

## ArborRaft

Urban Tree Planting System



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# ArborRaft Urban Tree Planting System



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## Introduction



The ArborRaft system has a proven track record.

In 2003 the city of Amsterdam undertook a number of trial projects to improve the growing environment for trees in the urban realm.

The first system to be trialed was the TreeBox High Performance and subsequently after the success of these trials, the ArborRaft system was tested and introduced for both new tree planting and tree root protection applications.



# ArborRaft for New Trees

The **ArborRaft** combines tree soil with a geocellular raft system to create growing space for newly planted trees in hard landscapes and in areas that are subject to vehicle loadings.

The unique ArborRaft system spreads the load ensuring there is no compaction of the soils around the tree roots, maintaining the perfect environment for the trees to establish and mature providing the benefits that healthy trees bring to our towns and cities.

Oxygen and water levels can be managed and improved within the ArborRaft system. All types of vehicle loadings can be accommodated, from cars through to Heavy goods vehicles.



The **ArborRaft** system is a combination of specially matched and tested materials.

The **ArborRaft** system prevents damage to the root structure from vertical pressures by completely absorbing all imposed loads placed upon it. This permits the root structure of new and existing trees to grow in a healthy environment.

The structural void created by the **ArborRaft** can be filled with a nutrient rich soil to act as a slow release fertiliser continually feeding the root structure when combined within a permeable or porous paving construction.

The **ArborRaft** system can be incorporated into a development's sustainable drainage design. The system has a 90% void ratio which may be used to store surface water runoff to assist with flood prevention.

This water may be re-used if required as grey water or attenuated to restrict flow rates from site to meet local environmental standards.



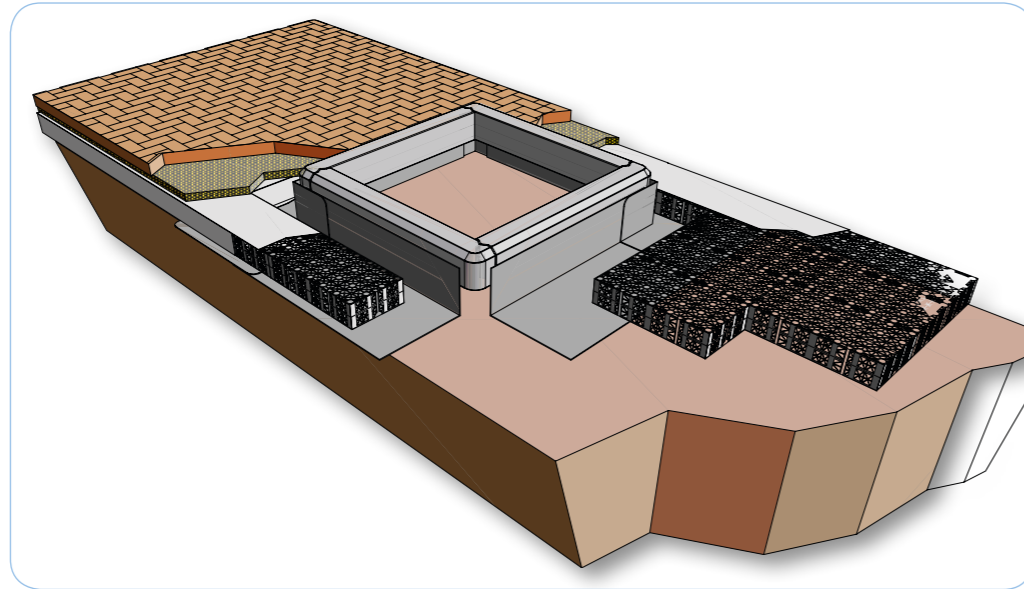
Parking spaces around trees



# General Installation Instructions

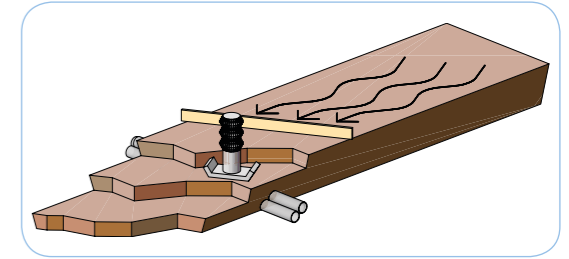
General instructions for the installation of the Infra Green **ArborRaft** system.

The material elements of the Infra Green **ArborRaft** have been carefully selected and tested in combination as part of the system to ensure that the performance of the complete construction can be guaranteed.

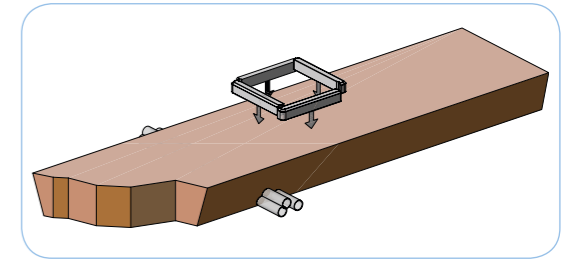


- 1** Installation of the ArborRaft tree soil:  
For the installation around the root ball there are various techniques and materials including plastic cuffs, root barriers and root deflectors.

Please contact us at [civils@polypipe.com](mailto:civils@polypipe.com) to obtain the ArborRaft tree soil specification

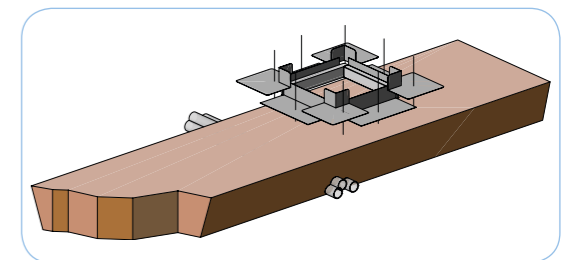


- 2** Placing tree pit grilles and frames

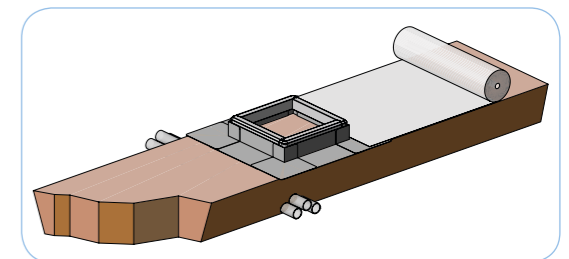


- 3** The assembly surrounding the root ball opening.

Calculating the finished level of the tree soil:  
The finished ground level minus the thickness of the paving surface, minus the thickness of the paving bedding layer and minus the thickness of the Infra Green **ArborRaft** units (150mm)



- 4** Placing the Reinforced Geotextile



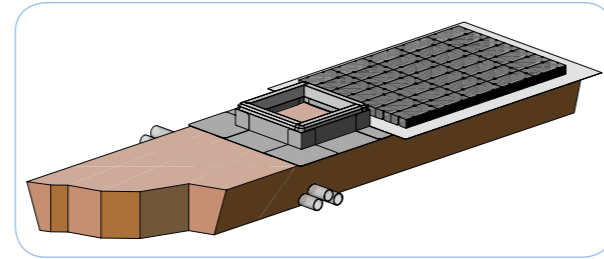
For special circumstances and site specific installation guidance please contact us at: [civils@polypipe.com](mailto:civils@polypipe.com)

# General Installation Instructions

5

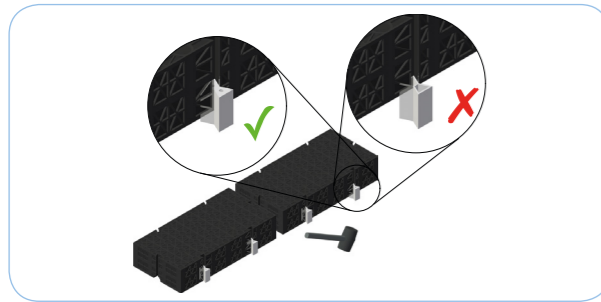
Installing the Infra Green **ArborRaft** units

Place the units with the semi-circular opening on the bottom



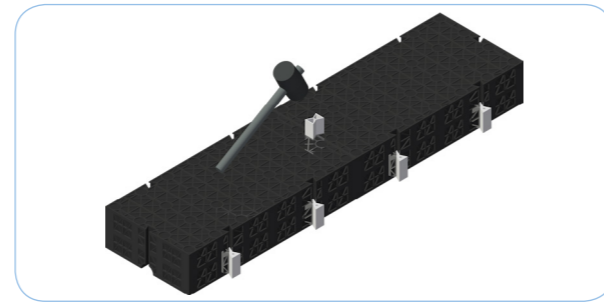
Note that the pins are tapered for ease of installation

5a



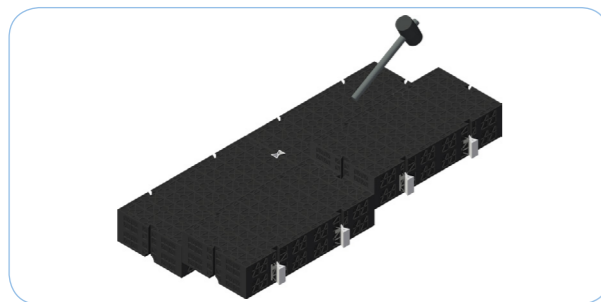
Applying the interlocking connection pins to the bottom side of the units.

5b



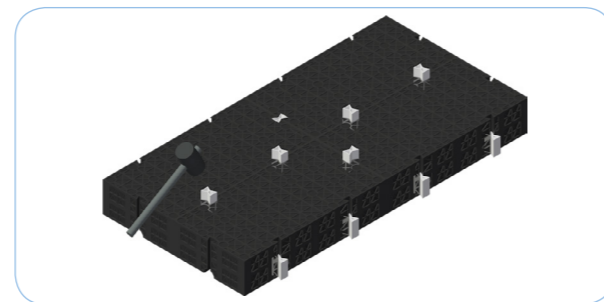
Connecting the units on the upper side

5c



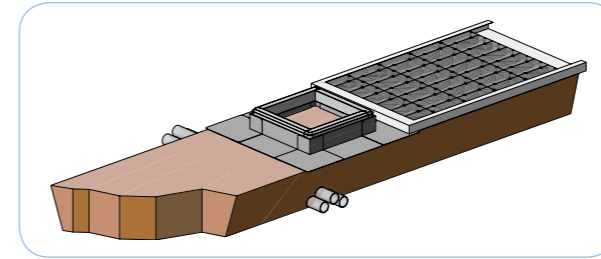
Connecting the units on the upper side

5d



Connecting the units on the upper side

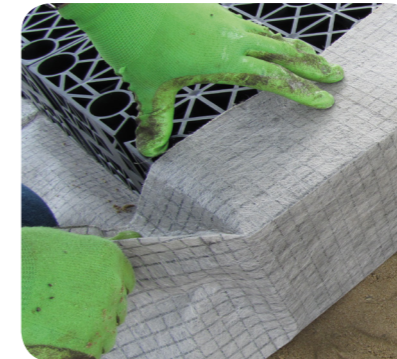
6



Securing the re-inforced geotextile around the Infra Green **ArborRaft** construction

6a

Fold the re-inforced geotextile around the outer edges of the **ArborRaft** units



6b

Secure the re-inforced geotextile around the corners of the **ArborRaft** units



6c

Lap the re-inforced geotextile 150-200mm on top of the units



6d

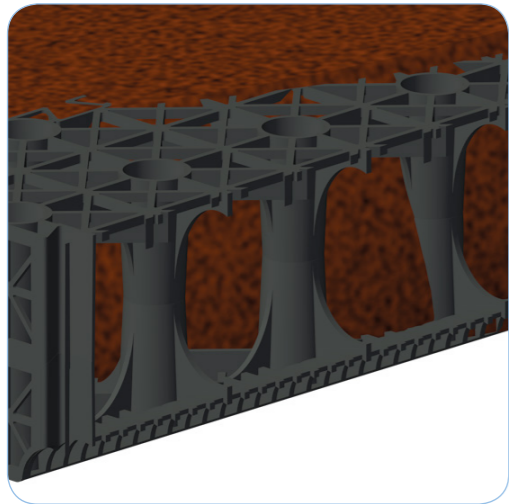
Hold the folded edge in place temporarily



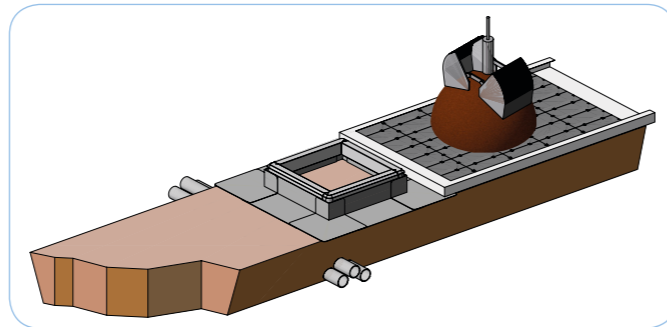
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# General Installation Instructions

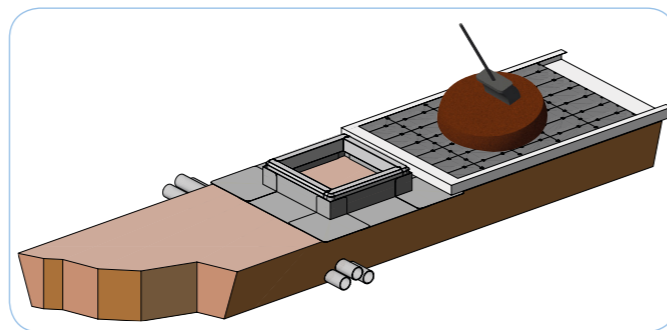
A nutrient rich soil can be used to fill the Infra Green ArborRaft



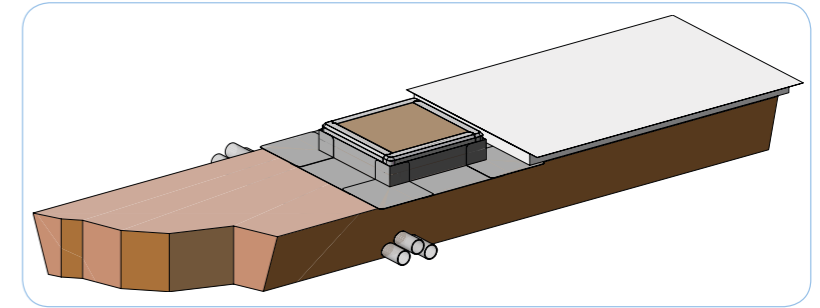
**7** If specified, fill in the **ArborRaft** units with a nutrient rich soil. The soil should be dry and made up of fine particles (screened if necessary) to make the brushing in of the material possible. Through natural settlement, a second ground level in the construction will be created



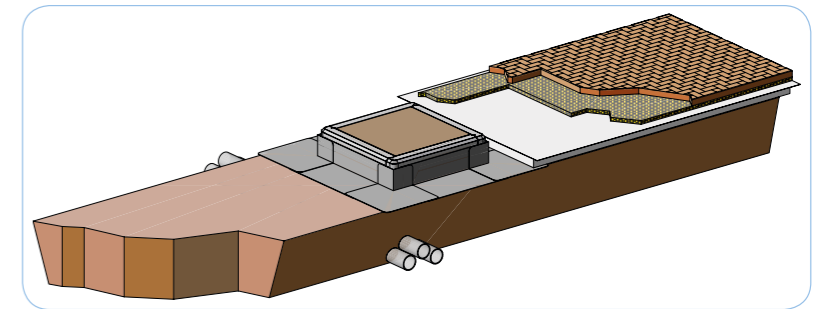
**8** Sweeping the nutrient rich soil into the Infra Green Sandwich Construction



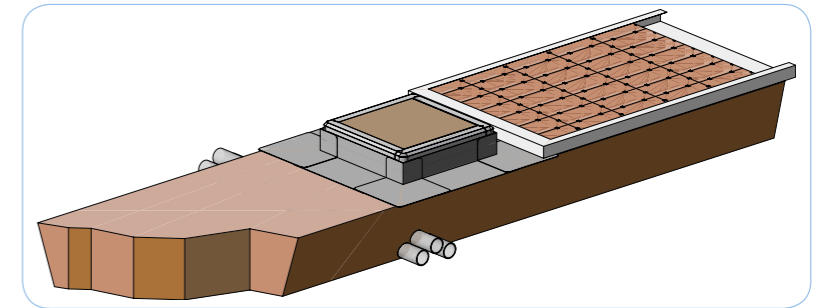
**9** The filled **ArborRaft** units and the tree pit



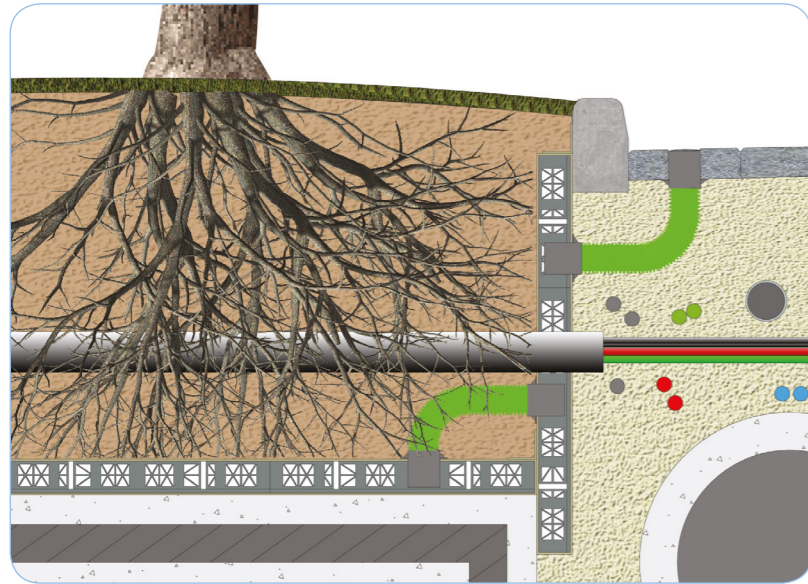
**10** Install the 50mm bedding layer and the paving surface



**11** Install the 50mm bedding layer and the paving surface. Ensure that edges surrounding the InfraGreen Sandwich construction that have been backfilled are well compacted



# Protecting Underground Infrastructure



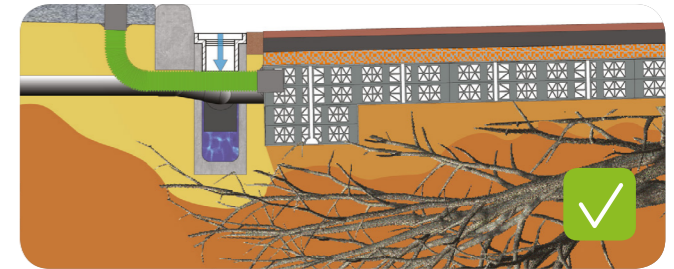
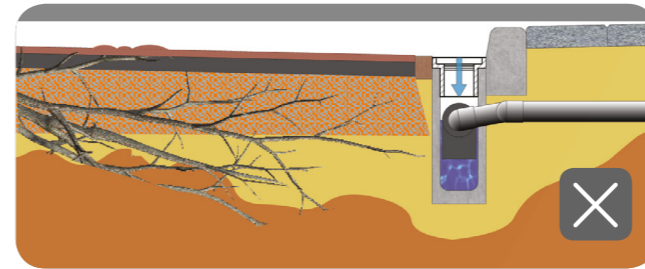
The **ArborRaft** system can also be used in basement construction for insulation and structure protection against the ingress of deep tree and plant rooting systems. The **ArborRaft** creates a high strength structural air void that acts as the perfect barrier against the ingress of deep rooted tree and plant roots into below ground structures thus reducing the damaging effects this can have.



By making use of the **ArborRaft** units, walls can be ventilated and underground hollow spaces are created. These also serve as a growth barrier for tree roots. As a result, cables, pipes and other underground structures are protected.

# ArborRaft for Existing Trees

The damage caused by tree roots lifting pavements and disturbing services is now eradicated by using the ArborRaft system. The root structure is provided with a healthy growing area which is left uncompacted and with access to water and constant nutrient feeding if required. Tree roots do not tend to break through pavement surfaces when their rooting environment is so similar to that of a natural forest floor and the ArborRaft system helps create a natural air barrier preventing roots from penetrating the surfaces.



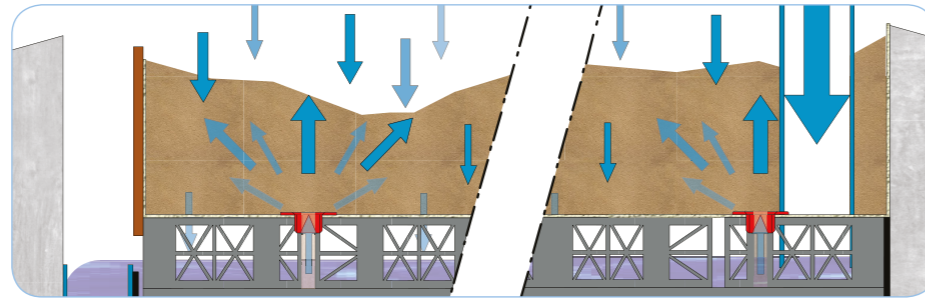
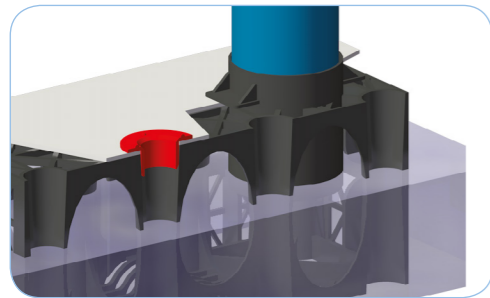
# Sustainable Water

The ArborRaft system can also be used in basement construction for insulation and structure protection against the ingress of deep tree and plant rooting systems. The system creates a high strength structural air void that acts as the perfect barrier against the ingress of deep tree and plant roots into below ground structures and reducing the damaging effects this can have.



1 3D impression of irrigation and drainage components

2 Irrigation and drainage can be incorporated with the aid of selected, tested substrates and geotextiles



## Other products by **InfraGreen** solutions

The TreeBox HP (High Performance) system is the most successful modular system for planting new trees in hard landscapes. The system allows large amounts of tree soil to be placed in areas subjected to heavy and dynamic traffic loadings. The system combines geocellular units, pre cast concrete support pillars and a concrete cover slab to create the ultimate high strength tree planting pits for towns and cities. For more information please refer to our Treebox HP brochure.

### Infra Green's full product range includes:

- TreeBox HP tree planting systems
- InfraWeb Tree Root Protection
- InfraWeb Ground Stabilisation
- Plastic paving grids for grass and gravel infill
- Tree soils and rootzones
- Turf protection
- Geotechnical products
- Drainage systems for sports fields
- Lightweight base systems for rooftop sports and play areas

For further information on any of our products, please contact our office on 01509 615100 or email [civils@polypipe.com](mailto:civils@polypipe.com)

### Infra Green can offer:

- Design services
- Onsite support
- Stock holding
- Next day delivery



**TreeBox HP**



**InfraWeb GS**



**InfraWeb TRP**



**Plastic Paving**



**Sports Pitch Drainage**