

#### Tree Pit Detail A - Trees to be planted in Open Space

1&2. 2x tanalised timber tree stake 2m, 75mm Ø and crossbar driven into backfilled pit to provide support to the tree.

3. Clear spiral guard to be fitted to trunk to protect against animal browsing.

4. Use 2x Tree Tie *GLB25A* with *GLPFA* spacer sleeve or similar to secure tree to support post.

5. 50mm deep bark mulch layer to be spread evenly over a circular area 1000mm Ø around the tree to prevent weed growth and retain moisture.

6. Excavate tree pit to sufficient size to accommodate tree root ball. Loosen any compaction in base of excavated pit to aid drainage. The tree should be planted at a depth where the root flare is still visible just breaching the soil surface following backfilling.

7. Backfill tree pit with subsoil and topsoil excavated from pit if this is regarded as of sufficient quality to promote the healthy establishment of the tree. If either the top soil or sub soil excavated from the pit is of poor quality then soil ameliorants may be used sparingly or imported topsoil compliant with **BS3882** should be used.

Immediately after planting, water the tree, saturating the tree pit to field capacity.

The notes above are intended as a basic guide only. For further guidance on tree planting refer to **BS 8545:2014** Section 10.

Products suggested in italics above are available from Green Blue Urban (<http://greenblueurban.com/>)

#### Tree Planting Program

Trees to be planted between October 2015 and March 2016.

A full young tree management programme with budgetary provision should be in place for all planting schemes. This management programme should be in place for at least 5 years. Between the months of March and October monthly visits should be made to inspect tree specimens, and correct irrigation carried out in line with management information provided. Trees should be watered to recommended field capacity percentage, and not allowed to drop below the permanent wilting point percentage where risk of failure is likely (see table fig 1). Tree monitoring frequency should be increased accordingly in periods of hot weather.

#### Tree Maintenance and Management During 5 Year Establishment Period

Immediately following planting, the tree should be watered thoroughly. Following this, and with regard to prevailing weather conditions, newly planted trees should be watered regularly during periods of dry weather. If the tree pit has been specified with and irrigation pipe, this should be used as the primary method of watering. If no irrigation pipe is specified, the square metre of ground around the tree should be soaked to field capacity (refer to **BS 8545:2014** for further detail) by surface watering. Watering frequency is more important than quantity to prevent the root ball of the newly planted tree from drying out.

All trees are fitted with protective guards to prevent animal damage. These should be checked regularly to ensure they remain in place and are providing adequate protection against the animals in the area. If damage to trees from browsing by animals still occurs additional measures may be required.

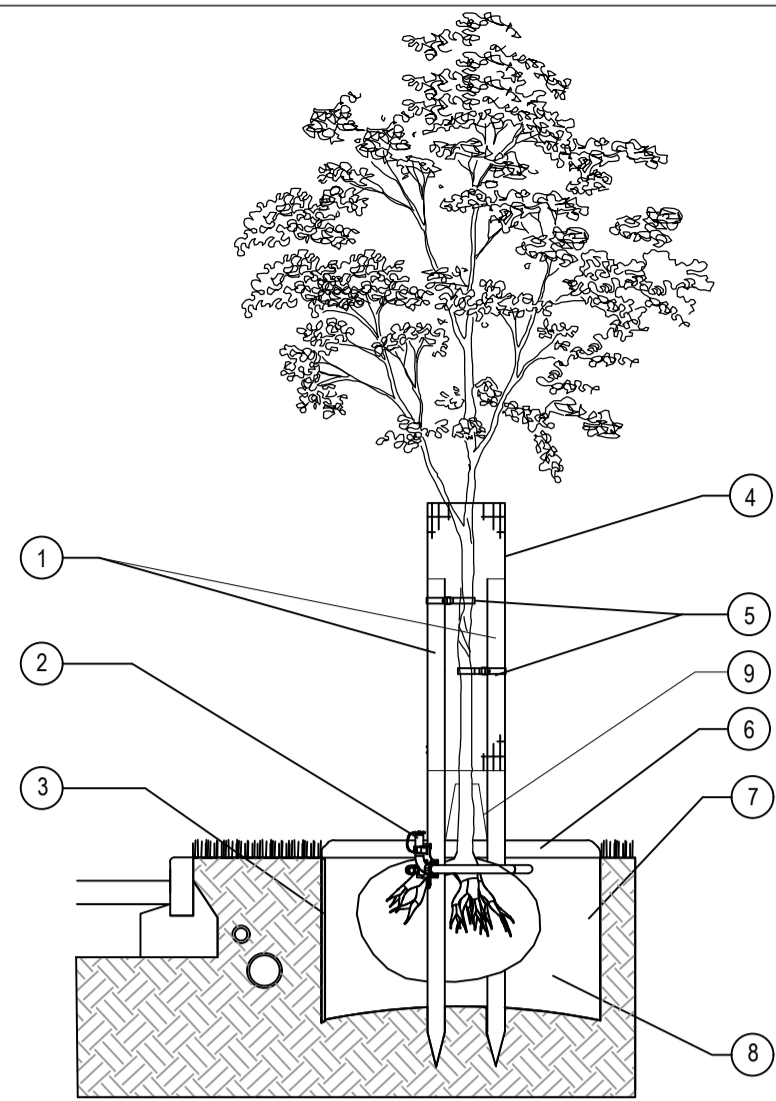
A formal assessment of young tree health and development should be carried out annually by a qualified arborist who will be able to advise on solutions should any problems be picked up. During this assessment any stakes and ties should be checked to ensure they are providing support but not damaging the tree and that the tree is still firmly seated in the ground. If the tree has become loose in the ground the soil around the base should be re-firmed and stakes and ties adjusted accordingly.

The mulched area around the base of the tree should be kept clear of competing vegetation and weeds at all times.

Tree stakes and ties should be removed once the tree has established a strong enough root system to support itself, likely to be 1-2 years after planting. Strimmer guards should remain in place until the end of the 5 year establishment, with adjustments or segments added as necessary to facilitate tree growth. Tree guards should only be removed if they are beginning to restrict tree growth or if it is felt the risk of damage has significantly reduced due to strong tree growth and development or changes in the surrounding environment.

Formative pruning should be carried out in accordance with **BS 3998** as required throughout the five year establishment period.

For further guidance on tree maintenance during establishment refer to **BS 8545:2014** Section 11.



#### Tree Pit Detail B - Trees to be planted within 3m of Hard Surfaces and/or Services

1. 2x tanalised timber tree stake 2m, 75mm Ø driven into backfilled pit to provide support to the tree.

2. *RootRain Metro* irrigation system or similar. Place around top of root ball and nail to supporting stake ensuring filler cap finishes slightly above mulch level.

3. *ReRoot* root barrier with root deflecting ribs installed between tree root ball and hard surfaces/services where there is a risk of root damage as the tree grows outward. As a general rule root barriers should be installed in locations where hard surfaces and/or services are located within four metres of the tree stem. Install closer to the paving/service than the tree, to allow space for the tree roots to grow into the space available, with the ribs facing the tree. Note this may mean not placing the barrier within the tree pit, but further away within its own trench. Root barriers must extend a minimum of 2m lengthways beyond the expected canopy of the mature tree. The top of the root barrier should be set as close to the soil surface as possible without being visible.

4. 50mm square galvanized wire mesh bent in circle 320mm Ø and nailed to tree stake to protect tree from damage by people and animals. Bottom of mesh should be 300mm above ground level to allow strimmer guard to be fitted and prevent litter and grass/weeds building up around the base of the tree. Top of mesh should be below the first lateral branch.

5. Use 2x Tree Tie *GLB25A* with *GLPFA* spacer sleeve or similar to secure tree to support post.

6. 50mm deep bark mulch layer to be spread evenly over a circular area 1000mm Ø around the tree to prevent weed growth and retain moisture.

7. Excavate tree pit to sufficient size to accommodate tree root ball. Loosen any compaction in base of excavated pit to aid drainage. The tree should be planted at a depth where the root flare is still visible just breaching the soil surface following backfilling.

8. Backfill tree pit with subsoil and topsoil excavated from pit if this is regarded as of sufficient quality to promote the healthy establishment of the tree. If either the top soil or sub soil excavated from the pit is of poor quality then soil ameliorants may be used sparingly or imported topsoil compliant with **BS3882** should be used.

9. *Strimmer guard* by *Arbortech* or similar to be fitted around base of tree to protect from damage by grass maintenance machinery primarily but also to provide an additional layer of defense against animal browsing.

Immediately after planting, water the tree, saturating the tree pit to field capacity.

The notes above are intended as a basic guide only. For further guidance on tree planting refer to **BS 8545:2014** Section 10.

Products suggested in italics above are available from Green Blue Urban (<http://greenblueurban.com/>) and *Arbortech* ([www.arbortech.co.uk](http://www.arbortech.co.uk))

#### Irrigation of new tree planting

The timing and frequency of irrigation should take into account the prevailing weather conditions, soil moisture release characteristics, and the response of the tree species to water deficits or periods of prolonged soil saturation.

The water holding capacity varies between soils and should be assessed before determining irrigation needs.

The frequency of irrigation is more important than volume of water at any one time. Increased water volumes should not compensate for a lack of frequency.

Additional monitoring is recommended if there are 10 consecutive days during the growing season at >25°C. Water should only be added if soil moisture probe/ tensiometer values indicate that it would be appropriate to do so.

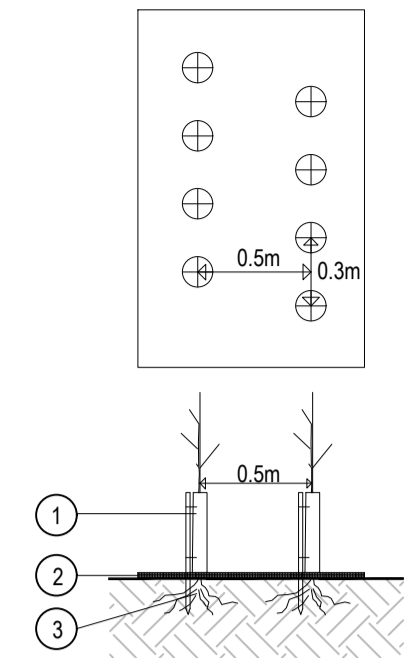
#### Ongoing Maintenance and Management

- All trees are to be regularly inspected by a member of the arboricultural association to ensure that they remain in a safe condition, do not obstruct access routes or visibility and do not cause nuisance. In undertaking the inspection, consideration should be given to safety aspects in balance with visual and ecological benefits provided by the tree
- Replace dead or dying trees in the next planting season (November to March)
- All tree works are to be carried out in accordance with good arboricultural practice, and under the direction of a member of the arboricultural association BS8545. In undertaking tree works, consideration must be given to safety aspects in balance with visual and ecological benefits provided by the tree.
- Tree works must take place outside of the bird nesting season (March to August inclusive, for most British birds) or under the supervision of a suitably qualified ecologist. If tree works need to be carried out between March and August seek ecological advice.
- Remove annually any excess growth encroaching onto grassed areas, paths, roads, signs, sightlines and light fittings

Texture	FC (v%)	PWP (v%)
Sand	10	5
Loamy sand	12	5
Sandy loam	18	8
Sandy clay loam	27	17
Loam	28	14
Sandy clay	36	25
Silt loam	31	11
Silt	30	6
Clay loam	36	22
Silty clay loam	38	22
Silty clay	41	27
Clay	42	30

Table fig 1: This table shows field capacity and past wilting point percentages, and how they vary according to soil texture and composition.

#### Double Staggered Row



#### Native Hedgerow Planting Detail

1. Tubex shrub shelter with supporting cane or stake.

2. Tubex 1m wide biodegradable Jute/Hessain Fbric roll pegged down with supplied biodegradable plastic pegs along line of hedgerow to prevent weed growth and retain moisture.

3 Whip to be notch planted following clearance of any existing vegetation.

Immediately after planting, water the whip, saturating the ground around its base to field capacity.

The notes above are intended as a basic guide only. For further guidance on whip planting refer to **BS 8545:2014** Section 10.

Whip planting only to take place between November and March

Products suggested in italics above are available from Green Blue Urban (<http://www.tubex.com/>)

#### Whip Maintenance and Management During 5 Year Establishment Period

Immediately following planting, the whip should be watered thoroughly. Following this, and with regard to prevailing weather conditions, newly planted whips should be watered regularly during periods of dry weather. When watering the square meter of ground around the whip should be soaked to field capacity (refer to **BS 8545:2014** for further detail) by surface watering. Watering frequency is more important than quantity to prevent the roots of the newly planted whip from drying out.

All whips are fitted with protective guards to prevent animal damage. These should be checked regularly to ensure they remain in place and are providing adequate protection against the animals in the area. If damage to trees from browsing by animals still occurs additional measures may be required.

A formal assessment of areas of whip planting should be carried out annually by a qualified arborist who will be able to advise on solutions should any problems be picked up. During this assessment any guards and canes/stakes should be checked to ensure they are providing protection but not damaging the developing whip and that its roots are still firmly seated in the ground. If the whip has become loose in the ground the soil around the base should be re-firmed and guards adjusted accordingly.

The space above the mulch mat around the whip should be kept clear of competing vegetation and weeds at all times.

The shrub shelter/guard should be removed once the whip has established a strong enough root system to support itself and has begun to grow strongly clear of the top of the shelter/guard, likely to be 1-2 years after planting. Biodegradable fabric can remain in place indefinitely.

Formative pruning should be carried out in accordance with **BS 3998** as required during the first five years to ensure the desired form is achieved.

For further guidance on whip and tree maintenance during establishment refer to **BS 8545:2014** Section 11.

#### Ongoing Maintenance and Management

- Allow whips to reach desired height before trimming
- Maintain weed-free area around trees and whips, minimum diameter from stem, using mulch mats
- Any dead or dying plants to be replaced during the winter season (November to March)
- Re-firm any plants loosened by frost heave, wind rock or vandalism by treading around the base
- Watering to be undertaken regularly during the summer months and as required in the first five years following planting, to achieve successful plant establishment
- Ameliorants to be added as necessary to amenity hedgerows and in accordance with the on-going maintenance above
- Shrub shelters/guards to be removed after two years to facilitate further growth and management
- Ideally hedges should be cut to form an 'A' shape, allowing light to reach the lower branches, which leads to a healthier and stronger hedge, whilst also offering a better habitat for wildlife and shelter for livestock;
- Native hedges are generally cut to a height of between 2 and 3m in sections on a three year rotation to allow fruit and berries to develop and remain as a food source for birds through the winter.