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ROMAN GARDENS
Landscape Specification

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Document Control

Revision	Description	Issued by	Date	Reviewed
-	Issue for Planning	EJB	29.04.16	DAW

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Roman Gardens Landscape Specification

29 April 2016

This document includes:

Code	Section	Revision	Dated
Q10	Kerbs/ edgings/ channels/ paving accessories		
Q23	Gravel/ Hogglin/ Woodchip/ Resin bound roads/ pavings/ overlays		
Q25	Slab/ brick/ sett/ cobble pavings		
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Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS/CHANNELS

- 115 PRECAST CONCRETE KERB AND CHANNELS: 'K1'
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls (www.marshalls.co.uk) or similar approved.
 - Product reference: BS Standard Concrete Kerb.
 - Sizes:
 - K1: Flush pin kerb - 80 x 200 x 1000mm.
 - Laying: Full cement mortar bedding
 - Jointing: Close butted 2mm joint
 - Special units: Radius kerbs to be used to obtain smooth curves on radii of 15m or less.
- 120J KERBS AND CHANNELS ALONG ROMAN ROAD 'K2.'
- Standard: To BS EN 1340.
 - Supplier: Hardscape +44 0845 260 1748.
 - Product reference: Sandstone 'Highmoor'.
 - Size: 250 x 255 x 1000mm.
 - Special shapes: None.
 - Bedding: Full cement mortar bedding.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: Not required.
 - Accessories: None
- 122J KERBS ALONG RAIN GARDEN EDGE 'K3.'
- Standard: To BS EN 1340.
 - Supplier: Hardscape +44 0845 260 1748.
 - Product reference: Granite Kerb 'Royal White'.
 - Size: 145 x 255 x 1000mm
 - Special shapes: None.
 - Finish: Diamond Sawn.
 - Bedding: Full cement mortar bedding.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: Not required.
 - Accessories: None
- 200 SPECIAL METAL EDGING TO FLEXIPAVE SURROUNDS
- Manufacturer: Kinley Systems Ltd +44 (0)1424 201 111 or similar approved.
 - Product reference: AluExcel – AE100RM.
 - Size: Profile height 100mm, supplied in 2.5metre lengths.
 - Type/ Material: Aluminium.
 - Finish: As cast.
 - Colour: Mill finish.
 - Accessories: As manufacturer's specification.
 - Bedding: As Q20, to Engineer's details.
 - Joints: As manufacturer's specification.

ROAD/PAVING ACCESSORIES/MARKING/DEMARCATIION

306J TREE SURROUNDS

- Manufacturer: KBI UK Ltd, or similar approved. +441422 242880.
- Product reference: KBI Flexi-Pave, or similar approved.
- Flexi-Pave Ratio Mix of Colour and Stone: 50% stone / 50% rubber - as standard.
- Colour: Stone Age Bronze.
- Bedding: To manufacturer's specification
- Metal edge to Q10/200.

405 ROAD MARKINGS TO ACCESS ROADS AND CAR PARK AREAS

- To Engineer's specification

LAYING

510 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat, accurate and without spalling. Form neat junctions.
- Long units (450 mm and over) minimum length after cutting: 300 mm.
- Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- 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.
- 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.

530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

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

580 DRAINAGE CHANNEL SYSTEMS

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

590 DRAINAGE CHANNEL SYSTEMS WITH BUILT IN FALL

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

600 RADIUS KERBS / CHANNELS

- Usage: Radii of 15 m or less.

610 ANGLE KERBS

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

620 ACCURACY

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

625J REGULARITY OF PAVED SURFACES

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

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Q23

Gravel/ Hoggin/ Woodchip/ Resin bound roads/
pavings/ overlays

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Q23 Gravel/ Hoggin/ Woodchip/ Resin bound roads/ pavings/ overlays

To be read with Preliminaries/ General conditions.

TYPES OF SURFACING

225J PROPRIETARY RESIN BOUND CHIPPINGS FOR ROMAN ROAD AND BRIDGEWATER WALK

- Subgrade improvement layer: Highways Agency Type 1 unbound mixture, as section Q20.
 - Compacted thickness: To Engineer's details.
- Geomembrane: Geotextile membranes.
 - Manufacturer: TERRAM Geotextile Membrane <http://www.terram.com/> +44(0) 1621 874200.
 - Product reference: T1000.
- Granular sub-base: Type 3 granular sub-base to SHW 805 or locally available secondary or recycled aggregates which complies with above specification binded with 2/6.3mm graded crushed concrete aggregate to EN12620.
 - Compacted thickness: 150mm minimum depth.
- Water collection: Not required.
- Base course: In situ concrete, to a 100mm minimum depth of 10mm. No-fines concrete 4 to 4.5 :1:0.4 aggregate cement water ratio or as specified by the engineer. New concrete should be cured under plastic sheeting for at least 7 days and primed with a polymer based primer.
- Surface course:
 - Manufacturer: Sureset or similar approved: <http://www.sureset.co.uk>. +44800 612 6501.
 - Product reference: Natural aggregate.
 - Colour: Buff.
 - Aggregate size: 6mm.

LAYING

315 MATERIALS

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

340 LAYING GENERALLY

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

350 COLD WEATHER WORKING

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

360 DRAINAGE FALLS

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

380 LAYING GRANULAR SURFACES IN PEDESTRIAN AREAS AND CYCLE TRACKS

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

390 PROTECTION FROM TRAFFIC AND PLANT

- Paved areas: Restrict access to prevent damage.

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Q25

Slab/ brick/ sett/ cobble pavings

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Q25 Slab/ brick/ sett/ cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL

110 NATURAL STONE SLAB PAVING SYSTEM FOR ALL NATURAL STONE PAVING AREAS

- Subgrade improvement layer: As section Q20.
 - Compacted thickness: To Engineer's details.
- Granular sub-base: MOT Type 1 Granular sub-base to Engineer's details.
 - Compacted thickness: 150 mm - Engineer's to confirm.
- Base: Concrete as section Q21.
 - Thickness: To Engineer's details.
- Laying course: Ready mixed mortar.
 - Accessories: To Engineer's specification.
- Paving units: To Engineer's specification.
- Jointing: To Engineer's specification.
 - Bond: To Engineer's specification.
- Accessories: Kerbs, as section Q10.

PRODUCTS

310J NATURAL STONE SLABS FOR PARK SQUARE

- Standard: To BS EN 1341.
- Supplier: Hardscape +44845 260 1748 enq@hardscape.co.uk.
 - Product reference: Sandstone.
- Finish: Riven.
- Sizes: 450mm width x 600, 650, 700, 750mm lengths x 50mm.
 - Plan dimension deviation class: P1.
 - Diagonal deviation class: D1.
 - Thickness deviation class: T1.
- Arrises: Square.

Notes: New Natural Stone Slabs to be merged with salvaged paving, as Q25/327J.

312J NATURAL STONE SLABS FOR DECORATIVE EDGE TO PARK SQUARE AND ROMAN ROAD

- Standard: To BS EN 1341.
- Supplier: Hardscape +44845 260 1748 enq@hardscape.co.uk.
 - Product reference: Sandstone.
- Finish: Diamond Sawn.
- Sizes: 500 x 3500mm per band to be broken up into smaller units which are linear / rectangular in shape (approx 100 x 500mm).
 - Plan dimension deviation class: P1.
 - Diagonal deviation class: D1.
 - Thickness deviation class: T1.
- Arrises: Square.

320J TACTILE FLAGS FOR EXTERIOR, ADOPTABLE PUBLIC AREA

- Standard: To DD CEN/TS 15209.
- Material: Precast concrete.
 - Manufacturer: Hardscape +44845 260 1748 enq@hardscape.co.uk or similar approved
 - Product reference: Blister concrete tactile paving units.
- Recycled content: As manufactured.
- Nominal sizes: 400 x 400 x 80mm.
- Colour: Natural.
- Type of surface: Blister pattern.

325J EXISTING YORKSTONE FLAGS

- Location: Good quality Yorkstone flags to be retained and made good.
 - Stack neatly on pallets and shrink wrap in plastic sheeting.
 - Store in a secure compound.
 - Contractor to provide method statement for lifting Yorkstone flags - mechanical means of lifting to be used if possible.
- Preparation:
 - All traces of original bedding and jointing material to be removed from Yorkstone flags.
 - Condition of existing material to be reviewed: re-texture the top surface to achieve required slip resistance (PTV over 45 in wet condition)
 - Submit sample of cleaned Yorkstone flags..

327J RECLAIMED YORKSTONE FLAGS FOR PARK SQUARE

- Location: Good quality Yorkstone flags to be retained, made good, and salvaged from exterior areas and re-used within Park Square.
- Lifting, storage and protection:
 - Stack neatly on pallets and shrink wrap in plastic sheeting.
 - Store in a secure compound.
 - Contractor to provide method statement for lifting Yorkstone flags - mechanical means of lifting to be used if possible.
- Preparation:
 - All traces of original bedding and jointing material to be removed from Yorkstone flags.
 - Condition of existing material to be reviewed: re-texture the top surface to achieve required slip resistance (PTV over 45 in wet condition)
 - Submit sample of cleaned Yorkstone flags..

335J NATURAL STONE YORKSTONE SETTS FOR RAISED TABLE

- Manufacturer: Marshalls <http://www.marshalls.co.uk/> +44370 241 24.
- Product reference: Yorkstone setts.
- Recycled content: As produced.
- Colour: Harvest Buff.
- Finish: Standard.
- Sizes: 150x100x80mm.
- Slip/ Skid resistance: Low potential - typically USRV 60.
- Integral accessories: None.

340J NATURAL STONE COBBLES ALONG STONE STREET, BEAUFORT STREET, COLLIER STREET, AND BRIDGEWATER STREET

- Cobbled areas which have been covered in tarmac to be uncovered to create visual continuity and completeness along the streets.
- All existing cobbles to be rejointed and made good to improve visual appearance.

390 SAND FOR FLEXIBLE LAYING COURSE AND JOINTING OF CONCRETE FLAG PAVING FOR PARK SQUARE.

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

EXECUTION

620 ADVERSE WEATHER

- General:
 - 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.
 - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding:
 - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Paving laid and jointed in sand:
 - Stockpiled bedding sand: Protect from saturation.
 - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
 - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
 - 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

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

630 LEVELS OF PAVING

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

635 REGULARITY – TO BS 7533

- 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):
 - Precast concrete paving blocks and clay pavers for flexible pavements: Maximum variation in gap under a 3 m straight edge: 10 mm; difference in level between adjacent paving units (maximum): 2 mm.
 - Precast concrete flags or natural stone slabs: 3 mm; Difference in level between adjacent paving units (maximum): 2 mm.
- Sudden irregularities: Not permitted.

637 REGULARITY - TO BS 8300

- 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.
- Joints between paving units or utility access covers:
 - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5mm max difference in level).
 - 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.
 - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

640 COLOUR BANDING

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

645 PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arrises, or previously laid paving.
- Mortar bedded pavings: Keep free from traffic after laying:
 - Pedestrian traffic (minimum): 7 days.
 - Vehicular traffic (minimum): 10 days.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.

650 CEMENTITIOUS BASES AND SUB-BASES

- 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

- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
- 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.
- Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
- Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
- Levels and falls: Accurate and within the specified tolerances.
- Drainage outlets: Within 0-10 mm of the required finished level.
- Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
- Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

COMPLETION**915 COMPLETION OF PAVING WITH DRY SAND OR FINE AGGREGATE FILLED JOINTS**

- Sand dressing: Leave a thin layer of dry jointing sand over the paving until opened to public access.
- Final compaction of the surface course: In accordance with BS 7533-3.
- Vacuum cleaning machines: Not allowed.

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Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

SYSTEM OUTLINE

PRODUCTS

300 PREPARATION MATERIALS GENERALLY

- Purity: Free of pests and disease.
- 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.
- Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - Corrosive, explosive or flammable.
 - Hazardous to human or animal life.
 - Detrimental to healthy plant growth.
- Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
- Objectionable odour: None.
- 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

- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- Standard: To BS 3882.
- Classification: Multipurpose.
 - Grade: Within the parameters of 'sandy loam' textural class.
- Source: Contractor's choice.
 - Product reference: Contractor's choice.

317 IMPORTED TOPSOIL ANALYSIS

Obtain approval of a sample, with a report from an approved soil analyst of physical and chemical properties as below. Allow approximately 2 weeks from the submission of the sample for the results to be available. Samples for analysis shall be representative of soil being offered and ten equal samples shall be taken and well mixed and quartered. From this mixture 500 gms of soil shall be placed in a plastic bag, labelled with name and details of origin and sent to the analyst with a request for the following information:

- Soil reaction and lime requirement
- Electrical conductivity
- Mechanical analysis
- Soil texture
- Stone content
- Nutrient levels: Nitrogen, Available Phosphorum, Available Potassium, Available Magnesium
- Organic matter
- Recommendations for making good any deficiencies and fertilizer treatment related to the planting proposals.
- The CA may ask for additional tests for toxicity, water holding capacity or mechanical composition.
- Approved analysts are:
 - Soil Environmental Services
1210 Parkview
Arlington Business Park
Theale
Reading
RG7 4TY
Telephone on 0191 243 0686
Email admin@soilenviromentservices.co.uk
 - Voelcker Consultants, Block A, Long Island House, 1-4 Warple Way, London W3 0RG
(Tel: 020 8746 9550)
- A sample of topsoil (max 1 kg) shall be submitted to the CA together with the analyst's report. No topsoil shall be delivered to the site before the Contractor has received written approval of the sample.

370 COMPOST

- Standard: In accordance with PAS 100.
- Supplier: Westland www.thecompostcentre.co.uk or similar approved.
 - Product reference: Peat free multi-purpose compost .
- Type: Sanitized and stabilized compost.
- Horticultural parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter (minimum): 25%.
 - Grading (air dried samples): 99% passing 25 mm screen, and 90% a 10 mm screen mesh aperture.
 - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Required.
- Submit: Declaration of analysis.
- Additional analyses: Not required.
- Samples: Supply 5 kg sample before ordering.
- Application rate: 4.9 m³/100 m².
- Timing: Apply prior to cultivation.

- 380 PEAT
Peat or products containing peat: Do not use.
- 390 FERTILIZERS TO BE INCORPORATED INTO TOPSOIL AND MANUFACTURED TOPSOIL FOR SHRUB PLANTING
- Type: Slow release fertiliser.
 - Source: Contractor's choice.
 - Product reference: Contractor's choice.

EXECUTION

- 615 TOPSOIL ANALYSIS
Soil to be analysed: Indicative samples from all areas of topsoil to be planted with ornamental shrubs, infrastructure planting, topsoil to be used for tree pits, topsoil for grassed areas.
- Soil analyst: Voelcker Science, Tel: 0181 9932421 mail@voelckerscience.co.uk or similar and approved.
 - Samples: Collect in accordance with BS 3882.
 - Submit originals of declaration of analysis of:
 - pH
 - Electrical conductivity
 - Soil texture
 - Soil structure
 - Organic matter
 - Phytotoxic elements
 - Zootoxic elements
 - Check for clay loam content for cricket square use.
 - Report detailing soil analyst's recommendations.
- 620 IMPORTING TOPSOIL
- Give notice: Before stripping topsoil for transfer to site.
 - Notice period: 7 days.
- 625 SAMPLE LOADS FOR IMPORTED TOPSOIL
- Deliver to site a sample load: of not less than 5 m³.
 - Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - Notice period: 7 days.
- 630 DOCUMENTATION FOR IMPORTED TOPSOIL FOR SHRUB BEDS AND TREE PITS
- Timing: Submit at handover.
 - Contents:
 - Full description of all soil components.
 - Record of source for all soil components.
 - Record drawings showing the location and depth of all soils by type and grade.
 - Declaration of analysis: in accordance with BS 3882, Annex E.
 - Number of copies: 5.

635 DOCUMENTATION FOR COMPOST AND COMPOSTED MATERIALS FOR COMPOST

- Timing: Submit at handover.
- Contents:
 - Full description of all compost components.
 - Record of source for all compost components.
 - Analyst's report for each test carried out.
 - Declaration of compliance: in accordance with PAS 100 and BSI PD CR 13456.
 - Quality Compost Protocol certification: Required.
- Number of copies: 1.

650 NOTICE

- Give notice before:
 - Setting out.
 - Spreading topsoil.
 - Applying herbicide.
 - Applying fertilizer.
 - Visiting site during maintenance period.
- Period of notice: One week.

655 MECHANICAL TOOLS

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

660 GRADING SUBSOIL

- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
- Loosening:
 - Light and non-cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
- Areas of thicker topsoil: Excavate locally.
- Avoid over compaction.

665 SUBSOIL SURFACE PREPARATION

- General: Excavate and/ or place fill to required profiles and levels, as section D20.
- Loosening:
 - Light and noncohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
- Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
- Remove from site: Weeds and other foreign material.

675 PREPARATION OF UNDISTURBED TOPSOIL

- Standard: In accordance with BS 4428.
 - Grading and cultivation: Prepare areas to receive soft landscaping as necessary to ensure that the topsoil is in a suitable state for cultivation operations specified in sections Q30 and/or Q31.
- Hard ground: Break up thoroughly.
- Clearing: Remove visible roots and large stones with a diameter greater than 50 mm.
- Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
- Fallow period (minimum): Three months.
 - Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.

680 SURPLUS TOPSOIL TO BE RETAINED

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

685 SURPLUS MATERIALS TO BE REMOVED

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

690 TOPSOIL STORAGE HEAPS

- Location: To be agreed.
- Height (maximum): 1.0 m.
- Width (maximum): 5.0 m.
 - Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination, by fencing and covering as appropriate.

695 CULTIVATION

- Compacted topsoil: Break up to full depth.
- Tilth: Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
 - Depth: 450 mm.
 - Particle size (maximum): 10 mm.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: As per General Arrangement drawing.
- Undesirable material brought to the surface: Remove visible weeds, roots and large stones with any dimension exceeding 50 mm.
- Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

700 GRADING OF TOPSOIL

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

705 HANDLING TOPSOIL

- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
- Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- 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.

712 SPREADING TOPSOIL

- Temporary roads/surfacing: Remove before spreading topsoil.
- Layers:
 - Depth (maximum): 150 mm.
 - Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum):
 - Grass areas: 150 mm (above 300mm decompacted subsoil)
 - Ground cover areas: 450 mm
 - Shrub planting areas: 450 mm
 - Hedge trenches: 450 mm.
- Crumb structure: Do not compact

715 LOOSE TIPPING OF TOPSOIL

- 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

- Above adjoining paving or kerbs: 30 mm.
- Below dpc of adjoining buildings: Not less than 150 mm.
- Shrub areas: Higher than adjoining grass areas by 50 mm.
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

810 APPLYING COMPOST TO SHRUB AREAS

- Locations: Shrub beds.
- Other requirements: None.
- Application rate for trees and shrubs: 4.9 m³/100 m².
 - Timing: Apply prior to cultivation.
- Application rate for grass: NA.
 - Timing: Apply prior to cultivation.

DRAFT

Q30 Seeding/ turfing

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/REQUIREMENTS

- 115 SEEDED AND TURFED AREAS
- Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
 - Appearance: A closely knit, continuous ground cover of even density, height and colour.
- 120 CLIMATIC CONDITIONS
- General: Carry out the work while soil and weather conditions are suitable.
- 145 WATERING
- Quantity: Wet full depth of topsoil.
 - Application: Even and without displacing seed, seedlings or soil.
 - Frequency: As necessary to ensure the establishment and continued thriving of all seeding/turfing.
- 150 WATER RESTRICTIONS
- 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
- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Preparing seed bed.
 - Seeding or turfing.
 - Visiting site during maintenance period.
 - Period of notice: 1 week.
- 170 SETTING OUT
- Boundaries: Mark clearly.
- Delineation: In straight lines or smoothly flowing curves as shown on drawings.

PREPARATION

- 210 HERBICIDE FOR ALL GRASSED AREAS
- Type: Suitable for suppressing perennial weeds.
 - Timing: Allow fallow period before cultivation.
 - Duration: As manufacturer's recommendation.
- 212 SEED BED CLEANING BEFORE SOWING ALL GRASSED AREAS
- Operations: Prevent weeds from seeding and perennial weeds from becoming established, by applying a suitable translocated herbicide.

280 FINAL CULTIVATION

- Timing: After grading and fertilizing.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.
 - Depth: 25 mm.
 - Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
 - Remove surface stones/earth clods exceeding:
 - General areas: 40 mm .
 - Fine lawn areas: 10 mm.
- Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

SEEDING

310J GRASS SEED FOR OVER-SEEDING EXISTING GRASS AREAS AND REINSTATING AREAS EFFECTED DURING CONSTRUCTION

Supplier: British Seed Houses, Tel: 01522 868714, or similar and approved

- Mixture: A4 - Low maintenance areas.
- Application rate: Sowing rate - 35g/m2. Overseed rate - 20g/m2.

311 GRASS SEED FOR WILDFLOWER AREAS

- Supplier: British Seed Houses, Tel: 01522 868714, or similar and approved.
- Mixture reference: WFG18 Butterfly and Honey Bee.
- Application rate: 5g/m2.

319 QUALITY OF SEED FOR ALL GRASSED AREAS

- Freshness: Produced for the current growing season.
- Certification: Blue label certified varieties.
 - Standard: EC purity and germination regulations.
 - Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
- Samples of mixtures: Submit when requested.

330 SOWING

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

335 GRASS SOWING SEASON

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

340 PRE-EMERGENT HERBICIDE FOR ALL GRASSED AREAS, EXCEPT WILDFLOWER AREAS

- Standard: Pesticide Safety Directorate approved.
- Application rate: In accordance with manufacturer's written recommendation.
 - Timing: Immediately after sowing.

352 EDGES TO SEEDED AREAS ADJACENT TO PLANTING BEDS

- Timing: After seeded areas are well established.
- Edges: Clean straight lines or smooth curves.
 - Mulch and soil: Draw back to permit edging.
- Arisings: Remove.
- Completion: Respread soil and mulch.

TURFING

400J CULTIVATED TURF WITHIN THE ROMAN FOOTINGS

- Supplier: Inturf <http://www.inturf.com> 01759 321 000, or similar approved.
- Product reference: INTURF Fibre Reinforced Lawn (for pedestrian access only).
- Properties of soil used for turf production: Well drained sandy loam.
Details: Turf surface 20mm, reinforced rootzone 80mm, top soil or sub soil up to 100mm.
May be mixed with TerraCottem soil conditioner to improve root development and to conserve water.

CUTTING MAINTENANCE

530 FIRST CUT OF GRASSED AREAS

- Timing: When grass is reasonably dry.
 - Height of initial growth: 50 mm.
- Preparation:
 - Debris and litter: Remove.
 - Stones and earth clods larger than 25 mm in any dimension: Remove
- Height of first cut: 25 mm.
- Mower type: Gang.
- Arisings: Remove from site.

550 CLEANLINESS

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

610 FAILURES OF SEEDING/TURFING

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

620 MAINTAINING GENERAL GRASSED AREAS

- Duration: Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.
- Maximum height of growth at any time: 50 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 15 mm.
 - Arisings: Remove.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
 - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
 - Method: Application of a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
 - Size: Exceeding 25 mm in any dimension.
- Areas of settlement: Make good.
- Watering: Q30/145.

685 MAINTENANCE FERTILIZER FOR ALL GRASSED AREAS EXCEPT WILDFLOWER MEADOWS

- Duration: Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.
- March application:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Application rate: As manufacturer's recommendations.
- September application:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Application rate: As manufacturer's recommendations.

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Q31 External planting

To be read with Preliminaries/ General conditions.

GENERAL INFORMATION/ REQUIREMENTS

112 SITE CLEARANCE GENERALLY

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with any dimension exceeding 50 mm.
- Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Vegetation: Clear surface vegetation in areas shown on drawings using suitable nonresidual herbicide.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: Refer to Tree Constraints Plan for trees to be removed and trees to be protected.

118 SOIL CONDITIONS

Soil for cultivating and planting: Moist, friable and (excepting aquatic/ marginal planting) not waterlogged.

- 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

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

125J TIMES OF YEAR FOR PLANTING

- Deciduous trees and shrubs: Late October to late March.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants (including marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable.
 - Watering and weed control: Provide as necessary.
- Dried bulbs, corms and tubers: September/ October.

130 MECHANICAL TOOLS

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

145 WATERING

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

150 WATER RESTRICTIONS

- 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

- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Delivery of plants/ trees.
 - Planting shrubs.
 - Planting trees into previously dug pits.
 - Watering.
 - Visiting site during maintenance period.
- Period of notice: One week.

200 PLANTS/ TREES - GENERAL

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Budded or grafted plants: Bottom worked.
- Root system and condition: Balanced with branch system.
 - Standard: The National Plant Specification.
- Species: True to name.
- Origin/ Provenance: Where possible to be British grown and of local provenance..
 - Definition: Origin and Provenance have the meaning given in the National Plant Specification.

215 PLANTS/ TREES - SPECIFICATION CRITERIA

- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.

220 PLANTS / TREES - SPECIFICATION CRITERIA

All trees and plants shall be obtained from one of the sources identified in the categories listed below. Under no circumstances will other nursery sources be considered at the time of tender.

- Tree/plant size category:
- Trees: all proposed sizes.
To BS 4043, sizes and other criteria as scheduled
Supplier(s):
 - Lappen, Germany Tel: +49 2157 8180 <http://www.lappen.de/en/the-nursery/>
 - Bruns, Germany Tel: +49 4403 601-0 <http://www.bruns.de/en/>
 - Lorenz von Ehren Tel: +49 (40) 761 08-220 <http://lve-baumschule.de/>
- Shrubs and herbaceous plants
To BS 4043, sizes and other criteria as scheduled
Supplier(s):
 - Crocus, Tel: 08445572233
 - Johnsons of Whixley, Tel: 01423 330234
 - Notcutts Nurseries Ltd, Tel: 01394 383344 or
 - J Parker Dutch Bulbs, Tel: 01618481100

- 225 BULBS/ CORMS/ TUBERS
- Condition: Firm, entire, not dried out or shrivelled.
 - Health: Free from pests, diseases and fungus.
 - Handling: Remove from packaging immediately.
 - Storage: Permitted only when necessary.
 - Location: Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
 - Duration: Minimum period.
 - Temperature.
- 235 CONTAINER GROWN PLANTS/ TREES
- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
 - Plants: Centred in containers, firmed and well watered.
 - Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
 - Hardiness: Grown in the open for at least two months before being supplied.
 - Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.
- 260 PLANT/ TREE SUBSTITUTION
- Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
 - Price.
 - Difference from specified plants/ trees.
 - Approval: Obtain before making any substitution.
- 265 PLANT HANDLING STORAGE TRANSPORT AND PLANTING
- Standard: To HTA 'Handling and establishing landscape plants'.
 - Frost: Protect plants from frost.
 - Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
 - Plant packaging: In adequate protective packaging and stacked container crate.
 - Packaging of bulk quantities: stacked crates for container grown plants.
 - Planting: Upright or well balanced with best side to front.
- 280 TREATMENT OF TREE WOUNDS
- Cutting: Keep wounds as small as possible.
 - Cut cleanly back to sound wood using sharp, clean tools.
 - Leave branch collars. Do not cut flush with stem or trunk.
 - Set cuts so that water will not collect on cut area.
 - Fungicide/ Sealant: Do not apply unless instructed.
- 285 PROTECTION OF EXISTING GRASS
- General: Protect areas affected by planting operations using boards/ tarpaulins.
 - Excavated or important material: Do not place directly on grass.
 - Duration: Minimum period.
- 290 SURPLUS MATERIAL
- Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

300 HERBICIDE TO CLEAR OVERGROWN BEDS

Locations: All planting areas.

- Type: Suitable for suppressing perennial weeds.
- Timing: Allow fallow period before cultivation.
 - Duration (minimum): As manufacturer's recommendation.

375 CULTIVATION

- Compacted topsoil: Break up to full depth.
- Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm.
 - Depth: 250 mm.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: As section Q28.
- Undesirable material brought to the surface: Remove visible weeds, roots and large stones with any dimension exceeding 50 mm.
- Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

405 SHRUB PLANTING PITS

- Timing: Excavate 1-2 days (maximum) before planting.
- Sizes: Wide enough to accommodate roots when fully spread and 75 mm deeper than root system.
- Pit bottom improvement: Break up to a depth of 150 mm, incorporating 25 g of slow release fertilizer per planting pit.
- Backfilling material: Shrub planting backfilling material.

445 PLANTING BULBS/ CORMS/ TUBERS

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

480 AFTER PLANTING

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- 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.
- Top dressing: Mulch clause Q31/490.
 - Depth: 50 mm.

490 MULCHING PLANTING BEDS

- To ornamental and shrub planting within courtyard:
 - Manufacturer: Melcourt Industries Ltd (www.melcourt.co.uk)
 - Product reference: Ornamental pine mini mulch 3mm to 18mm
 - Coverage: 50mm deep with even and level distribution
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 50mm min depth with even and level distribution.
- Finished level of mulch: 30 mm below adjacent grassed or paved areas.
- During the maintenance period, ensure that mulch is maintained neatly within the original area of spreading and topped up where necessary.
- At the end of the Rectification period, stated in clause Q31/710, where necessary apply a final application of the specified mulch type to achieve the final levels.

PLANTING TREES

505J TREE PITS: FOR TREES WITHIN SOFT LANDSCAPE

- Sizes: Where necessary increase the dimensions to ensure that the pits are at least 250 mm deeper and 600 mm wider than the root ball. Extra heavy standard tree 1500mm x 1500mm x 1100mm.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 250 mm.
- Pit sides: Scarify.
- Backfilling material: Tree backfilling material.
- Accessories:
 - Q31/595J Root ball anchor system;
 - Q31/600J Root barriers;
 - Q31/605J Tree pit irrigation and aeration.

510J TREE PITS: FOR TREES WITHIN HARD LANDSCAPE

- Sizes: The excavated pit should be of sufficient size to accommodate the root-ball, allowing approximately 500mm clearance.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 150 mm.
- Pit sides: Scarify.
- Backfilling material: Tree backfilling material.
- Accessories:
 - Q31/595J Root ball anchor system;
 - Q31/605J Tree pit irrigation and aeration.
 - Q10/306J tree grilles and surrounds;
 - Q10/310J Tree root barriers;
 - Q10/315J Tree soil structure system;

515J BEECH HEDGE PLANTING TRENCHES

Sizes: Trenches large enough to take full spread of roots. Minimum trench size of 500mm wide x 500mm deep to allow for backfilling. Ensure trench is free draining. To be planted 3 pots per linear metre to form a continuous planting frontage.

- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
 - Pit bottoms: With slightly raised centre. Break up to a depth of 250 mm.
 - Pit sides: Scarify.
 - Backfilling material: Tree backfilling material. Ensure all backfilling is even and consistent. Avoid air pockets which will prove detrimental to the survival of the plants..
- Completion: Trim to a consistent height of 1.2m.
- Accessories:
- Q31/600J Root barriers.

586J TREE BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required to BS3882:2007 - refer to Q28 315.
- Ameliorant/ Conditioner: Not required.
- Fertilizer: Not required.

595J TREE ROOT BALL ANCHOR SYSTEM

- Locations: For all trees.
- Manufacturer: Green Blue Urban +441424 717797.
- Product reference: Arborguy SASDMB.
 - Type: Arborguy strapped anchor deadman guying system.
- Installation to be in accordance with the manufacturers instructions.
 - Where ground conditions do not permit the use of underground guying systems inform the Landscape Architect.

600J ROOT BARRIERS

- Locations: Wherever the installed rootball will be within 2.0 m of a building foundation and 3.0m from an underground service route.
- Manufacturer: Green Blue Urban +441424 717797.
- Product reference: ReRoot2000.
 - Type: For trees adjacent to building foundations.
 - Product reference: [ReRoot1000].
 - Type: [For trees adjacent to paved surfaces, services and drainage].

605J TREE PIT IRRIGATION AND AERATION

- Locations: For all trees within soft landscaping.
- Manufacturer: Green Blue Urban +441424 717797.
- Product reference: RRM4.
 - Type: 4mx35mm; cap -metal with chain.
- Locations: For all trees within hard landscaping.
- Manufacturer: [Green Blue Urban +441424 717797].
- Product reference: [Arborvent irrigation system RRARBV1C and Arborvent aeration loop RRARBVD1C].
 - Type: [Square shaped in plan view, Cast Aluminium vent lid permanently attached to inlet by stainless steel fitting].

610J TREE PIT DRAINAGE

- Locations: For all trees within soft landscaping.
Depth of excavation: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
Working from tree pit down:
- Geotextile filter:
 - Manufacturer: Terram
 - Product reference: Terram1000.
 - Position: Lay over aggregate before installing tree or backfill.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20mm.
-Depth: >200mm.
- Base of drainage layer: Break up to a depth of 200mm.
- Completed pits: Test for free drainage before planting.

710 MAINTENANCE

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period.
- Frequency of maintenance visits: Fortnightly during growing season.

720 FAILURES OF PLANTING

- Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
 - Exclusions: Theft or malicious damage after completion.
 - Rectification: Replace with equivalent plants/ trees/ shrubs.
- Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- Timing of making good: unless otherwise instructed they must be replaced in the next appropriate planting season.

740 CLEANLINESS

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

750J PLANTING MAINTENANCE GENERALLY

- Weed control: Maintain weed free area around each tree and shrub.
 - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - Keep planting beds clear of weeds, by hoeing and maintaining full depth of mulch.
- 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.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards.
 - Broken or missing items: Replace.
 - Rubbing: Prevent.
 - Ties: Adjust to accommodate growth.
 - Damage to bark. Cut back neatly with sharp knife. Prevent further damage.
 - Frequency of checks: Every three months.
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
- Trees: Trees will require progressive thinning to ensure that canopy suppression does not occur and that individual specimens are allowed to develop. Spray crown when in leaf during warm weather.
 - Timing: After dusk.
- Watering: dependant on weather conditions.
 - Shrubs: regularly cut shrubs, including shaping the shrub and pruning back shrubs from encroaching the hardstanding areas. Planting beds will require progressive thinning to ensure that canopy suppression does not occur and that individual specimens within the groups are allowed to develop
 - Litter: Regularly cleanse planting beds of litter.

755 PLANTING MAINTENANCE - FERTILIZER

- Time of year: March or April.
- Fertilizer: Slow release.
 - Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Application: Evenly spread, carefully incorporating below mulch materials.
- Application rate: To manufacturer's recommendations.

760 PLANTING MAINTENANCE - PRUNING

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

790 FINAL MULCHING

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

DRAFT

Q40 Fencing

To be read with Preliminaries/ General conditions.

FENCING SYSTEMS

340J STEEL VERTICAL BAR FENCING - FOR 'PUBLIC HOUSE BEER GARDEN SURROUNDS

- Manufacturer: Sineu Graff or similar approved. www.sineugraff.com.
- Product reference: 3000 Series - ref. 41 3111 and ref. 41 3311.
- Standard: To BS 1722-9.
- Height: 900mm.
- Verticals: Rectangular tube 50mm x 30mm section, and a 30mm x 30mm section square tube.
- Centres of verticals: 150mm for ref.41 3111, 780mm for ref.41 3321.
- Colour: Black.
- Centres of posts (maximum): 2.8 m.
- Method of setting posts/ stays/ legs: As per manufacturers instructions.
- Accessories: None.
- Conformity: Submit manufacturer's and installer's certificates, to BS 1722-9.

345J EXISTING FENCING

To be retained and made good.

EXECUTION

710 INSTALLATION GENERALLY

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

715 COMPETENCE

- Operatives: Contractors must employ competent operatives.
- Qualifications: Submit certification of training.
 - NHSS Sector Scheme 2A sub categories: (a), (b), (d) and (f).
 - NHSS Sector Scheme 2C sub categories: Not required.

720 SETTING POSTS IN CONCRETE

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
- Admixtures: Do not use.
- Holes: Excavate neatly and with vertical sides.
- Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
- Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

Q50

Site/ street furniture/ equipment

DRAFT

Q50 Site/ street furniture/ equipment

To be read with Preliminaries/ General conditions.

SITE AND STREET FURNITURE

210 CYCLE STANDS

- Manufacturer: Metalco, supplied by BaileyArtform <http://www.baileyartform.co.uk/> +44 800 542 8118.
 - Product reference: Cafe bike stand.
- Material: Galvanised steel.
 - Finish: Powder coated.
 - Colour: Black.
- Number of stands: 5.
- Accessories: Roman numerals 'MMXVI' (2016 - the year of installation) to be engraved into each cycle stand.
- Method of fixing: Base plate prepared for ground fixing with suitable ground fixing anchors.

220J BENCHES - TYPE 1

- Manufacturer: Marshalls <http://www.marshalls.co.uk> Tel: 0370 990 7504.
 - Product reference: Escofet Tramet bench, with and without backrest.
- Material: Flanders pinewood with oxiron steel profiles.
 - Finish: Pressure treated Pinewood (FSC).
 - Colour: None.
- Size: L 2500 x W 560 x H 440mm.
- Accessories/ Special requirements: None.
- Method of fixing: To manufacturer's details.

222J BENCHES WITH TABLES - TYPE 1

- Manufacturer: Marshalls <http://www.marshalls.co.uk> Tel: 0370 990 7504.
- Product reference: Escofet Tramet table with bench without backrest.
 - Material: Flanders pinewood with oxiron steel profiles.
 - Finish: Pressure treated Pinewood (FSC).
 - Colour: None.
 - Size: Table - L 2500 x W 9140 x H 800mm. Bench - L 2500 x W 560 x H 440mm.
 - Accessories/ Special requirements: None.
 - Method of fixing: To manufacturer's details.

224J BENCHES WITH TABLE - TYPE 2

- Manufacturer: Marshalls <http://www.marshalls.co.uk> Tel: 0370 990 7504.
 - Product reference: Escofet Prima Marina table with bench without backrest.
- Material: UHPC (Ultra High Performance Concrete) with Deck teakwood cladding on the top surface.
 - Finish: Acid etched and waterproofed.
 - Colour: White and beige, as manufactured.
- Size: Table - L 220 x W 900 x H 750mm. Bench - L 2200 x W 600 x H 750mm.
- Accessories/ Special requirements: None.
- Method of fixing: To manufacturer's details.

240 LITTER BINS

- Manufacturer: Bailey Streetscene, Adlington Business Park, London Road, Adlington, Macclesfield, Cheshire SK10 4NL
01625 855900.
 - Product reference: Buffalo litter bin or similar approved.
- Material: 2mm Zintec, BS EN 10152: 1994 DC+ZE25 / 25-AC 5mm Stainless Steel, EN10088-2/0.
 - Finish: Gold backed LITTER punched beneath apertures. Gold vinyl trim and vinyl Tidyman. Three stainless steel pivot hinges, pivoted on a 20mm S/S rod..
 - Colour: Grey to be used to co-ordinate with benches and tables in Park Square and Bridgewater Walk..
- Accessories/ Special requirements: 1 x 120 Litre galvanised liner.
- Method of fixing: Surface mounted to manufacturer's specification.

345J PROPRIETARY SCULPTURE/ LANDSCAPE ART 'TIME-LINE' FEATURE ALONG THE ROMAN ROAD

- Supplier: To be confirmed. Time-line to be detailed at a later stage in collaboration with a specialist graphic artist.
Material: Hard grained dark material, for example granite or Carlow Blue limestone, and corten steel.
- Approximate size: Tile size width to match 250mm wide channel. Length to be confirmed. See Q10/120J.
- Refer to (9-)L010 for the time-line feature full detail intent.

352J GROW BOX TYPE 1

- Manufacturer: Streetlife <http://www.streetlife.nl/en/> Tel: +31(0)71 524 68 46.
 - Product reference: Corten Seat Block (with Planter).
- Material: Corten steel with timber seat.
 - Finish: Steel borders: laser cut structure, made of CorTen steel (weathering steel) 4mm thick. Timber 100% FSC Hardwood (Cumaru) Slats dim. 70x70mm.
 - Colour: None.
 - Size: Steel border (bespoke size) L 3000 x W 500 x H 400mm. Timber seat (bespoke size) L 800 x W 500 x H 470mm.
- Accessories/ Special requirements: Planting, as per detailed planing plan (9-)L003.
- Method of fixing: The construction does not require separate foundation. The standard depth of the wall below ground level is 150mm. A semi-permeable rubber strip can be installed around the steel wall to prevent rust stains on the pavement.
All corten steel products to be thermos-lacquered or pre-oxidised to prevent leaching. Refer to (9-)L009 for typical details.

354J GROW BOX TYPE 2

- Manufacturer: Streetlife <http://www.streetlife.nl/en/> Tel: +31(0)71 524 68 46.
 - Product reference: Corten Planter (bespoke unit).
- Material: Corten steel.
 - Finish: Steel borders: laser cut structure, made of CorTen steel (weathering steel) 4mm thick.
 - Colour: None.
 - Size: Steel border (bespoke size) L 3000 x W 500 x H 400mm.
- Accessories/ Special requirements: Planting, as per detailed planing plan (9-)L003.
- Method of fixing: The construction does not require separate foundation. The standard depth of the wall below ground level is 150mm. A semi-permeable rubber strip can be installed around the steel wall to prevent rust stains on the pavement.
All corten steel products to be thermos-lacquered or pre-oxidised to prevent leaching. Refer to (9-)L009 for typical details.

356J TIMBER AND CONCRETE STAGE WITHIN PARK SQUARE

- Manufacturer: Contractor to be confirmed.
 - Product reference: Two tier bespoke timber and concrete stage.
 - Material: In-situ concrete bases. Timber to be Iroko hardwood timber.
 - Finish: Concrete with smooth facial finish to Engineer's detail. Timber .
 - Colour: White concrete, timber as treated.
 - Accessories/ Special requirements: Lighting fixtures to Lighting Designers details.
 - Method of fixing: To be confirmed.
- Refer to (9-)L011 for the timber stage full detail intent.

358J CONCRETE SEAT WALL TO BRIDGEWATER WALK

- In situ concrete:
 - Structural rebar and expansion joints as necessary, in accordance with Engineers details.
 - Formwork to be smooth, oiled metal or similar approved.
 - Finish: Smooth.
 - Colour: White concrete.
 - Size (width x height x length): 500mm wide x height varies, as shown on drawings x length, as shown on drawings.

Other requirements:

- 20mm chamfered edges on all faces.
- Incorporation of lighting to Lighting Designers details.

359J CONCRETE PLINTH SEATS TO BRIDGEWATER WALK

- In situ concrete:
 - Structural rebar and expansion joints as necessary, in accordance with Engineers details.
 - Formwork to be smooth, oiled metal or similar approved.
 - Finish: Smooth.
 - Colour: White concrete.
 - Size (width x height x length): Width varies, as shown on drawings x 450mm height x length, as shown on drawings.

Other requirements:

- 20mm chamfered edges on all faces.

360J INTERPRETATION BOARD FOR WITHIN THE ROMAN GARDENS

- Manufacturer: Metalco, or similar approved. <http://metalco.it/> +39 0423.786400.
 - Product reference: TARGA - Betancourt design.
- Material: Steel.
 - Finish: Galvanised and coated.
 - Colour: Black.
- Accessories/ Special requirements: Display board made of a bearing structure in 'T' profile steel and double doors in steel sheet, fixed with hidden and stainless steel screws. Display surface measures 1400 x 1000mm.
- Method of fixing: Post-mounted.

362J ROMAN FOOTINGS WITHIN GRASSED AREA, SOUTH OF PARK SQUARE

- Existing Roman Vicus footings to be rejointed and made good to improve visual appearance.
- North Vicus: to have Yorkstone paving inlaid.
 South Vicus (2nr.): to have turf laid inside.

INSTALLATION**510 CONCRETE FOUNDATIONS GENERALLY**

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

515 SETTING COMPONENTS IN CONCRETE

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

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