

# PROTECTING THE FUTURE OF OUR WATERWAYS

PRODUCT GUIDE 2023





**Stormwater360** proudly holds the distinction as New Zealand's pioneers in stormwater solutions and the first company to focus on stormwater management in the country, with over 27 years of unmatched experience and expertise.

Our company's products address the impacts of urban growth with a range of natural and engineered stormwater solutions.

By screening plastic and other gross pollutants, filtering sediment, absorbing heavy metals, enhancing evapotranspiration and increasing infiltration, we can reduce the impact of stormwater runoff on our environment.

We are passionate about our waterways and are committed to delivering stormwater solutions that preserve and protect the future of our rivers, lakes and oceans.

[www.stormwater360.co.nz](http://www.stormwater360.co.nz)



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# Stormwater Filters

Our stormwater treatment filtration devices have been developed to remove an array of contaminants, including sediment, heavy metals and nutrients to meet the most stringent regulatory authority requirements.

## STORMFILTER™

The Stormwater Management StormFilter™ cleans stormwater through a patented passive filtration system, effectively removing pollutants to meet the most stringent regulatory requirements. Easy to install and maintain, and proven performance over time, the StormFilter™ contains rechargeable, media-filled cartridges that remove a variety of pollutants, such as sediments, oil and grease, metals, organics, and nutrients. These systems come in variable configurations to match local conditions and come with prolonged maintenance periods to ensure long-term performance and reduce operating costs.

Easy maintenance and low life cycle costs

Can be configured in any drainage structure.

Customised media options including ZPG, Perlite, Zeolite and GAC target TSS, phosphorus, heavy metals, and hydrocarbons

Multiple cartridge heights give design solutions for site restraints

**High Sediment Removal**

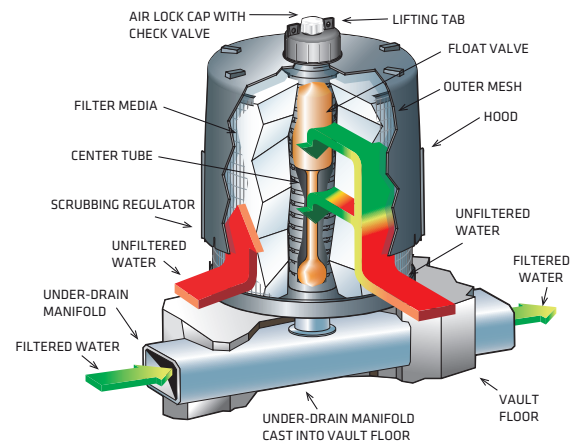


### MAINTENANCE

- » Every 1-3 years on average
- » Cartridge Exchange Service
- » Lifetime Warranty on StormFilter™ cartridges (conditions apply)

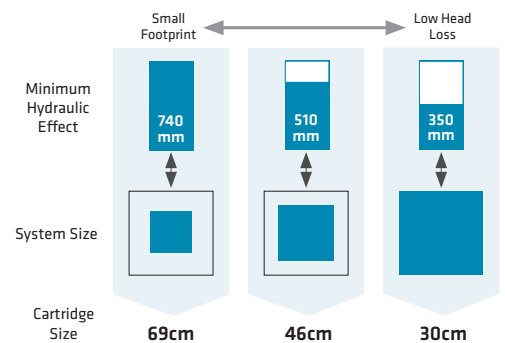
### APPROVALS

- ✓ ARC TP10 approval for removal of greater than 75 percent TSS
- ✓ Auckland Council Approved for use on Public and Private Sites
- ✓ Christchurch City Council Approved for use on Public and Private Sites
- ✓ Washington approval and NJDEP



### SUPERIOR HYDRAULICS

Multiple cartridge heights give design solutions for site restraints.







## JELLYFISH®

This revolutionary stormwater quality device is the latest in filtration technology and uses gravity, flow rotation, and up-flow membrane filtration to provide stormwater treatment in an underground compact stand-alone system. Using unique filtration cartridges, each Jellyfish® Filter has a large membrane surface area, resulting in high flow rates and pollutant removal capacity. The filter has a number of 'tentacles' that catch and remove floatables, litter, oil, debris, TSS, silt-sized particles (as small as 2 microns), and a high percentage of particulate-bound pollutants; including phosphorus, nitrogen, metals and hydrocarbons.

The Jellyfish® Filter has a much smaller footprint than other best-management practices (BMPs), greater design flexibility and no replaceable media.

High surface area, high flow rate membrane filtration

Highest design treatment flow rate per cartridge (up to 80 gpm (5 L/s))

150- 457mm headloss @5L/S

Lightweight cartridges with passive backwash

Ideal for flat land areas with low hydrologic grade

**High to Very High** Sediment Removal



### MAINTENANCE

- » Low maintenance costs
- » Reusable cartridges
- » No replaceable media

### APPROVALS

- ✓ Auckland Council Approved for use on Public and Private Sites
- ✓ Christchurch City Council Approved for use on Public and Private Sites



*Jellyfish® Filter*

For JellyFish models and sizing visit  
[www.stormwater.co.nz](http://www.stormwater.co.nz)





# Oil & Water Separators

Stormwater360 offers a range of solutions for industrial sites and trade-waste applications. Our products help you meet regulations by capturing oil in stormwater, keeping it on-site and away from the environment.



## ESK™ Oil Management System

The ESK™ is a passive high efficiency coalescing separator that removes free oil from contaminated stormwater runoff and has a built-in shutoff valve to prevent spills and storage capacity excess exiting the device. The device is ideally suited for sites where specific effluent targets are specified, or for sites where removal of oil and grease is the greatest concern e.g. fuel stations, fuel distribution stations, car servicing workshops, etc. It is typically sized to remove oil droplets as small as 10 microns and achieve an effluent concentration of 5 mg/L or less.

Easy to install and maintain

Reusable and washable media

Optional alarm system, sensor control, remote control

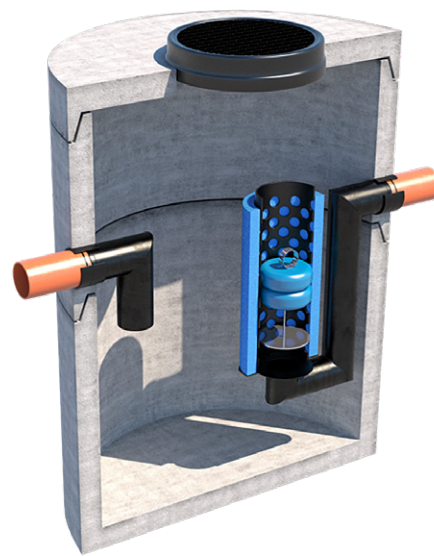
Small footprint

### APPLICATIONS

- » Refuelling stations
- » Farms
- » Petrol Stations
- » Industrial Sites
- » High contaminating activities

### MAINTENANCE

- » Easy to install and maintain
- » Reusable and washable media



in cooperation with



### TREATMENT TRAIN

With industrial sites, often the runoff is highly contaminated and cannot be managed through source control measures. In such instances, several treatment devices can be used in a “treatment train”. Each device in the treatment train targets a different contaminant. Often a treatment train is required to lower the concentration of contaminants to a suitable level for safe discharge. In many cases a treatment train is used to lower operational costs.

### AVAILABLE MODELS

ESK	Chamber Diameter	Treatment Flow	Recommended Inlet/Outlet Pipe Size
	m	L/s	mm
ESK10	1050	10	150
ESK20	1200	20	200
ESK40	1500	40	300
ESK100	1800	100	300

Our standard ESK coalescing separator range is designed and manufactured for treatment flows starting at 1.5L/s up to 100L/s.





## FOX™ Diversion Valves

The Fox™ Valve system is a stormwater/ tradewaste diversion system designed to divert washdown and/or first flush stormwater runoff to trade waste to prevent pollution of downstream waterbodies.

Stormwater360 can supply different models depending on application and contaminant of concern.

Plug and play – however needs on site calibration for 'First Flush Volume'

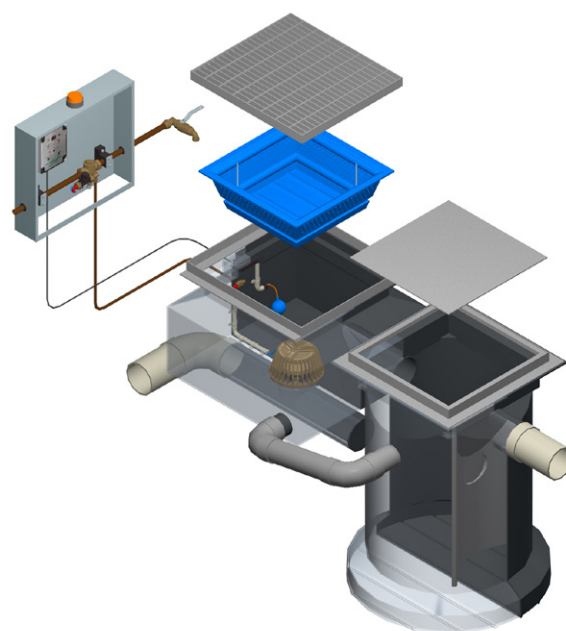
Designed for sites over 5m<sup>2</sup>

Operates at 20 L/ sec.

Trafficable – Heavy Duty CLASS D grate

### APPLICATIONS

- » Aviation/Airports
- » Earthmoving
- » Armed Forces
- » Ports
- » Marinas
- » Fuel/Gas Stations
- » Mining
- » Slipways
- » Trucking/Transport
- » Vehicle Dealerships



### AVAILABLE MODELS

UNIT	DESCRIPTION	APPLICATIONS	NEED POWER	LITRE/SEC
<b>FOX DD600</b>	DEMAND DRIVEN - this system relies on the work area being left free from pollutants after the washdown activity has ceased	Machine washdown, small wash areas that can be kept clean after use, car wash areas etc.	No	20 l/sec choke is silt tray - restricting to 5 l/sec
<b>FOX FF600</b>	FIRST FLUSH - for washpads where the area may be left polluted after the wash down operation ceases.	All washpads that are dirty and can't always be left clean	Yes (240v 10 amp)	20 l/sec choke is silt tray - restricting to 5 l/sec
<b>FOX SCS600</b>	SPILL CONTROL SYSTEM - provides total protection for pollutants "on the water"	Liquid sites such as Service Stations and re-fueling areas	Yes (240v 10 amp)	20 l/sec choke is silt tray - restricting to 5 l/sec
<b>FOX CMS600</b>	CONSTANT MONITORING SYSTEM - provides total protection where pollutant is water soluble	Milk Depots, Wineries and Chemical Plants.	Yes (240v 10 amp)	20 l/sec choke is silt tray - restricting to 5 l/sec



# Gross Pollutant Traps

Gross pollutant control plays an important role in stormwater management. From targeting visual contaminants such as plastic, litter, leaves or oils, to pre-treatment of sediments prior to filtration devices, ponds or wetlands, Gross Pollutant Traps (GPT's) are a cost-effective way to reduce your site's contaminant loadings and extend system maintenance frequencies.

## VORTCAPTURE™

VortCapture™ is a full capture, high-capacity litter, debris & sediment solution designed to remove all particles greater than 5mm in size. The system combines the proven sediment removal capability of hydrodynamic separation with superior litter and organic debris capture. The result is a stormwater treatment system that effectively captures and retains a broad range of pollutants.

Integrated high flow diversion

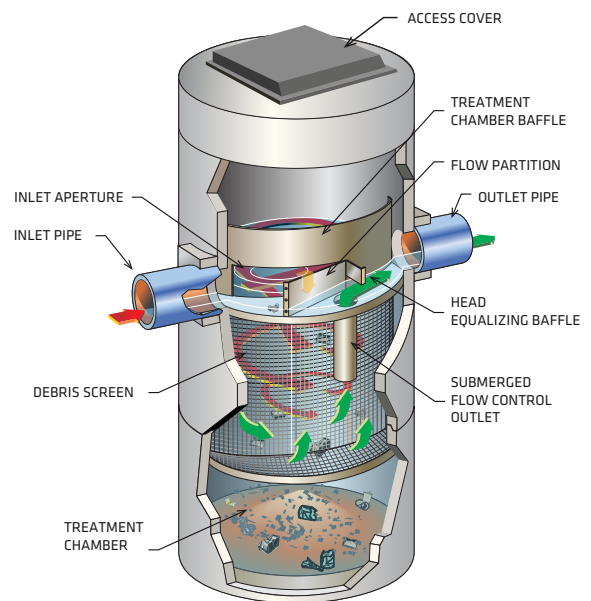
Flexible, compact design ideal for congested sites

Provides unobstructed access to stored pollutants, making it easy to maintain

Integrated screen to remove neutral buoyant debris.

### APPLICATIONS

- » Ideal for pretreatment – Reduce maintenance costs on downstream stormwater devices



**Moderate** Sediment Removal

### AVAILABLE MODELS

VORTCAPTURE™	Swirl Chamber Diameter	Typical Depth Below Invert	Max. Pipe Size Inlet/Outlet	Water Quality Flow Rate	Debris Storage Capacity	Sediment Storage
	mm	m	mm	L/s	m <sup>3</sup>	m <sup>3</sup>
VC40	1200	2.0	450 (900 <sup>+</sup> )	39	0.9	0.5
VC50	1500	2.3	450 (1050 <sup>+</sup> )	69	1.5	0.8
VC60	1800	2.6	600 (1200 <sup>+</sup> )	109	2.3	1.2
VC70	2050	2.8	750 (1500 <sup>+</sup> )	185	3.4	1.6
VC80	2300	3.1	750 (1500 <sup>+</sup> )	283	4.7	2.1

Custom design on request for high flow solutions. Contact [sales@stormwater360.co.nz](mailto:sales@stormwater360.co.nz)





## CASCADE SEPARATOR™

The Cascade Separator™ is the newest innovation in stormwater treatment. This innovative hydrodynamic separator excels at sediment capture and retention while also removing hydrocarbons, litter, and debris from stormwater runoff. What makes the Cascade Separator™ unique is the use of opposing vortices that enhance particle settling and a unique skirt design that allows for sediment transport into the sump while reducing turbulence and resuspension of previously captured material. These two factors allow the Cascade Separator™ to treat high flow rates in a small footprint, resulting in an efficient and economical solution for any site.

**Moderate** Sediment Removal

Unique Skirt Design with Opposing Vortices resulting in superior TSS removal

Accepts a Wide Range of Inlet Pipe Angles allowing for design and installation flexibility

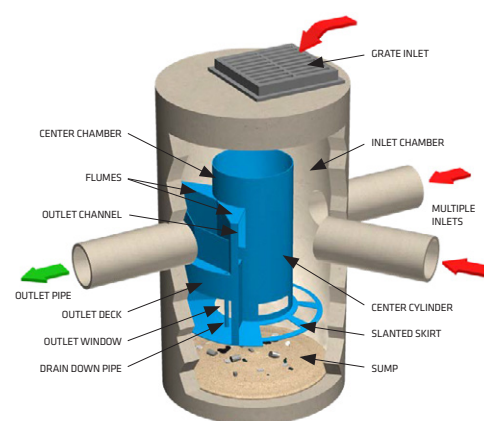
Accepts Multiple Inlet Pipes eliminating the requirement and cost for upstream receiving manholes

Grate Inlet Option eliminating the need for a separate grate inlet structure

Internal Bypass saving the requirement and cost of upstream bypass structures

Clear Access to Storage Sump providing fast and easy maintenance

Range of Sizes Available



## VORTECHS™

The Vortechs™ system is a high-performance gross pollutant trap that effectively removes fine sediment, oil and grease, and floating and sinking debris. Its swirl concentrator and flow controls work together to minimise turbulence and provide stable storage of captured pollutants. The design also allows for easy inspection and unobstructed maintenance access. With comprehensive lab and field testing, the system delivers proven results and site-specific solutions.

### APPLICATIONS

» Ideal for larger projects

**Moderate to High** Sediment Removal

High removal rate of fine sediments

Compact design to reduce cost and sprawl

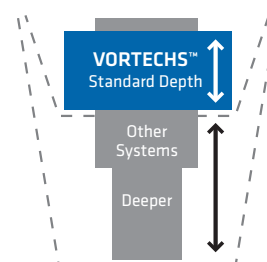
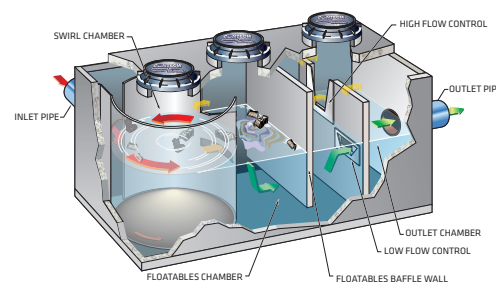
Largest treatment zone surface area of any hydrodynamic system available

Easy maintenance – unobstructed access to stored pollutants

Proven performance verified through third-party testing

Shallow system profile and unique horizontal design makes installation easier and cost-effective

Flexible design fits site constraints and accommodates a wide range of treatment options





# Catchpit Inserts

A low-cost solution that involves inserting a screening and sedimentation device into new or existing catchpits. Capturing pollutants at source allows hotspot targeting and can reduce maintenance costs for downstream stormwater treatment devices and infrastructure.



## LITTATRAP™

The LittaTrap™ is a cost effective, innovative catchpit insert designed to be easily retrofitted into new and existing stormwater drains to specifically target litter, plastic and gross pollutants over 5mm.

The LittaTrap™ has patented flow modifying components that dissipate energy, promote Total Suspended Solids (TSS) capture in sumped catchbasins, and provide full capture of gross solids.

Easy hand maintenance

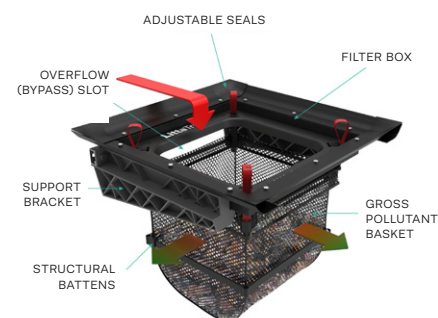
Easy to install

Lightweight for easy handling

Various sizes available and can be custom designed

Ideal for pretreatment – reduce maintenance costs on downstream stormwater devices

Optional liners for targeted contaminants e.g. sediment, plastic pellets



**LittaTrap™**

**Moderate** Sediment Removal



**1 LIFT**



**2 TIP**



**3 REUSE**

**LITTATRAP™ EASILY MAINTAINED BY HAND**

## ENVIROPOD®

The EnviroPod® is an effective, easily maintained catchpit insert that captures and retains litter, debris and other pollutants as runoff enters the storm drain system. This catchpit insert can be installed in either a curb inlet or drop-in catch basin and can be customised to meet site-specific requirements. The EnviroPod® is effective as a pre-treatment device in a treatment train and is often the most practical solution for retrofits.

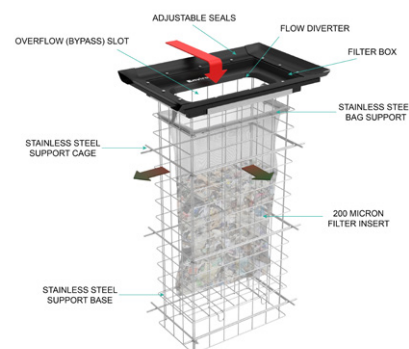
High performance catchpit insert

No construction required resulting in low costs

Various sizes available and can be custom designed

Can be used to easily target heavily polluted areas

Fine precision woven screen to capture smaller particles e.g. sediment, plastic pellets, turf rubber



**ENVIROPOD™**

**Moderate to High** Sediment Removal



# Detention & Retention

Stormwater chambers allow both retention and detention of stormwater so they can be used as either a traditional stormwater management tool or a green infrastructure device. In detention applications, the chambers can be sealed with an impermeable membrane to create an underground waterproof tank structure, and is ideal to maximise storage capacity in a shallow footprint.

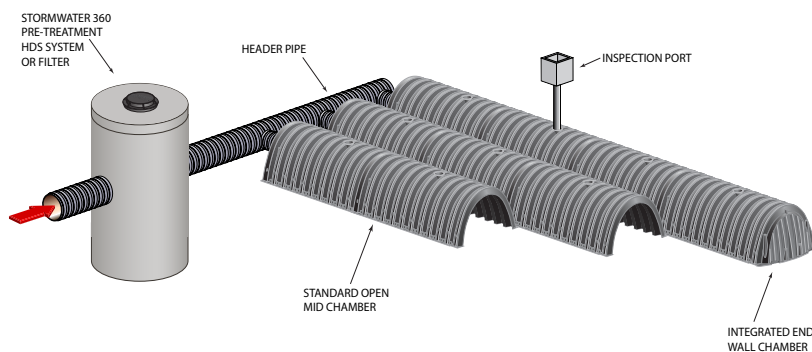


## CHAMBERMAXX™

The ChamberMaxx™ corrugated, open-bottom plastic infiltration chamber system allows you to meet stormwater runoff reduction requirements and maximise available land space by providing economic infiltration below ground. ChamberMaxx™ maximises storage volume in a small footprint, and its low profile shape is ideal for sites with shallow footprints or where land is at a premium.

### APPLICATIONS

- » Detention
- » Retention
- » Soakage
- » Rainwater Harvesting
- » Install under raingardens for reduced footprint in volume reduction regulated areas



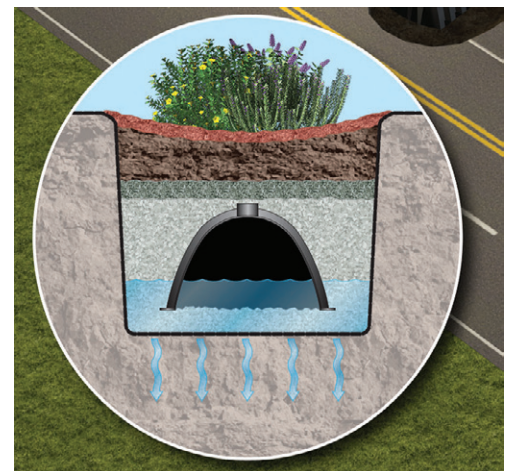
2.1m³ of storage per chamber

Easy installation - no heavy lifting equipment required

Lightweight, low profile shape (770mm rise)

Exceeds New Zealand Heavy Traffic Loading (HN-HO-72) standards

Modular configuration with flexible layout options



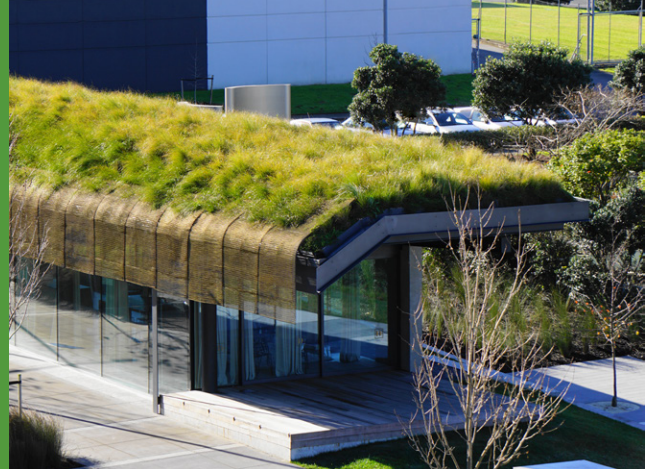
Reduce Auckland Council SMAF zone raingarden size





# Permeable Surfaces

Engineered permeable surfaces are an "at source" Water Sensitive Design (WSD) feature to reduce stormwater runoff volumes via infiltration and evapotranspiration.



## GRASSCRETE™

Grasscrete™ from Stormwater360 is a cast-on-site cellular reinforced concrete permeable paving system that is an effective Water Sensitive Design (WSD) solution to reduce impervious surfaces and promote infiltration.

Stormwater regulation limits the number of impermeable surfaces on a property; Grasscrete™ is considered permeable by many city councils allowing for a greater building footprint.

Easy to install

Reduce impervious areas

Withstands heavy vehicle loadings

Tested in flow rates in excess of 8 metres per second

Increase building footprint and functional space



## LIVEROOF®

LiveRoof® is New Zealand's only pre-vegetated modular green roof system, specifically designed to grow plants in a rooftop environment. With plants already grown before installation, establishment and maintenance costs are reduced as the roof is fully-grown when installed. The LiveRoof® modular green roof system uses Stormwater360's compliant green roof soil media and has numerous New Zealand native or sedum/succulent planting options.

Pre-vegetated before install ensuring maximum visual impact immediately

Reduced establishment costs

Low ongoing maintenance costs

Full design services using a complete range of native and succulent greenroof plants

Designed for roof pitches up to 30 degrees

Ideal for both residential and commercial builds



### APPROVALS

- ✓ Acceptance of compliance with New Zealand Building Code (Auckland Council)





# BioFilter

Biological treatment system that will remove the majority of contaminants, reduce stormwater flows and blend in to the urban environment.



## FILTERRA®

Developed after decades of research, Filterra® is a next-generation biofiltration solution, designed to provide enhanced treatment outcomes while requiring as little as 10% of the footprint of traditional rain gardens.

Filterra® is a pre-engineered and manufactured plug-and-play micro biofiltration system that removes TSS, metals and nutrients using natural, biological processes. Designed to treat up to 4450mm/hr and with a maximum treatable flow rate of 7000mm/hr the Filterra® media has been optimised to operate under high flow rates while maintaining high pollutant removal performance. The Filterra® engineered media is designed for low maintenance and does not need replacing under normal conditions, making it one of the most cost-effective treatment devices to maintain.

Delivered as a Plug and Play Solution

Low life cycle cost

Small footprint

Proven and verified performance

Fraction of the size of traditional raingardens

Enhanced dissolved heavy metal removal



**Very High Sediment Removal**

### CONFIGURATIONS

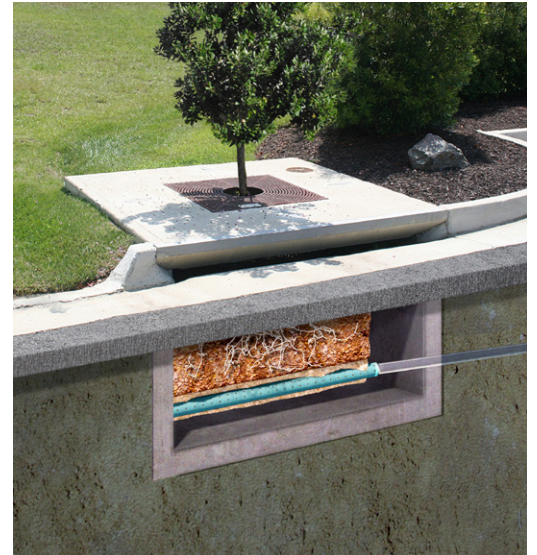
- » Filterra® Bioscape
- » Manhole Filterra®
- » Vault Filterra®
- » Roof Filterra®

### APPROVALS

- ✓ Auckland Council Approved for use on Public and Private Sites
- ✓ Christchurch City Council Approved for use on Public and Private Sites

### MAINTENANCE

- » Easy maintenance with no confined space access
- » First year maintenance included



Based on a comparison of a traditional designed raingarden ( $k=0.3-0.75\text{m/d}$ ) and the Filterra® ( $k=2.5\text{m/d}$ ).



**WINNER 2022**  
Water NZ Innovation Award  
Filtterra Roof



Filtterra® Bioscape (Station Bay, Tekapo)



Filtterra® (Coatesville, Auckland)



Manhole Filterra® (Rolleston)

# Stormwater360 Device Selection Guide

Stormwater can have a range of contaminants entrained in the runoff and Stormwater360 treatment devices target these various contaminants in their different forms. When it comes to designing your stormwater solution, our experienced team will offer advice and assistance and provide you with the best solution for your needs.

## STORMWATER360 TREATMENT PRODUCTS PERFORMANCE MATRIX

	Floatable Gross Pollutants	Neutrally Buoyant Gross Pollutants	Free Oil	Heavy Metals/ TSS			Dissolved Contaminants
				Moderate	High	Very High	
StormFilter™ (Perlite)	✓	✓	✓		✓		
StormFilter™ (Phosphorb)	✓	✓	✓		✓		✓
StormFilter™ (ZPG)	✓	✓	✓		✓		✓
Jellyfish™	✓	✓	✓			✓	
ESK™			✓				
VortCapture™	✓	✓		✓			
Cascade Separator™	✓		✓	✓			
VorTechs™	✓		✓	✓			
Enviropod®	✓	✓		✓			
LittaTrap™	✓	✓		✓			
Filterra®	✓	✓	✓			✓	✓

## OPERATION AND INSTALLATION CONSIDERATIONS

Often operational considerations influence the decision as to which treatment devices should be used.

	Installation Cost	Maintenance Cost	Shallow Install	Replaceable media	Hydraulic Requirement
StormFilter™	Medium	Medium	✓	✓	0.35 m - 0.9 m
Jellyfish™	Low	Medium			0.15 m - 0.45 m
VortCapture™	Medium	Low – Medium			0.25m - 1m
Cascade Separator™	Low	Low – Medium	✓		0.25m - 1m
VorTechs™	Low	Low – Medium	✓		0.25m - 1m
Enviropod®	Low	Medium	✓		Min (pipe cover)
LittaTrap™	Low	Low	✓		Min (pipe cover)
Filterra®	Low	Low	✓	✓	Min (pipe cover)



To work out which solution is right for your project talk to the Stormwater360 team or use our online design sizing calculator

Visit [www.stormwater360.co.nz](http://www.stormwater360.co.nz)



## All stormwater management devices require maintenance for effective operation.

Stormwater360 offers comprehensive maintenance services for our complete product range, ensuring optimal performance of all devices and ongoing regulatory compliance.



### WHY IS MAINTENANCE ESSENTIAL?

Stormwater structures or storage facilities can become clogged with debris or sediment, leading to reduced flow or storage capacity, which in turn may result in flooding of the site and damage to stormwater assets.

A reduction in the ability of stormwater treatment devices to efficiently and effectively remove and prevent pollutants from entering waterways.

A failure to comply with local authority regulations relating to stormwater quality standards, which may result in penalties for the site's owners or property managers.

The likelihood of costly repairs, increased ongoing maintenance costs and the potential of damage to other infrastructure or drainage assets.

An erosion of the asset's capital value.

### HOW IS MAINTENANCE CARRIED OUT?

Stormwater360 has developed a systematic maintenance approach to inspecting, cleaning and repairing our stormwater systems. We utilise approved maintenance contractors who are familiar with the characteristics of each type of system, and the processes required to optimise its efficiency and performance.

Our maintenance experts design a site-specific maintenance plan for each system and provide documentation and reporting to meet regulatory compliance.

## TALK TO US

The Stormwater360 team is available to discuss all stormwater needs. Contact [sales@stormwater360.co.nz](mailto:sales@stormwater360.co.nz) or **Freephone 0800 STORMWATER**





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