

510 TREE PIT ROOT BARRIERS

- Locations: All tree pits 1418-112-113-114 and 1418-117.
- Manufacturer: Terram
TERRAM Global Office
Fiberweb Geosynthetics Ltd
A PGI Business
Blackwater Trading Estate
The Causeway
Maldon
Essex
CM9 4GG
Tel: +44(0) 1621 874200
email: info@terram.com .
- Product reference: Terram Root Guard.
- Depth of top of root barrier below finished soil level: 75 mm.
- Installation: With sides vertical.

511 TREE PIT NON PERMEABLE ROOT BARRIERS

- Locations: All tree pits 1418-112-113-114 and 1418-117.
- Manufacturer: Terram
TERRAM Global Office
Fiberweb Geosynthetics Ltd
A PGI Business
Blackwater Trading Estate
The Causeway
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Essex
CM9 4GG
Tel: +44(0) 1621 874200
email: info@terram.com .
- Product reference: Terram Root Guard Plus.
- Depth of top of root barrier below finished soil level: 75 mm.
- Installation: With sides vertical.

515 TREE PIT DRAINAGE

- Depth of excavation: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
- Depth: 100mm.
- Drainage pipes:
- Type: Perforated plastics.
- Diameter: 80 mm.
- Position: Lay around perimeter of pit within aggregate layer.
- Discharge: Connect to drain as per engineers details and specification.
- Geotextile filter:
- Manufacturer: Terram or similar approvedf.
- Product reference: T1000.
- Position: Lay over aggregate before installing tree or backfill.
- Completed pits: Test for free drainage before planting.

- 516 TREE PIT ACCESSORIES ROOT CELL TO EASTERN COURTYARD WATER FEATURE TREE PIT
- Locations: See drawings 1418-025.
 - Manufacturer: Green Blue Urban
Haywood Way
Hastings
East Sussex
England
TN35 4PL
01424 717797 .
- Product reference: Root Cell Structural soil support module.
 - Type: Modular root cell system
- 517 TREE PIT ACCESSORIES SILVA CELL TO PUBLIC REALM TREE PIT
- Locations: See drawing 1418-113.
 - Manufacturer: Deeproot
DeepRoot Urban Solutions, Ltd.
43-45 Portman Square, London W1H 6HN
United Kingdom
steve@deeproot.com
Tel: +44 207 969 2739
Fax: +44 207 969 2800.
- Product reference: Silva Cell 2.
 - Type: Modular root cell system
- 518A TREE PIT ACCESSORIES D-MAN ANCHORING SYSTEM
- Locations: [See drawing 1418-112,113,117].
 - Manufacturer: Platipus
Kingsfield Business Centre
Philanthropic Road
Redhill
Surrey
RH1 4DP
EnglandT: +44 (0) 1737 762300
E: info@platipus-anchors.com.
- Product reference: RF1PDMAN.
 - Type: D-man Anchoring System
Anchorage: x3 4m lengths of galvanised guying wire attached to x6 D-MAN cells
Guying: use x1 two way ratchet tensioner with 5 meters x 35mm platipus strap, x3 plati-mat rootball protection mesh, x9 grips per tree in accordance with manufacturer's recommendation.
 - Installation: In accordance with manufacturer's recommendation.

518B TREE PIT ACCESSORIES EYEBOLT ANCHORING SYSTEM

- Locations: [See drawing 1418-114,025].
- Manufacturer: Platipus
Kingsfield Business Centre
Philanthropic Road
Redhill
Surrey
RH1 4DP
EnglandT: +44 (0) 1737 762300
E: info@platipus-anchors.com.
- Product reference: RF2RP.
- Type: EyeBolt Anchoring System
Anchorage: x3 M8 expanding eyebolts affixed to corten steel wall (to engineers details) with galvanised guying wire attached.
Guying: use x1 two way ratchet tensioner with 5 meters x 35mm platipus strap, x3 plati-mat rootball protection mesh, x9 grips per tree in accordance with manufacturer's recommendation.
- Installation: In accordance with manufacturer's recommendation.

519 TREE PIT ACCESSORIES IRRIGATION / AERATION SYSTEM

Locations: See drawing 1418-112,113,114,117.

Manufacturer: Platipus
Kingsfield Business Centre
Philanthropic Road
Redhill
Surrey
RH1 4DP
England

T: +44 (0) 1737 762300

E: info@platipus-anchors.com.

- Product reference: PID03.

- Type: Pidler Tree Irrigation System with Aluminium Cap

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

710 MAINTENANCE

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

740 CLEANLINESS

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

750 PLANTING MAINTENANCE GENERALLY

- Weed control: Maintain weed free area around each tree and shrub.
 - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - Keep planting beds clear of weeds: By 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: At each scheduled maintenance visit.
- 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: Contractor's choice.

760 PLANTING MAINTENANCE - PRUNING

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

790 FINAL MULCHING

- Timing: At end of the maintenance period.
- Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
- Planting beds: Remulch.
Depth (minimum): 75 mm.
- Trees: Remulch.
Depth (minimum): 75 mm.

Q35

Landscape maintenance

Q35 Landscape maintenance

To be read with Preliminaries/ General conditions.

GENERALLY

130 REINSTATEMENT

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

155 WATERING

- Supply: Potable mains water via stand pipes to courtyards. No site supply to public realm, submit proposals. Water butts to Terraces, submit proposals for additional water.
- 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.

170 DISPOSAL OF ARISING

- General: Unless specified otherwise, dispose of arisings as follows:
 - Biodegradable arisings: Remove to recycling facility.
 - Grass cuttings: Remove to recycling facility.
 - Tree roots and stumps: Remove from site.
 - Shrub and tree prunings: Remove to recycling facility.
 - Litter and nonbiodegradable arisings: Remove from site.

180 CHIPPING OR SHREDDING

- General: Not permitted on site.

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.

225 TREE STEMS

- Precautions: Do not use mowing machinery closer than 100 mm to tree stems. Use nylon filament rotary cutters and other hand held mechanical tools carefully to avoid damage to bark.

- 226 TREE STEMS
- Precautions: Do not allow nylon filament rotary cutters and other mechanical tools closer than 100 mm to the stem of any tree.
 - Operations close to stems: Complete using hand tools.

- 250 LEAF REMOVAL
- Operations: Collect fallen leaves.
 - Special requirements: None.
 - Disposal: Remove from site for recycling.

- 350 FERTILIZER - SPRING APPLICATION
- Type: Slow release.
 - Application rate: 60 g/m².

- 360 FERTILIZER - AUTUMN APPLICATION
- Type: Slow release.
 - Application rate: 60 g/m².

SHRUBS/TREES/HEDGES

- 500 ESTABLISHMENT OF NEW PLANTING
- Duration: Two years.
 - Weed control:
 - Method: Keep planting beds clear of weeds by hoeing and screening .
 - 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: When instructed.

- 502 ESTABLISHMENT OF NEW PLANTING - FERTILIZER
- Time of year: March or April.
 - Type: Slow release.
 - Spreading: Spread evenly. Carefully lift and replace any mulch materials.
 - Application rate: As manufacturer's recommendations.

- 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: In spring.

- 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.

545 PRUNING OF EXCESSIVE OVERHANG

- Timing: Annually.
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
- Special requirements: Allow ground cover plants to partially overlap paths and lawns.

570 FORMATIVE PRUNING OF YOUNG TREES

- Standard: Type and timing of pruning operations to suit the plant species.
- Time of year: Do not prune during the late winter/ early spring sap flow period.
- Young trees up to 4 m high:
 - Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.
 - Remove duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
- Whips or feathered trees: Do not prune.
- Operatives: Approved specialist contractor.

575 PRUNING ORNAMENTAL SHRUBS

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

580 PRUNING FLOWERING SPECIES OF SHRUBS AND ROSES

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

600 TRIMMING RAPIDLY ESTABLISHING HEDGES

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

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: Within one week of notification.
- Replacement: In the next scheduled round of replacement planting.

- 635 REINSTATEMENT OF SHRUB/ HERBACEOUS AREAS
- Dead and damaged plants: Remove.
 - Mulch/ matting materials:
 - Carefully move to one side and dig over the soil, leaving it fit for replanting.
 - - Do not disturb roots of adjacent plants.
 - Replacement plants:
 - Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
 - Additional requirements: Submit details and cost of plants before ordering.
 - Dressing: Slow release fertilizer:
 - Type: Organic.
 - Application rate: 50 g/m².
- 645 WEED CONTROL GENERALLY
- Weed tolerance: Weed to clear ground every two weeks.
 - Adjacent plants, trees and grass: Do not damage.
- 650 HAND WEEDING
- General: Remove weeds entirely, including roots.
 - Disturbance: Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
 - Completion: Rake area to a neat, clean condition.
 - Mulch: Reinstate to original depth.
- 675 DIGGING OVER
- General: Dig over beds. Do not damage existing plants, bulbs and roots.
 - Depth of dig (minimum): 150 mm.
- 680 SOIL AERATION
- Compacted soil surfaces:
 - Prick up: To aerate the soil of root areas and break surface crust.
 - Size of lumps: Reduce to crumb and level off.
 - Damage: Do not damage plants and their roots.
- 685 SOIL LEVEL ADJUSTMENT
- Level of soil/mulch at edges of beds: Reduce to 50 mm below adjacent grass or hard surface.
 - Arisings (if any): Spread evenly over the bed.
- 690 MAINTENANCE OF LOOSE MULCH
- Thickness (minimum): 75 mm.
 - Top up: Every three months.
 - Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
 - Weeding: Remove weeds growing on or in mulch by hand weeding.
- 705 WINTER LEAF REMOVAL
- Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds.
 - Arisings: Remove to recycling facility.

TREE WORK

810 TREE WORK GENERALLY

- Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
- Protection: Avoid damage to neighbouring trees, plants and .
- 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.

830 CLEANING OUT AND DEADWOODING

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

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.

845 CROWN LIFTING

- Clearances: Remove branch systems to give clearance.
 - Height: As recommended by BS 7370-4, clause 3.7.2.3.
- Removing branches: Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.

855 CUTTING TREE ROOTS

- Excavating: Use hand tools only.
- Protected area: Do not cut roots within an area which is the larger of:
 - The branch spread of the tree.
 - An area with a radius of half the tree's height, measured from the trunk.
- Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.
- Cutting:
 - Cutting: Make clean smooth cuts with a hand saw.
 - Wounds: Minimize. Avoid ragged edges.
 - Finishing: Pare cut surfaces smooth with a sharp knife.
- Backfilling:
 - Protection: Cover cut roots with clean sharp sand.
 - Material: Backfill with original topsoil.

860 REMOVING TREES, SHRUBS AND HEDGES

- Standards: To BS 3998, Appendix A and Health & Safety Executive (HSE)/ Arboricultural and Forestry Advisory Group Safety Leaflets.
- Existing services: Check for below and above ground services. Give notice if they may be affected.
- Shrubs and smaller trees: Cut down and grub up roots.
- Tree stumps:
 - Removal: Remove mechanically to a minimum depth of 300 mm below ground level.
 - Removal by winching: Give notice. Do not use other trees as supports or anchors.
- Protection: Avoid damage to neighbouring trees, plants and property.
- Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Filling holes:
 - Material: Use as-dug material and/ or imported soil as required.
 - Finishing: Consolidate and grade to marry in with surrounding ground level.

865 BARK DAMAGE

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

HARD LANDSCAPE AREAS/FENCING**900 SNOW CLEARANCE**

- Clearance: When instructed.
- Deicing: To footpaths.
 - Material: Contractors choice.
 - Timing: When instructed.
 - Application rate: Spread evenly at a rate of spread evenly at a rate to manufacturers recommendations.

910 HARD SURFACES AND GRAVEL AREAS

- Herbicide: Apply a suitable foliar acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
- Hard surfaces: Remove litter, leaves and other debris.
- Surface gutters and channels: Remove mud, silt and debris.
- Drainage gullies: Empty traps and flush clean.
- Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.
- Repairs to flexible bituminous pavings: In accordance with the original paving specification or BS 7370-2, clause 4.12.
- Stain removal: In accordance with BS 7370-2, table 4.

930 GRAFFITI REMOVAL

- Method: Submit proposals.
- Subsequent treatment: Submit proposals.
 - Finish: Matt.

Q37
Green roofs