

PLAN

Worcester Close
Landscape Specification

Stage 5

Document No: PLA 0104T D 2000 R00

For: Elkins Construction

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Note: This specification is based upon the NBS. Some clauses have been modified or added to meet with Plan Design Landscape Architects Ltd. specification requirements.

Environmental Impact

The Contractor shall wherever feasible take specific measures to maximise sustainability and minimise environmental impact.

The Contractor's Tender shall be accompanied by the Contractor's Company Environmental Policy which should consider the following aspects:

Material selected for minimum environmental impact during production, minimum waste and recyclables.

Critical issues are:

- i) Choice of all components with regard to their overall environmental impact (ref 'The Green Guide to Specification' BRE 2009)
- ii) Locally produced components and materials chosen wherever possible
- iii) Policies in place to ensure minimum waste in production and site processes
- iv) Strategy developed for recycling of all waste materials from production process
- v) Clearly marked or described recyclable components
- vi) Design and specify finishes to ease recycling at end of service life
- vii) Timber products chosen from certified sustainable sources with recognised accreditation e.g. Forestry Stewardship Council (FSC) Scheme
- viii) Avoidance of ozone depleting substances
- ix) Selection of recycled aluminium where used
- x) Avoidance of toxic water repellent sealants
- xi) Alternative products to uPVC

Energy Use – Processing & Manufacture

Critical issues are:

- i) Stone materials sourced from quarries where damage to the environment is minimised
- ii) Avoidance of components requiring high-energy input in manufacturing process if alternatives requiring less energy input are available
- iii) Using aluminium manufactured by sustainable energy producers (e.g. hydro)
- iv) Use of companies developing more energy efficient processes.

Transport

Critical issues are:

- i) Minimising distance materials/components travel prior to fabrication
- ii) Minimising distance materials/components travel after fabrication
- iii) Reducing environmental impact by use and planning of transport

Maintenance

Critical issues are:

- i) Maximise life expectancy of components
- ii) Clear maintenance instructions provided to optimise performance of fixings and reduce the need for replacements
- iii) Use of low energy maintenance materials and processes
- iv) Use of non-toxic maintenance materials
- v) Use of maintenance materials that do not damage the environment

CO-ORDINATING AND DESIGN INSTALLATION

The Contractor is responsible for coordinating and interfacing their works with others.

Typically interfaces and junctions with other works. The following is a provisional list of interfacing trades:

RC Works, Foundations & Substructures
Steel fabrication to match architectural specification
External Services / Lighting etc.
Landscape Drainage to engineer's details
Finished levels
Topsoil
Subsoil
Tree Planting
Planting

The contractor is responsible for ensuring that all the relevant details of other works (that may affect the construction of this package) are considered and included with any workshop drawings.

GENERAL SCOPE OF THE WORKS

Scope of the Works

The hard and soft external landscape works for Worcester Close generally comprise but is not limited to, the following:

Hardworks:

1. Grading works to formation levels to engineer's specification.
2. Construction of drainage works, including tree drains, recessed manholes to hard landscape areas to engineer's specification.
3. Supply and lay sub base to engineer's specification.
4. Supply and lay aggregates, and permeable slab and block paving as specified
5. Supply and lay kerbs, edgings and channels as specified.
6. Brick/ masonry walls to engineer's/ architects specification
7. Supply and install concrete edgings as specified
8. Concrete (including footings, foundations, haunches and races to engineer's specification.
9. Pre-practical completion maintenance of all external areas.

Softworks and Tree Planting:

1. Fine grading of subsoil to proposed levels.
2. Sub soil cultivation and ripping prior to topsoil placement.
3. Spreading, shaping and cultivation of topsoil.
4. Import & prepare topsoil for planting.
5. Supply, spread and incorporate specified ameliorants and fertilizers.
6. Preparation of topsoil prior to planting.
7. Planting of trees including staking, underground guying, root barriers and installation of aeration pipes.
8. Planting of shrubs, hedges, herbaceous plants & bulbs.
9. Supply and lay turf.
10. Supply and placement of mulches.

Works to all the above:

1. Pre-practical completion of maintenance of planted and other associated landscape features contained within this document.
2. Maintenance for 12 months (following issue of Practical Completion) of planted areas, grass and external areas.
3. Maintenance for 24 months (following issue of Practical Completion) of tree planting.

Potential Long Lead Items

Semi mature trees to meet planting schedule

F1 MASONRY WALLING

GENERAL

All external landscape brick wall and brick piers to engineer's / architects specification. Brick to match architectural façade. For design intent see PLAN Design drawings

L37 External Stair, Ramps, Handrail and Balustrades Systems

GENERAL

To be read with Preliminaries/ General Conditions.

100 BRICK WALLS

- All brick walls and brick piers to engineers' and architects' specification. Brick to match architectural façade.
- Refer to the PLAN Design Hard Landscape Plan, drawing reference: 24071-PLA-ZZ-00-DR-L-200 for location and detail drawing reference: 24071-PLA-ZZ-00-DR-L-602, 24071-PLA-ZZ-00-DR-L-620, 24071-PLA-ZZ-00-DR-L-621, 24071-PLA-ZZ-00-DR-L-631, 24071-PLA-ZZ-00-DR-L-632 for design intent.

110 CONCRETE STEPS (S1)

- Refer to the Hard Landscape Plan, drawing reference: 24071-PLA-ZZ-00-DR-L-200 and detail drawing reference: 24071-PLA-ZZ-00-DR-L-602.
 - Description: External steps S1
 - Type: Built in situ
 - Base/ Fabric: In situ concrete, to Structural engineers' design
 - Surface: Solid concrete block step units
 - Product: 'Conservation x Textured Step'
 - Dimensions: 350 x 150 x 1000mm
400 x 150 x 1000mm (top units) for full lengths of steps refer to PLAN Design drawing
 - Colour: 'Silvergrey'
 - Finish: incl. 55mm wide visibility strip
 - Supplier: Marshalls Plc
- Unobstructed width: 1.8m width
Refer to Hard Landscape Plan.
- Accessories: 'Corduroy' Hazard warning paving surface as section Q25 and Handrail system as clause L37.150

150 HANDRAIL SYSTEMS

- Refer to the Hard Landscape Plan, drawing reference: 24071-PLA-ZZ-00-DR-L-200 and detail drawing reference: 24071-PLA-ZZ-00-DR-L-602.
 - Description: To external steps S1
 - System manufacturer: Landscape Contractor to submit proposals to Landscape Architect for comments before fabrication
 - Material: Stainless Steel grade 316
 - Finish: Brushed
 - Cross section: 48.3mm
 - Height (to upper surface of handrail):
 - Above pitch line: 900mm
 - Above landing: 900mm

- Accessories: Rose plate to hide paving cuts
- Notes:
 - Refer to PLAN Design drawings for design intent
 - All fasteners should be flush, countersunk and no sharp edges
 - Manufacturer to produce fabrication drawings to be submitted to Landscape Architect for comments prior to fabrication

170 METAL RAILINGS TO BOUNDARY WALLS

- Refer to the Hard Landscape Plan, drawing reference: 24071-PLA-ZZ-00-DR-L-200 and detail drawing reference: 24071-PLA-ZZ-00-DR-L-620 and 24071-PLA-ZZ-00-DR-L-631
 - Description: Metal Railings to site boundary and private terraces installed on brick walls
 - System manufacturer: Lang + Fulton Ltd. (0131 4411255) or Landscape Contractor to submit proposals to Landscape Architect for comments before fabrication
 - Material: Stainless Steel grade 316
 - Finish: Powder coated
 - Colour: mid grey - RAL 7016 TBC
 - Height
 - Private Terraces: 750mm
 - Site Boundary: 750mm and 1200mm (in Root Protection Zones)
 - Accessories: 1200mm high gates to Private terraces and along site boundary.
 - All gates to have anti-finger trap hinges
 - Gates to private terraces with double sided handles and child proof locker
 - All balustrades to be installed in brick walls in between brick piers
 - Notes:
 - Refer to PLAN Design drawings for design intent
 - All fasteners should be flush, countersunk and no sharp edges
 - Manufacturer to produce fabrication drawings to be submitted to Landscape Architect for comments prior to fabrication

DESIGN

220 SYSTEM PERFORMANCE

- Description: Handrail system
- Structure and associated features: Complete the detailed design in accordance with BS 8300, BS 6399, BS 6180 and BS 7818, allowing for use by children
- Structural performance criteria:
 - Horizontal uniformly distributed line loads on railings (Maximum): All handrail systems to be designed in accordance with the horizontal U.D and point of loading requirements of BS 6399-1.
- For the purpose of this specification this shall be taken as a minimum U.D load of 1.5kn/m at the top of the vertical post (as stated in the BS) and a point load at midspan of rail of 1.0kn.
- Other performance criteria: Building Regs Compliance required throughout. Submit for approval all calculations and details (prior to preparation of any fabrication drawings) to demonstrate the handrails comply with the criteria stipulated in BS 6399 and referred to herein.
 - Test the fixings in-situ, refer to BS 5080

- Proposals: Submit:
 - Material samples
 - Finishes
 - Drawings
 - Technical information
 - Calculations
 - Manufacturer's literature

EXECUTION

610 LOADING

- Site activities: Restrict, to ensure that design loads are not exceeded, or submit proposals for temporary supports.

620 CONCRETE FOUNDATIONS GENERALLY

- To engineer's specification.

640 CUT EDGES

- Surfaces exposed by minor cutting and drilling: avoid exposed cut ends. Finish with chamfer returns where possible. Ends finished to manufacturer's recommended methods.

650 INSTALLATION GENERALLY

- Fasteners: To manufacturer's recommended installation methods.
- Structural members: To manufacturer's recommended installation methods.
- Temporary support: Do not use finished work as temporary support or strutting for other work
- Applied finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

660 INSTALLATION OF MANUFACTURED STEP ELEMENTS

- Selection: Do not use damaged units
- Accuracy:
 - Courses: level and true to line
 - Faces, angles and features: Plumb
 - Setting Out: Achieve satisfactory junctions and joints with adjoining or built-in elements and components
- Absorbent units: Dampen in warm weather to reduce suction
- Dowels: To specialist suppliers/ contractors details – submit for review and approval
- Mortar joints: 6 x 6mm recess, filled flush with colour matched mortar -subject to sample panel and review of colour options available as submitted by Contractor
 - Laying: Full bed of mortar with all joints and voids filled
 - Temporary distance pieces: Lead or stainless steel. Remove when mortar is sufficiently strong
 - Appearance: Neat and consistent
- Cleanliness: Keep facework clean. Rubbing and other abrasive or chemical cleaning methods to remove marks and stains, not permitted.
- Cutting of reinforced units: not permitted.
-

662 ADVERSE WEATHER

- General: Do not use frozen materials and do not lay on frozen surfaces.
- Working limits: Do not lay blocks/ dressing:

- Cement gauged mortars: When the air temperature is at or below 3° Celsius and falling or below 1° Celsius and rising (Unless mortar has the temperature of not less than 4° Celsius when laid and work is thoroughly protected)
- Hydraulic lime: sand mortars: When the air temperature is at or below 5°C and falling or below 3°C and rising.
- Temperature of work: Maintain above freezing until mortar has fully set.
- Newly erected work: Protect from precipitation; Prevent rapid drying in hot conditions
- Remedial work: Rake out and replace mortar damaged by frost
 - Damaged work: Rebuild.

COMPLETION

910 INSPECTION

- Timing: Two weeks prior to date when principal contractor expects work to be practically complete
- Period of notice (minimum): 5 working days.

Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS

- 116** Precast concrete edging (E1-Pedestrian Paving Edging)
Kerb type EF to BS EN 1340
Refer to drawing: 24071-PLA-ZZ-00-DR-L-200 and detail drawing: 24071-PLA-ZZ-00-DR-L-601 and engineers drawings.
Manufacturer: Marshalls (or equal and approved)
Landscape House,
Premier Way,
Lowfields Business Park,
Elland
HX5 9HT
Tel: 0333 000 20 50
e: services.advisory@marshalls.co.uk
- Product reference: EF type flat top edging
 - Tolerances on batter: No requirement.
 - Colour: silver grey.
 - Size (width x height): 50 x 150mm
 - Tolerances on overall width and height (nominal): Class 2.
 - Freeze/ Thaw resistance: Resistant.
 - Special shapes:
 - External radius kerbs – use half lengths
 - Internal radius kerbs – use half lengths
 - Finish: pimple
 - Bedding: Fresh concrete races.
 - Joints generally: N/A.
 - Sealant movement joints: To engineer's detail and specification.
 - Accessories: None.
- 118** Precast Concrete Kerb (E2 - Vehicular Concrete Edging)
Refer to drawing: 24071-PLA-ZZ-00-DR-L-200 and detail drawing: 24071-PLA-ZZ-00-DR-L-601 and engineers drawings.
Manufacturer: Marshalls (or equal and approved)
Landscape House,
Premier Way,
Lowfields Business Park,
Elland
HX5 9HT
Tel: 0333 000 20 50
e: services.advisory@marshalls.co.uk
- Product reference: Precast Concrete Kerb
 - Tolerances on batter: No requirement.
 - Colour: silver grey.
 - Size (width x height): 125 x 255mm
 - Tolerances on overall width and height (nominal): Class 2.
 - Freeze/ Thaw resistance: Resistant.
 - Special shapes:
 - External radius kerbs – use half lengths
 - Internal radius kerbs – use half lengths
 - Finish: pimple
 - Bedding: Fresh concrete races.

- Joints generally: N/A.
- Sealant movement joints: To engineer's detail and specification.
- Product reference: Precast Concrete Kerb

- Laid to engineer's specification

120 Timber Edge to reinstated Bridle Path
Refer to drawing 24071-PLA-ZZ-00-DR-L-200 for locations

- Manufacturer: Jacksons Fencing (or equal & approved)
Stowting Common
Ashford
TN25 6BN
Tel: +44 (0) 1233 750 393
Web: www.jacksons-security.co.uk
Email: security@jacksons-fencing.co.uk
- Product reference: Lawn Edging Board
 - Size: 25mm thick, 100mm height.
 - Finish: Jakcure
 - Accessories: N/A

LAYING

510 LAYING KERBS, EDGINGS AND CHANNELS

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

520 ADVERSE WEATHER

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

610 ANGLE KERBS

- Usage: Internal and external 90° changes of direction.
- Cutting of mitres: for E3 cut 45 degree mitre on square edges at corners

620 ACCURACY

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

625 REGULARITY OF PAVED SURFACES

- Maximum undulation of (non-tactile) paving surface: 3 mm.
 - Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- Difference in level between adjacent units (maximum):
 - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
 - Recessed, filled joints: 2 mm.
 - Recess depth (maximum): 5 mm.
 - Unfilled joints: 2 mm.

- Sudden irregularities: Not permitted.

Q25 Slab/brick/sett/cobble pavings

To be read with Preliminaries/ General conditions.

PRODUCTS

319 Permeable Concrete Block Paving (P1 – Car Park Area)
Refer to drawing: 24071-PLA-ZZ-00-DR-L-200 for locations

- Manufacturer: Hardscape (or equal and approved)
Ground Floor Front West,
1 Castle Lane,
London
SW1E 6DR
Tel: 0207 0992 500
- Standard: To BS 7533-13:2009
- Product reference: 'EcoGranite Permeable AquafLOW'
 - Recycled content: as supplied
 - Nominal sizes: 80mm thick
 - Size: 100 x 200mm
 - Bond: Herringbone
 - Colour: 'Balmoral'
 - Butt jointed using Interlocking nibs
- Sub base and bedding layer to engineer's specification.
- Laid tanked permeable

320 Permeable Concrete Block Paving (P2 – Footpath)
Refer to drawing: 24071-PLA-ZZ-00-DR-L-200 for locations

- Manufacturer: Hardscape (or equal and approved)
Ground Floor Front West,
1 Castle Lane,
London
SW1E 6DR
Tel: 0207 0992 500
- Standard: To BS 7533-13:2009
- Product reference: 'EcoGranite Permeable AquafLOW'
 - Recycled content: as supplied
 - Nominal sizes: 80mm thick
 - Size: 100 x 200mm
 - Bond: Herringbone
 - Colour: 'Cornish Silver Grey'
 - Butt jointed using Interlocking nibs
- Sub base and bedding layer to engineer's specification.
- Laid tanked permeable, except in root protection zones

325 Permeable Concrete Block Paving (P3 – Private Terraces)
Refer to drawing: 24071-PLA-ZZ-00-DR-L-200 for locations

- Manufacturer: Hardscape (or equal and approved)

Ground Floor Front West,
1 Castle Lane,
London
SW1E 6DR
Tel: 0207 0992 500

- Standard: To BS 7533-13:2009
- Product reference: 'EcoGranite Permeable Aquaslab'
 - Recycled content: as supplied
 - Nominal sizes: 60mm thick
 - Size: 450 x 300mm
 - Bond: Stretcher Bond
 - Colour: 'Cornish Silvergrey'
 - Butt jointed using Interlocking nibs
- Sub base and bedding layer to engineer's specification.
- Laid tanked permeable

320 Hazard Warning Concrete Flag Paving at External Steps
Refer to drawing: 24071-PLA-ZZ-00-DR-L-200 and 24071-PLA-ZZ-00-DR-L-602.

- Manufacturer: Hardscape (or equal and approved)
Ground Floor Front West,
1 Castle Lane,
London
SW1E 6DR
Tel: 0207 0992 500
- Standard: To BS 7533-13:2009
- Product reference: 'Hazard Warning Tactile Textured'
 - Recycled content: as supplied
 - Nominal sizes: 50mm thick
 - Size: 400x 400mm
 - Bond: Stacked
 - Colour: Natural
 - Butt jointed using Interlocking nibs
 - Sub base and bedding layer to engineer's specification.
 - Laid tanked permeable

EXECUTION

610 MATERIAL SAMPLES

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

620 ADVERSE WEATHER

- General:
 - Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
 - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding:
 - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Paving laid and jointed in sand:
 - Stockpiled bedding sand: Protect from saturation.
 - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
 - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.

- Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

625 LAYING PAVINGS - GENERAL

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

630 LEVELS OF PAVING

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

635 REGULARITY OF PAVED SURFACES

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

637 REGULARITY OF PAVED SURFACES

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

640 COLOUR BANDING

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

645 PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arrises, or previously laid paving.
- Mortar bedded pavings: Keep free from traffic after laying:
 - Pedestrian traffic (minimum): 4 days.
 - Vehicular traffic (minimum): N/A.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.

650 CEMENTITIOUS BASES AND SUB-BASES

- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

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

To be read with Preliminaries/ General conditions.

TYPES OF SURFACING

- 126** Gravel Beds at private Terraces (P11)
Refer to drawing: PLA 0089 TD 200 and detail drawing: PLA 0089 TD 603.
- Supplier: CED Stone
728 London Road
West Thurrock
Essex
RM20 3NL
Tel: 01708 867 237
E: <https://www.cedstone.co.uk>
 - Product reference: 'Cotswold Aggregate'
 - Aggregate size: 20mm
 - Depth: As required to work with drainage solution (pies from adjacent enclosures), to engs. specs.
 - Laying Method: follow CED installation guide and engineers design
- 127** Mulch Path/ Loose Chipping Path at Bridle Path(P10)
Refer to drawing: PLA 0089 TD 200
- Supplier: Radbournes
Radbournes Ltd
Reynard Close
Chapel Road
Rotherwas Industrial Estate
Hereford
HR2 6JH
Tel: 01432 279 623
W: <https://radbournes.co.uk>
 - Product reference: Stowe Brown Chippings
 - Size: 14mm
 - Laying course: 50mm thick
 - Notes: to finish 15mm below adjacent paved surface.

LAYING

- 320** SAMPLES
- Submit: Representative samples of gravel as Clause 125.
- 340** LAYING GENERALLY
- Channels, gullies, etc: Keep clear.
 - Finished surfaces:
 - Lines and levels: To prevent ponding.
 - Overall texture: Even.
 - State at completion: Clean.

350 COLD WEATHER WORKING

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

360 DRAINAGE FALLS

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

380 LAYING GRANULAR SURFACES IN PEDESTRIAN AREAS

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

390 PROTECTION FROM TRAFFIC AND PLANT

- Paved areas: Restrict access to prevent damage.

Q28 Topsoil, Growing Media and Ameliorants

To be read with Preliminaries/ General conditions.

130 SEQUENCE OF OPERATIONS

Formation levels i.e. subsoil placement prior to topsoil placement have been installed within the bulk earthworks package. The landscape contractor is deemed to have inspected, accepted and approved subsoil placement (by others) on the commencement of topsoil placement operations. Copies of package specification, record drawings/as built surveys and photographic records of work in progress are obtainable from the CA.

The Contractor is required to carry out the following operations:

- 1) Fine grading of formation levels (top of subsoil levels) including ripping in preparation to receive topsoil.
- 2) Removal of weed/vegetation from surfaces or within the stockpiles (if growth has accumulated on ground awaiting topsoiling).
- 3) Spreading, levelling, stone removal and lightly consolidating site topsoil, and supplying imported topsoil where necessary
- 4) Supply placement and incorporation of all soil ameliorants to achieve finished ground profiles.

Large stones or angular/sharp objects are to be removed as specified. Due to the textural characteristics of the soils screen is not considered an appropriate method of reducing the soil content. For full analysis of site won soils refer to the soil report.

REFERENCE DOCUMENTS

British Standards Institution

BS 1377 Methods for test for civil engineering purposes

Part 2: 1990 Classification test

BS3882 Recommendations and classification for topsoil

BS4428:1989 Code of practice for general landscape operations (excluding hard works)

BS5930:1981 Code of practice for site investigations

BS6031:1981 Code of practice for earthworks

BS8000 Workmanship on building sites Part 1:1989 Code of practice for excavating and filling

140 GRADE SUBSOIL GENERAL

- Formation levels/bulk subsoil levels will be placed in accordance with engineer's detail and specification.
- The Landscape Contractor's rates shall include for the fine grading and adjustment to these levels, so that the finished levels are accurately achieved using the prescribed topsoil depths.
- Prior to commencing fine grading the Landscape Contractor shall inspect/check the formation levels and be satisfied with the works before acceptance. Written reason must be given immediately to the CA if any formation levels placed by others are considered unsatisfactory.
- All groundwork is to be carried out in accordance with BS4428 unless specified otherwise hereafter.
- Cultivated areas are to be thoroughly cleaned and all extraneous matter, including broken brick, broken glass, tarmac and large stones (over 20mm dia), or organic matter exposed by this operation are to be removed and carted to tip.
- Carry out minor grading and regulating to remove local depression and high spots. Levels shall be brought to a uniform and even surface as required. The use of a heavy roller to roll out humps will not be permitted and any area that becomes unduly compacted during the grading operation shall be loosened by forking or harrowing.

210 BULKING

The Contractor's attention is drawn to the fact that any measurements of excavation and subsequent disposal are net measured and the Contractor's price should allow for increase in bulk and for transportation of excavated material to and from temporary heaps as may be necessary. The Contractor shall make allowance in placing for settlement to give (after settlement) depths as specified).

PRODUCTS

300 PREPARATION MATERIALS GENERALLY

- Purity: Free of pests, disease, and fungus.
- Foreign matter: On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
- Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - Corrosive, explosive or flammable.
 - Hazardous to human or animal life.
 - Detrimental to healthy plant growth.
- Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
- Objectionable odour: None.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

315 IMPORTED TOPSOIL TO BS 3882

- Quantity: Provide as necessary to achieve soil depths for trees, shrubs and lawns to complete the work sitewide. See drawing: PLA 0089 TD 400 for depths and locations
- Standard: To BS 3882.
- Classification: sandy loam topsoil.
 - Grade: 20mm
- Source: blended
 - Product reference: TS1 Topsoil by Bourne Amenity
 - The Wharf
 - Rye Road
 - Kent
 - TN18 5QG
 - Tel. 01797 252 299
 - e: info@bourneamenity.co.uk

332 IMPORTED TOPSOIL CUSTOM MIX GENERAL

- The Contractor is responsible for ascertaining accurate quantities necessary for the execution of the works. The Contractor shall confirm the above requirement at Tender stage.
- Any deficiency of topsoil existing on site shall be imported by the Contractor to fulfil the requirements of the Contract.
- A full written analysis of any proposed imported topsoil will be required by the CA/Landscape Architect for approval before soil is transported to site.
- Sources of topsoil are to be identified, the preference is for local virgin soils. Screened soils without full and detail analysis, origin history and samples will not be approved. The written analysis must include a report on the suitability of the proposed topsoil for its intended use. Imported topsoil, shall be moderately fertile, good quality, well structured, fibrous, loam soil with a humus and fibre content of medium texture and shall comply to British Standards Specification No. 3883 Specification for Topsoil. It shall be PH 6.5- 8, free draining, and of open texture, not more than slightly stony (20% max by weight) and shall be obtained from the top 250mm of the ground. It shall be free of debris and vegetation/grasses.
- Contractor to test the topsoil **after delivery to site** to BS 3883 Specification for Topsoil using methodologies described within.

The CA/Landscape Architect shall be also be informed of the topsoil's source by the Landscape Contractor.

Any topsoil brought onto the site without approval will be deemed to have been brought in at the Contractor's risk, and if instructed to cart such topsoil off site this will be at the Contractor's expense.

Imported topsoil shall conform to the following specification:

To BS 3882:2015

Texture: Well structured, free draining open texture, sandy loam-loam.

Clay (<0.002mm): lower limit 5%, upper limit 30% w/w

Silt (0.002-0.05mm): lower limit 0%, upper limit 65% w/w

Sand (0.05-2.0mm): lower limit 20%, upper limit 90% w/w

Textural Class:

Stones (2-20mm): lower limit 0%, upper limit 30% w/w DW

Stones (20-50mm): lower limit 0%, upper limit 10% w/w DW

Stones (>50mm): lower limit 0% w/w DW

Organic Matter (LOI): lower limit 3.0, upper limit 20.0 w/w

Soil Reaction: 5.5-8Ph

Contamination: Free of weed seeds, roots of perennial weeds, sticks, subsoil or foreign matter.

Conductivity: 3.0 milli O/cm

Limits of Toxic Elements for all soils:

Contaminant	Screening Value mg/kg	Data Source	Contaminant	Screening Value mg/kg	Data Source
Metals			Hydrocarbons		
Arsenic	40	C4SL	Banded TPH (8-10)	72	Calc1
Cadmium	149	C4SL	Banded TPH (10-12)	385	Calc1
Chromium (III)	910	S4UL	Banded TPH (12-16)	2769	Calc1
Chromium (VI)	21	C4SL	Banded TPH (16-21)	2923	Calc1
Copper	7,100	S4UL	Banded TPH (21-35)	2923	Calc1
Lead	310	C4SL	Benzene	0.89	C4SL
Elemental Mercury	1.2	S4UL	Toluene	120	SGV
Inorganic Mercury	56	S4UL	Ethyl Benzene	65	SGV
Nickel	180	S4UL	Xylene	42	SGV
Selenium	595	SGV	Aliphatic C5-C6	42	S4UL
Zinc	40,000	S4UL	Aliphatic C6-C8	100	S4UL
Anions			Aliphatic C8-C10	27	S4UL
Soluble Sulphate	500 mg/l	Structures	Aliphatic C10-C12	130	S4UL
Sulphide	50	Structures	Aliphatic C12-C16	1100	S4UL
Chloride	400	Structures	Aliphatic C16-C35	65,000	S4UL
Others			Aromatic C6-C7	See Benzene	S4UL
Organic Carbon (%)	6	Methanogenic potential	Aromatic C7-C8	See Toluene	S4UL
Total Cyanide	140	WRAS	Aromatic C8-C10	47	S4UL
Total Mono Phenols	310	SGV	Aromatic C10-C12	250	S4UL
PAH			Aromatic C12-C16	1800	S4UL
Naphthalene	2.33	S4UL	Aromatic C16-C21	1900	S4UL
Acenaphthylene	2,900	S4UL	Aromatic C21-C35	1900	S4UL
Acenaphthene	3,000	S4UL	PRO (C ₅ -C ₁₀)	337	Calc2
Fluorene	2,800	S4UL	DRO (C ₁₂ -C ₂₈)	69,800	Calc2
Phenanthrene	1,300	S4UL	Lube Oil (C ₂₈ -C ₄₄)	66,900	Calc2
Anthracene	31,000	S4UL	TPH	500	Trigger to consider speciated testing
Fluoranthene	1,500	S4UL	Chlorinated Solvents		
Pyrene	3,700	S4UL	1,1,1 trichloroethane (TCA)	9	S4UL
Benzo(a)anthracene	11.0	S4UL	tetrachloroethane (PCA)	1.5	S4UL
Chrysene	30	S4UL	tetrachloroethene (PCE)	0.18	S4UL
Benzo(b)fluoranthene	3.9	S4UL	trichloroethene (TCE)	0.017	S4UL
Benzo(k)fluoranthene	110.0	S4UL	1,2-dichloroethane (DCA)	0.0092	S4UL
Benzo(a)pyrene	4.65	C4SL	vinyl chloride (Chloroethene)	0.00077	S4UL
Indeno(1 2 3 cd)pyrene	45.0	S4UL	tetrachloromethane (Carbon tetra	0.026	S4UL
Dibenz(a h)anthracene	0.32	S4UL	trichloromethane (Chloroform)	1.2	S4UL
Benzo (g h i)perylene	360	S4UL			
Total PAH Screen	66.4	B(a)P / 0.15			
Notes Concentrations measured below these screening values may be considered to represent 'uncontaminated conditions' which pose a 'LOW' risk to human health. Concentrations measured in excess of these values indicate a potential risk which require further, site specific risk assessment. C4SL - Defra Category 4 Screening value based on Low Level of Toxicological Risk SGV - Soil Guideline Value, derived from the CLEA model and published by Environment Agency 2009 - where not superseded by C4SL S4UL - LQM/CIEH Suitable for use Level (2015) based on 'minimal' level of risk Calc1 - sum of thresholds for All & Aro fractions - assuming a 35% Aro:65% All ratio as is commonly encountered in the soil Calc2 - sum of nearest available carbon range specified including BTEX for PRO fraction Total PAH based on B(a)P / 0.15 - GEA experience indicates that Benzo(a) pyrene rarely exceeds 15% of the total PAH concentration					

315 IMPORTED SUBSOIL TO BS 8601:2013

- Quantity: Provide as necessary to achieve soil depths for trees, shrubs and lawns to complete the work sitewide. See drawing: PLA 0089 TD 400 for depths and locations
- Standard: To BS 8601.
- Classification: sandy clay loam subsoil.
 - Grade:n/a
- Source: single source
 - Product reference: Sandy Clay Loam by Bourne Amenity (or equal and approved)

The Wharf
Rye Road
Kent
TN18 5QG
Tel. 01797 252 299
e: info@bourneamenity.co.uk

332 IMPORTED SUBSOIL CUSTOM MIX GENERAL

- The Contractor is responsible for ascertaining accurate quantities necessary for the execution of the works. The Contractor shall confirm the above requirement at Tender stage.
- Any deficiency of subsoil existing on site shall be imported by the Contractor to fulfil the requirements of the Contract.
- A full written analysis of any proposed imported subsoil will be required by the CA/Landscape Architect for approval before soil is transported to site.
- Sources of subsoil are to be identified, the preference is for local virgin soils. Screened soils without full and detail analysis, origin history and samples will not be approved. The written analysis must include a report on the suitability of the proposed subsoil for its intended use. Imported subsoil, shall comply to British Standards BS 8601 Specification for subsoil and requirements for use. It shall be PH 6.5- 8.0, moderately draining. It shall be free of debris and vegetation/grasses.
- Contractor to test the subsoil **after delivery** to site to BS 8601 Specification for subsoil and requirements for use using methodologies described within and using limits of toxic elements provided above.

The CA/Landscape Architect shall be also be informed of the subsoil's source by the Landscape Contractor.

Any topsoil brought onto the site without approval will be deemed to have been brought in at the Contractor's risk, and if instructed to cart such topsoil off site this will be at the Contractor's expense.

500 SOIL CONDITIONERS

- Peat free, organic Green Waste Compost/soil conditioner shall be Premier Bio Organic Tree & Shrub Planting Compost (or equal and approved). Obtainable from:
Amenity Land Services
Long Lane, Wellington
Telford
Shropshire, TF6 6HA
Tel: 0192 641 949
(or equal approved).
- Organic fertilisers shall be: 6X Natural Poultry Manure Spread Pellets (or equal and approved)
Obtained from:
Organic Concentrates Ltd
3 Broadway Court
Chesham
Buckinghamshire, HP5 1EN
Tel: 01494 792 229
(or equal approved).

- Soil conditioner shall be: Seanure Seaweed Soil builder (or equal and approved)
Obtainable from:
Alginure Products Ltd
Bells Yew Green
Tunbridge Wells
Kent, TN3 9BQ
Tel: 01892 750 6
(or equal approved).
- Compost additives shall be: Perlite (or equal and approved)
Obtained from:
J Arthur Bower,s
Firth Road
Lincoln LN6 7AH
(or equal approved).
- Soil stabilisers shall be Netlon Advanced Turf. (or equal and approved)
Obtained from:
Netlon Ltd,
New Wellington Street
Blackburn
BB2 4PJ
Tel. 01254 262431
Fax.01254 694302
E-mail ats@tensar.co.uk
(or equal approved).

525A ON SITE AMELIORATION OF TOPSOIL

Drawing Reference: Topsoil and Ameliorations Plan PLA 0089 TD 400

- Following approval of topsoil placement, spread and incorporate soil ameliorants as follows. Prior to commencing these works the Contractor shall submit a detailed method statement to the Landscape Architect / CA regarding application of ameliorants, and incorporation methods with the objective of providing an intimate and even mixture with a finished surface of a uniformly light consolidated crumb. The degree of consolidation shall be consistent with the use to which the area is to be put.
- When storing soil ameliorants they shall be stored in clearly identifiable stores and in strict accordance with the suppliers recommendations. The Contractor shall ensure that no mixing between the materials occurs and that bagged ameliorants are not subject to overheating or water damage.

Sequence of Operations :

Apply topsoil to depths as specified. Fine grade and cultivate in preparation for soil amelioration.

Pre blend in ameliorates prior to topsoil placement all to agreed methodology apply ameliorated soil to depths as specified.

Shrub Beds as defined on the contract drawings above.

- Evenly apply 100mm depth of Bio-organic Tree/Shrub Compost (or equal approved) over placed topsoil
- Evenly apply 6X Poultry Pellets (or equal approved) at a rate of 20kg (bag) per 100m².
- Evenly apply Alginure Seanure Seaweed Soil Builder (or equal approved) at a rate of 70g per m².
- Fully incorporate above items into top 250mm of soil achieving an intimate mix 300mm deep.

Tree Pits/Trenches as defined on the contract drawings above.

- Backfill trenches with a pre blended ameliorated topsoil, comprising of 4 parts topsoil :1part Bio-organic Tree/Shrub Compost (or equal approved)
- Over fill trenches to allow for settlement as specified and to approved profiles. Contractor to allow for top dressing and any necessary adjustment to turf during the maintenance period to make good profiles if excessive settlement occurs.

Groundcover Beds or Ornamental Grasses as defined on the contract drawings above.

i. Evenly apply 50mm depth of Bio – Organic Tree/ Shrub Compost (or equal approved) over placed topsoil and cultivated to achieve an ameliorated depth of 300mm

Note:

Following incorporation of 6X pellets (or equal approved), thoroughly water in if deemed necessary. The plant bed shall be left fallow for a period of 5 days prior to planting (see supplier's recommendations).

Additional amelioration for tree, shrub and bulb planting are required to be incorporated at planting stations and in accordance with schedule 1: Pits Sizes, Amelioration and Fertilizers Q31.

EXECUTION

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: 100 mm below adjoining paving, kerbs, manholes etc.
- Blade grading: May be used to adjust topsoil levels provided depth of topsoil is nowhere less than 125 mm.
- Give notice: If required levels cannot be achieved by movement of existing soil.

705 HANDLING TOPSOIL

- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
- Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.

706A SPREADING TOPSOIL

- Cut from the vertical faces of the stockpiles thus incorporating material from the surface and base together, rather than removing the soil in horizontal layers. This process will promote biological activity throughout the soil that is spread, ensuring that nutrient cycling and organic matter decomposition processes are maintained.
- Spread over prepared formation in layers not exceeding 150mm and firm each layer before spreading the next. Overall minimum depths after firming and settlement to be:
- Immediately before topsoiling, remove all debris such as stones and bricks over 50mm Ø, metal, timber or decayed and contaminated matter existing on the surface or uncovered during decompaction operations. Inform the CA if any evidence or symptoms of soil contamination are discovered on the site.

Finished topsoil depths - refer to PLA 0089 TD 400 Topsoil Depths & Amelioration Plan and levels plans Tree pits as specified in Section Q31: Clause 507A

- Undertake topsoiling operations when the climatic conditions are suitable and in accordance with BS 4428. Topsoiling operations shall not be undertaken when the soil is waterlogged or frozen and once spread only machinery necessary to carry out subsequent operations shall be allowed access to the area. Such machinery shall be light in weight or of a suitable type to prevent compaction of the topsoil on underlying subsoil.
- Use hand tools around trees, plants and in confined spaces, where it is impracticable to use machinery.
- Where finished levels are not given, the levels shall be such that the finished surface will be smooth, even fall, (or gently rolling curve) between the finished levels on the boundaries of the areas and to avoid ponding hollows.
- Correct any shrinkages below the specified levels during the Contract or Defects liability Period.

COMPLETION

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 of all soils by type and grade.
- Number of copies: As agreed with CA

Q30 Seeding/turfing

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/REQUIREMENTS

115 SEEDED AND TURFED AREAS

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

120 CLIMATIC CONDITIONS

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

145 WATERING

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

150 WATER RESTRICTIONS

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

170 SETTING OUT

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

PREPARATION

210 HERBICIDE FOR ALL GRASSED AREAS

- Type: Suitable for suppressing perennial weeds.
- Timing: Allow fallow period before cultivation.
 - Duration: 2 weeks.

265 GRADING GENERALLY

- When topsoil is reasonably dry and workable grade to smooth, flowing contours, with falls for adequate drainage, removing all minor hollows and ridges.
- Unless otherwise stated, finished levels after settlement to be 100mm below adjoining paving, kerbs, service covers etc.
- Topsoil levels may be adjusted by blade grading to ensure that there is nowhere less than 150mm of topsoil. If the required levels cannot be achieved by movement of the existing soil, obtain instructions from CA.

SEEDING

401 AMENITY GRASS SEED TO AMENITY GRASS AREAS

- See drawing: 24071-PLA-ZZ-00-DR-360 for locations
- seed mix of local provenance
- Product ref: Flowering Lawn Meadow
- Supplier: Meadowmania British Wildflowers
Tel: 0800 085 4399
W: www.meadowmania.co.uk.

402 WILDFLOWER MIX

- See drawing: 24071-PLA-ZZ-00-DR-360 for locations
- 100% native wildflower mix; local provenance
- Product ref: Hedgerow & Banks 80/20 Wildflower Mix
- Supplier: Wildahome
Tel: 333 2420602
W: www.wildahome.co.uk

420 DELIVERY AND STORAGE

- Frosty weather or waterlogged ground: Do not sow.
- Delivery: dry storage.
- Certification:
 - Standard: To BS 3969.
 - Declaration: Species mix, including percentage of specified species.

ESTABLISHMENT OF GRASS AND WILDFLOWER MIXES

- 1) If possible, select a weed-free site of low fertility. DO NOT APPLY FERTILISER. Broad-leaved and grass weeds together with cultivated grasses contained in standard mixtures can be highly competitive on fertile soils and may adversely affect seed germination, establishment and subsequent growth. However over-competitive grasses may be counteracted by increased grass cutting.
- 2) CONTROL WEEDS BEFORE SOWING. Annual weeds may be hoed, buried or killed with a contact herbicide.
- 3) Sow mixtures either from early March to early May or from early August to mid-September (for autumn establishment of most species). If they contain COWSLIP, OXLIP, PRIMROSE, BLUEBELL or VIOLETS these will not be expected to germinate until after the winter following sowing.
- 4) Cultivate the ground to produce a fine, weed-free seed bed. Firm if necessary. Scarify or harrow surface to achieve 50% bare soil.
- 5) Remove and dispose of all arisings off-site.
- 6) Take care to sow evenly at the recommended rate. Thoroughly mixing one part seed with four to five parts DRY SAND, USED COMPOST or FLOUR makes it more easily distributed. For border sowings mix thoroughly one part seed to nine parts dry sand.
- 7) Rake the seed in lightly with a spring-tined rake and firm the soil by treading or preferably rolling to ensure that the seed comes into contact with moisture in the soil. Water with a fine spray to avoid disturbing the surface of the soil.
- 8) Keep the area well watered and free from any unwanted plants.
- 9) During the first year after sowing the sward should be cut every 6-8 weeks (or as necessary) in order to prevent the grass from overgrowing the slower growing wild flowers. IT IS ESSENTIAL THAT THE CUTTINGS ARE REMOVED.
- 10) In the following years, cut in early spring (before growth starts) and in October, after all wild flower seeds have been shed. REMOVE THE CUTTINGS.

CULTURAL INFORMATION FOR SOWING 100% WILD FLOWER MIXTURES

- 1) When choosing your site, bear in mind that the above mixtures do not contain grass seed and are intended to be sown without grass into cultivated ground to create ornamental beds of wild flowers only. THEY CANNOT BE SUCCESSFULLY OVER-SOWN INTO EXISTING GRASS.
- 2) When creating wild flower areas to be grown without grass, it is not necessary to avoid fertile soils. In general, wild flowers respond well to fertile ground and to being "fertilised" like any other garden flowers. However, grasses and weeds can be highly competitive on fertile soils and may adversely affect seed germination, establishment and subsequent growth.
- 3) Sow either from March to early May, or from early August to mid-September (for autumn establishment of most species)
- 4) Carefully prepare a fine, weed-free seed bed. Scarify or harrow surface to achieve 50% bare soil.
- 5) Remove and dispose of all arisings off-site.

- 6) Take care to sow the seed evenly at the recommended rate. Thoroughly mixing one part seed with nine parts dry sand or flour makes it more easily distributed.
- 7) Rake the seed in lightly with a spring-tined rake and firm the soil by treading or preferably rolling. Water with a fine spray to avoid disturbing the soil surface. Keep the area well-watered and free from grass and weeds.
- 8) As the seedlings/plantlets grow, some thinning-out will be necessary, especially with the larger, more vigorous species. Use the area as a source of plant material by transplanting the thinnings to other parts of the garden. Thinning out to the required planting distances should be achieved with as little root disturbance as possible.

PROTECTING/CUTTING

545 FIRST CUT OF AMENITY GRASS & TURF AREAS

- When grass is approximately 50mm high remove debris, litter and all stones and clay balls larger than 25mm in any dimensions and evenly firm.
- About 48 hours later and when grass is reasonably dry, cut to approximately 25-40mm high with a rota scythe. Remove and dispose of all arisings.

590 CLEANLINESS

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

MAINTENANCE

610 FAILURES OF SEEDING/TURFING

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

620 MAINTAINING GENERAL GRASSED AREAS

- Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the defects liability period.
- Maximum height of growth at any time: 35 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 25-40 mm.
 - Arisings: Remove.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Trimming: All edges.
 - Arisings: Remove.
- Weed control: Substantially free of broad leaved weeds.
 - Method: Application of a suitable selective herbicide.
- Stones brought to the surface: Remove regularly.
 - Size: Exceeding 25 mm in any dimension.
- Areas of settlement: Make good.
- Watering: Contractor's choice.

621 MAINTAINING GENERAL WILDFLOWER AREAS

Frequency – Year 1:

- Cut every 6–8 weeks from germination until end of August.
- Resume if flushes of growth occur in autumn.

Cutting height:

- Maintain sward at 40–60 mm.

Operations:

- Remove all arisings after each cut.
- Avoid cutting in drought or when wet.

- Control undesirable species by hand or spot spraying (as last resort).
- No fertilisers or irrigation to be used unless directed.
- Protect area from heavy use and compaction.

Frequency – Year 2 onwards:

Spring cut (optional):

- Timing: Late March to early April.
- Cut height: 50 mm.
- Remove arisings.

Main summer (hay) cut:

- Timing: Mid-July to early August, after flowering and seed drop.
- Cut to 50 mm.
- Allow arisings to lie for 7–10 days to dry and shed seed, then remove.

Autumn cut (optional):

- Timing: Late September to October.
- Cut any regrowth to 50 mm.
- Remove all arisings.

Additional cutting:

- If strong regrowth occurs (e.g. in warm autumns), cut and remove to prevent dominance by vigorous grasses.

Weed control:

- Monitor monthly in growing season.
- Remove invasive or aggressive species manually or by spot spraying.

Access restrictions:

- Limit public access during sensitive periods (establishment, wet weather, post-sowing).
- Prevent dog fouling or event use during early stages.

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS

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.

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.

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: 7 days.

210A PLANT PROCUREMENT QUALITY OF STOCK (TO BE READ IN CONJUNCTION WITH CLAUSES 215, 216, 225 & 235)

- Plant Materials

All plant material shall be first grade stock of the highest quality achievable. The Landscape Architect shall place great emphasis on the quality of roots and overall branch form / structure when inspecting plants for approval. Trees and shrubs with poor quality roots will be rejected regardless of quality of the shoot system. All plants shall conform to BS 3936 and to the HTA National Plant Specification September 1997, unless otherwise scheduled / specified.

- **Origin & Provenance / Acclimatization**

Preference shall be given to UK GROWN / ORIGIN STOCK. In particular, field grown native transplants, native wildflower and native aquatics shall be of UK origin, grown from UK provenance seed, cuttings, bud wood or grafts etc. However, quality of available stock (particularly with regard to trees) shall take precedence over origin of stock and accordingly trees may be other than UK origins.

Note: Where plant stock is to be supplied outside the UK, preference will be given to northern European nurseries. All plants shall be properly hardened off before delivery. Accordingly, any stock source outside of northern European nurseries must be acclimatized and fully hardy before delivery.

FORM & CONDITION OF PLANTS

TREES

- **Form**

Transplants: shall have been transplanted or undercut at least once in its life. The age and height shall be stated and in accordance with the plant schedules. Root collar shall be as scheduled. All transplants shall have a well-developed fibrous root system, strong central leader (where appropriate) and well-structured laterals.

Feathered Trees: shall have a upright central leader and a stem furnished with evenly spread and balanced lateral growth down to, or within, 300mm of ground level.

Standard Trees: Shall have a substantially upright central stem, clean of lateral growth, supporting an even balanced / proportioned and well-branched crown. The crown shall have a central leader and branching appropriate for the species. No main branches shall cross. The clear stem shall be clean, free of recent legging up marks. 2m clear stem.

Semi Mature Trees: Shall be transplanted the number of schedule times and great emphasis shall be placed upon this, ie a 5X tree will have a field spacing and root structure which confirms its history. They shall have a substantially upright central stem, clean of lateral growth, supporting an even balanced / proportioned and well branched crown. The crown shall have a central leader and branching appropriate for the species. No main branches shall cross. They shall be selected to meet the very best quality and form available.

Multi Stem Trees: Shall have a minimum number of main stems and main stem to break from below ground level, as specified. They shall be true multi stem trees, ie. Originating from one root system. The minimum stem girth shall be in accordance with the Schedules. The tree structure shall be balanced and well branched with a minimum crown diameter in accordance with the plant schedules.

Bushy Trees: Shall have many main stems arising from or very near to ground level, growing from one root system. They shall be of a height and diameter in accordance with the plant schedules. The structure / crown shall be well balanced and dense with the majority of stems of equal diameter.

- **Age / Condition or No. of Times Transplanted**
- Age / condition shall be in accordance with the Schedules. All trees shall be transplanted a sufficient number of times to encourage a compact and fibrous root system. Rootball holes at the supply nursery are to confirm this.
- **Root Collar Girth or Diameter**

Girth Trees: Shall be measured 1 metre above the ground level, and shall be in accordance with the plant schedules. All trees shall be tagged by colour marking ribbon using the standard industry code.

Root Collar Diameter (Transplants): Must be typical of species and representative of the specified height. Generally this should be 8/10mm or 10/12mm range.

- **Root Condition**

The root system must be well developed by good nursery practice. The system must not show any coiled main roots close to the collar, nor any physical damage.

Bare root Trees / Shrubs: Shall be supplied in bags, containing and enclosing the whole root system. All shall be root dipped in accordance with Clause 210. Rootballs shall be firm and solid and they must be well 'rooted through'. Rootballs must be enclosed in Hessian (Burlap). The size of the rootball must be appropriate for the species and cultivar, and its age and growth rates under the cultural and soil conditions in which it is growing.

For standard trees of girth 12-14cm and larger, and the equivalent size of multi stemmed trees, the rootballs must be additionally protected with ungalvanised wire netting.

Container Grown Trees: Shall be grown in the container for sufficient time for the root growth to have substantially penetrated the medium but not be root bound. Rooting must be well balanced in accordance with the container size.

Plants are to be centred in the container, well rooted, firm and moist on delivery, with the growing medium coming within a suitable depth of the pot rim. The surface of the growing medium shall be maintained, Moss, Liverwort and weed free at all times. Plants shall be supplied in rigid containers. The compost shall not contain peat from UK sites of Special Scientific Interest or equivalent designated from other countries.

- **Top / Bottom Working**

All trees shall be bottom worked unless otherwise specified

SHRUBS

- **Age / Condition**

The overall height and / or spread shall be in accordance with the Schedules

- **Root Condition**

The root system must be well developed by good nursery practice. The system must not show any coiled main roots close to the collar, nor any physical damage.

Container Grown Shrubs: Shall be grown in the container for sufficient time for the root growth to have substantially penetrated the medium but not be root bound. Rooting must be well balanced in accordance with the container size.

The requirements set out in the schedules are a guide to the required heights and number of breaks (in the lower 1/2 of the plants). Whilst it is recognized that these may vary they will be regarded as a target for measurement for a production regime of 'pinching' or trimming to produce a bushy subject.

Plants are to be centred in the container, well rooted, firm and moist on delivery, with the growing medium coming within a suitable depth of the pot rim. The surface of the growing medium shall be maintained, Moss, Liverwort and weed free at all times. Plants shall be supplied in rigid containers. The compost shall not contain peat from UK sites of Special Scientific Interest or equivalent designated from other countries. The compost must be of open texture yet retain adequate moisture to encourage a good rooting system. The compost will hold sufficient reserves of nutrients, to be a slow release from 14-16 months, to maintain the plant in a satisfactory condition for a reason period from the time after leaving the supplier's nursery.

After potting or when growth dictates, or as instructed ,all plant stock shall be spaced at a minimum of half pot width apart, depending upon species type , to facilitate a full and uniform leaf coverage to develop, to the crown evenly radiating around the pot . Stock which is allowed to grow into each other and is materially

substandard shall be rejected. The Supplier shall make full allowances for maintaining the regime throughout the contract grow/ reservation period.

- Habit
A bushy shrub (as Scheduled) shall have numerous lateral shoots arising from either a central point or elsewhere (subject to variety). The plants shall be dense with an evenly balanced head with growth generally covering the pot.

A plant scheduled as 'leader & laterals' shall have a single dominant shoot with significant side shoots. In particular, shrubs scheduled as hedging planting and are to be fit for this purpose, ie. a dense even head through the plants height.

HERBACEOUS PERENNIALS (Plants)

- Root System
The root system must be well developed and correspond to the species / cultivar, and its age and growth rates under the cultural and soil conditions within which it is growing. The system must show a good balance between the growing parts, ie. the buds and the roots and no physiological damage. This is especially important for plants grown from divisions.

Plants which have been stored in cool conditions must have good viability, must not have been allowed to dry out, and must be free from fungal infections. Perennials from cold store which are potted and grown on must have established a strong and vigorous root system before delivery. Perennials which are delivered out of cold storage after 1 May must be designated as cooled plants. The root system must not be allowed to dry out at any time.

- Root Condition and Form
Plants in containers shall have a good root system applicable to the species / cvs. Plants in growth must stand well and upright in the container, the pot or container must be filled for a least 90% with plant roots and soil and the compost must be moist. The surface growing medium shall be free of Moss, Liverwort and weeds. The compost shall not contain peat from UK sites of Special Scientific Interest or equivalent designated from other countries.

The Nursery will be expected to ensure that appropriate species are suitably grown to encourage full flowering in the year of planting. All plants shall show a high degree of extension growth typical of the species and appropriate to the specified container size. The plants shall be spaced on the nursery to allow full and uniform branch/ leaf structure coverage to develop, evenly radiating around the pot.

HERBACEOUS PERENNIALS (Bulbs)

- Generally
All bulbs and corms shall be in accordance with BS 3926, Part 9, and be clean and healthy, sound and ripe, free from pests and diseases, virus free and conform to the size and type scheduled. When scheduled as Topside the largest grade bulb commercially available shall be supplied.

SUPPORTING DOCUMENTS:

HANDLING AND ESTABLISHMENT OF PLANTS

(CPSE) Part 1 and 2

PLANT SCHEDULES

PROFORMA

ALTERNATIVES

SUPPORTIVE IMAGES/ SPEC NOTES

PROFORMA 1
DELIVERY NOTICE

Nursery:

Project:

Address:

Contractor:

Schedule of Plants:
(See attached)

To be completed by the contractor and forwarded to the above Nursery:

Delivery Required
(minimum 14 days notice)

Off Loading Location / Comments

Signed -

Date-

This form is incomplete unless signed by the contractor

Copies:

- Construction Manager
- Landscape Architect

PROFORMA 2
NOTICE OF REJECTION

Nursery:

Project:

Address:

Contractor:

Date of Delivery:

Schedule of Plants Rejected	Reason for Rejection
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Signed-
(Contractor)

This form is incomplete unless signed by the contractor

Copies

- Construction Manager
- Landscape Architect

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.

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 and Type of Container.

260 PLANT/ TREE SUBSTITUTION

- Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering:
Submit alternatives, stating:
 - Price.
 - Difference from specified plants/ trees.
- Approval: Obtain before making any substitution.

270 PLANT HANDLING

- All plants shall be lifted, handled, packaged and stored all in accordance with the HTA National Plant Specification 1997, in particular Parts I and II and CPSE Handling and Establishing Landscape Plants (Nov 1995) except in so far as the recommendations in the code of practice booklet are modified in the following clauses. Refer to Appendix 2.
- No deliveries to site shall be carried out on Mondays. Loading shall be undertaken immediately prior to delivery, ie. plants are not to be stored / loaded on lorries for a duration extending 16 hours.
- All packaging for either container grown or open ground plants shall be adequate to protect the Plants and prevent them heating or drying out or damage of any kind during transportation.
- All plants must be in a turgid state and stacked in such a way that breakage or crushing by the weight of the Plants above or securing ropes will not occur during transit.
- The plants shall be loaded in a manner suitable to facilitate simple unloading techniques which are not labour intensive and minimise the risk of damage.
- All bare root trees, shrubs and transplants are root dipped in a 1:3 Alginate root dip solution to manufacturer's recommendations.

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

302 CHEMICALS GENERALLY

- Weed clearance shall only be by hand or mechanical means only. Chemicals may only be used with the written approval of the CA.
- Use only where specified or approved, and then only products on the current list of the Agricultural Chemicals Approval Scheme.
- Where work is near water, drainage ditches or land drains, comply with the Ministry of Agriculture, Fisheries and Food (MAFF) Code of Practice for the use of herbicides on weeds in water courses and lakes.
- Observe all precautions recommended by the manufacturer and remove containers from site immediately they have been emptied or are no longer required.

304 HERBICIDE APPLICATION GENERALLY

- Herbicide application shall only be carried out by persons legally qualified to do so. The Contractor shall submit evidence of such qualifications to the CA prior to the application of herbicide.
- The Contractor shall not carry out spraying during unsuitable conditions, eg. during rainfall or when extensive rainfall is forecast or during windy weather etc. which may cause spray to drift onto adjoining land. The Contractor will be held responsible for any damage or injury to persons or property resulting from this operation and must indemnify the Client against all claims from damage.
- Spraying or spreading equipment shall be of an approved design and suitable for the type or terrain. Knapsack sprayers and other forms of portable equipment shall be used on banks and areas with difficult access. All spray equipment shall be fitted with a guard to prevent spray reaching the trees and shrubs to be retained. Any trees or shrubs (defined as to be retained) damaged by chemicals shall be replaced by and at the Contractor's expense.
- All relevant Acts of Parliament, in particular 1998 COSHH regulations, and the manufacturer's instructions concerning the handling, use and storage of chemicals shall be followed. Containers and other contaminated equipment shall be cleared from site after each days work.

350 CLIMBING SUPPORT FOR CLIMBING SHRUBS

- Product: Si3 Plant training wire system
- Supplier: S3i GROUP (tel. 01302 752 504)
- Installation: to supplier's recommendations

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

401 REGULAR PLANT LAYOUT TO ALL BEDS

Spacing: As drawing PLA 0089 TD 300 and 301

Density: As schedule on drawing PLA 0089 TD 300 and 301

407 PLANTING SHRUBS AND TRANSPLANTS

- Plant at the same depth as previously grown, care being taken to avoid damage to the root system and stems.
- Position showing their best side to the front.
- Bare roots shall be carefully spread out and packed around with soil. The plants shall be gently shaken to allow the fine soil to surround the roots. As the rest of the soil is returned it shall be well consolidated and firmed around the roots to eliminate all air pockets.
- Sufficient soil shall be taken out from the bed to enable the roots to be fully spread.
- All plants shall be pit planted in accordance with schedule clause Q31 507.
- Notch planting of transplants will not be approved.

409 POST PLANTING OPERATIONS

- Immediately after planting shrubs, carefully cut back any damaged, dead or diseased branches and remove any weak, thin or malformed growth. Where an to the extent appropriate for the species, cut back to encourage growth.
- Water plants thoroughly, immediately after planting, using a fine rose.
- Allow for cutting back shrubs and transplants as directed by the Landscape Architect.

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.

450 BULB OPERATIONS GENERALLY

- Throw on the ground in loose drifts to ensure natural spacing then carefully planted with a trowel, bulb planter or other approved planting methods to the following depth:
- Medium bulbs (eg Alliums) 100 mm
- Small bulbs (eg Bluebells) 50 mm
- All bulbs and corms shall be planted in the appropriate season with a suitable planting tool of appropriate pattern and at the correct depth. The hole formed shall be of sufficient diameter to accommodate the bulb or corm which shall have its base in contact with the soil at the bottom.
- In fine turf a plug or turf shall be neatly removed and replaced after planting.
- Within lawns extent of bulb planting to be pegged out and agreed with [landscape architect].
- All Allium bulbs shall be backfill with sufficient quantities of approved propriety fibrous bulb planting compost to base of hole to ensure good free draining amelioration.

485B MULCHING GENERALLY

- Variable depths of ornamental bark or clam shell mulch to all planting beds as identified on details and drawing PLA 0089 TD 400
- Immediately on completion of planting mulch the whole surface of planting beds with graded bark flakes to a minimum depth of 50mm as indentified on the Soft Landscape Plan.
- All dust and fine material to be excluded. The mulch shall be pest, disease, weed and contamination free.
- CA to approve a sample of graded bark flakes prior to use.
- Bark mulch to be ornamental grade bark mulch; 3-35mm particle size obtainable from:
Melcourt Industries Limited,
Boldridge Brake,
Long Newnton,
Tetbury,
Gloucestershire.
GL8 8RT
Tel: 01666 502711
Fax: 01666 504398
Email: mail @ melcourt.co.uk
- Remove any spillage of, soil, ameliorants and mulches from all hard surfaces and leave the works in a clean tidy and pristine condition at Practical Completion.

PLANTING TREES

499B PLANTING ROOTBALL PLANTS

- Plant to the depth of the nursery soil mark on the stem. The soil shall be distributed evenly around the root system.
- All work shall comply with BS 4031 1996, recommendations for transplanting semi-mature trees.

- During periods of intense and prolonged frost, measures shall be taken to protect the bottom and sides of the excavated trench and the root balls of trees awaiting planting.
- Dig pits do not glaze or compact the surface. If any glazing or compaction occurs it shall be thoroughly roughened and worked to ensure unrestricted movement of water.
- Orientated to present the best face to an edge of road or building as agreed with the CA.
- Prior to planting the rootball shall be measured and any necessary adjustments to the pit/trench made.
- Plant to give a vertical trunk and leader.
- The outer surface of the rootball shall be examined for damage, where required by the CA, by rolling back or cutting the burlap. Any hard surfacing or glazing shall be carefully slit or scarified.
- Fertiliser shall be incorporated into the backfill in accordance with the schedule in clause Q31 507 (Pit Sizes, Fertilisers and Ameliorants).
- The Contractor shall ensure that openings to watering pipes are kept free from ingress of all materials.
- The trees shall be securely anchored so that the rootball does not pivot in the soil under windy conditions.
- On completion of planting any broken branches shall be pruned, damaged areas of bark shall be neatly pared back to sound tissue.

505 TREE PITS

- Sizes: to planter sizes or 2000mm diameter x 1150mm deep. As shown in drawing: PLA 0089 TD 601 and PLA 0089 TD 602
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of n/a.
 - Treatment: Soil ameliorant worked into pit bottoms.
- Pit sides: Scarify.
- Backfilling material: 'TS1 Sandy Loam' to 300mm depth over 600mm depth of 'Sandy Clay Loam' subsoil. Top and subsoils from Bourne Amenity or equal and approved.
- Accessories: Aeration and irrigation pipe, root barriers and tree stakes as per drawing PLA 0089 TD 601 and PLA 0089 TD 602.
- For trees in hard landscape refer to drawing: PLA 0089 TD 602 for specialist Stockholm Tree Pits

507 PIT SPECIFICATION, AMELIORATION & BACKFILL

- For trees in hard landscape refer to drawing: PLA 0089 TD 602 for specialist Stockholm Tree Pits
- Diameter of each pit shall be a minimum 1500 mm greater than the average spread of the root system at the time of planting.
- This schedule gives the minimum pit sizes, the maximum being derived from the above provision:

Plant Type Pit size/ depth Fertiliser / Backfill

Ground cover 300 x 300 x 250mm ameliorated soil (as dug)

Containerised Shrubs 300 x 300x300 mm 30g Alginure, blended with 3 parts ameliorated soil (as dug) and 1 part ALS Bio Tree & Shrub Compost

1+2 transplants 300 x 300x250 mm Ficote 140 (16 – 10 – 10) 20gms in accordance with suppliers recommendations, backfilled with as dug ameliorated soil

Specimen shrubs 450 x 450x300 mm 75g Alginure, blended & back-filled 5litre + with 3 parts ameliorated soil: 1 part Bio Tree & Shrub Compost ALS

Trees 8-18cm 1200x1200x900mm Pre blended backfill comprising of 300g Alginure, 5L perlite 40 litres of ALS Bio Tree Shrub Compost and as dug ameliorated soil.

Trees 20cm-35cm 1750x1750x1200mm Pre blended backfill comprising of 300g Alginure, 15 litre of perlite, 120L of ALS Bio Tree and Shrub Compost and as dug ameliorated topsoil.

Trees 30cm+ 2000x2000x1500mm Pre blended backfill comprising of 400g Alginure, 30 litre of perlite, 160 L of ALS Bio Tree and Shrub Compost and as dug ameliorated soil.

Trees 60cm+ 2500x2500x1650mm Pre blended backfill comprising of 400g Alginure, 30 litre of perlite, 240 L of ALS Bio Tree and Shrub Compost and as dug ameliorated soil.

- Where the depth of pits exceed the ameliorated soil depth (eg. Specimen trees and shrubs within grass areas) subsoil shall be removed and replaced with the soil prescription as scheduled above i.e. non ameliorated sub soil / topsoil shall not form part of the backfill. (For manufacturer's references refer to D20 875).
- All trees and specimen shrubs within this contract are to be planted incorporating tree pit irrigation systems Root Rain Civic RRCIVIC 1-3 Green leaf Urban Tree Products or equal approved as specification clause 315 above.

Note; All to be fitted in accordance with suppliers recommendations and sized as scheduled by suppliers information pack.

- Root barrier to be included where defined on the contract drawings
Type: GreenBlue Urban ReRoot 1000 root barrier, or equal approved.

Obtainable from:

GreenBlue Urban

Northpoint, Compass Park

Junction Road, Bodiam

TN32 5BS

Email: enquiries@greenblueurban.com

Tel: 01580 830 800

514 AERATION PIPES

- All trees within this contract are to be planted incorporating RootRainCivic Tree pit irrigation systems - irrigation aperture with double inlet for long term irrigation & aeration.

Available from:

Greenleaf or equal & approved

Haywood Way

Hastings

East Sussex

TN35 4PL

Telephone: 01424 717797

Fax: 01424 533003

enquiries@greenleaftrees.co.uk

Note: All to be fitted in accordance with suppliers recommendations and sized as scheduled by suppliers information pack.

542A TREE SECURING SCHEDULE

- All trees shall be secured as schedule below.
- Ensure all trees remain firm and upright at all time and shall include within the tender rates for increase in scheduled stake lengths, dia. and guying systems specification to achieve this criteria if deemed necessary by varying site micro climate and soil conditions.

STAKING/GUYING SCHEDULE

Trees 16cm+ girth

Underground guyed by landscape contractor with fixing straps fixing to internal fixings within planters (or equal and approved).

Size and fixtures to landscape contractor's detail and specification.

585A TREE STAKES

All trees as schedule within Clause 542 to be double staked

- Tree stake: bury 1/3rd of the length in the ground or at least 60cm deep and ensure the stake does not move when pressure applied.
- Make sure the stake is no higher than 1/3rd of the tree height.
- Avoid the root ball.
- Align the two stakes in the direction of the prevailing wind.

590 MULCHING TREES

- Material: Ornamental bark or clam shell mulch refer to Q31 485.
 - Purity: Free of pests, disease, fungus and weeds.
 - Recycled content: Contractor's choice.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: In a circular area of 600 mm radius measured from the tree stem.
- Finished level of mulch: 50 mm below adjacent grassed or paved areas.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

709 MAINTENANCE GENERALLY

- The following clauses are related to pre-practical completion maintenance. For full maintenance scope i.e. during the defects liability period refer to Section Q35.

710 MAINTENANCE

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the defects liability period.
- Frequency of maintenance visits: In accordance with the agreed maintenance schedule.

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.

725 PLANT REPLACEMENTS PRE-PRACTICAL COMPLETION

- At Practical Completion all plants shall be healthy, in pristine condition. Any defective plants shall be replaced by and at the Contractor's expense and immediately.
- Any materials, trees or other plants which are found to be defective (e.g. does not show leaf, make adequate growth, or shows signs of excessive stress) during the period following planting defect liability period incorporating one full growing season (two for advance nursery stock trees to 20cm girth and above when planted and all evergreen tree species e.g. Quercus ilex, Taxus baccata and Ilex aquifolium irrespective of planting sizes) shall be replaced by and at the Contractor's expense.
- Plants damaged by vandalism prior to Practical Completion shall be noted by the Contractor and shall be replaced by and at the Contractor's expense.
- Replacements to make good defects pre practical completion must be planted immediately.
- Any stakes, ties, guys, etc shall be replaced as soon as possible after being found defective.
- The relevant planting rates shall be deemed to include all such costs and no additional payment will be made for defective work under any circumstances.

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.

747 PLANTING MAINTENANCE: SCOPE & FREQUENCY

Generally:

The responsibility for the maintenance of completed work is at the Contractor's expense during the progress of the works up to Practical Completion and during the following 24 months defects liability period. Contractor to also refer to section Q35.

Pre Practical Completion Maintenance:

Shall conform to the standards set for post practical completion maintenance, except where specified otherwise. In particular, attention shall be paid to planted and grass areas, including cutting, weeding and watering. The cost of Pre Practical Completion maintenance shall be included in the tender. The number of visits carried out prior to practical completion shall not form part of the total identified in clause "frequency of visits".

Post- Practical Completion Maintenance / Defects Liability Period

Refer to Q35

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 hoeing.
- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards.
 - Broken or missing items: Replace.
 - Rubbing: Prevent.
 - Ties: Adjust to accommodate growth.
 - Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - Frequency of checks: Every month.
- 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: When instructed.

755 PLANTING MAINTENANCE - FERTILIZER

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

760 PLANTING MAINTENANCE - PRUNING

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

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 defects liability 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): Refer to drawing PLA 0089 TD 400
 - Trees: Remulch.
 - Depth (minimum): Refer to drawing PLA 0089 TD 400

Q35 Landscape Maintenance

To be read with Preliminaries/ General conditions.

GENERALLY

104 POST PRACTICAL COMPLETION/DEFECTS LIABILITY MAINTENANCE

- Any materials, trees or other plants which are found to be defective (e.g. does not show leaf, make adequate growth, or shows signs of excessive stress) during the period following planting defect liability period incorporating one full growing season shall be replaced by and at the Contractor's expense.
- Plants damaged by vandalism post Practical Completion shall be noted by the Contractor and report to [Landscape Architect] Replacements to make good defects must be planted during the planting season immediately following their loss.
- Any stakes, ties, guys, etc shall be replaced as soon as possible after being found defective. The relevant planting rates shall be deemed to include all such costs and no additional payment will be made for defective work under any circumstances.

Inspections : Defects Liability Period:

- At the end of the growing season (Sept / Oct) of the first 12 months Defects Liability Period, the CA / Landscape Architect and the Contractor shall carry out a joint inspection of the works.
- Rectify any defective work or materials by the Contractor by 31 December of the same year this is deemed to include any advanced nursery stock trees that fail within the first 12 month period.
- At the end of the second growing season (Sept / Oct) of the 24 months Defects Liability Period the Landscape Architect and the Contractor shall carry out a second and final inspection to assess the required replacements for any Advance Nursery Stock trees which may have failed. This is deemed (if necessary) to include replacement of replacements carried out under the initial 12 months defects period.

107 MAINTENANCE SCOPE & FREQUENCY

Post- Practical Completion Maintenance / Defects Liability Period

- Carry out all maintenance operations as defined within this specification for the entirety of the works implemented under the landscape package as defined within this specification and associated drawings and contracts.

Definition of 'Maintenance':

- 'Maintenance' as applied to work included in this Contract will include all operations necessary for the establishment of and proper growth of plants and to keep the works in a neat and tidy condition, e.g. watering; pruning; disease and insect control; replacement of dead or dying plants; adjustment of duckbill anchors and tree stakes; rubbish picking (from soft landscape areas); fertiliser application; removal of leaves from drains and paved areas; trimming the edges of grass areas, mowing grass areas, adjusting tree ties; resetting plants and mulching.

Frequency of Visits:

- The Contractor is responsible for making regular maintenance visits to the site. The Contractor shall carry out minimum of 35 visits per year, giving the Landscape Architect 72 (seventy two) hours notice of the intention to commence work on each operation. The number of maintenance visits shall be increased as necessary to maintain the specified standards.

The maximum intervals between visits by the Contractor shall be:

- i) April to October, inclusive: 7 days (to an agreed programme)
- ii) November to February, inclusive: 20 days (to an agreed programme).

The Contractor's Tender shall include a preliminary maintenance programme confirming the minimum number of staff employed on site during each maintenance visit.

Labour

- The Contractor shall employ an approved competent Supervisor on the works, who is to be present during all maintenance visits, and any instruction given to the Supervisor by the CA / Landscape Architect shall be deemed to have been given to the Contractor.
- All work people employed on site by the Contractor shall be competent and experienced in all aspects of work on which they are engaged.

108 MAINTENANCE REPORTS

- Within two working days of each maintenance visit the Landscape Contractor shall submit to the CA / Landscape Architect, a record report outlining the condition of the works, a schedule of the works carried out and any items that require the attention of, or the approval of the Landscape Architect, including drainage problems, areas of suspected soil toxicity or vandalism.
- Payment for maintenance work will only be certified for correctly recorded, approved work in accordance with this clause.

109 MAINTENANCE OPERATIONS GENERALLY

Site Cleanliness: The Contractor shall carry out all necessary measures to ensure that drains and plant areas are kept clear of litter and fallen leaves at all times.

Weed Control- Generally

- The Contractor shall suppress weed growth to planted areas either by hand, or approved mechanical means.
- Shrub, forestry and ground cover areas shall be kept free from weed growth at all times.
- Hoe and weed all cultivated areas, removing weeds to tip as required to maintain a clean and tidy appearance.
- All perennial weeds, unless instructed otherwise, shall be removed and their roots destroyed.
- Growing plants shall not be disturbed by hoeing.
- All planted areas are to be maintained weed free by mechanical or manual methods.
- The use of herbicides may only be used if so directed by the Landscape Architect. Herbicides shall be applied strictly in accordance with the manufacturer's instructions. The Contact herbicide shall contain ingredients which do not persist in the soil in a toxic form.

Re-cultivation:

- Allow for the re-cultivation of planting areas, by approved hand or machinery means, which have become compacted due to any cause whatsoever.

Stakes & Fixings:

- Trees stakes shall be maintained secure and vertical. Blocks and belts shall be maintained secure but not over tight. The Contractor shall monitor the stem of staked trees and take away any action necessary to prevent damage.

Adjustment of Tree Guys, Ties & Training Wires:

- Tree anchors shall be maintained tight at all times, re-tensioned periodically to prevent excessive wind rock and to compensate for settlement. Protective covering shall be regularly checked and made good where necessary.

Tree Guards:

- Ensure that at all times the tree guards are secure and undamaged and acting as effective protectors against rabbit damage.

Top-Up Mulch:

- Maintain (at all times) mulch areas to their original specified depths using materials which conform to the mulching specification.

Aeration Pipes:

- Aeration pipes shall be kept fully operational and shall be kept free of ingress of any material. Replace damaged or missing caps to pipes.

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.

155 WATERING

- Supply: No site supply available, submit proposals.
- 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.

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.

165 WATERING GENERALLY

Watering: Manual

- Attention must be paid to watering all plant material including grass, during the maintenance period of the works.
- Carry out all watering as necessary to ensure the successful establishment of all plant material and grass areas.
- Special attention to watering is particularly required during the first spring /summer months following planting.
- Include within the tender rates for the watering of all transplants and trees (via irrigation tubes) within all plantations by the use of bowser or similar approved means.
- Include with the tender an indicative programme of watering, schedule of quantities to be applied for shrub, and grass areas trees (litres per tree) and detailed methodology confirming machinery and water sources.

180 CHIPPING OR SHREDDING

- General: Not permitted on site.

190 LITTER

- Extraneous rubbish not arising from the contract work: Collect and remove from site.

195 PROTECTION OF EXISTING GRASS

- General: Protect areas affected by maintenance operations using boards/tarpaulins. Do not place excavated or imported materials directly on grass.

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.

GRASSED AREAS

210 MAINTENANCE OF GRASSED AREAS

- See Q30

220 GRASS CUTTING GENERALLY

- Before mowing: Remove litter, rubbish and debris.
- Finish: Neat and even, without surface rutting, compaction or damage to grass.
- Edges: Leave neat and well defined. Neatly trim around obstructions.
- Adjoining hard areas: Sweep clear and remove arisings.
- Drought or wet conditions: Obtain instructions.

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: Remove by hand raking.
- Disposal: Remove from site for recycling.

350 FERTILIZER - SPRING APPLICATION

- Type: Organic.
- Application rate: 60 g/m².

381 REINSTATEMENT OF WORN OR DAMAGED LAWNS

- Worn or damaged areas: Make good by returfing or reseeding:
 - Returfing standard: To BS 7370-3, Clause 12.2.
 - Reseeding standard: To BS 7370-3, Clause 12.6.
- Turf or seed: To match existing in appearance and quality.
- Protection and watering: Provide as necessary to promote successful germination and/ or establishment.

FLOWER BEDS/ SEASONAL BEDDINGS

460 BEDS OF PERENNIALS OR PERENNIALS AND ANNUALS

- Plant supports: Stake and tie plants using pea sticks.
 - Length: To suit plant height.
 - Maintain throughout the growing season.
- Gaps in planting: Refill by replanting.
- Watering:
 - New plants: Before and after planting out.
 - Ongoing: As necessary for the continued thriving of all planting.
- Operations at end of growing season:
 - Trim: Older flowering stems of herbaceous perennials.
 - Remove: Redundant plant supports, litter, debris and arisings.
 - Cultivate: Fork over the soil, taking care not to cause undue disturbance to plants.
 - Top dress: Apply fertilizer at a rate of 60 g/m².

470 FLOWER BEDS GENERALLY

- Operations:
 - Remove: Dead flower heads, fallen leaves, litter and debris.
 - Weeds: Thoroughly hand weed.
 - Cultivate: Lightly hoe.
 - Trim: Clip grass edges.
- Fungicide: Not required.
- Insecticide: Not required.

SHRUBS/TREES/HEDGES

500 ESTABLISHMENT OF NEW PLANTING

- Duration: Two years.
- Weed control:
 - Method: Keep planting beds clear of weeds by maintaining full thickness of mulch.
 - 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: Contractor's choice.

515 TREE GUY WIRES

- Inspection/ Maintenance times: Immediately after strong winds.
- Operations:
 - Replace or resecure loose or missing guy wires.
 - Adjust to suit stem growth and to provide correct and uniform tension.
- Removal: During spring when no longer required to support the tree.

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.

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.

542 PRUNING GENERALLY

Pruning - Generally

- All works shall be carried out to BS 3998 (1988) or any subsequent revision, unless specified otherwise.
- Any dead or damaged limbs, water shoots epicormic growths or suckers occurring around the base of trees shall, if required by the Landscape Architect be removed and disposed.
- Allow for topping all trees and carry out any canopy management required by the CA/Landscape Architect. (Canopy management will be carried out once per annum).
- Allow for the cutting back or light pruning of shrubs to encourage correct shaping and bushiness.
- Pruning shall be carried out in the appropriate season for each species, winter pruning shall not be carried out in frosty weather.
- Bulbs and herbaceous perennials shall be dead headed at a time and frequency appropriate to their species.
- Each autumn, or as appropriate to each plant, withered or dead herbaceous material shall be cut out of the plant (unless directed otherwise) and removed from site to keep each plant in a tidy condition.

Sympathetic Pruning

- The Contractor shall be experienced with pruning techniques and plant responses to pruning. Pruning shall be carried out with due regard to natural growth patterns, and shall accentuate natural tendencies.
- Where plants have out grown their position and hard cutting back is required, pruning shall reflect the natural form of the plant (unless specified otherwise) which shall not be clipped to a formal shape forming straight lines and edges.

Season

- Light pruning to control spread, the removal of obstacles and the removal and repair of damage may occur at any time of year, and shall be carried out at the time it first becomes apparent. Branches that hang too low from the weight of leaves or fruit may be thinned during the growing season.
- Formative pruning and crown management for broad leaved trees shall be carried out in the dormant season between September and February.
- Species that are prone to bleeding, particularly Carpinus, Betula and Acer species shall only be pruned in late July or August.

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.

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.

630 DEAD AND DISEASED PLANTS

- Removal: As soon as possible.
- Replacement: In the next scheduled round of replacement planting.

645 WEED CONTROL GENERALLY

- Weed tolerance: At all times, weed cover less than 5% and no weed to exceed 100 mm high.
- 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.

690 MAINTENANCE OF LOOSE MULCH

- Thickness (minimum): 50 mm.
 - Top up: Annually.
- 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.

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 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.
- 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, 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 if unavoidable.
 - 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.

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.

HARD LANDSCAPE AREAS/FENCING

910A HARD SURFACES AND GRAVEL AREAS

- Hard surfaces: Remove litter, leaves and other debris.
- Surface gutters and channels: Remove mud, silt and debris.
- Drainage gullies: Empty traps and flush clean.
- Stain removal: In accordance with BS 7370-2, table 4.

Q40 Fencing

To be read with Preliminaries/ General conditions.

All supporting brick walls and brick piers to engineers and architects' specification. Brick to match architectural façade.

FENCING

567 TIMBER FENCE (Type C, D1 and D2))

Refer to Hard Landscape Layout Plan 24071-PLA-ZZ-00-DR-L-200 for locations and 24071-PLA-ZZ-00-DR-L-621 and 24071-PLA-ZZ-00-DR-L-632 for design intent.

- Manufacturer: Jacksons Fencing (or equal & approved)
Stowting Common
Ashford
TN25 6BN
Tel: +44 (0) 1233 750 393
Web: www.jacksons-security.co.uk
Email: security@jacksons-fencing.co.uk.
 - Product reference: Flat Top Featherboard
- Panel sizes:
 - Type C: assembled on site to 1.8m high including gravel boards.
 - Type D1: approx. 800mm fence and low brick wall in between brick piers (overall height 1200mm)
 - Type D2: approx.. 1400mm fence on low brick wall in between brick piers (overall height 1800mm)
- Posts/ Fixing:
 - Type C: Concrete slotted posts. Root fixed into concrete haunch to engineer's specification.
 - Type D1 and D2: Timber posts on brick piers; (to engineers and architects specifications);
- Finish as delivered: Jakcure® treated or pressure treated.
- Colour: N/A
- Fittings: proprietary
 - Finish: Galvanised
 - Colour: N/A
- Method of fixing: to engineer's specification.
- Accessories: Capping rails. For use with slotted concrete fence posts and concrete gravel boards.

568 SQUARE BAR OPEN RAILING FENCING (Type A and Type B)

Refer to Hard Landscape Layout Plan 24071-PLA-ZZ-00-DR-L-200 for locations and 24071-PLA-ZZ-00-DR-L-620 and 24071-PLA-ZZ-00-DR-L-631 for design intent.

Manufacturer: Lang + Fulton Ltd (or equal & approved)

Newbridge Industrial Estate

Edinburgh

EH28 8PJ

Tel: +44 (0) 0131 441 1214

Web: www.langandfulton.co.uk

- Product reference: 'Rimini'
- Panel sizes:
 - Type A: 750mm high.
 - Type b: 1150mm high
 - Panel width: 1950mm
- Straight Section: 60 x 10mm flat bar
- Materials: Flat bar, mild steel S235JR
- Post centres: approx. 2000mm apart. (Post centres to be reduced for steeper gradients (between 1:20 and 1:17))
- Posts: Mild Steel S235JR

- Corner: SHS square hollow section
- Finish: Hot-dip galvanised to BS EN ISO 1461:1999. Hot dip powder coated.
- Colour: Grey RAL 7016
- Fittings: proprietary
 - Finish: Galvanised to BS EN ISO 1461:1999
 - Colour: Hot dip powder coated – grey. To BS EN 1722-16
- Method of fixing: Sides fixed to brick piers and wall mounted onto brick wall (where required),
Root protection area: Root fixed into concrete haunch to engineer's specification.
- Accessories: N/A

GATES, POSTS AND STILES

570 TIMBER PEDESTRIAN GATE (To privet terrace)

Refer to Hard Landscape Layout Plan 24071-PLA-ZZ-00-DR-L-200 for locations

- Manufacturer: Jacksons Fencing (or equal & approved)
Stowting Common
Ashford, TN25 6BN
Tel: +44 (0) 1233 750 393
Web: www.jacksons-security.co.uk, Email: security@jacksons-fencing.co.uk.
 - Product reference: Flat Top Featherboard Gate
- Leaf sizes: 900mm wide x 1775mm high.
- Posts: 125x125mm treated posts. Root fixed into concrete haunch to manufacturer's recommendations.
- Finish as delivered: Jakcure® treated or pressure treated.
- Colour: N/A
- Fittings: proprietary
 - Finish: Galvanised
 - Colour: N/A
- Method of fixing: to engineer's specification.
- Accessories: Proprietary 2-way Key lock ('gate latch deluxe 2-way lockable') installed to manufacturer's recommendations. Galvanised ring latches and adjustable anti-finger-trap hinges included. Child proof lock.

572 STEEL PEDESTRIAN GATES (To private terrace)

Refer to Hard Landscape Layout Plan 24071-PLA-ZZ-00-DR-L-200 for locations and 24071-PLA-ZZ-00-DR-L-620 for design intent

- Manufacturer: Jacksons Fencing (or equal & approved)
Stowting Common
Ashford, TN25 6BN
Tel: +44 (0) 1233 750 393
Web: www.jacksons-security.co.uk, Email: security@jacksons-fencing.co.uk.
 - Product reference: 'Sentry' single leaf swing gate.
- Leaf sizes: approx. 1m wide x 1.2m high (fabricator to supply detailed design drawings prior to placing of order).
- Posts: to match post for balustrade (fabricator to supply detailed design drawings prior to placing of order).
Root fixed into concrete haunch to manufacturer's recommendations.
- Finish as delivered: Powder coated to BS 1722-16 to match railing
- Colour: to match railing
- Fittings: To manufacturer's standards.
 - Finish: Powder coated to BS 1722-16.
 - Colour: to match railing
- Method of fixing: to engineer's specification.
- Accessories: Double sided handle with child proof lock and anti-finger-trap hinges; proprietary key lock to Manufacturer's Specification.

Z22 Sealants

To be read with Preliminaries/General conditions.

PRODUCTS

- 306** Finishing around steel gates, handrails and street furniture root fixed into paved areas.
- Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.
 - 10mm wide Arbosil XL 1099 (or equal and approved)
 - Colour: 'Grey' to match paving

EXECUTION

- 610** SUITABILITY OF JOINTS
- Presealing checks:
 - Joint dimensions: Within limits specified for the sealant.
 - Substrate quality: Surfaces regular, undamaged and stable.
 - Joints not fit to receive sealant: Submit proposals for rectification.