

Product sustainability



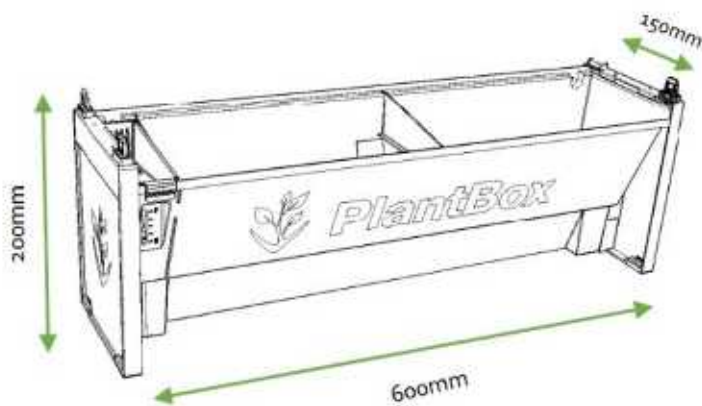
PlantBox **is** a cleverly simple living wall system designed with ease of installation, planting, watering and after-care in mind. The stackable trough assembly allows for small or large vertical spaces to be greened, with only the need to restrain the boxes back to a suitable wall or structure at height, and the integrated irrigation makes watering really easy.

Living walls bring many benefits to people and the environment, cleaning the air, improving health and well-being, enhancing biodiversity, using plants to soften and enrich previously hard, bare vertical surfaces.

PlantBox on both a project basis and as a product. As a product, PlantBox is available to both the general public and landscapers through retail and trade partners. We also offer PlantBox through our e-shop: www.growingrevolution.com.



PlantBox Specification

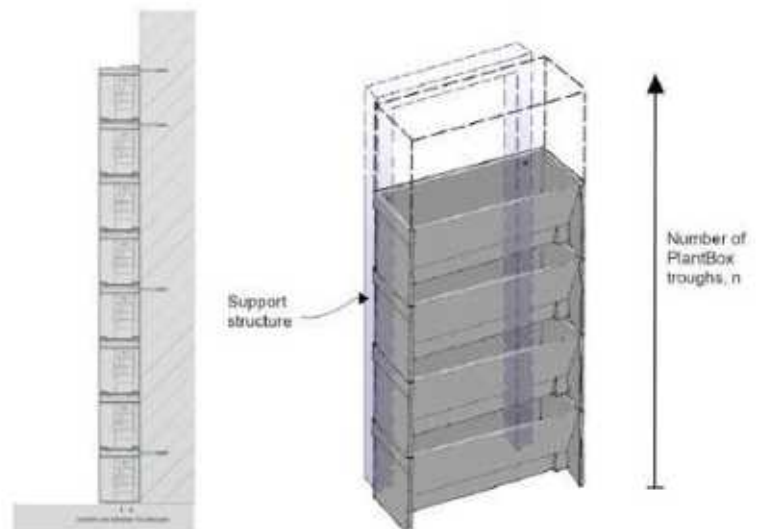


Specification Details

Unit dimensions	600mm x 200mm x 150mm
Fully loaded weight	70kgs per m ²
Base material	100% recycled polypropylene
Trough depth	200mm
Reservoir capacity	1.8L
Recommended support structures	Treated timber (plywood), aluminum, steel, masonry, concrete
Recommended fixings	Plywood (wood screws), Aluminum/steel (8.8 bolts), Masonry/concrete (Resin anchors) - 2 fixings per trough
Plants per m ²	33 plants (8.33 troughs per m ²)
Pot size	Anything up to 13cm (1 LTR) - 4 plants per trough
Design life	>10+ years
Compost type	Peat-free multi-use - 4-5L compost per trough
Nutrient feed	Drip feed or slow-release pellet into substrate

Installation Notes

- Fix vertical rails onto support structure at 600mm centres
- Pre-assemble PlantBox units and clip together to desired configuration
- Fix back to rails using appropriate fixings
- Attach PlantBox units with 2 fixings on the bottom row of troughs, before fixing every 3 troughs until the top and apply 2 more fixings to top row of units
- Attach irrigation lines if required
- Fill units with substrate
- Plant units and backfill around with substrate
- Fill units by adding water on the top row of filters
- Watch plants flourish!



PlantBox is so easy to install, we supply it in kit form. Fixing guides are online, plus advice videos for your clients. After-care is simple and can be done by contractor or client.

Sustainability



PlantBox Product Sustainability

Embodied Carbon

Our PlantBox System is manufactured from 100% post-consumer waste recycled plastic and as such has both a very low embodied carbon and saves materials from going to landfill. Research shows that the emissions reductions from eliminating the need for new plastic significantly outweigh the emissions that come from processing the scrap. As of 2018 90.5% of plastic went un-recycled worldwide. We want to be part of changing this.

The PlantBox troughs are manufactured from recycled polypropylene which is estimated to have an embodied energy of approx. 40 MJ/kg compared to virgin polypropylene which is estimated to have an embodied energy of approx. 80 MJ/kg. So there is a saving of approx. 50% of embodied energy just in the manufacture and there is the saving on landfill.

The table below comes from the Science Paper, Life Cycle Impacts for Post-Consumer recycled resins: PET, HDPE, PP by the Association of Plastic Recyclers, December 2018.

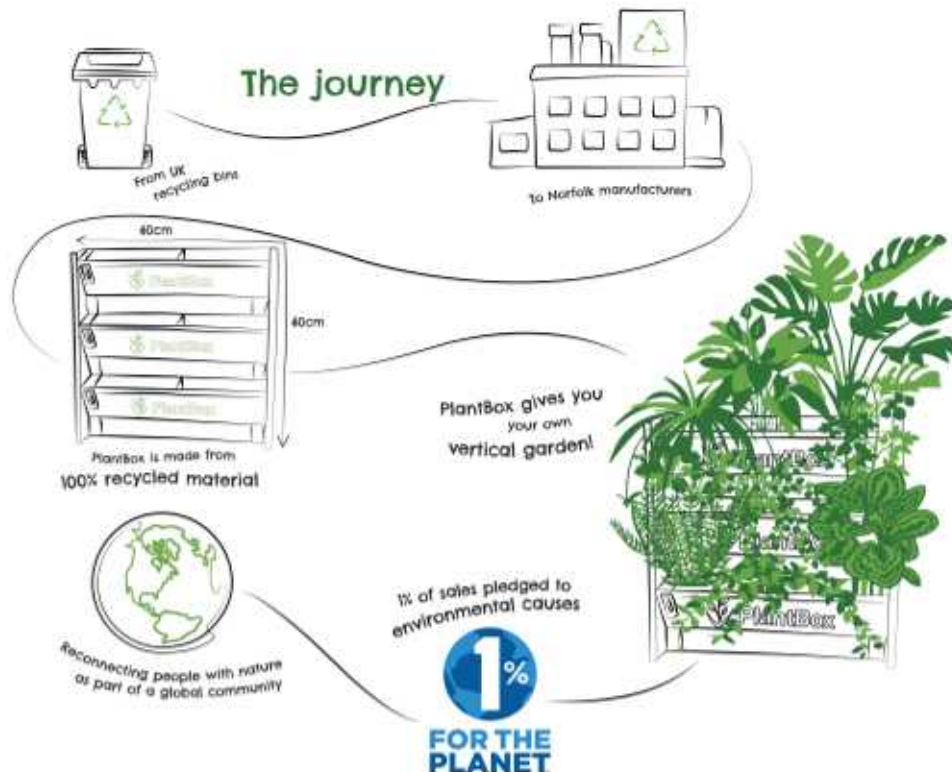
Table 3-9. Savings for Recycled Resins Compared to Virgin Resins

	Recycled PET		Recycled HDPE		Recycled PP	
	Recycled % of Virgin	Recycled Resin % Reduction from Virgin	Recycled % of Virgin	Recycled Resin % Reduction from Virgin	Recycled % of Virgin	Recycled Resin % Reduction from Virgin
CUT-OFF						
Total Energy	21%	79%	12%	88%	12%	88%
Water Consumption	104%	-4%	41%	59%	54%	46%
Solid Waste*	42%	58%	101%	-1%	77%	23%
Global Warming	33%	67%	29%	71%	29%	71%
Acidification	30%	70%	53%	47%	42%	58%
Eutrophication	54%	46%	102%	-2%	57%	43%
Smog	25%	75%	63%	37%	50%	50%
OPEN LOOP						
Total Energy	61%	39%	56%	44%	56%	44%
Water Consumption	102%	-2%	71%	29%	77%	23%
Solid Waste*	71%	29%	100%	0%	88%	12%
Global Warming	66%	34%	65%	35%	64%	36%
Acidification	65%	35%	77%	23%	71%	29%
Eutrophication	77%	23%	101%	-1%	79%	21%
Smog	63%	37%	82%	18%	75%	25%

*Solid waste excluding contaminants removed from incoming material. These contaminants are not caused by recycling and would have been disposed as waste regardless of whether postconsumer plastic recycling takes place.

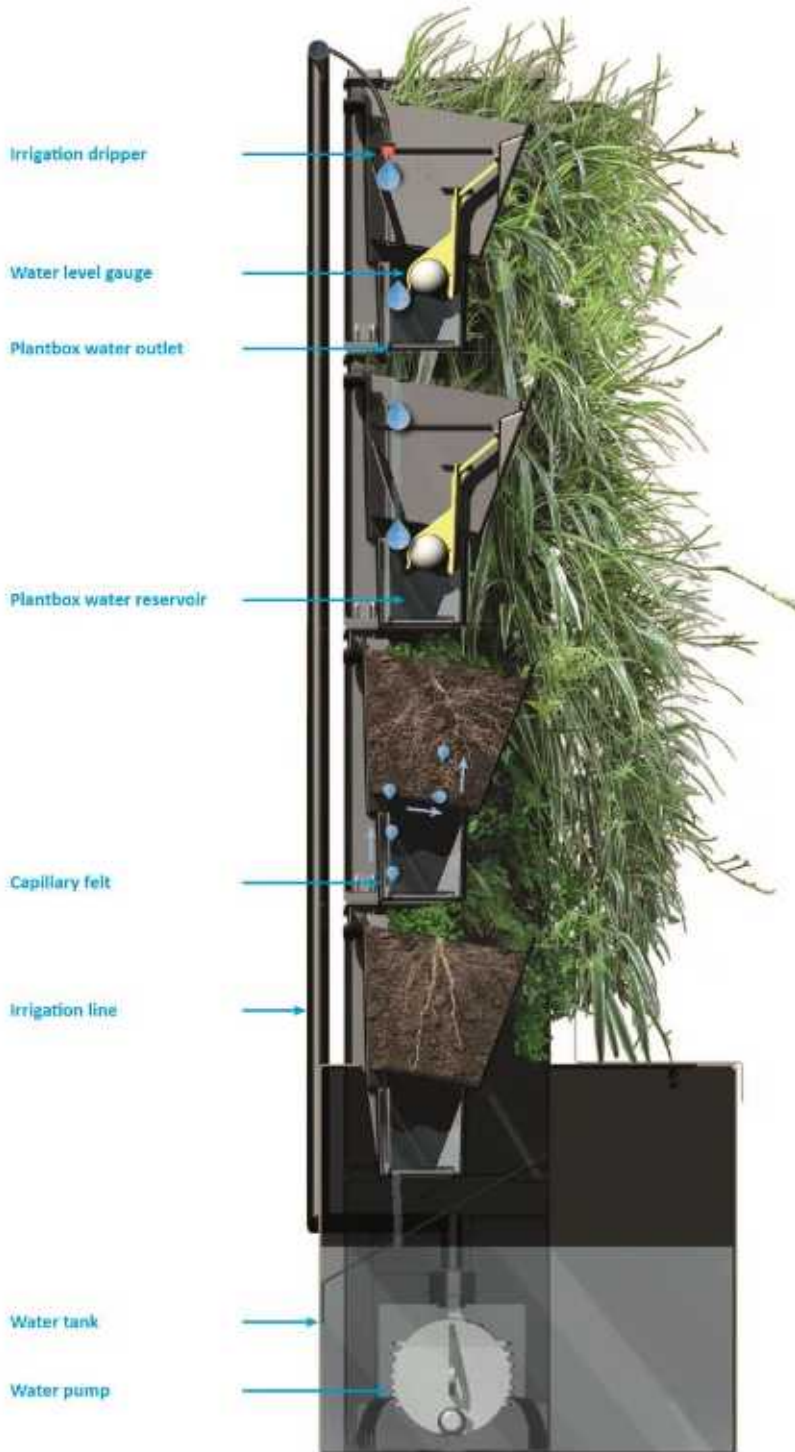
Manufacturing

PlantBox is manufactured here in the UK



Warranty

PlantBox has a warranty of more than 10 years subject to correct use



Water Usage

Each PlantBox trough has a 1.8 litre reservoir and there is a cascading overflow watering system that links each of the troughs without the water passing through the growing medium. Water then reaches the growing medium to suit the plants requirements through capillary felt. We are therefore watering directly at the rootzone to minimise losses.

The top trough is often open to the elements and can also be incorporated into rainwater harvesting systems meaning the PlantBox green wall cascading watering system can be used as part of a storm water attenuation system.

Water usage per m² changes dependent on season and location. For example our outdoor PlantBox walls have only required watering once during winter 2020/2021 (October to February inclusive). In the height of summer the living walls will require more. As an annual average it is well below 1 litre per m² per day

Electricity consumption

PlantBox doesn't HAVE to have pumps and in this case there is no electricity consumption. A simple hoselock connection can be provided for watering by hand, or a battery timer or full remote sensing and control. The pumps (if required) are rated at 0.8kW. Electricity consumption is dependent on the size of the green wall but it is minimal. For a 200m² for example we calculated the annual energy use to be £6.



NHS Nightingale Wellbeing Garden

Project Case Study

Richard Sabin, our MD, was phoned by the building contractor at the London NHS Nightingale Hospital. He wanted to know if we could help "do something" about the staff change area, which was just bland and unfriendly. Yes we can! And we did. In just three days, we created a garden for the staff at NHS Nightingale Hospital, transforming the space where they collected scrubs, shower and change.

It was a tight turnaround, so Richard quickly got to work calling up his contacts at West Sussex nurseries to donate thousands of plants and a host of other businesses to donate trees, pots, best quality artificial lawn, outdoor furniture, and the essential transport to site.

Growing Revolution donated plants, staff time and 600 troughs of our fabulous vertical planters, PlantBox. We called friends who volunteered their time to plant them all up. Richard also called on renowned landscape designer, Patrick Collins, for his input.

When the hospital was fully operational, 1,600 NHS staff were passing through the new garden area every day to collect scrubs and access the showers and changing rooms. The 100m² central breakout area features a 2.4-metre-high vertical garden, trees, potted plants, grass, seating and parasols.



Before and after: from dusty concrete and steel, to a green and pleasant garden...



"It's just gorgeous, it makes such a difference. We get stuck indoors and forget about the sun! It will be lovely to sit here and get some fresh air."

Liz Wells, Operations Manager





1 Wellington Road, Chichester

Project Case Study

Elberry Properties Ltd had just completed on a high-end development in Chichester before contacting Growing Revolution for their vertical garden. It had turned out that the site was only ten minutes down the road from us and the courtyard space was a perfect fit for PlantBox.

The team were quick to assemble the PlantBox troughs and by lunchtime had the living wall framework up ready for planting! Due to the shady location of the wall, the team planted a mixture of ferns, grasses and other hardy evergreens to give the new homeowner a low-maintenance vertical garden full with texture, shape and visual interest!

By mid-afternoon the living wall was planted up and the plain, uninspiring wall had been totally transformed!

We loved working with Elberry Properties on this project and we had some great feedback from them

"Today the fabulous team from Growing Revolution have installed a living wall for us in the courtyard of Plot 1, Wellington Mews in Chichester. We think it looks great! Thanks guys!"
Elberry Properties Ltd



Before and after: uninspiring courtyard to lush green oasis...





Growing Revolution and Biotecture Team, Bristol Royal Infirmary Garden Makeover, May 2020

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