

30a Highgate Road

SOFT LANDSCAPE SPECIFICATION

8158-SP201

APRIL 2012

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1.0 GENERAL CLAUSES

1.1 This specification should be read in conjunction with the following drawings:

Dwg. No	Title	Scale	
Soft Landscape Series			
8158-103	Soft Landscape GA	1:100	@A1
8158-301	Typical Soft Landscape Details	As shown	@A1
8158-302	Planting Schedule	N/A	
8158-303	Planting Plan - Sheet 01	1:20	@A1
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2.0 SCOPE OF WORKS

Note: Clearance / excavation works, installation of drainage and installation of irrigation will be the sole responsibility of the main contractor.

The work includes the following items:

- Supply and laying of premium grade topsoil and subsoil to depths as specified
- Spring-ringing of all trees
- Purchase, importation and planting of semi mature trees from the recommended suppliers (note: all trees are to be pre-tagged by the landscape architect in the supply nurseries. Organisation and expense of the tagging trip is to be met by the landscape contractor).
- Purchase, transportation and planting of container-grown shrubs, climber plants, groundcover plants and herbaceous plants from approved supply nurseries.
- Maintenance of all the above items as specified for two year period with a guarantee and replacement period to run in parallel with the maintenance period in strict accordance with the specification.

3.0 GENERAL NARRATIVE ON MATERIALS, WORKMANSHIP AND PROCEDURE

CONTRACTORS' NOTE

The following narrative relates to implementation of soft landscape and soiling works only.

PREPARATION OF AREAS AND HERBICIDE TREATMENT

On completion of all topsoiling works, all areas shall be cultivated and treated as specified, with all stones, flints, timber, brickbats and other foreign bodies larger than 50mm in any dimension removed, for approval on site by the landscape architect prior to any planting taking place. During the subsequent spraying operations, all logical precautions must be taken in preventing the herbicide:

- infecting off-site areas by windblow or other means
- being left in circumstances that may render it liable to access by children or other sectors of the community.
- being left in any circumstances that may render it a hazard in any way.

FERTILISER, MANURE, COMPOST, SUBSOIL, ENGINEERING SOIL, TOPSOIL ETC.

The contractor shall notify the landscape architect of the materials proposed to be used and submit a sample for approval prior to carting to the site. No peat shall be allowed as a soil additive.

PLANTS (INCLUDING ALL TREES)

Plants are to be in accordance with the specified British Standard. Plants shall be well branched and symmetrically shaped, of a normal habit for particular species. All plants shall conform to the measurements and requirements in the plant schedules and shall be of at least the minimum acceptable size for the species. At the time of tendering any plants not available in the size shall be mentioned by the tenderer on submission of all documents. All container grown plants must be well established in order that, on removal, the rootball remains intact through the planting operation.

All shrubs plants are to be supplied container grown unless stated otherwise.

All trees are to be supplied spring-ringed.

SOURCE OF TREES AND SHRUBS

Trees shall be sourced from suppliers approved by the landscape architect only, and will be inspected by the landscape architect prior to delivery to site. Material not in accordance with the specification requirements or British Standards will be rejected. The source of shrub material is to be approved by the LA prior to any order being placed. Substitutions shall only be permitted as and when unavailability is confirmed and substitution material confirmed.

DELIVERY

Delivery of tree and shrub stock shall accord with an approved programme of works. Adequate protection to all material to avoid damage etc. to root systems must be in place during transportation to site. Trees and shrubs not immediately planted on arrival shall be stored safely until required.

PLANTING AREAS

The setting out of all planting areas shall comply fully with the dimensions and patterns shown on the contract drawings, and shall be set out fully with softwood timber stakes for approval by the landscape architect prior to any spraying, cultivation or planting taking place.

TOPSOIL CULTIVATION AND FINAL GRADING

Final grading of the top 100mm is to be carried out to ensure a true specified level and slope to avoid any dishing or other depression where water may collect. The level of topsoil is to be at least 25mm above all paved areas, kerbs, timber edgings etc. to allow for shrinkage/settlement. A final inspection of the site will be undertaken once grading is completed and planting works shall commence only after full approval from the landscape architect.

TREE PLANTING GENERALLY

All tree pits shall be to the specified dimensions. Any pits proving too small once excavated shall be enlarged to easily accommodate the entire rootball. All trees shall have been transplanted at least 2 No. times in the holding nursery prior to inspection in order that, on lifting, the rootball is fibrous and well consolidated. All trees shall be planted at the depth at which they were previously growing.

SHRUB AND PIT PLANTING GENERALLY

Holes for shrubs and pit planting shall be of a sufficient size to take rootballs without breaking, bending or cramping roots. The LA reserves the right to tag and inspect all shrubs whilst still in the suppliers nursery. Plants are to be positioned in the numbers and locations shown on the drawings to achieve even spacing. All plants shall be planted at the same depth at which they were previously growing. All plastic and other imperishable containers shall be removed.

WATERING

All trees, shrubs and other transplants shall be watered in as they are planted, and regularly, as and when necessary.

WEATHER CONDITIONS

On no account shall planting of trees, shrubs and plant material be undertaken when the ground is frozen or in a waterlogged condition.

MAINTENANCE PERIOD

Shall be 24 months for all soft landscape work and shall commence at practical completion.

The landscape contractor shall maintain the works to the satisfaction of the landscape architect during the maintenance period.

DEFECTS LIABILITY

Shall be 24 months for all soft landscape and shall commence at practical completion.

The landscape contractor shall make good any defects in the works to the satisfaction of the landscape architect during the Defects Liability period.

SUBMITTALS

1. A fully detailed and bound maintenance programme for all works up to the end of the Defects Liability Period, and a revised programme prepared at the end of the Defects Liability Period for all works for a period of five years thereafter.
2. Topsoil samples.
3. Topsoil certificates of analysis.
4. Certificate of analysis for spent mushroom compost and/or farmyard manure for each source.
5. Phyto-sanitary certificates for all tree stock.
6. Purchase receipts for compound fertilizer for each delivery confirming quantity.
7. Written confirmation confirming that all contract grown material complies with the specification.
8. Design and method statement for transporting, lifting, planting and guying of all tree stock.
9. Any proposed substitutions to specified products or procedures (eg Q31/181).

To be read with Preliminaries/General conditions

CLEARANCE/EXCAVATING**260A INSPECTING FORMATIONS**

- Give notice: Make advance arrangements for inspection of formations for soft landscape areas by the Contract Administrator (and Landscape Architect if required) or representative.
- Preparation: The Contractor to provide formation level at depths as shown on drawings.
- Profiles and levels to be trimmed as required and loose material removed.
- Note: The Contractor should allow for a level survey of final formation level to ensure no level discrepancies.

DISPOSAL OF MATERIALS**420A TOPSOIL STORAGE HEAPS**

- Refer to Section Q28, Clause 680A of this appendix for details.

FILLING**500A PROPOSED FILL MATERIALS**

- Details: Submit full details of proposed fill materials to demonstrate compliance with specification, including:
 - Type and source of imported fill (refer to Section Q28 Clause 340 A/B/C/D/E/F of this Appendix)
 - Proposals for processing and reuse of material excavated on site.
 - Test reports as required elsewhere (refer to Section Q28 Clause 300A of this

Appendix).

- Timing: 21 days prior to use

510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS

- General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
 - Frozen or containing ice.
 - Organic.
 - Contaminated or noxious.
 - Susceptible to spontaneous combustion.
 - Likely to erode or decay and cause voids.
 - With excessive moisture content, slurry, mud or from marshes or bogs.
 - Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - Unacceptable, class U2 as defined in the Highways Agency MCDHW Volume 1

'Specification for highway works', clause 601.

530 PLACING FILL

- Surfaces of excavations and areas to be filled: Free from loose soil, topsoil, organic material, rubbish and standing water.
- Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and re-compact if not damaged after thawing.
- Adjacent structures, membranes and buried services:
 - Do not overload, destabilise or damage.
 - Submit proposals for temporary support necessary to ensure stability during filling.
 - Allow 14 days (minimum) before backfilling against in situ concrete structures.
- Layers: Place so that only one type of material occurs in each layer.
- Earthmoving equipment: Vary route to avoid rutting.

610 COMPACTED FILLING FOR LANDSCAPE AREAS

- Fill: Material capable of compaction by light earthmoving plant.
- Filling: Layers not more than 200 mm thick. Lightly compact each layer to produce a stable soil structure.

To be read with Preliminaries/ General conditions.

200 GRADING SUBSOIL

- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.

250A SUBSOIL SURFACE PREPARATION

- General: Excavate and/ or place fill to required profiles and levels, as section D20.
- Depth: as shown on drawings.
- 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.
- Stones: Immediately before spreading topsoil, remove stones larger than 75 mm.
- Remove Arisings, contaminants and debris.
- Note: The Contractor should ensure that all subsoil formation areas are de-compacted to allow for free drainage prior to placing subsoil/ topsoil. The Contractor shall notify the Landscape Architect (via the Contract Administrator) of his findings.

260 INSPECTING FORMATIONS

- Give notice: Before spreading topsoil.
- Notice period: 14 days.

300A TOPSOIL ANALYSIS

- All imported soil that is to be considered for use is to be independently sampled and analysed in accordance with the following specification
- No soil shall be delivered to site without receipt of written approval from the Contract Administrator (upon advice from the Landscape Architect). Approval shall be based on compliance of analysis with the specification.
- Sampling:
 - The sampling should be truly representative of the topsoil/subsoil being offered.
 - One Composite sample should be taken for every 250 m³ being considered, with a minimum of 3no. samples per source. Each composite sample should be made up of 10no. sub samples from evenly spaced locations across the field / stockpile. The subsamples should be mixed together and quartered down to form a 1kg composite samples.
 - Each source shall be sampled and analysed by a soil science consultancy to the approval of the Contract Administrator.
- Analysis
 - The composite sample(s) shall be tested prior to approval by the Contract Administrator (Upon advice from the Landscape Architect) in accordance with the topsoil/subsoil specification. The following parameters should be requested :

01. Visual examination to record: Munsell colour, structure, consistency, stone size and shapes, presence of any deleterious materials
02. p H Value (RB427 Method)
03. Electrical Conductivity (1:2.5 soil/water extract)
04. Particle Size Analysis (clay, silt, 5 sands)
05. Stone Content by % weight (>2mm, >20mm. >50mm)
06. Permeability
07. Total Nitrogen (% - Dumas Method)
08. Extractable Phosphorus & Magnesium (RB427 Method)
09. Organic Matter (% - RB427 Method)
10. Zootoxic Heavy Metals – As,Cd, Cr, Pd, Hg, Se
11. Phytotoxic Heavy Metals – Cu, Ni, Zn, B
12. Total Cyanide & total (mono) Phenols
13. Total Sulphate, Elemental Sulphur & Total Sulphide
14. Polyaromatic Hydrocarbons (speciated US EPA 16)
15. Total Petroleum Hydrocarbons (C10-C40 by GC-FID)

- The results of analysis should be presented in an interpretive report to include a Certificate of Analysis and comments on the suitability of the topsoil or subsoil for the proposed landscape scheme. A copy of this specification and the proposed planting list shall be provided for review by the soil scientist and for reference within the analytical report.
- Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
 - Notice period: 7 days
- Once approval has been given all supplies thereafter shall be derived from the same source and shall conform in every respect to the submitted sample.

335 SURPLUS TOPSOIL TO BE REMOVED

- Generally: Remove from site topsoil remaining after completion of all landscaping work.

340A IMPORTED TOPSOIL

- All topsoil shall comply in all respects to the requirements listed below:
- Visual Examination: the soil shall have a defined granular or blocky structure and shall be reasonably free from non-soil material, brick and other building materials and wastes, potential sharps, hydrocarbons, plant matter, roots of perennial weeds and any other foreign matter or material or substance that would render the soil unsuitable for use.
- Physical Parameters:
 - Clay (less than 0.002mm) % 5-15
 - Silt (0.002 – 0.06mm) % 0-30
 - Sand (0.06 – 2.00mm) % 55-85
 - Max. Stone content (2.00-50.00mm) % by weight 35
 - Max stone size in any dimension mm 50
 - Permeability m/sec 1-35mm/hr
- Chemical Parameters:
 - pH value units 5.5 – 8.5
 - Electrical conductivity(1:2.5 extract) $\mu\text{S}/\text{cm}$ < 1500
 - Organic matter % 4.0 – 10.0
 - Calcium carbonate % <6
 - Total Nitrogen % >0.2
 - Extractable Phosphorus mg/l >26

- Extractable Potassium mg/l >240
- Extractable Magnesium mg/l >50
- Potential Contaminants:
 - Total Arsenic (As) mg / kg <20
 - Total Cadmium (Cd) mg / kg <1
 - Total Chromium (Cr) mg / kg <130
 - Total Lead (Pb) mg / kg <450
 - Total Mercury (Hg) mg / kg <8
 - Total Selenium (Se) mg / kg <35
 - Total Copper (Cu) mg / kg <130
 - Total Nickel (Ni) mg / kg <50
 - Total Zinc (Zn) mg / kg <300
 - Water-soluble Boron (B) mg / kg <3
 - Total Cyanide mg / kg <20
 - Phenols mg / kg <3
 - Sulphate (total) mg / kg <200
 - Sulphide (total) mg / kg <25
 - Sulphur (elemental) mg / kg <500
 - Polyaromatic Hydrocarbons (USEPA 16) mg / kg <40
 - Benzo-a-pyrene mg / kg <1.0
 - Total petroleum Hydrocarbons mg / kg <100
- A minimum of 5m³/cu of topsoil is provided per tree
- Site compaction test to be carried out by manufacturer and results to be approved.

340B IMPORTED SUBSOIL

- All subsoil to be used in landscape areas and shall comply in all respects to the requirements listed below:
- Visual Examination: the soil shall have a defined granular or blocky structure and shall be reasonably free from non-soil material, brick and other building materials and wastes, hydrocarbons, plant matter, roots of perennial weeds and any other foreign matter or material or substance that would render the subsoil unsuitable for use.
- Physical Parameters
 - Clay (less than 0.002mm) % 5 – 25
 - Silt (0.002 - 0.06mm) % 5 – 35
 - Sand (0.06 - 2.00mm) % 50 - 90
 - Max. Stone Content (2 - 50mm) % by weight 50
 - Max. Stone Size in any dimension . mm 75
 - Permeability 0.5 – 35mm/hr
- Chemical Parameters
 - pH value units 5.0 - 8.5
 - Electrical Conductivity (1:2.5 extract) mS/cm <2000
 - Calcium carbonate % <15
 - Organic Matter % <1.5

- Potential Contaminants
 - Total Arsenic (As) mg/kg <20
 - Total Cadmium (Cd) mg/kg <1
 - Total Chromium (Cr) mg/kg <130
 - Total Lead (Pb) mg/kg <450
 - Total Mercury (Hg) mg/kg <8
 - Total Selenium (Se) mg/kg <35
 - Total Copper (Cu) mg/kg <130
 - Total Nickel (Ni) mg/kg <50
 - Total Zinc (Zn) mg/kg <300
 - Water-Soluble Boron (B) mg/kg <3
 - Total Cyanide mg/kg <20
 - Phenols mg/kg <3
 - Sulphate (total) mg/kg <200
 - Sulphide (total) mg/kg <25
 - Sulphur (elemental) mg/kg <500
 - Polyaromatic Hydrocarbons (USEPA16) mg/kg <40
 - Benzo-a-pyrene mg/kg <1.0
 - Total Petroleum Hydrocarbons mg/kg <100.

340C IMPORTED GRAVEL FOR DRAINAGE LAYER

- Lower part of planting beds to be backfilled with washed pea gravel as shown on the drawings:
- Spread clean washed pea gravel (5-10mm) to approved sample, evenly over formation level and compact.
- Sample: to be approved by the Project manager (upon advice from the Landscape Architect).
- Depth: As shown on the drawings

395 PEAT

- Peat or products containing peat: Do not use.

660 SAMPLE LOAD OF IMPORTED TOPSOIL

- General: 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: 14 days.

670 CONTAMINATION

- General: 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, do not use subsoil contaminated with the above materials.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.

680A TOPSOIL STORAGE HEAPS

- Location: To be agreed with Project Manager.

- Height (maximum): 1.5m
- 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.
- Should the timing of the works necessitate the temporary storage of imported topsoil on site it should be protected by temporary fencing from damage by trampling, vehicular access, fly tipping, pollution by petrol, oil or other toxic substances including cement, hardcore etc.
- Topsoil stacks should be evenly graded to 1:2 maximum slopes and should be free from hollows and depressions in which water could collect. On no account should stacked soil be compacted or driven on by any machine, or subject to trampling by people.

690 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 .

700B SPREADING TOPSOIL

- Temporary roads/surfacing: Remove before spreading topsoil.
- Only spread topsoil in suitable weather conditions as set out in Q28 Clause 690
- Spread topsoil over prepared subsoil in layers not exceeding 150mm.
- Use only suitable plant and minimise trafficking to ensure compaction does not occur
- Layers:
 - Depth (maximum): 150 mm.
- Depths after settlement (minimum):
 - as shown on drawings
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs at all times.

910A FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 25 mm.
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of mulch: Included.

920 DOCUMENTATION

- Timing: Submit at handover.
- Contents:
 - Full description of all soil components.
 - Record of source for all soil components.
 - Analyst's report for each test carried out.
 - Record drawings showing the location and depth of all soils by type and grade.
 - Supplier's declaration of compliance with BS 3882.

Number of copies: 3.

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS**112A SITE CLEARANCE GENERALLY**

- The Contractor is to follow the recommendations set down in BS 4428: 1989 Code of Practice for General Landscape Operations (excluding hard surfaces) unless stated otherwise in this specification.

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.

125A 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.

130 MECHANICAL TOOLS

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

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.

160A NOTICE

- Clearly mark boundaries of planting areas and planting layout and obtain approval of Contract Administrator (upon advice from the Landscape Architect prior to commencement of planting).
- Clearly mark out with timber stakes locations of all trees and obtain approval of Project Manager (upon advice from the Landscape Architect) prior to commencement of planting.

165 PREPARATION, PLANTING AND MULCHING MATERIALS

- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Certification of source, analysis, suitability for purpose and absence of harmful substances:
- Submit.
 - Certified materials: Bark mulch.
 - Give notice before ordering or using.

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: To be agreed with Contract Administrator (upon advice from the Landscape Architect).
- 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.

216C TREES – SUPPLY

- Obtain trees from approved sources as agreed with Contract Administrator (upon advice from the Landscape Architect).
- For tree list and specification refer to Soft Landscape Tender Drawings (8158-300 series) and the 'Planting Schedule'.
- All trees shall be spring-ring containerised.
- The contractor shall name the proposed supply nursery for all plant material with the returned tender.

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.

Q31

- Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

235A BULB – SUPPLY

- Obtain bulbs from approved sources as agreed with Contract Administrator (upon advice from the Landscape Architect).
- For bulb list & specification refer to Soft Landscape Tender Drawings (8158-300 series) and the 'Planting Schedule'.
- The contractor shall name the proposed supply nursery for all plant material with the returned tender.
- Bulbs: 20 bulbs per m2

245 LABELLING AND INFORMATION

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

246 LABELLING AND INFORMATION

- Standard: To BS 3936.

260A PLANT/ TREE SUBSTITUTION

- No substitutions shall be allowed without written approval of LA or representative.

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: Nursery's choice.
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped.
- 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.

Q31

290 SURPLUS MATERIAL

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

PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

305A WEED CONTROL FOR ALL WEEDS

- Treat with a suitable approved herbicide complying with all manufacturer's recommendations including the period of time required to elapse before undertaking further operations.

335 GENERAL FERTILIZER- SLOW RELEASE

- Locations: All planting areas.
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Application: Spread evenly.
 - Timing: Immediately before cultivation.
 - Rate: to ensure healthy growth of plants.

341 PEAT

- Peat or products containing peat: Do not use.

375 CULTIVATION

- Compacted topsoil: Break up to full depth.
- Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm.
 - Depth: 400mm below base of planting area.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: As shown on the drawings.
- 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 BULBS

401 PLANT LAYOUT TO BULB PLANTING

- Spacing: As shown on the drawings.
- Density: As set out in the 'Planting Schedule'.
- Bulb planting to be carried out during bulb planting season to suit species.

476 SHRUB, HERBACEOUS AND BULB BACKFILLING MATERIAL

- Composition: topsoil as required:
- Ameliorant/ Conditioner: Mushroom compost.

- Application rate: To manufacturer's/ supplier's recommendations.
- Fertilizer: Slow release.
 - Application rate: To manufacturer's/ supplier's recommendations.

Q31

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: Sanitized and stabilized compost.
 - Depth: 25-30 mm.

PLANTING TREES

505A TREE PITS

- Excavate tree pits as shown on the drawings.
- The landscape contractor shall seek approval of all excavated tree pits prior to backfilling or planting.
- Tree pits to be backfilled (with prepared imported topsoil, sand/subsoil and gravel drainage Layer as shown on the drawings).
- The Contractor should satisfy themselves that the base of the tree pit is free draining prior to backfilling. If drainage is impeded the Contractor shall notify the Contract Administrator.

505B TREE PITS: GENERAL

- Orientation: The north side of trees will have been marked to ensure that orientation is the same where replanted.
- Plant trees upright, unless otherwise instructed, in centre of pit and at original soil depth.
- Pruning: Damage to roots, bark or branches to be removed and wounds over 25mm diameter treated with fungicidal sealant. The Contract Administrator (upon advice from the Landscape Architect) has the right to reject any tree where pruning has resulted in the loss of the natural form of the tree and where extensive damage may result in the death of the tree.
- Remove non perishable containers prior to planting.
- Thoroughly water to field capacity immediately after planting using a low pressure hose.

505C SEMI MATURE SPECIMEN TREES

- Semi mature trees shall be trees in an advanced state of growth ranging in height as shown in schedules and shall be true to name, well grown, healthy, self supporting, of good form and strain, with vigorous stems and well balanced heads.
- Sizes and form as scheduled.
- Preparation and transplanting to BS 4043:1989 unless specified otherwise in this clause.
- Pits: Break up bottom of pit to a depth of 400mm.
- Backfill material: as Section Q28, Clauses 340 A/B/C of this Appendix.
- Backfill in layers not exceeding 250mm depth consolidating material to remove air pockets.
- Watering/aeration system: As Section Q31 Clause 512B of this Appendix.
- Support all trees as shown on the drawings with: Platipus Anchor System: as to clause 512A.

512A TREE PIT UNDERGROUND GUYING

- Location: To all trees
- Support all trees as shown in the drawings by:
Platimat system with concrete deadmen, 500mm x 500mm x 70mm(h) (refer to dwg 8158-301)
Manufacturer and reference:
Platapus Anchors Ltd,
Perrywood Business Park,
Honeycrock Lane,
Salfords, Redhill Surrey,
RH15DZ
(Tel: 01737 762300).
Install to manufacturer's instructions.
Or similar approved.
- The concrete deadmen shall be concrete slab with cast in bars for attaching guy wires.

512B TREE PIT ACCESSORIES – WATERING/AERATION SYSTEM

- All trees to be installed with watering/aeration system as shown on the drawings
- Manufacturer: Greenleaf, Haywood Way, Hastings, East Sussex, TN35 4PL. Tel: 01242 71779 or similar approved.
- Product reference: Green Leaf 'Root Rain Civic' aeration system for tree planting in soft landscape.
-Type: Perforated plastics irrigation pipe, 100mm diameter, in circle above and around sides of rootball, with twin aperture and end caps as shown on the drawings.

525 SEMIMATURE TREES

- Standard: Prepare roots and transplant to BS 4043.
- Backfilling material: As clause 586A of this Section.
- Support: Underground guying to BS 4043 as shown in the drawings.
- Protection: Not required.

586A TREE BACKFILLING MATERIAL

- Backfill material for treepits comprises Topsoil, Subsoil, Sand and Gravel to depths and location as shown on the drawings
Imported topsoil (as Section Q28, Clause 340A of this Appendix)
Imported subsoil (as Section Q28, Clause 340B of this Appendix)
Imported gravel (as Section Q28, Clause 340C of this Appendix)

600 PLANTING SHRUBS / HERBACEOUS PLANTS**610 EVERGREENS:**

Dip in anti-desiccant before delivering to site. Spray with anti-desiccant soon after planting. Do not apply in rainy or frosty weather.

620 PLANTING GENERALLY:

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- Before planting remove any non-perishable containers and advise the CA and Landscape Architect of any damaged roots and obtain instructions.
- Plant upright or well balanced with best side to front. Carefully backfill packing around evenly spread roots or root ball and heel well in.
- Water plants thoroughly immediately after planting, using a fine rose.
- Advise the CA and Landscape Architect of any damage to shrubs resulting from planting operations and obtain instructions.
- After planting fork and/or rake soil to a fine tilth with approved cambers and no hollows.

622 MULCH: all planting areas with:

- Melcourt Industries Ornamental medium grade bark (or equal approved). Bark shall have been rested for 90 days to remove tannin, shall have neutral pH and shall not include sticks, bark strippings, pulp or other timber yard waste.
- The Contractor will submit 1m³ sample for approval.
- Spread at 1m³ of material per 20 m² (50mm depth).
- The timing of the above operation shall be such that the ground is moist when the mulch is applied. If necessary apply water to soak ground beforehand.

630 SHRUBS:

- To BS 3936: Part 1. Sizes and form as scheduled.
- Ground cover to BS 3936 Part 10.
- Planting holes for shrubs: to be 150mm wider than container/root spread and 400mm deep.
- Planting holes for Specimen Shrubs: to be at least 300mm wider than root spread and 150mm deeper than root system. Break up bottom of pit to depth of 150mm.
- Finished level to be at original soil mark on shrubs and 25mm above surrounding level to allow for settlement.

650 CLIMBERS: Sizes as scheduled.

- To BS 3936 Part 1
- Planting holes for climbers to be 300 mm wider than container/root spread and 500 mm deep.
- Plant 150 mm clear of wall with roots spread outward. Lightly secure branches to supports. Retain canes of plants which are too small to reach supports.
- Climber timber frame supports: To be retained and fixed to wall / timber screen uprights.

660 HERBACEOUS PLANTS:

- Well rooted, healthy, hardy and not less than one year of full growth. Sizes as scheduled.

- Where there is no planting plan evenly space at the rate stated over the allocated area avoiding straight lines. Plant carefully in generously sized holes with finely broken soil returned around the roots. Lightly firm the soil.

680 IDENTIFICATION OF PLANTS:

- Attach a plastic label, clearly marked with species and variety, to each/to each group of tree/shrub/plant.

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700 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 Maintenance Period (2 years).
- Frequency of maintenance visits: In accordance with the agreed maintenance schedule.

750A PLANTING MAINTENANCE GENERALLY

- Maintain all plants and planted areas in good condition up to the end of the maintenance period as detailed in Q35.
Maintenance is to include:
 - watering
 - pruning
 - application of approved chemicals to combat insect attack, disease and weeds
 - forking and hoeing of beds
 - firming plants
 - removal of rubbish
- Maintenance Programme: Make visits as set out in required submittal 'Maintenance Programme' and as necessary to fulfil the requirements of this specification.
- 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 use of approved non-residual herbicides.
- 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: As schedule.
- " 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.
- Watering: As required as per Section Q35, Clause 155A of this Appendix.

780 MAINTENANCE INSTRUCTIONS

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 details of any special procedures to be carried out.

To be read with Preliminaries/ General conditions.

GENERALLY**105A MAINTENANCE OBJECTIVES**

- Location: 30a Highgate Road.
- Duration as follows:
 - 2 years.

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.

135A 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: All material originally specified as containerised to be replaced within 1 month unless otherwise instructed by LA or representative. Other material may be replaced at the next suitable planting season.

155A WATERING

- Supply: Manual watering using Potable mains water to be provided if required.
- Quantity: Wet full depth of topsoil.
- 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.
- Ensure that sufficient water is applied to maintain healthy growth of trees/lawn areas/wildflower meadow.
- Semi mature trees: To ensure thorough watering when it is necessary, holes or uneven depth should be forked in the rootball so that water reaches the whole root system using the tree root watering system where this has been installed.
- Spraying: During dry periods thoroughly spray crown of plants with water in early mornings or late evenings, but on no account in bright sunny weather.

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.

170A DISPOSAL OF ARISINGS

- General: Unless specified otherwise, dispose of arisings as follows:
 - Biodegradable arisings: Remove to recycling facility.
 - Shrub and tree prunings: Remove to recycling facility.
 - Litter and non-biodegradable arisings: Remove from site.

180 CHIPPING OR SHREDDING

- General: Not permitted on 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.

TREES/SHRUB/HERBACEOUS/CLIMBERS**500 ESTABLISHMENT OF NEW PLANTING**

- Weed control:
 - Method: Keep planting beds clear of weeds by maintaining full thickness of mulch.
- Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
- Watering: Contractor's choice.

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.

515A TREE GUY WIRES

- Inspection/ Maintenance times: Immediately after strong winds and at least once a year in spring.
- Operations:
 - Replace or re-secure loose or missing guy wires.
 - Adjust to suit stem growth and to provide correct and uniform tension.

520 REFIRMING OF TREES

- Timing: After strong winds, frost heave and other disturbances.
- Re-firming: 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 re-firm.

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: As instructed.
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
- Special requirements: None.

555 PRUNING TREES

- Standard: To BS 7370-4.
- Special requirements:
- All planting shall be maintained in accordance with appropriate horticultural practice for individual species.
- Tree maintenance operations to ensure uniformity and regular well balanced crowns
- Tree Pruning operations to ensure no spread or overhang into areas of adjacent pedestrian or vehicular movement.

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.

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: None.
- Dressing: Slow release fertilizer:
 - Type: Contractor's choice.
 - Application rate: As manufacturer's recommendations.

645 WEED CONTROL GENERALLY

- Weed tolerance: Weed to clear ground every two weeks.

- Adjacent plants and trees: Do not damage.

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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: Reinststate to original depth.

657 HERBICIDE TO KILL REGROWTH

- Type: Suitable foliar acting herbicide to kill re-growth.
- Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.

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.

690 MAINTENANCE OF LOOSE MULCH

- Thickness (minimum): 50 mm.
 - Top up: Every three months.
- 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.

692A FINAL MULCHING

- Timing: At end of the maintenance period.
- Watering: Ensure that soil is thoroughly moistened prior to re-mulching, applying water where necessary.
- Tree planting: Re-mulch.
- Depth (minimum): [50 mm].

695A FERTILIZING ESTABLISHED TREES

- Time of year: During February or March.
- Type of fertilizer: Slow release.
- Application: Spread evenly.
 - Rate: As manufacturer's recommendations.

TREE WORK

810A TREE WORK GENERALLY

- Identification: Before starting work agree which trees 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 as Arboricultural Association Leaflet 'Mature tree management'. 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.

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- Chain saw work: Operatives must hold a Certificate of Competence.
- Tree work: To be carried out by an approved member of the Arboricultural Association.

812 TREE WORK SPECIFICALLY

- All trees to be pruned as necessary to remove all dieback and all diseased or dead growth.
- Tree maintenance operations shall ensure that any pruning to trees is carried out to leave the crown properly balanced.
- Tree pruning shall ensure sufficient clearance is maintained to avoid potential hazard to passing pedestrians.

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, clause 8.

825 PREVENTION OF DISEASE TRANSMISSION

- Standard: To BS 3998, clause 9 and Appendix B.

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.
- 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.

END OF SPECIFICATION