-1 and CE marked.
 - 4.1. **Type:** Portland cement, CEM I.
 - 4.2. **Strength class:** 52.5.
5. **Sulfate resisting Portland cement**
 - 5.1. **Type:** To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
6. **To BS EN 197-1 fly ash cement,** CEM II/B-V and CE marked.
 - 6.1. **Strength class:** 32.5, 42.5 or 52.5.
7. **Masonry cement:** To BS EN 413-1 and CE marked.
 - 7.1. **Class:** MC 12.5.

180 Admixtures for site made cement gauged mortars

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

200 Storage of cement gauged mortar materials

1. **Sands and aggregates:** Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.

2. Factory made ready-mixed lime:sand/ ready to use retarded mortars: Keep in covered containers to prevent drying out or wetting.
3. Bagged cement/ hydrated lime: Store off the ground in dry conditions.

210 Making cement gauged mortars

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

Lime:sand mortars - Not Used

Ω End of Section

Z22 Sealants

Products - Not Used

Execution

610 Suitability of joints

1. Presealing checks
 - 1.1. Joint dimensions: Within limits specified for the sealant.
 - 1.2. Substrate quality: Surfaces regular, undamaged and stable.

620 Preparing joints

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

630 Applying sealants

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

Ω End of Section



Specification created using NBS Chorus