Specification for Planting of Trees and Shrubs

1.0 EXCAVATIONS AND TOPSOIL

1.1 IMPORTED TOPSOIL
Imported topsoil to be to BS 3882; general purpose grade.
Texture slightly stoney.
Soil pH 7.0.
Maximum stone size of 50mm in any dimension.
Topsoil to be free from, an excessive amount of weed seeds, roots of perennial weeds, subsoil and extraneous matter.

1.2 HANDLING TOPSOIL
Select and use plant to minimise disturbance, trafficking and compaction. Do not contaminate with subsoil, stone, hardcore, rubbish or material from demolition work. Handle topsoil in the driest conditions possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit as defined by BS 3882, Annex N2.

1.3 TOPSOIL DEPTH: SHRUB PLANTING AND HEDGE LINES
Topsoil shall be spread evenly in layers not exceeding 150mm depth to 450mm depth after lightly firming and settlement:

1.4 SOILS FOR GRASS SEEDING:
Soil forming materials should be low fertility topsoil or subsoil, maximum stone size of 50mm in any dimension. Soil pH 7.0. Minimum depth of soils after lightly firming and settlement: 150mm

2. PLANTS AND TREES GENERALLY

2.1 All trees and shrubs will conform to the specification for nursery stock as set out in British Standard 3936 Parts 1 (1992) and 4 (1984). Advanced Nursery stock trees shall conform to BS 5236. Sizes and type of nursery stock are tabulated below:

Form	Girth	Height	Clear stem to lowest branch	Stock	Container size if used
Feathered trees	 6 - 8 8 - 10 10 - 12	125-150 150-175 175-200 200-250 250-275 275-300 Over 300		B B B B B B/ RB B/ RB	 10 10 15 15 15
Standard Trees: Half Extra Light Light Standard Selected Heavy Extra Heavy	 4– 6 4 - 6 6 - 8 8 - 10 10 - 12 12 - 14 14 - 16	 175-200 200-250 250-300 250-300 300 – 350 350 min 350 min	 125 -150 150 - 175 150 - 175 175 - 200 175 - 200 175 - 200 175 - 200	 B B B B B / RB RB RB	 10 15 15 15 25 35 35

2.2 Stock shall be materially undamaged, sturdy, healthy and vigorous, of good shape and without elongated shoots, and free from pests and diseases, discolouration, weeds and physiological disorders. Plants shall have been grown in a suitable environment and hardened off. The root system shall be to the requirements of the National Plant Specification and balanced with branch system.

2.3 Native species shall be of local provenance.

2.4 SHRUBS
To BS3936: Part 1 and Part 10. Roses to BS3936: Part 2. All shrubs shall be true to character, well developed bushes and with uniform shoot and foliage development typical for the species or type. All shrubs will be container grown in rigid pots. Ground cover shrubs sized 10 -20 cm or 20 -40 cm high will be in not less than 2L pots and shrubs sized 40 - 60 cm high will be in 3L pots. Where larger stock is used it shall be supplied in correspondingly larger pots.

2.5 CONTAINER GROWN TREES AND SHRUBS
All material shall have been grown in the container at least one full growing season prior to delivery and show substantial new root growth within the full volume of the container. They must show no signs of being pot-bound or waterlogged.

2.6 SHRUBS FOR HEDGES:
To BS3936: Part 1, consistent in species, cultivar and clone to ensure a uniform hedge.

2.7 PLANT HANDLING, STORAGE AND TRANSPORT
Lifting, packaging and transporting shall be to CPSE (Committee for Plant Supply and Establishment) 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part l, Part ll, and part lll, paragraphs 1.3.3 to 1.3.6. 3.0 and 4.0.

3.0 PREPARATION OF PLANTING BEDS / PLANTING MATERIALS

3.1 SITE CLEARANCE:
Prior to planting, planting areas will be cleared of: rubbish, concrete, metal, glass, stones with largest dimension exceeding 75mm, decayed vegetation and contaminated topsoil. Substances injurious to plant growth including subsoil, rubble, fuel and lubricants also to be removed. Retain and protect trees indicated on drawings.

3.2 PLANTING CONDITIONS:
Deciduous trees and shrubs shall be planted only during the season November - March, and only when the soil is in a friable condition. Evergreens may be planted September/October or April/May.
Carry out preparation and planting while soil and weather conditions are suitable and when soil is not so wet that to work it would result in a loss of structure. Do not undertake work during periods of heavy frost or strong winds.

3.3 WATERING:
Planting will be watered as necessary to ensure establishment and continued thriving of planting, watering to full depth of topsoil without damaging or displacing plants or soil.

3.4 COMPOST:
Tree planting compost shall be entirely free of peat. Proprietary products based on composted straw, manure or coir are acceptable, but products based on wood chips or bark shall not be used.
Incorporate into backfill of tree pits at the rates specified or the manufacturers recommended rates.

3.5 FERTILIZER:
Enmag fertilizer as manufactured by Scottish Agricultural Industries Ltd or equal. Apply to backfill for tree pits in accordance with the manufacturer's recommendations.

3.6 ROOT DIP FOR ALL BARE ROOT PLANT MATERIAL:
Product: Root Dip as manufactured by Agricultural Polymers International Ltd. Apply in accordance with the manufacturers recommendations as soon as possible after lifting.

3.7 TREE SHELTERS / TREE PROTECTION:
In rural locations feathered and standard trees are to be protected with spiral rabbit guards. Cell grown/rootrainers, transplants, whips and shrubs in native planting mixes are to be provided with individual plastic tree shelters. Tree shelters are to be Tubex Standard Range or similar approved, 750 mm in height. Each shelter is to be fixed to its own softwood stake, 1.4 m. in length by 30 mm. cross section, driven into the ground to a depth of 500 mm, according to the manufacturer's instructions.

3.8 WEED CONTROL MEMBRANE FOR HEDGE LINES: Membrane to be random or woven fibre black plastic, having a weight of at least 110g/m2. It shall be water permeable, tear resistant and u.v. resistant to be effective for 3 years. Woven materials that fray should not be cut on site unnecessarily.

4.0 **PLANTING**

4.1 EXISTING VEGETATION/WEED CLEARANCE FOR 'WOODLAND' PLANTING:
At each planting station all weed competition to be removed in a 50cms radius or to the size of the planting pit, whichever is larger. After excavation of the planting pit as specified in Clause 5.5, and before backfilling return the turf, inverted and chopped, to the bottom of the pit.

4.2 HEDGE LINES: Cut and rake off any grass and herbage from a strip 1.4m wide. Treat the strip with an appropriate herbicide to kill all rooted grass and herbs. After herbicide has taken effect cultivate the area to a coarse tilth 600mm wide and 250mm deep.

4.3 PLANTING PITS GENERALLY: All trees and shrubs are to be planted in pits, the

sizes of which are specified below.

	Diameter (mm)	Depth (mm)
Shrubs, hedges and groundcover	150mm wider than root spread	
Cell grown / rootrainers	300 x 300	300
Transplants	300 x 300	300
Feathered	600 x 600	600
Standard	600 x 600	600
Tall Standard, Selected Standard	750 x 750	700
Heavy Standard	900 x 900	750
Extra Heavy Standard	1000 x 1000	750

Tree pit sizes should be increased where necessary to ensure pits are at least 300mm wider and 75mm deeper than the tree root system when fully spread.

Fork over the bottom of feathered tree pits to a depth of 150mm and other tree pits to a depth of 225mm and leave slightly domed to assist drainage. Roughen any smooth sides to pits. Topsoil excavated from planting pits is to be mixed with compost and used for backfilling. Any subsoil excavated is to be removed from site to an approved tip.

Pits shall be excavated to the dimensions given above for each plant type. Backfill shall be a mixture of topsoil excavated from the pit, mixed with tree planting compost to the quantities given below. Backfill mixture to be lightly firmed in by treading. Sufficient topsoil/compost mixture shall be returned to the pit to raise the surface level to a minimum of 50 mm. and a maximum of 70 mm. above the adjacent surface level unless otherwise stated.

4.4 PLANTING PITS

(a) Cell grown/rootrainers, transplant tree and shrub pits: Backfill topsoil mixed with 4.5 litres of tree and shrub planting compost

(b) Whip tree pits: Backfill topsoil mixed with 10L of tree planting compost and backfill the pit, lightly firming by treading.

(c) Feathered tree pits: Backfill topsoil mixed with 20L tree planting compost, and lightly firm by treading. Sufficient topsoil/compost mixture shall be returned to the pit to raise the surface level to a minimum of 75 mm. and a maximum of 150 mm. above adjacent surface levels.

(d) Standard and selected standard tree pit: Backfill topsoil mixed with 80 litres of tree planting compost to be provided by the Contractor, and lightly firm by treading. Return sufficient topsoil/compost mixture to the pit to raise the surface level as specified for Feathered tree pits.

(e) Extra Heavy and Heavy Standard tree pits: Over the area of each planting pit, remove all turf to one side for re-use. Excavate pit 1 to the dimensions given in the table above. Break up the soil forming the base of the pit to a depth of 150 mm. Refill pit with topsoil mixed with 100 litres of tree planting compost. Return sufficient topsoil/compost mixture to the pit to raise the surface level as specified for Feathered tree pits.

4.5 PLANTING GENERALLY: Excavate topsoil to a sufficient depth and width to accommodate the cell plug / container or allow roots to be spread without cutting

or bending. Spread friable backfill mixture over the roots in successive layers, working plant up and down between each layer to ensure a distribution of soil between all roots and an intimate contact between roots and soil particles. Firm the soil by treading with the heel and add more soil if necessary to bring the surface level to that of adjacent areas and also to the mark on the plant stem which indicates the nursery planted level. Do not leave any roots or cell plugs exposed to the air.

4.6 HEDGES: Plant shrubs in trenches large enough to take full spread of roots. Unless otherwise specified plant in a double staggered row 300mm apart and with 300mm between rows, to result in 6-7 plants per linear metre.
Weed control membrane shall be laid along the hedgerow over the top of the hedge plants and the membrane cut to allow the plants to extend through. The outer edges shall be dug into the ground to a depth of at least 150mm along the full length of the hedgeline.

4.7 STAKING TREES:
Standard and Feathered trees shall be supplied with one tree stake. The overall length of the stake shall be sufficient to ensure that they are firm when driven into the soil and that the top of the stake extends above ground level to approximately one third of the tree's height. Stakes are to be hammered into the ground before the tree is positioned in the pit. Stakes shall be whole sections of softwood timber 50 mm. to 75 mm. top diameter, peeled and pressure treated in accordance with BS 4072. Tree to be secured with one tree tie with a spacer shall be positioned approximately 50 mm. from the top of the stake to hold the tree, ensuring that tree and stake do not touch in any place.

Heavy standard trees shall be provided with two tree stakes. The overall length of the stakes shall be sufficient to ensure that they are firm when driven into the soil and that the top of the stake extends above ground level to approximately one third of the tree's height. Stakes are to be hammered into the ground before the tree is positioned in the pit. Each stake shall be whole sections of softwood timber of 75 mm top diameter, peeled and pressure treated in accordance with BS 4072. A 100mm x 30mm section cross spar shall be fixed to the posts with galvanised nails. Ties shall be of a type approved by the Employer. One tree tie shall be a rubber strap overlapped and fixed to the timber cross spar by galvanised clout nails. A rubber collar shall ensure that tree and stake do not touch in any place.

Extra heavy standard trees shall be secured using Arbofix underground tree anchoring system from http://www.arboa.com, or Platipus Anchor System from www.platipus-anchors.com (or similar approved) installed to the manufacturers recommendations. Ensure tree is straight and firm in ground with no movement of rootball. An irrigation system such as RootRain Urban, black plastic finish, code ref RRURB2 by Greenleaf, or similar approved shall also be installed in the pit of extra heavy standard trees. Install in accordance with the manufacturers recommendations: loop the 60mm irrigation pipe around shoulder of rootball (250mm below ground level). Connect securely to tee piece. Cut vertical piece of pipe to length if necessary to ensure that inlet is flush or slightly proud (25mm max) of final pit surround

4.8 SURPLUS MATERIAL: All subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, prunings and other arisings / rubbish to be removed from site.

5.0 **AFTERCARE**

5.1 Planting shall be tended for 60 months from the date of completion of all Works.

(a) WEEDING

Throughout the aftercare period keep all shrub planting areas weed free. For woodland planting keep an area of 1 m. in diameter around each planting station in a weed free condition. This may be achieved by the use of an approved herbicide or by regular cultivation. A minimum of 3 visits for weed control will be required during the growing season. All injurious weeds, defined in the Weeds Act 1959, will be removed from the remainder of each transplant tree or shrub plot. The growth of herbaceous material between the weed free planting stations should be controlled by strimming twice per year.

(b) STAKES, TREES, SHRUBS AND TIES

All stakes, trees and shrubs shall be maintained in firm positions within the ground and with all ties securely fixed and adjusted to allow for the increase in stem girth.

(c) REPLACEMENTS

Plants that fail to thrive, are removed, uprooted or destroyed or die during the aftercare period will be replaced with equivalent plants as soon as possible during the following planting season. Replacements shall be of the same size and species as that originally specified unless otherwise agreed with the Planning Authority. Defects shall be made good by the end of the planting season of the year in which the defect is identified.

(i) Shrub areas – all dead stock shall be replaced at the end of each growing season to obtain 100% stocking..

(ii) Cell grown/rootrainers and transplant planting – throughout the Aftercare Period all dead stock shall be replaced at the end of each growing season to obtain 90% stock providing that failures are evenly distributed throughout both plots and species.

(ii) Standard and heavy standard trees – throughout the Aftercare Period all dead or diseased stock shall be replaced at the end of each growing season.

(e) TOP DRESSING

At the commencement of the second growing season apply evenly a general fertiliser with a ratio of 10:6:6 NPK at the rate of 56 gm. over the area of each standard tree pit.