

Landscape specification

NOTES:

1. A Soil Resource Survey and Plan has been prepared for Willowbrook South by Tim O'Hare Associates dated 11 November 2020.
2. Any changes to specifications which may be prepared during subsequent stages of work (tender/construction) shall refer back to the landscape planning suite of drawings (TC22017 WBS.LA100 - LA104) and to ensure that this specification remains part of the contract documents.

Ground preparation: Protect retained trees/areas of retained soil where structural landscaping is proposed in accordance with an approved Arboricultural Method Statement and Tree Protection Plan. Tree protection fencing shall be erected as noted within an Arboricultural Method Statement and Tree Protection Plan. The fence is to be maintained for the duration of the works. Protection of existing trees against damage to be in accordance with the BS 5837:2012 - Trees in relation to design, demolition and construction - Recommendations. Protective fence to be approved by the LPA. Any excavations shall be in accordance with B.S. 8000 part 1:1989.

Site won soil: Refer to Chapter 5 (Discussion) and Chapter 6 (Soil Resource Plan) of Tim O'Hare's report. Where site won soil is to be re-used, it must be based on the Soil Resource Survey and Plan prepared by Tim O'Hare and it must also be in accordance with Cardiff Council's approved Soils and Development TGN. However, there must be no excavation of soil for re-use as part of landscaping until the Soil Resource Survey and Plan has been approved by Cardiff Council.

Imported soil: Refer to paragraph 6.10 (Imported Topsoil) of Tim O'Hare's report. Where soils need to be imported to make up for any deficiency of soil on site, then it must be suitable for their specific use, be this for tree planting or grass seeding.

A Soil Scientist shall check samples of any imported soil to ensure suitability and to check that it is in accordance with the specification. Prior to any soils being imported to site, a Soil Scientist shall submit an interpretive report to the LPA to demonstrate its fitness for purpose. For trees, in particular, this means specifying soils that maintain good drainage and aeration qualities to depth on handling and are of appropriate pH on placement for the planting proposed.

Soil placement should only take place where the receiving substrate is fit for purpose and under the supervision of a Soil Scientist. For example, where large container or root-balled tree planting is proposed, topsoil should not be employed onto compacted, poorly drained sub-soil, or any soil which has been compacted to bulk densities that will impede root growth. To ensure root growth is not impeded, bulk densities should be as provided in Cardiff Council's Soils and Development Technical Guidance Note.

Subsoil: Where required, and only if stated in the Soil Resource Survey and Plan, supply approved imported subsoil to B.S. 8601:2013 Specification for subsoil and requirements for use - Multipurpose subsoil, to make up any deficiency in on-site

subsoil. Spread and level to a depth as noted below (see soil profiles). Imported soil must be tipped and compacted only to appropriate bulk densities. Imported subsoil to be broken-up where there has been compaction. The imported subsoils must be suitable for their specific use

For in-situ subsoil, it shall not be disturbed other than where there has been compaction.

Topsoil: Where required, and only if stated within the Soil Resource Survey and Plan, supply approved imported topsoil to B.S. 3882:2015 Specification for topsoil - Multipurpose topsoil, to make up for any deficiency in on-site topsoil. Spread and level to a depth as noted below (see soil profiles). Certification of soil shall be in accordance with BS 8601/3882 and a topsoil and subsoil specification should be submitted to the Local Planning Authority setting parameters of acceptable soils which can be imported, such as a sandy loam textural range. The sand contents should consist of medium to fine grades at approximately equal quantity, including a pH of 6.5-7.5.

Imported soils shall also be suitable for the proposed landscape types, since the Standards allow for much flexibility in what is a certifiable soil, but this does not mean it is appropriate to support large root-balled trees for example. The Soil Survey and Plan by Tim O'Hare Associates would need to be referred to.

Soil handling: Soil protection, handling, storage, amelioration and placement must be informed by a Soil Resource Survey and Plan, prepared in accordance with Cardiff Council's Soils and Development Technical Guidance Note.

- Soil profiles:** Soil profiles outside of retained, in-situ soil, should comprise:
- 300mm topsoil over 600mm subsoil for trees planted within shrubs or where trees are planted in grass areas.
 - 300mm topsoil over 300mm subsoil for shrub planting areas (with no trees) and the adjacent grass areas, and 150mm topsoil over 150mm subsoil for grass areas only.
 - Refer to drawing WBS.LA103 'Soil volumes for proposed trees' which shows the extent of soil areas for proposed tree planting.

Excavation: Any excavations in order to win soil for re-use as part of landscaping must be undertaken in accordance with BS 3882:2015, BS 8601:2013 and the 2009 DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

Trees: excavate a few centimeters shallower than root-ball and twice its width with sloping, scarified sides. Root-balls of trees shall be set on a 150mm depth of horticultural grade sharp sand. Semi-Mature trees shall be set on a 400-450mm depth of horticultural grade sharp sand. **Shrubs:** excavate 300 x 300 x 300mm depth.

For trees in rain gardens, refer to the below, but components will need to be confirmed by a drainage engineer.

All non-perishable root-ball wrappings and cages to be removed except where root-ball collapse is a concern, in which case cut and peel back to one third root-ball height. Perishable wrappings and cages to be retained only where root-ball soils lack cohesion due to their textural qualities, but are then cut and peeled back to one-third root-ball height once the tree is in position, with the cut and peeled back parts removed. Perishable wrappings and cage constitute single thickness, untreated hessian and non-galvanized, narrow gauge wire. Non-perishable include double wrapped or treated hessian and cut, galvanized wire.

Backfilling: Trees: Backfill to reinsteate 300mm over 600mm profile and do not add compost or fertiliser unless soil analysis demonstrates the need. If compost is applied it should be worked in generally to the top 150mm, not back-filled into tree pits. Shrubs: Backfill to reinsteate soil profiles provided above and do not add compost or fertiliser unless soil analysis demonstrates the need.

Cultivation: Do not cultivate tree and shrub planting soils, only cultivate prior to planting if the soil is compacted (for example due to site/construction activities). For grass seeding areas, cultivate topsoil to a loose friable tith suitable for grass seeding. Collect and remove from site all stones, builders' rubble and other deleterious material over 50mm in any dimension.

Amenity grass: Grass areas to be sown at a rate of 35g/m² with a suitable grass seed mix such as Germinal A19. Initial grass cutting and edge trimming down to 50mm.

Species rich grass: Species rich grass, shown at the attenuation basins, shall be sown at a rate of 4g/m² with a suitable seed mix such as EM8: Meadow Mixture for Wetlands (by Emorsgate Seeds or equivalent). Ensure that the ground is not highly fertile prior to sowing. Establish and cut in accordance with manufacturer's recommendations. **NOTE:** Species rich grasses to be agreed with Cardiff Council's Parks department for the attenuation features.

Annuals: annuals shall be sown at a rate of 2g/m² with a suitable mix such as EC1: Standard Cornfield Mixture (by Emorsgate Seeds or equivalent). Establish and cut in accordance with manufacturer's recommendations.

Planting areas: Plant specification to be in accordance with the HTA National Plant Specification. Tree planting to be in accordance with BS 8545:2014 - Trees from nursery to independence in the landscape recommendations.

Tree planting: No tree to be planted that does not conform in full with **Table 1, p.21, BS 8545:2014**, to be established via nursery inspections prior to and on delivery of trees. The positioning of proposed trees are to avoid underground services. **No tree to be substituted by an alternative without formal agreement by the LPA, but prior consultations with nurseries should clearly establish availability.**

Root ball shaving (refer to the image below): All container trees to be subject to root-ball shaving:

- Shave outer periphery of the root ball a maximum of 2" thick. All roots growing around periphery are removed.
- Shaving to be conducted using a sharp blade or hand saw eliminating no more than needed to remove all roots on the periphery of root ball.
- Shaving can be performed just prior to planting or after placing in the hole.

Tree anchoring: Rootball fixing strap system to be provided by Platipus to secure the trees.

Supplier: Platipus. Product: Tree Anchoring with Strap. Product Code: RF1s/RF2s (depending on tree size). Ref: www.platipus-anchors.com/applications/tree-and-irrigation/ rootball-fixing-system---strap/

Note: Above ground stake supports for trees shall only be used where ground anchoring methods prove ineffective, but shall not be used to support trees with defective root-balls. Staking shall comprise x3 untreated wooden stakes set with two to the SW side and attached low (never more than one-third tree height) using flexible ties such as hessian nature-ties, arbor-tie or rubber straps. Ties shall allow for flexure without abrasion of the stem and all stakes and ties shall be removed before the third growing season.

Root barriers: Root barriers shall be installed (to be provided by GreenBlue Urban. Product: ReRoot 2000) and at a suitable depth to protect buried services. It shall be installed approximately 250mm parallel to the buried services and within 3m of the proposed trees. Proposed trees to be off set a minimum of 1m from the position of the buried services.

Bark mulch: Provide and spread evenly over all planting areas an organic graded bark flakes or similar approved bark mulch to a depth of 50mm. For trees, and in particular those planted in grass, apply a 50mm depth of mulch to give 2m² mulching circles, but tapered to 25mm depth over rootballs - mulch to be tapered so that the root flare of tree is clearly visible. Ensure that there is a coverage area of 1200mm radius for trees, measured from the tree stem. Mulching shall be free from toxins, pathogens and other extraneous substances harmful to plant, animal or human life. Ensure that all weeds have been cleared and that the soil have been watered thoroughly prior to mulching.

Maintenance: All landscape areas to be maintained in accordance with B.S. 7370 Part 3:1991 and Part 4:1993; including weed control, and adjustment to tree stakes and ties. Refer to the below.

General notes: Substitutions, if made, should be similar in size, form and water demand. Plants shall be arranged to avoid straight lines and geometric patterns.



Willowbrook South

Specifications

WBS.LA.104

Landscape programme

A qualified Landscape Architect shall be appointed to inspect implementation of the landscape scheme at key stages/milestones, such as during the import and spreading of soils and planting of trees and shrubs, to ensure that the soft landscape areas are in accordance with the approved drawings and specifications. The Landscape Architect shall report back to the LPA and provide photographs as necessary.

Tree protection fencing shall be erected as noted within an Arboricultural Method Statement and Tree Protection Plan. The fence is to be maintained for the duration of the works. Protection of existing trees against damage to be in accordance with the BS 5837:2012 - Trees in relation to design, demolition and construction - Recommendations. Protective fence to be approved by the LPA.

Site clearance shall be undertaken prior to any topsoil stripping. Stripping topsoil shall be undertaken before the beginning of general excavations or filling. Strip topsoil from areas where there will be regrading, buildings, pavings/ roads and other areas shown on the drawings.

Hard landscape works shall commence as soon as the building work is complete.

Import of soils shall be provided as necessary to make up any deficiency of topsoil on site and to complete the work. Tree planting shall be implemented during the planting season, November - March, for Root Balled trees, and any time of the year for container grown trees. Shrub planting (container grown species) shall be implemented as soon as practicable after construction of the buildings and hard landscape areas.

Grass seeding for amenity grass to be undertaken as soon as practicable after the building works, hard landscape and shrub planting have been completed, and to make good areas due to construction activities. Seeding of species rich grass areas to be sown either in April, or in October, and in accordance with manufacturer's recommendations.

Landscape maintenance

Soft landscape areas to be maintained in accordance with **B.S. 7370 Part 3:1991** and Part 4:1993. The maintenance of trees should be in accordance with **BS 3998:2010** and **BS 8545:2014**. Maintenance operations to successfully establish plants shall be carried out for the first 5 years after planting.

Maintenance operations for successful plant establishment shall include watering; weed control; fertiliser application; pest and disease control; pruning; and litter picking. Watering for trees should follow an irrigation plan in accordance with BS 8545:2014 and must be in anticipation of drought.

Tree pruning should be in the winter months or summer (July-August). Cherries must be pruned only in the summer months after flowering.

The replacement of failed trees should occur once reasons for failure have been identified and amendments to the specification are made as necessary. Shrubs which die, are removed or become seriously damaged shall be replaced in the next planting season with others of similar size and species, to be agreed in writing by the Local Planning Authority. For all new landscape areas, the following maintenance programme shall be undertaken:

| | |
|---|---|
| Inspections: | January - December. Replace dead plants when necessary. |
| Watering: | When necessary in accordance with an irrigation plan. |
| Pest and disease control: | January. |
| Litter removal: | January - December |
| Weed control: | February - May; July; and September. |
| Prune: | Winter months or summer. |
| Fork over planting beds: | March. |
| Cut grass and trim edges: | March - October. |
| Apply fertiliser: | April. |
| Lightly fork over planting beds: | September. |
| Rake / scarify grass | September. |
| Mulch: | Mid to late spring. |

Watering: Water trees in accordance with an irrigation plan as per BS 8545:2014. Watering shrubs shall be carried out to maintain vigorous plant growth. Water shall soak into the ground; it is not sufficient to dampen the surface. Water must be applied slowly to avoid damage to plants.

Weed control: Hand weed to remove all weeds and their roots using a hoe, trowel or fork. Apply a herbicide to kill re-growth when required.

Fertiliser: Applications of fertiliser to be carried out early in the growing season. Ensure correct fertiliser application. Inspect once a month and after very heavy winds. Adjust ties if necessary to conform to stem growth or to prevent chafing.

Pruning: At the appropriate season for the species, pruning to be carried out to remove all damaged diseased or dead wood. Prune shrubs to ensure the plant is kept well balanced and in good shape. For trees, pruning shall be in accordance with **BS 3998:2010**.

Pest and disease control: To be carried out if necessary and in accordance with best practice.

Litter removal: Collect and remove all extraneous rubbish.

Fork over planting beds: Prick up trodden or compacted soil surfaces to aerate the soil without damaging the plants.

Mulching: Mulching to be topped up annually over the duration of the agreed maintenance period. At the end of the maintenance period, undertake a final mulch. Ensure that the soil is thoroughly moistened prior to remulching, applying water where necessary. Planting beds and trees: re-mulch to a minimum depth of 50 mm.

Mowing: Amenity grass areas shall be managed to a height of 40mm. Species rich grass areas to be mowed as advised by the supplier.

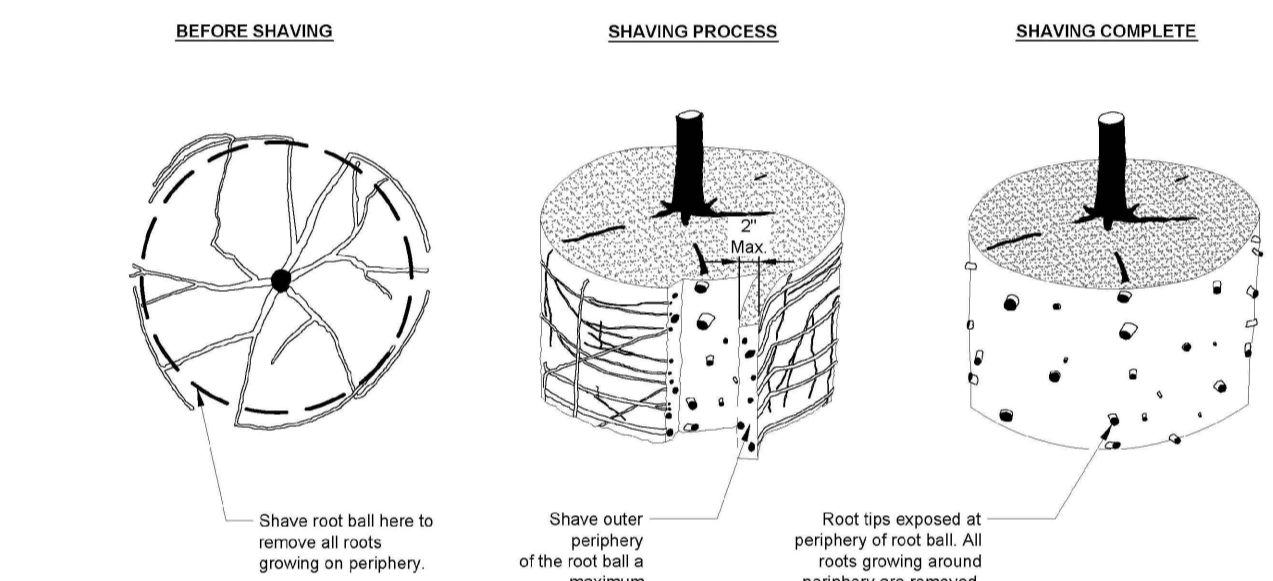
Raking/Scarifying: Relieve thatched conditions and remove dead grass in the autumn over all grassed areas.

Spiking (Aeration): Aerate to increase water, nutrient and oxygen movement into the soil.

General: If grass surface is disturbed by over use, restore by firming or lifting with a fork

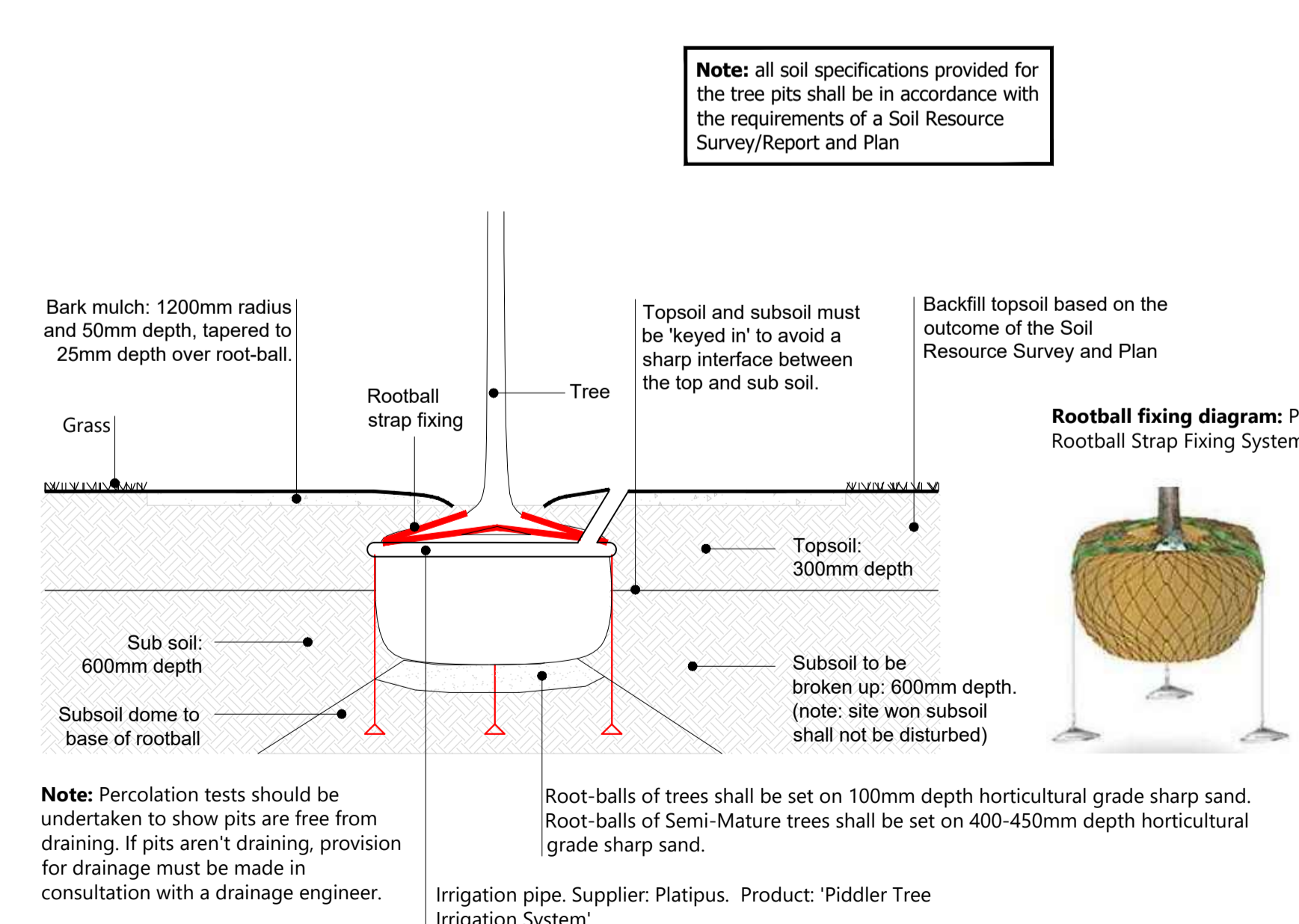
Any newly planted trees, plants or hedgerows, which within a period of 5 years from the completion of the development die, are removed, become seriously damaged or diseased, or in the opinion of the Local Planning Authority otherwise defective, shall be replaced. Replacement planting shall take place during the first available planting season

Root ball shaving



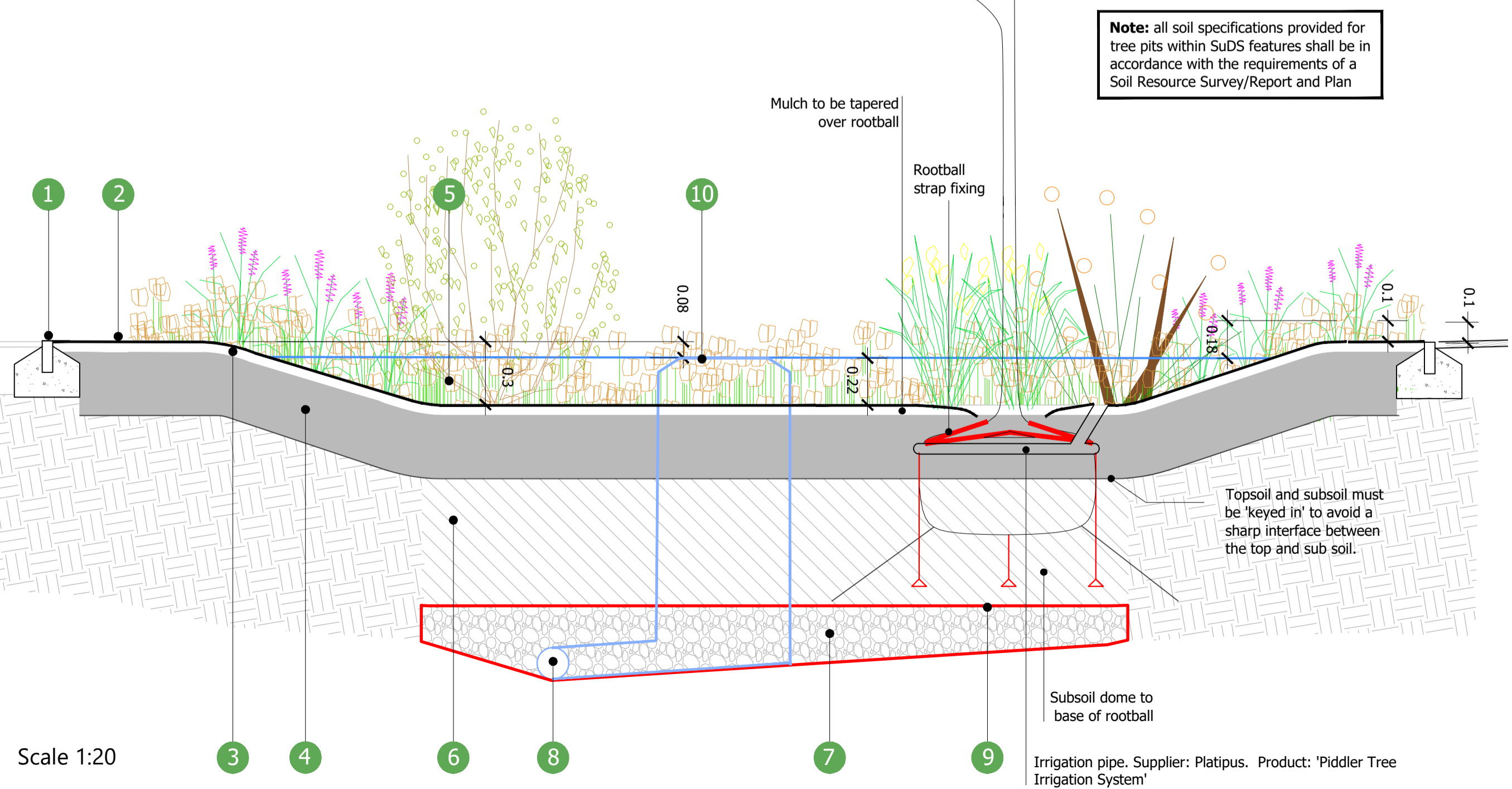
Notes:
1- Shaving to be conducted using a sharp blade or hand saw eliminating no more than needed to remove all roots on the periphery of root ball.
2- Shaving can be performed just prior to planting or after placing in the hole.

Tree pit section



Scale 1:20

Typical tree pit section in rain garden



Scale 1:20

- 1 Kerbs to engineer's details.
- 2 Verge
- 3 20 mm sized graded aggregate laid loose as stone mulch 50-70mm depth. No geotextile/ membrane to be installed under the gravel.
- 4 300 mm depth site won topsoil amended and ameliorated in accordance with the Ciria SuDS Manual box 18.1 to facilitate drainage.
- 5 Shrubs, grasses, herbaceous and groundcover planting
- 6 600mm depth site won subsoil amended and ameliorated in accordance with the Ciria SuDS Manual box 18.1 to facilitate drainage.
- 7 Drainage layer: 15/ 25 mm sized clean stone
- 8 Perforated drainage pipe: refer to engineer's details
- 9 Permeable geotextile

TC22017 WBS.LA100-104.dwg

23 September 2024



Floor 7, Brunel House, 2 Fitzalan Road, Cardiff, CF24 0EB
© Tir Collective Limited 2024. Registered Company No. 13489264