Dewsbury Bus Station, Landscape Specification

DBS-ECS-Z0-SL-T-L-00001

Report prepared by:

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Report to: **Willmott Dixon**

Report Title: **Dewsbury Bus Station Landscape Specification, ~~Ecus Ltd~~**

Version: **C04**

Issue Date: **April 2026**

Report Ref: **DBS-ECS-Z0-SL-T-L-00001**

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Version	Author	Description	Date
V0.1	JS	Originated report	21.03.24
V1.0	KM	QA1 & QA2	21.03.24
~~V1.1~~ P01	JS	Document Name updated (BIM compliance)	09.04.24
~~V1.2~~ C01	JS	Stage 5 updates – Q40	21.07.25
~~V1.3~~ C02	JS	Scoutmour availability Q25; Finial update Q40 Cl 340	19.08.25
C03	JS	Change to Marshalls products, ecological measures added to Q50	24.11.25
C04	JS	Change to kerb specification	21.04.26

Contents

D20
Excavating and filling

Generally/the site

110 Site investigation

1. Report: Check soil analysis of existing soil (west of site) for suitability for re-use for proposed planting in this area. Soil type will inform final species selection for wildflower meadow - a low fertility soil is required. Existing soil may require remediation accordingly or consider inverting the topsoil for the wildflower areas. If not suitable, soil to be removed and new soil imported.

Clearance/excavating

164 Tree roots

1. Protected area: Do not cut roots within precautionary protection area. Works within the vicinity of the existing trees to be overseen by appointed qualified arboriculture consultant acting as ECOW as recommended in Arb report.
    1.1. Size of area: As indicated on Arboricultural report 'West Yorkshire Combined Authority, Transforming Cities Fund: Dewsbury Bus Station Arboricultural Assessment Report'
2. Excavation in protected area
    2.1. Method: See Arboricultural method statement in above report
    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: Roots shall be wrapped with hessian material, which is to be kept damp until the area can be carefully backfilled with topsoil
5. Backfill: As dug material, enriched with amelioration as section Q31 ora s per Arboriculture consultant ECOW recommendations

168 Site clearance

1. Timing: Before topsoil stripping, if any.
2. General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.

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: 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

221 Treating topsoil

1. Treatment: Apply a suitable translocated non residual 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.

240 Adjacent excavations

1. Requirement: Where an excavation encroaches below a line drawn at an angle from the nearest formation level of another higher excavation, the lower excavation, all work within it and backfilling thereto, must be completed before the higher excavation is made.

245 Excavations adjacent to existing foundations – Contractor's design

1. Prior to commencing excavation: Excavate trial pits adjacent to existing foundations to determine extent and formation levels.
2. Submit proposals: For ensuring the safety of the existing foundations if the formation level for the new excavation will be below the formation level of the existing foundation.
3. Backfill material to new excavation: as clause 248

248 Backfill to excavations lower than foundation formation level

1. Critical level
   - 1.1. Distance between near faces of foundation and lower excavation less than 1 m: 150mm above foundation formation level
   - 1.2. Otherwise: 150 mm above the level at which a line drawn from the corner of the foundation formation nearest the excavation at an angle below the horizontal of 30° cuts the near face of the lower excavation.
2. Backfill material

2.1. Below critical level: Lean mix concrete
2.2. Above critical level: Hardcore filling as 710

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.

260 Inspecting formations

1. Give notice: Make advance arrangements for inspection of formations for foundations and filling formations, paving.
   1.1. Notice (minimum): 5 days
2. Preparation: Just before inspection remove the last 150 mm of excavation. Trim to required profiles and levels.
3. Seal: Within 4 hours of inspection, seal formations with blinding concrete.

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.

290 Foundations in made up ground

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

310 Unstable ground

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

320 Recorded features

1. Recorded foundations, beds, drains, manholes, etc.: Break out and seal drain ends
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:
   2.2. Shrub planting: 750 mm.
   2.3. Within 2 m of tree planting: 1000 mm.
3. Walls and slabs remaining: In every 10 m² of wall or slab, make a drainage hole at least 600 mm diameter.

Disposal of materials

450 Water

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

454 Ground water level, springs or running water

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

460 Permanent drainage system

1. Disposal of water from the excavations through system: Select from list

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.

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.

520 Frost susceptibility

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

535 Compaction generally

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

540 Benching in fill

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

615 Loose tip filling for landscape areas

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

700 Backfilling around foundations

1. Under oversite concrete and pavings: Hardcore to engineer's specification
2. Under grassed or soil areas: Material excavated from the trench, laid and compacted in 300 mm maximum layers.

Bioremediation - Not Used

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

Ω End of Section

Q10
Kerbs/ edgings/ channels/ paving accessories

Types of kerbs/edgings and channels

111 Precast concrete Kerb Type KB01

1. Description: KB01 - KERBS See Dwg No: DBS-ECS-Z0-SL-DR-L-00001 and engineer's drawings for location and setting out information respectively
2. Standard: To BS EN 1340.
3. Designations: HB2 Kerb, half battered
4. Size (width x height x length): 125 x 255 x 915 mm
5. Special shapes: Dropper kerbs DL1 and DR1 and Crossing Kerbs to footway crossings; radius kerbs as required. See engineers' drawings for setting out
6. Finish: As cast
7. Colour: Natural
8. Bending strength: Characteristic bending strength of 5 MPa, with no individual result less than 4 MPa
9. Suitability: Laid in accordance with BS 7533- 102:2025
10. Abrasion resistance: ≤ 23mm (Wide Wheel Abrasion Test)
11. Slip/ skid resistance: Mean unpolished skid resistance value (USRV) : > 45.
12. Bedding: To engineer's specification
13. Joints generally: To engineer's specification
14. Sealant movement joints: As required to engineer's specification
15. Accessories: As required to engineer's specification

112 Precast concrete Kerb Type KB02

1. Description: KB02 - KERBS See Dwg No: DBS-ECS-Z0-SL-DR-L-00001 and engineer's drawings for location and setting out information respectively
2. Standard: To BS EN 1340: 2003
3. Designations: BN1 kerb, bullnosed
4. Product Name: Bullnosed kerb, straight (RK0150000) by Marshalls (www.marshalls.co.uk) or similar approved
5. Size (width x height x length): 150 x 305 x 915 mm
6. Special shapes: Dropper kerbs Left and Right and Centre Kerbs to footway crossings; radius kerbs as required. See engineers' drawings for setting out
7. Finish: As cast
8. Colour: Natural
9. Bending strength: Characteristic bending strength of 5 MPa, with no individual result less than 4 MPa
10. Suitability: Laid in accordance with BS 7533- 102:2025
11. Abrasion resistance: ≤ 23mm (Wide Wheel Abrasion Test)
12. Slip/ skid resistance: Mean polished skid resistance value (PSRV) >45, Mean unpolished skid resistance value (USRV) >45
13. Bedding: To engineer's specification
14. Joints generally: To engineer's specification

15. Sealant movement joints: As required to engineer's specification
16. Accessories: As required to engineer's specification

113 Precast concrete Kerb Type E01

1. Description: E01 - KERBS See Dwg No: DBS-ECS-Z0-SL-DR-L-00001 and engineer's drawings for location and setting out information respectively
2. Standard: To BS EN 1340: 2003
3. Designations: EF: Concrete Edging Kerb
4. Product Name: Flat Top Edging kerb by Marshalls (www.marshalls.com) or similar approved
5. Size (width x height x length): 50 x 150 x 900 mm
6. Special shapes: Not required
7. Finish: As cast
8. Colour: Natural
9. Bending strength: As required for purpose
10. Weathering resistance: Freeze/thaw: ≤ 1.0 kg/m² as a mean with no individual value > 1.5 kg/m²
11. Abrasion resistance: ≤ 23mm (Wide Wheel Abrasion Test)
12. Slip/ skid resistance: Mean polished skid resistance value (PSRV) >45, Mean unpolished skid resistance value (USRV) >45
13. Bedding: To engineer's specification
14. Joints generally: To engineer's specification
15. Sealant movement joints: As required to engineer's specification
16. Accessories: As required to engineer's specification

114 Precast concrete Kerb Type E02

1. Description: E02 - KERBS See Dwg No: DBS-ECS-Z0-SL-DR-L-00001 and engineer's drawings for location and setting out information respectively
2. Standard: To BS EN 1340: 2003
3. Designations: Concrete kerb with exposed granite aggregate finish
4. Product Name: Conservation X Edging by Marshalls (www.marshalls.co.uk) or similar approved
5. Size (width x height x length): 63 x 150 x 900 mm
6. Special shapes: Not required
7. Finish: As cast
8. Colour: Silver
9. Bending strength: Characteristic bending strength of 3.5 MPa with no individual result less than 2.8 MPa
10. Weathering resistance: Class 3
11. Abrasion resistance: ≤ 23mm (Wide Wheel Abrasion Test)
12. Slip/ skid resistance: Mean polished skid resistance value (PSRV) >45, Mean unpolished skid resistance value (USRV) >45
13. Bedding: To engineer's specification
14. Joints generally: To engineer's specification
15. Sealant movement joints: As required to engineer's specification
16. Accessories: As required to engineer's specification

115 Precast concrete Kerb Type Q01

17. Description: QBN - KERBS See Dwg No: DBS-ECS-Z0-SL-DR-L-00001 and engineer's drawings for location and setting out information respectively
18. Standard: To BS EN 1340: 2003
19. Designations: QBN kerb
20. Product Name: Quadrant kerb, straight (RK4710000) by Marshalls (www.marshalls.co.uk) or similar approved
21. Size (width x height x length): 255 x 455mm
22. Special shapes: NA. See engineer's drawings for setting out
23. Finish: As cast
24. Colour: Natural
25. Bending strength: Characteristic bending strength of 5 MPa, with no individual result less than 4 MPa
26. Suitability: Laid in accordance with BS 7533- 102:2025
27. Abrasion resistance: ≤ 23mm (Wide Wheel Abrasion Test)
28. Slip/ skid resistance: Mean polished skid resistance value (PSRV) >45, Mean unpolished skid resistance value (USRV) >45
29. Bedding: To engineer's specification
30. Joints generally: To engineer's specification
31. Sealant movement joints: As required to engineer's specification
32. Accessories: As required to engineer's specification

200 Aluminium Edging - Edging Type E03

1. Description: Aluminium edging
2. Manufacturer: Kinley (www.kinley.co.uk)
    2.1. Product reference: ExcelEdge AluExcel Aluminium Rigid: 101017 for straight runs and Flexible: 101016 for curved areas
3. Size: 4mm thick x 2500mmm long x 50mm deep (dependent on application and subject to existing tree roots etc)
4. Type/ Material: 6063A aluminium
    4.1. Finish: Mill finish
    4.2. Colour: Aluminium
5. Accessories: 250mm long galvanised steel spiral fixing stake to secure it down
6. Bedding: MOT Type 1 sub base to engineer's detail
7. Joints: NA

Roads/paving accessories/ marking/ demarcation - Not Used

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.

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.

650 Sealant movement joints

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

Ω End of Section

Q23
Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays

Types of surfacing

111 Permeable Resin Bound Stone – Paving Type P09

1. Description: Arboresin surfacing by GreenBlue Urban (www.greenblue.com/) to area of existing trees as shown on DBS-ECS-Z0-SL-DR-L-00001
2. Surface course: Washed clean and dry aggregate (6-10mm aggregate size) should be laid in the base of the area at a depth of 15-20mm, leaving 50mm depth free for ArboResin to be laid. Apply a ring collar or similar around the tree trunk to provide a neat edge and to provide the tree trunk room for growth.
   - 2.1. Type: 6-10mm aggregate size, triple washed and dried
   - 2.2. Source: GreenBlue Urban
   - 2.3. Colour: Silver Grey
   - 2.4. Resin:: Mix resin (cold applied clear polyurethane resin) with remaining stone as per manufacturer's recommendations and spread evenly over the surface working into all corners and trowel smooth and level using a suitable metal float.
3. Completion: Compact to produce a firm, regular surface, stable in use. Quartz sand or glass grit to be scattered on the uncured surface to provide additional slip resistance.
4. Edging:: Arboresin to be laid up to Aluminium edging "AluExcel" by Kinley systems (www.kinley.co.uk/) installed to manufacturer's recommendations. Required depth to provide secure edging but to avoid damage to existing tree roots.
5. Reference:: **Works to be undertaken under the supervision of a qualified arboriculture consultant acting as ECOW as per Arboricultural Method Statement.**
   Refer to: "ArboResin Resin bound tree pit surfacing Installation guide" for full details

190 Bonded chippings for pedestrian areas

1. Description:
2. Subgrade improvement layer:
   - 2.1. Compacted thickness:
3. Geotextile:
   - 3.1. Manufacturer:
     - 3.1.1. Product reference:
4. Granular sub-base:
   - 4.1. Compacted thickness:
5. Blinding layer: Clean angular stone chippings to BS EN 13043, nominal size 20 mm.
   - 5.1. Thickness (minimum): 25 mm.
6. Base course
   - 6.1. Binder: Cold bitumen emulsion to BS 434-1, class A1 60.
   - 6.2. Application: Uniformly spray binder at a rate of 5 L/m². Cover with stone dust or sand. Brush into interstices.
   - 6.3. Consolidation: Before application of surface course, allow surface to dry, then compact.
7. Surface course
   - 7.1. Slip/ skid resistance:

7.2. Binder: Cold bitumen emulsion to BS 434-1, class A1 60.
7.3. Chippings: To BS EN 13043, nominal size 6 mm.
7.3.1. Colour:
7.4. Application: Uniformly spray binder at a rate of 2 L/m². Cover with clean chippings. Provide 100-105% shoulder to shoulder coverage to BS 598-1 and compact.
8. Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use. Do not crush chippings.
9. Completion: Before trafficking, remove excess chippings.

Laying

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

400 Slip resistance testing

1. Surfaces to be tested: Arboresin surfacing around existing trees
1.1. Surface condition: Dry and wet
2. Timing: Post final clean, prior to handover

3. Period of notice (minimum): 3 working days.
4. Test standard: To BS 7976
   4.1. Testing authority: A UKAS accredited laboratory
   4.2. Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: Project manager.
   4.3. Report: Submit.
   4.4. Format: As required under BS 7976

Ω End of Section

Q24
Interlocking brick/ block roads/ pavings

Types of paving

110 Conventional concrete block paving Paving Type P04

1. Description: As shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001- Paving Type P04
2. Subgrade improvement layer: If required - to engineer's specification
   - 2.1. Compacted thickness: To engineer's specification
3. Base Course: AC 20, 80mm depth
4. Geotextile: If recommended by engineer
   - 4.1. Manufacturer: Contractor's choice
     - 4.1.1. Product reference: Contractor's choice
5. Granular sub-base: MOT Type 1 SHW Cl.803 to engineer's specification
   - 5.1. Compacted thickness: 170 mm
6. Laying course
   - 6.1. Material: 30mm Sand
     - 6.1.1. Category: To engineer's specification
   - 6.2. Method: in accordance with BS7533:101:2021: Compaction
   - 6.3. Nominal thickness after compaction: 30mm
7. Blocks: To BS EN 1338.
   - 7.1. Manufacturer: Marshalls (www.marshalls.co.uk)
     - 7.1.1. Product reference: Conservation X Block
   - 7.2. Sizes: 240x160x60mm
   - 7.3. Special blocks: None
   - 7.4. Arrises: Square edged chamfer
   - 7.5. Colour/ Finish: Silver Grey
   - 7.6. Recycled content: Not less than 6%
   - 7.7. Requirements:
     - 7.7.1. Freeze/ thaw resistance: Class 3
     - 7.7.2. Abrasion resistance: Class 3
     - 7.7.3. Slip/ Skid resistance: PSRV >45 USRV >45
     - 7.7.4. CBR: 2.5%
8. Jointing
   - 8.1. Material: Sand
   - 8.2. Joint width: 2-5mm
9. Setting out
   - 9.1. Bond: Stretcher
   - 9.2. Features: Single soldier course edging to perimeter of block paving laid on mortar bed in accordance with manufacturer and engineer’s detail

130 Natural stone block Paving Type 05C/05D

1. Description: As shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001

2. Subgrade improvement layer: To engineer's specification
   2.1. Compacted thickness: To engineer's specification
3. Granular sub-base: To engineer's specification
   3.1. Compacted thickness: To engineer's specification
4. Geotextile: If required - to engineer's specification
   4.1. Manufacturer: Contractor's choice
      4.1.1. Product reference: Contractor's choice
5. Laying course
   5.1. Material: sand bed to engineer's specification and in accordance with manufacturer's recommendations
   5.2. Compaction: to engineer's specification
   5.3. Nominal thickness after compaction: To engineer's specification
6. Blocks
   6.1. Standard: To BS EN 7533
   6.2. Supplier: Marshalls
      6.2.1. Product reference: Scoutmoor Yorkstone or similar approved subject to availability
   6.3. Sizes: 100x300x70mm (Type 05D) / 200x300x70mm (Type 05C)
   6.4. Colour/ Finish: Blue Grey to Brown fine grained Yorkstone; Diamond Sawn finish
   6.5. Requirements:
      6.5.1. Petrographical description/ stone type: Pale greenish grey fine-grained sandstone
      6.5.2. Slip resistance: Sawn 90 (dry) / 87 (wet)
7. Method of cutting sett sides: Diamond sawn.
8. Jointing
   8.1. Material: sand to engineer's specification and in accordance with manufacturer's recommendations
   8.2. Joint width: As recommended by manufacturer / paving supplier
9. Setting out: Stretcher bond as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001 – long edge running parallel to adjacent building/kerb as indicated
   9.1. Bond: Stretcher
10. Sealer/ Stabilizer: as recommended by manufacturer
11. Accessories: If required, slip resistant paint to engineer's detail

Execution

200 Execution generally – concrete block and clay paver paving

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

205 Execution generally – natural stone paving

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

211 Colour banding

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

220 Samples

1. General: Before ordering, submit samples of natural stone 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: Natural stone paving as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001
    1.2. Size (minimum): 3.0 x 3.0 m
    1.3. Features to be included: Recessed manhole cover infill and junction with building facade
2. Give notice: When ready for inspection.
3. Timing: Obtain approval of appearance before proceeding.

240 Adverse weather

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

325 Drainage holes in existing bases

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

350 Granular layer over existing bases

1. Material: To engineer's specification
2. Thickness: To engineer's specification
3. Compaction: To engineer's specification
4. Blinding: To engineer's specification

385 Mortar bedded

1. Description: EDGE RESTRAINT
2. Foundation
    2.1. Size: To engineer's specification
    2.2. Concrete: As section E10 To engineer's specification.
3. Bedding
    3.1. Thickness: 10 mm minimum to 40 mm maximum.
    3.2. Mortar: As section Z21 To engineer's specification.
4. Laying: Bed units on foundation, and secure with continuous mortar haunching.

4.1. Keep exposed faces clean and free from mortar.

5. Jointing: To engineer's specification

425 Tooled coloured joints in mortar bedded units

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

485 Laying blocks/ pavers/ setts

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

505 Regularity of paved surfaces

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

Completion

600 Sealer/ Stabilizer for new blocks and setts

1.1.1. Not used – specification revised to use a sand bed construction

615 Completion of paving

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

620 Slip resistance testing

1. Surfaces to be tested: Natural stone paving
   1.1. Surface condition: Dry and wet
2. Timing: Post final clean, prior to handover

3. Period of notice (minimum): 3 working days.
4. Test standard: To BS 7976-2
   4.1. Testing authority: A UKAS accredited laboratory
   4.2. Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: Project manager.
   4.3. Report: Submit.
      4.3.1. Format: As required under BS 7976-2

Ω End of Section

Q25
Slab/ brick/ sett/ cobble pavings

General

120 Concrete flag paving Type P02/03

1. Description: Locations as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001
2. Subgrade improvement layer: To engineer's specification
   2.1. Compacted thickness: To engineer's specification
3. Granular sub-base: MOT Type 1 SHW Cl.803 to engineer's specification
   3.1. Compacted thickness: 170mm
4. Base: N/A
   4.1. Thickness: N/A
5. Laying course: 30mm Sand to engineer’s specification or as recommended by manufacturer
6. Paving units: Conservation X Paving (www.marshalls.co.uk); Paving Type P02: 450x450x50mm Charcoal colour (FL2930200); Paving Type P03: 450x450x50mm Silver Grey colour (FL2930100)
7. Jointing: 2-5mm Sand to engineer’s specification or as recommended by manufacturer
   7.1. Bond: Stretcher as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00005
   7.2. CBR: 2.5%

121 Concrete Corduroy flag paving Type P05

1. Description: Locations as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001
2. Subgrade improvement layer: To engineer's specification
   2.1. Compacted thickness: To engineer's specification
3. Granular sub-base: MOT Type 1 SHW Cl.803 to engineer's specification or manufacturer's recommendations
   3.1. Compacted thickness: 100mm
4. Base: To engineer's specification
   4.1. Thickness: To engineer's specification
5. Laying course: 25mm Sand to BS 7533 - 4:2006 and to engineer’s specification or as recommended by manufacturer
6. Paving units: Marshalls Tactile Flag (www.marshalls.co.uk); Paving Type P05: 400x400x50mm Buff colour (FL6181050).
1. Jointing: 2-5mm sand to engineer’s specification or as recommended by manufacturer
   6.1. Bond: Square bond as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001

Commented [JS1]: To update

121A Ladder & Tramline Tactile flag paving Type P06

1. Description: Locations as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001
2. Subgrade improvement layer: To engineer's specification
   2.1. Compacted thickness: To engineer's specification
3. Granular sub-base: MOT Type 1 SHW Cl.803 to engineer's specification or manufacturer's recommendations
   3.1. Compacted thickness: 100mm
4. Base: To engineer's specification
   4.1. Thickness: To engineer's specification

5. Laying course: 25mm Sand to BS 7533 - 4:2006 and to engineer's specification or as recommended by manufacturer
6. Paving units: Marshalls Cycle Way (www.marshalls.co.uk); Paving Type P06: 400x400x50mm Buff colour (FL6131050).
7. Jointing: 2-5mm sand to engineer's specification or as recommended by manufacturer
   7.1. Bond: Square bond as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001

Commented [JS2]: To update

122 Concrete tactile flag paving Type P07A

1. Description: Locations as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001
2. Subgrade improvement layer: To engineer's specification
   2.1. Compacted thickness: To engineer's specification
3. Granular sub-base: MOT Type 1 SHW Cl.803 to engineer's specification or manufacturer's recommendations
   3.1. Compacted thickness: 100mm
4. Base: To engineer's specification
   4.1. Thickness: To engineer's specification
5. Laying course: 25mm Sand to BS 7533 - 4:2006 and to engineer's specification or as recommended by manufacturer
6. Paving units: Marshalls Tactile Flag (www.marshalls.co.uk); Paving Type P07A: 450x450x70mm Red colour (FL6031500) for controlled crossings
7. Jointing: 2-5mm sand to engineer's specification or as recommended by manufacturer
   7.1. Bond: Square bond as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001

System performance - Not Used

Products

305 Granular material for layer over existing bases

1. Material: To engineer's specification

320 Concrete deterrent paving Type P10

1. Description: Locations as shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001
2. Subgrade improvement layer: To engineer's specification
   2.1. Compacted thickness: To engineer's specification
3. Granular sub-base: MOT Type 1 SHW Cl.803 to engineer's specification or manufacturer's recommendations
   3.1. Compacted thickness: To engineer's specification
4. Base: To engineer's specification
   4.1. Thickness: To engineer's specification
5. Laying course: 30mm Sand to engineer's specification or as recommended by manufacturer
6. Paving units: Marshalls Cycleway Demarcation Block (www.marshalls.co.uk); Paving Type P10: 200 x 200 x 60mm Natural colour (PV9002553)
7. Jointing: 2-5mm sand to engineer's specification or as recommended by manufacturer
   7.1. Bond: Herringbone pattern laid at 90 degrees to create an irregular surface

NOTE: Standard Marshalls deterrent paving ("Tactile Lambeth") not suitable as not tolerant of de-icing salt. Above product selected from discussions with Marshalls.

365 Geotextile sheet

1. Description: As required
2. Manufacturer: To engineer's specification
   2.1. Product reference: To engineer's specification

440 Ready-mixed mortar

1. Not used – specification revised to sand bed

Execution

610 Material samples

1. Samples representative of colour and appearance of designated materials: Submit before placing orders.
   1.1. Designated materials: Natural stone flags, blocks and tactiles

615 Control samples

1. Sample areas: Complete as part of the finished work.
   1.1. Types of paving: Natural stone flag / block paving
   1.2. Location: As shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00001
   1.3. Size (minimum): 3.0 x 3.0 m
   1.4. Included features: Recessed manhole cover infill and interface with adjoining building facade
2. Approval of appearance and surface: Obtain before proceeding.

620 Adverse weather

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

625 Laying pavings – general

1. Appearance: Smooth and even with regular joints and accurate to line, level and profile.

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

630 Levels of paving

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

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 maximum difference in level).
   2.2. Recessed, filled joints: Difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
   2.3. Unfilled joints: Difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

640 Colour banding

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

645 Protection

1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Mortar-bedded pavings: Keep free from traffic after laying:
   4.1. Pedestrian traffic (minimum): Four 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 7533-101, 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.

715 Laying flag and slab paving – mortar laying course and jointing

1. Not used – specification revised to sand bed

Completion

930 Slip resistance testing

1. Surfaces to be tested: Natural stone paving
   1.1. Surface condition: dry and wet
2. Timing: Post final clean, prior to handover
3. Period of notice (minimum): Three working days.
4. Test standard: To BS EN 16165
   4.1. Testing authority: A UKAS-accredited laboratory
   4.2. Witnessing/ Certification: Arrange for tests to be witnessed/ certified by: Project manager.
   4.3. Report: Submit.
      4.3.1. Format: As required under BS EN 16165

Ω End of Section

Q28
Topsoil and soil ameliorants

System outline

135 Planting bed topsoil system

1. Description: FOR GENERAL PLANTING AREAS (not wildflower meadow)
2. Composition
   - 2.1. Topsoil: Imported topsoil to BS 3882
   - 2.2. Ameliorants: Sanitized and stabilized composted materials certified to PAS 100
   - 2.3. Accessories: Mycorrhizal inoculant to be applied to the roots of all hedge and tree plants

145 Planting pit backfilling topsoil system

1. Description: FOR SHRUB / HERBACEOUS / HEDGE PLANTING PITS
2. Composition
   - 2.1. Topsoil: Imported topsoil to BS 3882
   - 2.2. Ameliorants: Sanitized and stabilized composted materials certified to PAS 100
   - 2.3. Accessories: Mycorrhizal inoculant to be applied to all hedge planting roots

145A Planting pit backfilling topsoil system

1. Description: FOR NEW TREE PLANTING PITS
2. Composition
   - 2.1. Topsoil: Imported topsoil to BS 3882 to supplement existing topsoil
   - 2.2. Ameliorants: Sanitized and stabilized composted materials certified to PAS 100
   - 2.3. Accessories: Mycorrhizal inoculant to be applied to all tree roots

145B Planting pit backfilling topsoil system

1. Description: FOR EXISTING TREE PLANTING PITS
2. Composition
   - 2.1. Topsoil: Imported topsoil to BS 3882 to supplement existing topsoil if deficiencies evident upon inspection during works
   - 2.2. Ameliorants: Sanitized and stabilized composted materials certified to PAS 100
   - 2.3. Accessories: Wrap exposed roots in damp hessian under supervision of qualified Arboriculture consultant

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.

315 Imported topsoil to BS 3882

1. Description: FOR PLANTING BEDS & TREE PITS
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: Submit proposals
   5.1. Product reference: Submit proposals

360 Sanitized and stabilized composted materials certified to PAS 100

1. Description: FOR ALL PLANTING BEDS AND TREE PITS
2. Standard: In accordance with PAS 100 and Compost Quality Protocol
3. Source: Submit proposals
   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:
8. Declaration of analysis: Submit.
9. Additional analyses: Not required
10. Samples: Not required

380 Mycorrhizal inoculant

1. Description: Root dip all new hedge and tree plants
2. Manufacturer: Submit proposals
   2.1. Product reference: Submit proposals

401 Organic fertilizers

1. Description: TO ALL NEW TREE PLANTING PITS (& AS REQUIRED TO ALL PLANT BEDS)
2. Manufacturer/ source: Submit proposals

2.1. Product reference: Submit proposals
3. Standard: In accordance with the Fertilizer Industry Assurance Scheme (FIAS)
4. Purpose: Establishment fertilizer
5. Type: Sanitized and stabilized compost
6. Availability to plants: Slow-release

Execution

605 Site investigation

1. Report: See section D20.

610 Topsoil analysis

1. Soil to be analysed: Existing soil (western side of site)
2. Soil analyst: Submit proposals
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 contaminants
   4.3. Report detailing soil analyst's recommendations.

620 Importing topsoil

1. Give notice: Before stripping topsoil for transfer to site.
   1.1. Notice period: 7 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: FOR PLANTING BEDS AND TREE PITS
2. Timing: Submit at handover.
3. Contents
   3.1. Full description of all soil components.
   3.2. Record of source for all soil components.
   3.3. Record drawings showing the location and depth of all soils by type and grade.
   3.4. Declaration of analysis: in accordance with BS 3882, clause 6 and Table 1.
4. Number of copies: Two

635 Documentation for compost and composted materials

1. Description: FOR IMPORTED SOIL IMPROVERS
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:
4. Number of copies: Two

650 Notice

1. Give notice before
   1.1. Spreading topsoil.
   1.2. 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.

665 Subsoil surface preparation for:

1. Description: PLANT BEDS AND TREE PITS
2. Standard: In accordance with BS 3882.
3. General: Excavate and/ or place fill to required profiles and levels, as section D20.
4. Loosening
   4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth
      4.1.1. Light and noncohesive subsoils:
      4.1.2. Stiff clay and cohesive subsoils:
      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:

675 Preparation of undisturbed topsoil

1. Standard: In accordance with BS 4428.
   1.1. Grading and cultivation: To suit cultivation operations specified in Q30 for wildflower meadow areas (west of site)
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): Six months
   5.1. Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.

685 Surplus materials to be removed

1. Topsoil removal from site: If existing topsoil is not fit for purpose / cannot be altered for wildflower meadow areas it is to be removed from site

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): 3.0 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. Description: PLANTING BEDS & TREE PITS
2. Standard: In accordance with BS 3882.
3. Temporary roads/ surfacing: Remove before spreading topsoil.
4. Layers
   4.1. Depth (maximum): 400 mm for shrub/herbaceous planting. For Tree pits see Q31
   4.2. Gently firm each layer before spreading the next.
5. Depth after firming and settlement: 400 mm
6. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

718 Final cultivation

1. Description: FOR PLANT BEDS & TREE PITS
2. Compacted topsoil: Break up to full depth.

3. Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
4. Depth: 450 mm
5. Particle size (maximum): 5 mm
6. Timing: Within a few days before planting
7. Weather and ground conditions: Suitably dry.
8. Surface: Leave regular and even.
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 below for plant beds & tree pits(to allow for 50/75mm depth of mulch above). 25mm above for seeded areas.
2. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
3. Adjoining soil areas: Marry in.
4. Thickness of turf or mulch: Included.

755 Site-made growing media

1. Description: For Wildflower Meadow
2. Quantity: Re-use existing topsoil and subsoil on western side and modify to reduce fertility and make it fit for wildflower meadow (**Final proprietary seed mix to be confirmed following soil analysis**). If soil analysis indicates topsoil is too fertile for wildflower, consider inverting it for these areas (not tree pits). Supplement as necessary to make up any deficiency of growing media existing on site and to complete the work. **Care to be taken when working in proximity to existing trees. No excavations permitted within root protection area (RPA) - See Arboriculture report for details.** Proposed tree pits to use existing and new topsoil as appropriate.
3. Composition
    3.1. Base material: Existing subsoil and topsoil
    3.2. Additional materials: Sand if required
4. Crumb structure: Made up of discernible crumbs.
5. Nutrient content: Index level 0-1 phosphorus levels, index level 1 for potassium, low-med nitrogen levels (<0.25-0.5%)

805 Applying soil ameliorant

1. Description: As required for existing topsoil where it is being used for new tree pits / plant beds.
2. Type: As required following soil analysis to ensure the topsoil is fit for purpose and meets BS3882
3. Fully incorporate into topsoil to a depth of as recommended by supplier.
4. Application: Spread evenly.
    4.1. Timing: Apply prior to cultivation.
    4.2. Rate: as recommended by supplier
5. Timing: Prior to cultivation.
6. Other requirements: Submit details of recent chemical and physical analysis before ordering

810 Applying compost

1. Description: TO PLANT BEDS AND TREE PITS (as clause 360)

2. Application rate for trees and shrubs: 25-50mm thick layer. Tree pits 1:3 ratio mix of compost and topsoil into backfill material
   2.1. Timing: Apply prior to cultivation.
3. Other requirements: None

815 Applying lime

1. Description: As required for existing topsoil where it is being used for new tree pits / plant beds.
2. Spread evenly.
   2.1. Timing: Immediately before cultivation.
   2.2. Rate: As required based on soil analysis to ensure the soil is modified for intended purpose and to meet BS3882

820 Applying general fertilizer

1. Description: As required for existing topsoil where it is being used for new tree pits / plant beds.
2. Application: Spread evenly, carefully incorporating below mulch materials.
   2.1. Timing: Immediately before cultivation.
   2.2. Application rate: As required based on soil analysis to ensure the soil is modified for intended purpose and to meet BS3882

845 Applying loose mulch

1. Description: TO ALL TREE PITS AND PLANT BEDS
2. Timing: Immediately after planting and watering
3. Preparation: Water soil thoroughly
4. Product:: Bark Nuggets by Melcourts Ltd (www.melcourt.co.uk) or similar approved
5. Size:: Nominal particle size range 15 to 65mm
6. Coverage of mulch (minimum)
   6.1. Planting beds (depth): 50mm shrubs
   6.2. Trees: 75mm trees and hedges
7. Finished level of mulch: 25 mm below adjacent grassed or paved areas

Completion - Not Used

Ω End of Section

Q30
Seeding/ turfing

General information/requirements

120 Climatic conditions

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

145 Watering

1. Quantity: Wet full depth of subsoil/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.

150 Water restrictions

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

170 Setting out

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

Preparation

210 Herbicide

1. Description: FOR WILDFLOWER MEADOWS
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: FOR WILDFLOWER AREAS: Existing subsoil / modified or inverted topsoil

Seeding

312 Wildflower seed mixture

1. Description: See Planting Plan: DBS-ECS-Z0-SL-DR-L-00002 & 00003 for locations
2. Supplier: Emorsgate Seeds (www.wildseed.co.uk/)
    2.1. Mixture reference: See Planting Plan: DBS-ECS-Z0-SL-DR-L-00003 for mixes
3. Origin of each species (as defined in Flora Locale's Code of practice for collectors, growers and suppliers of native flora): British Native and UK Origin
4. Application rate: 4g/m2 and 2g/m2 see DBS-ECS-Z0-SL-DR-L-00003 for details

330 Sowing

1. General: Establish good seed contact with the root zone.

2. Method: In accordance with seed manufacturer's recommendations
   2.1. Distribution: 2 equal sowings at right angles to each other and diagonally to main axis

336 Wildflower sowing season

1. Wildflower seed generally: March to May or August to October

Turfing - Not Used

Protecting/cutting

510 Protective fencing

1. Fencing type: Polypropylene barrier fencing
   1.1. Height: 1m
2. Erection: On completion of seeding using steel fencing posts.
3. Removal: After meadow is well established

540 First cut of

1. Description: WILDFLOWER MEADOWS
2. Timing: Mid to late summer
3. Debris and litter: Remove.
   3.1. Stones and earth clods larger than 25 mm in any dimension: Remove
4. Height of first cut: 50-75mm
5. Mower type: Contractor's choice
6. Arisings: Remove from site

590 Cleanliness

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

Maintenance

610 Failures of seeding/ turfing

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

660 Maintaining grassed areas with annual 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. Timing of first cut: Mid to late summer
4. Height of first cut: 50-75 mm

5. Subsequent cutting: As necessary, so the height of growth does not exceed 100 mm.
   5.1. Height of cut: 50-75 mm
6. Trimming: All edges.
   6.1. Arisings: Remove
7. Watering: When instructed

Ω End of Section

Q31
External planting

General information/ requirements

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.

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. Planting shrubs.
   1.2. Planting trees into previously dug pits.
   1.3. 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. Mulch applied after planting: Mulching 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:
7. Species: True to name.
8. Origin/ Provenance:
9. Definition: Origin and Provenance have the meaning given in the National Plant Specification.

216 Plants/ Trees – specification criteria

1. Name, forms, dimensions and other criteria: To the relevant part of BS 3936 and in accordance with the National Plant Specification.

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: 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. Written approval nmay be required from Local Planning Authority.

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.

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

305 Weed control

1. Description: IF WEEDS HAVE ARISEN PRIOR TO PLANTING
2. Locations: PLANT BEDS/ TREE PITS
3. General: Prevent weeds from seeding and perennial weeds from becoming established, by hand weeding.

Planting shrubs/ herbaceous plants/ bulbs

405 Shrub planting pits

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

420 Climbing plants

1. Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
   1.1. Branches: Lightly secured to supports - new weldmesh fence.
2. Climber supports: Green plastics coated steel wire
   2.1. Base height: 600 mm above ground
   2.2. Centres: 300 mm
   2.3. Distance from fence:: 75 mm
3. Fixings: Contractor's choice Contractor's choice
   3.1. Centres: 2m (max) or to suit geometry of fence

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.

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

Planting trees

500 Tree planting

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

505 Tree pits

1. Sizes: See Dwg No 22740-LD-06
2. Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.

3. Excavated material: Separate topsoil and subsoil material and stockpile for backfilling (if existing soil is suitable - see soil analysis)
4. Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 200 mm if drainage is a problem.
    4.1. Treatment: Not required
5. Pit sides: Scarify.
6. Backfilling material: 85% approved topsoil; 15% peat-free tree planting compost; 100mg Enmag fertiliser (or similar)

510 Tree pit root barriers

1. Locations: As shown on Dwg No: DBS-ECS-Z0-SL-DR-L-00002
2. Manufacturer: GreenBlue Urban Ltd (www.greenblue.com)
    2.1. Product reference: ReRoot 1000 (ribbed)
3. Thickness: 1.0 mm
4. Barrier depth: 1000mm
5. Foil liner: Contractor's choice
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 Ltd
    2.1. Product reference: RootRain Urban
3. Type: Perforated plastics irrigation pipe with inlet
4. Pipe diameter: 60 mm
5. Ring diameter: 3m
6. Inlet: Black plastics, with cap
7. Installation
    7.1. Pipe: Lay in loop above root ball with slight fall away from inlet pipe. Trim length to ensure a close fit in the tree pit. Connect both ends of pipe securely into plastics tee junction on inlet.
    7.2. Top cap of inlet: Protruding slightly above finished surround level.
    7.3. Backfill material: Carefully compact in layers.

515 Tree pit drainage

1. Locations: As required if conditions warrant
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: 150mm
4. Geotextile filter
    4.1. Manufacturer: Contractors' choice
        4.1.1. Product reference: Contractors' choice
    4.2. Position: Lay over aggregate before installing tree or backfill.
5. Completed pits: Test for free drainage before planting.

1.

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: First grade pressure impregnated round timber with chamfered tops
2. Stake size (minimum): 60 mm diameter
3. Stake length (minimum): Min 300mm below ground and max 1/3rd of height of tree above ground

550 Double staking for

1. Description: ALL NEW TREES as per Dwg No: 22740-LD-06
2. Staking
    2.1. Position: Either side of tree position and perpendicular to wind direction.
    2.2. Driving: Vertically at least 300 mm into bottom of pit before planting.
    2.3. Backfilling: Consolidate material around stake.
    2.4. Firming: Sufficiently firm to prevent movement of the rootball/ rootstock.
3. Height of stakes: Cut off at approximately one third (max) of the height of the clear stem of tree
4. Horizontal bracing: Adjustable rubber tie from each stake, and no spacer pad
    4.1. Fixing: Not required

576 Tree pit surfacing – loose fill

1. Surfacing material: Mulch, as section Q28
2. Area: 1000 mm radius circle
3. Depth: 75mm
4. Watering: Water soil thoroughly before laying.
5. Installation: Ensure the base of the tree stem is kept free from loose filled material.

580 Tree pit surfacing – bound aggregate

1. Surfacing material: ArboResin by GreenBlue Urban as Q23
2. Area: Existing Trees as shown on Dwg No: 22740-LD01
3. Collar: Install protective tree collar around base of tree prior to installing surfacing. Allow clearance for tree growth.
4. Collar infill: Mulch as Q28

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 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:

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:
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. Ties: Adjust to accommodate growth and prevent constriction or abrasion.
6.4. Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
6.5. Frequency of checks: At each scheduled maintenance visit
7. Watering: As required for healthy establishment, depending on weather conditions

760 Planting maintenance – pruning

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

780 Maintenance instructions

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

790 Final mulching

1. Timing: At end of the maintenance period.

2. Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
3. Planting beds: Remulch.
4. Depth (minimum): 50mm for all shrub/herbaceous. 75mm for hedge pits
5. Trees: Remulch.
6. Depth (minimum): 75mm

Ω End of Section

Q37
Green roofs - Refer to Architectural Specification for details: DBS-AHR-XX-ZZ-SP-A-NBS – Architectural Specification

Ω End of Section

Q40
Fencing

Fencing systems

126 Open mesh steel panel security fencing to bin store

1. Manufacturer: Jackson's Fencing (www.jacksons-security.co.uk/)
   1.1. Product reference: Euroguard® Regular V Mesh Fencing
2. Height: 1810mm
3. Mesh and wire:

   Welded mesh; 5mm wires with 3 - 4 reinforcing folds according to height, Galfan® Zinc alloy treated as standard. Vertical wires are at 50mm centres, therefore the panel has 61 vertical wires. Galvanised and powder coated to BS EN 13438 in grey RAL 7012

4. Posts: Posts are rectangular hollow section steel hot dip galvanised inside and out to BS EN 1461 as standard and supplied with flat post caps in black polypropylene. 60x40x2500mm. Galvanised and powder coated grey RAL 7012 to BS EN 13438.
5. Maximum centres of posts: 3034mm.
6. Method of setting posts: In concrete foundations [Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2] to comply with the design loading requirements specified by BS 1722-14 for this category of fence. Corner posts used as required.
7. Bottom of fencing: Fixed to engineer's detail and manufacturer's recommendations
8. Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.

340 Steel vertical bar fencing to southern boundary wall

1. Manufacturer: Jacksons Fencing
   1.1. Contact details
      1.1.1. Address: 209 Stowting Common
      Ashford
      Kent
      TN25 6BN
      1.1.2. Telephone: 0800 408 4757
      1.1.3. Web: www.jacksons-security.co.uk
      1.1.4. Email: sales@jacksons-fencing.co.uk
   1.2. Product reference: Barbican Fencing Imperial
2. Panels: Steel framed vertical bar and rail panels. 60 x 40 mm RHS rails and 25 x 25 mm SHS pales.
3. Fence topping: Type 5 from Jackson's website as illustrated on Detail A on Dwg no: DBS-ECS-Z0-SL-DR-L-00004 . Contractor to confirm with imagery prior to ordering.
4. System accessories: Not required.
5. Applied finish: Hot-dip galvanized and powder-coated to BS EN 13438.
6. Colour: Black RAL 9005.
7. Height: 1250mm
8. Posts: 60x60x1850mm @ 3m centres
   8.1. Finish: Hot-dip galvanized and powder-coated to BS EN 13438.
      8.1.1. Colour: Black RAL 9005.

9. Method of setting posts/ stays/ legs: Posts fixed to wall to engineer's detail

Gates, posts and stiles

570 Gates to Bin Store

2. Manufacturer: Jacksons Fencing (www.jacksons-security.co.uk)
   2.1. Product reference: Euroguard Flatform Heavy Welded Mesh Gates to match adjacent fencing
3. Sizes: Single Leaf = 910mm wide (clear opening) x 1800mm high; Double Leaf = 1800mm wide (clear opening) x 1800mm high
4. Posts: 100x100mm square section posts.
5. Finish as delivered: Powder-coated to BS 1722-16
6. Fittings: As supplied: Single leaf with key in lock, handles, and gate stop; Double leaf with key in lock, handles, centre gate stop and drop bolt
   6.1. Finish: Powder-coated to BS 1722-16
7. Method of fixing: Posts set in concrete foundations to engineer's detail. Gates to open outwards with method of securing in fixed open position as required.
8. Accessories: Gates to open outwards with method of securing in fixed open position as required.

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:
   2.2. NHSS Sector Scheme 2C sub categories:

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.

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.

Ω End of Section

Q50
Site/ street furniture/ equipment

Gates, barriers and parking controls - Not Used

Site and street furniture

210 Cycle stands & shelter

1. Manufacturer: Broxap Ltd (www.broxap.com/)
   1.1. Product reference: Apollo Cycle Shelter (BXMW/AP)
2. Location: see Dwg No: DBS-ECS-Z0-SL-DR-L-00001
3. Type: Shelter with rack of 4 stands
4. Material: Frame /structure: Galvanised to BS EN ISO 1461:2009 & Polyester Powder Coated with Cladding - 4 mm PETG uv
   Racks: Galvanised steel to BS EN ISO 1461:2009
   4.1. Finish: Galvanised to BS EN ISO 1461:2009 & Polyester Powder Coated
   4.2. Colour: RAL 7016 (Anthracite grey)
5. Accessories: Submerged baseplates
6. Method of fixing: Submerged baseplates
7. Fire rating: Cladding is fire tested to EN ISO 11925-2

300 Bird Box

1. Manufacturer: Schwegler (www.schwegler-natur.de/)
   1.1. Product reference: Nest Box 1P; Order No. 00 102/3
   1.2. Dimensions:W 17 x H 26 x D 18 cm.
   1.3. Entrance hole: 32mm diameter
2. Material: SCHWEGLER Wood-Concrete Nest Box. Hanger: steel, galvanised.
3. Accessories: hanger and aluminium nail (Included).
4. Method of fixing: Carefully using galvanized wire/bracket to suitable existing mature tree, allowing for future growth

301 Bat Box

1. Supplier: CJ Wildlife (www.birdfood.co.uk) T: - Tel: 0800 731 2820 865913
   1.1. Product reference: Woodstone Beaumaris Bat Box Midi – ref: 910200119
2. Dimensions: 410mm x 320mm x 80mm
3. Material: Woodstone.
4. Colour: black
5. Method of fixing: As per manufacturer's recommendations and in accordance with architect's drawing: DBS-AHR-XX-ZZ-D-A-20100

302 Insect Tower

1. Supplier: CJ Wildlife (www.birdfood.co.uk) T: - Tel: 0800 731 2820 865913
   1.1. Product reference: National Trust Bee & Insect Tower; ref: 92063012
2. Dimensions: W 22 x H 63.5 x L 13.9 cm
3. Material: Wood

4. Colour: Green
5. Accessories: Pressure treated wooden (FSC®-certified) mounting post and galvanized nails (not included).
6. Method of fixing: Carefully using galvanized wire/bracket to above wooden post. Post 1m height above ground; bottom of insect tower to be 300mm above ground level; post to be fixed in concrete footings (care to be taken around below ground services and root protection area of trees) to engineer's detail

303 Hedgehog House

1. Supplier: CJ Wildlife (www.birdfood.co.uk) T: - Tel: 0800 731 2820 865913
   1.1. Product reference: Hedgehog House, ref: 921440119
2. Dimensions: W 41.1 x H21.8 x L 46.7 cm
   Material: Wood (waterproof plywood)
3. Colour: Natural / green
4. Accessories: Pressure treated wooden (FSC®-certified) mounting post and galvanized nails (not included).
5. Method of fixing: Locate in quiet position as shown on Landscape GA DBS-ECS-Z0-SL-DR-L-00001; entrance to be facing south or west to avoid cold, wet wind.

304 Information Sign

1. Supplier: Greenbarnes (www.greenbarnes.co.uk/) T: - Tel: 01280 701093
   1.1. Product reference: A2 steel/g.r.p. information panel, ref: SIPA2
2. Dimensions: 614mm wide x 440mm high x 30mm (594mm wide x 420mm high display size – A2)
3. Posts/Fixing: 80x80X1500mm mild steel section with anchor bar and 400 x 200mm top plate (single leg version) or 200 x 200mm top plate (two-leg version), welded at 45° for fixing to carrier.
4. Base of display to be 800mm above ground level @ 45 degree angle
5. Material: GRP display mounted on mild steel posts (powder coated)
   Colour: Panel border and posts to be powder coated in RAL 7016 (Anthracite Grey)
6. Method of fixing: Location as shown on Landscape GA DBS-ECS-Z0-SL-DR-L-00001 – **TBC by all parties beforehand**; concrete posts to engineer's detail
7. Illustrative Content: to be designed and agreed in conjunction with WDC/WYCA

Installation

510 Concrete foundations generally

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

515 Setting components in concrete

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

550 Damage to galvanized surfaces

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

Ω End of Section

Specification created using NBS Chorus