
Wavin
TreeTank
Planting trees
in urban areas
Let roots grow
and trees thrive

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orbia



Why trees in urban areas?

Cities need trees. People need trees.

Trees are an essential part of a livable and loveable city.

Trees produce oxygen, improve air quality and contribute to a lovable, living environment. Trees can also lower summer daytime temperatures and are even considered the ‘central air-conditioning system’ of a city.

They contribute significantly to the physical and mental well-being of city-dwellers and increase property value.

Cities around the world are intensifying their “greenification” efforts. And although trees do play a key role in urban life, they are vulnerable and a big investment. They are expensive to maintain, to grow and to stay healthy. But the benefits of trees far outweigh the challenges.



“One tree can absorb as much as 150 kilograms of carbon dioxide annually. Large urban trees are excellent filters for urban pollutants and fine particulates.”

— Food and Agriculture Organization (FAO) of the UN

Why tree tanks?

Planting many trees in the traditional way – immediately adjacent to roads, pavements and engineered structures – causes trees to struggle to grow, to die, or to have their roots push through the pavement and ruin sidewalks and roads.







Roots

are the vital lifeline for any tree, sucking up moisture and nutrients from the soil. When there is no aeration, moisture or nutrients in the soil for the roots to thrive – due to the proximity of hard surfaces like roads and pavements – then trees simply cannot survive.

Unprotected roots can cause unsafe conditions

when they penetrate pavements and roads, and when windthrow (the uprooting of a whole tree at the interface of the trunk and the soil) occurs, this can cause harm to people and vehicles.

Solving root penetration is costly

Roadwork, pavement repair, old clay and concrete pipeline damaged by roots colliding with pipes… this costs money.



To overcome these problems, most cities build tree tanks or tree pits – constructions around the tree roots with uncompacted soil, allowing water and nutrients to flow to the tree roots. Uncompacted soil is essential for trees. However, the outside of the tree tank construction requires compacted soil – so as to avoid uneven road surfaces (like potholes) and to transfer the loads from (heavy) traffic. The only way to combine well-compacted soil with uncompacted soil is to use a tree tank.

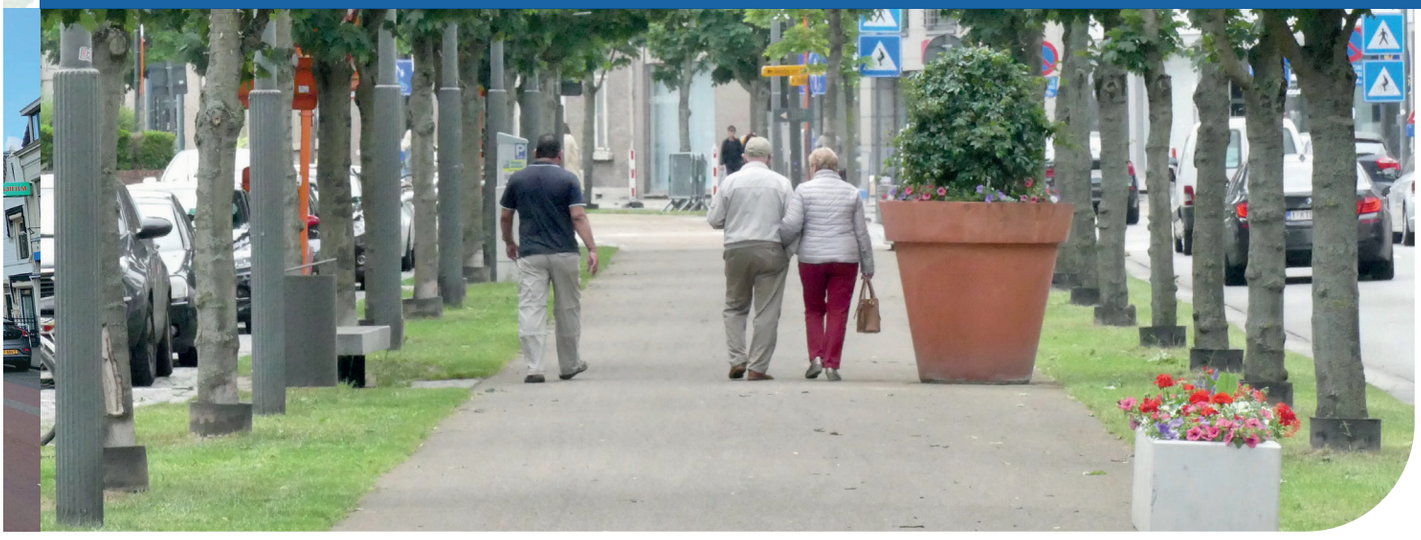
Soil around the trees need to be well-drained. It's good to know that tree tanks can be combined with irrigation and drainage.

A tree tank provides room for unhindered root growth and keeps roots in their intended rooting zones. Tree tanks are the perfect solution in places where roads and pavements will be combined with trees.

- **Saplings develop more quickly into mature trees when planted in a tree tank,** because the tree tank provides the ideal environment for roots to grow quickly.

- **Tree tanks stimulate the growth of anchor roots since these roots develop in well-drained and uncompacted soil. Anchor roots mitigate the risk of windthrow**

- **Tree tanks eliminate the risk of roots penetrating roads, pavements and pipelines.** Tree pits have uncompacted soil, an air gap of 5-10 cm at the top of the box, and are wrapped in geotextile. First, geotextile keeps roots from entering the area outside the tree tank. Secondly, the permeable geotextile allows water to flow through but the nutrient rich soil to stay inside the tank.



Why the Wavin TreeTank®?

Wavin has been at the forefront of using plastic rainwater infiltration units and these units have now been applied to serve as a tree tank.

The Wavin TreeTank solution is a flexible system and can be installed much faster and easier, compared to traditional systems.



At the location where the tree will be planted, a hollow space is created in which the plastic TreeTank units are placed. The tree is planted and the rest is filled with substrate.

To stabilize the tree, it is anchored in place. Uncompacted soil is added, securing both water and nutrients to reach the roots. Rainwater is introduced into the root volume via Wavin rainwater collection and pipe systems. A stellar example for this solution is the Wavin Tegra road gully with its unique litter filter. Rainwater from the streets is collected via these gullies, where the Tegra road gully filters up to 70 times more dirt and litter, compared to gullies without a filter.

The tree tank developed and proven to withstand traffic loads.

Wavin TreeTanks are suitable to withstand continuous traffic loads up to 3 ton wheel load and incidental heavy traffic up to 5 ton wheel load, with an applied cover depth of 40 cm.









Your advantages!
Wavin TreeTank®

Wavin TreeTanks can be installed up to 6 times faster than any other type of tree root box.

The modular units with integrated connectors allow for a very quick (and easy) installation. This minimizes the length of time that the roads will be blocked off/disturbed.





Wavin TreeTanks have a rigid separation of the soil inside and outside the box.

They are the only tree root boxes to have side plates, securing a sturdy separation of compacted soil outside of the box, versus loosely compacted soil in the tree root box.

Wavin TreeTanks are modular.

Different types of trees need different sizes/ shapes of tree root boxes. Due to their size and modular connection, these tree tanks can easily be customized into whatever volume and shape is needed.

Wavin TreeTanks are flexible.

Obstructions in the soil – like pipework – require a flexible system. Existing and new pipes can be easily integrated into the Wavin TreeTank.



Wavin TreeTank® units are available in BIM Revit

– minimizing design and installation time.

Wavin TreeTank® in practice:

city of Hasselt (Belgium)

Just like many other cities, the city of Hasselt (80,000 residents) wanted to add more greenery to the streets.

The Wavin TreeTank made it possible for Hasselt to plant 86 large trees in the brand new Quartier Blue district, where the trees needed to be planted on top of a concrete parking garage. No problem when using the TreeTank solutions, as the pictures show.









Many cities are seeking sustainable tree solutions for their urban areas.

At Wavin we hope to promote the Wavin TreeTank system in cities across Europe.









"Installation of the Wavin TreeTank units turned out to be 6 times faster than the alternative. To date, a total of 2,500 cubic meters of Wavin TreeTank units have been supplied to the Hasselt project."



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Wavin is part of Orbia, a community of companies working together to tackle some of the world’s most complex challenges. We are bound by a common purpose: To Advance Life Around the World.

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