

ROYAL BRITISH LEGION WATTS DYKE LLAY LL12 ORL

SPECIFICATION

Landscape Soft Works including Five Year Maintenance

LANDSCAPE AND HORTICULTURAL DESIGN

**SARAH BYRNE
ND MI Hort**

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Rev	Date	By	Description
0	27 11 20	SB	Planning

CLEARANCE/EXCAVATING

- 150 EXISTING SERVICES: Check engineers/architects drawings and specification document for location of all existing and proposed services
- 161 SITE FEATURES: Before starting work verify with LA which existing fences, gates, walls, roads, paved areas and other site features are to be removed. Materials arising are to be removed from site.
- 170 REMOVING TREES, SHRUBS AND HEDGES
- Identification: Clearly mark trees/vegetation to be removed.
 - Safety: Comply with Forestry and Arboriculture Safety and Training Council Safety Guides.
 - Felling: Cut down and grub up roots of shrubs and smaller trees. Fell larger trees as close to the ground as possible and kill stumps immediately after felling by applying a suitable herbicide into drilled holes, remove stumps mechanically to a minimum depth of 300mm below ground level.
 - Work near retained trees: Take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained, where tree canopies overlap and in confined spaces generally.
 - Stumps: Obtain approval before removing stumps by winching and do not use other trees as supports or anchors.
- 181 SITE CLEARANCE
- Clear site of rubbish and debris
 - Grub up and dispose of large root without undue disturbance of soil and adjacent areas.
 - Apply suitable herbicide to prevent weed regrowth in newly planted areas. For weed killing specifics see clause Q31/190 and 300
- 210 MATERIALS ARISING
- Ownership: Excavated materials, including topsoil, surplus to requirements for filling remain the property of the Employer unless the Contractor:
 - Is instructed to remove them from the site, or
 - Purchases them at a price to be agreed.
- 220 STRIPPING TOPSOIL
- Before beginning general excavation or filling, strip topsoil from areas where there will be regrading, buildings, paving/roads and other areas shown on drawings.
 - Confirm with LA depths of topsoil present on site by taking appropriate samples from site before any topsoil stripping commences.
 - Handling: Handle topsoil for reuse or sale in accordance with clause 225.
 - Around trees: Do not remove topsoil from below the spread of trees to be retained.

221 TREATING TOPSOIL

- Treatment: Apply a suitable translocated non residual herbicide. (eg Glyphosate)
- Timing: Not less than two weeks before excavating topsoil.

225 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 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 [3% to BS 3882, annex N2].

230 BENCHING:

Surfaces of excavations with a gradient greater than 1 in 5 which are to receive filling must have horizontal benches cut to match the depths of compacted layers of filling.

250 ACCURACY

Permissible deviations from formation levels:

- Beneath mass concrete foundations: +/- 25 mm
- Beneath ground bearing slabs and r.c. foundations: +/- 15 mm
- Embankments and cuttings: +/- 50 mm
- Ground abutting external walls: +/- 50 mm, but such as to ensure that finished level is not less than 150 mm below dpc.

310 UNSTABLE GROUND: Inform LA without delay if any newly excavated face will not remain unsupported sufficiently long to allow the necessary earthwork support to be inserted. If the instability is likely to affect adjacent structures or roadways, take appropriate emergency action until instructions are obtained.

320 RECORDED FEATURES

- Recorded foundations, beds, drains, manholes, etc: Break out and seal drain ends.
- Contaminated earth: Remove and disinfect as required by local authority.

330 UNRECORDED FEATURES

- Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

DISPOSAL OF MATERIALS

370 UNDERGROUND STRUCTURES

Remove buildings, walls, roads, foundations, disused services, drains manholes and like (subject to approval by the Main Contractor) in areas to be

landscaped to a minimum depth below finished levels of

- Grass, ground cover and perennial planting 500mm
- Shrub planting 750mm
- Within 2m of tree planting 1000mm

410 EXCAVATED TOPSOIL

- Storage: Stockpile in temporary spoil heaps [in suitable locations on site, as agreed with LA].

420 TOPSOIL SPOIL HEAPS

- Location: in suitable location on site.
- Height (maximum): 1.8 m.
To be shaped and sealed to shed water, side slopes to be no greater than 1:2 and slightly convex top surface of piles to be no more than 2m in width.
- Stockpiles to be free from depressions or hollows in which water could collect.
- Orientate stockpiles in line with the main slope of the land to prevent water logging of the bottom of the stockpile runs.
- Do not place any other material on top of topsoil mounds.
- Do not allow construction plant to pass over topsoil mounds.
- Prevent compaction and contamination by fencing off topsoil storage areas with Chespaie fencing or other similar approved.
- Present the initial formed stockpile as a sample and obtain approval by LA before proceeding.

422 TOPSOIL SPOIL HEAP HERBICIDE TREATMENT

- Treatment: Apply a suitable herbicide at appropriate times to prevent seeding of weeds.

425 LONGTERM STORAGE OF STOCKPILES

- To alleviate water runoff and maintain long-term structure of stored topsoil, all topsoil mounds to be seeded with a clover rich green manure mixture crop of ryegrass and brassica; such as British Seed Houses mixture A17, or similar approved.
- Timing, fertilizer and other operations for seeding shall be in accordance with supplier's recommendations.

441A SURPLUS SUBSOIL

Remove any surplus excavated material off site. Do not raise or lower soil level within root spread of existing trees that are to be retained.

450 WATER

Keep all excavations free from water until foundations are covered and below ground constructions are completed

454 GROUND WATER LEVEL

- Give notice: If it is considered that the excavations are below water table.

FILLING

- 510 HAZARDOUS, AGGRESSIVE OR UNSTABLE MATERIALS:
Do not import material or use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling.
- 515 SUBSOIL
Materials arising from the excavations or imported, capable of compaction by light earthmoving plant, and excluding the following
- Material from marshes or bogs
 - Peat, logs, stumps, slurry, mud, and perishable material
 - Material susceptible to spontaneous combustion
 - Material in frozen condition
 - Clay of liquid limit exceeding 80 and/or plasticity exceeding 55
 - Material with excessive moisture content
 - Unacceptable material class U2 as defined in clause 601 of the Highways Agency 'Specification for Highway Works'
- Lay in Layers not more than 200mm thick and lightly compact each layer with earth moving plant to produce a stable soil structure
- 610 COMPACTED FILLING FOR LANDSCAPE AREAS
- Fill: Material capable of compaction by light earthmoving plant.
 - Filling: Layers not more than 150mm thick. Lightly compact each layer to produce a stable soil structure.
- 615 LOOSE TIP FILLING FOR LANDSCAPE AREAS
- Filling: Do not firm, consolidate or compact when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.
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 - Q28 TOPSOILING
- To be read with Preliminaries/General conditions.
- 200 GRADING SUBSOIL
- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
 - Areas of thicker topsoil: Excavate locally.
 - Small planting beds located in general landscape areas may be excavated separately at a later date
- 210 LIGHT AND NONCOHESIVE SUBSOILS
- Loosening: Use a three tine ripper, drawn 300 mm deep at 600 mm centres in two directions obliquely, when ground conditions are reasonably dry.
- 220 STIFF CLAY AND COHESIVE SUBSOILS
- Loosening: Use a single tine ripper, driven 450 mm deep at 1m centres in two

- directions obliquely, when ground conditions are reasonably dry.
 - See clause D20/515 for limits of clay subsoil that are acceptable
- 250 **SURFACE PREPARATION**
- Stones: Immediately before spreading topsoil remove stones larger than 75mm.
 - Other items: Remove contaminants and/or debris.
 - Ensure there is a minimum of 300mm depth of subsoil in all planted areas
- 300 **TOPSOIL ANALYSIS**
- Soil to be analysed: from all areas of proposed topsoil strip, sample areas to be agreed with LA, including all imported soil.
 - Soil analyst: by approval.
 - Samples: Collect in accordance with BS 3882, Annex A.
 - Submit originals of:
 - Declaration of analysis to accord with BS3882 table 2.
 - Report detailing soil analyst's recommendations.
- 310 **PREPARATION OF UNDISTURBED TOPSOIL**
- General: Prepare areas to receive soft landscaping as necessary to ensure that the topsoil is in a suitable state for cultivation operations specified in sections Q30 and/or Q31.
 - Hard ground: Break up with a ripper operated in transverse directions. Remove roots and boulders.
 - Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
 - Fallow period:
 - After preparation leave for not less than 2 months, if possible.
 - Weed control: At appropriate times treat with suitable translocated herbicide.
- 342A **IMPORTED TOPSOIL (IF REQUIRED)**
- All areas to be soft landscaped
- Provide: as necessary to make up any deficiency of topsoil existing on site and to complete the work
 - Source: The source of the material shall be confirmed in writing to the LA prior to delivery on site, and a certificate of analysis from a reputable soil analysis shall be provided for every 500cu m prior to delivery at no extra cost to the contract. A 5cu m sample of the topsoil shall be submitted to the Construction Manager prior to the commencement of bulk deliveries to site. Once approval has been given all supplies thereafter shall be derived from the same source and shall conform in every respect to the submitted sample
 - Texture: Medium loam in a workable consistency, having been stripped to a depth not exceeding 250mm from original ground level with its content of humus not less than 58% on a dry weight basis to BS 3882, figure K1
 - Reaction: pH 6.0 to 7.5 to BS 1377 : part 3
 - Organic Matter: Not less than 4%
 - Nutrient content: Nitrogen, phosphorus, potassium and magnesium. Minimum index values to be as for general purpose grade of BS 3882. Nitrogen (N): Not less than 0.2%. Available Phosphorus (P): not less than 70ppm when extracted

with 4.2% NAHCOPz at pH8.5. Available Potassium (K): not less than 330ppm when extracted with 8% ammonium nitrate. Electrical conductivity : below 1500 micro-ohms per cm in 1.2%

- Made up of: discernible crumbs typically 2-7mm diameter, each comprising an aggregation of soil particles attracted around a sticky humus centre.
- Maximum size of stone in any dimension: 50mm
- Maximum stone content by dry weight: reasonably free of stone up to 10% in any dimension
- 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, or any other foreign matter exceeding 50mm in size
- Other requirements : Manufactured soil of any kind is not acceptable.

345 IMPORTED SUBSOIL (IF REQUIRED)

Subsoil is to be naturally occurring material, excavated from a level immediately below the vegetable topsoil down to a maximum depth of 2.0m from the original ground level. To comply with clause D20/515

The material shall be a friable consistency, free draining, free from extraneous material and pernicious weeds and with a clay content of no greater than 10%. The subsoil must contain no chemical or domestic refuse or pollutants that would be harmful to short term or permanent plant life. The material will have a pH level between 6.5 and 7.5.

All sources of material shall be stated and a 5m³ minimum sample be provided for analysis, inspection and approval prior to deliveries to site. All supplies thereafter shall conform to approved samples.

346 INSPECTION OF IMPORTED TOPSOIL

Give 15 day notice to LA of intention to strip topsoil for transfer to site. Arrange for CA to inspect topsoil before stripping. Give opportunity to CA to view soil once stripped.

380 CONTAMINATION

- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - Corrosive, explosive or flammable.
 - Hazardous to human or animal life.
 - Detrimental to healthy plant growth.
- Subsoil: In areas to receive topsoil, do not use subsoil contaminated with the above materials.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.

420 SPREADING TOPSOIL

- Temporary roads/surfacing: Remove before spreading topsoil.
- Layers:

- Depth (maximum): 150 mm.
- Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum) Grass areas 150mm, shrub and transplant areas 450mm, 700mm for trees.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.
- All areas on a minimum depth of 300mm of subsoil

450 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

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

455 WEED CONTROL

- Maintain all top soiled or subsoil areas to be landscaped free from weed growth up to the time of cultivation by the use of a suitable approved herbicide complying strictly with manufacturer's recommendations.

Q31 EXTERNAL PLANTING

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/REQUIREMENTS

110 Topsoil/Subsoil depths for planting should be as follows:

Trees	Top soil	700mm
	Subsoil	300mm
Diameter of all tree pits to be 1.5m		
Shrub Areas	Topsoil	450mm
	Subsoil	300mm

112 SITE CLEARANCE:

- Remove rubbish, concrete, metal, glass, decayed vegetation, contaminated topsoil, and stones with largest dimension exceeding [50] mm.
- Contamination includes subsoil, rubble, fuel, lubricants, domestic waste or other substances injurious to plant growth.
- Clear all [areas for planting as required of all deleterious material]
- Grub up and dispose of large roots without undue disturbance of soil and adjacent areas.
- Apply a suitable non-residual herbicide to [all areas to be planted]

118 SOIL CONDITIONS:

- Cultivate and plant into moist friable soil that is not waterlogged.
- Do not plant into frozen or snow covered soil without prior approval of the LA. Provide adequate additional root protection and prevent planting pit sides and

bases backfill materials from freezing.

120A CLIMATIC CONDITIONS:

- Carry out the work while soil and weather conditions are suitable for the relevant operations. Do not plant during periods of frost or strong winds. Plant only during the following periods:
- Deciduous trees and shrubs: Late October to late March
- Conifers and Evergreens: September/ October or April/ May
- Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering and weed control are provided.

130 MACHINES AND TOOLS:

- Use only machinery and tools suitable for the site conditions and the work to be carried out. Use hand tools around trees, plants and in confined spaces where it is impracticable to use machinery.

144 WATERING IN GENERAL:

- Ensure the full depth of topsoil is thoroughly wetted.
- Use a fine rose where appropriate to avoid damaging or loosening plants.

145 WATERING: Water as necessary to ensure the establishment and continued thriving of all planting.

150 WATER RESTRICTIONS:

- If the 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 TO LA:

Provide 3 days notice of the following operations, to give the LA the opportunity of being present.

Setting out

Application of herbicide

Application of fertilizer

Delivery of plants

Harvesting/Spreading of topsoil

Planting of trees/ shrubs/ grass seeding/ native hedge planting

Each site visit during the maintenance period

165 PREPARATION, PLANTING AND MULCHING MATERIALS GENERALLY:

- Do not use materials containing concentrations of toxins, pathogens or other extraneous substances harmful to plant, animal or human life, except as specified elsewhere.
- Submit to LA a supplier's certificate for the following materials and obtain approval before ordering or using the materials: any materials requested. The certificates must provide the following information
 - Source of supply
 - Analysis of content
 - Confirmation of suitability for proposed purpose

- Confirmation of absence of harmful substances
- 170 SETTING OUT
Clearly mark boundaries of planting areas and location of trees and obtain approval before starting work.
- 180 USE OF CHEMICALS GENERALLY:
The Contractor must use a certified operator, take appropriate safety precautions and comply with the Control of Pesticides Regulations 1986, the conditions of approval for the chemical and any relevant Code of Practice issued by MAFF.
- The Contractor must dispose of empty or unwanted containers and chemicals, including unused diluted tank mixture, in a safe way in accordance with the methods approved by the Control of Pesticides Regulations and relevant Codes of Practice. Disposal will be off site unless prior arrangements have been made.
 - The Contractor must notify the LA of his intention to apply chemicals, the product to be used and the dose rates.
- 200 TREES/PLANTS GENERALLY:
- Materially undamaged, sturdy, healthy, vigorous, of good shape and without elongated shoots.
 - Grown in a suitable environment and hardened off.
 - Free from pests, diseases, discoloration, weeds and physiological disorders.
 - Budded or grafted plants to be bottom worked, unless otherwise specified or approved.
 - With balanced root and branch systems, root system and condition in accordance with the relevant part of the National Plant Specification.
 - True to name.
 - Origin and Provenance have the meaning given in the National Plant Specification.
- 210 CONDITION OF MATERIAL:
All plant material is to be healthy, vigorous and sound transplanted nursery stock, with well formed fibrous roots, well formed heads and to have been grown at, or grown on, the supply nursery for a minimum of one year.
- 215 TREES/PLANTS:
Name, forms, dimensions and other criteria as scheduled and defined in the National Plant Specification.
- 217 EHS/ SEMIMATURE TREES
Specified to the relevant part of BS3936, sizes and other criteria as scheduled.
Supplier: as approved by client/landscape horticulturalist.
- 240 CONTAINER GROWN PLANTS:
Supplied in a growing medium with adequate nutrients for the plant to thrive until permanently planted.
Centred in the container, firmed and well watered.

With root growth substantially filling the container, but not root bound, and in a condition conducive to successful transplanting.

Grown in the open for at least two months before being supplied.

Grown in containers with holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

Supplier: as approved by client/landscape architect

245 LABELLING AND INFORMATION

Provide each tree / plant or group of trees / plants of a single species or cultivar with supplier's labelling for delivery to site, showing

- The full botanically name
- Total number
- Number of bundles
- Part bundles
- Suppliers name
- Employers name and project reference
- Plant specification, in accordance with the scheduled National Plant Specification categories

When requested provide to the LA additional stock information as follows

- Propagation methods and dates
- Country of origin
- Impact of pest / disease

246 LABELLING AND INFORMATION:

Label all trees/plants in accordance with the relevant part of BS 3936.

250 SUPPLY OF TREES / PLANTS

Unless specified otherwise, obtain trees / plants from suppliers listed in the Horticultural Trades Association Nursery Certificate scheme.

255 PREDELIVERY INSPECTION:

The following are to be inspected by LA before supplying to site, and clearly identified as being reserved for use on this project:

All hedge species, conifers, all EHS/ standard trees, and all ornamental/ specimen shrub species.

256 PRE-SELECTED PLANT MATERIAL

The Contractor is required to place an order for the plant material and be responsible for it in very respect, from the point it leaves the supply nursery. In particular the Contractor must:

- Satisfy themselves that the plant material leaves the supply nursery in prime condition and that no deterioration has resulted from the lifting operation.
- Comply in full with any requirements of the supplier in order to maintain the effectiveness of the guarantees
- Obtain a valid PHYTO-SANITARY certificate
- Take a receipt of the stock on arrival in the UK and transport to a suitable holding nursery
- Maintain the plant material in a healthy condition until required on site
- Co-ordinate all deliveries of plant material from the supply nursery
- Give 3 days notice to the LA of all deliveries to site

The LA reserves the right to reject damaged or sub-specification plant material at any time in the collection and delivery process

The Contractor will visit the supply nursery at the end of the growing season making provision for the LA to accompany him, and at that time check the health and quality of the plant material.

260 SUBSTITUTES:

If specified plants are unobtainable or known to be likely to be unobtainable at the time of ordering, submit alternatives to the LA, stating price and how they differ from the specification. Such substitutions may not be acceptable and submission of further alternatives may be required. Obtain approval before making any substitution.

265 PLANT/TREE HANDLING STORAGE AND TRANSPORT:

- Comply with CPSE 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part I, Part II and Part III, paragraphs 1.3.3 to 1.3.6, 3.0, and 4.0.
- Protect plants/trees from frost.
- Handle plants/trees with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Packaging of bulk quantities: [pallets or bins sealed with polyethylene and shrink wrapped]

270 PLANTING GENERALLY:

- Comply with CPSE 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part III, paragraphs 6.2 to 6.6.
- Plant upright or well balanced with best side to front.

285 PROTECTION

Protect existing grass during planting operations by laying boards or tarpaulins. Do not place excavated material directly on to grass.

290 SURPLACE MATERIAL

- Including subsoil, stones, debris, wrapping material, canes, ties, temporary labelling and prunings to be removed from the site.

PREPARATION OF PLANTING BEDS/PLANTING MATERIALS

300 HERBICIDE:

- Prevent weeds from seeding and perennial weeds from becoming established, by applying a suitable herbicide. Allow period of time to elapse as recommended by manufacturer before cultivation.

335 GENERAL FERTILIZER:

- Manufacturer and reference: Enmag or similar approved product.
- Apply evenly over all planting beds at 55 g/m², or as specified by soil analysis after soil analysis.

341 PEAT: Do not use peat or products containing peat.

- 355 SOIL CONDITIONER/AMELIORANT:
One of the following used as backfill material for all tree pits in the percentages stated in clause 477.
- Manure: Well rotted horse or farmyard dung but not poultry or pig manure.
 - Leaf mould: Well rotted broad leaves from deciduous trees but not ash, poplar or sycamore leaves.
 - Other well rotted organic material, subject to approval.
 - Each batch shall be accompanied by a Certificate of Analysis from an approved independent testing station detailing it's nutrient, pH and organic matter content.

- 375 CULTIVATION:
- Break up any compacted topsoil to full depth.
 - Within a few days before planting, but in suitably dry weather and ground conditions, cultivate top 100 mm of all planting beds, using suitable plant to loosen, aerate and break up the soil into particles of 2-8 mm.
 - Leave surface regular and even, with levels as required in section D20.
 - Remove weeds, perennial weed roots and undesirable material brought to the surface including stones and clods larger than 50 mm in any dimension, roots, tufts of grass and foreign matter.
 - Do not dig or cultivate within the root spread of trees and shrubs to be retained.

PLANTING SHRUBS/HERBACEOUS PLANTS

- 405 SHRUB PLANTING PITS:
- Excavate not more than [2] days before planting and retain topsoil for re-use where specified.
Size(s): [as scheduled]
 - Break up bottoms of pits to a depth of [150mm]
 - Backfilling material: As per clause 477.

- 435 GROUND COVER PLANTS: When using climbing plants as ground cover, remove canes or other supports and spread stems, pinning to ground where appropriate to ensure good contact to encourage rooting and early establishment.

HEDGING: All hedging to have a post and wire support fence. Height 700mm.

CLIMBERS: All fences will be wired in accordance with good horticultural practice to support climbers. All climbers when planted will have their original support removed and arranged and secured onto fence and wire system.

- 477 BACKFILLING MATERIAL: A previously prepared mixture of topsoil excavated from the pit and additional topsoil as required, together with:
-Compost/soil conditioner/ameliorant: as specified in Clauses 335 and 355.
Thoroughly mix the following prior to planting the tree:

Advanced Nursery Stock
70% topsoil
30% compost Q31: 355
250g/m³ fertiliser Q31: 335
1kg/m³ lime Q31: 315
100g/m³ ameliorant

Nursery Stock/ Shrubs/ Hedge sp.
70% topsoil
30% compost Q31: 355
250g/m³ fertiliser Q31: 335
1kg/m³ lime Q31: 315
100g/m³ ameliorant

480 AFTER PLANTING:

- Water plants thoroughly immediately after planting, using a fine rose or sprinkler where necessary to avoid damaging plants.
- Lightly firm soil around plants and fork and/or rake soil, without damaging roots, to a fine tilth with approved gentle cambers and no hollows.

485 MULCHING TO ALL PLANT AREAS

All hedges and shrub and areas with: Melcourt Industries ornamental medium grade bark mulch or equivalent. Clear all weeds, water soil thoroughly and mulch whole surface of shrub planting beds. Depth 50mm and should not cover any plant material.

- Bark shall have been rested for 90 days to remove tannin, shall have neutral pH and shall not include sticks, bark shavings, pulp or other timber yard waste.
- The Contractor will submit 1m³ sample for approval.
- Spread at 1m³ of material per 20m².

The timing of the above operation shall be such that the ground is moist when the mulch is applied. If necessary, apply water to soak ground beforehand.

PLANTING TREES

500 CONIFERS/EVERGREENS: Dip in or thoroughly spray with [suitable] before antidesiccant delivering to site. Apply again soon after planting. Do not apply in rainy or frosty weather. Ensure full coverage of underside of foliage.

502 TREE PITS GENERALLY:

- Size to be 1.5m diameter. See 110 for topsoil/subsoil depths.
- Orientation: Before lifting, mark north side of trees to ensure that orientation is the same where replanted.
- Plant trees upright, unless otherwise instructed, in centre of pit and at original soil depth.
- Pruning: Damage to roots, bark or branches to be removed and wounds over 25mm diameter treated with fungicidal sealant. The LA has the right to

reject any tree where pruning has resulted in the loss of the natural form of the tree and where extensive damage may result in the death of the tree.

- Remove non-perishable containers and rootball wrappings prior to planting. Non-galvanised wire mesh cages and timber frames may be retained during planting.

- Thoroughly water to field capacity immediately after planting using a low pressure hose.

When planting trees in grass, cut and subsequently maintain a 400mm diameter circle from the sward and remove arisings from site. (This diameter should be adjusted to suit the size of tree seek approval from LA) Supply bark mulch as 485 above to this area.

All trees require a minimum 400mm diameter circle of bark mulch as 485 above.

507 TREE PITS FOR ALL MULTISTEMMED SPECIMEN SHRUBS/ STANDARD AND TREES.

- Excavate with slightly raised centre. Retain topsoil for re-use where specified. In sloping ground, maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Size: 60-100cm
- Break up bottoms of pits to a depth of 300mm and scarify sides. Backfill material: As specified in clause 477.

575 SHORT DOUBLE STAKING FOR: EHS/Standard trees within structure planted areas and hedgerows and trees within car park bays.

Staking: Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting. Consolidate material around stakes during backfilling.

Height of stakes: Cut to approximately 600 mm above ground level.

Cross bar: - Firmly fix on windward side of tree and as close as possible to stem.

Tying: Secure tree firmly but not rigidly to cross bar.

RABBIT PROTECTION

Use the appropriate method of protection for each type of plant material in accordance with good horticultural practice to all trees and hedging material if required.

PROTECTING/MAINTAINING/MAKING GOOD DEFECTS

710 MAINTENANCE

- Carry out the following operations from completion of planting until the end of the defects liability period. (2 years)
- Make visits at approximately fortnightly intervals during the growing season and as necessary to fulfil the requirements of this specification.

720 FAILURES OF PLANTING:

- Excepting theft or malicious damage after practical completion, any trees/shrubs/plants that have failed to thrive, which are apparent during the period stated in clause 710, will be regarded as defects due to materials or workmanship not in accordance with the Contract. Unless otherwise instructed they must be replaced by approved equivalent trees/shrubs/plants [during the next available planting season]
- Replacements must match the size of adjacent or nearby plants of the same species or should match the original specification, whichever is the greater.

722 VANDALISM:

The cost of reinstating any loss or damage resulting from malicious damage or theft during the Defects Liability Period will be met by the Employer. Any claim in this connection must be lodged with the LA in writing at the earliest possible time and be capable of proof that the damage has been so caused.

Where work is to be reinstated, the cost will be determined where possible from rates in the Schedules/Bills of Quantities.

723 MAINTENANCE OF TREES AND PLANTED AREAS:

Maintain plants and planted areas in good condition up to the end of the Defects Liability Period which will operate for 24 months for semi-mature stock and 12 months for all else.

- Maintenance is to include watering, pruning, application of approved chemicals to combat insect attack, disease and weeds, forking and hoeing of beds, firming plants and stakes and removal of all rubbish. Training and securing of all climbers onto fences in accordance with good horticultural practice.

- Maintenance:

Make visits as necessary to fulfil the requirements of this specification.

Carry out provisional/additional works within 14 days of receiving written instruction from the LA.

Give written notice to LA within 7 days to confirm completion of individual maintenance operations.

Replacements inspection of semi-mature trees and conifers at the end of 24 months - inspection will be made by the LA. All semi-mature trees 20-25cm girth and over, together with conifers which are dead, have failed to show leaf, or are seen to be seriously retarded in growth to such a degree that they are below the standard originally specified, or which are in an unhealthy condition shall be removed from site. These and others missing due to the Contractor's negligence shall be replaced by the Landscape Contractor as soon as planting conditions permit during the normal planting season.

- Replacements Inspection: At the end of the 12 months Defects Liability Period an inspection will be made by the LA. All remaining trees, shrubs and other plants which are dead, have failed to show leaf, or are seen to be seriously retarded in growth to such a degree that they are below the standard originally specified, or which are in an unhealthy condition shall be removed from the site. These and others missing due to the Contractor's negligence shall be replaced by the Landscape Contractor as soon as planting conditions permit during the normal planting season.

- Replacement: If trees/shrubs fail to come into leaf in the second growing season they shall again be replaced at the appropriate season at no additional cost.
- Malicious damage: The Contractor is to inspect the planting at intervals to ascertain the extent of any losses or damage resulting from vandalism or other causes outside his control. Any such damage shall be immediately brought to the attention of the LA and the Contractor shall carry out such remedial works as instructed.
- If more than 5% of replacements fail to come to leaf during the season following the end of Defects Liability Period they will again be replaced at the appropriate season at no additional cost.

724 MAINTENANCE PROGRAMME:

The Landscape Contractor will provide a maintenance programme covering the requirements of this specification no later than 14 days after the acceptance of Practical Completion. Programme to identify:

- Number of visits
- Approximate dates
- Operations to be undertaken at each visit
- Chemicals to be used, location and quantities
- Machinery and labour.

Within the programme provide space for ratification by the LA or Client Representative that the work has been completed. Give 48 hours notice to LA of intention to carry out maintenance works. At end of each visit inform LA in writing of operations carried out, within 48 hours. Failure to notify LA and record work done may result in non payment.

725 REPLACEMENTS INSPECTION:

At the end of each growing season during the Defects Liability Period, an inspection will be made by the LA. All trees, shrubs and other plants which are dead, have failed to show leaf, or are seen to be seriously retarded in growth to such a degree that they are below the standard originally specified, or which are in an unhealthy condition will be removed from the site.

- These and others missing due to the Contractor's negligence will be replaced as soon as planting conditions permit during the normal planting season at no additional cost.

- If more than 5% of replacements fail to come into leaf during the season following the end of the Defects Liability Period they will again be replaced at the appropriate season at no additional cost.

730 REINSTATEMENT

Reinstate to original condition and within a reasonable period of time (according to season), any damage or disturbance occurring during work, to soil structure, planting, grass, fencing, hard landscaping, structures or buildings.

735 CONTROL OF MAMMALIAN PESTS

Employ only approved firms and methods.

- 740 CLEANLINESS:
At completion and at each visit, remove soil and other debris from all hard surfaces and grassed areas and leave the works in a clean tidy condition.
- 745 PEST CONTROL
Apply approved pesticides as necessary to control and insect or fungal attack. Report to LA any signs of insect and/ or fungal attack and apply approved pesticides immediately as instructed.
- 750 PLANTING MAINTENANCE: During the Defects Liability Period carry out maintenance of the planted areas as follows:
- 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. Keep planting beds clear of weeds, by [use of suitable herbicides and by hand weeding where necessary] Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows, taking care not to reduce depth or effect of mulch.
 - Ensure that trees and shrubs are not damaged by the use of mowers, nylon filament rotary cutters and similar powered tools.
 - Every [6 months] check condition of dead man anchors. Re-tension and make good where necessary.
 - Spray crown of trees when in leaf during warm weather. Carry out in the evening.
- 755 WATERING GENERALLY
- Obtain CA's approval before using a supply other than potable mains water.
 - Ensure the full depth of topsoil is thoroughly wetted.
 - Use a fine rose or low pressure hose where appropriate to avoid damaging or loosening plants.
 - Where necessary, loosen soil or form depressions around the stem base of plants to ensure that water reaches the root zone instead of dispersing on the surface
- 756 WATERING
- Ensure that sufficient water is applied to maintain healthy growth of tree/ shrub/ hedge/ plants using a fine rose or sprinkle until the full depth of topsoil is saturated.
 - Allow 16 waterings per season.
 - Contractor to provide LHort with suggested watering regime for tree, hedge and shrub areas during summer months (establishment period).
 - Semi-mature trees and specimen shrubs: To ensure thorough watering when it is necessary, holes of uneven depth should be forked in the rootball so that water reaches the whole root system. Water to be applied at the following rates.

Semi-mature trees	150 litres/tree
Nursery Stock	30 litres/tree
Shrub Beds/Hedge	40 litres/m ²
 - Spraying:
During dry periods thoroughly spray crown of plants with water in early mornings or late evenings, but on no account in bright sunny weather.
 - Irrigation System:
Take responsibility for operating and maintaining the system and adjusting

settings and monitoring the performance to ensure that the correct amount of water is applied to irrigated areas.

- 760 PLANTING MAINTENANCE - PRUNING: Prune at appropriate times, to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape. Prune trees to favour a single central leading shoot, unless specified otherwise.
- 761 MULCHING PLANTING BEDS: Ensure that ground is moist before mulching, either by timing operation to follow rainfall, or by applying mulch immediately after watering.
- Mulched areas: As Clause 485 to all planted areas.
Top up existing mulched areas to maintain depth of 50mm over soil.
 - Record materials required, and submit authenticated receipts to LA.
Allow visits annually.
- 765 PLANTING MAINTENANCE - WATERING: Water in accordance with clause(s) [144], using a fine rose or sprinkler until full depth of topsoil is saturated.
- 780 MAINTENANCE INSTRUCTIONS: Before the end of the period stated in clause 710 submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year.

Q35 LANDSCAPE MAINTENANCE

Period covering first 5 years post completion of works

To be read with Preliminaries/General conditions.

GENERALLY

- 155 WATERING: Water as necessary to ensure the continued thriving of all planting.
- 170 DISPOSAL OF ARISINGs GENERALLY: unless specified otherwise, dispose of arising from all specified operations by [removing from site]
- 190 LITTER COLLECTION: Collect and remove all extraneous rubbish from all planted areas not arising from the contract work and detrimental to the appearance of the site, including paper, packaging materials, bottles, cans, and similar debris.
- 197 CLEANLINESS: Remove soil and arising from hard surfaces and leave the works in a clean, tidy condition after maintenance operations.

SHRUBS/TREES

- 500 ESTABLISHMENT OF NEW PLANTING: During the initial establishment of newly planted trees and shrubs, carry out maintenance of the planted areas as follows:
- 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. Keep planting beds clear of weeds, by [use of suitable herbicides] Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows, taking care not to reduce depth or effect of mulch.
 - Spray crown of trees when in leaf during warm weather. Carry out in the evening.
- 502A ESTABLISHMENT OF NEW PLANTING- FERTILIZER
In March or April, evenly spread approved compound fertilizer, carefully incorporating below mulch materials. Follow manufacturers recommendations for quantities per feathered, standard or larger tree.
- 520 REFIRMING: Ensure that trees and shrubs remain firmly bedded after strong winds, frost heave and other disturbances. Refirm by treading around the base. 'Collars' at the base of tree stems created by tree movement to be broken up by fork, avoiding damage to roots, backfilled with topsoil as necessary, and refirmed.
- 540 PRUNING GENERALLY:
- Prune in accordance with good horticultural practice. Prune larger branches and woody stems in accordance with good arboricultural practice.
 - Thin, trim and shape appropriately to each species, location, season, and stage of growth, leaving a well balanced natural appearance.
 - Use clean sharp secateurs, hand saws or other tools approved by the CA. Trim off ragged edges of bark or wood with a sharp knife.
 - Remove branches without damaging or tearing the stem.
 - Keep wounds as small as possible and cut cleanly back to sound wood. Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - Prune larger branches neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
 - Notify the LA of any disease or fungus. Do not apply growth retardants, fungicide or sealant unless instructed by the LA.
- 545 PRUNING OF EXCESSIVE OVERHANG
- Remove annually any growth encroaching onto grassed areas, paths, roads, signs, sightlines and light fittings.
- 550 PRUNING OF EXCESSIVE HEIGHT
- Remove excessive height annually and/ or as instructed by LA.

- 555 PRUNING TREES AND SHRUBS
- Except where specified otherwise, prune as recommended by BS 7370: Part 4, clauses 3.6.3 to 3.6.5.
- 575 PRUNING ORNAMENTAL SHRUBS
- Prune to encourage healthy and bushy growth and desirable ornamental features, eg. Flowers, fruit, autumn colour, stem colour.
 - Remove all suckers by cutting back level with the source stem or root.
- 580 PRUNING FLOWERING SPECIES:
- Winter flowering shrubs in 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 in early spring to encourage basal growths and a balanced, compact habit.
- 620 REMOVAL OF DEAD PLANT MATERIAL
- At the end of the growing season, check all dead foliage, dead wood, and broken or damaged branches and stems.
- 630 REMOVE AND REPLACE DEAD PLANTS
- As soon as possible, and in any case within (See clause Q30/ 720-725)
- 635 REINSTATEMENT OF SHRUB/ HERBACEOUS AREAS
- Remove dead and damaged plants as identified by the LA.
 - Carefully move any mulch/ matting materials to one side and dig over the soil, leaving it fit for replanting. Take care not to disturb roots of adjacent plants.
 - Replace plants, using pits and plants to the original specification or to match the size of adjacent plants of the same species, whichever is the greater.
 - Dress with SA1 Enmag slow release fertilizer at 55g/ sq. m.
 - Agree details of replacement plants with CA before ordering.
- 645 WEED CONTROL GENERALLY
- Remove and/ or prevent plant growth that is not required in the landscape to achieve the following level(s) of weed control: allow for 4no. visits as follows: late spring, late summer, post replacement planting.
- 650 HAND WEEDING
- Remove all weeds, including roots, by hand using hoes, trowel or forks, taking care to remove not more than a minimum quantity of soil, causing minimum disturbance to trees, plants, mulched surfaces and bulbs and leaving the area in a neat, raked, clean condition.
- 655 WEED CUTTING BY HAND OR MACHINE
- Completely and cleanly cut down all undesirable grass, brambles and herbaceous growth to a maximum height of 75mm.
 - If herbicides are to be used, remove arisings before applying.

- 657 HERBICIDE TO KILL REGROWTH
- Where scheduled or instructed by LA:
 - Apply a suitable foliar acting herbicide to kill regrowth.
 - Allow the recommended period before clearing arisings.
- 660 TREE AND PLANT STEMS: Do not allow nylon filament rotary cutters or other mechanical tools closer than 100 mm to the stem of any tree or plant. Complete operations close to stems using hand tools.
- 665 WEED CONTROL WITH WINTER HERBICIDE:
- Apply a suitable residual soil acting herbicide.
 - Re-apply as necessary to maintain required level of weed control.
 - Allow the recommended period before clearing arisings.
 - Unless otherwise agreed with the LA, complete before 31 March.
- 670 WEED CONTROL WITH SUMMER HERBICIDE:
- Apply a suitable foliar acting herbicide.
 - Re-apply as necessary to maintain required level of weed control.
 - Allow the recommended period before clearing arisings.
- 675 DIGGING OVER
- Where specified, dig over beds to a minimum depth of 100mm, taking care to minimize damage to existing plants, bulbs and roots.
- 680 SOIL AERATION
- Prick up trodden or otherwise compacted soil surfaces using a border fork as specified in BS 7370: Part 4, clause 3.4.5.6 to aerate the soil of root areas. Do not damage plants and their roots.
- 685 SOIL LEVEL ADJUSTMENT
- Reduce the level of the soil/ mulch at the edges of beds to 50mm below the adjacent grass or hard surface. Spread arisings evenly over the bed.
- 690A MAINTENANCE OF MULCH
- Top up with ornamental medium grade bark mulch to a thickness of 50mm, as per clause Q30/ 485A to all planted areas.
 - Top up mulch at Practical Completion (end of 1 year defects liability period) and once per annum in July during the Maintenance period.
 - Sweep up and replace mulch spilling onto adjacent areas and, if not contaminated with weeds or rubbish, return to planted area.
 - Remove weeds growing on or in mulch by hand weeding or herbicide.
 - Ensure that ground is moist before mulching, either by timing operation to follow rainfall, or by applying mulch immediately after watering.
 - Record materials required, and submit authenticated receipts to LA.
 - Allow visits annually as necessary to keep the above.

Q40 FENCING

To be read with Preliminaries/General conditions
All hedging to have a post and wire support fence

- 610 INSTALLATION: Set out and erect fencing:
In straight lines or smoothly flowing curves as shown on drawings,
With tops of posts following profile of the ground,
With posts set rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
With correct fastenings and all components securely fixed.
- 640 SETTING POSTS IN EARTH: Excavate holes neatly, with vertical sides and as small as practicable to allow refilling. Position posts/struts and replace excavated material, well rammed as filling proceeds.
- 650 DRIVING POSTS: Prevent damage to heads of posts when driving.

Please note:

Any failures in planting will be identified in the spring following completion of works and will be replaced at that time.

Any failures in planting will be identified in the winter/spring of the 4th year of maintenance and replaced at that time.