biofilta

PRODUCTS & SERVICES

Transforming cities into catchments and food bowls

RAINWALL™ FOODWALL™

Biofilta planter, Darling Street, East Melbourne, Victoria.

biofilta | About Us

Biofilta Pty Ltd is an Australian company based in Port Melbourne, Victoria, that undertakes Water Sensitive Urban Design (WSUD) and installation at the household, streetscape, municipal and precinct level. Biofilta has developed innovative methods to harvest and treat stormwater in a spatially efficient manner.

Our expanding range of services and products focus on harnessing one our most valuable resources, storm water, for beneficial use.

We are partnered with Australian Ecosystems Pty Ltd who provide horticultural expertise and plant stock from its nursery in South East Melbourne, Victoria.

Biofilta recognise that wetlands are not the only solution for urban stormwater treatment given the spatial constraints of urban development and cost of developable land. Bioretention treatment has been established as an effective means of combining natural beneficial bacterial and plants to reduce excess nutrients and pollution from urban runoff.

Using our horticultural and ecological expertise, Biofilta has revolutionised the way rain gardens are installed by pre-growing the plants to an advanced stage thus avoiding the usual 12 months of establishment phase.

We also source our own sand and media to match the hydraulic properties modelled in eWater's Model for Urban Stormwater Improvement Conceptualisation (MUSIC) so the end result is compliant and has the right characteristics to filter water with optimal contact time to remove pollutants.

Great plants and compliant media is only half the Biofilta story.

We realise that plants alone do not guarantee ongoing rain garden sustainability in harsh environments.

Biofilta has developed an innovative system which involves a robust treatment train of gross pollutant removal, sediment removal, oil separation and large volume retention to capture as much short burst rainfall as possible. Once captured, the stormwater is then filtered through our planters and the filtered water is used for irrigation and sustainability.

Our large scale Biofilta system has been shown to be scalable to precinct sizes capturing stormwater from up to 37ha and producing fit for purpose stormwater at an average cost of $2.80 per kilo litre.

Biofilta invests heavily into its own research and development to ensure that products are robust, low maintenance and effective.

We consult in the areas of WSUD and new to 2015, we are excited to offer our vertical food growing systems (Foodwall™ and Rainwall™) for commercial applications.

biofilta | Stormwater Treatment

Biofilta has undertaken a range of project installations for urban stormwater capture and treatment as our system makes valuable land available for additional development (compared to traditional raingardens), utilises native plants and are aesthetically pleasing.

GTV 9 Redevelopment - Richmond, VIC

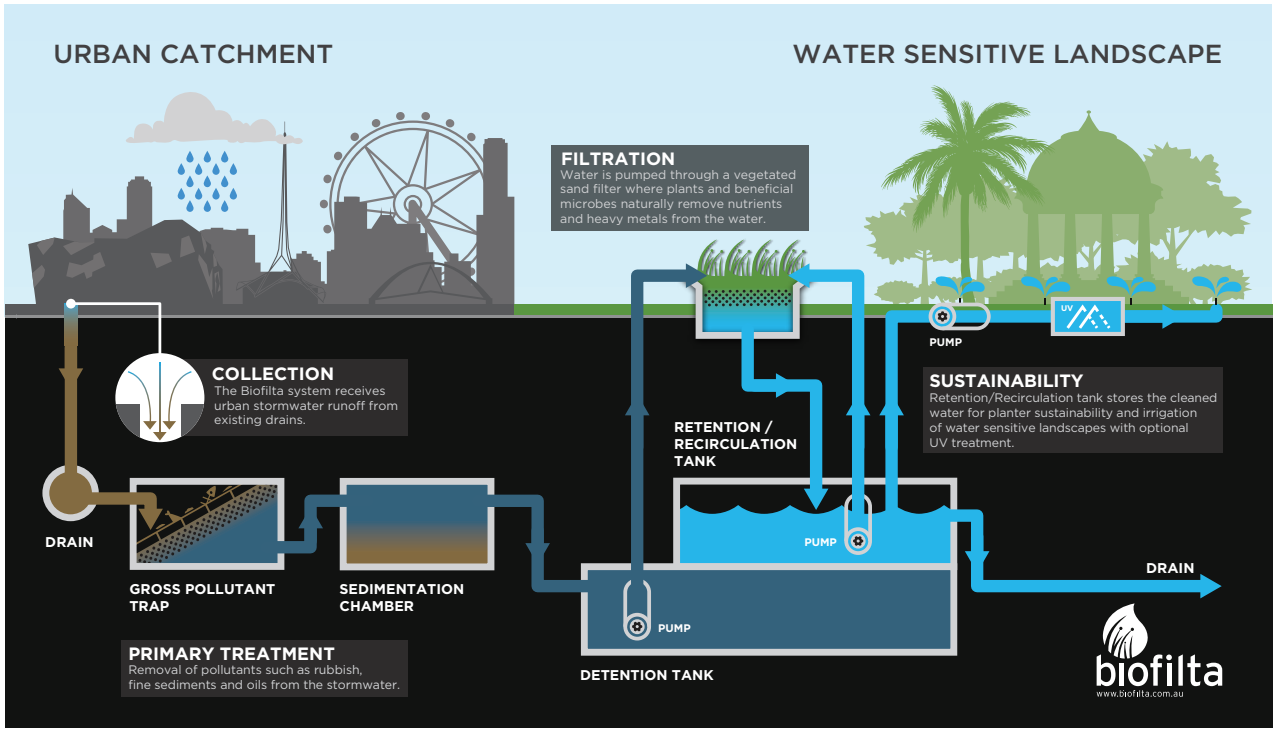
Biofilta undertook the complete design and construction of a highly compact stormwater system for Lend Lease.

The system includes our unique treatment train and stacked underground tank configuration to provide 75m^3 of primary storage which is then filtered through a three-tier 50m^2 Biofilta vegetated planter. Filtered water is then collected in a 50m^3 re-use tank for on-site irrigation needs with over 75% reliability of supply.

GTV 9 completed planter

Birrarung Marr - Melbourne, VIC

Integrated stormwater at its finest with a 2.5ML Biofilta system adopted by the City of Melbourne to produce over 30ML potable water offset using filtered stormwater.



Biofilta system engineering drawing

Our 100m^2 planter does all the heavy lifting in terms of nutrient removal whilst blending into the landscape.

Biofilta provided plants, filtration media, pumps and controls for the Birrarung Marr project with the City of Melbourne licencing the treatment train approach developed by Biofilta for its East Melbourne Parks and Gardens initiative.

Commercial buildings - Middleborough Road, VIC

The Biofilta system has been incorporated within this development in order to meet high water quality requirements as well reduce the peak stormwater flow to the reticulated stormwater infrastructure in the area. These objectives have been achieved whilst reducing the overall footprint of the system, thus increasing the land available for additional development. The Biofilta planter bed also provides an attractive landscape feature in the public space.

Darling Street - East Melbourne, VIC

Biofilta designed and constructed a 300kl primary and 150kl reuse tank in the middle of Darling Street, East Melbourne.

With urban space at a premium and a thirsty heritage listed park next door, Biofilta's innovative design meant that a treatment footprint of only 120m^2 was required to harvest and filter water from a 30ha urban catchment and provide 20ML per annum to the Darling Square park and protect the heritage listed trees. This project won the Siemens Global Climate Adaptation Award which is recognised the innovation in urban stormwater harvesting.

The Sands - Tannum Sands, QLD

Designed and constructed by Biofilta, our system captures and treats stormwater from the adjacent 10ha residential catchment.

Stormwater flows from the sediment basin to the 300m^2 Biofilta planter via a surcharge pit and pipe connection. From the planter, the water filters through the biorentention system to a 150kl sustainability tank. The water in the sustainability tank is recirculated through the planter during low rainfall periods. The recirculation keeps the plants healthy as well as maintaining the biofilms within the root structure of the planted material.

During construction

Post construction

biofilta FOODWALL™

Urban Food Production

Urban food production is a key part of our future sustainability, social connection and food security.

Biofilta has developed a vertical and modular Foodwall™ system to provide a highly water efficient vertical wicking garden bed that is self-sufficient.

No more bending across garden beds, Foodwall™ comes in double or triple row heights and multiplies the productivity of any space.

Key Features:

- Wicking garden beds water from the bottom, thus increasing water efficiency
- Optimal water efficiency for seedlings and established plants
- Stored water for less plant stress during hot periods
- Adjustable water level
- Internal aeration system
- High productivity and yield
- Modular – connect five bays and control from one point
- Robust heavy duty galvanised and powder coated frame
- Adjustable height middle tub
- Modules 1m long
- Low maintenance

biofilta FOODWALL™

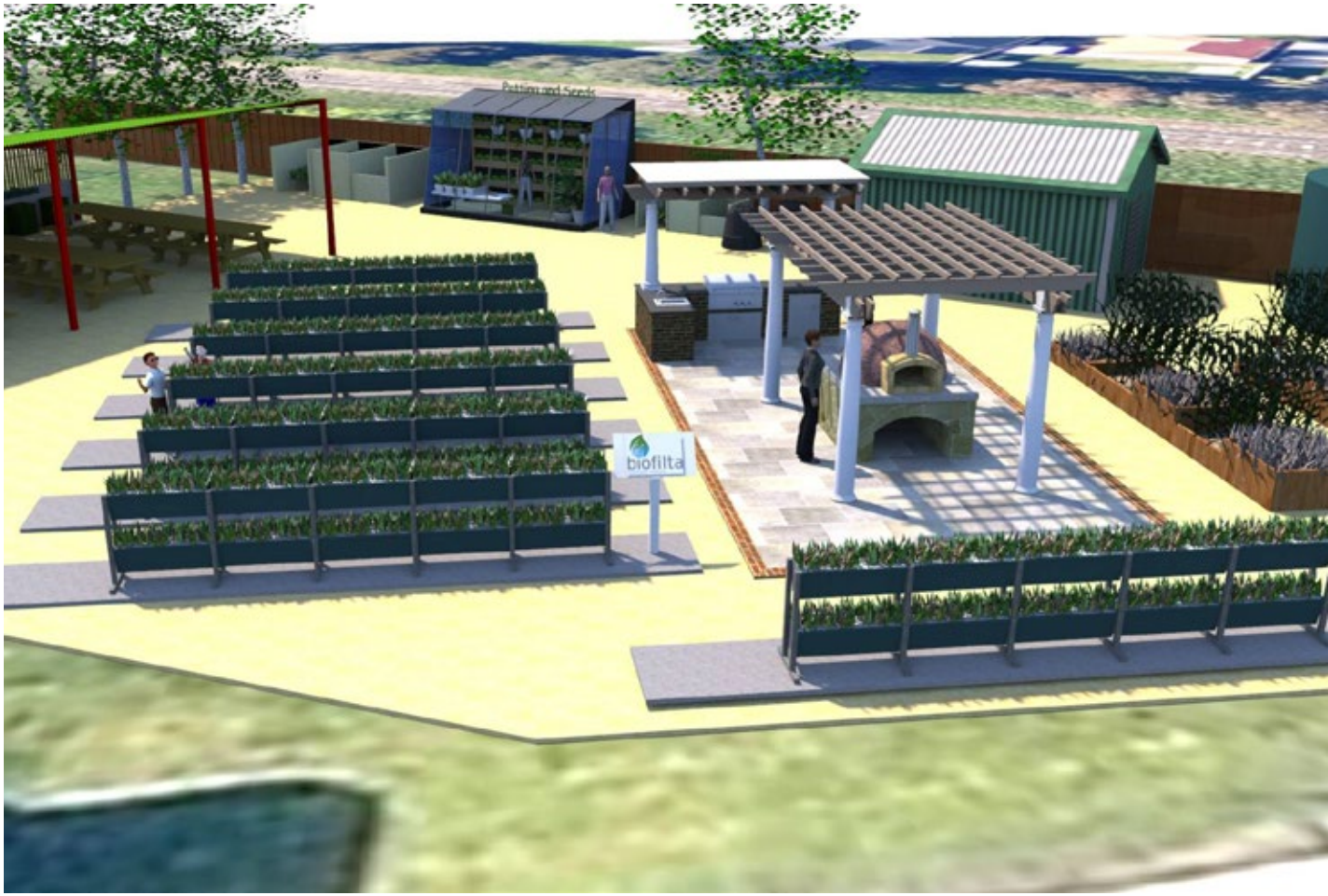
Community Garden

Casey Urban Garden - VIC

Casey Grammar School in Cranbourne, VIC, is set to become the first school community garden using Foodwall™ with the help of funding from the Living Victoria grant scheme.

Foodwall™ is ideal for school projects because its high water efficiency, high food yield, accessibility from either side, no need for bending to tend to plants and is easy for kids to maintain and learn the practice of being water and food self-sufficient.

Biofilta has designed an entire community garden including composting, worm farms, potting sheds, weather station and horizontal garden beds for a total community asset and horticultural learning centre.



biofilta RAINWALL™

Vertical Bioretention

Traditionally, rain gardens are at the ground level. Biofilta has constructed many ground level rain gardens and above ground planters. However, there are some situations where water quality targets just cannot be met in the available space and new thinking is required. For this challenge, we developed Rainwall™.

Rainwall™ uses our exclusive modular system and is configured with an anoxic zone for denitrification, Biofilta media and native plants to provide an attractive vertical bioretention system that can be connected to a roofwater tank or pumped from a basement collection sump.

MUSIC modelling is undertaken by Biofilta to size the number of modules required to meet Best Practice water quality objectives and is dependent on the project location, size of catchment and amount of capture volume.

Our service technicians will install the system as part of the building fit out or retrofit to bring an existing site up to current environmental standards.

biofilta RAINWALL™

Independently Tested

Melbourne University's Centre for Aquatic Pollution Identification and Management (CAPIM) undertook extensive testing of Rainwall™. The results show *"Biofilta's vertical biofiltration system demonstrates very good performance in percentage removal of pollutants, removing suspended solids and removing nearly 100% of all metals."*

Pollutant	Current best practice performance objective	Receiving water objective	Result
Total Suspended Solids (TSS)	80% retention of the typical urban annual load	Comply with State Environmental Protection Policy (SEPP) (i.e. not exceed the 90th percentile of 90 mg/L)	Exceeded
Total Phosphorus (TP)	45% retention of the typical urban annual load	Comply with SEPP (i.e. base flow concentration not to exceed 0.0 8mg/L)	Exceeded
Total Nitrogen (TN)	45% retention of the typical urban annual load	Comply with SEPP (i.e. base flow concentration not to exceed 0.9 mg/L)	Exceeded

CAPIM

Field testing

biofilta | Consulting Services

Biofilta's team of professional consultants are experts in consulting for Water Sensitive Urban Design (WSUD) and stormwater harvesting projects.

We undertake all conceptual design using industry standard software packages such as MUSIC and can offer our experience across a broad range of projects to meet your challenges.

Our range of services include:

- Water quality modelling using MUSIC to size wetlands, ponds, sediment collection pits, swales, bioretention and water balances for landscapes
- Stormwater harvesting and reuse design at Municipal, Commercial, Streetscape and Household scales
- Community Garden design
- Provision of vertical Foodwall™ growing systems for urban food production and community gardens
- Environmental Management Plans
- Water sensitive urban design asset assessment and troubleshooting
- Wetland hydraulic review and recommendations
- Hydraulic structure operation assessment
- Supply and installation of rain gardens
- Water quality testing and reporting
- Urban Heat Island assessment
- Fish ladder design
- Dwarf galaxid habitat ponds design
- Hydraulic design and sizing
- Retardation basin sizing and design
- WSUD construction estimation

Contact Us

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