

ArborSystem®

Installation & Maintenance Manual



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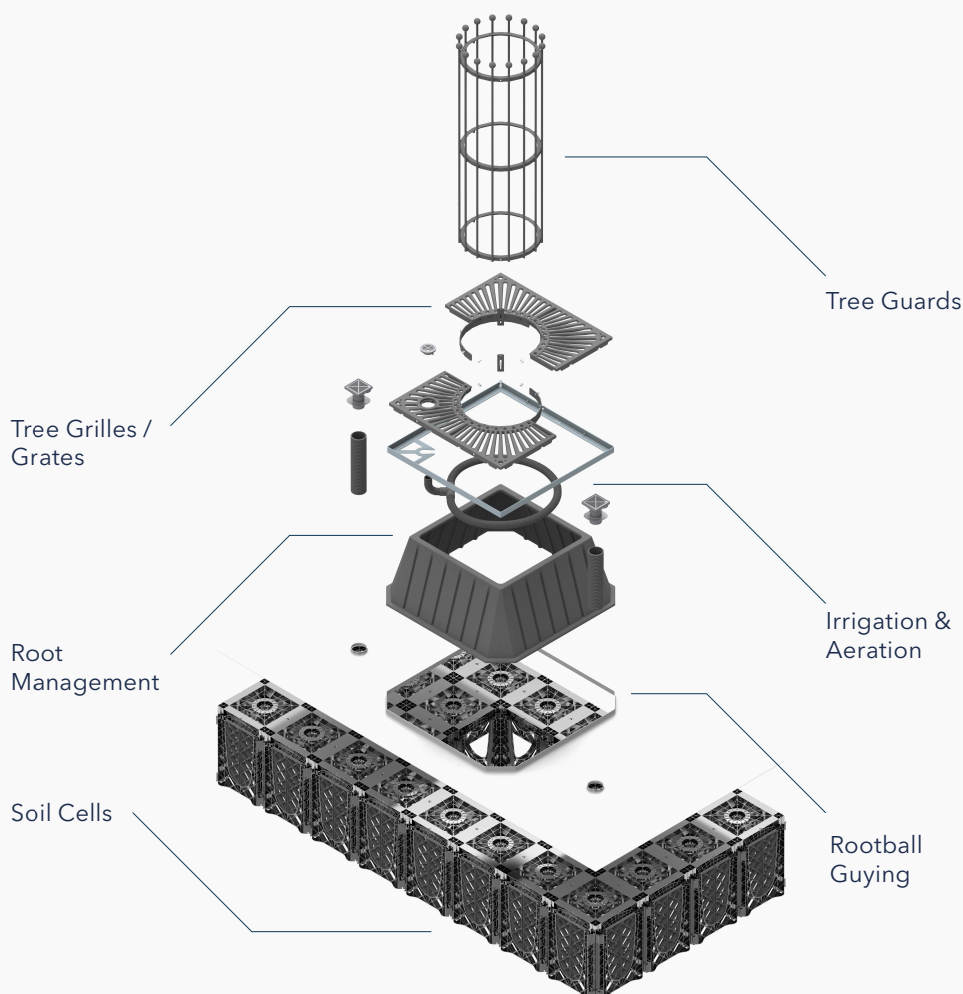
System Description, Definitions & Material Handling

- **1.1** ArborSystem® Description
- **1.2** Definitions
- **1.3** Delivery, Storage & Handling

1.1

ArborSystem® Description

- The ArborSystem® is a complete system that includes but is not limited to the following integral components: RootSpace® Pavement Support System, geogrid/geofabric, RootRain™ aeration/irrigation piping, fittings, ArborVent™ aeration surface inlets, ReRoot™/ RootStop™/ RootDirector™/ RootForm™ root management products, ArborGuy™ underground rootball anchoring system and inspection portals, Tree Grate/ Grilles and guards.
- RootSpace® is a pavement support system designed specifically for the purpose of providing maximum void space for uncompacted soil and/or stormwater management (bioretention) to promote healthy tree growth under load-bearing pavement surfaces.
- The ArborSystem® has the flexibility to be assembled around existing structures, utilities and in tight constraints, specific to the site requirements and achieve the required soil and/or stormwater volume. The system can be easily disassembled and reassembled to allow for utility repair within and/or below the system.



1.2

Definitions

- **AERATION/IRRIGATION SYSTEM:** A system of small perforated piping that is placed around the tree rootball, and within the pavement support system that has inlets at finished grade. The GreenBlue Urban system is referred to as the RootRain™. This system is used to provide a means of getting air and water into the soil and rootzone, and a means of allowing organic gases, from the decay of organic matter within the soil, to escape. Manual or automatic irrigation may also be incorporated into this system as well as LID / SuDS applications from stormwater runoff.
- **AGGREGATE BASE COURSE:** Aggregate material between the top deck of the RootSpace® Pavement Support System and the pavement surface above. It is designed to support the pavement system and distribute loads across the top of the RootSpace® Pavement Support System.
- **BACKFILL:** Clean, native excavated fill, free from organic matter, frozen materials, stones larger than 3" (75mm) in diameter, debris and other foreign substances.
- **COMPACTION:** The method of mechanically increasing the density of soil. Soil compaction is measured using the Proctor Test (ASTM D1557-91).
- **CONSULTANT:** The person or entity, (Landscape Architect, Architect, Civil Engineer) employed by the Owner to represent their interest in the design and review of the Work.
- **FINISH GRADE:** Elevation of the finished pavement or planting surface.
- **GEOGRID WITH INTEGRATED NON-WOVEN GEOTEXTILE:** High strength geogrid comprised of stretched monolithic polypropylene or polyester flat bars with welded junctions and a mechanically bonded filter geotextile welded within the geogrid structure. It is used for the reinforcement of granular aggregate pavement bases.
- **GEOGRID:** A net-shaped woven, uniaxial or biaxial grid. It is inert to biological degradation, resistant to naturally occurring chemicals, alkalis, and acids. It is used for the reinforcement of granular pavement bases by providing a stabilizing force within soil structure as the fill interlocks with the grid.
- **GEOTEXTILE / GEOFABRIC / FILTER FABRIC:** A fabric composed of high tenacity polypropylene or polyester fibers which are woven into a network such that the fibers retain their relative position. It is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids, and is used as separation layer between different aggregate types, and for the reinforcement of granular aggregate pavement.
- **PAVEMENT:** The hard surface of a road, street, plaza or sidewalk.
- **PLANTING SOIL:** Soil as defined in Section 32 91 13 - Planting soil is a consistent blend of silt, sand, clay and organic material.
- **REINFORCING COLLAR:** A trench between the pavement support system and surrounding soil, lined with geogrid with integrated non-woven geotextile, filled with granular base course and compacted to Consultants specifications.

- **RIBBED ROOT BARRIER:** Linear ribbed root barrier (made from recycled material) with vertical integral root training ribs, also referred to as ReRoot™. It is used to direct tree roots to a deeper soil profile to prevent root heave and damage to pavement and other built infrastructure.
- **ROOT & MOISTURE BARRIER:** An impermeable, puncture resistant, linear membrane to prevent root and moisture penetration into surrounding areas. Also referred to as RootStop / Root Barrier. Made from recycled material.
- **ROOTBALL ANCHOR SYSTEM:** A below grade system comprised of cables, spearhead or deadman anchors and web strap used for anchoring the tree rootball into the ground, as an unobtrusive and beneficial alternative to above ground staking and guying. Referred to as ArborGuy™. The rootball anchoring system eliminates damage to the tree trunk caused by tree stakes and guy wires.
- **ROOTSPACE® PAVEMENT SUPPORT SYSTEM:** A modular, engineered, pavement support system comprised of interlocking vertical Uprights, Infill Panels and an AirFlow™ Lid that allows for air movement above the soil profile. This system is designed to be filled with planting soil for tree rooting; bioretention soil for tree rooting and stormwater attenuation and pollutant removal; or left empty and used for stormwater infiltration, detention or retention. It is an engineered, load-bearing system that is designed to be used sub-surface under pedestrian and/or vehicle rated pavement surfaces. Made from recycled material.
- **SOIL INSPECTION PORT:** A vertical pipe extending from the pavement surface down through the top of the pavement support system. This port is used for the sampling and inspection of the soil within the pavement support system and can be used as a means of adding nutrients to the soil.
- **SOIL MEDIA:** (see planting media)
- **SUB-BASE COURSE:** Aggregate material between the bottom of the RootSpace® Pavement Support System and the compacted subgrade below, designed to distribute loads from the RootSpace® Pavement Support System to the subgrade.
- **SUB-GRADE:** Surface or elevation of subsoil remaining after completing excavation.
- **TREE PIT / TREE WELL:** Excavated space or space within the pavement support system that filled with appropriate soil media for tree planting.
- **TREE PIT OPENING:** The pavement opening within which a tree is planted.
- **UNIT PAVER SETTING BASE COURSE:** Aggregate or granular material used between the aggregate base course and unit surface pavers, designed as a setting and leveling bed for the unit pavers.
- **UNIT PAVERS:** Segmented units typically made of concrete, clay, or stone and used to create a pavement surface.
- **WALKED-IN:** A process for light compaction of soils by walking through the soil during and following soil placement.

1.3

Delivery, Storage & Handling

- Components shall be unloaded, handled and stored in an area protected from traffic and in a manner to prevent damage from other construction activities. Inspect materials to ensure that specified materials have been received.
- Store all material on pallets, with pallet wrap intact until required for installation. Unwrap pallets carefully ensuring unstable sections don't collapse dangerously.
- Protect geogrids and geofabrics from physical damage and from temperatures in excess of 150°F (65°C). If geogrids and geofabrics are to be left exposed for more than 7 days, cover them to prevent direct sunlight exposure.
- Plastic components may become brittle at cold temperatures. Use caution when handling plastic components below 15°F (-10°C).
- Ensure that all unrelated construction traffic be kept away from the limits of excavation until project is complete and final surface materials are in place.
- The RootSpace® Pavement Support System should not be left exposed to extreme temperatures, high wind conditions, snow, ice or copious amounts of rainfall.

2

Site Preparation, Excavation & Drainage

- **2.1** Site Conditions
- **2.2** Site Preparation & Layout
- **2.3** Excavation Below Grade
- **2.4** RootSpace® Excavation Depths
- **2.5** RootSpace® Excavation Widths
- **2.6** Subgrade Preparation & Grading
- **2.7** Installation of Sub-Drainage System
- **2.8** Sub-Base Preparation

2.1

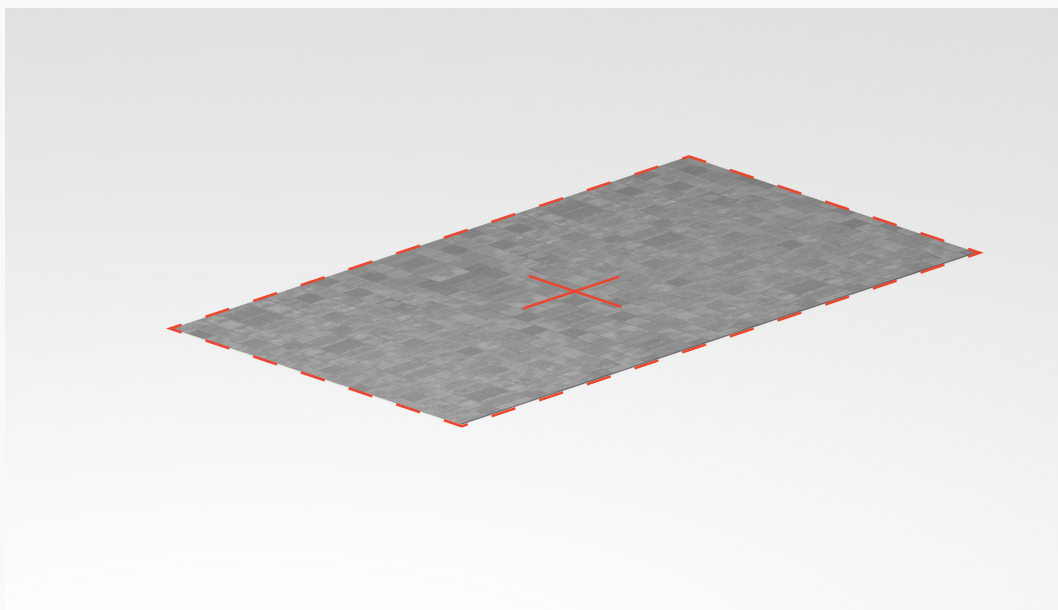
Site Conditions

- Before proceeding with full scale excavation work, confirm nature of existing soil conditions and in particular the drainage characteristics of the existing soil. Additional drainage may be required per the engineer's design.
- Before commencing work on site, review installation procedures and coordinate installation with other work affected, such as grading, excavation, utilities, construction access, erosion control, etc.
- Do not proceed with installation when subgrades, soils and planting soils are in a wet, muddy or frozen condition.
- Use caution when installing pavement support system in extreme cold weather.
- New and existing utilities can be incorporated within the pavement support system (see "Integrating Utilities within the RootSpace® Pavement Support System" section and "Utilities & RootSpace® Guide").

2.2

Site Preparation & Layout

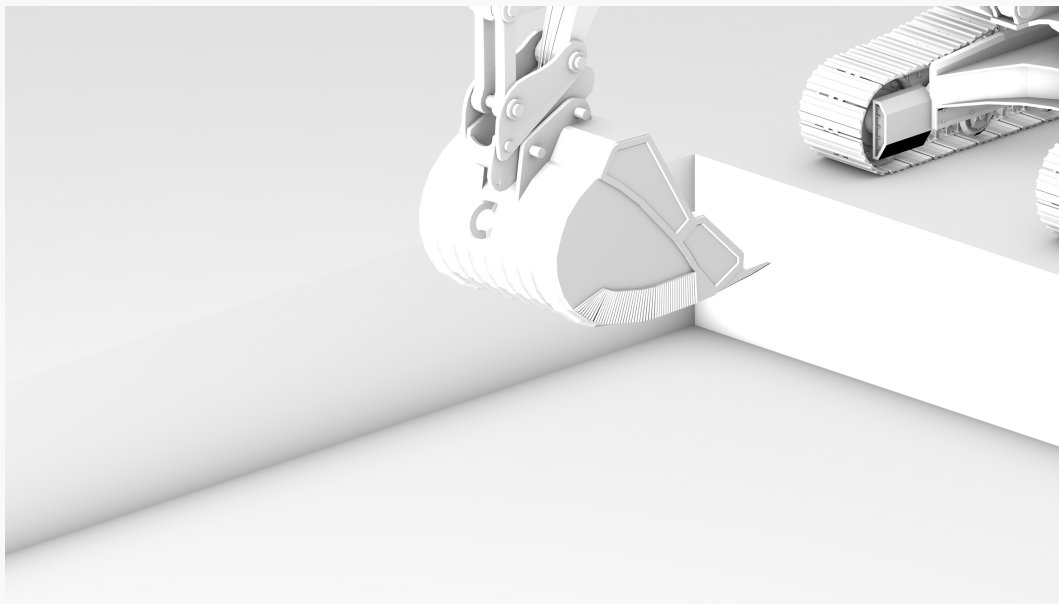
- Tree Pit Layout: Layout tree pit locations and dimensions using string lines, survey pegs and marking paint. Obtain Consultant's approval of layout before proceeding with excavation.
- Tree Pit Depths: Confirm excavation depth with reference to finished pavement elevation. Allow for granular base course layer and, where applicable, drainage layer.
- As required by local, state or federal regulations, locate underground utilities before proceeding with excavation.



2.3

Excavation Below Grade

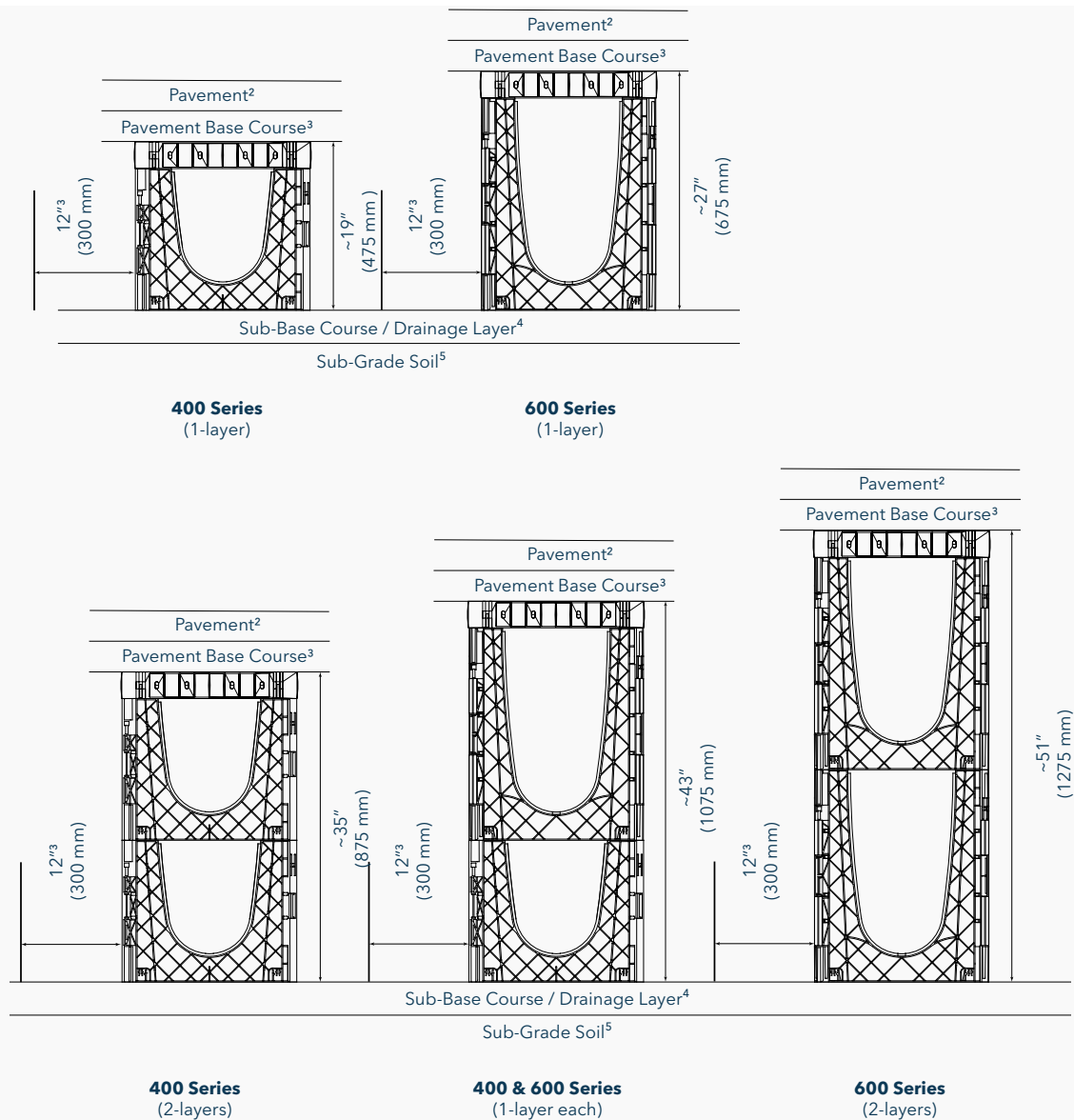
- Excavation required for the installation of all pipes and structures shall be made to the depths and widths indicated on the Drawings. Excavation shall include a minimum of 8-12" (200-300mm) beyond all sides of the RootSpace® Pavement Support System for proper backfill and compaction. The Contractor shall ensure that the bottom of the excavation is firm and dry and, in all respects, acceptable to the Consultant.
- All objectionable material encountered within the limits indicated shall be removed and disposed of by the Contractor.
- All loose or protruding rocks in excavation faces shall be secured or otherwise removed to finished grade. All cut slopes shall be uniformly dressed to the slope, cross-section and alignment shown on the Drawings or as directed by the Consultant or authorized representative.
- Furnish, install, monitor and maintain excavation support (e.g., shoring, sheeting, bracing, trench boxes, etc.) as required by federal, state/provincial and local laws, ordinances, regulations and safety requirements.. Support the sides of excavation to prevent any movement which could in any way reduce the width of the excavation below that necessary for proper construction and protect adjacent structures from undermining, settlement or other damage.



2.4

RootSpace

Excavation Depths



Notes

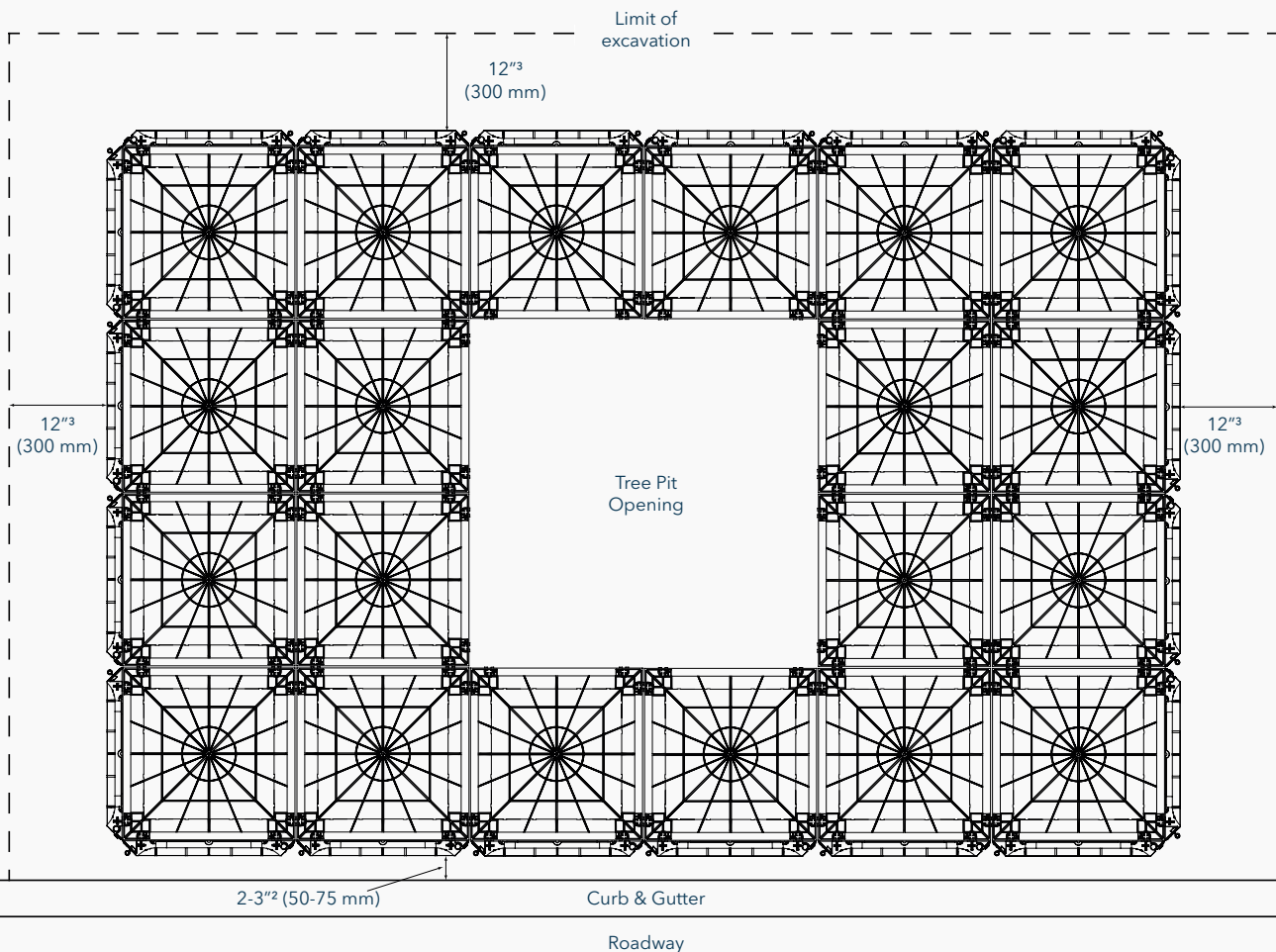
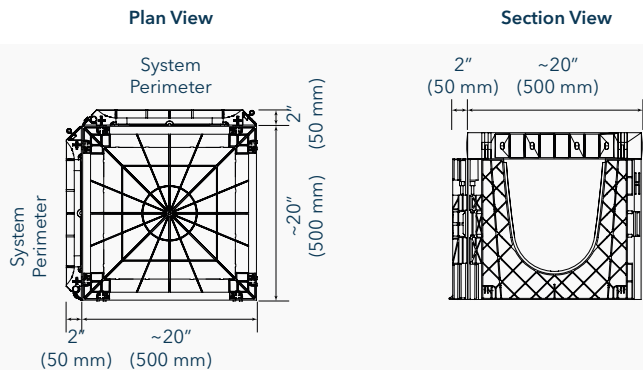
1. Pavement design per engineers specifications.
2. Pavement base course per engineers specifications. 4" (100 mm) minimum depth of a compactable angular aggregate placed on top of a geogrid with an integrated geocomposite. Compact base course to a minimum of 95% standard proctor density.
3. Excavate a minimum of 12" (300 mm) beyond the perimeter of the RootSpace® Pavement Support System to allow for proper backfill and compaction. Compact backfill to a minimum of 95% standard proctor density.
4. Total excavation depth is a sum of the RootSpace® Pavement Support System height, plus the thicknesses of the sub-base course/drainage layer, the base course and the pavement.
5. Sub-base course/drainage layer per engineers specifications. 4" (100 mm) minimum depth of a compactable angular aggregate, placed on a geogrid or filter fabric, based on project design requirements. Compact sub-base/drainage layer to a minimum of 95% standard proctor density.
6. For sub-grade soils with an allowable bearing capacity of less than 2000 psf (96 kPa), a geotechnical engineer should evaluate the specific conditions.

2.5

RootSpace

Excavation Widths

Note:
When calculating the overall system dimensions, add 2" to each of the outside edges to account for the system uprights below.



Notes

- Excavate a minimum of 12" (300 mm) beyond the perimeter of the RootSpace® Pavement Support System to allow for proper backfill and compaction. Compact backfill around the perimeter to a minimum of 95% standard proctor density
- Allow a maximum of 2-3" (50-75 mm) between the back of the curb and the RootSpace® Pavement Support System to allow for proper backfill and compaction. Backfill the space between the back of the curb and the RootSpace® Pavement Support System using sand, aggregate fines or non-shrink grout, and compact to a minimum of 95% standard proctor density.

2.6

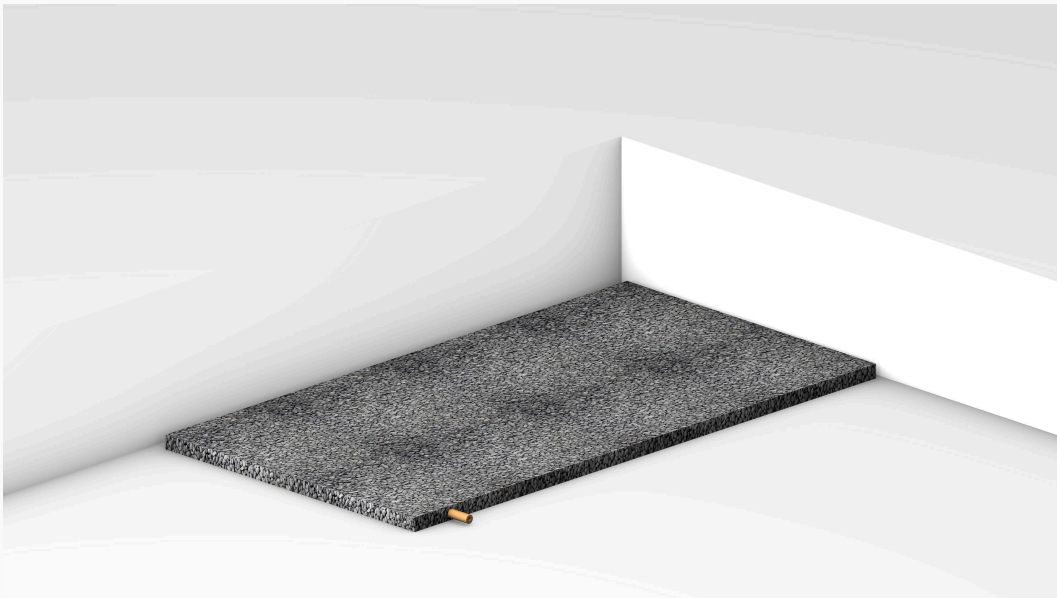
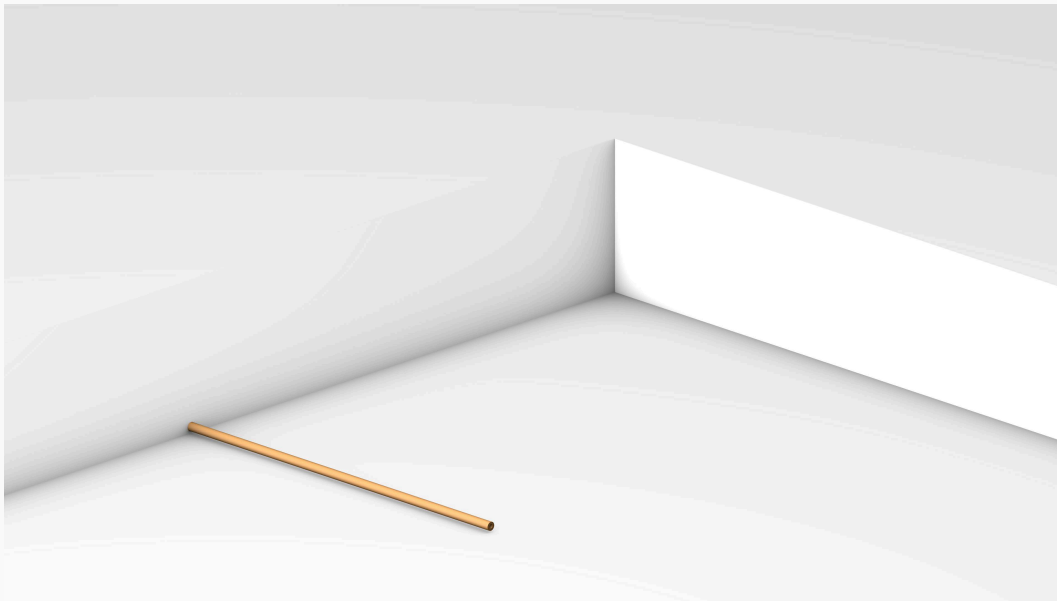
Subgrade Preparation & Grading

- Subgrade shall be unfrozen, level, and free of lumps or debris with no standing water. Do not use frozen materials or materials mixed or coated with ice or frost.
- If Contractor fails to maintain the subgrade properly, the Contractor shall remove the unsuitable material. If the bottom of any portion of the excavation is removed below the limits shown on the Drawings, it shall be restored per the Consultant to the elevation shown in the Drawings. Compacted native earth fill is not acceptable.
- If in the opinion of Consultant or authorized representative, the subgrade, at or below the normal grade of the excavation as indicated on the Drawings, is unsuitable for construction; it shall be removed to such depth and width as the Consultant may direct and be replaced with suitable material as directed by the Consultant.
- UK - Base of excavation, subject to opinion of Consultant or authorized representative, should be tested for California Bearing Ratio. A minimum rating of 3% is required, however a tree pit base of 2% CBR should be covered by Twinwall Geonet / soil reinforcement netting.
- NA - Subgrade shall be compacted to at least 95% Proctor Density, or as specified by the consultant.

2.7

Installation of Sub-Drainage System

- Install sub-drainage piping as per drawing layout and elevations.



2.8

Sub-Base Preparation

- Per engineering requirements, a reinforcement geogrid may be required between the native soil and the sub-base layer. Overlap geogrid a minimum 12" (300 mm) or as recommended by manufacturer.
- Install specified leveling bed, 4" (100 mm) minimum depth of free-draining, compactable angular crushed stone, 12" (200 mm) minimum beyond the footprint of the structure. Stone shall be rolled, or plate compacted (minimum of three passes) to provide a **flat** surface; free from lumps and debris or any other sharp materials. Base shall be compacted to 95% Proctor Density minimum, or as specified by the Consultant.
- Maximum allowable tree pit sub-base slope is 2% (1:50). Slopes greater than 2% (1:50) are subject to engineers review and approval.
- For tree pits designed with stormwater infiltration, please refer to our SuDS / LID Installation & Maintenance Manual.



3

Installation of the Pavement Support System

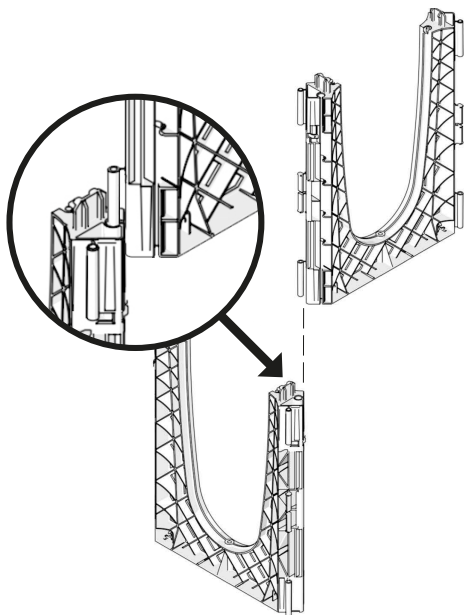
- **3.1** Assembly of RootSpace® Pavement Support System
- **3.2** Integrating Utilities within the RootSpacec Pavement Support System
- **3.3** Installation of RootSpace® Pavement Support System
- **3.4** Installation of Root & Moisture Barrier
- **3.5** Backfilling the Outside Perimeter

3.1

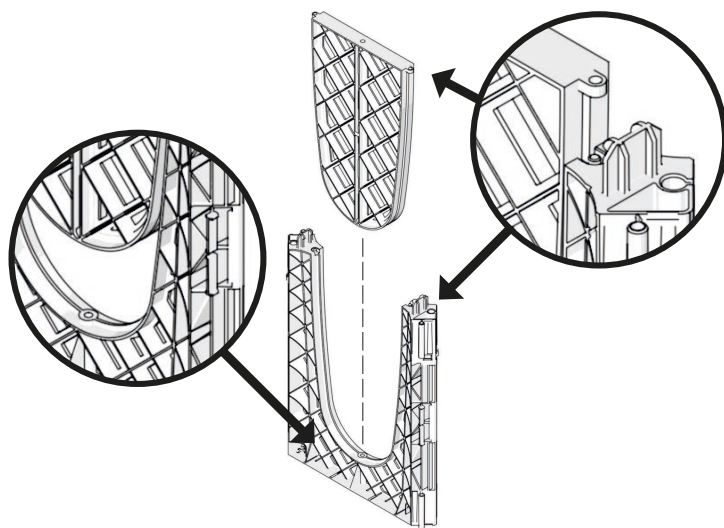
Assembly of RootSpace® Pavement Support System

- Determine whether the tree pit(s) is an interconnected assembly (typical method) or consists of independent module layout – see specification and layout details. If layout contains independent module assembly, request a copy of the separate “RootSpace® Independent Assembly Installation Instructions” for installation details specific to independent assembly.
- Identify tree location by marking out the inner dimensions of the tree pit opening. This area remains void of the RootSpace® Pavement Support System in a single layer application.
- Each unit is mainly made up of two components, AirFlow™ Lid and Upright Panel (with the option of an Infill Panel for increased lateral stability). When joining more than one unit together each unit will share a common upright Panel.
- Joining two Upright Panels: First engage lower tab into slot, then align top tab into top slot. Push unit down until the panels lock into place. Continue this process across the entire excavation. Do not install upright Panels in the top layer of the tree pit openings.
- Multi-Layer System: Place Upright Panel directly over the lower Upright Panel and push unit downward until it locks in the top layer at the tree pit opening. Continue this process across the entire lower level. Do not install Upright Panels in the tree pit openings. If assembling a multi-layer system, see specifications and layout details to determine whether bottom layer(s) of tree pit opening requires placement of RootSpace modules.
- Installing optional Infill Panels: Locate male and female guides and slide panel down. Ensure panel pins locate top (2) and base (1) lock into place.
- Installing AirFlow™ Lid: Locate the AirFlow™ Lid over the tabs on the Upright Panel and push down until the AirFlow™ Lid locks in place. Before installing AirFlow Lids, determine which method of soil filling will be used (see section 4.3 for details).
- Before filling with soil, install single row of AirFlow™ Lids around the perimeter and throughout the center at a minimum of every three rows, in a ‘ladder’ formation, to ensure construction is square.
- Utilities within the RootSpace® Pavement Support System should meet specifications as required by utility company’s standards. This may require special treatments, barriers and details to achieve this - see “Utilities & RootSpace® Guide” for more details.
- The RootSpace® Pavement Support System should not be left exposed to extreme temperatures, high wind conditions, snow, ice or copious amounts of rainfall.

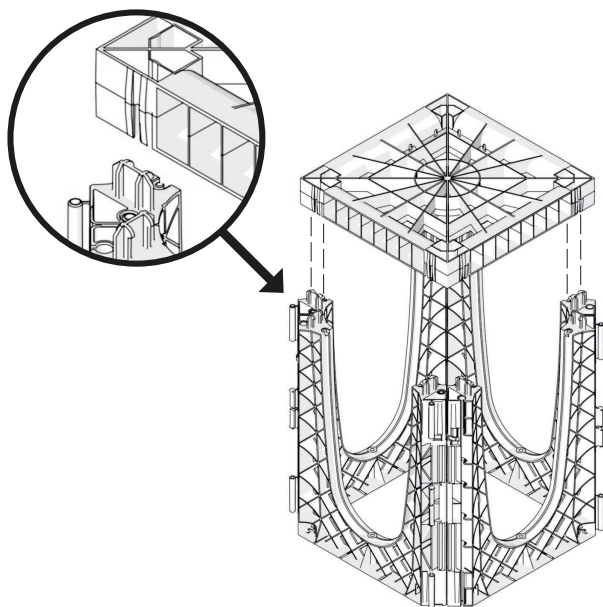
Connecting the Upright Panels.



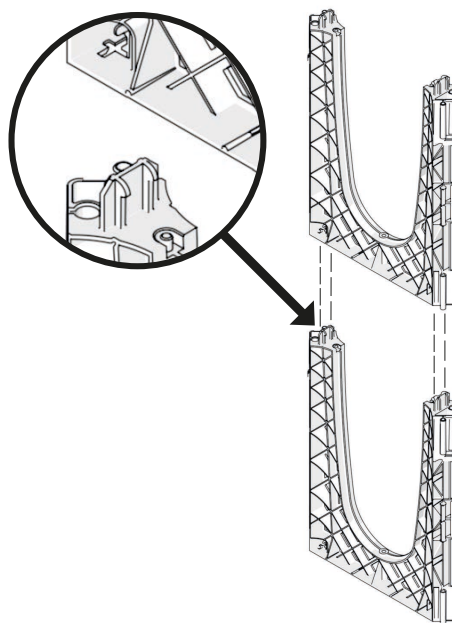
Installing optional Infill Panels.



Attaching the AirFlow™ Lid.



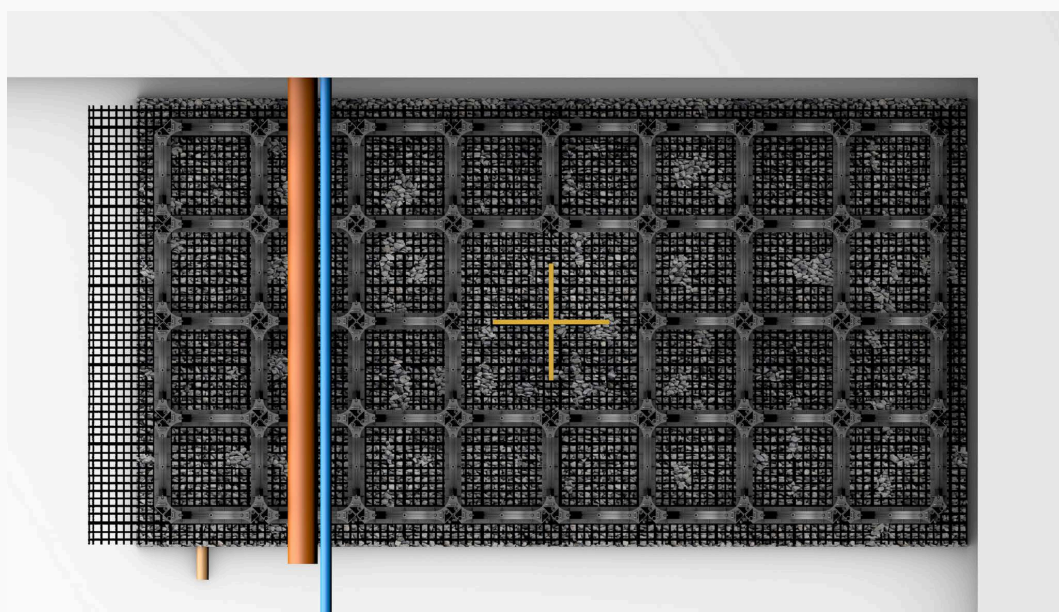
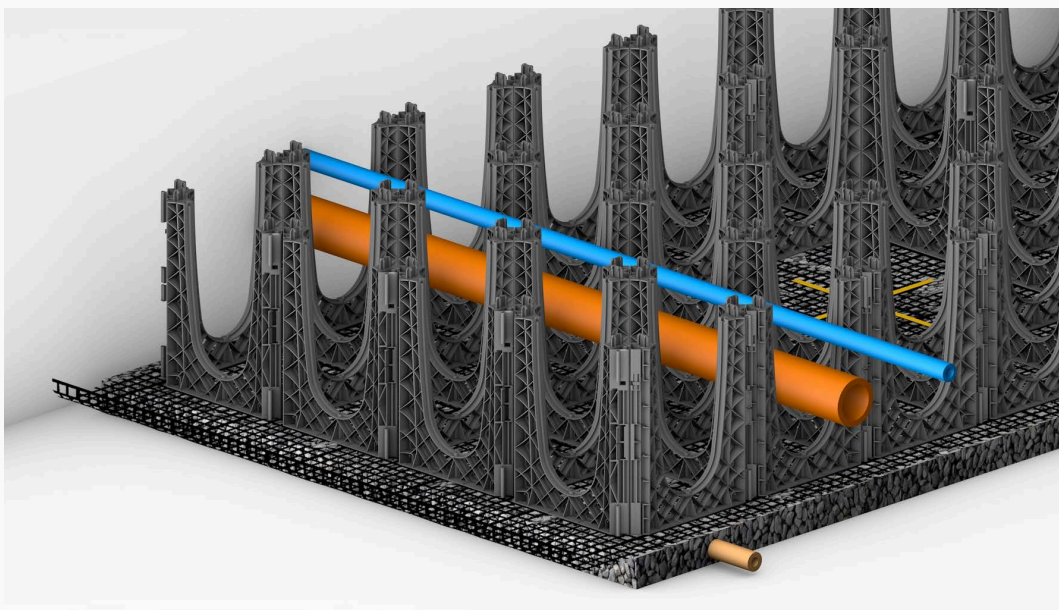
Building a multi-layer system.



3.2

Integrating Utilities within the RootSpace® Pavement Support System

- Utilities less than 10" (250 mm) in diameter
- Place within module



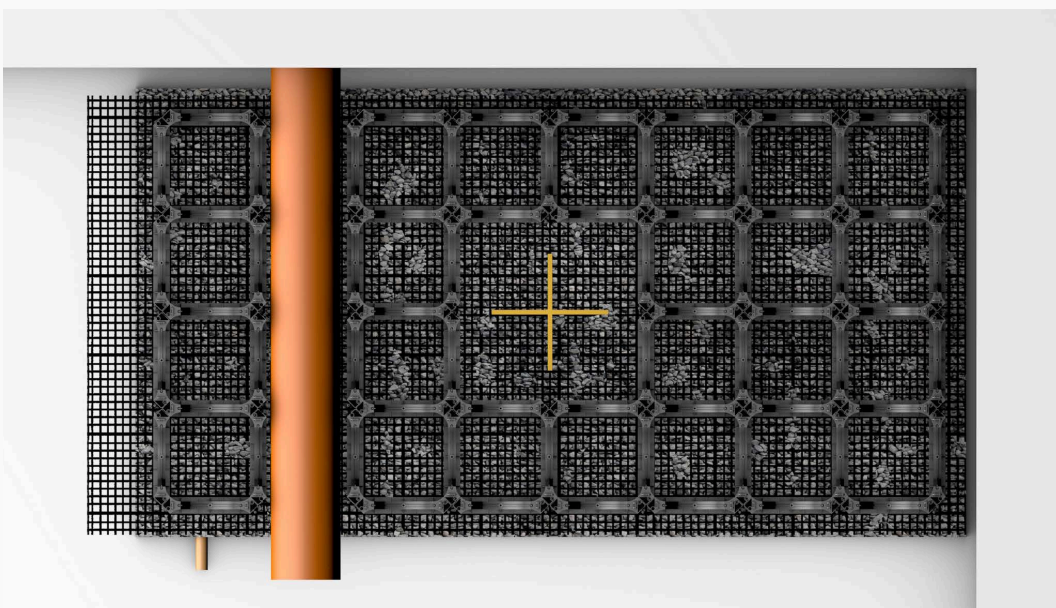
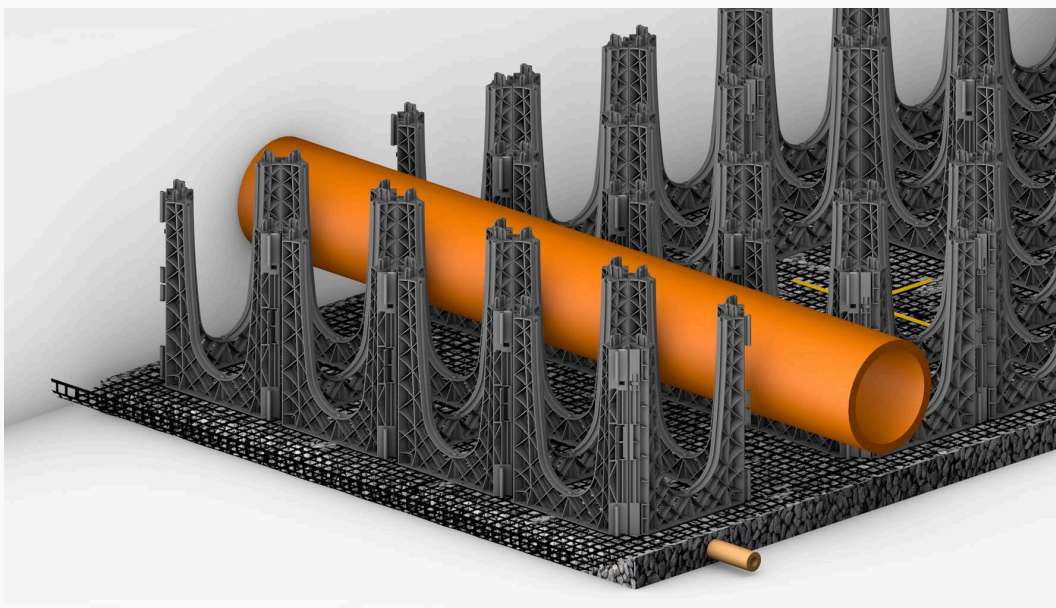
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Utilities & RootSpace® Guide

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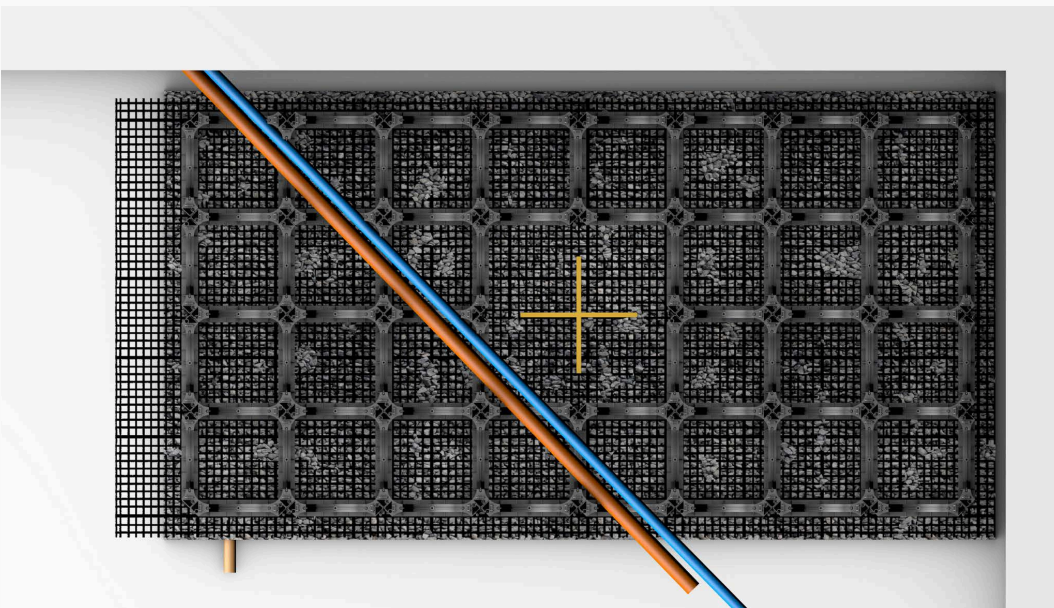
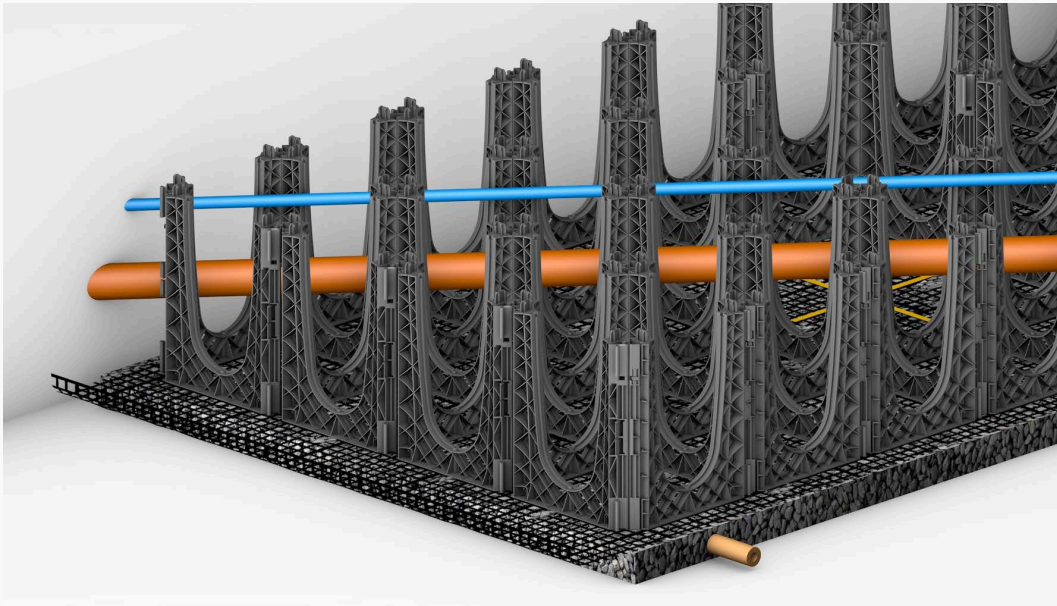


- Utilities larger than 10" (250 mm) in diameter
 - Independent assembly of modules around utility/utilities as required
 - Bridging detail as per specification and layout drawings



Integrating Utilities within the RootSpace® Pavement Support System

- Angled utilities



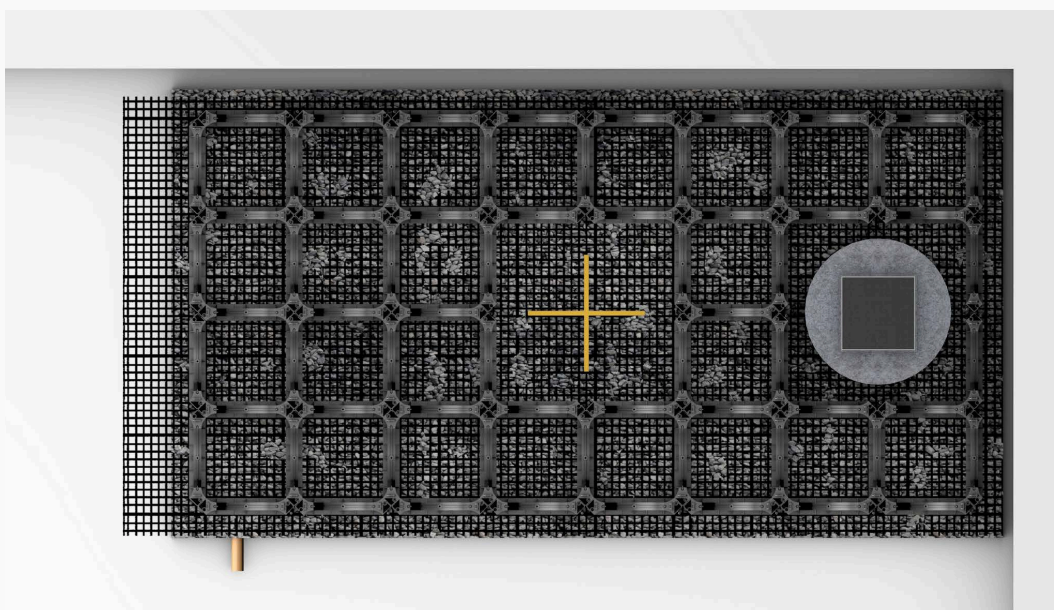
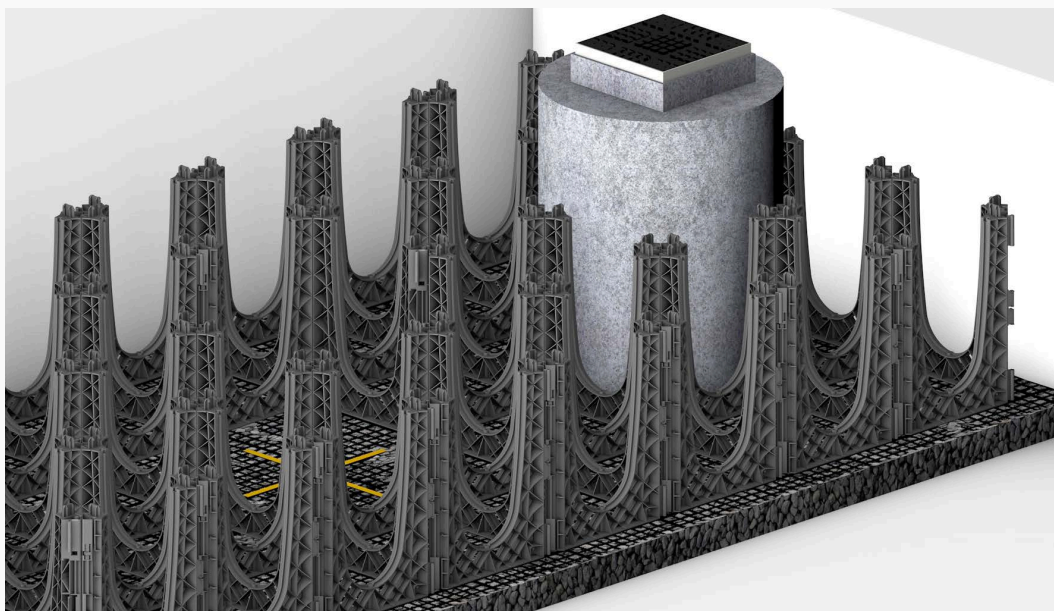
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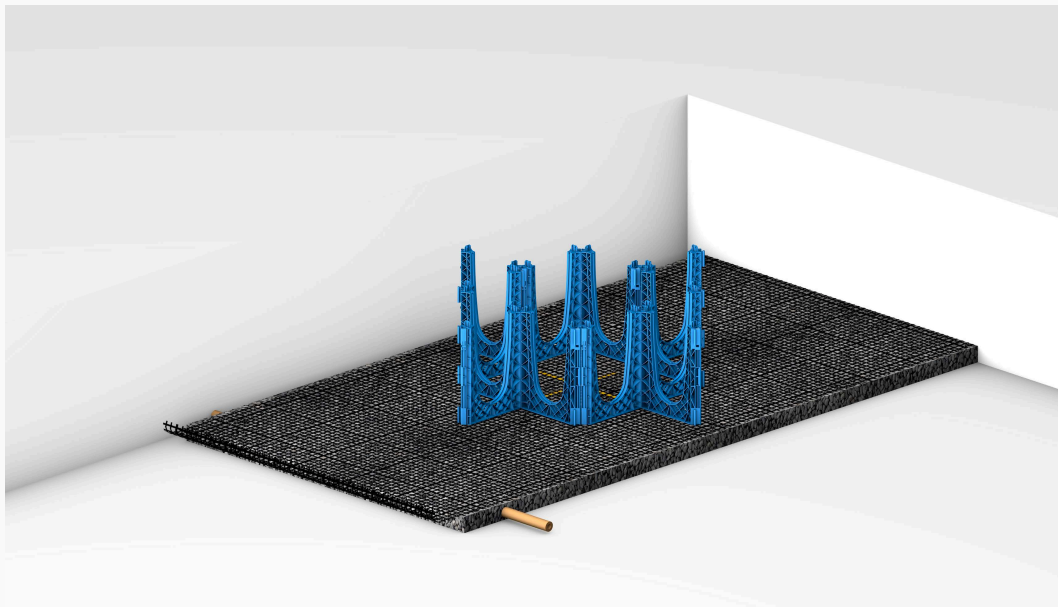
- Existing drainage services / inspection chambers, light pole bases and footings.



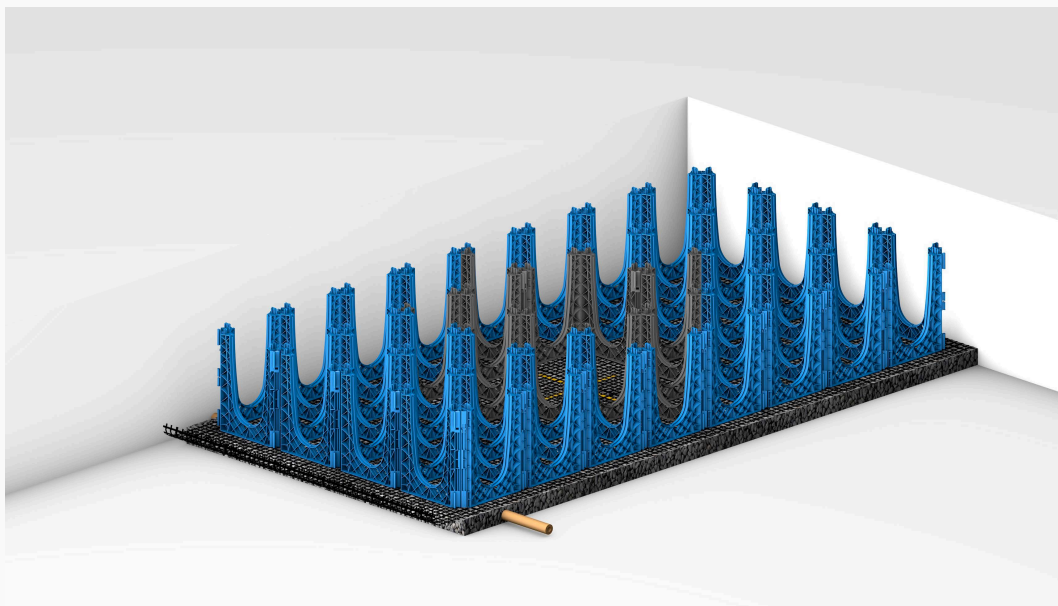
3.3

Installation of RootSpace® Pavement Support System

- Begin assembling RootSpace® Uprights around the marked center of the tree pit, working outwards toward the perimeter, ensuring sub-base consistently flat in all directions.

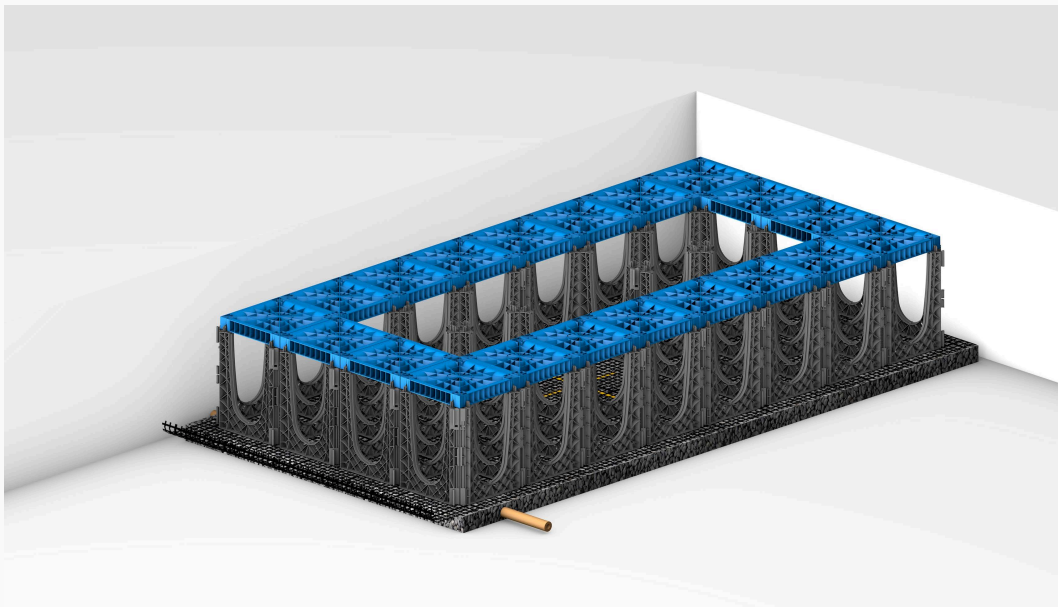


- Continue building out the tree pit Uprights before installing the RootSpace® AirFlow™ Lid around the perimeter of the tree pit. Where a single row of RootSpace® is used, anchor the base of the Upright Panel to the sub-base using a 3/8" x 8" galvanized spiral spike.

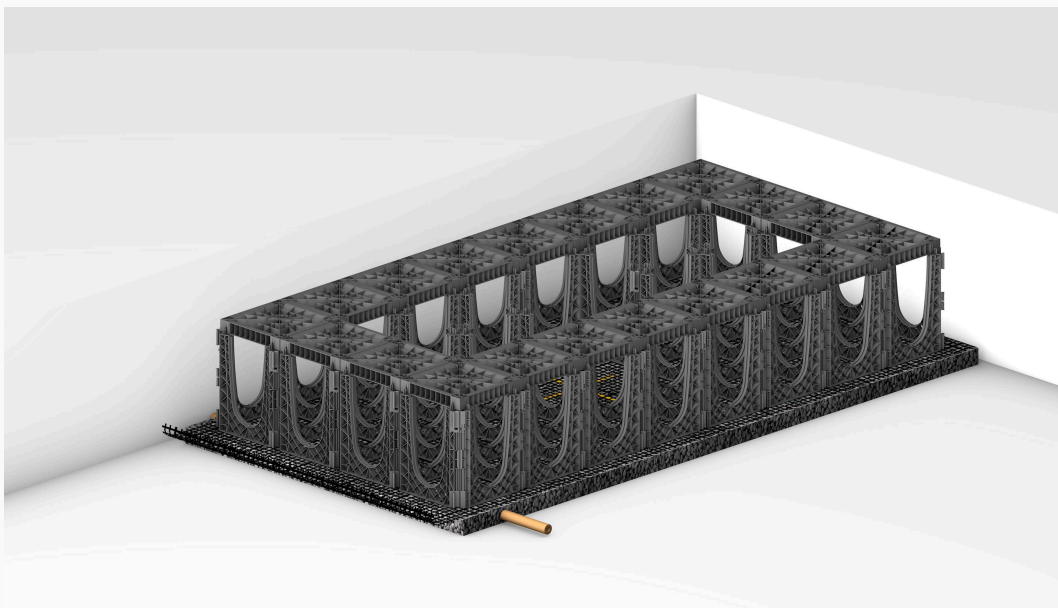


Installation of RootSpace® Pavement Support System

- To allow for easy filling of soil, ladder the remaining RootSpace® AirFlow™ Lids as per the diagram below to ensure structural integrity is retained once filled with soil.



- RootSpace® assembly complete.

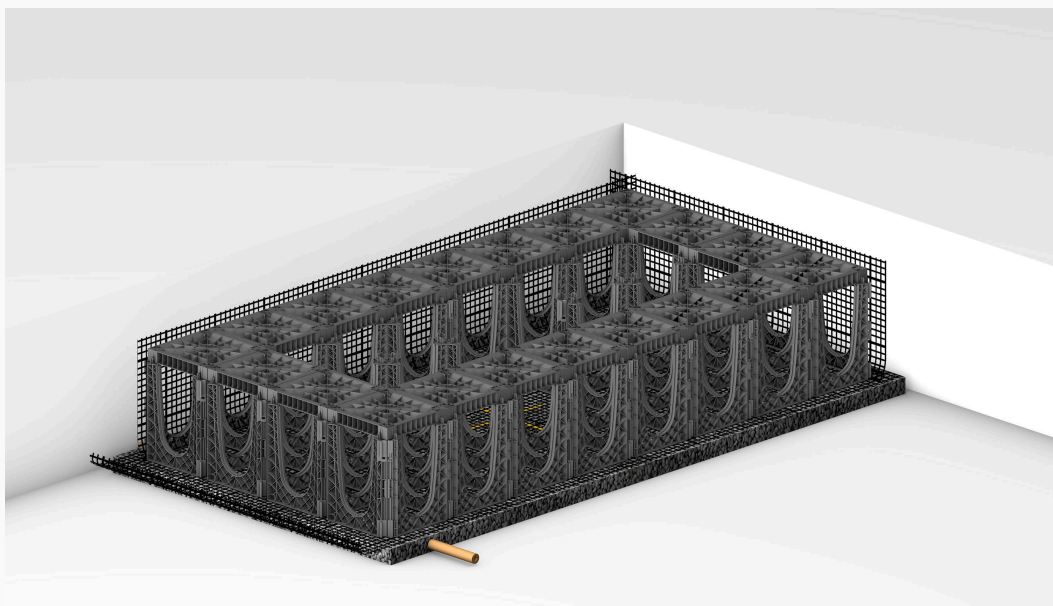


3.4

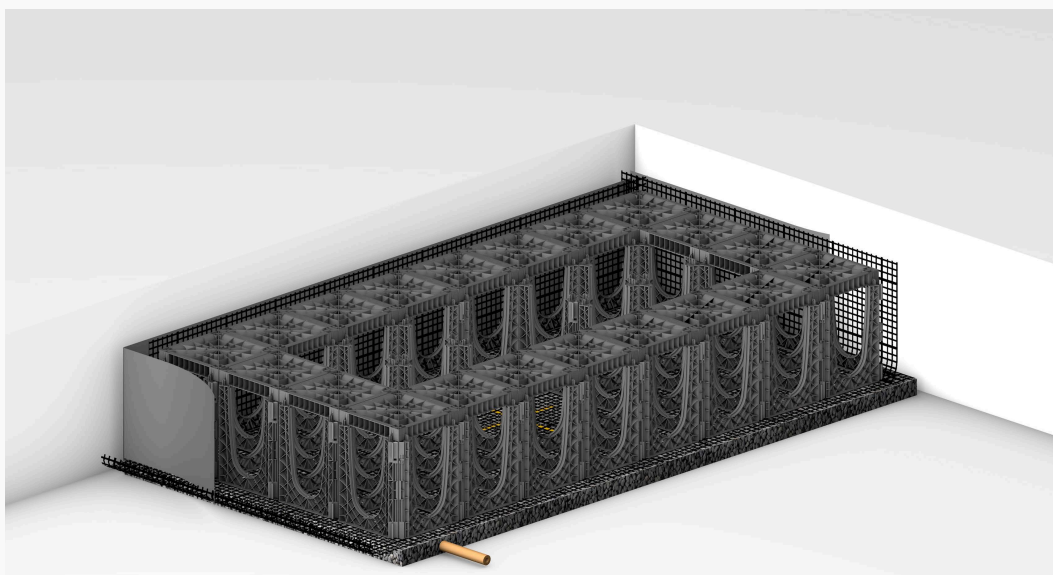
Installation of Root & Moisture Barrier and/or Geogrid/Mesh

- Install root and moisture barriers and/or geogrid/mesh as shown on Drawings. Overlap all joints 8" (200mm), root and moisture barriers shall be taped on both sides of joint. Top edge of root and moisture barriers shall be flush with adjacent construction. Ensure that earth surfaces in contact with barriers are flat and free of sharp debris and stones to avoid puncturing barriers.

3.4a Installation of Geogrid/Mesh (Optional)



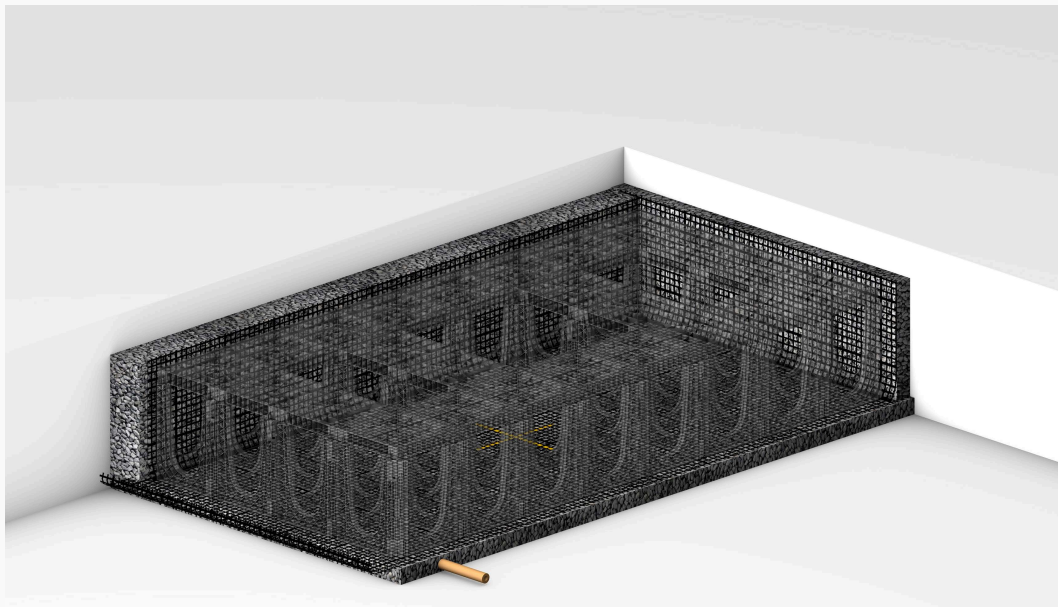
3.4b Installation of Root Barrier (Optional)



3.5

Backfilling the Outside Perimeter

- Place backfill materials around the perimeter in 8" (200 mm) lifts and compact to 95% Proctor Density minimum, or as specified by the Consultant. Continue backfilling around the entire perimeter until the backfill is within 8-12" (200-300 mm) of the top of the RootSpace® Pavement Support System.
- Take care to ensure that the compaction process does not allow the machinery to come into contact with the RootSpace® Pavement Support System due to the potential for damage to the root and moisture barrier or geogrid/fabric and RootSpace® Pavement Support System.
- Skid-loaders with a maximum ground pressure of 10 psi may be used to place backfill and pavement sub-base. GreenBlue Urban recommends that the contractor use plywood or steel plates on top of the RootSpace® System when using equipment for extended periods of time.
- GreenBlue Urban recommends that the contractor inspect the RootSpace® System for damage before placing final backfill and pavement sub-base. Any components damaged during construction shall be removed & replaced.



4

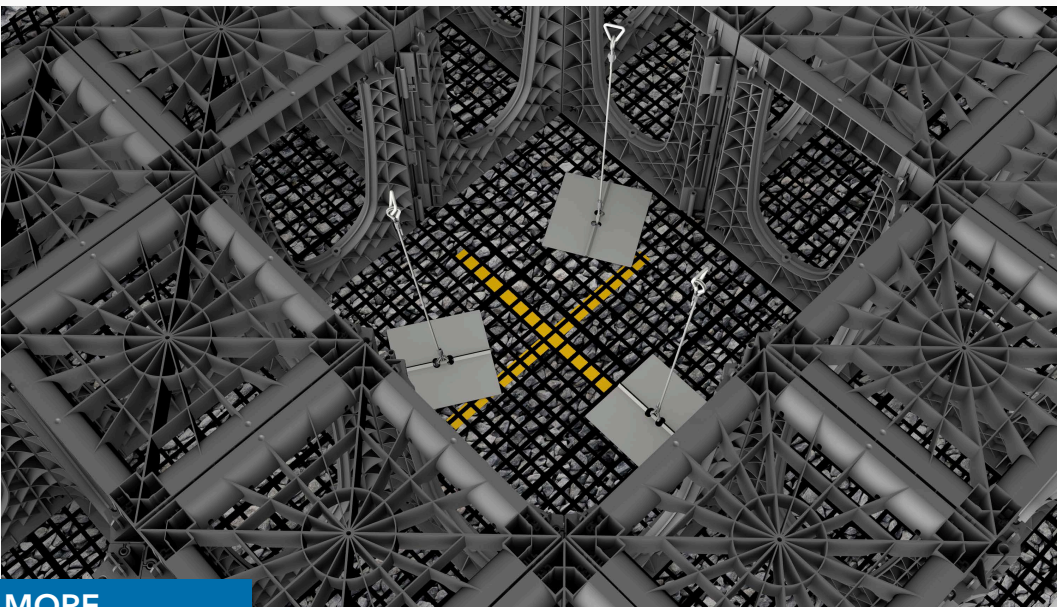
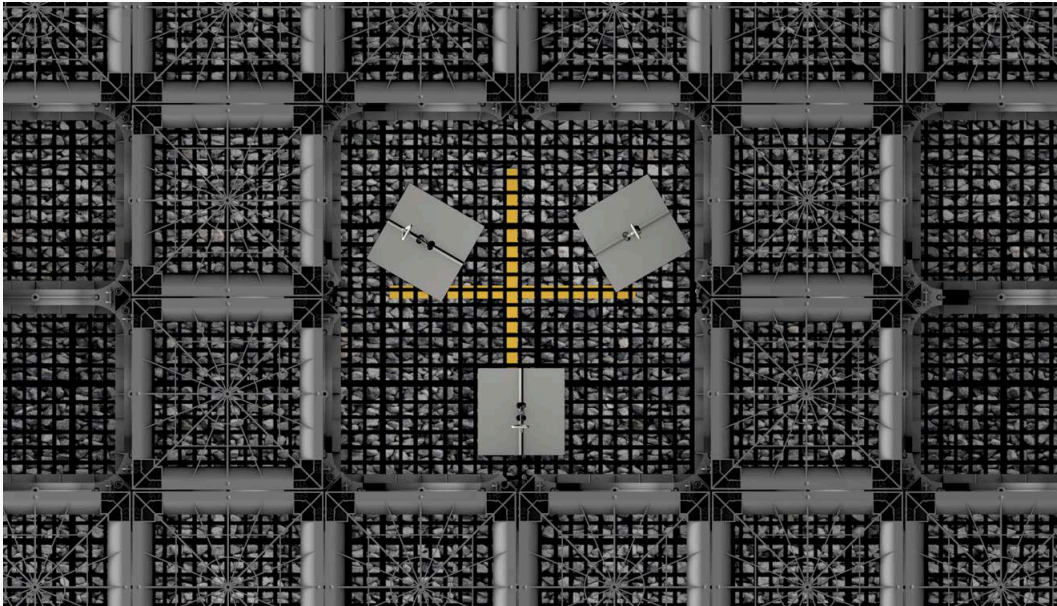
Installation of the Planting Medium

- **4.1** Installation of Rootball Anchoring System
- **4.2** Installation of Soil Pedestal for Rootball Support
- **4.3** Installation of Planting Soil
- **4.4** Installation of RootDirector
- **4.5** Installation of RootForm™
- **4.6** Installation of ReRoot™

4.1

Installation of the Rootball Anchoring System

- Install rootball anchoring system per manufacturer's instructions.



DISCOVER MORE

Rootball Guying & Tree Ties

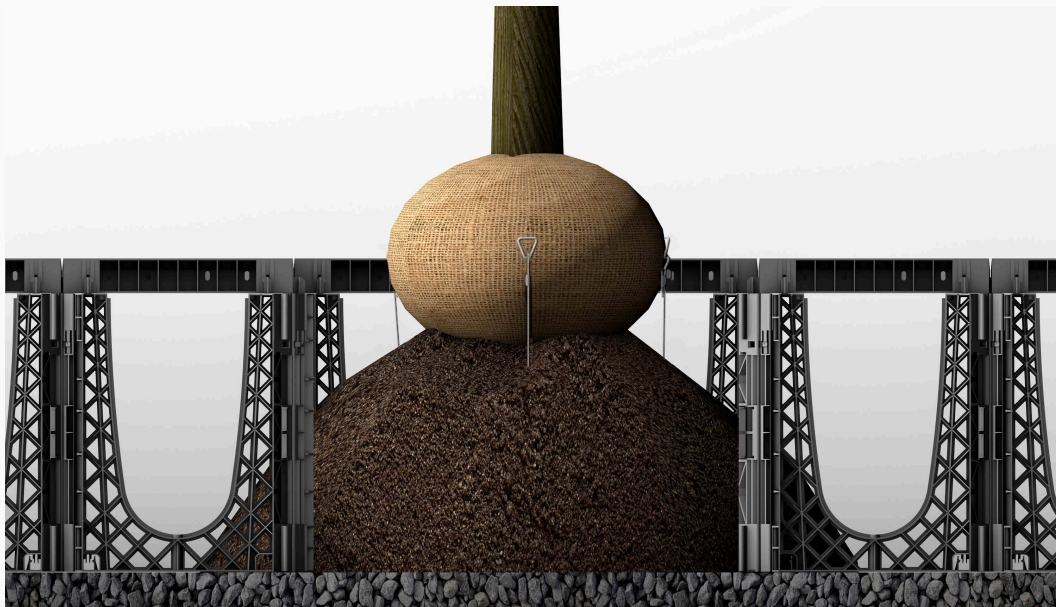
greenblue.com//rootball-guying-tree-ties/



4.2

Installation of the Soil Pedestal for Rootball Support

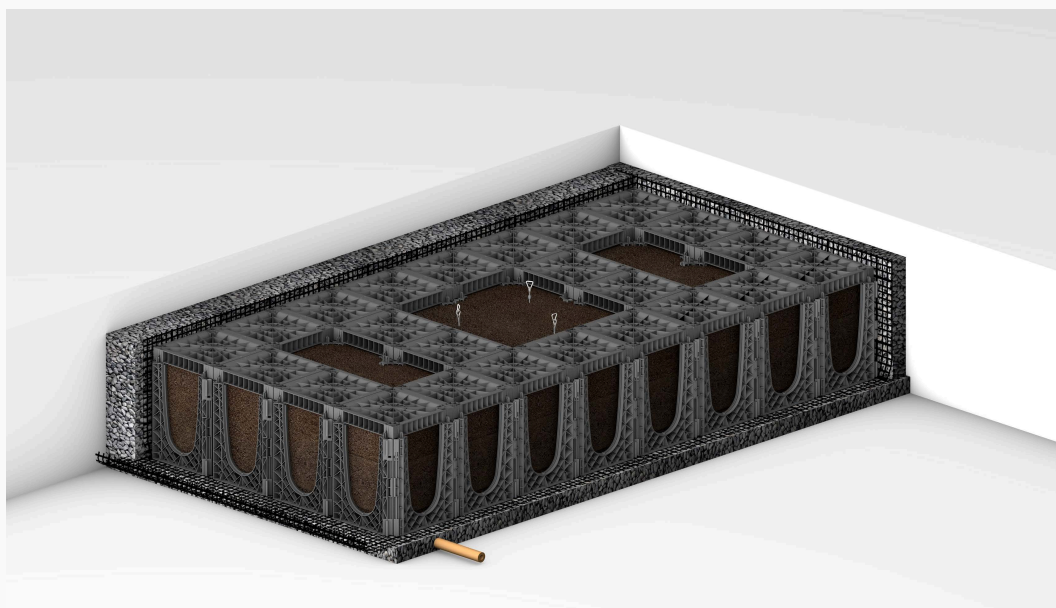
- On single layer systems, place and compact enough soil to form a pedestal to prevent rootball settlement. On multi-layer systems, this is done either at the base of the tree pit or on top of the bottom layer(s).
- Rootball pedestals for standard tree planting shall be constructed using native subsoil.
- Rootball pedestals in ArborFlow™ tree planting shall be constructed using washed sand.
- Refer to specification and layout drawing to determine where soil pedestal is required.



4.3

Installation of the Planting Soil

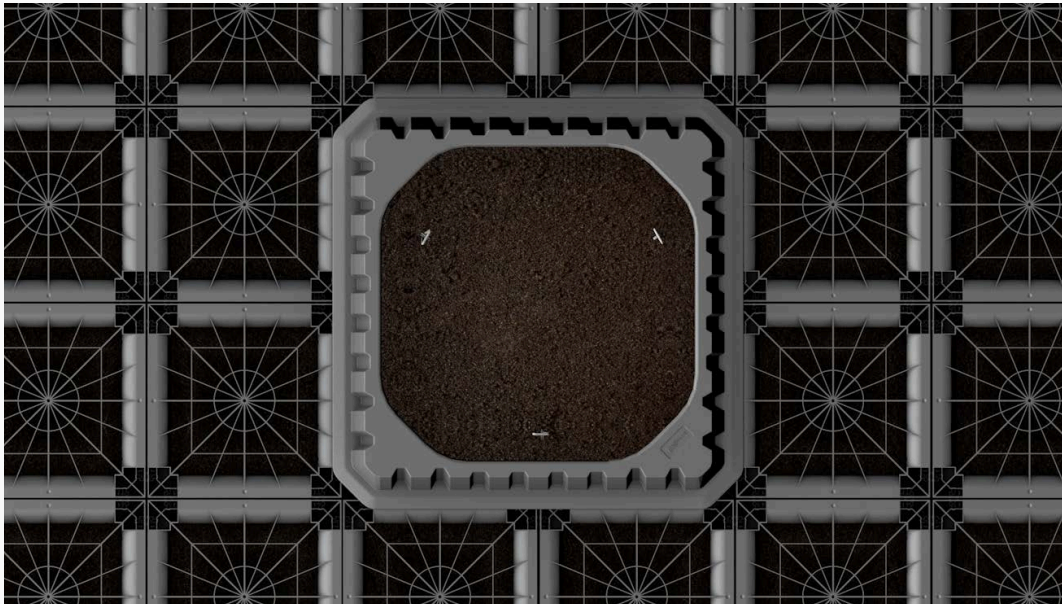
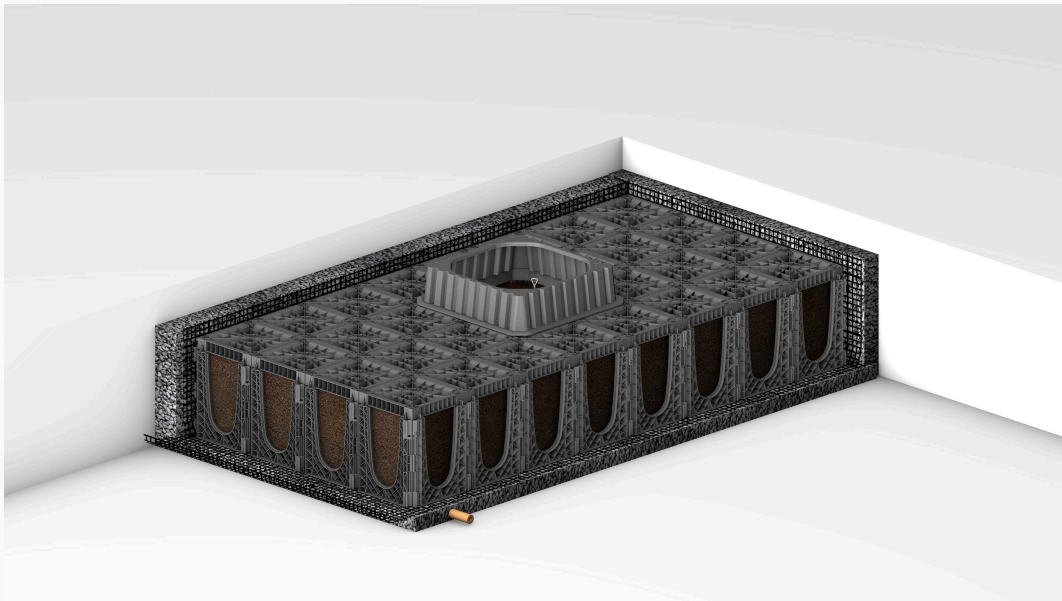
- Verify that planting soil meets specifications. Soil shall be a dry, loose consistent blend of silt, sand, clay and organic matter.
- Verify that the RootSpace® Pavement Support System installation has been completed and approved by the Consultant. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, asphalt/concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, solid waste, or acid has been deposited in planting soil or RootSpace® Pavement Support System.
- Unless shown otherwise on Drawings, completely fill all void spaces within the RootSpace® Pavement Support System with the specified filler soil. Keep backfilled area around outer perimeter free of filler soil.
- Placing soil prior to attaching the AirFlow™ Lids (Recommended Installation)
- Place filler soil in the RootSpace® Pavement Support System using an excavator bucket in 8" to 12" (200mm to 300mm) lifts or layers and spread with rakes or shovels.
- Foot compact each lift of soil media by foot compaction of the soil within the system.
- Once soil is filled to the top of the top Upright Panels, install AirFlow™ Lids by locating the AirFlow™ lid over the tabs on the Upright Panel and pushing down until the AirFlow™ lid locks in place.
- Ensure soil is filled to the top of the top of the AirFlow™ Lids to allow for natural settlement of uncompacted soil fill. Rake top of AirFlow™ Lid to remove ridges and re-expose the flat surface of the AirFlow™ Lids in preparation for laying geogrid/ geofabric.



4.4

Installation of Root Director™ (If Specified)

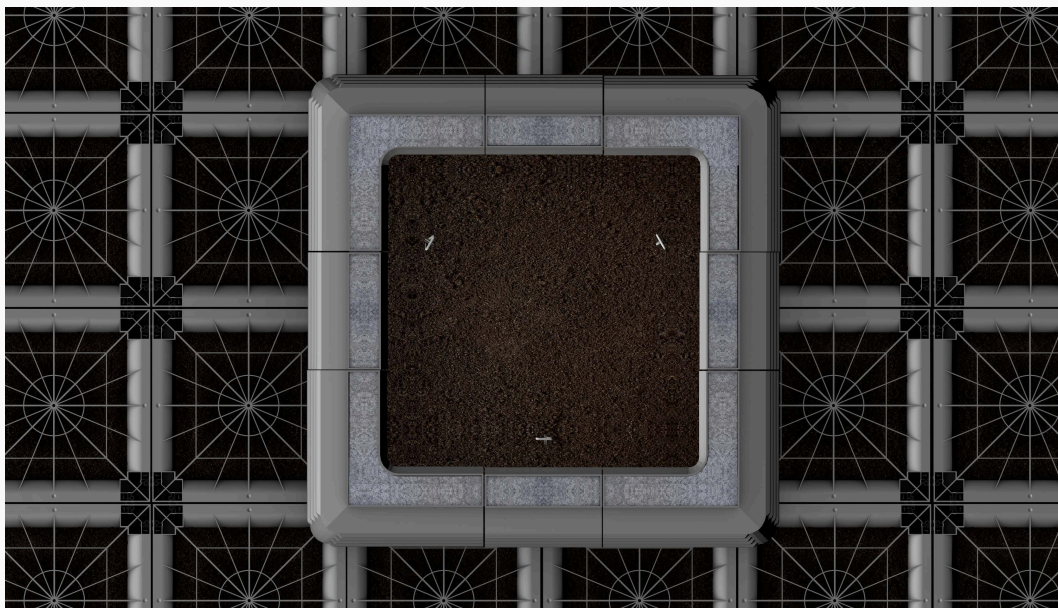
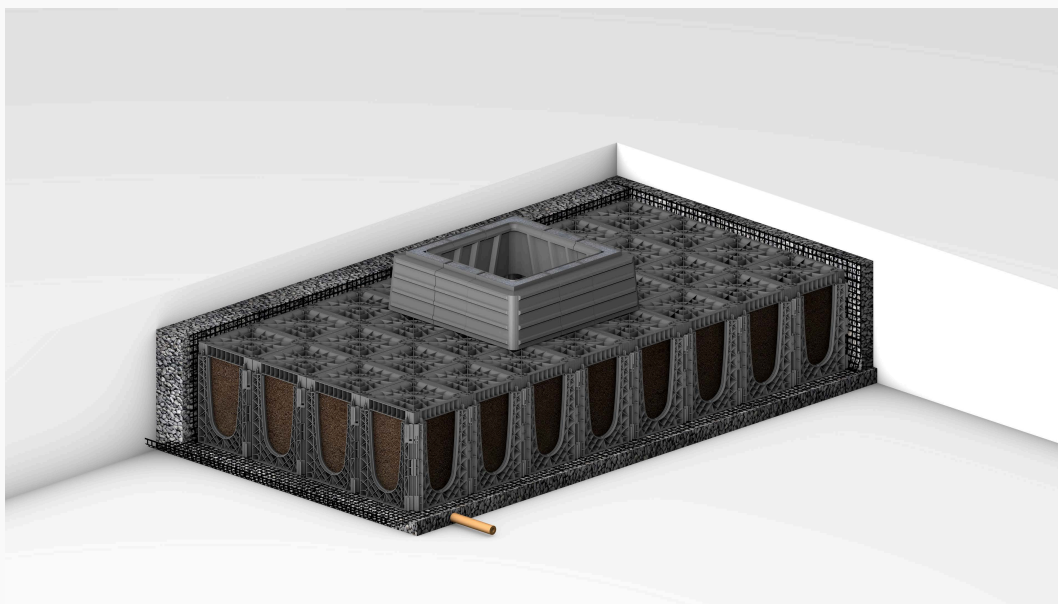
- Install the Root Director™ root management at tree pit opening and secure in place.



4.5

Installation of RootForm™ (If Specified)

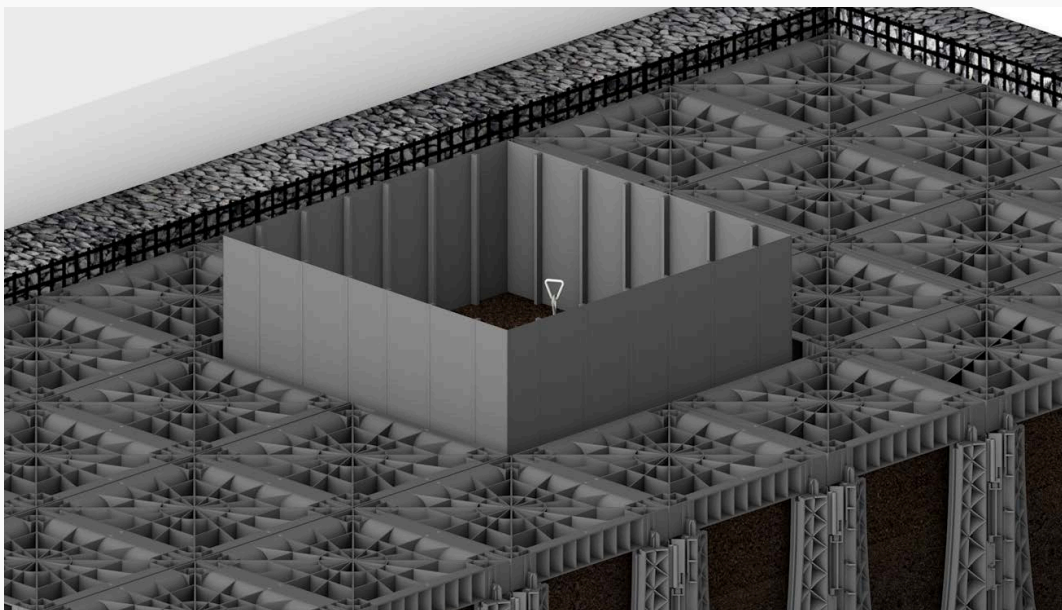
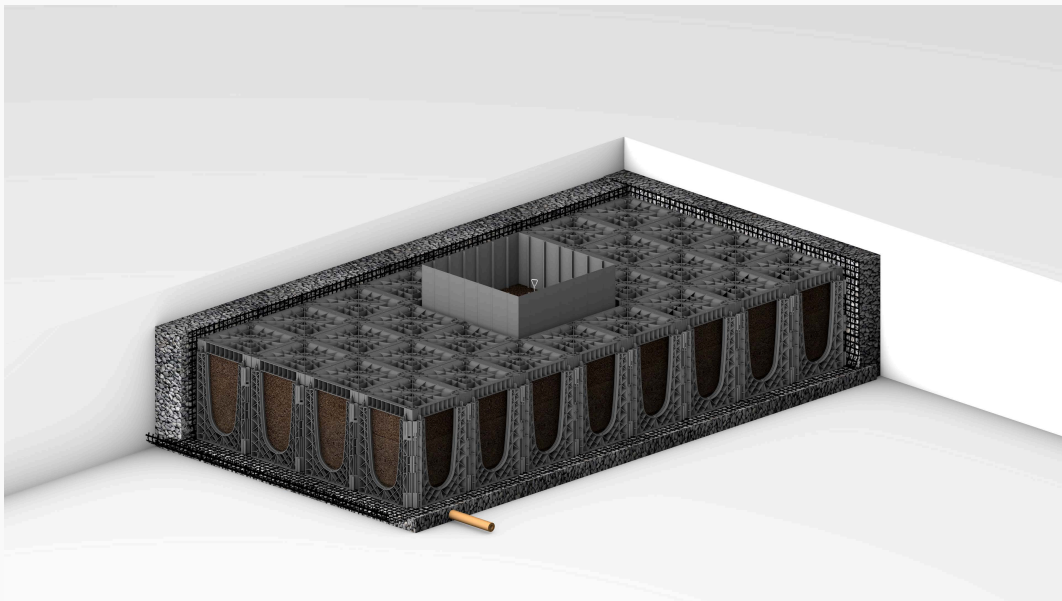
- Install RootForm™ at tree pit opening as per drawings and elevations.
- For correct install procedure of RootForm™, please see GreenBlue Urban RootForm™ installation guide.



4.6

Installation of ReRoot™ (If Specified)

- Install the ReRoot™ root management at the tree pit opening and secure in place. Ribs must face inwards.



5

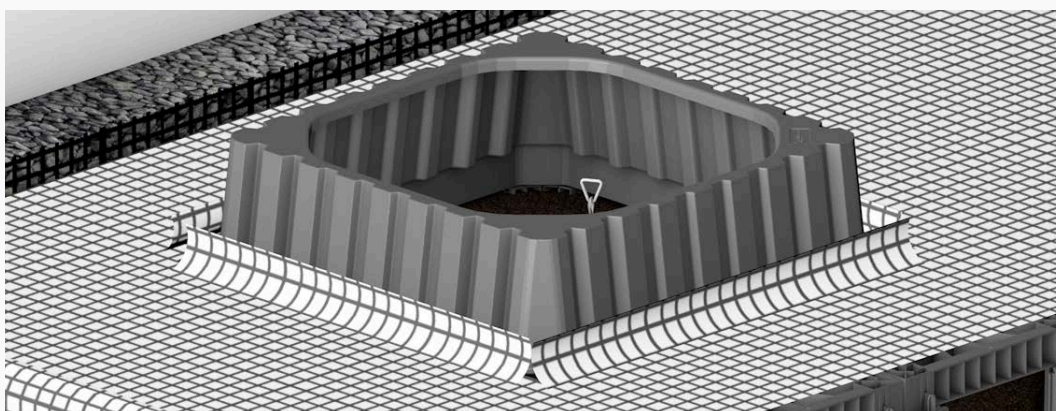
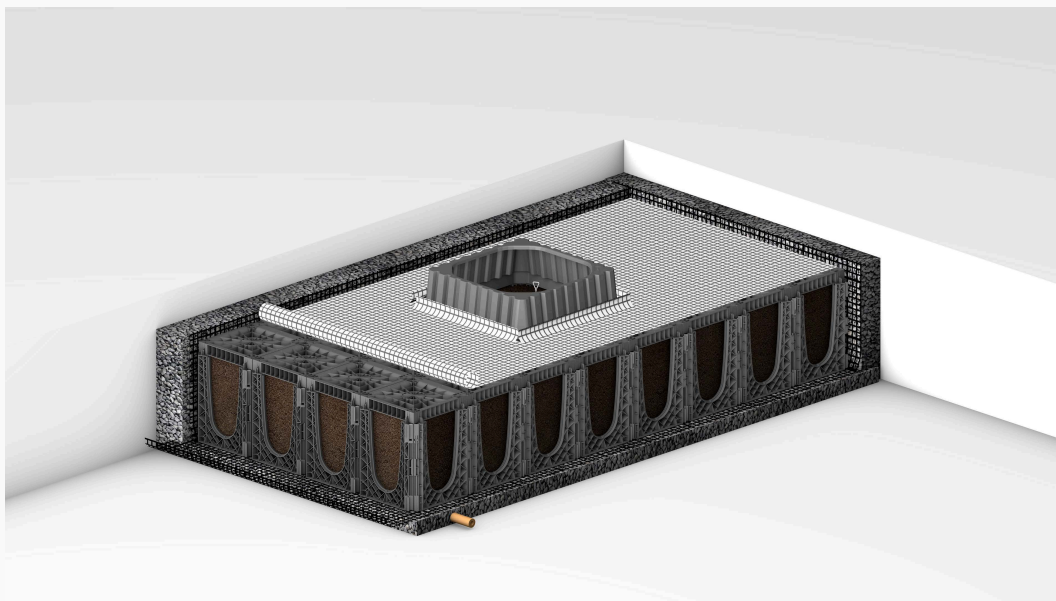
Installation of Pavement Base Course Layer

- **5.1** Installation of the Geogrid with Integrated Non-woven Geotextile
- **5.2** Installation of Irrigation/Aeration Vertical Piping
- **5.3** Installation of Vertical Inspection Portals
- **5.4** Installation of Concrete Curbs at Tree Openings
- **5.5** Installation of Pavement Base Course

5.1

Installation of the Geogrid with Integrated Non-woven Geotextile

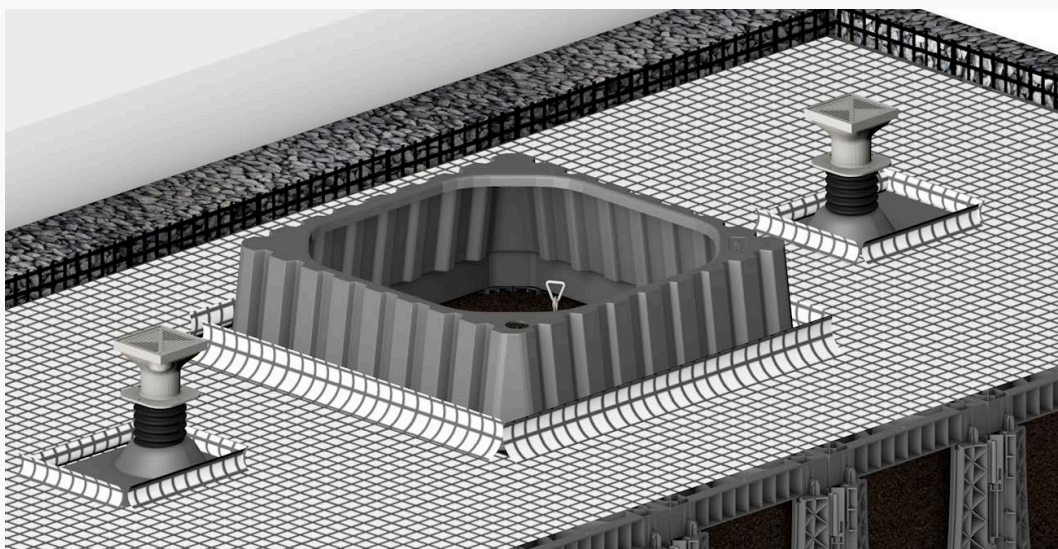
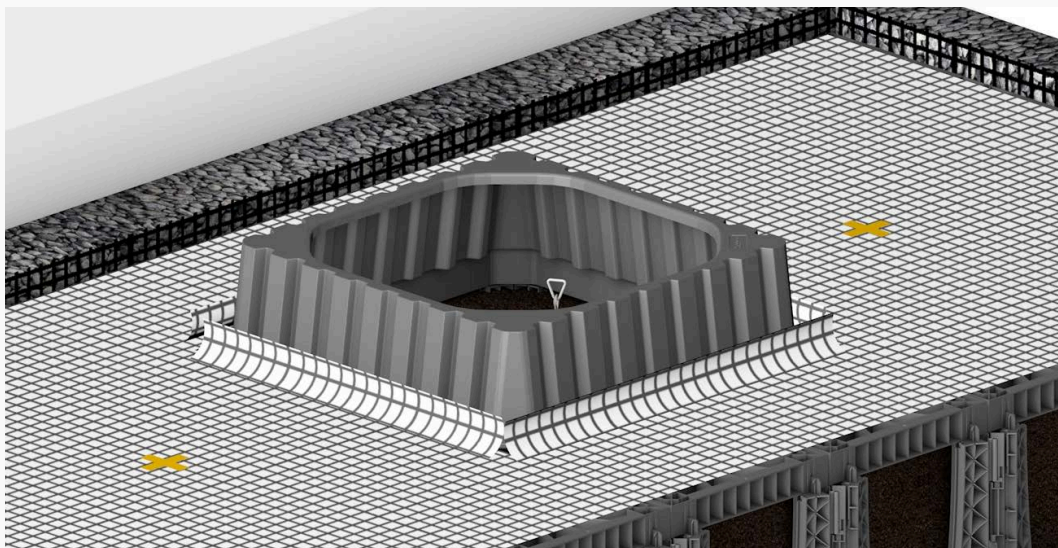
- Install the specified geogrid with integrated non-woven geotextile (i.e. CombiGrid) on top of the RootSpace® pavement support system AirFlow Lid™, allowing it to extend 8-10" (200-250mm) vertically down the sides of the RootSpace® Pavement Support System, and 12" (300 mm) horizontally away from the RootSpace® Pavement Support System. Overlap geogrid with integrated non-woven geotextile a minimum 8" (200 mm).
- Cut and lap geogrid with integrated non-woven geotextile up at treepit openings.
- Finish backfilling around the perimeter of the RootSpace® Pavement Support System on top of the horizontal geogrid with integrated non-woven geotextile. Compact to 95% Proctor Density minimum, or as specified by the Consultant.



5.2

Installation of ArborVent™ Irrigation/ Aeration Vertical Piping

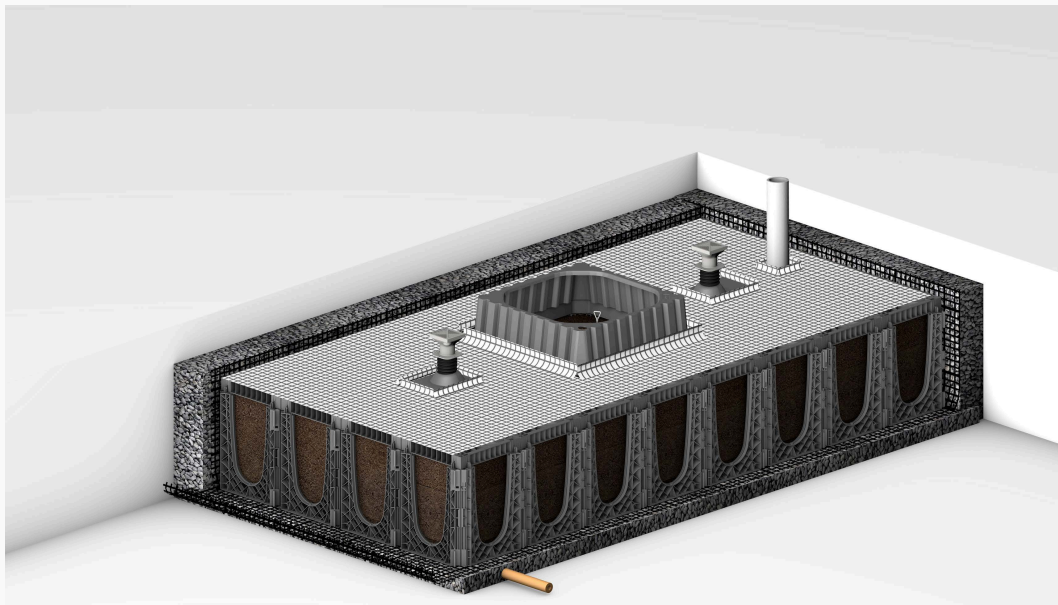
- Mark location of aeration/irrigation inlet, cut the geocomposite in an X pattern, fold back the geocomposite and insert the aeration/irrigation pipe.
- Trim vertical pipes to 6" (150mm) above finished pavement and support in vertical position by temporary staking. Seal open ends of pipes.
- After placing the pavement base course, trim the vertical pipe so that the top of the ArborVent™ inlet is at the desired finished elevation.
- To prevent settling of the ArborVent™ inlet, place a mortar bed around the base of the ArborVent™ inlet.



5.3

Installation of Vertical Inspection Portals

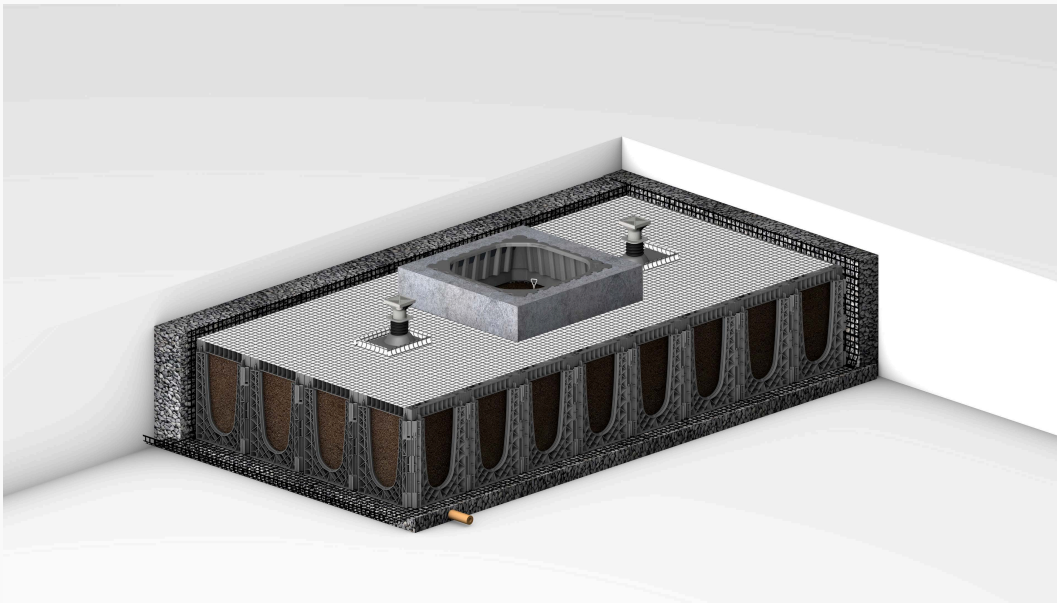
- Mark location of inspection port, cut the geocomposite in an X pattern, fold back the geocomposite and insert the inspection port.
- Trim vertical pipes to 6" (150mm) above finished pavement and support in vertical position by temporary staking. Seal open ends of pipes.



5.4

Installation of the Concrete Curbs at Tree Openings

- Form and pour concrete curbs at tree pit openings as per drawing layout and elevations.



5.5

Installation of Pavement Base Course

- Install pavement base course as per drawing layout and elevations.
- Skid-loaders with a maximum ground pressure of 10 psi may be used to place backfill and pavement sub-base. GreenBlue Urban recommends that the contractor inspect the RootSpace® Pavement Support System for damage before placing final backfill and pavement sub-base. Any components damaged by construction shall be removed & replaced.



6

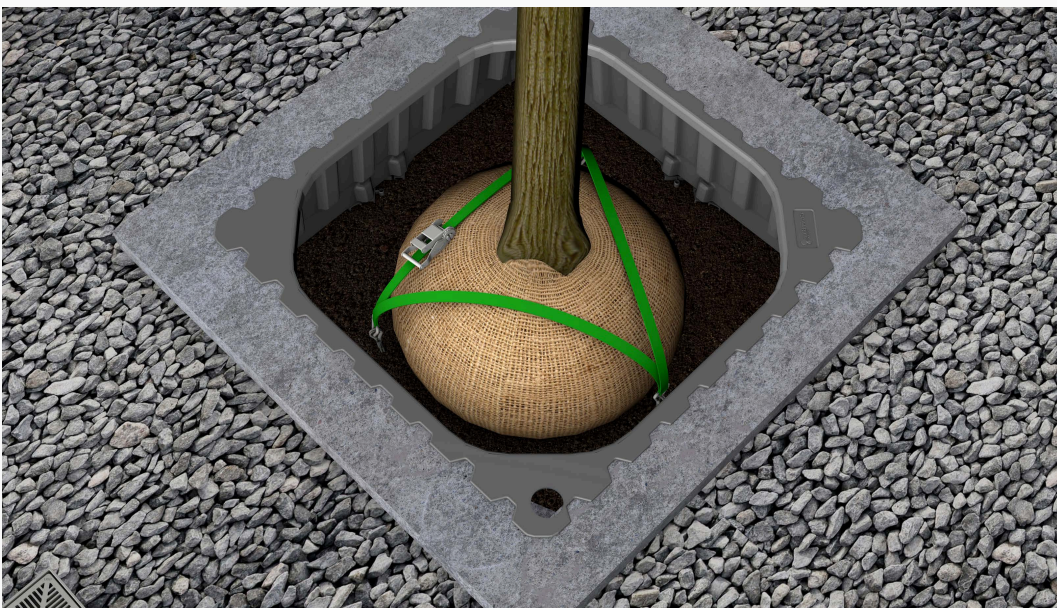
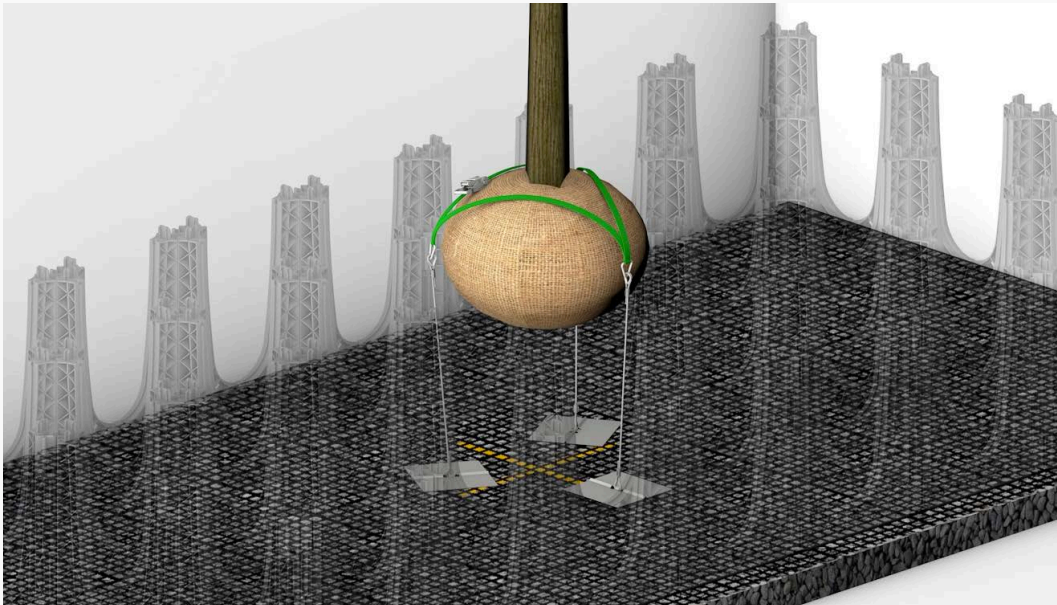
Tree Planting

- **6.1** Tree Planting
- **6.2** Installation of Rootball Aeration/Irrigation System
- **6.3** Installation of Tree Grilles/Grates (optional)
- **6.4** Installation of Pavement Surfaces
- **6.5** Installation of Tree Guards (optional)

6.1

Tree Planting

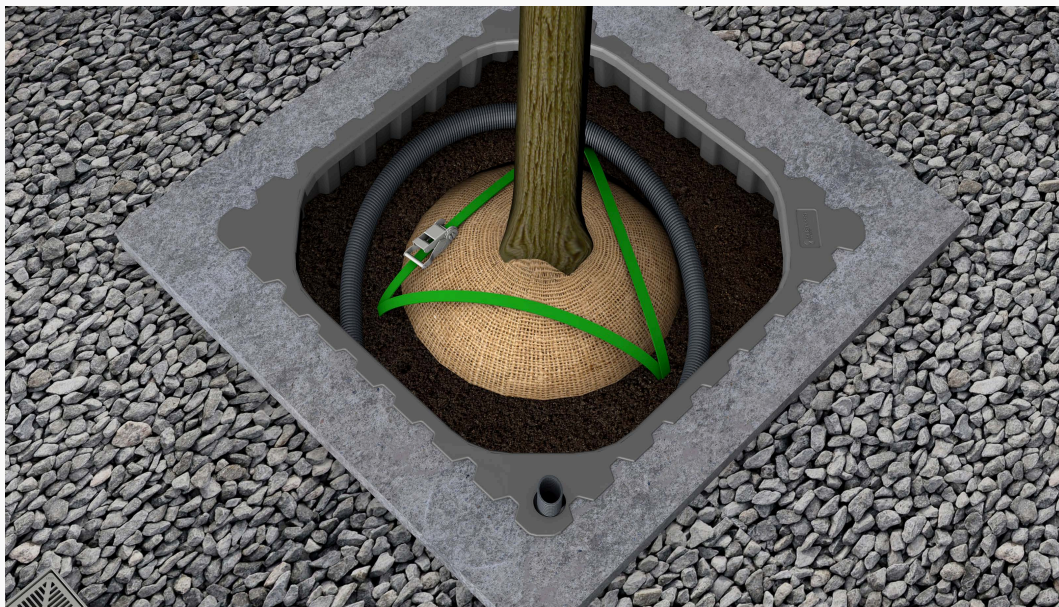
- Plant trees as per drawing layout.
- Care should be taken to ensure that the root flare is not below the finished soil grade elevation.
- Place anchor strap through the anchor loops and tighten. Follow manufacturers instructions for installation.



6.2

Installation of RootRain™ Aeration/Irrigation System

- Install RootRain™ rootball aeration/irrigation system around the outside of the rootball and below the rootball shoulder.
- If specified, install automatic irrigation bubbler per irrigation detail.
- Backfill soil to specified elevation.



6.3

Installation of Tree Grilles/Grates (If Specified)

- Install tree grilles/grates per manufacturer's instructions.



6.4

Installation of Pavement Surfaces

- Install pavement surfaces as per drawing layout and elevations.
- Skid-loaders with a maximum ground pressure of 10 psi may be used to place backfill and pavement sub-base. GreenBlue Urban recommends that the contractor inspect the RootSpace® Pavement Support System for damage before placing final backfill and pavement sub-base. Any components damaged by construction shall be removed & replaced.



6.5

Installation of Tree Guards (If Specified)

- Install tree guards per manufacturer's instructions.



7

Completion & Cleanup

- **7.1** Completion & Cleanup

7.1

Completion & Cleanup

- Perform cleaning during the installation of work and upon completion of the work.
- Remove from site all excess materials, debris, and equipment. Repair any damage to adjacent materials and surfaces resulting from installation of this work.



8

System Maintenance

- **8.1** ArborSystem® Scheduled Maintenance
- **8.2** ArborSystem® Tree Replacement
- **8.3** Service & Maintenance of Utilities within the ArborSystem®
- **8.4** Service & Maintenance of Utilities below the ArborSystem®

8.1

ArborSystem® Maintenance

- Clean out of aeration/irrigation inlets (annually).
- Inspect underdrain system for blockage. Cleanout as required. (LID treepits) (annually).

8.2

ArborSystem® Tree Replacement

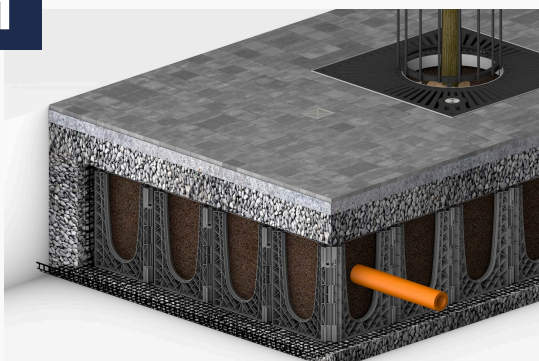
Even when a tree is planted in optimal conditions, scenarios like pest infection, disease, and car accidents can cause the premature death of a tree. In such instances, removal and replanting of a tree in ArborSystem® is simple:

- Remove Tree Grille/Grate and Guard (if present).
- Cut down the tree.
- Cut the roots around the outside of rootball within the tree pit opening.
- Remove the rootball.
- Plant new tree.
- Replace ReRoot™ Ribbed Root Barrier (if damaged).
- RootRain™ aeration/irrigation system (if damaged).
- Replace Tree Grille/Grate and Guard.

8.3

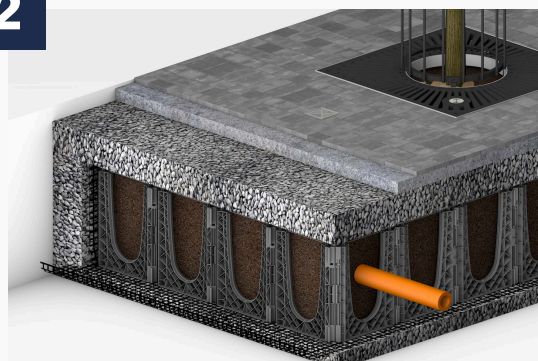
Service & Maintenance of Utilities **within** the ArborSystem®

1



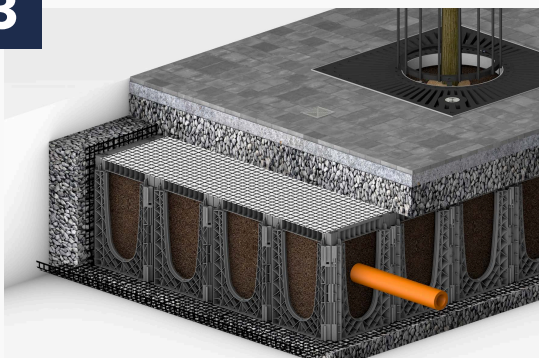
Locate utilities.

2



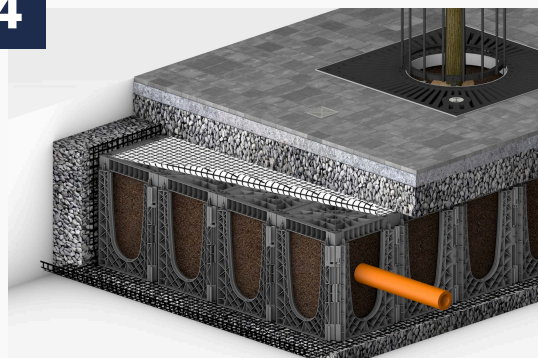
Saw cut and remove pavement surface / pavers in affected area.

3



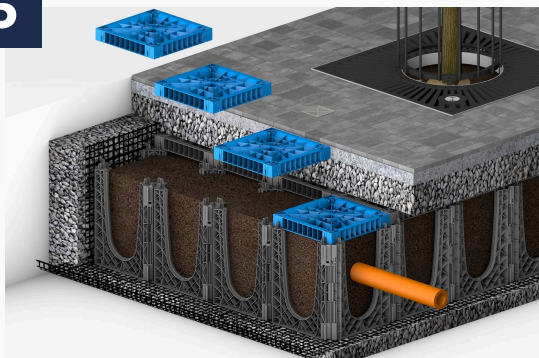
Remove aggregate subbase to expose geocomposite.

4



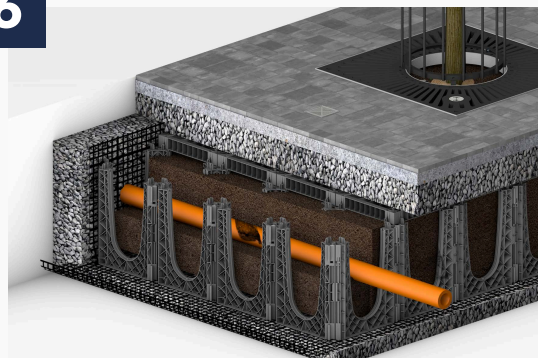
Cut and remove geocomposite.

5



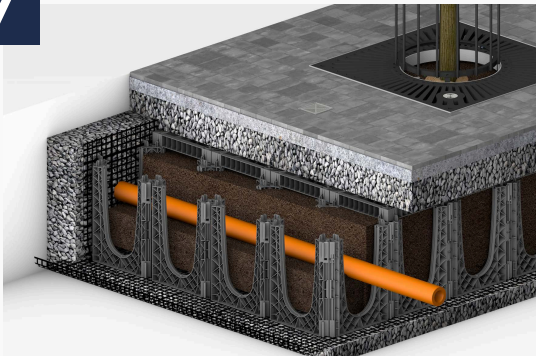
Remove RootSpace® AirFlow™ Lid(s) by pulling up or by excavating.

6



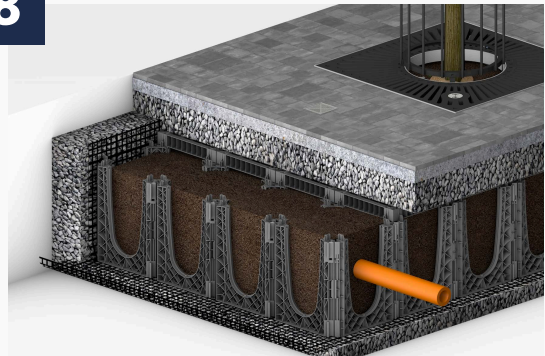
Remove soil within the RootSpace®.

7



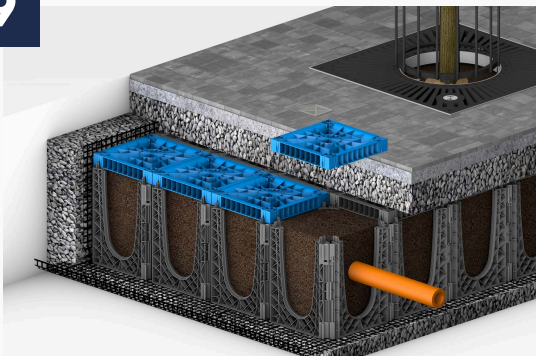
Repair utility.

8



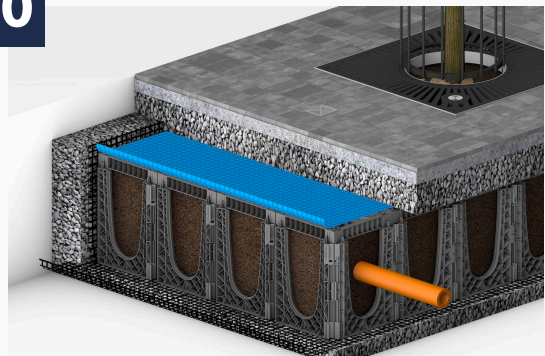
Replace planting soil.

9



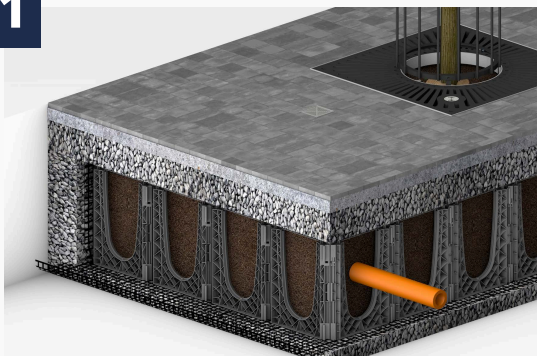
Replace AirFlow™ Lids.

10



Install geocomposite.

11



Install pavement sub-base and pavement surface.

8.4

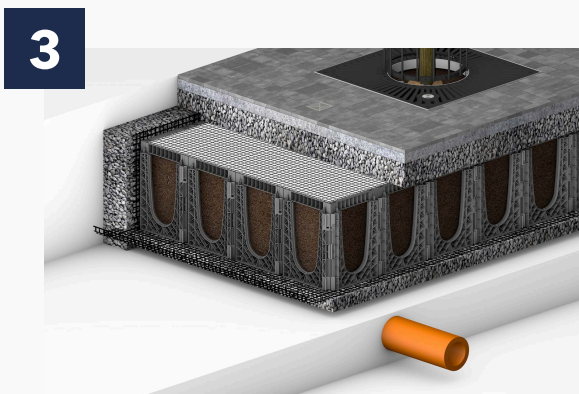
Service & Maintenance of Utilities **below** the ArborSystem®



1
Locate utilities.



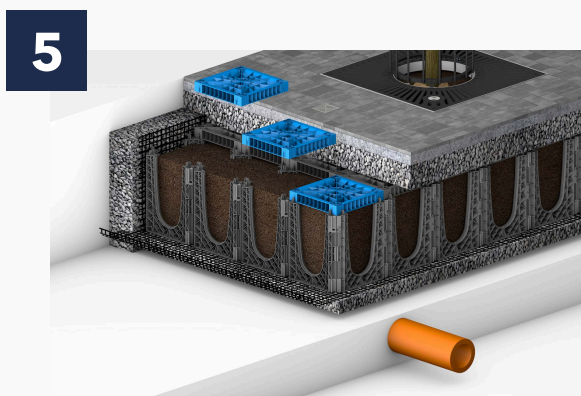
2
Saw cut and remove pavement surface /
pavers in affected area.



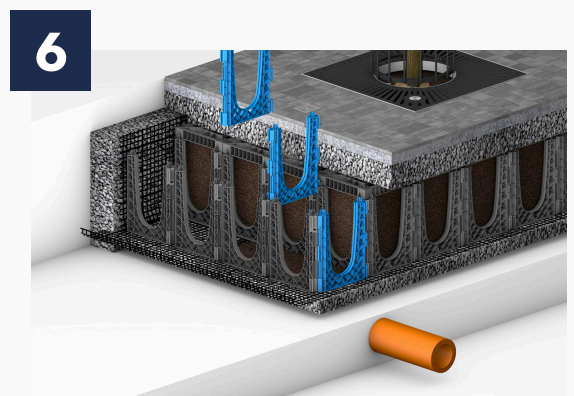
3
Remove aggregate subbase to expose
geocomposite



4
Cut and remove geocomposite.



5
Remove RootSpace® AirFlow™ Lid(s) by pulling
up or by excavating.



6
Remove RootSpace® Upright Panel(s) by pulling
each Upright Panel up or by excavating. Remove
soil.

7



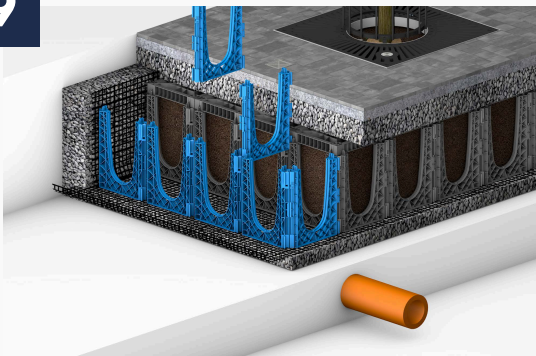
Excavate soil below RootSpace® to access and repair utility.

8



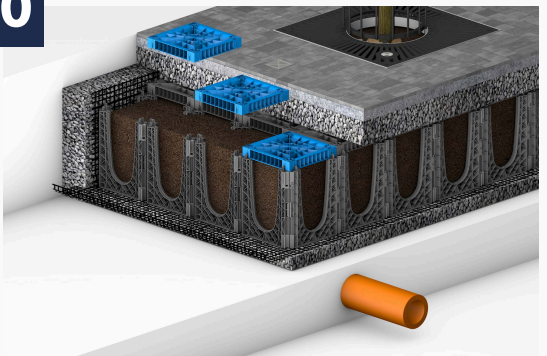
Backfill and compact to surrounding sub-base to original elevations including geotextiles.

9



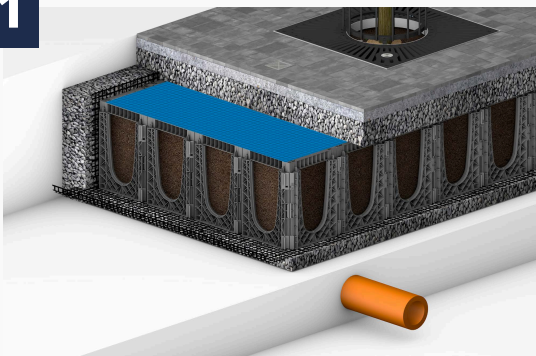
Reassemble RootSpace® Upright Panels.

10



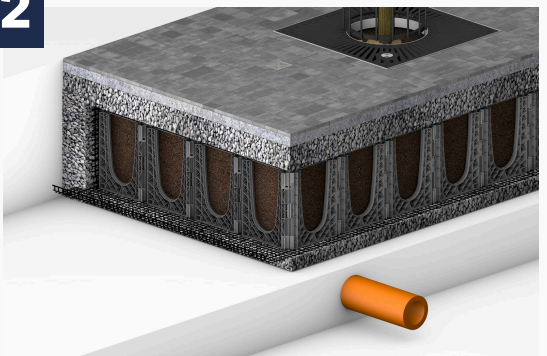
Replace AirFlow™ Lids and planting soil.

11



Install geocomposite.

12



Install pavement sub-base and pavement surface.

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