

Standard specification for replacement tree planting in areas of soft landscape

INTRODUCTION:

The retention of existing trees and landscaping on a development site and the provision of new planting, is fundamental to green infrastructure provision. Development proposals should seek to retain existing trees where possible to enhance the environmental and visual amenity of the site, and therefore at an early stage when considering site layout proposals should make space for retaining existing trees and boundary hedges, and for new planting.

To ensure that trees on a development site are fully considered in the design process, at an early stage a Tree Survey should be carried out in accordance with British Standard 5837:2012: Trees in relation to design, demolition and construction – Recommendations. This will identify trees that merit retention due to their good condition, high visual amenity and potential longevity. These trees should be considered constraints in the development the need for their retention should be inform site layout. The survey may also identify trees in decline that it may be advisable to remove, for example for safety reasons. During development retained trees must be protected in accordance with BS5837:2012

If some tree removal is unavoidable then replacement tree planting will be required on a 3 for 1 basis. This 'Standard Specification' has been prepared to provide general guidance to developers on tree planting in areas of generally undisturbed soil with natural profiles. Planting methods will need to take account of conditions and constraints of an individual site.

1.0 TOPSOIL

1.1 TOPSOIL GENERALLY

Where possible use in situ soils. Site soils should be protected, managed and handled in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra 2009)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69308/pb13298-code-of-practice-090910.pdf

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.

1.2 SAMPLING AND ANALYSIS

Testing is recommended to establish soil texture, organic matter content, nutrient availability and the presence of any contaminants. Analysis should be

used to determine if amelioration is required to promote health growth.

1.3 IMPORTED TOPSOIL FOR TREE PITS

Only use if insufficient suitable in situ soils are available. 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.

2. **PLANTS AND TREES GENERALLY**

2.1 All trees and shrubs shall conform to the specification for nursery stock as set out in the National Plant Specification where it applies to trees, shrubs and plant handling and establishment: <http://www.gohelios.co.uk/nps/nps.aspx> and British Standard 3936 Parts 1 (1992) and 4 (1984). Advanced Nursery stock trees shall conform to BS 5236. Handling, planting and establishment of trees shall be in accordance with BS 8545:2014 Trees from nursery to independence in the landscape: Recommendations.

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 containing a fully fibrous and balanced, branched system. Containerized or container grown trees must be free from circling or girdled roots – these should be rejected if apparent.

2.3 Tree species should be selected to be suitable for the soil type and ground conditions of the site.

2.4 Native species specified shall be of local provenance and preferably from seed collected from semi-natural parent trees within the appropriate region of provenance zone as set out in the Forestry Commission Practice Note “using local stock for planting native trees and shrubs”.

2.4 Where a necessary change from the approved species is required due to lack of availability, then an amendment will need to be submitted to the LPA for approval.

3.0 **PREPARATION**

3.1 RETAINED TREES

Retain and protect trees indicated on drawings in accordance with BS5837:2012 Trees in relation to design, demolition and construction – Recommendations. If working within Tree Protection Areas operations must comply with a Method Statement agreed with the Local Authority.

- 3.2 **SITE CLEARANCE:**
Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil. Remove stones with largest dimension exceeding 75mm. Substances injurious to plant growth including subsoil, rubble, fuel and lubricants to be removed.
- 3.3 **PLANTING CONDITIONS:**
Deciduous trees and shrubs: Plant during the season November - March. Container grown material may be planted outside the planting season and when the soil is in a friable condition, but only with provision for supplementary watering. Conifers and evergreens may be planted September/October or April/May.
Carry out preparation and planting while soil and weather conditions are suitable. Do not plant in periods of wet weather when working the soil would result in a loss of structure, or during periods of heavy frost or strong winds.
- 3.3 **WATERING:**
Trees should be watered prior to planting and backfilled planting pits watered to full depth of topsoil after planting. Apply evenly and without damaging or displacing plants or soil.
Water as necessary to ensure establishment and continued thriving of planting.

MATERIALS

- 4.1 **BACKFILLING MEDIUM:**
The backfill medium should be as close as possible in texture and structure to the soil excavated from the tree pit. By preference soils excavated from the tree pit should be used as backfill, replaced to replicate the natural soil profile.

If soil analysis indicated that modifications to the soil are necessary, soil ameliorants may be used sparingly. Tree planting compost should be entirely free of peat; proprietary products based on composted straw, manure or coir are acceptable, but products based on wood chips or bark should not be used. Recycled compost material must comply with BS PAS100.
- 4.2 **ROOT DEFLECTORS/ ROOT BARRIERS**
Root deflectors / geotextile root barriers should not be used routinely and only where there is a specific requirement to inhibit root growth. If required install in accordance with the manufacturer's recommendations.
- 4.3 **MULCH**
A 50mm - 100mm depth layer of Medium Grade bark mulch is to be applied to the surface of the weed free tree pit after planting and watering. Bark mulch to be free of pests, disease, fungus and weeds.
- 4.4 **TREE SHELTERS / TREE PROTECTION:**
Where there is a risk of rabbit, hare or deer damage trees should be provided with an individual guard or tree shelter to a height appropriate for the protection required.

PLANTING

5.1 PLANTING PITS GENERALLY:

Tree pit sizes should be at least 150mm wider and approximately the same depth as the tree root system when fully spread. Where space permits the planting pit should splay out towards the top to maximise potential development of the rooting zone in the top 200-300mm of the tree pit. The base of the tree pit should be left undisturbed unless drainage problems are apparent or soil smearing or pans are evident. Break up pans if present, loosen base of pit if required. Tree pit sizes may need to be increased if poor conditions are encountered.

Roughen any smooth sides to pits. Soils excavated from planting pits separated as subsoil and topsoil should be used for backfill, unless unsuitable due to contaminants. Backfill should as far as practicable replicate the existing soil profile, though topsoil depth should be increased to 200mm - 300mm if existing topsoil is shallower. Where soils have high clay or silt content addition of sand in the lower layers of the backfill will help to improve drainage.

Tree pits would typically be expected to have the following approximate minimum dimensions:

	Diameter (mm)	Depth (mm)
Feathered	450 x 450	300
Standard, Selected Standard (up to 10-12cm girth)	500 x 500	400
Heavy Standard	600 x 600	500
Extra Heavy Standard	700 x 700	500

a) Bare root Stock:

Slight mounding of the base of the tree pit under bare root trees provides support against shrinkage and ensures correct planting depth, but soils at the base of the pit should not be compacted or impede drainage. Spread friable mixed topsoil/compost backfill 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. Water, and apply mulch after planting.

b) Container grown and root balled stock

Excavate topsoil to a sufficient depth to accommodate the container/root ball and a minimum of 300mm wider. Install a proprietary irrigation pipe system such as RootRain or similar, to facilitate watering where soil resource and natural water availability is limited.

4.2 TREE SUPPORT

Use softwood timber stakes unless underground methods are desirable due to the nature of the environment. Stakes are to be hammered into the ground

before the tree is positioned in the pit.

Bare root stock: (Feathered, Standard and Selected Standard trees)

Support 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 should be whole sections of softwood timber 50 mm. to 75 mm. top diameter, peeled and pressure treated in accordance with BS 4072. Use ties with a spacer and of a type that can be adjusted as the tree grows. Position one tree tie approximately 50mm from the top of the stake to hold the tree, ensuring that tree and stake do not touch in any place.

Container grown and rootballed stock (Selected Standard Heavy standard trees)

Support with two tree stakes and a cross spar. 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 shall be whole sections of softwood timber of 75 mm top diameter. Drive stakes into the tree pit before positioning the tree. Fix a 100mm x 30mm section cross to the posts with galvanised nails. The tree tie should utilise a rubber collar to ensure that tree and stake do not touch in any place. All timber shall be peeled and pressure treated in accordance with BS 4072

5.0 **AFTERCARE**

A 5 year aftercare period is required, during which time plants shall be maintained regularly to ensure establishment. Plant condition is to be assessed annually at the end of each growing season and any plants that die or are badly misshapen by dieback, disease or damage shall be replaced during the planting season in the year the fault was identified. Replacement stock shall be of the same size and species as that originally specified.

Monthly maintenance visits through the growing season should include:

5.1 a) WEEDING

Keep planting beds clear of weeds by use of suitable herbicides or hand weeding and maintain an area of clean ground 1 m. in diameter around each transplant tree or shrub, feathered and standard tree.

b) WATERING

Water as necessary to promote establishment

c) STAKES, TREES, SHRUBS AND TIES

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

d) MULCH

Mulches should be hand weeded as necessary and replenished to their original depth at least once annually

e) PRUNING

Remove all dead wood and diseased tissue from all planted material at the end of each growing season, and all stem growths from standard trees immediately before the completion of the maintenance period. Prune tree crowns if necessary to encourage development of good shape.

Guidance Notes

Existing trees of good quality can enhance any new development by providing an immediate appearance of maturity and by contributing to Green Infrastructure. Development proposals should seek to retain existing trees where possible, therefore when considering site layout proposals should make space for retaining existing trees and / or accommodating new planting.

To ensure that trees on a development site are fully considered at an early stage in the design process a tree survey should be carried out in accordance with British Standard 5837:2012 "Trees in relation to design, demolition and construction – Recommendations". This will help to identify trees that merit retention due to their good condition, high visual amenity, and potential longevity, and these should be considered as constraints to the design.

On occasions there will be justification to remove trees for development. In this situation mitigation planting is expected. Replacement planting of three trees for each one lost is required, unless the applicant wishes to carry out planting with larger tree stock and has limited space, in which case two trees would be expected.

It may be appropriate to locate tree planting where this will also contribute to visual mitigation of the development as it matures.

Selection of species suitable for replacement should be based on the species of the tree removed. By preference, where space permits, the same species should be used or a species / variety that will ultimately achieve a similar stature. On more constrained sites a species attaining a smaller stature is likely to be more appropriate. Where planting is on or close to a boundary with open countryside a native species appropriate to the location should be selected.

Planting into paved areas will require additional root management products, tree pit irrigation and soil structure systems.