

NBS Landscape Specification

St Anns New Neighbourhood

N15301-PLI-XX-XX-SP-00001

Compiled for Hill Group Ltd

on behalf of Acacia Gardens and Horticulture Ltd



INTERIOR AND EXTERIOR LANDSCAPE CONSULTANTS & CONTRACTORS

31, BULSTRODE ROAD • HOUNSLOW • MIDDLESEX TW3 3AW
TELEPHONE: 020 8577 3795 • FACSIMILE: 020 8577 2375

+44 (0)20 7739 3330
info@plincke.com

65 Neal Street
Covent Garden
London WC2H 9PJ
www.plincke.com

Registered office:
Deerhurst Studio, The Green, Dunchurch, Rugby CV22 6NJ
Registered number in England: 2578483

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Contents

B51 General structural requirements - landscape	1
B91 Buildings in the landscape	2
D20 Excavating and filling	4
D41 Crib walls, gabions and other gravity retaining walls	9
E41 Worked finishes to in situ concrete	11
F10 Brick/ block walling	12
L37 External stair, ramps, handrail and balustrades systems	16
Q10 Kerbs/ edgings/ channels/ paving accessories REVISED	18
Q23 Gravel/ hoggins/ woodchip/ resin bound roads/ pavings/ overlays	25
Q24 Interlocking brick/ block roads/ pavings REVISED	29
Q25 Slab/ brick/ sett/ cobble pavings REVISED	41
Q26 Special surfacings/ pavings for sport/ general amenity	46
Q28 Topsoil and soil ameliorants	49
Q30 Seeding/ turfing	58
Q31 External planting	64
Q37 Green roofs REVISED	77
Q40 Fencing	81
Q50 Site/ street furniture/ equipment REVISED	85
Q52 Play and sports equipment	97
Q55 External decks, boardwalks and bridges	103
Z10 Purpose made joinery	106
Z11 Purpose made metalwork	107
Z20 Fixings and adhesives	112
Z21 Mortars	115
Z31 Powder coatings	118

B51

General structural requirements - landscape

Tendering - Not Used

General

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

120 Structural work

1. Designated codes of practice: Refer to Engineers information.
2. Design working life: Refer to Engineers information.
3. Completed structure generally: To comply with the requirements of the designated codes of practice and the standards referenced therein. Deflections and other structural movements at serviceability limit state to be compatible with requirements of the structure, movement joints and weathertightness.
4. Special requirements: Refer to Engineers information.

Performance - Not Used

Execution - Not Used

Completion - Not Used

Ω End of Section

B91

Buildings in the landscape

System outline

2 To be read with Preliminaries / General Conditions

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System performance - Not Used

Products

365 Folly/ gazebo BT_01

1. **Description:** Folly/ Gazebo to Peace Garden
2. **Designation::** BT_01
3. **Size:** Refer to design intent drawing N15301-PLI-XX-ZZ-DR-L-60234 and to Engineer's details and specification
4. **Frame:** Bespoke circular reconstituted stone bench seat with armrests and overhead frame incorporating 2.2m height site-won cast-iron columns
5. **Finish::** Bench seat: Reconstituted stone;
Columns: Site-won cast-iron fully refurbished including primer and top-coat; RAL 5017 NHS Blue colour (TBC)
6. **Accessibility:** In accordance with BS 8300-1
7. **Accessories/ Special requirements:** Complete design to meet performance criteria and design intent drawings. Submittals to include detail design of external railings.
8. **Method of fixing to ground or base:** To Specialist sub consultant's details and specifications.

370 Pergola BT_02

1. **Description:** Pergola to Courtyard
2. **Size:** Refer to design intent drawing N15301-PLI-XX-ZZ-DR-L-60238 and to Engineer's details and specification.
3. **Frame:** Bespoke semi-circular climbing plant support incorporating tensile steel cables supported by 2.2m height site-won cast-iron columns
4. **Finish: :** Cables & fixings: Stainless steel;
Columns: Site-won cast-iron fully refurbished including primer and top-coat; RAL 5017 NHS Blue colour (TBC)
5. **Accessibility:** In accordance with BS 8300-1
6. **Accessories/ Special requirements:** Complete design to meet performance criteria and design intent drawings. Submittals to include detail design of external railings.
7. **Method of fixing to ground or base:** To Specialist sub consultant's details and specifications.

Materials - Not Used

Execution/ erection/ installation

600 Erection/ installation generally

1. Frameworks: Assemble and brace, including temporary members required for installation.
2. Contact between dissimilar metals: Avoid.
3. Fixings: Fully bolt together. Tighten bolts.
4. Temporary support: Do not subject members to non-design loadings.

605 Jointing/ Fixing generally

1. Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.

610 Concrete foundations generally

1. Concrete: To BS 8500-2.
2. Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
3. Admixtures: Do not use.
4. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.
5. Foundation holes: Neat vertical sides.
6. Components: Accurately positioned and securely supported.
7. Concrete fill: Compact as filling proceeds.
8. Concrete foundations exposed to view: Compact until air bubbles cease to appear on the upper surface, then weather to shed water and trowel smooth.
9. Temporary component support: Maintain undisturbed for minimum 48 hours.

640 Site painting and staining

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

Completion

930 Documentation

1. Contents
 - 1.1. General product information.
 - 1.2. Installation information.
 - 1.3. Inspection and maintenance reports.
2. Number of copies: 1
3. Submission: 2 weeks after request by contract administrator

Ω End of Section

D20

Excavating and filling

Generally/the site

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

110 Site investigation

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

145 Variations in ground water level

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

150 Existing services, features and structures

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

Clearance/excavating

164 Tree roots

1. **Protected area:** Do not cut roots within precautionary protection area.
 - 1.1. **Size of area:** As shown on drawings
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:** Wrap in hessian.
5. **Backfill:** As dug material.

166 Tree root barriers to trenches

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

2. **Root barrier:** Installed to trench.
 - 2.1. **Manufacturer::** GreenBlue Urban.
www.greenblue.com.
01580 830 800.
 - 2.2. **Product reference::** Select from ReRoot 600 to ReRoot 2000 depending on depth.
 - 2.3. **Notes::** Refer to Engineers information.
3. **Cutting roots:** As clause 164.
4. **Root barrier installation:** Full depth of excavation. Fit closely to trench wall nearest the tree.
5. **Backfill material:** As dug material excavated from trench.
6. **Backfilling:** Lay and compact thoroughly in layers not more than 300 mm thick.
7. **Notes::** Where services fall within 3m of a tree, then services trench to be lined to sides AND top with root barrier.

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 by stump grinding
6. **Work near retained trees:** Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.

180 Chipping and shredding

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

220 Stripping topsoil

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

221 Treating topsoil

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

225 Handling topsoil

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

250 Permissible deviations from formation levels

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

270 Foundations generally

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

310 Unstable ground

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

320 Recorded features

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

330 Unrecorded features

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

370 Underground structures in landscape areas

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

Disposal of materials

410 Excavated topsoil storage

1. **Storage:** Stockpile in temporary storage heaps - Refer to DEFRA publication 'Construction code of practice for the sustainable use of soils on construction sites 2009'.

420 Topsoil storage heaps

1. **Location:** Principal Contractor to submit proposals
2. **Standard:** To BS 3882.
3. **Height (maximum):** 1m
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:** Sow with perennial ryegrass, sowing rate 20g/m²

441 Surplus subsoil

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

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.

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

Ω End of Section

D41

Crib walls, gabions and other gravity retaining walls

To be read with preliminaries/general conditions.

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
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4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

105 Design and construction of earth retaining structure

1. Requirement: To Engineer's details and specification
 - 1.1. A design and details for the retention structure.
 - 1.2. A stability check for the earth mass containing the structure.
2. Type of structure: In situ concrete retaining walls (WT04) and timber retaining edges (WT03)
3. Structural requirements
 - 3.1. Generally: As section B50 or B51.
 - 3.2. Modifications: None
 - 3.3. Design: Complete in accordance with the designated code of practice to satisfy specified performance criteria.
4. Other requirements: Refer to Engineer's design and details
5. Fill/ Backfill
 - 5.1. Material: Contractor's choice to suit requirements of retaining structure manufacturer
 - 5.2. Compaction: As retaining structure manufacturer's instructions.
6. Face fill
7. Monitoring of ground conditions during construction: As section B50 or B51.

410 In situ reinforced concrete retaining wall WT_04

1. Manufacturer: In-situ concrete wall to Engineer's details and specification
 - 1.1. Product reference: Refer to design intent drawings N15301-PLI-XX-ZZ-DR-L-60236 and N15301-PLI-XX-ZZ-DR-L-60237 and to Engineer's details and specification.
2. Properties:
 - 2.1. Sizes: 250mm thick
3. Substrate: To Engineer's recommendations
4. Facing: Fair-faced with vertical timber shuttering

420 Placing in situ reinforced concrete retaining wall

1. Installation
 - 1.1. Perpends: Aligned.
 - 1.2. Joints: To Engineer's recommendations
 - 1.3. Securing: To Engineer's recommendations
2. Backfill: Compact in layers maximum 200 mm deep.

520 Timber retaining walls WT_03

1. **Description::** Timber retaining wall to Plot
2. **Designation::** WT_03
3. **Type:** Oak timber sleepers
4. **Manufacturer::** Contractor's choice
5. **Size**
 - 5.1. **Overall length:** Refer to design intent drawing N15301-PLI-XX-ZZ-DR-L-60232 and to Engineer's details and specification.
 - 5.2. **Cross section:** 200 x 100mm
6. **Preservative treatment:** As Wood Protection Association Commodity specification C4, use class 4 with 30 year desired service life

i.e. 3x coats of Protek Royal Exterior Superior Wood Finish woodstain preservative, colour tbc, with associated knotting agent & stain blocking primer.
7. **Foundation:** Concrete foundations as Engineers information
8. **Other requirements:** 100 x 50 mm timber coping planed and bevelled.
All fixtures and fittings to be stainless steel.
Timber to be procured from FSC source.
9. **Notes::** Refer to drawing N15301-PLI-XX-ZZ-DR-L-60232.

550 Erecting timber retaining walls

1. **Setting out:** To line and level, edges abutting and vertical to front face
2. **Installation:** Refer to Engineers information for detail; Engineers information takes precedence.
 - 2.1. **Embedment below ground level:** Varies, but typically 33% of component length
 - 2.2. **Securement:** Not required
 - 2.3. **Trimming:** Cut to height to levels shown on Plincke drawing N15301-PLI-XX-ZZ-DR-L-60232 and to specialist sub contractor's drawings and details.
3. **Tie-backs:** Not required
4. **Backfill:** Compact in layers maximum 150 mm deep.

Ω End of Section

E41

Worked finishes to in situ concrete

To be read with preliminaries/ general conditions.

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
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3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

145 Control samples

1. **Location:** To be agreed
2. **Notes:** Obtain sample of proposed finish from Manufacturer/ Contractor for approval.
3. **Approval of appearance:** Obtain before proceeding with remainder of the work.

150 Finishing

1. **Timing:** Carry out at optimum times in relation to setting and hardening of concrete.
2. **Prohibited treatments to concrete surfaces**
 - 2.1. Wetting to assist surface working.
 - 2.2. Sprinkling cement.

240 Wood floated finish

1. **Surface on completion:** Slightly coarse, even texture with no ridges or steps.

Ω End of Section

F10 Brick/ block walling

Types of walling

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
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4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

110 Clay facing brickwork

1. **Description:** To wall types WT01 & WT02a, WT02b, & WT02c.

Select from site-won existing reclaimed brick.

Refer to design intent drawings N15301-PLI-XX-ZZ-DR-L-60231 & N15301-PLI-XX-ZZ-DR-L-60232 and to Engineer's details and specification.

2. **Bricks:** To BS EN 771-1.

2.1. **Manufacturer:** Not applicable

2.2. **Recycled content:** Not applicable

2.3. **Special shapes:** 'Cut-and-Bonded' special shapes to corners where less-than or greater-than 90 degs.

Solid bricks to be used where end of rowlock coping is visible.

3. **Mortar:** As section Z21 of Architect specification.

3.1. **Standard:** To BS EN 998-2

3.2. **Mix:** Refer to Architect specification.

3.3. **Additional requirements:** Mortar type tbc by planners.

4. **Bond:** Refer to design intent drawings N15301-PLI-XX-ZZ-DR-L-60231 & N15301-PLI-XX-ZZ-DR-L-60232

5. **Joints:** To match retained adjacent existing brick walls.

Testing - Not Used

Workmanship generally

430 Conditioning of clay bricks and blocks

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

460 Mortar designations

1. **Mix proportions:** For a specified designation select a mix from the following:
 - 1.1. **Designation (i)** (BS EN 998-2 M12 equivalent)
 - 1.1.1. 1:0-¼:3 (Portland cement:lime:sand with or without air entraining additive).

- 1.1.2. 1:3 (Portland cement:sand and air entraining additive).
- 1.2. Designation (ii) (BS EN 998-2 class M6 equivalent)
 - 1.2.1. 1½:4-5 (Portland cement:lime:sand with or without air entraining additive).
 - 1.2.2. 1:3 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.2.3. 1:2½-3½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.2.4. 1:3-4 (Portland cement:sand and air entraining additive).
- 1.3. Designation (iii) (BS EN 998-2 class M4 equivalent)
 - 1.3.1. 1:1:5-6 (Portland cement:lime:sand with or without air entraining additive).
 - 1.3.2. 1:3½-4 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.3.3. 1:4-5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.3.4. 1:5-6 (Portland cement:sand and air entraining additive).
- 1.4. Designation (iv) (BS EN 998-2 class M2 equivalent)
 - 1.4.1. 1:2:8-9 (Portland cement:lime:sand with or without air entraining additive).
 - 1.4.2. 1:4½ (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
 - 1.4.3. 1:5½-6½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
 - 1.4.4. 1:7-8 (Portland cement:sand and air entraining additive).
- 2. Batching: Mix proportions by volume.
- 3. Mortar type: Continuous throughout any one type of masonry work.

500 Laying generally

- 1. Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
- 2. AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
- 3. Clay block joints
 - 3.1. Thin-layer mortar: Lay blocks on a full bed.
 - 3.2. Interlocking perpend: Butted.
- 4. Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

520 Accuracy

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

561 Coursing brickwork with existing

1. Gauge: Line up with existing brick courses.

585 Laying cellular bricks

1. Orientation: Cavities downward.

635 Jointing

1. Profile: Consistent in appearance.

665 Pointing

1. Description: To Facing Brick.
2. Joint preparation: Remove debris. Dampen surface.
3. Mortar: As section Z21.
 - 3.1. Standard: To BS EN 998-2.
 - 3.2. Mix: As clause 110.
 - 3.3. Additional requirements: None
4. Profile: Bucket handle

690 Adverse weather

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

Additional requirements for facework

710 The term facework

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

730 Brick/ Concrete block samples

1. General: Before placing orders with suppliers submit for approval of appearance labelled samples of the following: Bricks as in clause F10/110.
2. Selection of samples: Representative of the range in variation of appearance.

740 Finished masonry work reference panels

1. General: Before proceeding to construct the following walling types, construct panels as specified. Give notice when panels are dry.
2. Selection of masonry units: Refer to Architect specification.

750 Colour consistency of masonry units

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

760 Appearance

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

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

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

160 Balustrade systems

1. **Description:** To wall type WT04 in-situ concrete retaining walls

'Refer to design intent drawings N15301-PLI-XX-ZZ-DR-L-60235 and N15301-PLI-XX-ZZ-DR-L-60237 and to Engineer's details and specification.

2. **Designation:** BS1

3. **System manufacturer:** Alpharail.
www.alpharail.co.uk
01623 750 214

4. **Product reference:** 'Brentford Lock' style flat bar railing system

4.1. **Material:** Galvanised steel to rails, infills, posts and lugs.

4.2. **Finish:** Polyester powder coated, colour tbc.

4.3. **Components:** Rail: 80 x 8 mm flat bar.

Infill: 40 x 8 mm flat bar.

Post: 80 x 10 mm flat bar.

Lug: 50 x 6 mm flat bar c/w 12 mm diameter x 25 mm slots.

4.4. **Height:** Minimum 1100 mm above adjacent ground level.

Balustrade to be stepped to match corresponding wall level.

4.5. **Fixing:** M10 CSK bolt secured to lugs using dome bolts.

Posts to be supplied with base-plate fix.

Posts to be fixed to concrete core where installed to wall type WT04, or concrete foundation where installed to external terraces.

Posts to be aligned with jointing to brick/ kerb, depending on location.

5. **Accessories:** Rose-covers to be installed where posts penetrate wall coping or kerb edge.

6. **Notes:** Refer to drawing 0583-PLI-XX-XX-DR-L-0233.

Above is design intent only. Detailed design by Engineer and/ or specialist subcontractor.

System performance - Not Used

Products - Not Used

Fabrication - Not Used

Execution

620 Concrete foundations generally

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

630 Setting components in concrete

1. Holes: Refer to Engineers information
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.

Completion

910 Inspection

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

920 Documentation

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

Ω End of Section

Q10

Kerbs/ edgings/ channels/ paving accessories **REVISED**

Types of kerbs/edgings and channels

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

112 Concrete kerbs KT_01 **ADDED**

1. Description: Square profile upstand kerb; stone aggregate finish
2. Manufacturer: [Brett Landscaping](#)
3. Contact details
 - 3.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 3.2. Telephone: +44 (0)345 60 80 570
 - 3.3. Web: <https://www.brettlandscaping.co.uk>
 - 3.4. Email: project.designer@brett.co.uk
4. Product reference: [Meltone Kerbs \(Straight kerb, CS1\)](#)
5. Standard: To BS EN 1340: 2003.
6. Physical properties
 - 6.1. Colour: Grey with black flecks.
 - 6.2. Finish: Textured surface with square edge detail.
 - 6.3. Dimensions: 914 x 255 x 125 mm.
 - 6.4. Weathering resistance: Class 2.
 - 6.5. Abrasion resistance: Class 4.
 - 6.6. Bending strength: Class 3.
 - 6.7. Unpolished Slip Resistance Value (USRV) (minimum): Potential for slip: Extremely low.
7. Type: Hand lay.
8. Third-party certification: CE marked.
9. Unit weight: 68.2 kg.
10. Thermal Conductivity: 1.2 W/m·K.
11. Recycled content: As supplied
12. Bedding: Refer to Engineer's information, laid to 100mm upstand
13. Joints generally: Refer to Engineer's information.
14. Sealant movement joints: Refer to Engineer's information.
15. Accessories: Refer to Engineer's information.

16. Notes:: Laid with 145 mm face upwards.

113 Concrete kerbs KT_02 ADDED

1. Description: Square profile flush kerb; stone aggregate finish
2. Manufacturer: [Brett Landscaping](#)
3. Contact details
 - 3.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 3.2. Telephone: +44 (0)345 60 80 570
 - 3.3. Web: <https://www.brettlandscaping.co.uk>
 - 3.4. Email: project.designer@brett.co.uk
4. Product reference: [Meltone Kerbs \(Straight kerb, CS2\)](#)
5. Standard: To BS EN 1340: 2003.
6. Physical properties
 - 6.1. Colour: Grey with black flecks.
 - 6.2. Finish: Textured surface with square edge detail.
 - 6.3. Dimensions: 914 x 150 x 125 mm.
 - 6.4. Weathering resistance: Class 2.
 - 6.5. Abrasion resistance: Class 4.
 - 6.6. Bending strength: Class 3.
 - 6.7. Unpolished Slip Resistance Value (USRV) (minimum): Potential for slip: Extremely low.
7. Type: Hand lay.
8. Third-party certification: CE marked.
9. Unit weight: 39.2 kg.
10. ThermalConductivity: 1.2 W/m·K.
11. Recycled content: As supplied
12. Bedding: Refer to Engineer's information, laid flush.
13. Joints generally: Refer to Engineer's information.
14. Sealant movement joints: Refer to Engineer's information.
15. Accessories: Refer to Engineer's information.

114 A Concrete kerbs KT_03 ADDED

1. Description: Square profile channel kerb; stone aggregate finish
2. Standard: To BS EN 1340.
3. Manufacturer: [Brett Landscaping](#)
4. Contact details
 - 4.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 4.2. Telephone: +44 (0)345 60 80 570
 - 4.3. Web: <https://www.brettlandscaping.co.uk>

- 4.4. Email: project.designer@brett.co.uk
- 5. Product reference:
- 6. Standard: To BS 7533-6:1999.
- 7. Physical properties
 - 7.1. Colour: Silver grey.
 - 7.2. Finish: Textured.
 - 7.3. Dimensions: 255 x 205 x 915 mm.
 - 7.4. Weathering resistance: $\leq 1.0 \text{ kg/m}^2$ as a mean with no individual value $> 1.5 \text{ kg/m}^2$ (freeze thaw durability).
 - 7.5. Abrasion resistance: $\leq 23 \text{ mm}$ (Wide Wheel Abrasion Test).
 - 7.6. Bending strength: Characteristic bending strength of 3.5 MPa with no individual result less than 2.8 MPa
 - 7.7. Unpolished Slip Resistance Value (USRV) (minimum): > 45 .
- 8. Recycled content: As supplied
- 9. Size (width x height x length): 255 x 205 x 915 mm, laid with 255 mm face upwards.
- 10. Special shapes: None
- 11. Bedding: Refer to Engineer's information.
- 12. Joints generally: Refer to Engineer's information.
- 13. Sealant movement joints: Refer to Engineer's information.
- 14. Accessories: Refer to Engineer's information.

114 B Concrete kerbs ST_17 ADDED

- 1. Description: Square profile channel kerb; stone aggregate finish
-to informal play path
- 2. Manufacturer: [Brett Landscaping](#)
- 3. Contact details
 - 3.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 3.2. Telephone: [+44 \(0\)345 60 80 570](tel:+44153456080570)
 - 3.3. Web: <https://www.brettlandscaping.co.uk>
 - 3.4. Email: project.designer@brett.co.uk
- 4. Product reference: [Meltone Kerbs \(Straight kerb, CS1\)](#)
- 5. Standard: To BS EN 1340: 2003.
- 6. Physical properties
 - 6.1. Colour: Grey with black flecks.
 - 6.2. Finish: Textured surface with square edge detail.
 - 6.3. Dimensions: 914 x 255 x 125 mm.
 - 6.4. Radial units
 - 6.4.1. Radial face:
 - 6.4.2. Radius:
 - 6.5. Weathering resistance: Class 2.
 - 6.6. Abrasion resistance: Class 4.
 - 6.7. Bending strength: Class 3.

- 6.8. Unpolished Slip Resistance Value (USRV) (minimum): Potential for slip: Extremely low.
- 7. Type: Hand lay.
- 8. Third-party certification: CE marked.
- 9. Unit weight: 68.2 kg.
- 10. ThermalConductivity: 1.2 W/m·K.
- 11. Recycled content: As supplied
- 12. Size (width x height x length): 255 x 205 x 915 mm, laid with 255 mm face upwards.
- 13. Special shapes: None
- 14. Bedding: Laid on 30mm sharp sand on top of MOT type 1 to Engineer's specifications.
- 15. Joints generally: Refer to Engineer's information.
- 16. Sealant movement joints: Refer to Engineer's information.
- 17. Accessories: Refer to Engineer's information.

115 Concrete kerbs KT_04 ADDED

- 1. Description: Kerb laid flush
- 2. Standard: To BS EN 1340.
- 3. Manufacturer: [Brett Landscaping](#)
- 4. Contact details
 - 4.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 4.2. Telephone: [+44 \(0\)345 60 80 570](tel:+44(0)3456080570)
 - 4.3. Web: <https://www.brettlandscaping.co.uk>
 - 4.4. Email: project.designer@brett.co.uk
- 5. Product reference: [Meltone Kerbs \(Flat top edging unit\)](#)
- 6. Standard: To BS EN 1340: 2003.
- 7. Physical properties
 - 7.1. Colour: Grey with black flecks.
 - 7.2. Finish: Textured surface with square edge detail.
 - 7.3. Dimensions: 914 x 150 x 50 mm.
 - 7.4. Weathering resistance: Class 2.
 - 7.5. Abrasion resistance: Class 4.
 - 7.6. Bending strength: Class 3.
 - 7.7. Unpolished Slip Resistance Value (USRV) (minimum): Potential for slip: Extremely low.
- 8. Type: Hand lay.
- 9. Third-party certification: CE marked.
- 10. Unit weight: 15.7 kg.
- 11. ThermalConductivity: 1.2 W/m·K.
- 12. Recycled content: As supplied
- 13. Bedding: Refer to Engineers information, laid flush.
- 14. Joints generally: Refer to Engineers information.
- 15. Sealant movement joints: Refer to Engineers information.
- 16. Accessories: Refer to Engineers information.

118 Proprietary steel edge KT_05 **REVISED**

1. Description: Metal edge laid flush.
2. Manufacturer: Kinley.
www.kinley.co.uk.
01580 830688.
3. Product reference: Fort L-Profile Steel Angle Edging (Ref. 181010); FLEXIBLE (curved edges) and RIGID (straight edges)
4. Size (width x height x length): 7 x 150 x 2400 mm.
5. Finish: Galvanised steel
6. Colour: As supplied
7. Joints generally: Connect using 150 mm connector plate to all joints, spiral fixings (5nr per 2.4m length)
8. Accessories: Fix using 250 mm steel spiral fixing stakes in accordance with manufacturer's recommendations.

124 Square profile sett edge KT_06 **REVISED**

1. Description: EDGINGS
2. Standard: To BS EN 1343.
3. Supplier: Marshalls Plc
[+44 \(0\)330 0574472](tel:+44203300574472)
info@marshalls.co.uk
www.marshalls.co.uk
4. Product reference:: Conservation X sett paving
5. Size (width x height): 100 x 100 x 100 mm
6. Freeze/ Thaw resistance: $\leq 1.0 \text{ kg/m}^2$ as a mean with no individual value $> 1.5 \text{ kg/m}^2$ (freeze thaw durability).
7. Colour:: Silver Grey
8. Finish: Textured
9. Bedding: Bedding as Engineer's details, laid flush.

125 Reclaimed stone KT_08 **ADDED**

1. Description: Granite kerb (existing reclaimed)
2. Location and access: Refer to N15301-PLI-XX-XX-SH-L-00003 Existing Fixtures & Fittings Schedule
3. Lifting, storage and protection: Refer to N15301-PLI-XX-XX-SH-L-00003 Existing Fixtures & Fittings Schedule
4. Preparation: Refer to N15301-PLI-XX-XX-SH-L-00003 Existing Fixtures & Fittings Schedule
5. Accessories: None

Roads/paving accessories/ marking/ demarcation

395 Road marking (thermoplastic)

1. Standard: Road Safety Markings Association standard specification document for road marking and road studs (StanSpec).
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Contractor's choice
3. Colour: White
4. Retroreflectivity to BS EN 1436: Class R2

396 Road marking (thermoplastic)

1. **Standard:** Road Safety Markings Association standard specification document for road marking and road studs (StanSpec).
2. **Manufacturer:** Contractor's choice
 - 2.1. **Product reference:** Contractor's choice
3. **Colour:** Yellow
4. **Retroreflectivity to BS EN 1436:** Class R2

Laying

510 Laying kerbs, edgings and channels

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

520 Adverse weather

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

530 Concrete for foundations, races and haunching

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

540 Cement mortar bedding

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

580 Drainage channel systems

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

590 Drainage channel systems with built in fall

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

600 Radius kerbs/ channels

1. Usage: Radii of 15 m or less.

610 Angle kerbs

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

620 Accuracy

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

625 Regularity of paved surfaces

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

630 Narrow mortar joints

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

Deleted clauses

~~112 Square profile upstand kerb KT_01~~ **DELETED**

~~113 Square profile flush kerb KT_02~~ **DELETED**

~~114a Square profile flush kerb KT_03~~ **DELETED**

~~114b Square profile flush kerb ST_17~~ **DELETED**

~~115 Square profile edge KT_04~~ **DELETED**

~~305 Tree grilles and surrounds~~ **DELETED**

Ω End of Section

Q23

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

Types of surfacing

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

225a Resin-bound mixed aggregate surfacings ST_05

1. **Description:** Porous resin-bound gravel (pedestrian grade)
-to COMMUNAL COURTYARDS
2. **Designation::** ST_05
3. **Geomembrane:** Geotextile membranes
 - 3.1. **Manufacturer:** [Addagrip Terraco Ltd](#)
 - 3.1.1. **Contact details**
 - 3.1.1.1. **Address:** Addagrip House
Bell Lane Industrial Estate
Uckfield
East Sussex
TN22 1QL
 - 3.1.1.2. **Telephone:** [+44 \(0\)1825 761333](#)
 - 3.1.1.3. **Web:** [www.addagrip.co.uk](#)
 - 3.1.1.4. **Email:** [sales@addagrip.co.uk](#)
 - 3.1.2. **Product reference:** [Terrabound Resin Bound Surfacing \(6 mm\)](#)
 - 3.2. **Aggregate**
 - 3.2.1. **Type:** Terrabound.
 - 3.2.2. **Size (nominal):** 6 mm.
 - 3.2.3. **Colour:** Trent 6 mm.
 - 3.3. **Binder**
 - 3.3.1. **Type:** Terrabound Resin.
 - 3.4. **Slip resistance – water wet (minimum):** PTV of 43.
 - 3.5. **Density:** 1.02 g/cm³.
 - 3.6. **Application temperature range:** 5—25°C, maximum 80% relative humidity.
 - 3.7. **Cure time:** Seven days.
 - 3.8. **Shelf life:** Three months.
 - 3.9. **Third-party certification:** British Board of Agrément.
4. **Granular sub-base:** As supplier's recommendations
 - 4.1. **Compacted thickness:** As supplier's recommendations

5. Water collection: Not required
6. Geotextile: Sheet
 - 6.1. Manufacturer: Contractor's choice
 - 6.1.1. Product reference: Contractor's choice
7. Base course: Refer to Engineer's drawings and specifications
8. Surface course
9. Application: Thoroughly mixed and uniformly spread.
 - 9.1. Thickness: Min. 18mm-depth surface course

225b Resin-bound mixed aggregate surfacings ST_08a

1. Description: Porous resin-bound gravel (pedestrian grade)
-to PUBLIC FOOTPATHS
2. Designation:: ST_08a
3. Geomembrane: Geotextile membranes
 - 3.1. Manufacturer: [Addagrip Terraco Ltd](#)
 - 3.1.1. Contact details
 - 3.1.1.1. Address: Addagrip House
Bell Lane Industrial Estate
Uckfield
East Sussex
TN22 1QL
 - 3.1.1.2. Telephone: [+44 \(0\)1825 761333](tel:+44(0)1825761333)
 - 3.1.1.3. Web: www.addagrip.co.uk
 - 3.1.1.4. Email: sales@addagrip.co.uk
 - 3.1.2. Product reference: Terrabase rustic
 - 3.2. Aggregate
 - 3.2.1. Type: Polyurethane resin for resin bound surfacing
 - 3.2.2. Size (nominal): 10 mm.
 - 3.2.3. Colour: Golden
 - 3.3. Binder
 - 3.3.1. Type: Terrabound Resin.
 - 3.4. Slip resistance – water wet (minimum): PTV of 43.
 - 3.5. Density: 1.02 g/cm³.
 - 3.6. Application temperature range: +5oC to 30oC, maximum 80% relative humidity
 - 3.7. Cure time: Seven days.
4. Granular sub-base: Not applicable
5. Geotextile: Sheet
 - 5.1. Manufacturer: Submit proposals
 - 5.1.1. Product reference: Submit proposals
6. Base course: As per supplier's recommendations
7. Surface course
 - 7.1. Slip/ skid resistance: Slider 96 (Pedestrian) > 55
 - 7.2. Binder: Not applicable
8. Application: Thoroughly mixed and uniformly spread.
 - 8.1. Thickness: Min. 24mm-depth surface course

225c Resin-bound mixed aggregate surfacings ST_08b

1. **Description:** Porous resin-bound gravel (pedestrian grade)
-to PUBLIC FOOTPATHS (NO-DIG CONSTRUCTION)
2. **Designation::** ST_08b
3. **Geomembrane:** Geotextile membranes
 - 3.1. **Manufacturer:** [Addagrip Terraco Ltd](#)
 - 3.1.1. **Contact details**
 - 3.1.1.1. **Address:** Addagrip House
Bell Lane Industrial Estate
Uckfield
East Sussex
TN22 1QL
 - 3.1.1.2. **Telephone:** [+44 \(0\)1825 761333](tel:+441825761333)
 - 3.1.1.3. **Web:** www.addagrip.co.uk
 - 3.1.1.4. **Email:** sales@addagrip.co.uk
 - 3.1.2. **Product reference:** Terrabase rustic
 - 3.2. **Aggregate**
 - 3.2.1. **Type:** Polyurethane resin for resin bound surfacing
 - 3.2.2. **Size (nominal):** 10 mm.
 - 3.2.3. **Colour:** Golden
 - 3.3. **Binder**
 - 3.3.1. **Type:** Terrabound Resin.
 - 3.4. **Slip resistance – water wet (minimum):** PTV of 43.
 - 3.5. **Density:** 1.02 g/cm³.
 - 3.6. **Application temperature range:** +5oC to 30oC, maximum 80% relative humidity
 - 3.7. **Cure time:** Seven days.
4. **Granular sub-base:** Not applicable
5. **Water collection:**
6. **Geotextile:** Sheet
 - 6.1. **Manufacturer:**
 - 6.1.1. **Product reference:**
7. **Base course:** As per supplier's recommendations
8. **Surface course**
 - 8.1. **Slip/ skid resistance:** Slider 96 (Pedestrian) > 55
 - 8.2. **Binder:** Not applicable
9. **Application:** Thoroughly mixed and uniformly spread.
 - 9.1. **Thickness:** 30mm depth surface course

Laying

315 Materials

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

325a Anti-slip top-dressing

1. **Type:** 0.5mm dia. grit

2. Laying: Cast onto uncured surface.

340 Laying generally

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

350 Cold weather working

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

360 Drainage falls

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

380 Laying granular surfaces in pedestrian areas and cycle tracks

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

390 Protection from traffic and plant

1. Paved areas: Restrict access to prevent damage.

Completion - Not Used

Ω End of Section

Q24

Interlocking brick/ block roads/ pavings **REVISED**

Types of paving

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

115 A Concrete paving blocks ST_02 **ADDED**

1. **Description:** PCC flag paving (pedestrian)
-to adoptable highway
2. **Subgrade improvement layer:** Refer to Engineers information
 - 2.1. **Compacted thickness:** Refer to Engineers information
3. **Geotextile:** Refer to Engineers information
 - 3.1. **Manufacturer:** [Tobermore](#)
 - 3.1.1. **Contact details**
 - 3.1.1.1. **Address:** 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 3.1.1.2. **Telephone:** +44 (0)844 800 5736
 - 3.1.1.3. **Web:** <https://www.tobermore.co.uk/professional/>
 - 3.1.1.4. **Email:** NBSdataplatfrom@tobermore.co.uk
 - 3.1.2. **Product reference:** [Shannon | Concrete Block Paving \(Shannon 60 mm\)](#)
 - 3.2. **Standard:** To BS EN 1338.
 - 3.3. **Physical properties**
 - 3.3.1. **Colour:** Slate.
 - 3.3.2. **Finish:** Smooth.
 - 3.3.3. **Profile**
 - 3.3.3.1. **Paver type:** Standard with pencil chamfer.
 - 3.3.4. **Dimensions and associated tolerances**
 - 3.3.4.1. **Nominal sizes:** 208 x 173 x 60 mm.
 - 3.3.5. **Weathering resistance:** Class 3.
 - 3.3.6. **Abrasion resistance:** Class 3.
 - 3.3.7. **Slip resistance:** Mean polished skid resistance value (PSRV): >45. Mean unpolished skid resistance value (USRV): >45.
 - 3.3.8. **Recycled content (minimum):** Not less than 12%.
 - 3.4. **Strength:** Not less than 3.6 MPa.
 - 3.5. **Efflorescence:** Minimum 12 hour vapour curing to reduce significantly the possibility of efflorescence.

- 3.6. BREEAM rating: B (A can be achieved when used with recycled sub-base).
- 3.7. Surface finish: Hard wearing surface layer at least 4 mm thick, with >350 kg/m³ cement.
- 3.8. Pack size: 12.96 m².
- 4. Granular sub-base: Refer to Engineers information
 - 4.1. Compacted thickness: Refer to Engineers information
- 5. Laying course
 - 5.1. Material: In accordance with BS 7533-3.
 - 5.1.1. Category: Refer to Engineers information
 - 5.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 5.3. Nominal thickness after compaction: Refer to Engineers information
- 6. Jointing
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.2. Joint width: Minimum 6 mm as per manufacturers information
- 7. Sealer/ Stabilizer: Refer to Engineers information
- 8. Setting out
 - 8.1. Bond: Stretcher
 - 8.2. Features: None
- 9. Accessories: None

115 B Concrete paving blocks ST_03 ADDED

- 1. Description: PCC conservation sett paving (vehicle grade)
-to pedestrian crossings
- 2. Subgrade improvement layer: Refer to Engineers information
 - 2.1. Compacted thickness: Refer to Engineers information
- 3. Geotextile: Refer to Engineers information
 - 3.1. Manufacturer: [Brett Landscaping](#)
 - 3.1.1. Contact details
 - 3.1.1.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 3.1.1.2. Telephone: [+44 \(0\)345 60 80 570](tel:+44(0)3456080570)
 - 3.1.1.3. Web: <https://www.brettlandscaping.co.uk>
 - 3.1.1.4. Email: project.designer@brett.co.uk
 - 3.1.2. Product reference: [Omega Block Paving](#)
- 3.2. Standard: To BS EN 1338: 2003.
- 3.3. Physical properties
 - 3.3.1. Colour: Charcoal.
 - 3.3.2. Finish: Smooth faced.
 - 3.3.3. Profile
 - 3.3.3.1. Paver type: Regular plan form.
 - 3.3.3.2. Arrises: Chamfered.
 - 3.3.4. Dimensions and associated tolerances
 - 3.3.4.1. Nominal sizes: 200 x 100 x 80 mm.
 - 3.3.5. Arrises: Chamfered, 6 x 4 mm.

- 3.3.6. Weathering resistance: Class 3.
- 3.3.7. Abrasion resistance: Class 3.
- 3.3.8. Slip resistance: Unpolished Slip Resistance Value (USRV): ≥ 55 ; Potential for slip: Low.
- 3.4. Strength: Characteristic tensile splitting strength: ≥ 3.6 MPa; Failing load: ≥ 250 N/mm.
- 3.5. Tolerances on plan dimension and thickness nominal: Thickness ± 3 mm ; Plan Size ± 2 mm.
- 4. Granular sub-base: Refer to Engineers information
 - 4.1. Compacted thickness: Refer to Engineers information
- 5. Laying course
 - 5.1. Material: In accordance with BS 7533-3.
 - 5.1.1. Category: Refer to Engineers information
 - 5.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 5.3. Nominal thickness after compaction: Refer to Engineers information
- 6. Jointing
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.2. Joint width: Minimum 6 mm as per manufacturers information
- 7. Sealer/ Stabilizer: Refer to Engineers information
- 8. Setting out
 - 8.1. Bond: 90° herringbone
 - 8.2. Features: None
- 9. Accessories: None

115 C Concrete paving blocks ST_04a ADDED

- 1. Description: PCC permeable block paving (vehicle grade)
-to parking bays
- 2. Designation: ST_04a
- 3. Subgrade improvement layer: Refer to Engineers information
 - 3.1. Compacted thickness: Refer to Engineers information
- 4. Geotextile: Refer to Engineers information
 - 4.1. Manufacturer: [Brett Landscaping](#)
 - 4.1.1. Contact details
 - 4.1.1.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 4.1.1.2. Telephone: [+44 \(0\)345 60 80 570](tel:+44(0)3456080570)
 - 4.1.1.3. Web: <https://www.brettlandscaping.co.uk>
 - 4.1.1.4. Email: project.designer@brett.co.uk
 - 4.1.2. Product reference: [Omega Flow Permeable Block Paving \(80 mm Single size packs\)](#)
 - 4.2. Standard: To BS EN 1338: 2003.
 - 4.3. Physical properties
 - 4.3.1. Colour: Charcoal.
 - 4.3.2. Finish: Smooth faced.
 - 4.3.3. Profile

- 4.3.3.1. Paver type: Regular plan form.
- 4.3.3.2. Arrises: Chamfered.
- 4.3.3.3. Interlocking features: Nibs.
- 4.3.4. Dimensions and associated tolerances
 - 4.3.4.1. Nominal sizes: 215 x 115 x 80 mm.
- 4.3.5. Arrises: Chamfered, 6 x 2 mm.
- 4.3.6. Weathering resistance: Class 3.
- 4.3.7. Abrasion resistance: ≤ 23 mm.
- 4.3.8. Slip resistance: Unpolished Slip Resistance Value (USRV): ≥ 55 ; Potential for slip: Low.
- 4.3.9. Recycled content (minimum): As manufactured.
- 4.4. Type: Hand lay.
- 4.5. Permeability: To BS DD 229:1996, 4265 mm/h.
- 4.6. Third-party certification: CE marked; BREEAM B rating as per the BRE Green Guide, 4th Edition 2009.
- 4.7. Strength: Characteristic tensile splitting strength: ≥ 3.6 MPa; Failing load: ≥ 250 N/mm.
- 4.8. Unit weight: 3.6 kg.
- 4.9. Accessories: None.
- 4.10. Tolerances on plan dimension and thickness nominal: Thickness: ± 3 mm; Plan size: ± 2 mm.
- 5. Granular sub-base: Refer to Engineers information
 - 5.1. Compacted thickness: Refer to Engineers information
- 6. Laying course
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.1.1. Category: Refer to Engineers information
 - 6.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 6.3. Nominal thickness after compaction: Refer to Engineers information
- 7. Jointing
 - 7.1. Material: In accordance with BS 7533-3.
 - 7.2. Joint width: Minimum 6 mm as per manufacturers information
- 8. Sealer/ Stabilizer: Refer to Engineers information
- 9. Setting out
 - 9.1. Bond: 90° herringbone
 - 9.2. Features: None
- 10. Accessories: None

115 D Concrete paving blocks ST_07a ADDED

- 1. Description: PCC permeable block paving (vehicle grade)
-to shared surfaces (main)
- 2. Designation: ST_04a
- 3. Subgrade improvement layer: Refer to Engineers information
 - 3.1. Compacted thickness: Refer to Engineers information
- 4. Geotextile: Refer to Engineers information
 - 4.1. Manufacturer: [Brett Landscaping](#)
 - 4.1.1. Contact details

- 4.1.1.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
- 4.1.1.2. Telephone: +44 (0)345 60 80 570
- 4.1.1.3. Web: <https://www.brettlandscaping.co.uk>
- 4.1.1.4. Email: project.designer@brett.co.uk
- 4.1.2. Product reference: [Omega Flow Permeable Block Paving \(80 mm Single size packs\)](#)
- 4.2. Standard: To BS EN 1338: 2003.
- 4.3. Physical properties
 - 4.3.1. Colour: Burnt Oak. Brindle.
 - 4.3.2. Finish: Smooth faced.
 - 4.3.3. Profile
 - 4.3.3.1. Paver type: Regular plan form.
 - 4.3.3.2. Arrises: Chamfered.
 - 4.3.3.3. Interlocking features: Nibs.
 - 4.3.4. Dimensions and associated tolerances
 - 4.3.4.1. Nominal sizes: 215 x 115 x 80 mm.
 - 4.3.5. Arrises: Chamfered, 6 x 2 mm.
 - 4.3.6. Weathering resistance: Class 3.
 - 4.3.7. Abrasion resistance: ≤ 23 mm.
 - 4.3.8. Slip resistance: Unpolished Slip Resistance Value (USRV): ≥ 55 ; Potential for slip: Low.
 - 4.3.9. Recycled content (minimum): As manufactured.
- 4.4. Type: Hand lay.
- 4.5. Permeability: To BS DD 229:1996, 4265 mm/h.
- 4.6. Third-party certification: CE marked; BREEAM B rating as per the BRE Green Guide, 4th Edition 2009.
- 4.7. Strength: Characteristic tensile splitting strength: ≥ 3.6 MPa; Failing load: ≥ 250 N/mm.
- 4.8. Unit weight: 3.6 kg.
- 4.9. Accessories: Omega Flow marker block paving, white.
- 4.10. Tolerances on plan dimension and thickness nominal: Thickness: ± 3 mm; Plan size: ± 2 mm.
- 5. Granular sub-base: Refer to Engineers information
 - 5.1. Compacted thickness: Refer to Engineers information
- 6. Laying course
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.1.1. Category: Refer to Engineers information
 - 6.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 6.3. Nominal thickness after compaction: Refer to Engineers information
- 7. Jointing
 - 7.1. Material: In accordance with BS 7533-3.
 - 7.2. Joint width: Minimum 6 mm as per manufacturers information
- 8. Sealer/ Stabilizer: Refer to Engineers information
- 9. Setting out
 - 9.1. Bond: 45° stretcher; alternating bands; Refer to drawing N15301-PLI-XX-ZZ-DR-L-60242

9.2. Features: None

10. Accessories: None

115 E Concrete paving blocks ST_07b ADDED

1. Description: PCC permeable block paving (vehicle grade)
-to shared surfaces (inset)
2. Designation: ST_04a
3. Subgrade improvement layer: Refer to Engineers information
 - 3.1. Compacted thickness: Refer to Engineers information
4. Geotextile: Refer to Engineers information
 - 4.1. Manufacturer: [Brett Landscaping](#)
 - 4.1.1. Contact details
 - 4.1.1.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 4.1.1.2. Telephone: [+44 \(0\)345 60 80 570](tel:+44(0)3456080570)
 - 4.1.1.3. Web: <https://www.brettlandscaping.co.uk>
 - 4.1.1.4. Email: project.designer@brett.co.uk
 - 4.1.2. Product reference: [Omega Flow Permeable Block Paving \(80 mm Single size packs\)](#)
 - 4.2. Standard: To BS EN 1338: 2003.
 - 4.3. Physical properties
 - 4.3.1. Colour: Burnt Oak. Brindle.
 - 4.3.2. Finish: Smooth faced.
 - 4.3.3. Profile
 - 4.3.3.1. Paver type: Regular plan form.
 - 4.3.3.2. Arrises: Chamfered.
 - 4.3.3.3. Interlocking features: Nibs.
 - 4.3.4. Dimensions and associated tolerances
 - 4.3.4.1. Nominal sizes: 215 x 115 x 80 mm.
 - 4.3.5. Arrises: Chamfered, 6 x 2 mm.
 - 4.3.6. Weathering resistance: Class 3.
 - 4.3.7. Abrasion resistance: ≤ 23 mm.
 - 4.3.8. Slip resistance: Unpolished Slip Resistance Value (USRV): ≥ 55 ; Potential for slip: Low.
 - 4.3.9. Recycled content (minimum): As manufactured.
 - 4.4. Type: Hand lay.
 - 4.5. Permeability: To BS DD 229:1996, 4265 mm/h.
 - 4.6. Third-party certification: CE marked; BREEAM B rating as per the BRE Green Guide, 4th Edition 2009.
 - 4.7. Strength: Characteristic tensile splitting strength: ≥ 3.6 MPa; Failing load: ≥ 250 N/mm.
 - 4.8. Unit weight: 3.6 kg.
 - 4.9. Accessories: None.
 - 4.10. Tolerances on plan dimension and thickness nominal: Thickness: ± 3 mm; Plan size: ± 2 mm.
5. Granular sub-base: Refer to Engineers information

- 5.1. Compacted thickness: Refer to Engineers information
- 6. Laying course
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.1.1. Category: Refer to Engineers information
 - 6.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 6.3. Nominal thickness after compaction: Refer to Engineers information
- 7. Jointing
 - 7.1. Material: In accordance with BS 7533-3.
 - 7.2. Joint width: Minimum 6 mm as per manufacturers information
- 8. Sealer/ Stabilizer: Refer to Engineers information
- 9. Setting out
 - 9.1. Bond: 90° herringbone; Refer to drawing N15301-PLI-XX-ZZ-DR-L-60242
 - 9.2. Features: None
- 10. Accessories: None

115 F Concrete paving blocks ST_07c ADDED

- 1. Description: PCC permeable block paving (vehicle grade)
-to carriageway
- 2. Designation: ST_04a
- 3. Subgrade improvement layer: Refer to Engineers information
 - 3.1. Compacted thickness: Refer to Engineers information
- 4. Geotextile: Refer to Engineers information
 - 4.1. Manufacturer: [Brett Landscaping](#)
 - 4.1.1. Contact details
 - 4.1.1.1. Address: Brett Landscaping
Sileby Road
Barrow-upon-Soar
Leicestershire
LE12 8LX
 - 4.1.1.2. Telephone: [+44 \(0\)345 60 80 570](tel:+4415303456080)
 - 4.1.1.3. Web: <https://www.brettlandscaping.co.uk>
 - 4.1.1.4. Email: project.designer@brett.co.uk
 - 4.1.2. Product reference: [Omega Flow Permeable Block Paving \(80 mm Single size packs\)](#)
- 4.2. Standard: To BS EN 1338: 2003.
- 4.3. Physical properties
 - 4.3.1. Colour: Autumn Gold.
 - 4.3.2. Finish: Smooth faced.
 - 4.3.3. Profile
 - 4.3.3.1. Paver type: Regular plan form.
 - 4.3.3.2. Arrises: Chamfered.
 - 4.3.3.3. Interlocking features: Nibs.
 - 4.3.4. Dimensions and associated tolerances
 - 4.3.4.1. Nominal sizes: 215 x 115 x 80 mm.
 - 4.3.5. Arrises: Chamfered, 6 x 2 mm.
 - 4.3.6. Weathering resistance: Class 3.
 - 4.3.7. Abrasion resistance: ≤ 23 mm.

- 4.3.8. Slip resistance: Unpolished Slip Resistance Value (USRV): ≥ 55 ; Potential for slip: Low.
- 4.3.9. Recycled content (minimum): As manufactured.
- 4.4. Type: Hand lay.
- 4.5. Permeability: To BS DD 229:1996, 4265 mm/h.
- 4.6. Third-party certification: CE marked; BREEAM B rating as per the BRE Green Guide, 4th Edition 2009.
- 4.7. Strength: Characteristic tensile splitting strength: ≥ 3.6 MPa; Failing load: ≥ 250 N/mm.
- 4.8. Unit weight: 3.6 kg.
- 4.9. Accessories: None.
- 4.10. Tolerances on plan dimension and thickness nominal: Thickness: ± 3 mm; Plan size: ± 2 mm.
- 5. Granular sub-base: Refer to Engineers information
 - 5.1. Compacted thickness: Refer to Engineers information
- 6. Laying course
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.1.1. Category: Refer to Engineers information
 - 6.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 6.3. Nominal thickness after compaction: Refer to Engineers information
- 7. Jointing
 - 7.1. Material: In accordance with BS 7533-3.
 - 7.2. Joint width: Minimum 6 mm as per manufacturers information
- 8. Sealer/ Stabilizer: Refer to Engineers information
- 9. Setting out
 - 9.1. Bond: 90° herringbone
 - 9.2. Features: None
- 10. Accessories: None

115 G Concrete paving blocks ST_13 ADDED

- 1. Description: PCC clay-effect pavers
- to Water Tower
- 2. Subgrade improvement layer: Refer to Engineers information
 - 2.1. Compacted thickness: Refer to Engineers information
- 3. Geotextile: Refer to Engineers information
 - 3.1. Manufacturer: [Tobermore](#)
 - 3.1.1. Contact details
 - 3.1.1.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 3.1.1.2. Telephone: [+44 \(0\)844 800 5736](tel:+44(0)8448005736)
 - 3.1.1.3. Web: <https://www.tobermore.co.uk/professional/>
 - 3.1.1.4. Email: NBSdatapatform@tobermore.co.uk
 - 3.1.2. Product reference: [Artro | Concrete Block Paving](#)
 - 3.2. Standard: To BS EN 1338.
 - 3.3. Physical properties
 - 3.3.1. Colour: Carbon.

- 3.3.2. Finish: Prime top surface layer with a minimum depth of 4 mm and >350 kg/m³ of cement.
- 3.3.3. Profile
 - 3.3.3.1. Paver type: Rectangular block paving.
- 3.3.4. Dimensions and associated tolerances
 - 3.3.4.1. Nominal sizes: 220 x 55 x 80 mm.
- 3.3.5. Weathering resistance: ≤ 1.0 kg/m² as a mean with no individual value > 1.5 kg/m² Class 3.
- 3.3.6. Slip resistance: Extremely low risk of slipping (>45 USRV).
- 3.3.7. Skid resistance: (PSRV) >45. (USRV) >45.
- 3.3.8. Recycled content (minimum): Not less than 10 % recycled content.
- 3.4. Strength: >3.6 MPa.
- 3.5. Efflorescence: Minimum 12 hour vapour curing to reduce significantly the possibility of efflorescence.
- 4. Granular sub-base: Refer to Engineers information
 - 4.1. Compacted thickness: Refer to Engineers information
- 5. Laying course
 - 5.1. Material: In accordance with BS 7533-3.
 - 5.1.1. Category: Refer to Engineers information
 - 5.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 5.3. Nominal thickness after compaction: Refer to Engineers information
- 6. Jointing
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.2. Joint width: Minimum 6 mm as per manufacturers information
- 7. Sealer/ Stabilizer: Refer to Engineers information
- 8. Setting out
 - 8.1. Bond: Basket weave
 - 8.2. Features: None
- 9. Accessories: None

115 H Concrete paving blocks ST_15 ADDED

- 1. Description: PCC clay-effect pavers
 - to block main entrances
- 2. Subgrade improvement layer: Refer to Engineers information
 - 2.1. Compacted thickness: Refer to Engineers information
- 3. Geotextile: Refer to Engineers information
 - 3.1. Manufacturer: [Tobermore](#)
 - 3.1.1. Contact details
 - 3.1.1.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 3.1.1.2. Telephone: [+44 \(0\)844 800 5736](tel:+44(0)8448005736)
 - 3.1.1.3. Web: <https://www.tobermore.co.uk/professional/>
 - 3.1.1.4. Email: NBSdataplatfrom@tobermore.co.uk
 - 3.1.2. Product reference: [Artro | Concrete Block Paving](#)

- 3.2. Standard: To BS EN 1338.
- 3.3. Physical properties
 - 3.3.1. Colour: Carbon.
 - 3.3.2. Finish: Prime top surface layer with a minimum depth of 4 mm and >350 kg/m³ of cement.
 - 3.3.3. Profile
 - 3.3.3.1. Paver type: Rectangular block paving.
 - 3.3.4. Dimensions and associated tolerances
 - 3.3.4.1. Nominal sizes: 220 x 55 x 80 mm.
 - 3.3.5. Weathering resistance: ≤ 1.0 kg/m² as a mean with no individual value > 1.5 kg/m² Class 3.
 - 3.3.6. Slip resistance: Extremely low risk of slipping (>45 USRV).
 - 3.3.7. Skid resistance: (PSRV) >45. (USRV) >45.
 - 3.3.8. Recycled content (minimum): Not less than 10 % recycled content.
- 3.4. Strength: >3.6 MPa.
- 3.5. Efflorescence: Minimum 12 hour vapour curing to reduce significantly the possibility of efflorescence.
- 4. Granular sub-base: Refer to Engineers information
 - 4.1. Compacted thickness: Refer to Engineers information
- 5. Laying course
 - 5.1. Material: In accordance with BS 7533-3.
 - 5.1.1. Category: Refer to Engineers information
 - 5.2. Method of screeding, in accordance with BS 7533-3: Refer to Engineers information
 - 5.3. Nominal thickness after compaction: Refer to Engineers information
- 6. Jointing
 - 6.1. Material: In accordance with BS 7533-3.
 - 6.2. Joint width: Minimum 6 mm as per manufacturers information
- 7. Sealer/ Stabilizer: Refer to Engineers information
- 8. Setting out
 - 8.1. Bond: Laid as per Architect's details (42000-Series Drawings)
 - 8.2. Features: None
- 9. Accessories: None

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.

220 Samples

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

230 Control samples

1. **General:** Carry out sample area of finished work:
 - 1.1. **Location:** To be agreed
 - 1.2. **Size (minimum):** 3.0 x 3.0 m
 - 1.3. **Features to be included:** Channel
Edging
Kerb
Recessed manhole cover infill
Junction with building facade
Cutting to base of light column
2. **Give notice:** When ready for inspection.
3. **Timing:** Obtain approval of appearance before proceeding.

240 Adverse weather

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

485 Laying blocks/ pavers/ setts

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

495 In situ surrounds to obstructions

1. **Locations:** Around circular drainage fittings

At circular street furniture bases

Where blocks/ pavers cannot be fitted tight up to features
2. **Material:** C35 air entrained concrete in accordance with BS 7533-3, clause 5.4.3.2.
3. **Shape and size:** Rectangular, 100 mm (minimum) all round obstruction.
4. **Thickness (minimum):** Combined depth of blocks/ pavers/ setts and sand laying course.
5. **Colour:** To match paving units
6. **Timing:** Lay and allow to cure in advance of laying blocks/ pavers/ setts.

505 Regularity of paved surfaces

1. **Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface):** 3 mm.
2. **Joints between paving units or utility access covers**
 - 2.1. **Joints flush with the surface:** difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - 2.2. **Recessed, filled joints:** difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.

- 2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

Completion

615 Completion of paving

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

Deleted clauses

~~115a Permeable concrete paving blocks ST_04a~~ **DELETED**

~~115b Permeable concrete paving blocks ST_04b~~ **DELETED**

~~115c Permeable concrete paving blocks ST_07~~ **DELETED**

~~115d Permeable concrete paving blocks ST_09~~ **DELETED**

~~120 Patterned clay paver paving ST_13~~ **DELETED**

Ω End of Section

Q25

Slab/ brick/ sett/ cobble pavings **REVISED**

General

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

System performance

220 Design – concrete flag paving system

1. **Design:** Complete the design of the concrete slab paving system in accordance with BS 7533-4.
 - 1.1. **Site category:** Refer to Engineers information
2. **Ground conditions:** Refer to Engineers information
3. **Performance criteria:** Refer to Engineers information
4. **Proposals:** Submit drawings, technical information, calculations and manufacturers' literature.

240 Design – natural stone sett paving system ST_16 **ADDED**

1. **Design:** Complete the design of the natural stone sett paving system in accordance with BS 7533-7.
2. **Performance criteria:** Vehicular loading (HGV over-run)
3. **Proposals:** Submit proposals for using reclaimed granite setts (reserve reclaimed limestone setts for paved aprons to WT_02a / WT_02b / WT_02c)

Products

321 Tactile paving ST_19 **REVISED**

1. **Description:** Tactile paving
 - to pedestrian crossings
2. **Designation:** ST_19
3. **Standard:** To DD CEN/TS 15209.
4. **Material:** Precast concrete
 - 4.1. **Manufacturer:** Contractor's choice
 - 4.1.1. **Product reference:** Tactile paving; Blister
5. **Recycled content:** As supplied Submit proposals
6. **Nominal sizes:** 400 x 400 x 65 mm
7. **Colour:** Charcoal
8. **Notes::** -Fully compliant with Part M4(2)
 - Flexible bedding as Engineer's details
 - Laid stack bond
 - Maximum 1:12 fall

322 Demarcation studs ST_18

1. **Description:** Demarcation stud.
To delineate extent of S278 works.
2. **Designation:** ST_18
3. **Standard:** None.
4. **Material:** Grade 316L stainless steel.
 - 4.1. **Manufacturer:** Kent Stainless.
www.kentstainless.com.
0800 3768377.
 - 4.1.1. **Product reference:** Kent Domed Road Stud (KDRS100)
5. **Nominal sizes:** 100mm diameter, 12mm diameter threaded bar, 16.63mm stud
6. **Finish:** Satin finish 320 Grit Polished finish
7. **Notes:** -Laid to supplier's recommendations
-Resin-set in 40mm-depth drilled hole @ 1.0m centres

365 Geotextile sheet

1. **Description:** Below sand laying course
2. **Manufacturer:** Submit proposals
 - 2.1. **Product reference:** Submit proposals
3. **Recycled content:** Submit proposals

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

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

Execution

620 Adverse weather

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

625 Laying pavings – general

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

630 Levels of paving

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

637 Regularity of paved surfaces

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

645 Protection

1. **Cleanliness:** Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. **Materials storage:** Do not overload pavings with stacks of materials.
3. **Handling:** Do not damage paving unit corners, arrises, or previously laid paving.
4. **Mortar bedded pavings:** Keep free from traffic after laying:
 - 4.1. **Pedestrian traffic (minimum):** 7 days
 - 4.2. **Vehicular traffic (minimum):** 14 days
5. **Access:** Restrict access to paved areas to prevent damage from site traffic and plant.

650 Cementitious bases and sub-bases

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

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

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

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

675 Laying geotextile sheet edging strips

1. **Location:** Immediately below the laying course, abutting features which interrupt the laying course, including:
 - 1.1. Perimeters/ Edge restraints/ Kerbs.
 - 1.2. Other types of paving.
 - 1.3. Drainage fittings, e.g. channels and manholes.
2. **Edge detail:** Turn sheet up to a height not less than thickness of the laying course to form an upstand fitted neatly against features.
3. **Width:** 1000 mm
4. **Jointing:** Lap by 500 mm.

685 Laying geotextile sheet overlays

1. **Location:** Immediately below the laying course.
2. **Laying:** Fit neatly at edge restraints and other features that interrupt the laying course, e.g. drainage fittings, channels, manholes and kerbs.
3. **Edge detail:** Turn sheet up to form an upstand against features, height not less than thickness of the laying course.
4. **Width:** 1000 mm
5. **Jointing:** Lap by 500mm.

710 Laying flag and slab paving – sand/ fine aggregate laying course and jointing

1. **Standard:** In accordance with BS 7533-4.
2. **Flag installation and cutting:** To Interpave 'Concrete flag paving'.
3. **Laying course**
 - 3.1. **Nominal thickness after compaction:** 30 mm
4. **Joint width:** 2-5 mm.

Completion

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

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

Deleted clauses

~~315a Concrete flags (pedestrian) ST_02~~ **DELETED**

~~315b Concrete permeable flag paving ST_15~~ **DELETED**

~~335 Concrete setts (vehicle grade) ST_03~~ **DELETED**

Ω End of Section

Q26

Special surfacings/ pavings for sport/ general amenity

Sports surfacing

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.
5. **Specification and design of rubber wet pour safety surface and all build-ups to be agreed and confirmed with specialist supplier.**

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

301 Extent of impact attenuating surfacing

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

360a Bonded rubber mulch ST_11

1. Description: Bonded rubber mulch 1
- to Play Area safety surface
2. Designation:: ST_11
3. Sub-base: Laid to manufacturer's recommendations
 - 3.1. Thickness: Refer to Engineer's details
4. Sub-structure:: Refer to Engineer's details
 - 4.1. Thickness:: Refer to Engineer's details
5. Base: Refer to Engineer's details
 - 5.1. Thickness: Refer to Engineer's details
6. Surface course: 45mm-100mm depth surface course according to critical fall heights
 - 6.1. Thickness:: 45-100mm
 - 6.2. Standard: To BS 7188.
 - 6.3. Manufacturer: Abacus Playground Ltd
01332 287 410
sales@abacuspj.co.uk
www.abacuspj.co.uk
 - 6.3.1. Product reference: Mulchbond Bonded Rubber Mulch Surfacing or equal approved
 - 6.4. Colour: Earth Brown colour (TBC)
 - 6.5. Health and safety

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

7. Submit

- 7.1. Resistance to abrasive wear, slip resistance, resistance to indentation and ease of ignition: Evidence of testing to BS 7188.
- 7.2. Critical fall height: Evidence of testing to BS EN 1177.

360b Wet pour EPDM surface ST_12

- 1. Description: Wet pour surface
- to Play Area safety surface
- 2. Designation:: ST_12
- 3. Sub-base: Laid to manufacturer's recommendations
 - 3.1. Thickness: Refer to Engineer's details
- 4. Sub-structure:: Refer to Engineer's details
 - 4.1. Thickness:: Refer to Engineer's details
- 5. Base: Abacus Base Course - refer to manufacturer's and Engineer's details and specifications
 - 5.1. Thickness: Depths according to critical fall heights; in accordance with BS EN 1177
- 6. Surface course: Abacus EPDM Wearing Course
 - 6.1. Thickness:: 20mm
 - 6.2. Standard: To BS 7188.
 - 6.3. Manufacturer: Abacus Playground Ltd
01332 287 410
sales@abacuspg.co.uk
www.abacuspg.co.uk
 - 6.3.1. Product reference: Impact absorbant wet-pour; Abacus Wet Pour Surfacing or equal approved
 - 6.4. Colour: Beige RH30 colour (TBC)
 - 6.5. Critical fall height when tested to BS EN 1177: Up to 3.0 m - refer to play equipment manufacturer's fall zone extents, specification and installation recommendations.
 - 6.6. Health and safety
 - 6.6.1. Substance known to be toxic or carcinogenic on skin contact or released as vapour or dust during normal use: Not permitted.
- 7. Submit
 - 7.1. Resistance to abrasive wear, slip resistance, resistance to indentation and ease of ignition: Evidence of testing to BS 7188.
 - 7.2. 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.

940 Labelling

1. **Signs:** Provide permanent labelling in approved locations on all types of surfacing stating: Critical fall height; Date of installation; Manufacturer's name and contact details; Product name.

Ω End of Section

Q28

Topsoil and soil ameliorants

System outline

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

155 Mulching and top dressing system

1. **Description:** For trees, shrubs and hedge planting
2. **Composition**
 - 2.1. **Material:** Organic materials

Products

300 Preparation materials generally

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

305 Permitted materials

1. **Materials:** Composted green waste
Spent mushroom compost
Wood waste
2. **Give notice:** before ordering or using.
3. **Declaration of compliance in accordance with BS EN 13650:** Required

310 Materials not permitted

1. **Materials:** Products containing peat
River and canal dredgings

315 A Imported topsoil to BS 3882 generally

1. **Description:** Sitewide, to planting at ground level.

Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
2. **Quantity:** Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
3. **Standard:** To BS 3882.
4. **Classification:** Multipurpose
 - 4.1. **Soil textural class to BS 3882, Figure 1:** Sandy loam
5. **Source:** Local, within a 50 mile radius
 - 5.1. **Product reference:** Submit proposals
6. **Screening of foreign matter::** Any imported soils must be screened to ensure they are free of foreign matter in particular glass, metal, ceramics, slate or any other material that may be considered as having the potential to cause injury.

Proposed sources for imported soil should be submitted to the Landscape Architect for comment at least 1 month prior to use on site.

Samples of proposed topsoil shall be submitted to the Landscape Architect for comment 2 weeks prior to use on site.

The Landscape Architect shall be made aware of any significant deviation in appearance between delivered topsoil and previously submitted samples of topsoil, prior to acceptance on site and/or installation.

315 B Imported topsoil to BS 3882 for wildflower grassland

1. **Description:** For wildflower grassland
2. **Quantity:** 100mm depth or deeper to make up any deficiency of topsoil existing on site and to complete the work.
3. **Standard:** To BS 3882.
4. **Classification:** Specific purpose - Low fertility
 - 4.1. **Soil textural class to BS 3882, Figure 1:** Loamy sand
5. **Source:** Submit proposals
 - 5.1. **Product reference:** Submit proposals

315 C Imported subsoil to BS 8601

1. **Description:** For tree pits
2. **Quantity:** 350mm depth or deeper to make up remainder of backfill beneath 400mm-depth imported topsoil layer.
3. **Standard:** To BS 8601.
4. **Classification:** Specific purpose - Low fertility
 - 4.1. **Soil textural class to BS 3882, Figure 1:** Loamy sand
5. **Source:** Submit proposals
 - 5.1. **Product reference:** Submit proposals

330 Imported manufactured topsoil/ growing medium

1. **Description:** To soil cell system CT_01 and CT_02
2. **Type:** Urban tree planting medium

2.1. Soil textural class: Sandy loam

3. Manufacturer: GreenBlue Urban.
www.greenblue.com.
01580 830800.

3.1. Product reference: RootSoil 20.

340 Lightweight growing medium Intensive Substrate

1. Description: To intensive biodiverse green roofs.
2. Standard: In accordance with FLL 'Guidelines for the planning, construction, and maintenance of green roofs' and GRO 'Green Roof Code: Code of Best Practice for the UK'
3. Manufacturer: Bauder.
www.bauder.co.uk.
01473 257671.
 - 3.1. Product reference: Intensive Substrate
4. pH (range): 6.0-8.5
5. Organic matter content: As supplied
6. Notes: Refer to Plincke drawings for soil depths. Min. 125 mm-depth; Max. 225mm-depth.

341 Lightweight growing medium Seedbed Substrate

1. Description: To all wildflower seeded areas on intensive biodiverse green roofs.
2. Standard: In accordance with FLL 'Guidelines for the planning, construction, and maintenance of green roofs' and GRO 'Green Roof Code: Code of Best Practice for the UK'
3. Manufacturer: Bauder.
www.bauder.co.uk.
01473 257671.
 - 3.1. Product reference: 'SeedBed Substrate' - 25 mm depth top dressing.
Over 'Biodiverse Substrate' (Min. 125 mm-depth; Max. 225mm-depth).
To give undulating effect.
4. pH (range): 'SeedBed Substrate' = 7.0-9.0
'Biodiverse Substrate' = 6.0-8.5
5. Organic matter content: As supplied
6. Notes: Refer to Plincke drawings.

345 Aggregates

1. Description: For tree pits
2. Source: Bourne Amenity Ltd, or similar approved.
 - 2.1. Product reference: Washed Grade D Sand, or equal approved.
3. Reference, description and grading
 - 3.1. Sand: Medium coarse washed Grade D sand
 - 3.2. Grit: Not required
 - 3.3. Crushed materials: Not required
 - 3.4. Other aggregates or particles: Not required
4. Recycled content: None permitted

360 Sanitized and stabilized composted materials certified to PAS 100

1. Description: If site-won and/ or imported topsoils require amelioration.
2. Standard: In accordance with PAS 100 and Compost Quality Protocol
3. Source: Local, within a 50 mile radius

- 3.1. Product reference: Submit proposals
4. Horticultural parameters
 - 4.1. pH (1:5 water extract): 7.0-8.7
 - 4.2. Electrical conductivity (maximum, 1:5 water extract): 200 mS/m
 - 4.3. Moisture content (m/m of fresh weight): 35-55%.
 - 4.4. Organic matter content (minimum): 25%
 - 4.5. Grading (air dried samples): 95% passing 25 mm and 90% passing 10 mm screen mesh apertures
 - 4.6. Carbon:Nitrogen ratio (maximum): 20:1.
5. Texture: Friable.
6. Objectionable odour: Not permitted.
7. Compost Certification Scheme certification: Required
8. Declaration of analysis: Submit.
9. Additional analyses: CLEA elements
Electrical conductivity
Phytotoxic elements
10. Samples: Submit details of recent chemical and physical analysis before ordering
11. Notes:: Not to be added to Imported Manufactured Topsoil/ Growing Medium under clause 330, or Lightweight Growing Medium under clauses 340 and 341.

370 Temporary crops grown on site

1. Description: On temporary topsoil storage heaps
2. Seed mix: Green manure seed mix
3. Source: Local, within a 50 mile radius
 - 3.1. Product reference: Submit proposals

380 Mycorrhizal inoculant

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

Execution

610 Topsoil analysis

1. Soil to be analysed: All areas where existing soil is to be re-used.
All imported topsoil.
2. Soil analyst: Contractor's choice
3. Samples: Collect in accordance with BS 3882.
4. Submit
 - 4.1. Declaration of analysis: In accordance with BS 3882, clause 6 and Table 1.
 - 4.2. Additional analysis: Chemical analysis
Chemical contaminants
Phytotoxic and CLEA elements
Potentially toxic elements (PTEs)
 - 4.3. Report detailing soil analyst's recommendations.

- 4.3.1. **Note::** Any amelioration of soil is based on clauses 360 and 810, and WRAP 'Guidance on the use of BSI PAS100 compost in soil amendment and surface treatment'.

620 Importing topsoil

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

625 Sample loads

1. **Description:** For imported topsoil
2. **Deliver to site a sample load:** of 5 kg
3. **Give notice:** Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - 3.1. **Notice period:** 7 days

630 Documentation for imported topsoil

1. **Description:** To clause 315.
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:** One

635 Documentation for compost and composted materials

1. **Description:** To clause 360.
2. **Timing:** Submit at handover.
3. **Contents**
 - 3.1. Full description of all compost components.
 - 3.2. Record of source for all compost components.
 - 3.3. Analyst's report for each test carried out.
 - 3.4. **Declaration of compliance:** in accordance with PAS 100 and BSI PD CR 13456.
 - 3.5. **Quality Compost Protocol certification:** Required
4. **Number of copies:** One

650 Notice

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

655 Mechanical tools

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

660 Grading subsoil for:

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

665 Subsoil surface preparation for:

1. **Standard:** In accordance with BS 3882.
2. **General:** Excavate and/ or place fill to required profiles and levels, as section D20.
3. **Loosening**
 - 3.1. **When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth**
 - 3.1.1. **Light and noncohesive subsoils:** 150 mm
 - 3.1.2. **Stiff clay and cohesive subsoils:** 300 mm
 - 3.1.3. **Rock and chalk subgrades:** Lightly scarify to promote free drainage.
 - 3.2. **Wet conditions:** Do not loosen subsoils.
4. **Stones:** Immediately before spreading topsoil, remove stones larger than 20 mm.
5. **Remove from site:** Arisings, contaminants and debris
Builders rubble

670 Inspecting formations

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

680 Surplus topsoil to be retained

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

685 Surplus materials to be removed

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

690 Topsoil storage heaps

1. **Location:** Contractor's choice
2. **Height (maximum):** 1.0 m
3. **Width (maximum):** 5.0 m
 - 3.1. **Formation:** Loose tip and shape from the side only, without running machinery on the heap at any time.
4. **Protection**
 - 4.1. **Do not place any other material on top of storage heaps.**

- 4.2. Do not allow construction plant to pass over storage heaps.
- 4.3. Prevent compaction and contamination, by fencing and covering as appropriate.

700 Grading of topsoil

1. **Topsoil condition:** Reasonably dry and workable.
2. **Contours:** Smooth and flowing, with falls for adequate drainage.
 - 2.1. **Hollows and ridges:** Not permitted.
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. **Standard:** In accordance with BS 3882.
2. **Temporary roads/ surfacing:** Remove before spreading topsoil.
3. **Layers**
 - 3.1. **Depth (maximum):** 150 mm.
 - 3.2. Gently firm each layer before spreading the next.
4. **Depth after firming and settlement:** 150 mm to grass areas (with 300 mm subsoil).
300 mm to shrub and hedge areas (with 300 mm subsoil).
300 mm to tree pits (with 600 mm subsoil).
5. **Crumb structure:** Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 Loose tipping of topsoil

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

718 Final cultivation

1. **Compacted topsoil:** Break up to full depth.
2. **Tilth:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
3. **Depth:** 150 mm
4. **Particle size (maximum):** 10 mm
5. **Timing:** Within a few days before planting
6. **Weather and ground conditions:** Suitably dry.
7. **Surface:** Leave regular and even.
8. **Levels:** As Plincke drawings 0583-PLI-XX-XX-DR-L-0410, 0583-PLI-XX-XX-DR-L-0411, and 0583-PLI-XX-XX-DR-L-0412

9. Undesirable material brought to the surface
 - 9.1. Remove visible weeds.
 - 9.2. Remove roots and large stones with any dimension exceeding 20 mm.

720 Finished levels of topsoil after settlement

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

730 Green roof 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): 250 mm.
 - 2.2. Sequence: Gently firm each layer before spreading the next.

800 Sowing temporary crops

1. Locations: All topsoil storage heaps
2. Sowing rate: In accordance with seed supplier's recommendations
3. Maintenance: In accordance with seed supplier's recommendations

810 Applying compost

1. Type:: For soil amelioration as clause 360.
2. Description: To all soft landscape areas, except green roofs and wildflower areas
3. Application rate for trees and shrubs: Sufficient to ameliorate any deficiency identified under clause 610.
 - 3.1. Timing: Apply prior to cultivation.
4. Application rate for grass: Sufficient to ameliorate any deficiency identified under clause 610.
 - 4.1. Timing: Apply prior to cultivation.
5. Application rate for planters: Sufficient to ameliorate any deficiency identified under clause 610.
 - 5.1. Timing: Apply prior to cultivation.
6. Other requirements: Not to be added to Lightweight Growing Medium under clauses 340 and 341.

840 Applying mycorrhizal inoculant

1. Description: As clause 380
2. Depth: To manufacturer's/ supplier's recommendations

845 Applying loose mulch

1. **Description:** To all trees, shrubs areas, and hedge areas
2. **Manufacturer::** Rolawn Limited.
www.rolawn.co.uk.
01904 757372.
 - 2.1. **Product reference::** ProMulch
3. **Timing:** Immediately after planting
4. **Preparation:** Clear all weeds.
Ensure that soil is thoroughly moistened, applying water where necessary.
5. **Coverage of mulch (minimum)**
 - 5.1. **Planting beds (depth):** 50 mm depth
 - 5.2. **Hedges (depth)::** 50 mm depth
 - 5.3. **Trees:** 50 mm depth in a circular area of 500 mm radius measured from the tree stem

Completion

905 Applying maintenance fertilizer to soil

1. **Description:** To all trees, shrubs areas, and hedge areas
2. **Duration:** Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.
3. **Time of year:** To manufacturer's recommendations
4. **Application:** Evenly spread, carefully incorporating below mulch materials.
5. **Rate:** To manufacturer's recommendations

920 Applying mulch

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

Ω End of Section

Q30

Seeding/ turfing

General information/requirements

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

115 Seeded and turfed areas

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

120 Climatic conditions

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

145 Watering

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

150 Water restrictions

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

160 Notice

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

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: To all amenity grass seed areas.
2. Type: Suitable for suppressing perennial weeds.
3. Timing: Allow fallow period before cultivation.
 - 3.1. Duration: As manufacturer's recommendation
4. Notes:: Not to be added to Lightweight Growing Medium under clauses Q28/340 and 341.

250 Soil requirements

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

Seeding

311 Grass seed

1. Description: Amenity Grass Seed
2. Supplier: Contractor's choice
 - 2.1. Mixture reference: Contractor's choice
3. Application rate: 40 g/m²

312 Wildflower seed mixture

1. Description: Wildflower Grass Seed
2. Supplier: Contractor's choice
 - 2.1. Mixture reference: Contractor's choice
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 Amenity Grass Seed 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.

322 Quality of wildflower seed

1. Description: For Wildflower Grass Seed.
For Green Roof Wildflower Grass Seed.
2. Standard: In accordance with Flora Locale's 'Code of practice for collectors, growers and suppliers of native flora'.
3. Germination testing: Not required
4. Freshness of seed: Produced for the current growing season
5. Samples: Submit when requested.

330 Sowing

1. **General:** Establish good seed contact with the root zone.
2. **Method:** Broadcast manually or use seed drill, rake level and roll. Ensure good seed to soil contact.
 - 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: March to October

336 Wildflower sowing season

1. Wildflower seed generally: March to October.

340 Pre-emergent herbicide

1. **Description:** For Amenity Grass Seed 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

400 Cultivated turf ref. M01

1. **Description:** Shade tolerant Wildflower Turf (ref. M01)
2. **Supplier:** Wildflower Turf
 - 2.1. **Product reference:** WFT-Shade-41
3. **Properties of soil used for turf production:** Not used

400 Cultivated turf ref. M02

1. **Description:** Native Enriched Turf (ref. M02)
2. **Supplier:** Wildflower Turf
 - 2.1. **Product reference:** WFT-Native-Enriched
3. **Properties of soil used for turf production:** Not used

400 Cultivated turf ref. M03

1. **Description:** Species Rich Lawn Turf (ref. M03)
2. **Supplier:** Wildflower Turf
 - 2.1. **Product reference:** WFT-Species-Rich-26
3. **Properties of soil used for turf production:** Not used

400 Cultivated turf ref. M05

1. Description: SuDS Turf (ref. M05)
2. Supplier: Wildflower Turf
 - 2.1. Product reference: WFT-SUD-37
3. Properties of soil used for turf production: Not used

410 Turf to BS 3969

1. Description:
2. Standard: To BS 3969, free from undesirable grasses and weeds.
 - 2.1. Grade:
3. Source: Submit proposals.
4. Herbicide treatment: Apply not less than four weeks and not more than three months before lifting.
5. Dimensions:

420 Delivery and storage

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

430 Turfing generally

1. Time of year: To be agreed
2. Timing of laying
 - 2.1. Spring and summer: Within 18 hours of delivery.
 - 2.2. Autumn and winter: Within 24 hours of delivery.
3. Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
4. Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
5. Jointing: Laid with broken joints, well butted up. Do not stretch turf.
6. Edges: Whole turfs, trimmed to a true line.
7. Adjusting levels: Remove high spots and fill hollows with fine soil.
8. Consolidating: Lightly and evenly firm as laying proceeds to ensure full contact with substrate. Do not use rollers.
9. Dressing, brushed well in to completely fill all joints: None
10. Watering: Thoroughly water completed turf immediately after laying. Check that water has penetrated into the soil below.

Protecting/cutting

510 Protective fencing

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

540 First cut of

1. **Description:** For Shade Tolerant Grassland (ref. M01); Species Rich Lawn (ref. M03) and Existing Lawn (ref. M04)
2. **Height of initial growth:** 75 mm
3. **Preparation:**
4. **Debris and litter:** Remove.
 - 4.1. **Stones and earth clods larger than 25 mm in any dimension:** Remove
5. **Height of first cut:** 50 mm
6. **Mower type:** Contractor's choice
7. **Arisings:** Remove from site

541 First cut of

1. **Description:** For Wildflower Grassland (ref. M02); Wetland Grassland (ref. M05) and Woodland Flora (ref. M06) areas
2. **Maintenance::** Year one.
1st cut Mid - September – 1st October and collect the arisings.

Cutting height 70-100 mm.

Thereafter.

Cut from mid-August to early October. This can be done as one cut but preferably, and if the meadow is big enough, cut it in sections leaving a week to a fortnight between cuts. Ensure you collect the arisings. If the meadow is large enough consider allowing up to a fifth to stand uncut through the winter and cut down and remove the clippings in March the following year, this will provide a habitat for invertebrates and some vertebrates over the winter. Rotate this area so a different section is left uncut each year. This more closely replicates the grazing of animals which would leave some small areas not grazed.

If possible and with the obvious exception of areas you are leaving uncut, lightly mow the sward down to 70-100mm as required throughout the winter months until March and collect the clippings.

542 First cut of

1. **Description:** For Green Roof Wildflower Grass Seed.
2. **Maintenance::** Cut down to 70-100mm from early September. Remove arisings. If practical consider leaving up to one fifth of the area uncut, the remaining dead stalks will provide a nesting and hibernation site and egg laying habitat for invertebrates over the winter. Alternate this area each winter. If possible and with the obvious exception of areas left uncut, lightly mow the sward down to 70-100 mm as required throughout the winter months until March and collect the clippings.

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 reseeded/ returfing.
4. Timing of making good: The next suitable planting season

620 Maintaining

1. Description: For Amenity Grass Seed 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: 50 mm
4. Preparation: Before each cut remove all litter and debris.
5. Cutting: As and when necessary to a height of 50 mm.
 - 5.1. Arisings: Remove
6. Trimming: All edges.
 - 6.1. Arisings: Remove.
7. Weed control: Substantially free of broad leaved weeds.
 - 7.1. Method: Application of a suitable selective herbicide.
8. Stones brought to the surface: Remove regularly.
 - 8.1. Size: Exceeding 25 mm in any dimension.
9. Areas of settlement: Make good.
10. Watering: Contractor's choice

650 Maintaining grassed areas with perennial wildflowers

1. Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. Preparation: Before each cut remove all litter and debris.
3. Height and frequency of cut in first growing season
 - 3.1. Time of first cut:
 - 3.2. Height of first cut:
 - 3.3. Frequency of subsequent cutting (minimum):
 - 3.4. Height of growth permitted (maximum):
4. Height and frequency of cut in second growing season
 - 4.1. Time of cut:
 - 4.2. Height of cut:
5. Trimming: All edges.
 - 5.1. Arisings: Remove.
6. Watering:

Ω End of Section

Q31

External planting

General information/ requirements

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

112 Site clearance generally

1. **General:** Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. **Stones:** Remove those with any dimension exceeding 50 mm.
3. **Contamination:** Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. **Vegetation:** Clear surface vegetation using suitable nonresidual herbicide
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. **Container grown plants:** At any time if ground and weather conditions are favourable.
 - 4.1. **Watering and weed control:** Provide as necessary.
5. **Dried bulbs, corms and tubers:** September/ October.
6. **Colchicum (crocus):** July/ August.
7. **Green bulbs:** After flowering in spring.
8. **Wildflower plugs:** Late August to mid November or March/ April.
9. **Aquatic plants:** May/ June or September/ October.

130 Mechanical tools

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

145 Watering

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

150 Water restrictions

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

160 Notice

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

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:** Grown in the United Kingdom for at least one growing season, unless otherwise approved
9. **Definition:** Origin and Provenance have the meaning given in the National Plant Specification.

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).

225 Bulbs/ Corms/ Tubers

1. **Condition:** Firm, entire, not dried out or shrivelled.
2. **Health:** Free from pests, diseases and fungus.
3. **Handling:** Remove from packaging immediately.
4. **Storage:** Permitted only when necessary.
 - 4.1. **Location:** Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
 - 4.2. **Duration:** Minimum period.
 - 4.3. **Temperature:** 18-21°C.

235 Container grown plants/ Trees

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

245 Labelling and information

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

255 Plants/ Trees reserved at supplier's premises

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

260 Plant/ Tree substitution

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

265 Plant handling, storage transport and planting

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

280 Treatment of tree wounds

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

285 Protection of existing grass

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

290 Surplus material

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

Plant containers

292a Timber 4.8m planter to Plot D Courtyard FT_08

1. **Manufacturer:** Langley Design
 - 1.1. **Product reference:** Sheldon Planter (SPL316)
2. **Designation::** FT_08
3. **Material:** Douglas Douglas-fir timber
4. **Dimensions/ Shape:** 4800mm (L) x 1500mm (W) x 620(H) mm
5. **Lining:** Geotextile lined
6. **Accessories:** Includes single slat bench around the outside of the planter for additional seating
7. **Fixing::** All fixings galvanised steel
8. **Installation::** Free standing

292b Timber 2.6m planter to Plot D Courtyard FT_09

1. **Manufacturer:** Langley Design
 - 1.1. **Product reference:** Sheldon Planter (SPL316)
2. **Designation::** FT_09
3. **Material:** Douglas Douglas-fir timber
4. **Dimensions/ Shape:** 2600mm (L) x 1500mm (W) x 620(H) mm
5. **Lining:** Geotextile lined
6. **Accessories:** Includes single slat bench around the outside of the planter for additional seating

7. Fixing:: All fixings galvanised steel
8. Installation:: Free standing

292c Timber 2.62m planter to Plot C & D Courtyard FT_10

1. Manufacturer: Langley Design
 - 1.1. Product reference: Sheldon Planter (SPL316)
2. Designation:: FT_10
3. Material: Douglas Douglas-fir timber
4. Dimensions/ Shape: 2200mm (L) x 1500mm (W) x 620(H) mm
5. Lining: Geotextile lined
6. Accessories: Includes single slat bench around the outside of the planter for additional seating
7. Fixing:: All fixings galvanised steel
8. Installation:: Free standing

298 Waterproofing lining

1. Material: Pitch polymer prefabricated to fit containers
2. Base protection: Clean horticultural sand, 25 mm thick
3. Installation of liner
 - 3.1. Fully supported on the base.
 - 3.2. Closely fitting to the sides of container.

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): As manufacturer's recommendation

305 Weed control

1. Description: For invasive non-native weeds
2. Locations: Whole site
3. General: Prevent weeds from seeding and perennial weeds from becoming established, by contractor's choice of herbicide.

Planting shrubs/ herbaceous plants/ bulbs

400 Random plant layout

1. Description: To shrub planting
2. Spacing: Refer to Plincke drawings
3. Density: Refer to Plincke schedule

401 Regular plant layout

1. Description: To shrub planting
2. Spacing: Refer to Plincke drawings
3. Density: Refer to Plincke schedule

405 Shrub planting pits

1. **Timing:** Excavate 1-2 days (maximum) before planting.
2. **Sizes:** 150 mm wider than roots when fully spread and 300 mm deep
3. **Pit bottom improvement** Not required.
4. **Backfilling material:** Reuse excavated material; import topsoil to Q28 to address any deficiency.

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.

445 Planting bulbs/ Corms/ Tubers

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

470 Formal hedges

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

471 Naturalized hedges

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

472 Fencing support for new hedges

1. **Type:** As Q40/150
2. **Timing:** Before planting hedge.
3. **Support:** Lightly secure hedge plants to fence wires at appropriate intervals.

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:** Not required

495 Shrub Bed Irrigation

1. **Locations::** To all shrub planting
2. **Manufacturer::** Contractor's choice
 - 2.1. **Product reference::** Contractor's choice
3. **Type::** Leaky pipe system.
4. **Notes::** Allow for:-
 1. Connection(s) to external tap
 2. Supply pipe from external tap, typically 16 mm dia
 3. Leaky pipe network, typically 12 mm dia
 4. Connectors between supply pipe and leaky pipe network
 5. Connectors between leaky pipe sections
 6. End stops to leaky pipe network

Lawn irrigation to be provided manually via hosepipe.

Above is design intent only.

Planting trees

500 Tree planting

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

502 Antidesiccant for conifers/ Evergreens

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

505 Tree pits

1. **Sizes:** To BS4043. Trees pits to have a diameter at least 500mm wider than the rootball and 75mm deeper than the root system.
2. **Sloping ground:** Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. **Excavated material:** To trees in soft landscape at ground level:-
Separate topsoil and subsoil material and stockpile for backfilling.
4. **Pit bottoms:** Excavate with slightly raised centre: To trees in soft landscape at ground level - Break up base to a depth of 150 mm.
 - 4.1. **Treatment:** Soil ameliorant worked into pit bottoms
5. **Pit sides:** Scarify.
6. **Backfilling material:** Loamy and sandy subsoil or medium coarse washed sand and topsoil as section Q28.

510 Tree pit root barriers

1. **Locations:** Wherever the installed rootball will be within 3m of an underground service route or within 2m of a building foundation
2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com
01580 830800.
 - 2.1. **Product reference:** ReRoot 1000
3. **Thickness:** 1.0 mm
4. **Barrier depth:** 1000 mm
5. **Foil liner:** Not required
6. **Top of root barrier in relation to finished topsoil level:** 10 mm above ground level
7. **Installation:** With sides vertical. Remove all sharp objects adjacent to barrier.
8. **Notes:** To also be installed where service trenches fall within 3 m of a tree.

510a Tree pit root barriers to Soil Cells

1. **Locations:** To trees in soil cells

2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com
01580 830800.
 - 2.1. **Product reference:** ReRoot 600
3. **Thickness:** As supplied
4. **Barrier depth:** 600 mm
5. **Foil liner:** As supplied
6. **Top of root barrier in relation to finished topsoil level:** 50 mm below ground level
7. **Installation:** With sides vertical. Remove all sharp objects adjacent to barrier.
8. **Notes:** To also be installed where service trenches fall within 3 m of a tree.

510b Tree pit root barriers to Soil Cells

1. **Locations:** To trees in soft landscape at ground level
2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com
01580 830800.
 - 2.1. **Product reference:** ReRoot 1000
3. **Thickness:** As supplied
4. **Barrier depth:** 1000 mm
5. **Foil liner:** As supplied
6. **Top of root barrier in relation to finished topsoil level:** 50 mm below ground level
7. **Installation:** With sides vertical. Remove all sharp objects adjacent to barrier.
8. **Notes:** To also be installed where service trenches fall within 3 m of a tree.

512 Tree pit irrigation accessories

1. **Locations:** To trees in soft landscape at ground level.

To trees in soil cell system.
2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. **Product reference:** RootRain Urban
3. **Type:** Perforated plastics irrigation pipe with inlet
4. **Pipe diameter:** 60 mm
5. **Ring diameter:** 900 mm
6. **Inlet:** Black plastics
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.

513 Tree pit ventilation accessories

1. **Locations:** To trees in soft landscape at ground level.

To trees in soil cell system.

2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. **Product reference:** RootRain Urban
3. **Type:** Heavy-duty cast aluminium structure
4. **Pipe diameter:** 110 mm
5. **Inlet:** 150 x 150 mm
6. **Installation**
 - 6.1. **Pipe:** Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
 - 6.2. **Top cap of inlet:** Flush finish to ensure no trip hazard.

515 Tree pit drainage

1. **Locations:** To all tree pits
2. **Depth of excavation:** Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
3. **Aggregate layer:** Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - 3.1. **Depth:** 200 mm
4. **Drainage pipes**
 - 4.1. **Type:** Perforated plastics to Engineer's details and specifications
 - 4.2. **Diameter:** To Engineer's details and specifications
 - 4.3. **Position:** Lay around perimeter of pit within aggregate layer.
 - 4.4. **Discharge:** To Engineer's details and specifications
5. **Geotextile filter**
 - 5.1. **Manufacturer:** Terram or similar approved
 - 5.1.1. **Product reference:** Terram 1000 or similar approved
 - 5.2. **Position:** Lay over aggregate before installing tree or backfill.
6. **Completed pits:** Test for free drainage before planting.

520a Cellular structural soil system - SuDS CT_01

1. **Locations:** To locations on Levels Plan
2. **Designation:** CT_01
3. **Manufacturer:** GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 3.1. **Product reference:** Root Space (GBURS61A)
4. **Geotextile membrane:** -20mm structural black geogrid
-Close weave mesh
5. **Installation:** Ensure all void spaces are filled with lightly compacted growing medium prior to installation of further layers or sub-bases.
6. **Notes:** 600 mm deep units.
Installation to include:-
 - Hessian fabric membrane (GBUHESA or similar approved)
 - ArborSoil Hydro for filling Root Space (ARBORSOILHYDROA or similar approved)
 - 10-20mm washed angular aggregate (GBUDRSC or similar approved)
 - ArborCell water storage crate (GBUABC110B / GBUABC40C or similar approved)
 - Cast iron kerb inlet (GBUCIKI500A or similar approved)

- 20mm structural black Geogrid
- Close weave mesh

520b Cellular structural soil system - Standard CT_02

1. **Locations:** To locations on Levels Plan
2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. **Product reference:** Root Space (GBURS61A)
3. **Geotextile membrane:** -20mm structural black geogrid
-Twinwall geonet
4. **Installation:** Ensure all void spaces are filled with lightly compacted growing medium prior to installation of further layers or sub-bases.
5. **Notes:** 600 mm deep units.
Installation to include:-
 - 10-20mm washed angular aggregate (GBUDRSC or similar approved)
 - RootSoil 20 (ROOTSOIL20A or similar approved)
 - Twinwall geonet with 20mm black geogrid c/w white nonwoven membrane
 - 20mm structural black Geogrid

526 Underground guying for:

1. **Description:** To trees in soft landscape at ground level.

To trees in soil cell system.
2. **Manufacturer:** GreenBlue Urban.
www.greenblue.com.
01580 830800.
 - 2.1. **Product reference:** ArborGuy Deadman Anchor to trees in soft landscape at ground level.

Arborguy AnchorPlate Anchors to trees in soil cell system.
3. **Anchoring system:** 3 no concrete dead-man anchors per tree to Deadman system.

3 no galvanised steel plates to AnchorPlate system.
4. **Installation:** Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.
5. **Notes:** Where there is insufficient space adjacent trees in soft landscape to roof gardens to install 3 no galvanised steel plates, then eye-bolts are to be resin-anchored into wall foundation to receive ArborGuy strap.

535 Tree stakes

1. **Stakes:** Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
 - 1.1. **Preservative treatment:** Not required
2. **Stake size (minimum):** Contractor's choice
3. **Stake length (minimum):** 1200 mm

546 Single vertical staking for

1. **Description:** STANDARD TREES
2. **Staking**
 - 2.1. **Position:** Close to tree position on windward side.
 - 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 at approximately one third of the height of the clear stem of tree
- 4. **Ties:** Biodegradable natural fibre
 - 4.1. **Number of ties:** At least two
- 5. **Tying:** Secure tree firmly but not rigidly to stake with ties. Prevent tree from touching stake using spacer blocks or cushions if required.
 - 5.1. **Position:** Top tie within 25 mm of top of stake and additional ties equally spaced along the stake.
- 6. **Nails:** To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.

550 Double staking for

- 1. **Description:**
- 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:**
- 4. **Horizontal bracing:**
 - 4.1. **Fixing:**
- 5. **Ties:**
- 6. **Tying:**
- 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:**

556 Triple staking for

- 1. **Description:**
- 2. **Staking**
 - 2.1. **Position:** Equidistantly around the tree position.
 - 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:**
- 4. **Horizontal bracing:**
- 5. **Tying:**
- 6. **Nails for fixing belts and webbing:** To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads

576 Tree pit surfacing – loose fill

- 1. **Surfacing material:** Mulch, as section Q28
- 2. **Area:** 500 mm radius circle
- 3. **Depth:** 75 mm
- 4. **Watering:** Water soil thoroughly before laying.
- 5. **Installation:** Ensure the base of the tree stem is kept free from loose filled material.

Woodland/ matrix/ buffer zone planting

605 Existing vegetation/ Weed clearance

1. Surface vegetation clearance: Using suitable nonresidual herbicide
2. Arisings: Remove.

Protecting/ maintaining/ making good defects

710 Maintenance

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

720 Failures of planting

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

740 Cleanliness

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

750 Planting maintenance generally

1. Weed control: Maintain weed free area around each tree and shrub.
 - 1.1. Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - 1.2. Keep planting beds clear of weeds: By maintaining full thickness of mulch
2. Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
3. Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. Trees: Spray crown when in leaf during warm weather.
 - 5.1. Timing: After dusk.
6. Tree accessories: Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - 6.1. Broken or missing items: Replace.
 - 6.2. Loose stakes: Re-firm in the ground or replace as necessary to provide support to the tree.
 - 6.3. Loose guys: Re-firm anchor points and adjust as necessary to provide support to the tree.
 - 6.4. Ties: Adjust to accommodate growth and prevent constriction or abrasion.
 - 6.5. Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - 6.6. Frequency of checks: At each scheduled maintenance visit
7. Watering: Contractor's choice

760 Planting maintenance – pruning

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

780 Maintenance instructions

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

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
7. **Hedges::** Remulch.
8. **Depth (minimum)::** 50 mm.

Ω End of Section

Q37

Green roofs **REVISED**

General

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

110 Intensive green roof **REVISED**

1. **Description:** To Block C1, C2 & Block C3.
To Block D1, Block D2, & Block D3.
2. **Roof type:** Refer to Architects drawings and specifications
 - 2.1. **Substrate:** Refer to Architects drawings and specifications
 - 2.2. **Slope:** Refer to Architects drawings and specifications
3. **Waterproofing:** Refer to Architects drawings and specifications
4. **Thermal insulation:** Refer to Architects drawings and specifications
5. **Protection layer::** As clause 330.
6. **Separation layer::** As clause 335.
7. **Drainage layer::** As clause 350.
8. **Filter layer::** As clause 360.
9. **Permeable sub-base layer::** As clause 370.
10. **Permeable geotextile::** As clause 375.
11. **Permeable bedding layer::** As clause 380.
12. **Permeable jointing aggregate::** As clause 385.
13. **Permeable paving joint spacer::** As clause 390.
14. **Growing medium:** As clause Q28/340 and clause Q28/341.
 - 14.1. **Depth:** As drawing N15301-PLI-XX-ZZ-DR-L-60244 and N15301-PLI-XX-ZZ-DR-L-12000 drawing series.
15. **Vegetation:** Planting, as section Q31 and drawing N15301-PLI-XX-ZZ-DR-L-60244 and N15301-PLI-XX-ZZ-DR-L-12000 drawing series.
16. **Accessories:** None

Performance - Not Used

Products

320 Root barrier

1. **Description:** Assumed integral to waterproofing system, to Architect drawings and specification.

If not integral to waterproofing system, then install permeable geotextile as clause 375 over waterproofing system.

330 Protection layer

1. **Description:** To biodiverse intensive green roof
2. **Manufacturer:** Bauder Ltd.
www.bauder.co.uk.
01473 257671.
 - 2.1. **Product reference:** Pro-Mat Protection Matting
3. **Material:** Recycled shredded rubber
 - 3.1. **Thickness:** 6 mm

335 Separation layer

1. **Description:** To biodiverse intensive green roof
2. **Manufacturer:** Bauder Ltd.
www.bauder.co.uk.
01473 257671.
 - 2.1. **Product reference:** PE Foil Separation Layer.
3. **Material:** Polypropylene foil manufactured from recycled granules
 - 3.1. **Thickness:** 0.2 mm

350 Drainage layer

1. **Description:** To biodiverse intensive green roof
2. **Manufacturer:** Bauder Ltd.
www.bauder.co.uk.
01473 257671.
 - 2.1. **Product reference:** DSE 40 Drainage & Protection Layer
3. **Material:** Recycled high density polyethylene
 - 3.1. **Depth:** 40 mm
4. **Infill:** Single size limestone aggregate
 - 4.1. **Manufacturer::** Bauder Ltd.
www.bauder.co.uk.
01473 257671.
 - 4.2. **Product reference::** Mineral Drain

360 Filter membrane

1. **Description:** To intensive green roof
2. **Manufacturer:** Bauder Ltd.
www.bauder.co.uk.
01473 257671.
 - 2.1. **Product reference:** Filter Fleece
3. **Material:** Polypropylene fleece
 - 3.1. **Mass:** 125 g/m²

420 Edge-retaining profile REVISED

1. **Description:** Rigid L-profile galvanised steel angle edging; including 120mm x 10mm drainage slots @ 100mm spacing
2. **Manufacturer:** Kinley Ltd.
www.kinley.co.uk.
01580 830 688.
 - 2.1. **Product reference:** RoofEdge 200H L-Profile Steel Angle Edging (Ref. 125014)

3. Material: Galvanised steel
4. Height: 200mm

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

1. Joints: Minimize.
 - 1.1. Overlaps (minimum): Manufacturer's recommendation
2. Upstands: Extend to top of growing medium.

750 Protection layer installation

1. Joints: Minimize.
 - 1.1. Overlaps (minimum): Manufacturer's recommendation
2. Upstands: Extend to top of growing medium.

755 Separation layer installation

1. Joints: Minimize.
 - 1.1. Overlaps (minimum): Manufacturer's recommendation
2. Upstands: Extend to top of growing medium.

770 Drainage layer installation

1. Extent: Continuous over entire roof area.
2. Fitting: Manufacturer's recommendation
3. Upstands: Fit closely around penetrations and outlets.

780 Filter membrane installation

1. Joints: Minimize.
 - 1.1. Overlaps (minimum): Manufacturer's recommendation
2. Fitting: Manufacturer's recommendation
3. Upstands: Extend to top of growing medium.

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): Three 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: 1

Ω End of Section

Q40 Fencing

Fencing systems

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

310 Close boarded fencing FE_03

1. **Manufacturer:** Contractor's choice
 - 1.1. **Product reference:** Contractor's choice
2. **Height:** 1800 mm
3. **Wood:** Oak (European and English)
 - 3.1. **Treatment:** To provide a 15-year service life
 - 3.2. **Finish:** Tanalised, pressure treated
4. **Boards/ rails:** Softwood feather edged boards on rectangular rails
5. **Posts:** Wood
6. **Centres of posts (maximum):** 2.4 m
7. **Method of setting posts:** Root-fixed into concrete footings
8. **Accessories:** -Bottom of fencing no more than 50mm higher than ground level
-Gravel boards to include holes (130 x 130mm min.) for hedgehogs

Associated gates as per Plincke drawings

Gates to have locking mechanism (sliding bolt or similar) capable of being secured by padlock. All gates to have lockable drop bolts so they can be secure in the open position.

9. **Conformity:** Submit manufacturer's and installer's certificates, to BS 1722-5.

430a PCC Steel flat top railing FE_01

1. **Description:** PPC steel flat top railing
2. **Designation::** FE_01
3. **Manufacturer:** Contractor's choice
 - 3.1. **Product reference:** Contractor's choice
4. **Height:** 1800 mm
5. **Materials:** Galvanised steel
 - 5.1. **Treatment:** Hot-dip galvanized to BS EN ISO 1461
 - 5.2. **Finish:** Powder-coated to BS 1722-16
 - 5.3. **Colour::** Tbc
6. **Centres of posts (maximum):** As manufacturer's recommendations
7. **Method of setting posts:** As manufacturer's recommendations

8. Accessories: Associated gates ref. GT01 - refer to clause Q40/570a

430b PCC Steel flat top railing FE_02

1. Description: PPC steel estate railing
2. Designation:: FE_02
3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Contractor's choice
4. Height: 1200 mm
5. Materials: Galvanised steel
 - 5.1. Treatment: Hot-dip galvanized to BS EN ISO 1461
 - 5.2. Finish: Powder-coated to BS 1722-16
 - 5.3. Colour:: Tbc
6. Centres of posts (maximum): As manufacturer's recommendations
7. Method of setting posts: As manufacturer's recommendations
8. Accessories: Associated gates ref. GT02 - refer to clause Q40/570b

430c PPC steel flat top railing FE_04

1. Description: PPC steel flat top railing
- to Play Area RC walls
2. Designation:: FE_04
3. Manufacturer: Contractor's choice
 - 3.1. Product reference: Contractor's choice
4. Height: 1100 mm minimum above adjacent finished ground levels.
5. Materials: Galvanised steel
 - 5.1. Treatment: Hot-dip galvanized to BS EN ISO 1461
 - 5.2. Finish: Powder-coated to BS 1722-16
 - 5.3. Colour:: Tbc
6. Centres of posts (maximum): As manufacturer's recommendations
7. Method of setting posts: Core-drilled into wall type WT04

Gates, posts and stiles

570a Gates GT_01

1. Manufacturer: Contractor's choice
 - 1.1. Product reference: Contractor's choice - double-leaf vertical solid bar flat-top steel railing gate
2. Sizes: 1.8m height above FGL; 1.8m c/o
3. Posts: As supplied
4. Finish as delivered: Powder coated to match the adjoining fence type
5. Fittings: Two hook and band hinges, return spring and a padbolt with padlock
 - 5.1. Finish: Hot-dip galvanized to BS EN ISO 1461, Powder-coated to BS 1722-16
6. Method of fixing: Root-fixed
7. Accessories: Gates to have locking mechanism (sliding bolt or similar) capable of being secured by padlock. All gates to have lockable drop bolts so they can be secure in the open position.

570b Gates GT_02

1. **Manufacturer:** Contractor's choice
 - 1.1. **Product reference:** Contractor's choice - single-leaf continuous bar traditional welded steel estate gate
2. **Sizes:** 1.2m height above FGL; 1.2m c/o
3. **Posts:** As supplied
4. **Finish as delivered:** Powder coated to match the adjoining fence type
5. **Fittings:** Two hook and band hinges, return spring and a padbolt with padlock
 - 5.1. **Finish:** Hot-dip galvanized to BS EN ISO 1461, Powder-coated to BS 1722-16
6. **Method of fixing:** Root-fixed
7. **Accessories:** Gates to have locking mechanism (sliding bolt or similar) capable of being secured by padlock. All gates to have lockable drop bolts so they can be secure in the open position.

Accessories - Not Used

Execution

710 Installation generally

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

715 Competence

1. **Operatives:** Contractors must employ competent operatives.
2. **Qualifications:** Submit certification of training.
 - 2.1. **NHSS Sector Scheme 2A sub categories:** (a) (d) (g)
 - 2.2. **NHSS Sector Scheme 2C sub categories:** Not required

720 Setting posts in concrete

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

740 Setting posts in earth

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

750 Driven posts

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

770 Site cutting of wood

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

780 Making good galvanized surfaces

1. Treatment of minor damage (including on fasteners and fittings): Low melting point zinc alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint to BS 4652.
2. Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

Completion

910 Cleaning

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

920 Fixings

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

930 Gates

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

Ω End of Section

Q50

Site/ street furniture/ equipment **REVISED**

Gates, barriers and parking controls

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.

190 A Cast Iron Bollards FT_01 **REVISED**

1. Description: Fixed
2. Designation:: FT_01
3. Manufacturer: [Furnitubes International Ltd](#)
 - 3.1. Contact details
 - 3.1.1. Address: 28 Leonard Street
London
United Kingdom
United Kingdom
EC2A 4BY
 - 3.1.2. Telephone: +44 (0)20 8378 3200
 - 3.1.3. Web: www.furnitubes.com
 - 3.1.4. Email: sales@furnitubes.com
 - 3.2. Product reference: [Doric Cast Iron Bollard](#)
4. Material: Cast iron.
5. Dimensions
 - 5.1. Height: 920 mm.
 - 5.2. Length below ground: 290 mm.
6. Top profile: Domed.
7. Base: Root fixed.
8. Finishes
 - 8.1. Applied finish: Primed.
 - 8.2. Colour: Black.
9. Accessories: Not required.
10. Weight: 55 kg.
11. Type:: Standard.
12. Diameter: 170 mm.
13. Installation: Root fixed in concrete footing to Engineer's information

190 B Cast Iron Bollards FT_03

1. Description: Fixed
 2. Designation:: FT_03
- Plincke Landscape Limited
27-01-2025

3. Manufacturer: [Furnitubes International Ltd](#)
 - 3.1. Contact details
 - 3.1.1. Address: 28 Leonard Street
London
United Kingdom
United Kingdom
EC2A 4BY
 - 3.1.2. Telephone: [+44 \(0\)20 8378 3200](#)
 - 3.1.3. Web: [www.furnitubes.com](#)
 - 3.1.4. Email: [sales@furnitubes.com](#)
 - 3.2. Product reference: [Bell® Traffic Bollard \(BELL 100\)](#)
4. Dimensions
 - 4.1. Size and profile: 600 mm diameter, bell-shaped.
 - 4.2. Height: 475 mm.
 - 4.3. Length below ground: 450 mm.
5. Post top: Bell-shaped rounded top.
6. Post base: Flat.
7. Finishes
 - 7.1. Applied finish: Primed.
 - 7.2. Colour: Black.
8. Fixing: Root fixing.
9. Material:: Cast iron.
10. Method of fixing: Root fixed in concrete footing to Engineer's information.

192 Carbon steel hinged bollards FT_04

1. Description: Fold Down
2. Designation:: FT_04
3. Manufacturer: [Broxap Ltd](#)
 - 3.1. Contact details
 - 3.1.1. Address: Rowhurst Industrial Estate
Chesterton
Newcastle-under-Lyme
Staffordshire
ST5 6BD
 - 3.1.2. Telephone: [+44 \(0\)1782 571700](#)
 - 3.1.3. Web: [www.broxap.com](#)
 - 3.1.4. Email: [nbs@broxap.com](#)
 - 3.2. Product reference: [Haslington Fold Down Post \(BX90 5501\)](#)
4. Dimensions
 - 4.1. Size and profile: Overall Diameter: 60 mm.
 - 4.2. Height: 620 mm.
5. Post top: Flat.
6. Post base: Hinged.
7. Finishes
 - 7.1. Colour: Yellow.
8. BaseMaterial: Carbon steel and aluminium.

196 Removable Aluminium bollards FT_02

1. Description: Removable
2. Designation:: FT_02
3. Manufacturer: [Furnitubes International Ltd](#)
 - 3.1. Contact details
 - 3.1.1. Address: 28 Leonard Street
London
United Kingdom
United Kingdom
EC2A 4BY
 - 3.1.2. Telephone: [+44 \(0\)20 8378 3200](#)
 - 3.1.3. Web: [www.furnitubes.com](#)
 - 3.1.4. Email: sales@furnitubes.com
 - 3.2. Product reference: [Doric Aluminium Removable Bollard](#)
4. Dimensions
 - 4.1. Size and profile: 170 mm diameter.
 - 4.2. Height: 920 mm.
 - 4.3. Length below ground: 320 mm.
5. Top profile: Domed.
6. Base: Flat, removable.
7. Finishes
 - 7.1. Applied finish: Primed.
 - 7.2. Colour: Black.
8. Accessories: Not required.
9. Socket: SOCKLS.
10. Weight: 25 kg.
11. Material: Aluminium
 - 11.1. Finish as delivered: Primed for painting
 - 11.2. Colour: As manufactured
12. Method of fixing: Concrete base with manufacturer's standard lockable socket

Site and street furniture

210 Carbon steel cycle stands FT_06

1. Description:: Sitewide
2. Designation:: FT_06
3. Manufacturer: [Broxap Ltd](#)
 - 3.1. Contact details
 - 3.1.1. Address: Rowhurst Industrial Estate
Chesterton
Newcastle-under-Lyme
Staffordshire
ST5 6BD
 - 3.1.2. Telephone: [+44 \(0\)1782 571700](#)
 - 3.1.3. Web: [www.broxap.com](#)
 - 3.1.4. Email: nbs@broxap.com

3.2. Product reference: [Sheffield Cycle Parking Stand \(BXMW/GS0 Senior With Tapping Bar Sheffield Cycle Stand\)](#)

4. Stand type: Sheffield Cycle Stand
5. Number of stands: Single.
6. Base: Root fixed.
7. Finish as delivered: Galvanized and polyester powder coated.
8. Colours: Jet Black RAL 9005.
9. Size:: 800 x 715 mm.
10. Stand type: Sheffield Rack
11. Type: Single stands
12. Material: Stainless steel
13. Accessories: None
14. Method of fixing: Root below ground as per manufacturers detail.

220 A Curved 2.0m Bench FT_12 REVISED

1. Description: Curved 2.0m bench to courtyard
2. Designation:: FT_12
3. Manufacturer: Streetlife Ltd
 - 3.1. Product reference: Streetlife Rough & Ready
4. Material: Wood and Steel
 - 4.1. Finish: Wood stain, as section M60
5. Slat Material: FSC Hardwood I - Virgin
 - 5.1. Texture: Smooth, without knots
 - 5.2. Finish: Smooth
 - 5.3. Colour: Multi-Brown
 - 5.4. Size:: 2.0m (L) x 0.5m (W) with 4.5m outer radius
6. Frame Material: Steel
 - 6.1. Finish: Galvanised and powder coated
 - 6.2. Colour: RAL 2010 Signal Orange (TBC).
 - 6.3. Size:: To Supplier's details
7. Fixings Material:: All fixings galvanised steel
8. Accessories/ Special requirements:
9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

220 B Curved 5.2m Bench FT_13 REVISED

1. Description: Curved 5.2m bench to Neighbourhood Square
2. Designation:: FT_13
3. Description: Bespoke circular reconstituted stone bench with hardwood seat and PPC armrests; 10.0m-radius; 'Refer to design intent drawing N15301-PLI-XX-ZZ-DR-L-60248 and to Engineer's details and specification.
4. Material: Reconstituted stone; Wood; Steel
 - 4.1. Finish: Reconstituted stone: Polished; Armrests: Polyester powder-coated, as section Z31
5. Slat Material: FSC/PEFC Hardwood
 - 5.1. Texture: Smooth, without knots
 - 5.2. Finish: Smooth

6. Armrest Material: Steel
 - 6.1. Finish: Galvanised and powder coated
 - 6.2. Colour: RAL 6026 Opal Green (TBC).
 - 6.3. Size:: To Supplier's details
7. Fixings Material:: All fixings stainless steel
8. Accessories/ Special requirements: None
9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

220 C Curved 3.2m Bench FT_14 REVISED

1. Description: Curved 3.2m bench to courtyard
2. Designation:: FT_14
3. Manufacturer: Streetlife Ltd
 - 3.1. Product reference: Streetlife Rough & Ready
4. Material: Wood and Steel
 - 4.1. Finish: Wood stain, as section M60
5. Slat Material: FSC Hardwood I - Virgin
 - 5.1. Texture: Smooth, without knots
 - 5.2. Finish: Smooth
 - 5.3. Colour: Multi-Brown
 - 5.4. Size:: 3.2m (L) x 0.5m (W) with 5.0m outer radius
6. Frame Material: Steel
 - 6.1. Finish: Galvanised and powder coated
 - 6.2. Colour: RAL 6026 Opal Green (TBC).
 - 6.3. Size:: To Supplier's details
7. Fixings Material:: All fixings galvanised steel
8. Accessories/ Special requirements:
9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

220 D Straight 5.0m Bench FT_15

1. Description: Straight 5.0m Bench bench to Play Area
2. Designation:: FT_15
3. Manufacturer: Streetlife Ltd
 - 3.1. Product reference: Streetlife Drifter Bench with 1.8m-length Low horizontal beam backrest
4. Material: Wood and Steel
 - 4.1. Finish: Wood stain, as section M60
5. Slat Material: FSC Hardwood - Upcycled
 - 5.1. Texture: Rough
 - 5.2. Colour: Multi-Brown
 - 5.3. Size:: 5.0m (L) x 0.62m (W)
6. Frame Material: CorTen weathering steel
 - 6.1. Size:: To Supplier's details
7. Fixings Material:: All fixings galvanised steel
8. Accessories/ Special requirements:
9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

220 E Straight 2.0m Bench FT_16

1. Description: Straight 2.0m Bench bench to Play Area
2. Designation:: FT_16
3. Manufacturer: Streetlife Ltd
 - 3.1. Product reference: Streetlife Drifter Bench with 1.2m-length Low horizontal beam backrest
4. Material: Wood and Steel
 - 4.1. Finish: Wood stain, as section M60
5. Slat Material: FSC Hardwood - Upcycled
 - 5.1. Texture: Rough
 - 5.2. Colour: Multi-Brown
 - 5.3. Size:: 2.0m (L) x 0.62m (W)
6. Frame Material: CorTen weathering steel
 - 6.1. Size:: To Supplier's details
7. Fixings Material:: All fixings acid-proof stainless steel with EPDM or neoprene gasket to avoid galvanic corrosion
8. Accessories/ Special requirements:
9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

220 F Straight 1.8m Bench FT_17 REVISED

1. Description: Straight 1.8m Bench bench to Play Area
2. Designation:: FT_17
3. Manufacturer: Streetlife Ltd
 - 3.1. Product reference: Streetlife Rough&Ready (R&R) Crosswise Bench with Low vertical beam backrest and 2nr Classic armrests
4. Material: Wood and Steel
 - 4.1. Finish: Wood stain, as section M60
5. Slat Material: FSC Hardwood I - Virgin
 - 5.1. Texture: Rough
 - 5.2. Colour: Multi-Brown
 - 5.3. Size:: 1.8m (L) x 0.5m (W)
6. Frame Material: Galvanised and polyester powder coated; RAL 2010 Signal Orange (TBC)
 - 6.1. Size:: To Supplier's details
7. Fixings Material:: All fixings galvanised steel
8. Accessories/ Special requirements:
9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

220 G Straight 2.8m Bench FT_18 REVISED

1. Description: Straight 2.8m Bench bench to Play Area
2. Designation:: FT_18
3. Manufacturer: Streetlife Ltd
 - 3.1. Product reference: Streetlife Rough&Ready (R&R) Crosswise Bench with Low vertical beam backrest and 3nr Classic armrests
4. Material: Wood and Steel
 - 4.1. Finish: Wood stain, as section M60
5. Slat Material: FSC Hardwood I - Virgin

- 5.1. Texture: Rough
- 5.2. Colour: Multi-Brown
- 5.3. Size:: 2.8m (L) x 0.5m (W)
- 6. Frame Material: Galvanised and polyester powder coated; RAL 6026 Opal Green (TBC).
 - 6.1. Size:: To Supplier's details
- 7. Fixings Material:: All fixings galvanised steel
- 8. Accessories/ Special requirements:
- 9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

220 H Straight 4.6m angled bench FT_19 REVISED

- 1. Description: Straight 4.6m angled bench
- to Peace Building
- 2. Designation:: FT_19
- 3. Manufacturer: Streetlife Ltd
 - 3.1. Product reference: Streetlife Rough&Ready (R&R) Crosswise Bench with Low vertical beam backrest and 4nr Classic armrests - 120-degree angle
- 4. Material: Wood and Steel
 - 4.1. Finish: Wood stain, as section M60
- 5. Slat Material: FSC Hardwood I - Virgin
 - 5.1. Texture: Rough
 - 5.2. Colour: Multi-Brown
 - 5.3. Size:: 2.8m (L) x 0.5m (W)
- 6. Frame Material: Galvanised and polyester powder coated; RAL 6026 Opal Green (TBC).
 - 6.1. Size:: To Supplier's details
- 7. Fixings Material:: All fixings galvanised steel
- 8. Accessories/ Special requirements:
- 9. Method of fixing: Surface mounted (anchor-bolted into concrete footings)

225 A Street and site seats FT_21 REVISED

- 1. Description: Cafe chairs freestanding to Plot C Courtyard
- 2. Designation:: FT_21
- 3. Manufacturer: [Vestre](#)
 - 3.1. Contact details
 - 3.1.1. Address: Profile West Suite 2, Floor 1
950 Great West Road
Brentford
TW8 9ES
 - 3.1.2. Telephone: [+44\(0\)207 846 8725](tel:+44(0)207 846 8725)
 - 3.1.3. Web: www.vestre.com
 - 3.1.4. Email: uk@vestre.com
 - 3.2. Product reference: [April Go Chair \(April Go Chair with Armrests: 7014-900\)](#)
- 4. Length: 486 mm.
- 5. Base: Free standing.
- 6. Material: Steel and wood.
- 7. Finish as delivered: Hot-dip galvanized and powder-coated.
- 8. Colours: RAL 2010 Signal Orange (TBC).

9. Accessories: Armrests to each end.
10. Wood species/ Finish: Kebony clear.
11. Weight: 14 kg.
12. Width: 669 mm.

225 B Street and site seats FT_23 REVISED

1. Description: Cafe' chairs freestanding to Peace Building
2. Designation:: FT_23
3. Manufacturer: [Vestre](#)
 - 3.1. Contact details
 - 3.1.1. Address: Profile West Suite 2, Floor 1
950 Great West Road
Brentford
TW8 9ES
 - 3.1.2. Telephone: [+44\(0\)207 846 8725](tel:+44(0)207 846 8725)
 - 3.1.3. Web: www.vestre.com
 - 3.1.4. Email: uk@vestre.com
 - 3.2. Product reference: Munch Stackable Cafe' Chair 5113
4. Length: 548 mm
5. Base: Free standing.
6. Material: Steel
7. Finish as delivered: Hot-dip galvanized and powder-coated.
8. Colours: RAL 9003 Signal White (TBC).
9. Accessories: Not required.
10. Width: 516 mm.
11. Height: 747 mm.

230A Cafe's table fixed FT_20 ADDED

1. Manufacturer: [Vestre](#)
 - 1.1. Contact details
 - 1.1.1. Address: Profile West Suite 2, Floor 1
950 Great West Road
Brentford
TW8 9ES
 - 1.1.2. Telephone: [+44\(0\)207 846 8725](tel:+44(0)207 846 8725)
 - 1.1.3. Web: www.vestre.com
 - 1.1.4. Email: uk@vestre.com
 - 1.2. Product reference: April Standard Table 733C
2. Dimensions
 - 2.1. Width: 722 mm.
 - 2.2. Height: 740 mm.
3. Base: Ground mounted.
4. Material: Steel and wood.
5. Finish as delivered: Hot-dip galvanized and powder-coated.
6. Colours: RAL 2010 Signal Orange (TBC).
7. Accessories: Not required.

8. Wood species/ Finish: Kebony clear.
9. Weight: 57 kg.
10. Size: 1513 mm long.
11. Accessories/ Special requirements: None
12. Method of fixing: Root, 300 mm below ground, set in concrete base to manufacturer's details

230B Cafe's table freestanding FT_22 ADDED

1. Manufacturer: [Vestre](#)
 - 1.1. Contact details
 - 1.1.1. Address: Profile West Suite 2, Floor 1
950 Great West Road
Brentford
TW8 9ES
 - 1.1.2. Telephone: [+44\(0\)207 846 8725](tel:+44(0)207 846 8725)
 - 1.1.3. Web: www.vestre.com
 - 1.1.4. Email: uk@vestre.com
 - 1.2. Product reference: Munch Cafe' Table Round 5132
2. Material: Steel
 - 2.1. Finish: Hot-dip galvanized and powder coated
 - 2.2. Colour: RAL 9003 Signal White (TBC).
3. Size: 600 mm dia
4. Accessories/ Special requirements: None
5. Method of fixing: Free standing

262 Tree grilles FT_41

1. Description: Recessed tree grilles to shared surface
2. Designation:: FT_41
3. Manufacturer: [GreenBlue Urban Ltd](#)
 - 3.1. Contact details
 - 3.1.1. Address: Northpoint
Compass Park
Junction Road
Bodiam
East Sussex
TN32 5BS
 - 3.1.2. Telephone: [+44 \(0\)1580 830800](tel:+44(0)1580 830800)
 - 3.1.3. Web: www.greenblue.com
 - 3.1.4. Email: hello@greenblueurban.com
 - 3.2. Product reference: [Castle Tree Grille \(CASTLE15A - Single\)](#)
4. Material: Stainless steel grade 314.
5. Finish: Hot dip galvanized to BS EN ISO 1461:2009.
6. Shape: Square.
7. Size: 1500 x 1500 mm.
8. OverallDepth: 142 mm.
9. Method of fixing: To Manufacturer's recommendations
Bolted to frame, anchored to in situ concrete base as drawing

340 In ground artwork FT_43

1. Description:: In ground artwork to Peace Garden Entrances
2. Designation:: FT_43
3. Manufacturer:: Hardscape Ltd
0845 260 1748
enq@hardscape.co.uk
www.hardscape.co.uk
4. Material: Stainless steel and natural stone (TBC)
5. Finish:: Smooth
6. Approximate size: 1600mm (L) x 1200mm (W)
7. Delivery/ Handling/ Storage requirements:
8. Method of fixing: Fixing to manufacturer's recommendations
9. Additional requirement: -Natural stone unit to incorporate metal lettering 'PEACE GARDEN' text in flush outline edge capital letters. Design to be developed with the manufacturer
-Laid flush with adjacent paving

340A Rock Pile - to Green Roofs FT_45 ADDED

1. Material: Clean, assorted stone
2. Approximate size: 20-200mm diameter
3. Delivery/ Handling/ Storage requirements: Site-won or locally sourced.
4. Method of fixing: Mounded in piles no more than three stones deep, maximum 95mm above FGL, embedded in substrate - refer to detailed drawings N15301-PLI-XX-ZZ-DR-L-60244 & N15301-PLI-XX-ZZ-DR-L-60245.

340B Log Pile - to Green Roofs FT_46 ADDED

1. Material: Natural deadwood timber; Bark retained; British native hardwood preferred.
2. Approximate size: 100-200mm diameter; 600mm-1200mm length.
3. Delivery/ Handling/ Storage requirements: Site-won or locally sourced.
4. Method of fixing: Mounded in piles of 8-12 logs, maximum 95mm above FGL, embedded in substrate - refer to detailed drawings N15301-PLI-XX-ZZ-DR-L-60244 & N15301-PLI-XX-ZZ-DR-L-60245.

345a Play Boulder 1.5m FT_24

1. Supplier: Specialist Aggregates Ltd.
 - 1.1. Product reference: Granite Feature Boulder 2-4 tonnes (1902)
2. Designation:: FT_24
3. Material: Natural granite, smooth and rounded with no sharp edges, sawn base.
4. Approximate weight: 3000 kg
5. Approximate size: 1500x1000x900mm
6. Approximate height: : max. 600mm installed height
7. Delivery/ Handling/ Storage requirements: Mechanical lifting required
8. Method of fixing: Fixed into concrete pad footings to Engineer's details and specification

345b Play Boulder 1.2m FT_25

1. Supplier: Specialist Aggregates Ltd.
 - 1.1. Product reference: Granite Feature Boulder 1-2 tonnes (1902)
2. Designation:: FT_25

3. Material: Natural granite, smooth and rounded with no sharp edges, sawn base.
4. Approximate weight: 1500 kg
5. Approximate size: 1200mm x 1000mm x 500mm
6. Approximate height: : max. 600mm installed height
7. Delivery/ Handling/ Storage requirements: Mechanical lifting required
8. Method of fixing: Fixed into concrete pad footings to Engineer's details and specification

345c Play Boulder 1.0m FT_26

1. Supplier: Specialist Aggregates Ltd.
 - 1.1. Product reference: Granite Feature Boulder 1-2 tonnes (1900)
2. Designation:: FT_26
3. Material: Natural granite, smooth and rounded with no sharp edges, sawn base.
4. Approximate weight: 750-1000 kg
5. Approximate size: 1000x750x500mm approx.
6. Approximate height: : max. 600mm installed height
7. Delivery/ Handling/ Storage requirements: Mechanical lifting required
8. Method of fixing: Fixed into concrete pad footings to Engineer's details and specification

346 Stepping Stones FT_27

1. Supplier: Specialist Aggregates Ltd.
 - 1.1. Product reference: Granite Glacial Boulder 7 Medium Rounded (1914)
2. Designation:: FT_27
3. Material: Natural granite, gneiss and quartzite, smooth and rounded with no sharp edges.
4. Approximate weight: 100-150 kg
5. Approximate size: 400mm length.
6. Approximate height: : max. 600mm installed height
7. Delivery/ Handling/ Storage requirements: Mechanical lifting and shifting advised
8. Method of fixing: Fixed into concrete pad footings to Engineer's details and specification at 800-1000mm centres.

347 Informal Stone Steps FT_28

1. Supplier: CED Stone Group
 - 1.1. Product reference: Buff Yorkstone Rockery (S35-105-A)
2. Designation:: FT_28
3. Material: Yorkstone
4. Approximate weight: 25-1000 kg
5. Approximate size: 1200mm (L) x 400mm (W) each
6. Approximate height: : max. 600mm installed height
7. Delivery/ Handling/ Storage requirements: Mechanical lifting and shifting advised
8. Method of fixing: Fixed into concrete pad footings to Engineer's details and specification at 800-1000mm centres.

348 Stepping Stones FT_44 REVISED

1. Supplier: Marshall's Plc
 - 1.1. Product reference: Conservation X Kerb or equal approved
2. Material: PCC kerb, textured; silver grey colour.

3. Approximate size: 255 x 205 x 915mm
4. Approximate height: : laid flush
5. Method of fixing: Bedding as per Engineer's details. Refer to drawings N15301-PLI-XX-ZZ-DR-L-60240 and N15301-PLI-XX-ZZ-DR-L-60241 for fixing details

Installation

510 Concrete foundations generally

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

515 Setting components in concrete

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

Deleted clauses

~~230 Cafe's table fixed FT_20~~ **DELETED**

~~230 Cafe's table freestanding FT_22~~ **DELETED**

Ω End of Section

Q52

Play and sports equipment

General

2 To be read with Preliminaries / General Conditions

1. All materials to be reviewed by Landscape Architect and/ or Principal Contractor where alternatives provided.
2. Refer to Engineers drawings and specifications for all vehicular accessible areas, access roads and parking areas, bedding and sub-base build-ups, concrete foundations / haunching, wall design, and drainage design.
3. Engineers drawings and specifications takes precedence where duplication occurs.
4. Reference should be made to any site / ground investigation reports, any civil and structural drawings and specifications and all other Stage 4 & 5 specifications.
5. **Design of play space indicated on Plincke drawings 0583-PLI-XX-XX-DR-L-0212, 0583-PLI-XX-XX-DR-L-0312, and 0583-PLI-XX-XX-DR-L-0412, and Plincke specification 0583-PLI-XX-XX-SP-L-0220 is a design intent only, and should be developed in detail by a specialist subcontractor. This includes layout, surfaces, and equipment.**

System performance

210 Design

1. Design: Complete the design of the Playground.
2. **Proposals:** Submit drawings, technical information, calculations and manufacturers' literature.
3. **Performance criteria:** Location, size, theme, and colours as per Plincke drawing

215 Playground design

1. **Design criteria:** To satisfy:-
Equality Act 2010
BS EN 1176
BS EN 1177
RoSPA pre-installation design review
RoSPA post-installation report
 - 1.1. **Age range:**

0-11
 - 1.2. **Population served:** Local community
 - 1.3. **Frequency of use:** Continuous

Products

321 Jumping Disc FT_33

1. **Description:** Jumping Disc to Play Area
2. **Designation::** FT_33
3. **Standard:** To BS EN 1176-1.
4. **Manufacturer:** Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. **Product reference:** Richter Spielgerate - Jumping Disc (No 6.06000)
5. **Age range:** 5+

6. **Materials:** Wood
 - 6.1. **Finish:** Non-impregnated Mountain Larch timber top; Coated springs
 - 6.2. **Colour:** Manufacturer's standard
7. **Diameter::** 1000 mm
8. **Height:** 350 mm (fall height of ≤ 0.60 m)
9. **Features:** 1 Disc complete with 3 springs (coated Red)
10. **Method of fixing:** Inground as manufacturers detail
Excavation for pre-fabricated concrete foundation $\varnothing$ 95 cm x 15 cm

340a Play equipment - Climbing structure FT_29

1. **Description:** Climbing Structure to Play Area
2. **Designation::** FT_29
3. **Standard:** To BS EN 1176-1.
4. **Manufacturer:** Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. **Product reference:** Richter Spielgerate - Climbing Structure 08 (No 6.51008)
5. **Age range:** 6+
6. **Components:** 7 Stand posts
12 Connecting tie beams
1 Net area
1 Balancing rope / holding rope Ropes for tensioning
Fittings
7. **Materials:** Wood, Galvanized steel, Stainless steel, Aluminium
 - 7.1. **Finish:** Robbinia timber posts; Hot dip galvanised
 - 7.2. **Colour:** Manufacturer's standard
8. **Highest platform height:** fall height of ≤ 3.00 m
9. **Method of fixing:** Foundations to manufacturer's recommendations
7 items 80 x 80 x 60 cm Excavation depth 80 cm

340b Play equipment - Play tower FT_30

1. **Description:** Play Tower to Play Area
2. **Designation::** FT_30
3. **Standard:** To BS EN 1176-1.
4. **Manufacturer:** Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. **Product reference:** Richter Spielgerate - Hexagonal Hut incl roof, walls, bench (No 3.16350)
5. **Age range:** 5+
6. **Components:** Hexagonal Hut with roof, 3 walls and 1 bench
7. **Materials:** Wood
 - 7.1. **Finish:** Non-impregnated Mountain Larch timber; Hot dip galvanised or stainless steel
ground anchors
 - 7.2. **Colour:** Manufacturer's standard
8. **Highest platform height:** Critical Fall Height: < 1.5 m
9. **Method of fixing:** Foundations to manufacturer's recommendations
6 items 50 x 50 x 40 cm Excavation depth 60 cm

340c Platform hut with roof FT_38

1. **Description:** Platform hut with roof
2. **Designation::** FT_38
3. **Standard:** To BS EN 1176-1.
4. **Manufacturer:** Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. **Product reference:** Richter Spielgerate - Platform Hut (No 3.13100 PLUS)
5. **Age range:** 4-12
6. **Components:** 4 Side parts, 1 ladder, 2 floors 2 Walls, 1 bench, 4 steel feet
7. **Materials:** Wood
 - 7.1. **Finish:** Non-impregnated Mountain Larch timber; Hot dip galvanised or stainless steel ground anchors
 - 7.2. **Colour:** Manufacturer's standard
8. **Highest platform height:** Critical Fall Height: < 1.5m
9. **Method of fixing:** Installed as Manufacturer's details and specification

355 Climbing holds FT_39

1. **Description:** Climbing holds to Play Area
2. **Designation::** FT_39
3. **Standard:** To BS EN 1176-1.
4. **Manufacturer:** Custom Holds Ltd
info@customholds.com
www.customholds.com
 - 4.1. **Product reference:** Custom Holds 'Mini Jugs Individual'
5. **Features:** : Placed every 150-250mm apart
6. **Materials:** PU resin
 - 6.1. **Finish:** None
 - 6.2. **Colour:** Random mixed colours (Orange; Green; Blue; Aircraft grey; Bright Yellow; Bright Red; Sandstone)
7. **Features:** Need expansion sockets to solid wall
8. **Method of fixing:** Installed as Manufacturer's details and specification (with e

360a Play tunnel FT_37

1. **Description:** Play Tunnel to Play Area
2. **Designation::** FT_37
3. **Standard:** To BS EN 1176-1.
4. **Manufacturer::** To Contractor's choice
5. **Materials:** HDPE
 - 5.1. **Finish:** Unperforated Twin-wall Plain End Drainage Pipe
6. **Size:** 3000mm (L) x Ø 750mm
7. **Method of fixing:** Installed as Manufacturer's details and specification

360b Felled trees FT_40

1. **Description:** Felled trees to Play Area and site-wide informal play features.
2. **Designation::** FT_40

3. **Standard:** To BS EN 1176-1.
4. **Materials:** Stems of reclaimed existing felled trees
 - 4.1. **Finish:** Natural green timber; No sharp edges
5. **Size:** Min. Ø 900-1200mm trunk; Min. Ø 700mm branches
6. **Feature::** Site-won; acceptable trees to be confirmed on site and marked with spray paint; loose material removed and sharp edges planed off
7. **Height:** Maximum 600mm installed height
8. **Method of fixing:** Securely bedded or pegged into ground to ensure stability

390 Swaying Ship FT_36

1. **Description:** Swaying Ship to Play Area
2. **Designation::** FT_36
3. **Standard:** To BS EN 1176-1 and -6.
4. **Manufacturer:** Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. **Product reference:** Richter Spielgerate - Swaying Ship (No. 6.08000)
5. **Age range:** 5-10
6. **Type:** Sweeping see-saw
7. **Number of seats:** 2
8. **Materials:** Wood
 - 8.1. **Finish:** Non-impregnated mountain larch'Non-impregnated Mountain Larch timber tongue-and-groove planks
9. **Features:** Milled-off tyre
10. **Method of fixing:** To manufacturer's standards
Excavation for concrete foundation pedestal Ø 1.20 x 0.60 m

420a 5.2m Slide FT_34

1. **Description:** 5.2m Slide to Play Area
2. **Designation::** FT_34
3. **Standard:** To BS EN 1176-1 and -3.
4. **Manufacturer:** Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. **Product reference:** Richter Spielgerate - Stainless Steel Slide (No 3.63323)
5. **Age range:** 3-12
6. **Format:** Straight
7. **Materials:** Stainless steel
 - 7.1. **Finish:** Glass Bead Blasted Stainless Steel
 - 7.2. **Colour:** Manufacturer's standard
8. **Deck height:** 1.5m (fall height of ≤ 2.00 m)
9. **Slide width:** 1000mm
10. **Surfacing requirement::** Sand to be used as a loose fill material at the run-out of the slide
11. **Method of fixing:** Foundation to manufacture's recommendation
4 items 30 x 30 x 30 cm Excavation depth 70 cm

420b 5.2m Slide FT_35

1. Description: 4.8m Slide to Play Area
2. Designation:: FT_35
3. Standard: To BS EN 1176-1 and -3.
4. Manufacturer: Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. Product reference: Richter Spielgerate - Stainless Steel Slide (No 3.63303)
5. Age range: 3-12
6. Format: Straight
7. Materials: Stainless steel
 - 7.1. Finish: Glass Bead Blasted Stainless Steel
 - 7.2. Colour: Manufacturer's standard
8. Deck height: 1.0m (fall height of ≤ 2.00 m)
9. Slide width: 1000mm
10. Surfacing requirements:: Sand to be used as a loose fill material at the run-out of the slide
11. Method of fixing: Foundation to manufacture's recommendation
4 items 30 x 30 x 30 cm Excavation depth 70 cm

430 Wobble Dish FT_31

1. Description: Wobble Dish to Play Area
2. Designation: : FT_31
3. Standard: To BS EN 1176-1 and -5.
4. Manufacturer: Timberplay Ltd.
www.timberplay.com
0114 282 3462
 - 4.1. Product reference: Richter Spielgerate - Wobble Dish (No 6.27300)
5. Age range: 3-6
6. Materials: Stainless steel and wood
 - 6.1. Finish: 2 mm thick stainless steel, glass bead blasted, with grip rim; non-impregnated Mountain Larch timber
7. Diameter: Ø1100mm
8. Deck height: Critical Fall Height: < 0.6m
9. Features: The rotating joint is covered with a rubber ring for finger protection
10. Method of fixing: Foundations to manufacturer's recommendations
Excavation for pre-fabricated foundation Ø 1.05 x 0.07 m

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:** As manufacturer's detail
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.

750 Damage to galvanized surfaces

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

Completion

910 Inspection

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

In accordance with equipment manufacturer's maintenance and inspection instructions

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

920 Cleaning

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

930 Testing

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

950 Documentation

1. **Standard:** To BS EN 1176-1
2. **Contents**
 - 2.1. Copies of test reports.
 - 2.2. General product information.
 - 2.3. Installation information.
 - 2.4. Inspection and maintenance information.
3. **Number of copies:** 1
4. **Submission:** 2 weeks after request by contract administrator

Ω End of Section

Q55

External decks, boardwalks and bridges

Tendering

10 Information to be provided with tender

1. General structural requirements in accordance with clause B51/15.

General

110 Composite Deck ST_10_

1. Description: Composite decking
- to Play Area level access
2. Designation: ST_10
3. Base preparation: Bedding as Engineer's details
4. Structure, other than surfacing: Recycled plastics
 - 4.1. Fasteners: 316 stainless steel fixing screws
5. Post setting: Posts set in concrete
6. Surfacing: Millboard Enhanced Grain SB Decking Board
 - 6.1. Method of attachment: Stainless steel screws
7. Guarding: Refer to design intent drawing N15301-PLI-XX-ZZ-DR-L-60233 and to Engineer's details and specification
8. Edge protection: PPC steel flat rail guarding, refer to design intent drawing N15301-PLI-XX-ZZ-DR-L-60233 and to Engineer's details and specification
9. Accessories: Applied slip-resistant rebated inserts

System performance

215 Contractor's design

1. Design responsibility:
 - 1.1. Including: Fabric and structure, fixings between elements, anchorage to supporting structure and functionality.
2. Requirements
 - 2.1. Generally: As section:
 - 2.2. Modifications:
 - 2.3. Design: Complete the design in accordance with the designated code of practice to satisfy specified performance criteria.
3. Functional requirements: Satisfy specified criteria for Durability of fabric.
4. Additional requirements:
5. Design and production information:
6. Timing of submissions:

Products

380 Deck boards ST_10_

1. Description: Deck boards to Play Area access
2. Manufacturer: The Millboard Company Ltd
 - 2.1. Product reference: Enhanced Grain SB Decking Board

3. Material: Composite
4. Treatment: Not required
5. Profile: Grained with anti-slip insert strip
6. Finished size: 176 x 32 mm
 - 6.1. Length: To suit deck design
7. Finish: As manufactured

390 Guarding

1. Description: PPC steel flat bar railing to boardwalk access
2. Manufacturer: Lang + Fulton, or equal approved
 - 2.1. Product reference: Rimini
3. Height: 1100 mm
4. Material: Carbon steel
 - 4.1. Treatment: Hot-dip-galvanized to BS EN ISO 1461
5. Finish: Polyester powder coating
 - 5.1. Colour: RAL 2010 Signal Orange (TBC)
6. Accessories: None

Fabrication

510 Fabrication generally

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

Execution

610 Loading

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

620 Concrete foundations generally

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

630 Setting components in concrete

1. Holes: To Engineer's recommendations
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.

640 Setting components in earth

1. **Holes:** As small as practicable.
2. **Components:** Accurately positioned and securely supported.
3. **Buried depth (minimum):** To Engineer's recommendations
4. **Earth fill:** Well rammed as filling proceeds.

650 Driven posts

1. **Driven depth below finished ground level (minimum):** Refer to Engineer's details
2. **Post heads:** Minimize damage during driving. Finish neatly after installation.

665 Installation generally

1. **Fasteners and methods of fixing:** As 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 stairs, walkways or balustrades as temporary support or strutting for other work.

672 Installation of slip-resistant products

1. **Surfacing:** Sound and level. Prepared/ rebated for products.
2. **Fixing**
 - 2.1. **Location/ position:** In accordance with BS 8300-1
 - 2.2. **Method:** As manufacturer's recommendations
 - 2.2.1. **Centres:** As manufacturer's recommendations

680 Site-painting and staining

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

Completion

950 Documentation

1. **Contents**
 - 1.1. General product information.
 - 1.2. Installation information.
 - 1.3. Inspection and maintenance reports.
2. **Number of copies:**
3. **Submission:**

Ω End of Section

Z10

Purpose made joinery

To be read with preliminaries/ general conditions.

110 Fabrication

1. **Standard:** To BS 1186-2.
2. **Sections:** Accurate in profile and length, and free from twist and bowing. Formed out of solid unless shown otherwise.
 - 2.1. **Machined surfaces:** Smooth and free from tearing, wooliness, chip bruising and other machining defects.
3. **Joints:** Tight and close fitting.
4. **Assembled components:** Rigid. Free from distortion.
5. **Screws:** Provide pilot holes.
 - 5.1. **Screws of 8 gauge (4 mm diameter) or more and screws into hardwood:** Provide clearance holes.
 - 5.2. **Countersink screws:** Heads sunk at least 2 mm below surfaces visible in completed work.
6. **Adhesives:** Compatible with wood preservatives applied and end uses of timber.

120 Cross section dimensions of timber

1. **General:** Dimensions on drawings are finished sizes.
2. **Maximum permitted deviations from finished sizes**
 - 2.1. **Softwood sections:** To BS EN 1313-1:-
 - 2.1.1. Clause 6 for sawn sections.
 - 2.2. **Hardwood sections:** To BS EN 1313-2:-
 - 2.2.1. Clause 6 for sawn sections.
 - 2.2.2. Clause NA.3 for further processed sections.

130 Preservative treated wood

1. **Cutting and machining:** Completed as far as possible before treatment.
2. **Extensively processed timber:** Retreat timber sawn lengthways, thickened, planed, ploughed, etc.
3. **Surfaces exposed by minor cutting and/ or drilling:** Treat as recommended by main treatment solution manufacturer.

140 Moisture content

1. **Wood and wood based products:** Maintained within range specified for the component during manufacture and storage.

250 Finishing

1. **Surfaces:** Smooth, even and suitable to receive finishes.
 - 1.1. **Arrises:** Eased unless shown otherwise on drawings.
2. **End grain in external components:** Sealed with primer or sealer as section M60 and allowed to dry before assembly.

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.

400 Stainless steel products

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

410 Aluminium alloy products

1. Designations
 - 1.1. Designation system, chemical composition and forms: To BS EN 573-1, -2, -3 and -5.
 - 1.2. Temper designations: To BS EN 515.
2. Sheet, strip and plate: To BS EN 485-1 to -4.
3. Cold drawn rods, bars and tubes: To BS EN 754-1 and -2.
4. Extruded rods, bars, tubes and profiles: To BS EN 755-1 and -2.
5. Drawn wire: To BS EN 1301-1, -2 and -3.
6. Rivet, bolt and screw stock: To BS 1473.
7. Structural sections: To BS 1161.

420 Copper alloy products

1. Sheet, strip, plate and circles for general purposes: To BS EN 1652.
2. Sheet and strip for building purposes: To BS EN 1172.
3. Rods: To BS EN 12163.
4. Profiles and rectangular bars: To BS EN 12167.
5. Wire: To BS EN 12166.
6. Tubes: To BS EN 12449.

Fabrication

515 Fabrication generally

1. Contact between dissimilar metals in components: Avoid.

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

520 Cold formed work

1. Profiles: Accurate, with straight arrises.

525 Adhesive bonding

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

527 Welding

1. Description:
2. Welding procedures
 - 2.1. Method and standard:
 - 2.2. Welding Procedure Specification (WPS):
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. Dissimilar metals:
 - 4.3. Strength requirements: Welds to achieve design loads.
 - 4.4. Heat straightening:
 - 4.5. Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
 - 4.6. Tack welds: Use only for temporary attachment.
 - 4.7. Jigs: Provide to support and restrain members during welding.
 - 4.8. Filler plates:
 - 4.9. Lap joints: Minimum 5 x metal thickness or 25 mm, whichever is greater.
 - 4.10. Weld terminations: Clean and sound.

530 Stainless steel fabrication

1. Guillotining or punching: Do not use for metal thicknesses greater than 10 mm.
2. Thermal cutting
 - 2.1. Carbonation in the heat affected zone: Remove, after cutting.
3. Bending
 - 3.1. Plates or bars: Cold bending radius not less than material thickness.
 - 3.2. Tubes: Cold bending radius not less than 2 x tube diameter.
4. Welding: In addition to general welding requirements:
 - 4.1. Protect adjacent surfaces from weld spatter.

4.2. Pickle all welds before post fabrication treatments.

5. Protection: Provide protection to fabricated components during transit and on site.

555 Brazing

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

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.

750 Liquid organic coating for aluminium alloy components

1. Standard: To BS 4842.

760 Zinc and cadmium plating of iron and steel surfaces

1. Zinc plating: To BS EN ISO 2081.
2. Cadmium plating: To BS EN ISO 2082.

770 Chromium plating

1. Standard: To BS EN ISO 1456.

780 Galvanizing

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

790 Vitreous enamelling

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

Completion

910 Documentation

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

920 Completion

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

Ω End of Section

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.

131 Ready-Mixed lime:sand for cement gauged masonry mortars

1. **Standard:** To BS EN 998-2.
2. **Lime:** Nonhydraulic to BS EN 459-1.
 - 2.1. **Type:** CL 90S.
3. **Pigments for coloured mortars:** To BS EN 12878.

135 Site made lime:sand for cement gauged masonry mortars

1. **Permitted use:** Where a special colour is not required and in lieu of factory made ready-mixed material.
2. **Lime:** Nonhydraulic to BS EN 459-1.
 - 2.1. **Type:** CL 90S.
3. **Mixing:** Thoroughly mix lime with sand, in the dry state. Add water and mix again. Allow to stand, without drying out, for at least 16 hours before using.

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.

190 Retarded ready to use cement gauged mortar

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

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

310 Lime:sand mortar mixes

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

320 Sand for lime:sand masonry mortars

1. **Type:** Sharp, well graded.
 - 1.1. **Quality, sampling and testing:** To BS EN 13139.
 - 1.2. **Grading/ Source:** As specified elsewhere in relevant mortar mix items.

330 Ready prepared lime putty

1. **Type:** Slaked directly from CL 90 quicklime to BS 890, using an excess of water.
 - 1.1. **Maturation:** In pits/ containers that allow excess water to drain away.
 - 1.2. **Density of matured lime putty:** 1.3 - 1.4 kg/litre.

345 Admixtures for hydraulic lime:sand mortars

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

350 Storage of lime:sand mortar materials

1. **Sands and aggregates:** Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
2. **Ready prepared nonhydraulic lime putty:** Prevent drying out and protect from frost.
3. **Nonhydraulic lime:sand mortar:** Store on clean bases or in clean containers that allow free drainage. Prevent drying out or wetting and protect from frost.
4. **Bagged hydrated hydraulic lime:** Store off the ground in dry conditions.

360 Making lime:sand mortars generally

1. **Batching:** By volume. Use clean and accurate gauge boxes or buckets.
2. **Mixing:** Mix materials thoroughly to uniform consistency, free from lumps.
3. **Contamination:** Prevent intermixing with other materials, including cement.

390 Knocking up nonhydraulic lime:sand mortars

1. **Knocking up before and during use:** Achieve and maintain a workable consistency by compressing, beating and chopping. Do not add water.
 - 1.1. **Equipment:** Roller pan mixer or submit proposals.

400 Making hydraulic lime:sand mortars

1. **Mixing hydrated hydraulic lime:sand:** Follow the lime manufacturer's recommendations for each stage of the mix.
 - 1.1. **Water quantity:** Only sufficient to produce a workable mix.
2. **Working time:** Within limits recommended by the hydraulic lime manufacturer.

Ω End of Section

Z31

Powder coatings

To be read with preliminaries/ general conditions.

120 Powder coating materials

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

210 Working procedures

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

220 Powder coating applicators

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

225 Guarantees

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

230 Control samples

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

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

240 Qualicoat quality assurance system

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

250 Component design

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

310 Pretreatment of aluminium components

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

320 Pretreatment of steel components

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

330 Pretreatment for protection in aggressive environments

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

430 Extent of powder coatings

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

435 Application of powder coatings

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

440 Performance and appearance of powder coatings

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

450 Aluminium alloy fabrications

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

460 Steel fabrications

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

470 Fixings

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

480 Damaged components – repair or replacement

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

510 Protection

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

520 Protection in hazardous locations

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

535 Documentation

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

540 Completion

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

Ω End of Section



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