

Tree Planting

1. Description of works

Tree planting includes the preparation of a tree pit. This is a typical, non-site-specific technical detail only. Setting out completed by TGL in conjunction with the garden designer. SOP to be read in conjunction with relevant job specifications, drawings and site-specific RAMS for additional health and safety information prior to commencement of works.

2. Sequence of Events

2.1 Site Arrival & Induction

Appropriate site induction is to be carried out before commencing work for any staff members or contractors who have not previously visited the site.

- Toolbox talks are to be carried out before commencing work to familiarise staff and contractors with the expected schedule and work procedures.
- Staff and contractors are to be made aware of all welfare facilities.
- Staff and contractors are to be made aware of who the designated first aider is on site and of the location of the first aid kit.
- Staff and contractors are to be made aware of other people using the site and work to be carried out is to be communicated to others using the site as necessary.
- Associated RAMS to be read and signed by operatives prior to commencement of works.

2.2 Setting out for tree planting

2.2.1) Review the relevant plan or drawing for the tree planting and the setting out plan if present OR

2.2.2) Work with the garden designer on site to position trees.

2.2.3) Trees location can either be staked in the centre point using a road pin or timber stake, or trees themselves can be positioned and then moved aside for planting. Larger trees should be marked with a stake to avoid excess handling, which could increase the risk of damage to larger trees.

2.3 Preparing the planting hole or tree pit

*Reviewing and complying with a technical tree pit detail or specification provided by the garden designer should supersede the following steps.

2.3.1) Use line marking spray to mark a square on the ground that is a minimum of 1.5X the diameter of the root ball.

2.3.2) Dig to a depth of 5-10m shallower than the height of the rootball. This will ultimately ensure adequate oxygen for the tree by avoiding planting it too low. The depth of the hole can be measured from the lowest adjacent ground level.

2.3.3) If planting on a slope, a shelf will need to be dug into the higher edge of adjacent ground and shaped in a bowl to meet the lower adjacent level, creating a more natural and aesthetic finish.

2.3.4) Ensure the sides of the hole are not smoothed down and sealed, which will prevent roots from penetrating. The sides of the hold should be loosed; if using a digger, use a toothed bucket.

2.3.5) Discard organic matter and most subsoil and organise topsoil into a tidy pile. Keep some subsoil to help upright the tree.

2.3.6) Dig over the soil at the base of the hole to 300mm to allow greater root development and encourage capillary rise of groundwater. This layer should then be pressed down again to prevent ground and therefore tree subsidence.

2.4 Planting the tree step one

2.4.1) If lifting mechanically, lift the tree using the instructions in the above section on handling trees. If lifting manually, ensure it is maneuvered by the root ball, avoiding weight and pressure on the trunk or branches.

2.4.2) Mix 30% good quality imported topsoil to the pile of existing topsoil. Integrate fertiliser and/or rooting compound at specified rates.

2.4.3) Prior to placing the tree in the hole, remove any tying material.

2.4.4) Place the tree in the planting hole 50-100mm higher than the existing ground level. This is because the formation level within the tree pit will sink a little. Trees that are planted too low have a high chance of being deprived of oxygen, which is linked to root rot and dieback.

2.4.5) Use a straight edge placed across the tree pit to determine the ground level at the position of the trunk and double check it is positioned at the correct level.

2.4.6) Work as a team to ensure the tree is positioned upright from all visible angles. Adjust the upright position by using a combination of subsoil and/or broken brick. Lever the tree from beneath the root ball and never by the trunk or branches.

2.4.7) Work as a team to orientate the tree. Its best face (usually the fullest and most balanced) should be presented toward either the direction it is seen most or in the direction of the most important viewpoint.

2.5 Anchoring and staking

Platipus anchors (See Fig. 3)

- To be used for larger single stem and multi stem trees.
- Watch the following installation videos:

RF3P & RF4P system: <https://www.youtube.com/watch?v=UmDspn4p5nk>

Deadman system: <https://www.youtube.com/watch?v=ZHNJWDcZVKc>

Timber staking below ground

- To be used for smaller multi stem trees only.
- Position 3nr 75mm machine round pointed stakes at 1.8m in length in a triangle around the root ball.
- Drive into the ground fully using a sledgehammer at an angle that holds the root ball in place.
- Any excess material once the stakes have reached their maximum depth can be cut off below the finish ground level.

Timber staking above ground (See Fig. 4)

- To be used for single stem trees that are smaller in circumference (typically up to 14-16 cmg) or have a smaller root ball that won't hold a Platipus anchor.
- Drive 75mm machine round pointed stakes into the ground just outside of the root ball at the northwest and southeast points. At least half needs to be in the ground.
- Screw a half machine round 80mm rail between the stakes on the southwest side to support it against the prevailing wind. The optimum height is one third of the full height of the tree.
- Use a suitable tree tie and spacer (if required) to avoid the tree rubbing against the cross bar.

2.6 Planting the tree step two

2.6.1) Install any below ground irrigation or aeration system at this point according to the relevant manufacturer's instructions. For surface irrigation, refer to irrigation SOP (ref TBC).

2.6.2) Fill the planting hole a third of the way up with the mixture of existing and imported topsoil and tamp down firmly using your feet.

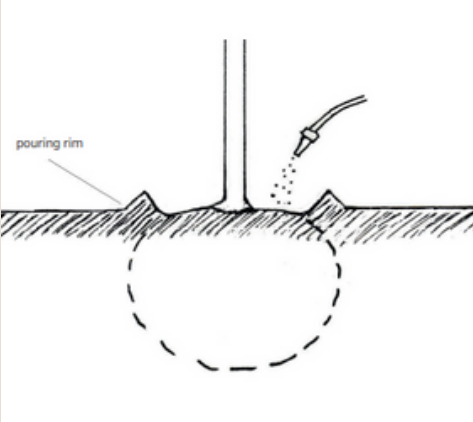
2.6.3) Fill the planting hole three quarters of the way up and tamp down firmly using your feet.

2.6.4) If a wire root ball tree, detach the wire at the top of the root ball to avoid pinching as the tree gets thicker. Never remove the wire at the top of the root ball before planting as the root ball is likely to collapse.

2.6.5) Fill the planting hole completely and tamp down firmly using your feet.

2.6.7) The soil can be shaped and compacted to create a pouring rim that ensures water reaches into the rootball without run off (see Fig. 5).

Fig. 5: Tree pouring rim section (source Van Den Berk)



2.6.8) Apply a suitable surface mulch min 30mm depth to the area of the tree pit.

2.6.9) Install suitable tree protection against either pests or sunburn.



Source: Ebben Trees (L) and Van Den Berk (R)

Fig. 1: Tree Handling with a sling



Source: Ebben Trees (L) and Van Den Berk (R)

Fig. 2: Tree Handling with a rootball hook



Source: pghorticulture.co.uk

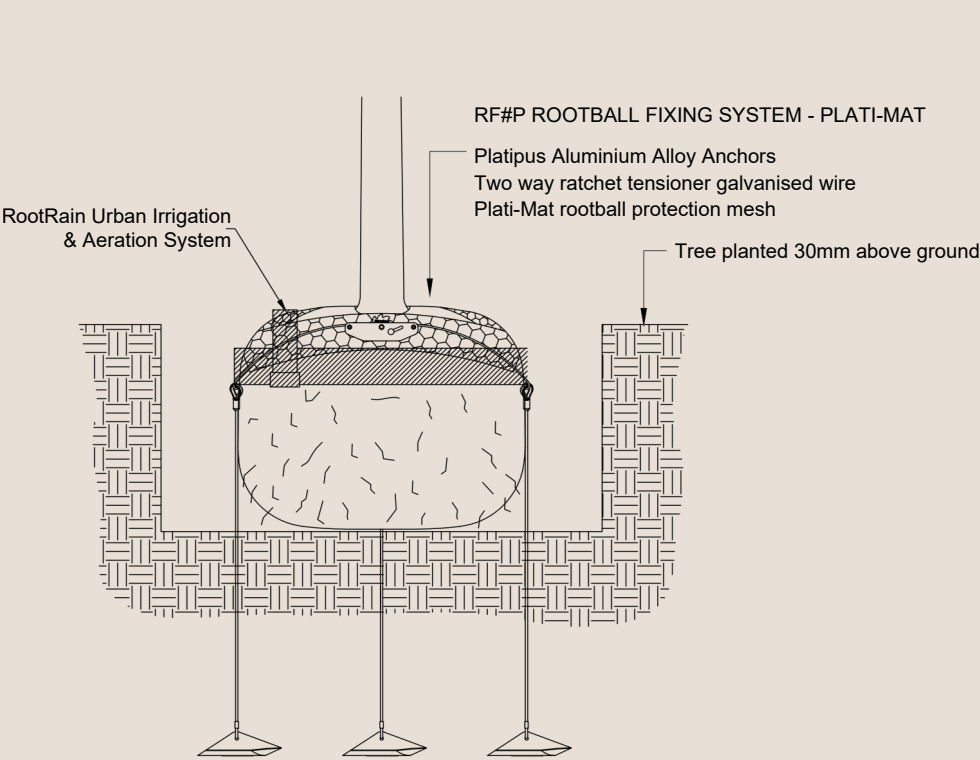


Fig. 3: Platipus anchors

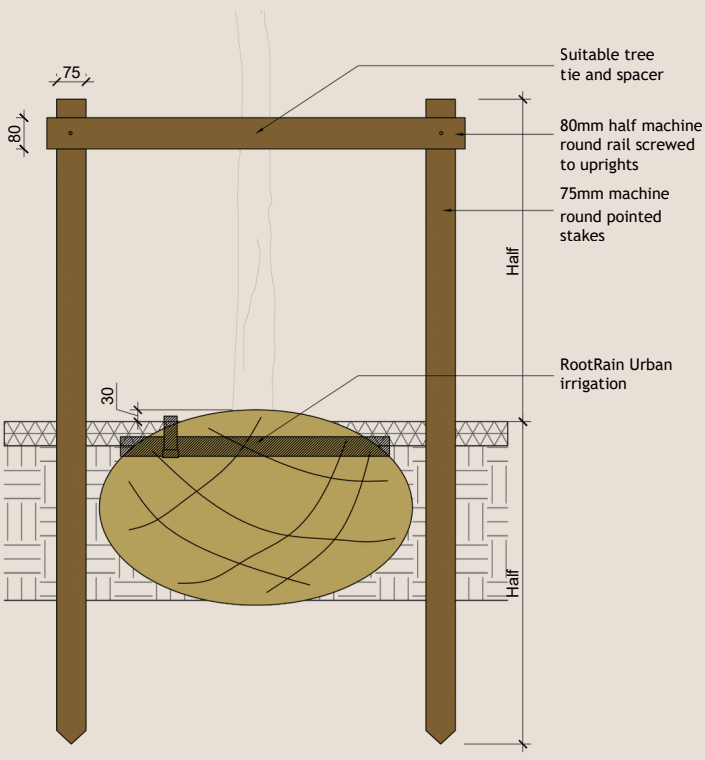


Fig. 4: Timber staking above ground

Useful Information

Planting Trees

- Unloading and planting trees with a wire root ball must occur during winter dormancy. This period generally runs from November (after leaf fall) to late March (before bud break).
- Planting does not take place during the following periods:
 - If the ground is very frozen.
 - If there is a lot of snow.
 - If the ground is so saturated the planting hole can't be dewatered.
 - If there is a risk of structural deterioration of the soil.

Handling trees - general

- Trees should only be lifted or moved by their rootball and never by their stem. The stem can however be supported to ensure it is at no point under force of pressure from gravity or otherwise.
- Particularly in the case of large trees, there is a risk of bark being stripped while handling using a sling. Risk increases as sap streams begin in late winter and early Spring when cambium (the growth layer under the bark) swells due to the rising sap flow. This makes the tissue highly vulnerable. Stripping the bark can cause irreparable damage and cause the tree to die.

Handling Trees with a sling (see Fig. 1)

- Standard approach for all larger and more vulnerable trees.
- The entire weight is supported by the root ball, completely relieving the trunk and cambium.
- Place a wide lifting strap centrally under the root ball so that it hangs in balance.
- Place a second, loose sling around the trunk to guide and stabilize the tree, not to lift it. The truck should always be protected by a layer of jute/hessian to avoid the strap rubbing directly against the bark.
- Lift the tree slowly, bring it horizontally to the planting pit, and lower it in a controlled manner.
- Larger multi-stems are unloaded using a sling around the root ball and slings around the back stems. A sling around just one of the stems is guaranteed to result in damage to the bark.

Handling trees with a root ball hook (see Fig. 2)

- This method can be used for trees up to a trunk circumference of 45-50cm but it most effective for multi-stem trees with a stem thickness up to 30cm and/or with a root ball diameter or 80cm
- The hook should be attached low down in the root ball, so that it bears the weight of the tree.
- Maintaining a maximum lifting angle of 60 degrees to limit pressure on the trunk
- Overlarge root balls should never be unloaded using the root hook, this can tear open the wire basket or damage the trunk as the weight has to be borne by the trunk sling.

Handling trees with a Telehandler or Compact Telehandler (such as Avant Loader)

- This method is best suited to moving trees from one location to another or for unloading from the haulier. It is not the ideal method for planting as it is difficult to place the tree into the planting hole.
- For multi-stem trees, ensure the forks are the correct distance apart, spreading the load of the root ball being careful not to damage it. Manually maneuver the root ball or pot onto the forks.
- For single stem trees, the rootball can be 'dropped' between the forks that are placed closer together, so it becomes wedged. Maintain a maximum lifting angle of 60 degrees to limit pressure on the trunk.

Storage of trees

- If trees cannot be planted immediately upon delivery, they should be protected from drying out until planting. Protect the roots relevant with tarpaulin or hessian. Ensure the rootball remains moist and test by inserting your finger where possible. Do not overwater.
- Keep trees cool and sheltered and in a frost-free place.

Table 1: Weights of typical materials handled by excavators	
Material	Mass (kg/m3)
Clay compacted	1746
Clay, dry	1073
Clay, wet	1602
Earth, dense	2002
Earth, dry, loam	1249
Earth, moist	1442
Earth, wet	1602
Turf	400

Table 3: Nursery/Landscape Codes		
WRB	Wire Root Ball	A root ball also secured with wire mesh for added strength
RB	Rootballed	A field-grown tree lifted with its root system and surrounding soil wrapped in a breathable like hessian
CMG	Centimeters of Girth (of tree stem)	
CG	Container Grown	
STD	Standard	A single straight trunk clear of lower branches for at least 1.8m
HS	Half Standard	A single trunk with lower branches cleared to 1.2 - 1.5m
FTH	Feathered	A single dominant stem with lateral branches from the ground up
MS	Multi-stemmed	Multiple stems originating near the ground
Pleached		Single stemmed tree, with lateral growth trained to a two-dimensional vertical frame and clipped to create a panel
Roof Shape/Parasol		Single stemmed tree with central leaders cut and lateral branches trained over a horizontal frame
Box Shape		Single stemmed tree with lateral growth trained to a three-dimensional frame and clipped to create a box / cubed head
Umbrella		Mature, specimen multistem, where lateral growth is pruned from the lower parts of the main stems to raise the canopy and create an umbrella form
Pollard		A tree with a single stem that is regularly pruned back to the trunk

Suppliers

Aggregates

Gardenscape Direct, The Wharf, Rye Road, Newenden TN18 5QG, 0800 654663

Misc. disposable materials

Parker Building Supplies, St. Leonards on sea (on account), Highfield Dr, St. Leonards-on-sea TN38 9TG, 01424 856800

Staking, Tying, Protection

Tate Fencing, Yellowcoat Sawmill, Hastings Rd, Flimwell TN5 7PR, Tel: 01850 879900

Littlewood Fencing, N Trade Rd, Battle TN33 9LJ, 01424 775333

Robins Herstmonceux (includes recycled aggregate for general fill such as 75mm down or 100mm cobbles and grading sub-base such as Type 1 50mm down), 2 Chilsham Ln, Herstmonceux, Hailsham BN27 4Q, Tel: 01323 833181

LBS Horticulture: <https://www.lbsbuyersguide.co.uk/plant-support-tree-care/plant-tree-tying> 01282 873300

Green-Tech: <https://www.green-tech.co.uk/tree-planting-products> 01423 332100

Fertilisers/Mycorrhizae

LBS Horticulture: <https://www.lbsbuyersguide.co.uk/> 01282 873300
Green-Tech: <https://www.green-tech.co.uk/> 01423 332100

Tool and Plant Hire

Top Plant, The Stage, Stable Works, Climpsetts Farm, Robertsbridge TN32 5SP, Tel: 07527 164641

Anchoring and Sundries

Platipus Direct: <https://platipusdirect.co.uk/> 0808 169 5060

Irrigation

Landscape Plus: <https://landscapeplus.com/> 01666 577577

Tools List

Note: Appropriate PPE to be available for all tasks as per site specific RAMS. It is assumed that all personnel will carry suitable pencils/markers.

Batteries	Digging forks	Grinder with metal blade	Handsaw	Hessian/Jute
Hose and connections	Impact driver	Knife	Laser level	Marking spray
Nails	Platipus tools (Tension Lever, Hand Drive Rod)	Screws	Shovels	Sledgehammer
Soil rammer	Spades	Strops and shackles	Tape measure	Timber (straight edge)
Tree Hooks	Tree ties and spaces	Wheelbarrows		

Table 2: Bulkage of soils (after excavation)	
Type of soil	Approximate bulking of 1m3 after excavation
Vegetative soil and loam	25-30%
Soft Clay	30-40%
Stiff Clay	10-20%



Standard Operating Procedures

Soft Landscaping Planting

Tree Planting (04)