

Document Control Sheet

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Specification-Systems

B91 Buildings in the landscape	1
F10 Brick/ block walling	3
F30 Accessories/ sundry items for brick/ block/ stone walling	5
Q10 Kerbs/ edgings/ channels/ paving accessories	6
Q23 Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays	11
Q24 Interlocking brick/ block roads/ pavings	13
Q25 Slab/ brick/ sett/ cobble pavings.....	15
Q28 Topsoil and soil ameliorants	21
Q30 Seeding/ turfing.....	27
Q31 External planting	30
Q40 Fencing.....	39
Q41 Barriers/ guardrails	40
Q50 Site/ street furniture/ equipment	42

B91

Buildings in the landscape

Clauses

2 To be read with preliminaries/ general conditions.

System outline - Not Used

System performance - Not Used

Products

340 Cycle shelter

1. Description: CS - Cycle Store
2. Manufacturer: The Bike Storage Company
 - 2.1. Product reference: Bespoke 20 Space Amazon Eco Shelter
3. Size: W 8,150mm x H 2,100 x D 2,100mm
4. Frame: As supplied
5. Panels: As supplied
6. Roof covering: As supplied
7. Accessibility: Front doors to be locked, locking type to be submitted and agreed with the client
8. Accessories/ Special requirements: None

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.

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.

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

F10**Brick/ block walling****Types of walling**

110 W4, W5 Clay facing brickwork

1. Description: Brickwork System by DBA Building Solutions
2. Bricks: To BS EN 771-1.
 - 2.1. Manufacturer: Feldhaus Klinker
Klinkerwerk B. Feldhaus
GmbH & Co.
Nordring 1
49196 Bad Laer
Germany
 - 2.1.1. Product reference: Clinker Brick Slips R694 Carmesi
 - 2.2. Recycled content: Contractor's choice
 - 2.3. Special shapes:
3. Joints: Line Sintra
4. Colour:: Group Red
5. Size:: 215L x 114W x 65H
6. Parameters:: Water absorption: $\leq 6\%$ (average 4%) DIN EN ISO 10545-3
Frost resistance: class F2, DIN EN ISO 10545-12
Fire class: A1

Testing - Not Used**Workmanship generally**

671 Fire stopping

1. Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.

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

780 Ground level

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

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

F30**Accessories/ sundry items for brick/ block/ stone walling****Clauses****2 To be read with preliminaries/ general conditions.**

Cavities - Not Used**Reinforcing/ fixing accessories - Not Used****Flexible damp proof courses/ cavity trays - Not Used****Installation of dpcs/ cavity trays - Not Used****Joints - Not Used****Proprietary sills/ lintels/ copings/ dressings****760A W4, W5 Coping units brick wall**

1. To external walls
2. Standard: To BS 5642-2.
3. Material: Natural stone
4. Manufacturer: Ethical Stone
 - 4.1. Product reference: Granite Coping - Extremadura Black
5. Dimensions: As shown on drawings.
6. Finish: Fine rubbed
7. Mortar for bedding/ jointing: Cement gauged as section Z21.
 - 7.1. Standard: To BS EN 998-2
 - 7.2. Mix: Mortar to BS EN 998-2
 - 7.3. Additional requirements: None
8. Joints: Full and finished flush.
9. Placement: Lay on a full bed of mortar to line and level.

Miscellaneous items - Not Used

Ω End of Section

Q10**Kerbs/ edgings/ channels/ paving accessories****Clauses**

2 To be read with preliminaries/ general conditions.

Types of kerbs/edgings and channels

110A Flush Kerb

1. Description: E3 - Flush Kerb
2. Manufacturer: [Tobermore](#)
3. Contact details
 - 3.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 3.2. Telephone: [+44 \(0\)844 800 5736](tel:+44(0)8448005736)
 - 3.3. Web: <https://www.tobermore.co.uk/professional/>
 - 3.4. Email: NBSdataplatfom@tobermore.co.uk
4. Product reference: Fusion Dropper
5. Standard: To BS EN 1340.
6. Physical properties
 - 6.1. Colour: Silver.
 - 6.2. Finish: Granite aggregate.
 - 6.3. Dimensions: 145 x 255/150 x 915 mm
 - 6.4. Radial units
 - 6.5. Weathering resistance: $\leq 1.0 \text{ kg/m}^2$.
 - 6.6. Abrasion resistance: $\leq 23 \text{ mm}$.
 - 6.7. Bending strength: $> 3.5 \text{ MPa}$.
 - 6.8. Unpolished Slip Resistance Value (USRV) (minimum): Extremely Low
 - 6.9. Recycled content (minimum): Not less than 5%.
7. BREEAM rating: In accordance with the Green Guide to Specification.

110C E2 Upstand Kerb

1. Description: E2 - Upstand Kerb
2. Manufacturer: [Tobermore](#)
3. Contact details
 - 3.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 3.2. Telephone: [+44 \(0\)844 800 5736](tel:+44(0)8448005736)
 - 3.3. Web: <https://www.tobermore.co.uk/professional/>
 - 3.4. Email: NBSdataplatfom@tobermore.co.uk
4. Product reference: [Fusion Kerb](#) | [Concrete Kerb](#)
5. Standard: To BS EN 1340.

6. Physical properties

- 6.1. Colour: Silver.
- 6.2. Finish: Granite aggregate.
- 6.3. Dimensions: 145 x 255 x 915 mm
- 6.4. Radial units
- 6.5. Weathering resistance: $\leq 1.0 \text{ kg/m}^2$.
- 6.6. Abrasion resistance: $\leq 23 \text{ mm}$.
- 6.7. Bending strength: $>3.5 \text{ MPa}$.
- 6.8. Unpolished Slip Resistance Value (USRV) (minimum): Extremely Low
- 6.9. Recycled content (minimum): Not less than 5%.
7. BREEAM rating: In accordance with the Green Guide to Specification.

110D Pin Kerb

1. Description: E6 - Pin Kerb
2. Manufacturer: [Tobermore](#)
3. Contact details
 - 3.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 3.2. Telephone: [+44 \(0\)844 800 5736](tel:+44(0)8448005736)
 - 3.3. Web: <https://www.tobermore.co.uk/professional/>
 - 3.4. Email: NBSdataplatfom@tobermore.co.uk
4. Product reference: Fusion Edge
5. Standard: To BS EN 1340.
6. Physical properties
 - 6.1. Colour: Silver.
 - 6.2. Finish: Granite aggregate.
 - 6.3. Dimensions: 75 x 150 x 900mm
 - 6.4. Radial units

110E E7 Timber retaining edge

1. Description: E7 - Timber retaining edge
2. Standard: To BS4978, BS EN-14081, C16 Graded, FSC Certified
3. Manufacturer: Contractor's choice
4. - Product reference: Treated timber board
5. Size (width x height x length): 250 x 50 x 3600mm
6. Finish: As supplied
7. Colour: Natural
8. Accessories: Fixed to 50 x 50 x 400mm timber stages at 1.2m centres.

Refer to P1040-HLM-XX-00-DR-L-3092 Detail Section 27 & P1040-HLM-XX-00-DR-L-3080.

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
3. Colour: White
4. Retroreflectivity to BS EN 1436: Class R2

415 E1 Demarcation units to parking bays

1. Description: E1 - Permeable block paving demarcation units
2. Manufacturer: Marshalls
 - 2.1. Product reference: Modal Piora permeable paving
3. Material/ Standard: Concrete blocks to BS EN 1338
4. Recycled content: As supplied
5. Size (width x height x length): 100 x 200 x 80 mm
6. Finish: Textured
7. Colour: Light Granite
8. Bedding: To engineer's specification
9. Joints generally: To engineer's specification

Laying

510 Laying kerbs, edgings and channels

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

520 Adverse weather

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

530 Concrete for foundations, races and haunching

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

540 Cement mortar bedding

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

-
3. Bed thickness: 12-40 mm.

547 Bedding/ Backing of units on fresh concrete races

1. Standard: To BS 7533-6.

550 Kerb dowels

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

560 Haunching dowels

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

600 Radius kerbs/ channels

1. Usage: Radii of 15 m or less.

610 Angle kerbs

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

620 Accuracy

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

625 Regularity of paved surfaces

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

630 Narrow mortar joints

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

Ω End of Section

Q23

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

Clauses

2 To be read with preliminaries/ general conditions.

Types of surfacing

160 P13 Loose gravel

1. Description: P13 - Gravel margin
2. Subgrade improvement layer: Not required
 - 2.1. Compacted thickness: Not applicable
3. Geotextile: Sheet
 - 3.1. Manufacturer: Contractor's choice
 - 3.1.1. Product reference: Contractor's choice
4. Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20
 - 4.1. Compacted thickness: 100 mm
5. Blinding to sub-base: Not required
6. Gravel: Loose laid and raked to uniform thickness.
 - 6.1. Type: Scottish Beach Pebbles
 - 6.2. Source: CED
 - 6.3. Colour: Silver Grey
 - 6.4. Size: Graded 20-30 mm
 - 6.5. Thickness: 75 mm

160A RG Loose gravel

1. Description: RG - Gravel mulch to rain garden
2. Subgrade improvement layer: Not required
 - 2.1. Compacted thickness: Not applicable
3. Geotextile: Sheet
 - 3.1. Manufacturer: Contractor's choice
 - 3.1.1. Product reference: Contractor's choice
4. Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20
 - 4.1. Compacted thickness: 100 mm
5. Blinding to sub-base: Not required
6. Gravel: Loose laid and raked to uniform thickness.
 - 6.1. Type: Cotswold Pebbles
 - 6.2. Thickness: 100 mm

160C Loose gravel

1. Description: To trees in hard landscape with aroresin tree surround (tree pit detail 01)
2. Subgrade improvement layer: N/A
 - 2.1. Compacted thickness: N/A
3. Geotextile: N/A
 - 3.1. Manufacturer: N/A

3.1.1. Product reference: N/A

4. Granular sub-base: N/A

4.1. Compacted thickness: N/A

5. Blinding to sub-base: N/A

6. Gravel: Loose laid and raked to uniform thickness.

6.1. Type: Loose gravel to match ArboResin

6.2. Source: GREEN BLUE URBAN

6.3. Colour: To match ArboResin

6.4. Size: 8-14 mm

6.5. Thickness: 75 mm or to match level of surrounding arboresin surface

Laying

315 Materials

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

320 Samples

1. Submit: Representative samples of all aggregates.

340 Laying generally

1. Channels, gullies, etc: Keep clear.

2. **Finished surfaces**

2.1. Lines and levels: To prevent ponding.

2.2. Overall texture: Even.

2.3. State at completion: Clean.

350 Cold weather working

1. Frozen materials: Do not use.

2. Freezing conditions: Do not lay pavings.

3. Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.

4. Other dressings or overlays: As manufacturers' recommendations.

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.

Completion - Not Used

Ω End of Section

Q24

Interlocking brick/ block roads/ pavings

Clauses

2 To be read with preliminaries/ general conditions

Types of paving

115 P6 Permeable block paving

1. Description: P6 - Proposed permeable block
2. Subgrade improvement layer: To Engineer's specification
 - 2.1. Compacted thickness: To Engineer's specification
3. Geotextile below granular sub-base: To Engineer's specification
4. Granular sub-base: To Engineer's specification
 - 4.1. Compacted thickness: To Engineer's specification
5. Geotextile below laying course
 - 5.1. Manufacturer: Marshalls Modal
 - 5.1.1. Product reference: Piora concrete paving
6. Laying course
 - 6.1. Material: To Engineer's specification
 - 6.2. Compaction: In accordance with BS 7533-3. Determine by trial the depth of loose bedding material needed to ensure specified bedding course thickness after final compaction of paving.
 - 6.3. Nominal thickness after compaction: To Engineer's specification
7. Blocks: To BS EN 1338.
 - 7.1. Manufacturer: Marshalls
 - 7.1.1. Product reference: Modal Piora
 - 7.2. Sizes: 200 x 100 x 80 mm
 - 7.3. Special blocks: None
 - 7.4. Spacer nibs: Required
 - 7.5. Arrises: Unchamfered
 - 7.6. Colour/ Finish: Anthracite - textured
 - 7.7. Recycled content: As supplied
 - 7.8. Requirements: As supplied
 - 7.8.1. Freeze/ thaw resistance: As supplied
 - 7.8.2. Abrasion resistance: As supplied
 - 7.8.3. Slip/ Skid resistance: As supplied
8. Jointing
 - 8.1. Material: To Engineer's specification
 - 8.2. Joint width: To Engineer's specification
 - 8.3. Conventional sand jointing: To Engineer's specification
9. Setting out
 - 9.1. Bond: Herringbone bond
 - 9.2. Features: None
10. Accessories: None

160 Hard landscaping materials specification

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

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 4 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.

240 Adverse weather

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

335 Planing and repairs to existing bases

1. Existing macadam/ asphalt surfaces: Plane to required levels.
2. Repairs: Cut out to remove ruts and cracks over 25 mm wide
3. Building up to required levels: Regulate using bituminous material to Highways Agency 'Specification for highway works'

500 Regularity of paved surfaces

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

Completion

615 Completion of paving

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

Ω End of Section

Q25

Slab/ brick/ sett/ cobble pavings

Clauses

2 To be read with preliminaries/ general conditions.

General - Not Used

System performance - Not Used

Products

315 P1 Linear Paving

1. Description: P1 - Proposed linear paving
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: [Tobermore](#)
 - 2.1.1. Contact details
 - 2.1.1.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 2.1.1.2. Telephone: +44 (0)844 800 5736
 - 2.1.1.3. Web: <https://www.tobermore.co.uk/professional/>
 - 2.1.1.4. Email: NBSdataplatfom@tobermore.co.uk
 - 2.1.2. Product reference: City Pave VS5
3. Recycled content: N/A
4. Colour: Silver
 - 4.1. Finish: Textured
 - 4.2. Nominal sizes: 400 x 200 x 80mm

315A P2 Block Paving

1. Description: P2 - Proposed block paving
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: [Tobermore](#)
 - 2.1.1. Contact details
 - 2.1.1.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 2.1.1.2. Telephone: +44 (0)844 800 5736
 - 2.1.1.3. Web: <https://www.tobermore.co.uk/professional/>
 - 2.1.1.4. Email: NBSdataplatfom@tobermore.co.uk
 - 2.1.2. Product reference: Fusion
3. Recycled content: N/A
4. Colour: Graphite
 - 4.1. Finish: Textured
 - 4.2. Nominal sizes: 200 x 200 x 80mm

315B P4 Flag Paving

1. Description: P4 - Proposed flag paving
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: [Tobermore](#)
 - 2.1.1. Contact details
 - 2.1.1.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 2.1.1.2. Telephone: +44 (0)844 800 5736
 - 2.1.1.3. Web: <https://www.tobermore.co.uk/professional/>
 - 2.1.1.4. Email: NBSdataplatfom@tobermore.co.uk
 - 2.1.2. Product reference: [Mayfair Paving Slabs | Concrete Paving Slab \(Silver colour\)](#)
 - 2.2. Standard: To BS EN 1339.
 - 2.3. Physical properties
 - 2.3.1. Colour: Silver.
 - 2.3.2. Finish: Granite aggregate.
 - 2.3.3. Dimensions and associated tolerances
 - 2.3.3.1. Nominal sizes: 450 x 450 x 50 mm.
 - 2.3.4. Weathering resistance: $\leq 1.0 \text{ kg/m}^2$ as a mean with no individual value $> 1.5 \text{ kg/m}^2$ Class 3.
 - 2.3.5. Abrasion resistance: $\leq 23 \text{ mm}$ (Wide Wheel Abrasion Test) Class 3.
 - 2.3.6. Slip resistance: Extremely low ($> 75 \text{ USRV}$).
 - 2.3.7. Recycled content (minimum): Not less than 6%.
 - 2.4. Granite content: Not less than 63.3% of granite aggregate in surface layer.
 - 2.5. Efflorescence: Minimum 12 hour vapour curing to significantly reduce the possibility of efflorescence.
 - 2.6. Strength: $> 3.5 \text{ MPa}$.
 - 2.7. BREEAM rating: A (A+ can be achieved when used with recycled sub-base).
 - 2.8. Surface finish: Hard wearing surface layer with a minimum layer of 4 mm and $> 390 \text{ kg/m}^3$ cement.

315C P5 Block Paving

1. Description: P5 - Proposed block paving
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: [Tobermore](#)
 - 2.1.1. Contact details
 - 2.1.1.1. Address: 2 Lisnamuck Road
Tobermore
Co L'derry
BT45 5QF
 - 2.1.1.2. Telephone: +44 (0)844 800 5736
 - 2.1.1.3. Web: <https://www.tobermore.co.uk/professional/>
 - 2.1.1.4. Email: NBSdataplatfom@tobermore.co.uk
 - 2.1.2. Product reference: Fusion
 3. Colour: Charcoal Grey Granite
 - 3.1. Finish: Textured

3.2. Nominal sizes: 300 x 200 x 80mm

315E P12 Concrete flag paving

1. Description: P12 - Proposed flag paving
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: Marshalls or similar approved
 - 2.1.1. Product reference: Perfecta 'Taffica'
3. Recycled content: N/A
4. Colour: Buff
 - 4.1. Finish: Smooth ground
 - 4.2. Nominal sizes: 400 x 400 x 65mm
5. Arrises: Square
6. Water absorption and freeze/ thaw resistance class: N/A
7. Bending strength class: N/A
8. Abrasion resistance class: < 23mm (wide wheel abrasion test)
9. Slip/ Skid resistance: USRV > 45
10. Breaking load class: N/A

316 St Concrete step units

1. Description: St - Flight of steps
2. Standard: To BS EN 1339.
 - 2.1. Manufacturer: Marshalls or similar approved
 - 2.1.1. Product reference: Conservation Step Unit
3. Colour: Silver Grey
 - 3.1. Finish: Textured
 - 3.2. Nominal sizes: 1000 x 150 x 350mm, 1000 x 150 x 400mm (top step)
4. Features: Black visibility strip to tread and riser

320 Tp1 Tactile flags and slabs

1. Description: Tp1 - Tactile paving to steps
2. Standard: To DD CEN/TS 15209.
3. Material: Precast concrete
 - 3.1. Manufacturer: Marshalls or similar approved
 - 3.1.1. Product reference: Hazard Warning Paving
4. Recycled content: N/A
5. Nominal sizes: 400 x 400 x 50mm
6. Colour: Natural
7. Type of surface: Rib – type R1

320A Tp2 Tactile flags and slabs

1. Description: Tp2 - Tactile paving to crossing
2. Standard: To DD CEN/TS 15209.
3. Material: Precast concrete
 - 3.1. Manufacturer: Marshalls or similar approved
 - 3.1.1. Product reference: Tactile Blister Paving
4. Recycled content: N/A

5. Nominal sizes: 400 x 400 x 50mm
6. Colour: Buff
7. Type of surface: Blister – type B1

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

1. Material: Laying course sand to BS 7533-4

425 Fine aggregate for jointing concrete sett paving

1. Material: Limestone dust, 3-4 mm down

Execution

610 Material samples

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

615 Control samples

1. Sample areas: Complete as part of the finished work.
 - 1.1. Types of paving: - Concrete slab paving; - Natural stone sett paving; and - Concrete sett paving
 - 1.2. Location: All
 - 1.3. Size (minimum): 1.5 x 1.5 m
 - 1.4. Included features: Kerb
2. Approval of appearance and surface: Obtain before proceeding.

620 Adverse weather

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

625 Laying pavings – general

1. Appearance: Smooth and even with regular joints and accurate to line, level and profile.
2. Falls: To prevent ponding.
3. Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
 - 3.1. Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.

4. Slopes: Lay paving units upwards from the bottom of slopes.
5. Paving units: Free of mortar and sand stains.
6. Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

630 Levels of paving

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

635 Regularity of paved surfaces

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

637 Regularity of paved surfaces

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

645 Protection

1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Mortar bedded pavings: Keep free from traffic after laying:
 - 4.1. Pedestrian traffic (minimum): 4 days
 - 4.2. Vehicular traffic (minimum): 10 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 sand bedded 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.

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: 25 mm
4. Joint width: 2-5 mm.

Completion

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

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

Ω End of Section

Q28

Topsoil and soil ameliorants

Clauses

2 To be read with preliminaries/ general conditions.

System outline

115 Topsoil system for turfing and seeding

1. Description: For all grassed areas
2. Composition
 - 2.1. Soil: Imported topsoil to BS 3882
 - 2.2. Ameliorants: None
 - 2.3. Accessories: None

135 Planting bed topsoil system

1. Description: Tree pits & borders
2. Composition
 - 2.1. Topsoil: Imported topsoil to BS 3882
 - 2.2. Ameliorants: Sanitized and stabilized composted materials
 - 2.3. Accessories: None

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/ food waste certified to PAS 100
2. Give notice: before ordering or using.
3. Declaration of compliance in accordance with BS EN 13650: Required

310 Materials not permitted

1. Materials: - Peat; - Products containing peat; and - River and canal dredgings

315 Imported topsoil to BS 3882

1. Description: For planting beds
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: Contractor's choice

330 Imported manufactured topsoil/ growing medium

1. Description: For tree pits installed with 'root space' soil support system
2. Type: Urban tree planting medium
 - 2.1. Soil textural class: Sandy loam
3. Source: Submit proposals
4. Manufacturer: GREEN BLUE URBAN or similar approved
 - 4.1. Product reference: ROOTSOIL20A

330A Imported manufactured topsoil/ rain garden filter medium To rain gardens

1. Description: For rain gardens, refer to drawings: P1040-HLM-XX-00-DR-L-3092 and P1040-HLM-XX-00-DR-L-4503
2. Type: Rain garden planting/ filter medium
3. Permeability: 107mm/hr
4. Total Porosity: 47%
5. Grading/ PSD: Clay and silt (<0.063mm) 8%
Fine Sand (0.063mm - 0.2mm) 45%
Medium Sand (0.2mm - 0.6mm) 31%
Coarse Sand (0.6mm - 2.0mm) 8%
6. Manufacturer: Green-tree (Green-tech)
 - 6.1. Product reference: Rain Garden Filter Medium
Product code: GT-RAIN-GARDEN
7. Testing: Hydraulic conductivity of compacted filter medium to be tested prior to installation to ensure 107mm/hr permeability is achieved.

345 Aggregates

1. Description: For grass seeding
2. Source: Contractor's choice
 - 2.1. Product reference: Contractor's choice
3. Reference, description and grading
 - 3.1. Sand: Coarse grained, washed river sand with neutral pH
 - 3.2. Grit: Fine gravels and grits
 - 3.3. Crushed materials: Crushed and graded rubble
 - 3.4. Other aggregates or particles: Graded slate chips
4. Recycled content: 10% (minimum) to BS EN ISO 14021

360 Sanitized and stabilized composted materials certified to PAS 100

1. Description: For planting beds
2. Standard: In accordance with PAS 100.
3. Source: Contractor's choice
 - 3.1. Product reference: Contractor's choice
4. Horticultural parameters
 - 4.1. pH (1:5 water extract): 7.0-8.7.
 - 4.2. Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - 4.3. Moisture content (m/m of fresh weight): 35-55%.
 - 4.4. Organic matter content (minimum): 25%.
 - 4.5. Grading (air dried samples): 99% passing 25 mm screen, and 90% passing: 10 mm screen mesh aperture
 - 4.6. Carbon:Nitrogen ratio (maximum): 20:1.
5. Texture: Friable.
6. Objectionable odour: None.
7. Compost Certification Scheme certification: Required
8. Declaration of analysis: Submit.
9. Additional analyses: Phytotoxic elements
10. Samples: Supply 5 kg sample before ordering

Execution

625 Sample loads

1. Description: For imported topsoil
2. Deliver to site a sample load: of not less than 5 m³
3. Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - 3.1. Notice period: 5 days

650 Notice

1. Give notice before
 - 1.1. Setting out.
 - 1.2. Spreading topsoil.
 - 1.3. Applying herbicide.
 - 1.4. Applying fertilizer.
 - 1.5. Visiting site during maintenance period.
2. Period of notice: 3 working days

655 Mechanical tools

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

660 Grading subsoil for:

1. Description: Tree pits and planting beds
2. Standard: In accordance with BS 8601.
3. General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
4. Areas of thicker topsoil: Excavate locally.

5. Avoid compaction.
6. Excess subsoil: Remove.

665A Subsoil surface preparation for

1. Description: Tree pits and planting beds
2. Standard: In accordance with BS 3882 and BS 8601.
3. General: Excavate and/ or place fill to required profiles and levels, as section D20.
4. **Loosening**
 - 4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth
 - 4.1.1. Light and noncohesive subsoils: 600 mm
 - 4.1.2. Stiff clay and cohesive subsoils: 600 mm
 - 4.1.3. Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - 4.2. Wet conditions: Do not loosen subsoils.
5. Stones: Immediately before spreading topsoil, remove stones larger than 20 mm.
6. Remove from site: Arisings, contaminants and debris and Builders rubble

670 Inspecting formations

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

675 Preparation of undisturbed topsoil

1. Standard: In accordance with BS 4428.
 - 1.1. Grading and cultivation: Category C
2. Hard ground: Break up thoroughly.
3. Clearing: Remove visible roots and large stones with a diameter greater than 50 mm.
4. Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
5. Fallow period (minimum): One month
 - 5.1. Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.

680 Surplus topsoil to be retained

1. Generally: Spread and level on site:
 - 1.1. Locations: As directed by Contract Administrator
 - 1.2. Protected areas: Do not raise soil level within root spread of trees that are to be retained.

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 it is wetter than the plastic limit: less 3%, to BS 1377-2

710 Spreading topsoil on:

1. Description: Tree pits and planting beds
2. Standard: In accordance with BS 3882.
3. Temporary roads/ surfacing: Remove before spreading topsoil.
4. **Layers**
 - 4.1. Depth (maximum): 150 mm.
 - 4.2. Gently firm each layer before spreading the next.
5. Depth after firming and settlement: 300 mm
6. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

715 Loose tipping of topsoil

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

720 Finished levels of topsoil after settlement

1. In relation to adjoining paving, kerbs or hard surfaces: 25 mm below
2. In relation to dpc of adjoining buildings: Not less than 150 mm below.
3. In relation to adjacent grass areas: 25 mm below
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.

825 Applying fertilizer to proposed grass areas

1. Description: To turfed areas
2. Application: Before final cultivation and three to five days before seeding/ turfing.
3. Coverage:
4. Spread evenly, in transverse directions.
 - 4.1. Rate: 50 g/m²

845 Applying loose mulch

1. Description: For tree pits and planting beds
2. Timing: Immediately after planting
3. Preparation: Ensure that soil is thoroughly moistened, applying water where necessary
4. **Coverage of mulch (minimum)**

-
- 4.1. Planting beds (depth): 75 mm depth (Bark Mulch) or 100mm depth (Gravel Mulch)
 - 4.2. Trees: 75 litres per tree position, 75 mm depth
 - 4.3. Container planting: 75 mm depth
 5. Finished level of mulch: 30 mm below adjacent grassed or paved areas

Completion

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): 75 mm (Bark Mulch) or 100mm (Gravel Mulch)
4. Trees: Remulch.
 - 4.1. Depth (minimum): 75 mm
5. Container planting: Remulch.
 - 5.1. Depth (minimum): 75 mm

Ω End of Section

Q30

Seeding/ turfing

Clauses

2 To be read with preliminaries/general conditions.

General information/requirements

114 Soft Landscape Drawings References

1. P1040-HLM-XX-00-DR-L-4501
2. P1040-HLM-XX-00-DR-L-4502
3. P1040-HLM-XX-00-DR-L-4503

115 Seeded and turfed areas

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

120 Climatic conditions

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

145 Watering

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

150 Water restrictions

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

160 Notice

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

Preparation

210 Herbicide

1. Description: For all grassed areas
2. Type: Suitable for suppressing perennial weeds.
3. Timing: Allow fallow period before cultivation.

-
- 3.1. Duration: As manufacturer's recommendation

250 Soil requirements

1. Type
 - 1.1. Seeded areas: Mulching and top dressing system, as section Q28
 - 1.2. Turfed areas: Mulching and top dressing system, as section Q28
 - 1.3. Reinforced grass areas: N/A

Seeding

311 Grass seed

1. Description: As indicated on soft landscape plans
2. Supplier: Emorsgate Seeds
 - 2.1. Mixture reference: EL1 - Flowering Lawn Mixture
3. Application rate: 4 g/m²

319 Quality of seed

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

330 Sowing

1. General: Establish good seed contact with the root zone.
2. Method: To suit soil type, proposed usage, location and weather conditions during and after sowing
 - 2.1. Distribution: 2 equal sowings at right angles to each other and diagonally to main axis

Turfing

400 Cultivated turf

1. Description: As indicated on soft landscape plans
2. Supplier: Lindum
 - 2.1. Product reference: LT8 Festival PLUS
3. Properties of soil used for turf production: Peat-free, well drained sandy loam

430 Turfing generally

1. Time of year: Autumn or early winter
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: Mulching and top dressing system, as section Q28
 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: 1.2 m
2. Erection: On completion of seeding/ turfing.
3. Removal: After grass is well established. Fencing will remain the property of the Contractor

530 First cut of grassed areas

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

590 Cleanliness

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

Maintenance

610 Failures of seeding/ turfing

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

Ω End of Section

Q31

External planting

Clauses

2 To be read with preliminaries/general conditions.

General information/ requirements

111 Soft Landscape Drawings References

1. P1040-HLM-XX-00-DR-L-4501
2. P1040-HLM-XX-00-DR-L-4502
3. P1040-HLM-XX-00-DR-L-4503

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 in areas shown on drawings 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.

213 A Preferred Suppliers/Nurseries - Trees The preferred suppliers/nurseries for tree stock are (preference is given to YJ grown/origin stock):

1. Deepdale Trees Ltd.
Tithe Farm,

Hatley Road,
Potton,
Sandy,
Beds.
SG19 2DX
Tel: 01767 26 26 36
Fax: 01767 26 22 88
Contact: Matthias Anton - matthias@deepdale-trees.co.uk

2. **Wyevale Nurseries**
Wyevale Nurseries Ltd.
Kings Acre
Hereford, HR4 7AY
Tel: 01432 845200
Contact: Andy Congera - andyc@wevevale-nurseries.co.uk
- 3.

213B Preferred Suppliers/Nurseries - Shrubs & Herbaceous Perennials The preferred suppliers/nurseries for tree stock are:

1. **Wyevale Nurseries**
Wyevale Nurseries Ltd.
Kings Acre
Hereford, HR4 7AY
Tel: 01432 845200
Contact: Andy Congera - andyc@wevevale-nurseries.co.uk

215 Plants/ Trees – specification criteria

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

235 Container grown plants/ Trees

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

245 Labelling and information

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

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 - Not Used

Preparation of planting beds/ planting materials

300 Herbicide

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

Planting shrubs/ herbaceous plants/ bulbs

400 Random plant layout

1. Description: To all beds
2. Spacing: Refer to plant schedule

-
3. Density: Refer to plant schedule

401 Regular plant layout

1. Description: To hedge planting
2. Spacing: In regular, double staggered rows
3. Density: Refer to plant schedule

405 Shrub planting pits

1. Timing: Excavate 1-2 days (maximum) before planting.
2. Sizes: Wide enough to accommodate roots when fully spread and 75 mm deeper than root system
3. Pit bottom improvement Break up to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m².

415 Antidesiccant for conifers/ Evergreens

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

420 Climbing plants

1. Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
 - 1.1. Branches: Lightly secured to supports.
2. Climber supports: Stainless steel wires 3i (SW) Wire Trellis Kit 33cm spacing GWK-31-333m x 1m
 - 2.1. Base height: N/A
 - 2.2. Extent: Refer to soft landscape drawings
 - 2.3. Centres: Refer to soft landscape drawings
 - 2.4. Distance from wall: Refer to soft landscape drawings
3. Fixings: Stainless steel screw eyes
 - 3.1. Centres: 2 m

470 Formal hedges

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

471 Naturalized hedges

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

480 After planting

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

Planting trees

500 Tree planting

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

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.

505A Tree pits

1. In soft landscape
2. Sizes: Refer to P1040-HLM-XX-00-DR-L-4503
3. Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
4. Excavated material: Separate topsoil and subsoil material and stockpile for backfilling
5. Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 200 mm.
 - 5.1. Treatment: Gravel drainage layer
6. Pit sides: Scarify.
7. Backfilling material: 1:3 mixture of compost and topsoil

510 Tree pit root barriers

1. Locations: To all tree pits adjacent to paved areas
2. Manufacturer: GreenBlue Urban or similar and approved
 - 2.1. Product reference: ReRoot 600 / 1000 / 2000 or similar and approved
3. Thickness: 1.0 mm
4. Barrier depth: varies - To extend 300mm below depth of services or hard landscape
5. Foil liner: Not required
6. Top of root barrier in relation to finished topsoil level: 75 mm below ground level
7. Installation: With sides vertical. Remove all sharp objects adjacent to barrier.

512 Tree pit irrigation and ventilation accessories

1. Locations: To all tree pits
2. Manufacturer: GreenBlue Urban or similar and approved
 - 2.1. Product reference: 'RRURB1A' RootRain Urban or similar and approved
3. Type: Perforated plastics irrigation pipe with inlet
4. Pipe diameter: 60 mm
5. Ring diameter: 3000 mm (length)
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.

515A Tree pit drainage

1. Locations: As indicated on P1040-HLM-XX-00-DR-L-4503
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. Geotextile membrane:: Terram T1000 or equal approved.

526 Underground guying for:

1. Description: All trees
2. Manufacturer: GreenBlue Urban or similar and approved
 - 2.1. Product reference: 'SASLCB' Arborguy or similar and approved
3. Anchoring system: 3 no drive-in anchors
4. Installation: Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.

566 Tree protection

1. Manufacturer: GreenBlue Urban or similar and approved
 - 1.1. Product reference: Tree Collar or similar and approved
2. Type: Round
3. Material: Stainless Steel
4. Size: 75mm high x 300mm diameter
5. Colour: Stainless Steel
6. Support: N/A
7. General: Ensure that protection methods do not impede natural movement of trees or restrict growth.

576 Tree pit surfacing – loose fill

1. Surfacing material: Mulch, as section Q28
2. Area: 1000 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.

576A Tree pit surfacing - loose fill

1. Surfacing material: Loose gravel, as section Q23
2. Area: to Infill gap in tree grille
3. Depth: 130 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 - Not Used

Protecting/ maintaining/ making good defects

710 Maintenance

1. Duration: Carry out the operations in the following clauses from completion of planting until practical completion.
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

730 Protective fencing

1. Fencing type: Cleft chestnut pale fencing, as section Q40
2. Erection: On completion of planting.
3. Removal: After planting is well established

740 Cleanliness

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

750 Planting maintenance generally

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

780 Maintenance instructions

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

790 Final mulching

1. Timing: At end of the maintenance period.
2. Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
3. Planting beds: Remulch.
4. Depth (minimum): 75 mm (Bark Mulch) or 100mm (Gravel Mulch)
5. Trees: Remulch.
6. Depth (minimum): 75 mm

Ω End of Section

Q40

Fencing

Clauses - Not Used

Fencing systems - Not Used

Gates, posts and stiles - Not Used

Accessories - Not Used

Execution - Not Used

Completion - Not Used

Ω End of Section

Q41 Barriers/ guardrails

Clauses

2 To be read with preliminaries/ general conditions.

Types of barriers/ guardrails

110 Pedestrian restraint systems in metal (GR - Guardrail)

1. Standard: To BS 7818.
2. Manufacturer: Contractor's choice
 - 2.1. Product reference: Contractor's choice
3. Height above datum (minimum): 1100 mm
4. Rails and posts
 - 4.1. Material/ Protection: Galvanised Steel
5. Infill
 - 5.1. Class B.
 - 5.2. Type: Vertical
 - 5.3. Material/ Protection: Galvanised Steel
6. Surface finish: Polyester Powder Coated
 - 6.1. Colour/ Texture: RAL 7012 Basalt Grey
7. Foundations: To Engineer's details
8. Fixings: To Engineer's details
 - 8.1. Material for fixings: Similar material or coating to the connected items, or isolating washers/ bushes provided to prevent bimetallic corrosion.
 - 8.2. Resistance to vandalism: Spot welding
9. Other requirements: 1000 mm wide gate
10. Performance verification: Submit a certificate of the restraint system's conformity to BS 7818, issued by a United Kingdom Accreditation Service (UKAS) independent laboratory, prior to ordering materials.
11. Production inspection of posts: Required

240 Handrail systems (HR - Handrail to steps)

1. Description: To steps
2. System manufacturer: Contractor's choice
3. Material: Galvanised Steel
 - 3.1. Cross section: Oval profile, 50 mm wide and 39 mm
 - 3.2. Finish: Polyester powder-coated to RAL 7012 Basalt Grey
4. Height above ground surface (to upper surface of handrail)
 - 4.1. Upper handrail: 900 mm
5. Accessories: Posts

Performance/ inspection/ testing

305 Production inspection of posts

1. General: At place of fabrication, at rate of 15 per order selected randomly.

- 1.1. Weld defect levels: As stipulated in Highways Agency 'Manual of contract documents for highway works' Volume 1 'Specification for highway works' Series 400.

Installation

405 Competence

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

410 Work on or adjacent to highways

1. Requirement: Comply with the Department for Transport's 'Safety at street works and road works. A code of practice'. Retain a copy of this document on site at all times during the course of the works.

420 Alignment

1. Erection: Fences/ barriers to present a flowing alignment. Tops of posts to follow ground profile.
2. Tolerance: ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.

430 Erection generally

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

480 Concrete foundations for posts

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

Completion

900 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: Two weeks after request by contract administrator

Ω End of Section

Q50

Site/ street furniture/ equipment

Clauses

2 To be read with preliminaries/ general conditions.

Gates, barriers and parking controls

196 Removable bollards

1. Description: BL2
2. Manufacturer: Marshalls
 - 2.1. Product reference: Rhino RT R14b HD Steel Telescopic Bollard
3. Material: Stainless steel
 - 3.1. Finish as delivered: As manufactured
 - 3.2. Colour: None
4. Height above ground: 850 mm
5. Sectional size: 114 mm diameter
6. Top: Flat
7. Special features: As supplied
8. Method of fixing: Concrete base with manufacturer's standard lockable socket

Site and street furniture

262 Vent Grating - Below ground ventilation (V1)

1. Description: Flush stainless steel gratings within paving, to below ground ventilation boxes
2. Manufacturer: Enterprise
 - 2.1. Product reference: Rectangular Gully Vent
3. Material: Stainless Steel
 - 3.1. Finish: As supplied
4. Size: 420 (l) x 210mm (w)
5. Accessories/ Special requirements: Refer to drawings: P1040-HLM-XX-00-DR-L-3090 & 3092.
Refer to Architect's details: P1040-HLM-XX-00-DR-A-3010, detail D1.
Refer to manufacturer's installation details.
 - 5.1. Drainage: Gravel soakaway to each vent pipe, refer to engineer's details: P1040-ARP-XX-ZZ-SK-C-0010.
200 x 200 x 200mm gravel
soakaway for each vent pipe,
encased in geotextile
membrane.
Minimum 300mm freeboard to be maintained between gravel soakaway and gas vent pipe.
 - 5.2. Falls: Horizontal ventilation pipe to fall away from building at 1:100 to prevent water ingress.
6. Method of fixing: To manufacturer's details.

Installation

510 Concrete foundations generally

1. Standard: To BS 8500-2.
2. Concrete: Designated, not less than GEN 1

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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: 250 x 250 x minimum 300 mm deep
2. Components: Accurately positioned and securely supported.
3. Concrete fill: Fully compacted as filling proceeds.
4. Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
5. Temporary component support: Maintain undisturbed for minimum 48 hours.

520 Setting in earth

1. Holes: As small as practicable.
2. Components being fixed: Accurately positioned and securely supported.
3. Buried depth (minimum): 300 mm
4. Earth refill: Well rammed as filling proceeds.

550 Damage to galvanized surfaces

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

560 Site painting

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

Ω End of Section

