

R + Building

Main Entrance, Reception, and 5th Floor Terrace

Specification for the Hard and Soft Landscape

For Oval Properties LTD

UL-14846-04-8001

December 2022 R00

Revision	Date	Description	Prepared	Reviewed	Approved
R00	07/12/2022	First Issue	FF	MB	CP

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Q28 Topsoil and soil ameliorants

To be read with Preliminaries/ General conditions.

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.

310 MATERIALS NOT PERMITTED

- Materials: Peat and Products containing peat.

330A IMPORTED MANUFACTURED TOPSOIL/ GROWING MEDIUM FOR TREES PLANTED IN PAVING

- Type: Urban tree planting medium.
 - Grade: As per the manufacturer's recommendations.
- Source: Amethyst Horticulture Ltd, Lynsted Lane, Lynsted (nr Sittingbourne), Kent. ME9 0RL. Tel: +44 (0)1795 522828, or equal and approved.
 - Product reference: City Sand or equal and approved.
- Installation: Strictly in accordance with the manufacturer's recommendation.

345A GRAVEL FOR DRAINAGE LAYER TO PROPOSED TREE PITS

- Product reference: Pea Gravel or Pea Shingle.
- Size: Particle size 5-10mm
- Type: Quarried, washed, non-calcareous, sub-rounded to rounded gravel.
- Quantity: Provide as necessary to complete the works. Make do allowance for settlement after laying.
- Other: Submit sample for approval before ordering.

355A ORGANIC MATERIALS FOR TOP DRESSING/ MULCHING

- Type: Melcourt Industries Ltd. Boldridge Brake, Long Newnton, Tetbury, Glouc. GL8 8RT Tel. 01666 502711, or equal and approved.
- Source: The product shall consist of matured British Conifer bark with an even nominal particle size distribution of 1-10mm and less than 5% wood content.
 - Product reference: Composted fine bark Mulch.
 - Purity: Free of pests, disease, fungus and weed.
- The product shall be Forestry Stewardship Council (FSC) certified.
- Typical product analysis to be:
 - Bulk density range 390-440Kg/m³
 - Dry Matter 55%
 - Organic matter 85%
 - pH 4.5-5.5
 - Cation exchange capacity low
 - Nitrogen (N) low

- Phosphorous (P) low
- Potassium (K) medium
- Magnesium (Mg) low
- Electrical conductivity 150 µS/cm - A low reserve of trace elements.
- Process: The product must have been matured for a minimum of 12 weeks.
 - The natural heat treatment maturing process shall have been sufficient to ensure that excess volatile substances are driven from the product.
 - During the process; temperatures within the product heaps must exceed 50°C for a minimum 14 day period, followed by a further period of stabilisation.
- Application Rates: Spread evenly to a depth of 30mm.
- Contractor to submit sample for approval before ordering material.
- Finished level of mulch: Flush with adjacent grassed or paved areas.
- All product volumes to be calculated using the bulk density method, as set out in BS EN12579:2000 & BS EN 12580:2000.

EXECUTION

620A IMPORTING TOPSOIL

- The Contractor shall allow sufficient time for sourcing and testing the necessary soils to meet the requirements of Q28.
- A copy of the Soft Landscape specification and the proposed planting list /drawings shall be provided for review by the Soil Scientist and for reference within the test report(s).
- The Contractor shall appoint a suitably qualified and approved, independent Soil Scientist to undertake the sampling and testing of the soil materials considered for importation.
- An approved Soil Scientist is:
Tim O'Hare Associates LLP
Howbery Park
Wallingford
Oxon OX10 8BA Tel:
01491 822653
www.toha.co.uk
- Other equal consultants may be used if they are approved by the Contract Administrator. Alternatives will be considered at the time of tender.
- The Contractor shall await written approval from the Contract Administrator prior to importing soil materials to site.

630A DOCUMENTATION FOR IMPORTED TOPSOIL, SUBSOIL, TREE SAND AND WASHED SAND FOR SHRUB BEDS

- The Contractor shall provide the Contract Administrator with the appointed Soil Scientist's report for each source and type of topsoil, subsoil or washed sand to be imported.
- Timing: At least 1 week prior to delivery.
- Each report shall contain the following information:
 - Source name and location;
 - Date of sampling;
 - Details of the Soil Scientist, including company information, qualifications;
 - Photographs of the stockpile and the soils;
 - Visual examination;
 - Certificate of Analysis;
 - Interpretation of all results with comments on the suitability of the soil for the proposed landscape scheme;
 - Recommendations for soil improvements, treatments, additives.
- Number of copies: 1 (in digital format)

631 SAMPLE AND TESTING IMPORTED SOILS AND SANDS

- The soil materials considered for importation shall be independently sampled while stockpiled off site at their source or manufacture location.

- The samples shall be truly representative of the soil to be offered. One Composite Sample shall be taken for every 250m³ of each type of soil to be used.
- Samples shall be analysed strictly in accordance with relevant Testing Schedule given in clauses Q28.
- The samples shall be analysed and reported on a 10 working day turnaround and the Contractor should incorporate this into their programme. An accelerated analysis turnaround will be permitted at the Contractor's cost where programme constraints deem this necessary.
- The sampled soil materials shall be temporarily stockpiled at the source location until the Contract administrator has provided written approval on its suitability for use within the project.

632 IMPORTED TOPSOIL TESTING SCHEDULE

- Topsoil samples shall be tested prior to approval by the Contract Administrator. The following parameters shall be requested (methods in accordance with BS3882:2007 or as indicated):
 1. Visual examination to record Munsell colour, moisture status, aerobic state, soil structure, texture, stoniness (size & shape), the presence of any deleterious materials
 2. pH Value (1:2.5 soil/water extract)
 3. Electrical Conductivity (1:2.5 soil/water extract)
 4. Electrical Conductivity (1:2.5 soil/CaSO₄ extract)
 5. Exchangeable Sodium Percentage
 6. Particle Size Analysis (clay, silt, 5 sands – USGA sieve sizes)
 7. Stone Content by % weight (2-20mm, 20-50mm, >50mm)
 8. Total Nitrogen (% - Dumas Method)
 9. Extractable Phosphorus, Potassium & Magnesium (RB427 Method)
 10. Organic Matter (%)
 11. Carbon: Nitrogen ratio (by calculation)
 12. Potential Contaminants – See parameters in Clause Q28/636

Additional samples and/or additional testing may be required if the initial results are not satisfactory or conclusive.

632A IMPORTED TOPSOIL QUALITY

- Quantity: Provide as necessary to complete the work. Make due allowance for settlement after laying.
- The topsoil shall comply with the following lower and upper limits:

Parameter	Unit	Lower Limit	Upper Limit
Clay (<0.002mm) %	5	18	
Silt (0.002-0.05mm) %	5	35	
Sand (0.05-2.0mm) %	55	80	
Of which at least 45% shall fall into fine to medium sand range			
Stones (2-20mm) %DW	--	15	
Stones (20-50mm) %DW	--	20	
Stones (>50mm) %DW	--	0	
pH Value	Unit	5.5	8.5
Electrical Conductivity (1:2.5 water extract)	µS/cm	--	1500
Electrical Conductivity (CaSO ₄ extract)	µS/cm	--	2800

Exchangeable Sodium Percentage%	--	15
Organic Matter %	4.0	8.0
Total Nitrogen % 0.20 -Carbon: Nitrogen Ratio -- -- 2		
0:1		
Extractable Phosphorus mg/l	26	100
Extractable Potassium mg/l	240	1
200		
Extractable Magnesium mg/l	50	6
00		
Calcium Carbonate %	--	3

634 WASHED SAND TESTING SCHEDULE

- Washed sand samples shall be tested prior to approval by the Contract Administrator. The following parameters shall be requested (methods in accordance with BS3882:2007 or as indicated):
 1. Visual examination to record the presence of any deleterious materials
 2. pH Value (1:2.5 soil/water extract)
 3. Electrical Conductivity (1:2.5 soil/water extract)
 4. Particle Size Analysis (clay, silt, 5 sands – USGA sieve sizes)
 5. Stone Content by % weight (>2mm, >10mm)
 6. Calcium Carbonate (% - BS7755:3:10:1995)

634A WASHED SAND QUALITY

- Quantity: Provide as necessary to complete the work. Make due allowance for settlement after laying.
- Washed Sand that is to be used in the lower section of tree trenches/pits in hard landscape areas shall be a quarried washed sand material that meets the following requirements. It shall not be a marine-dredged sand or a recycled sand.

Parameter	Unit	Lower Limit	Upper
Limit			
Clay & Silt (less than 0.05mm)	%	0	0
Very Fine Sand (0.05 – 0.15mm)	%	0	0
5 15			
Medium Sand (0.25 – 0.50mm)	%	45	6
0			
Coarse Sand (0.50 – 1.0mm)	%	25	45
Very Coarse Sand (1.0 – 2.0mm)	%	0	5

Stones (2-10mm) %DW	0	10	Stones (>10mm) %DW	0	0	pH Value	Unit	5.0	8.0
Electrical Conductivity			µS/cm	--					800
(1:2.5 water extract)									
Calcium Carbonate			%	--					1

Additional samples and/or additional testing may be required if the initial results are not satisfactory or conclusive

636 POTENTIAL CONTAMINANTS

- All imported soils shall free from significant contamination with respect to the proposed end use of the soil. As a minimum requirement, all soils shall meet the following criteria:

Parameter	Level	Unit	Maximum Permissible
Inorganic Arsenic		mg/kg	32
Boron (soluble)		mg/kg	5
Cadmium		mg/kg	3
Chromium (III)		mg/kg	3000
Chromium (IV)		mg/kg	4.3
Copper		mg/kg	100
Lead		mg/kg	450
Inorganic Mercury Hg 2+		mg/kg	170
Nickel		mg/kg	60
Selenium		mg/kg	350
Zinc		mg/kg	200
Phenol		mg/kg	420
Total Cyanide		mg/kg	20
Aliphatic C5-C6		mg/kg	110
Aliphatic C6-C8		mg/kg	370
Aliphatic C8-C10		mg/kg	110
Aliphatic C10-C12		mg/kg	540
Aliphatic C12-C16		mg/kg	3000
Aliphatic C16-C35		mg/kg	76,000
Aromatic C5-C7		mg/kg	280
Aromatic C7-C8		mg/kg	611
Aromatic C8-C10		mg/kg	151
Aromatic C10-C12		mg/kg	346
Aromatic C12-C16		mg/kg	593
Aromatic C16-C21		mg/kg	770
Aromatic C21-C35		mg/kg	1230
Acenaphthene		mg/kg	1000
Acenaphthylene		mg/kg	850
Anthracene		mg/kg	9200
Benz(a)anthracene		mg/kg	5.9
Benzo[a]pyrene		mg/kg	0.98
Benz(b)fluoranthene		mg/kg	7.0

Benzo(g,h,l)perylene	mg/kg	47
Benz(k)fluoranthene	mg/kg	10
Chrysene	mg/kg	9.3
Dibenzo[a,h]anthracene	mg/kg	0.93
Fluoranthene	mg/kg	670
Fluorene	mg/kg	780
Indeno(1,2,3-cd)pyrene	mg/kg	4.2
Naphthalene	mg/kg	8.7
Phenanthrene	mg/kg	380
Pyrene	mg/kg	1600
Sulphate (soluble)	mg/l	500
Sulphate (total potential)	%	0.24

650A NOTICE

- Give notice before: - Setting out.
 - Soil decompaction treatments - Spreading subsoil
 - Spreading topsoil.
 - Applying fertilizer.
 - Final cultivations
 - Visiting site during maintenance period.
- Period of notice: One week.

655A MECHANICAL TOOLS

- Restrictions: Do not use within 100 mm of plant stems or within the tree root protection zone.

660A SPREADING SUBSOIL

- Remove all temporary roads/surfacing /building materials from the basal layer (top of formation level) before spreading subsoil.
- The surface of the formation layer shall be loosened to minimum 500mm depth by ripping at 600mm centres, using appropriate tillage equipment (e.g. rigid tine, subsoiler).
- Unless otherwise agreed by the project Landscape Architect prior to soiling operations, the subsoil shall be respread using the 'loose-tipping' method.
- A dump truck shall transport the subsoil to the desired location and tip it in a line of heaps.
- The subsoil shall be spread by a second excavator working from the formation layer or a temporary surface or adjacent hardstanding.
- The subsoil shall be spread and then firmed by trampling in (restricted access areas), tracking in or using the excavator bucket (as deemed appropriate).
- Grade to smooth flowing contours to achieve specified finished depths of subsoil. Depths after firming and settlement (minimum) to be as specified.

665A SPREADING TOPSOIL

- Remove all temporary roads/surfacing before spreading topsoil.
- Unless otherwise agreed by the project Landscape Architect prior to soiling operations, all topsoil shall be respread using the 'loose-tipping' method.
- A dump truck shall transport the topsoil to the desired location and tip it in a line of heaps.
- The topsoil shall be spread by a second excavator working from the subsoil layer or a temporary surface or adjacent hardstanding.
- The topsoil shall be spread and then firmed by trampling in (restricted access areas), tracking in or using the excavator bucket (as deemed appropriate). Depths after firming and settlement (minimum) to be as specified.

- Grade to smooth flowing contours to achieve specified finished depths of topsoil.
- 667 SOIL DEPTHS
- Soil depths shall be in accordance with the Uncommon Land drawings.
- 670 INSPECTING FORMATIONS
- Give notice: Before spreading topsoil for
 - areas to receive forestry planting; -
 - lawn areas; and - planting beds.
 - Notice period: 7 days.
- 680 SURPLUS TOPSOIL TO BE RETAINED
- Generally: Spread and level on site:
 - Locations: As agreed with the contract administrator.
 - 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 as agreed with the contract administrator.
 - Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.
- 690A TOPSOIL STORAGE HEAPS
- Location: As agreed with the contract administrator..
 - Height (maximum): 2.0 m unless advised by the appointed soil scientist.
 - Protection:
 - To protect from wet weather once the final height is achieved, a tracked dozer shall regrade the sides and top of each stockpile to encourage water to runoff. The tracked dozer shall then compact down the surface of the stockpile by tracking across it to seal in the dry soil and reduce rainfall infiltration.- Do not place any other material on top of storage heaps.
 - Do not place any other material on top of or adjacent to each stockpile.
 - Do not place different soil types on top of or adjacent to each stockpile.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination, by fencing and covering as appropriate.
- 695A CULTIVATION
- After spreading topsoil, the soil profile shall be ripped at 200mm centres to a minimum depth of 250mm (grass areas) or 500mm (shrubs, hedges) to decompact the soils and key in the topsoil and subsoil layers.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
 - Any large, compacted lumps of soil shall be broken down by further appropriate cultivation (in accordance with BS 4428) to produce a fine tilth suitable for planting (<30mm), turfing and seeding (<10mm).
 - The topsoil may be anaerobic after storage in a temporary stockpile - cultivations shall ensure that the topsoil is fully aerated.
 - Only when the topsoil has lost any sour odour and grey coloration (symptoms of anaerobism) will it be satisfactory for planting, turfing or seeding.
 - Any undesirable material brought to the surface during this exercise shall be removed by picking or raking. For example, stones, fill materials and coarse vegetation larger than 50mm in any dimension.
 - Surface: Leave regular and even.
 - Levels: As shown on drawings.
 - 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.

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

825A **APPLYING FERTILIZER FOR TREES AND SHRUBS PROVISIONAL ITEM.**

- Apply and incorporate compound, slow release fertiliser Scotts Enmag CRF (11%N:22% P2O5:9%K2O:6%MgO) or equal and approved at a rate of 80 g/m2 and to a depth of 150mm.
- Timing: Apply 5-10 days prior to planting.

830 **USE OF COMPOST AND FERTILISERS**

- The use of additional green compost, fertilisers or any other soil ameliorants is dependent on the findings of the soil tests (as presented for Q28/635 Documentation) and the written approval of the project Soil Scientist.

COMPLETION

905 **APPLYING MAINTENANCE FERTILIZER**

- Time of year: March or April.
- Application: Evenly spread, carefully incorporating below mulch materials.
- Rate: To manufacturer's recommendations.

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 scrub to ground level by flail mowing and remove arisings.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: Remove any material likely to affect the planting operations and safety before, during and after installation.

118 SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (except in 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.

125 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.
- Colchicum (crocus): July/ August.
- Green bulbs: After flowering in spring.
- Wildflower plugs: Late August to mid November or March/ April.
- Aquatic plants: May/ June or 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.

155A FIRE AND RUBBISH

- Burning on site of materials arising from the works or of any other materials will not be permitted under any circumstances during the works or during the maintenance period.
- All rubbish and arisings from the works on a day to day basis shall be cleared away and removed from the site as it accumulates. The site shall be left clean and in good order at all times. The

Contractor is to allow for immediately clearing the highways of deposits or droppings from vehicles used for the works.

160A 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.
- Set out an example of each mix or planting type and seek approval prior to planting.

170 SOIL REQUIREMENTS •

Type

- Planted beds: As Q28.
- Tree pits, shrub pits and other backfilling: As Q28.
- External container planting: As Q28.
- Mulch applied after planting: As Q28.

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 relevant parts of BS 3936.
 - Species: True to name.
 - Origin/ Provenance: Grown in the United Kingdom for at least one growing season, unless otherwise approved.
- 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 (available on CS Design Software Limited's website).

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: 18-21°C. 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.

246 LABELLING AND INFORMATION

- Standard: To BS 3936.

255A PLANTS/ TREES RESERVED AT SUPPLIER'S PREMISES

- Types/ Species: As drawings and plant schedules.
- Predelivery inspection: Give notice.
- Labelling: Identify inspected plants/ trees as reserved for use on this project.
- At the time of tender it is the contractors responsibility to notify the contract administrator of any discrepancies between the schedules, drawings and highlight and planting areas that may not be labelled clearly.

255B PLANT SELECTION

- The intention is to select and mark at the earliest appropriate time all the plant material listed in the accompanying schedules to meet the size shown in schedules. These sizes must be achieved when the material is delivered to and planted on the site.
- All selected plant material will be retained in approved areas of the Contractor's nursery or nurseries and clearly marked as being for the project.

255C PLANT SELECTION

- If not approved at the nursery and before any planting commences the Contractor shall deliver to the site labelled samples of the plants but not the trees they propose to use. A sample of any variety of plant shall comprise at least five plants which upon the approval of the Contract Administrator for size, quality, shape and variety shall be deemed to be the minimum quality of the sample variety acceptable for incorporation into the works.
- Approved sample plants shall either be heeled in temporarily, or planted in their final positions as directed by the Contract Administrator. On no account unless so directed in writing by the Contract Administrator shall approved samples be removed and the Contractor shall be deemed to have allowed for their protection in accordance with normal horticultural practice.
- Samples which are not approved shall be removed at the Contractor's own expense.
- Any material below the approved standard shall be removed and replaced at the Contractor's own expense.

260A 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.
- Further alternatives: Proposed substitutions may not be acceptable and submission of further alternatives may be required.
- Approval: Obtain before making any substitution.

265A PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To CPSE '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: Pots.
- Packaging of bulk quantities: Dutch Trolleys or similar unless alternate method is submitted and approved in writing.
- Planting: Upright or well balanced with best side to front.

265B PLANT HANDLING, STORAGE TRANSPORT AND PLANTING ROOTBALLED PLANTS

- All rootballed plants shall be lifted in accordance with good nursery practice and the deciduous trees/conifers shall be machine root balled with root ball size appropriate to the height of tree and as per current British Standards, and in accordance with the best nursery and horticultural practice if required.

- A full method statement of lifting technique and machinery along with the minimum, optimum and maximum time between lifting material and replanting on the site shall be included with the Tender return and will be subject to approval by the Contract Administrator.
- Root balls shall be completely wrapped in degradable hessian carefully tied round the base of the trunk. The root balls shall then be fully encased in ungalvanized chain link annealed wire mesh. The wire mesh shall be fully tensioned to provide maximum support to the rootball. Prior to lifting the plant material shall be sprayed with anti-desiccant in accordance with best nursery practice if so required by the Contract Administrator.
- The Contractor shall be responsible for all costs associated with the transportation of the material to the site including obtaining the necessary licences, complying any quarantine requirements etc. of any plant material being imported to the UK.
- The Contractor shall provide copies of the licences for inspection when requested by the Contract Administrator.

265C INSPECTION AND RECORDS

- The Contractor will afford access and assistance to the Contract Administrator to visit and inspect the plant material within this Contract during the period they are being grown on in the nursery for the project.
The Contractor will maintain records of all the operations carried out to the plant material and land on which it is grown on subject to this contract and make these available for the Contract Administrator inspection.

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.

290 SURPLUS MATERIAL

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

PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

305 WEED CONTROL FOR INVASIVE NON-NATIVE WEEDS

- Locations: All planting areas.
- General: Prevent weeds from seeding and perennial weeds from becoming established, by hand weeding.

375A CULTIVATION GENERALLY

- Unless recommended otherwise by the soil scientist the soil profile shall be ripped at 200mm centres to a minimum depth of 250mm (grass areas) or 500mm (shrubs, hedges) to decompact the soils and key in the topsoil and subsoil layers.
- Timing: Within a few days before planting.
- Weather and ground conditions: Suitably dry.
- Any large, compacted lumps of soil shall be broken down by further appropriate cultivation (in accordance with BS 4428) to produce a fine tilth suitable for planting (<30mm), turfing and seeding (<10mm).
- The topsoil may be anaerobic after storage in a temporary stockpile - cultivations shall ensure that the topsoil is fully aerated. Only when the topsoil has lost any sour odour and grey coloration (symptoms of anaerobism) will it be satisfactory for planting, turfing or seeding.
- Any undesirable material brought to the surface during this exercise shall be removed by picking or raking. For example, stones, fill materials and coarse vegetation larger than 50mm in any dimension.
- Surface: Leave regular and even.
- Levels: As shown on drawings.
- Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

- 401A REGULAR PLANT LAYOUT TO ALL BEDS
- Spacing: As drawings.
 - Density: As drawings.
 - Setting Out: Set out sample areas as 160A.
- 405 SHRUB PLANTING PITS
- Timing: Excavate 1-2 days (maximum) before planting.
 - Sizes: Drawings and plant schedule.
 - Pit bottom improvement Not required.
- 415 ANTIDESICCANT FOR CONIFERS/ EVERGREENS
- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Application: Dip before delivering to site. Spray soon after planting.
 - Do not apply in wet or frosty weather.
 - Ensure full coverage of underside of foliage.
- 420 CLIMBING PLANTS
- Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
 - Branches: Lightly secured to supports.
 - Climber supports: Stainless steel wire to Contractors detail.
 - Base height: As drawing to Contractors detail. - Extent: As drawing to Contractors detail.
 - Centres: As drawing to Contractors detail
 - Distance from wall: As drawing to Contractors detail.
 - Fixings: To Contractors detail.
 - Centres: To Contractors detail.

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.

470 FORMAL HEDGES

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

471 NATURALIZED HEDGES

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

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: Mulching and top dressing system, as section Q28. - Depth: 25 mm.

PLANTING TREES

500 TREE PLANTING

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

502 ANTIDESICCANT FOR CONIFERS/ EVERGREENS

- Manufacturer: Submit proposals.
 - Product reference: Submit proposals.
- Application: Dip or thoroughly spray before delivering to site. Spray again soon after planting.
 - Do not apply in wet or frosty weather.
 - Ensure full coverage of underside of foliage.

505 TREE PITS

- Sizes: Refer to drawings.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Excavated material: Separate topsoil and subsoil material and stockpile for backfilling.
- Pit bottoms: Excavate with slightly raised centre: Refer to drawings.
 - Treatment: Refer to drawings.
- Pit sides: Scarify.
- Backfilling material: As section Q28.

510 TREE PIT ROOT BARRIERS

Locations: Refer to drawings.

- Manufacturer: Terram, Fiberweb Geosynthetics Ltd, Blackwater Trading Estate, The Causeway, Maldon, Essex, CM9 4GG. Tel: 01621 874200, Email: info@terram.com or equal and approved.

- Product reference: Rootguard. • Thickness: As manufactured.
- Barrier depth: Refer to drawings.
- Foil liner: Not required.
- Top of root barrier in relation to finished topsoil level: Refer to drawings.
- Installation: With sides vertical. Remove all sharp objects adjacent to barrier.

512A TREE PIT IRRIGATION AND VENTILATION ACCESSORIES IN PLANTED AREAS

- Locations: Refer to drawings.
- Manufacturer: Green Blue Urban, Northpoint, Compass Park, Junction Road, Bodiam, TN32 5BS. Tel. 01580 830 800 or equal and approved.
 - Product reference: RootRain Urban or equal and approved.
- Type: Perforated plastics ventilation pipe with inlet.
- Pipe diameter: Submit proposals.
- Ring diameter: Submit proposals.
- Inlet: Black plastics, with cap.
- Installation:
 - 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.
 - Top cap of inlet: Protruding slightly above finished surround level. - Backfill material: Carefully compact in layers.

515 TREE PIT DRAINAGE

- Locations: As drawing.
- Depth of excavation: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - Depth: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet..
- Drainage pipes:
 - Type: Perforated plastics.
 - Diameter: Contractor's choice.
 - Position: Lay around perimeter of pit within aggregate layer. - Discharge: Not required.
- Geotextile filter:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Position: Lay over aggregate before installing tree or backfill.
- Completed pits: Test for free drainage before planting.

526 UNDERGROUND GUYING FOR ALL TREES.

- Manufacturer: Green Blue Urban, Northpoint, Compass Park, Junction Road, Bodiam, TN32 5BS. Tel. 01580 830 800 or equal and approved. - Product reference: ArborGuy or equal and approved.
- Anchoring system: pre-cast concrete dead-man anchors.
- Installation: Ensure tree is positioned correctly and vertically prior to tightening guy line tensioners.

528 AERATION PIPING AND CAP

Aeration Cap - RootRain Arbovent 100mm x 100mm Square Stainless Steel grid cap by Green Urban Blue Ltd. or equal & approved. Tel 01424 433 233.

- The Contractor is to prepare and submit to the Contract Administrator for approval a sample of the aeration pipe and cap they intend to use for planting the trees.
- The aeration pipe system is to be contained within the tree pit, inspection pipe to be located at the base of the tree and be fit for it's intended purpose of aerating the tree rootball in accordance with good horticultural practice.
- Aeration Cap - RootRain Arbovent 100mm x 100mm Square Stainless Steel grid cap by Green Urban Blue Ltd. or equal & approved. Tel 01424 433 233.

625B CULTIVATION

- General: Ripping at 500 mm centres to full depth of topsoil.
- Consolidation: Leave for one month.
- Soil within root spread of trees to be retained: Do not plough or cultivate.

635 NOTCH PLANTING IN UNCULTIVATED GROUND

- Notching: Make a vertical 'I', 'L', 'T' or 'H' notch.
 - Depth: To accommodate full depth of roots.
- Planting: Plant tree, close notch with root collar at ground level and firm the soil.

665 SETTING OUT

- Distance between trees: As drawing.
- Distance between rows: As drawing. - Plant in staggered rows.

680 SETTING OUT

- Planting density: As plant schedule.
- Layout: Random groups of no less than 3 or more than 7 of the same species, ensuring that no three plants are aligned in any one direction.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

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: Submit proposals.

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: During the next suitable planting season if not in an irrigated area.

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.
- 750 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 hand weeding.
- 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.
 - Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
 - Trees: Spray crown when in leaf during warm weather.
 - Timing: After dusk.
 - Tree accessories: Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
 - Broken or missing items: Replace.
 - Loose stakes: Re-firm in the ground or replace as necessary to provide support to the tree.
 - Loose guys: Re-firm anchor points and adjust as necessary to provide support to the tree.
 - Ties: Adjust to accommodate growth and prevent constriction or abrasion.
 - Damage to bark: Cut back neatly with sharp knife. Prevent further damage. - Frequency of checks: Every month.
 - Watering: As required for healthy establishment, depending on weather conditions.
- 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.
- 780 MAINTENANCE INSTRUCTIONS
- General: Before end of the maintenance period, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year: Provide a schedule of any ongoing maintenance problems experienced during the rectification period.
- 790 FINAL MULCHING
- 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): 25 mm. •
 - Trees: Remulch.
 - Depth (minimum): 25 mm.

Q35 Landscape maintenance

To be read with Preliminaries/ General conditions.

GENERALLY

105A MAINTENANCE OBJECTIVES

- Location: Site as defined on the drawings and within the contract documents.
 - Duration: If not stated elsewhere the minimum Maintenance Period for trees will be 36 months, and the minimum Maintenance Period for shrubs and other planting will be 12 months.
- Aims: The Contractor shall programme regular visits so as to carry out required maintenance operations and ensure that the site is kept clean in a tidy and weed free condition at all times. He shall allow for at least 24 visits during the growing season and 10 visits outside the growing season for all shrub and tree areas and at least 30 visits to cut the grass areas each year.
- Restrictions: None
- Visits: The Contractor shall programme regular visits so as to carry out required maintenance operations and ensure that the site is kept clean in a tidy and weed free condition at all times. He shall allow for at least 24 visits during the growing season and 10 visits outside the growing season for all shrub and tree areas and at least 30 visits to cut the grass areas each year.
- Notice: The Contractor shall advise the client representative in writing at least 48 hours prior to carrying out any maintenance visits.
- Records: The Contractor shall keep full records of all maintenance visits indicating the date and time of all visits, the operations carried out, any machinery used for the operation, the number of staff employed during the visit and weather records at the time of the visit.
- Methodology: The Contractor shall submit written details AT THE TIME OF TENDERING of the methods and frequency of maintenance and types of herbicides that they propose to use during the maintenance period.
- Theft and Vandalism: The Contractor shall immediately, upon discovery, report any note of vandalism or theft or suspicion of either to the clients representative.
- Completion of Visit: Upon completion of every visit the Contractor shall present a report slip for signature to the clients representative. Upon signature the report slips shall be forwarded to the Contract Administrator. No claim for payment shall be met if the visit has not been so recorded.

110 NOTICE

- Give notice before:
 - Application of herbicide.
 - Application of fertilizer.
 - Watering.
 - Each site maintenance visit.
- Period of notice: 7 days.

130 REINSTATEMENT

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

145 CONTROL OF INVASIVE ANIMAL SPECIES

- Specialist firms: Submit proposals.
- Species: As Instructed.
- Location: Whole site.

- Method: Submit Proposals.
- 152 PERFORMANCE CRITERIA FOR CONTROL OF INVASIVE PLANT SPECIES
- Specialist firms: Submit proposals. Species:
Japanese knotweed.
- Location: Whole site.
 - Requirement: complete removal. - Timing: Submit Proposals.
- 152A PERFORMANCE CRITERIA FOR CONTROL OF PESTS AND DISEASES
- Inspection: The Contractor shall inspect monthly all planted areas, including trees, for any signs of pest or disease infection and shall report any such discovery to the clients representative.
 - Reporting: Upon discovery of such pest or disease the Contractor shall apply a suitable approved pesticide or other remedy in accordance with good horticultural practice.
 - Specialist firms: Submit proposals.
 - Location: Whole site.
 - Timing: Submit Proposals.
- 155 WATERING
- Supply: Potable mains water.
 - Quantity: Wet to field capacity .
 - Application: Do not damage or loosen plants.
 - Compacted soil: Loosen or scoop out, to direct water to rootzone.
 - Frequency: As necessary for the continued thriving of all planting.
- 160 WATER RESTRICTIONS
- General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.
- 170 DISPOSAL OF ARISING
- General: Unless specified otherwise, dispose of arisings as follows:
 - Biodegradable arisings: Remove to recycling facility.
 - Grass cuttings: Remove to recycling facility.
 - Tree roots and stumps: Remove from site.
 - Shrub and tree prunings: Remove to recycling facility.
 - Litter and nonbiodegradable arisings: Remove from site.
- 180 CHIPPING OR SHREDDING
- General: Not permitted on site.
- 181A MECHANICAL EQUIPMENT
- General: Minimize.
 - Equipment: Noisy equipment.
 - Timing: Use of mechanical equipment as agreed with the clients representative at the time of tender.
 - The Contractor is responsible for ensuring any maintenance vehicles and/or machinery do not interfere with or obstruct the client's day to day operations or cause any nuisance to the clients representative.
 - Where vehicles are to be parked and/or moved about the client's land for maintenance purposes the Contract Administrator shall be informed of the presence of those vehicles as necessary.
- 190 LITTER

- Extraneous rubbish not arising from the contract work: Collect and remove from site.
- 197 **CLEANLINESS**
 Soil and arisings: Remove from hard surfaces.
 General: Leave the works in a clean, tidy condition at completion and after any maintenance operations.
- 225 **TREE STEMS**
- Precautions: Do not use mowing machinery closer than 100 mm to tree stems. Use nylon filament rotary cutters and other handheld mechanical tools carefully to avoid damage to bark.
- 226 **TREE STEMS**
- Precautions: Do not allow nylon filament rotary cutters and other mechanical tools closer than 100 mm to the stem of any tree.
 - Operations close to stems: Complete using hand tools.
- 250 **LEAF REMOVAL**
- Operations: Collect fallen leaves.
 - Special requirements: None.
 - Disposal: Remove from site for recycling.
- 345 **CONTROL OF JAPANESE KNOTWEED**
- Operations: Spot treat in June and September during suitable weather conditions and when plants are growing vigorously.
 - Herbicide: In accordance with the Environment Agency 'Managing Japanese knotweed on development sites. The knotweed code of practice'.
 - Application: In accordance with the Environment Agency 'Managing Japanese knotweed on development sites. The knotweed code of practice'.
 - Arisings: In accordance with the Environment Agency 'Managing Japanese knotweed on development sites. The knotweed code of practice'.
- 350 **FERTILIZER - SPRING APPLICATION**
- Type: Slow release.
 - Application rate: 60 g/m².
- 360 **FERTILIZER - AUTUMN APPLICATION**
- Type: Slow release.
 - Application rate: 60 g/m².
- SHRUBS/TREES/HEDGES**
- 500 **ESTABLISHMENT OF NEW PLANTING**
- Duration: 1 year.
 - Weed control:
 - Method: Keep planting beds clear of weeds by hoeing and screefing.
 - Area: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
 - Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.

- Watering: Where there is no irrigation system is specified water as and when required to ensure the planting thrives.
- 502 ESTABLISHMENT OF NEW PLANTING - FERTILIZER
- Time of year: March or April. Type: Slow release.
- Spreading: Spread evenly. Carefully lift and replace any mulch materials. - Application rate: As manufacturer's recommendations.
- 520 REFIRMING OF TREES AND SHRUBS
- Timing: After strong winds, frost heave and other disturbances.
 - Refirming: Tread around the base until firmly bedded.
 - Collars in soil at base of tree stems, created by tree movement: Break up by fork, avoiding damage to roots. Backfill with topsoil and refirm.
- 537 NESTING WILD BIRDS
- Survey: Before starting hedge or tree work during the period of February to August (inclusive), carry out a survey by a qualified ecologist and submit report.
 - Accidental disturbance: Report immediately.
- 540 PRUNING GENERALLY
- Pruning: In accordance with good horticultural and arboricultural practice. - Removing branches: Do not damage or tear the stem or bark.
 - Wounds: Keep as small as possible and cut cleanly back to sound wood.
 - Cutting: Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - Larger branches: Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
 - Appearance: Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well balanced natural appearance.
 - Tools: Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
 - Disease or infection: Give notice if detected.
 - Growth retardants, fungicide or pruning sealant: Do not use unless instructed.
- 545 PRUNING OF EXCESSIVE OVERHANG
- Timing: Annually.
 - Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
 - Special requirements: None.
- 550 PRUNING OF EXCESSIVE HEIGHT
- Timing: Annually.
 - Operations: Remove excessive height As instructed.
- 555 PRUNING TREES AND SHRUBS
- Standard: To BS 7370-4.
 - Special requirements: Growth retardants not permitted.

570 FORMATIVE PRUNING OF YOUNG TREES

Standard: Type and timing of pruning operations to suit the plant species.

Time of year: Do not prune during the late winter/ early spring sap flow period.

Young trees up to 4 m high:

- Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.
- Remove duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
- Whips or feathered trees: Do not prune.
- Operatives: Approved specialist contractor.

575 PRUNING ORNAMENTAL SHRUBS

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

580 PRUNING FLOWERING SPECIES OF SHRUBS AND ROSES

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

600 TRIMMING RAPIDLY ESTABLISHING HEDGES

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

605 TRIMMING SLOWLY ESTABLISHING HEDGES

- Operations:
 - Timing: Cut back hard in June and September to encourage bushy growth down to ground level.
 - Form: Allow to reach planned dimensions only by gradual degrees, depending on growth rate and habit.

611 TRIMMING NONTAPERING ESTABLISHED HEDGES

- Time of year: Regular trimming from June to September.
- Operations:
 - Form: Trim carefully and neatly to regular line and shape with vertical sides. -
Trim: Remove current growth rather than old wood.
- Tools/ Cutting: Shears.

620 REMOVAL OF DEAD PLANT MATERIAL

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

625 CLIMBING PLANTS

- Pruning: Remove excess growth, to ensure that signs, light fittings, doors and windows are kept clear at all times.

- Insecure growth: Attach to supporting wires or structures using 1 mm diameter black plastics coated steel wire.
 - Supporting structures: Check and repair as necessary.
- 630 DEAD AND DISEASED PLANTS
Removal: Within 1 week of notification.
Replacement: In the next suitable planting season.
- 635 REINSTATEMENT OF SHRUB/ HERBACEOUS AREAS
- Dead and damaged plants: Remove.
 - Mulch/ matting materials:
 - Carefully move to one side and dig over the soil, leaving it fit for replanting.
 - Do not disturb roots of adjacent plants.
 - Replacement plants:
 - Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
 - Additional requirements: Submit details and cost of plants before ordering.
 - Dressing: Slow release fertilizer:
 - Type: Submit proposals.
 - Application rate: As manufacturer's recommendations.
- 640A THINNING BY REMOVAL OF SURPLUS PLANTS
- Plants to be thinned: Shrub beds.
 - Standard: BS 7370-4.
 - Timing: At end of growing season unless irrigated in which case when instructed.
 - Roots:
 - Disturbance to adjacent plants: Minimise.
 - Soil: Refill holes with topsoil to leave an even graded surface.
 - Mulch: Maintain mulch as original specification.
 - Adjacent plants: Make good any minor damage immediately.
 - Plants for retention: Select plants with a strong healthy habit.
 - Mature planting density: As schedules.
 - If required use plants to fill and gaps on other parts of the bed or mix.
- 645 WEED CONTROL GENERALLY
- Weed tolerance: Weed to clear ground every 2 weeks.
 - Adjacent plants, trees and grass: Do not damage.
- 650 HAND WEEDING
- General: Remove weeds entirely, including roots.
 - Disturbance: Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
 - Completion: Rake area to a neat, clean condition.
 - Mulch: Reinstate to original depth.
- 680 SOIL AERATION
- Compacted soil surfaces:
 - Prick up: To aerate the soil of root areas and break surface crust.
 - Size of lumps: Reduce to crumb and level off.

- Damage: Do not damage plants and their roots.

685 SOIL LEVEL ADJUSTMENT

- Level of soil/mulch at edges of beds: Reduce to 50 mm below adjacent grass or hard surface.
- Arisings (if any): Spread evenly over the bed.

690 MAINTENANCE OF LOOSE MULCH

Thickness (minimum): 50 mm.

- Top up: Twice per year or as required.

Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.

- Weeding: Remove weeds growing on or in mulch by hand weeding.

695 FERTILIZING ESTABLISHED TREES AND SHRUBS

- Time of year: As required.
- Type of fertilizer: Submit Proposals.
- Application: Spread evenly.
- Rate: As manufacturer's recommendations.

700 SNOW REMOVAL FROM SHRUBS/ TREES

- Standard: To BS 7370-4.
- Plants subject to snow removal: All evergreens.
- Timing: When instructed.

705 WINTER LEAF REMOVAL

- Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds.
- Arisings: Remove to recycling facility.

TREE WORK

810 TREE WORK GENERALLY

- Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
- Protection: Avoid damage to neighbouring trees, plants and property.
- Standards: To BS 3998 and Health & Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'.
- Removing branches: Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
- Appearance: Leave trees with a well balanced natural appearance.
- Chain saw work: Operatives must hold a Certificate of Competence.
- Tree work: To be carried out by an approved member of the Arboricultural Association.

815 ADDITIONAL WORK

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

820 PREVENTION OF WOUND BLEEDING

- Standard: To BS 3998.

825 PREVENTION OF DISEASE TRANSMISSION

- Standard: To BS 3998.

830 CLEANING OUT AND DEADWOODING

- Remove:
 - Dead, dying, or diseased wood, broken branches and stubs.
 - Fungal growths and fruiting bodies.
 - Rubbish, wind blown or accumulated in branch forks.
 - Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
 - Other unwanted objects, e.g. tree houses, swings.
 - Climbing plants remove if not part of original scheme.

- 835 CUTTING AND PRUNING GENERALLY
Tools: Appropriate, well maintained and sharp.
- Final pruning cuts:
 - Chainsaws: Do not use on branches of less than 50 mm diameter.
 - Hand saws: Form a smooth cut surface. - Anvil type secateurs: Do not use.
 - Removing branches: Do not damage or tear the stem.
 - Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
 - Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible. Large branches: Remove only with prior approval.
 - Remove in small sections and lower to ground with ropes and slings.
 - Dead branches and stubs: When removing, do not cut into live wood.
 - Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
 - Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.
- 840 CROWN REDUCTION/ SHAPING
- General: Cut back selectively to lateral or sublateral buds or branches to retain flowing branch lines without leaving stumps.
 - Operations: Remove and shape as instructed.
- 850 CROWN THINNING
- Removing branches: Remove inward growing, crossing, rubbing, dead and damaged branches.
 - Thinning: Selectively remove secondary and small live branch growth evenly throughout the crown.
 - Quantity: As instructed.
 - Cutting: Make no cuts of more than 50 mm diameter.
 - Branches: Cut back to lateral or sublateral buds or branches without leaving stumps.
 - Appearance: Leave a uniform and well balanced structure of branches and foliage.
- 855 CUTTING TREE ROOTS
- Excavating: Use hand tools only.
 - Protected area: Do not cut roots within an area which is the larger of: - The branch spread of the tree.
 - An area with a radius of half the tree's height, measured from the trunk.
 - Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.
 - Cutting:
 - Cutting: Make clean smooth cuts with a hand saw.
 - Wounds: Minimize. Avoid ragged edges.
 - Finishing: Pare cut surfaces smooth with a sharp knife.
 - Backfilling:
 - Protection: Cover cut roots with clean sharp sand. - Material: Backfill with original topsoil.
- 860 REMOVING TREES, SHRUBS AND HEDGES
Standards: To BS 3998 and Health & Safety Executive (HSE)/ Arboricultural and Forestry Advisory Group Safety Leaflets.
Existing services: Check for below and above ground services. Give notice if they may be affected.
- Shrubs and smaller trees: Cut down and grub up roots.
 - Tree stumps:

- Treatment: Remove mechanically to a minimum depth of 300 mm below ground level. -
Removal by winching: Give notice. Do not use other trees as supports or anchors.
- Protection: Avoid damage to neighbouring trees, plants and property.
- Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Filling holes:
 - Material: Use as-dug material and/ or imported soil as required.
 - Finishing: Consolidate and grade to marry in with surrounding ground level.

865 BARK DAMAGE

- Wounds:
 - Do not attempt to stop sap bleeding.
 - Bark: Remove ragged edges using a sharp knife.
 - Wood: Remove splintered wood from deep wounds. - Size: Keep wounds as small as possible.
- Liquid or flux oozing from apparently healthy bark: Give notice.

870 CAVITIES IN TREES

- Investigation: Remove rubbish and rotten wood. Probe the cavity to find the extent of any decay, and give notice.
- Water filled cavities: Do not drain.
- Sound wood inside cavities: Do not remove.
- Cavity openings: Do not cover.

Q50 Site/street furniture/equipment

To be read with Preliminaries/ General conditions.

SITE AND STREET FURNITURE

240 LARGE POT – *Bola Artstone Plant Pot*

Manufacturer: Hortology Ltd, Unit 1D Marconi Road, Burgh Road Industrial Estate, Carlisle, CA2 7NA, United Kingdom. Email: info@hortology.co.uk

- Size: Large, 55x45cm
- Finish: As manufactured
- Colour: As manufactured
- Shop drawings: Submit full and obtain approval prior to manufacture.

241 MEDIUM POT – *Bola Artstone Plant Pot*

Manufacturer: Hortology Ltd, Unit 1D Marconi Road, Burgh Road Industrial Estate, Carlisle, CA2 7NA, United Kingdom. Email: info@hortology.co.uk

- Size: Medium, 45x38cm
- Finish: As manufactured
- Colour: As manufactured
- Shop drawings: Submit full and obtain approval prior to manufacture.