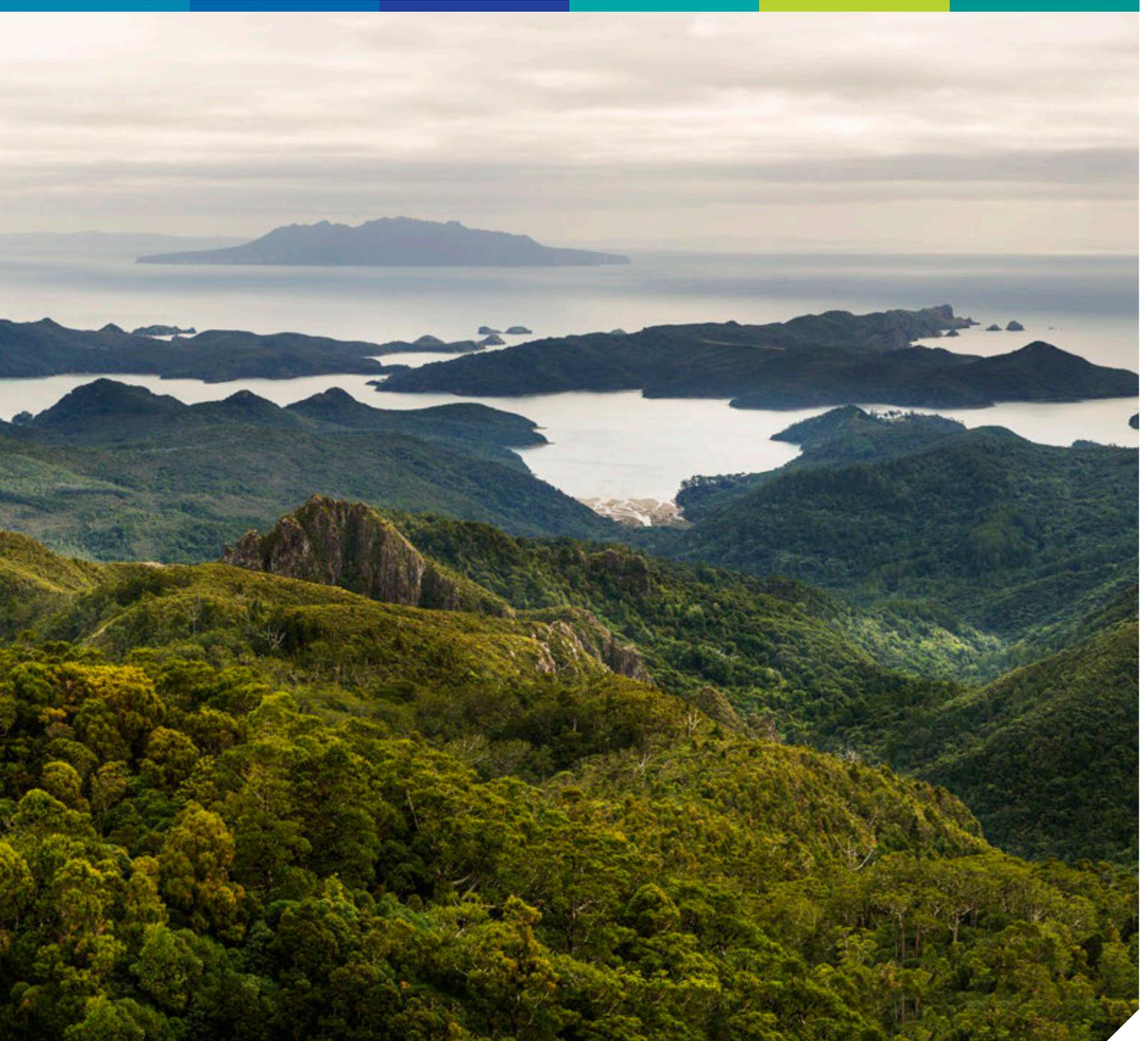


Stormwater Management and Green Infrastructure Solutions





Stormwater360 is New Zealand's only specialist stormwater technology company with over 25 years' experience and expertise in managing every aspect of stormwater management.

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

Stormwater Filters

HEAVY METALS / NUTRIENTS / FINE SEDIMENT

Our 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.

Oil and Water Separators

DIESEL / PETROL / HYDROCARBON / SPILL CONTROL

Separate and divert oil, hydrocarbons and other contaminants from stormwater discharges.

Gross Pollutant Traps

PLASTIC / GROSS POLLUTANT / SEDIMENT

Gross Pollutant Traps separate sediment, litter and debris from stormwater. Ideal for pre-treatment or retrofit application.

Catchpit Inserts

PLASTIC / GROSS POLLUTANT / SEDIMENT

Screening and sediment device which uses existing infrastructure. Low cost stormwater treatment.

Detention/ Retention Structures

RUNOFF REDUCTION / FLOW CONTROL

Underground structures that promote infiltration and store water.

Permeable Surfaces

RUNOFF REDUCTION

Surface infiltration allows runoff to slowly seep into soil or substrate where it is filtered and can be reduced through evapotranspiration and infiltration.

BioFilter

HEAVY METALS / NUTRIENTS / FINE SEDIMENT

Engineered modular biofiltration systems with a small footprint. Effective at removing dissolved contaminants.

STORMFILTER™

High efficiency / low maintenance media filter

4

JELLYFISH™

Low head, high efficiency membrane filter

5

ESK™

Oil/Water Separator that removes oil from contaminated runoff

6

FOX™ VALVES

Divert first flush and contaminants from stormwater flows

7

VORTCAPTURE™

Full capture gross pollutant trap with internal bypass

8

VORTSENTRY HS™

Cost competitive oil, sediment and litter removal device

9

VORTECHS™

Shallow profile for enhanced solid removal

9

LITTATRAP™

Low-cost, hand maintained catchpit insert for removal of litter, gross pollutants and sediment

10

ENVIROPOD®

High efficiency, easily maintained catchpit insert

10

CHAMBERMAXX™

Underground open-bottom systems that detain and retain stormwater

11

LIVEROOF®

Modular pre-vegetated green roof system

12

GRASSCRETE™

Permeable grass and gravel paving system

12

FILTERRA®

Engineered BioFiltration device

13

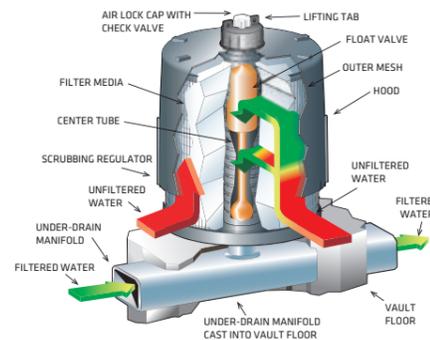
Stormwater Filters

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 and Phosphorb® target TSS, phosphorus, heavy metals, and hydrocarbons

Multiple cartridge heights give design solutions for site restraints

High Sediment Removal

MAINTENANCE

- » Only needs to be maintained every 1-3 years
- » Cartridge Exchange Service
- » Lifetime Warranty on StormFilter cartridges (conditions apply)

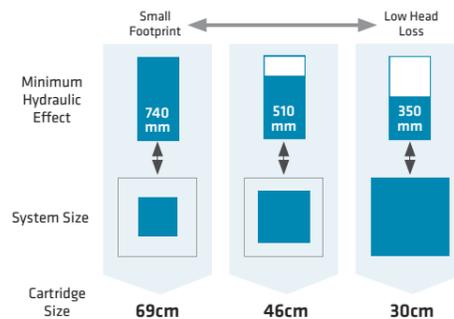
APPROVALS

- ✓ 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



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

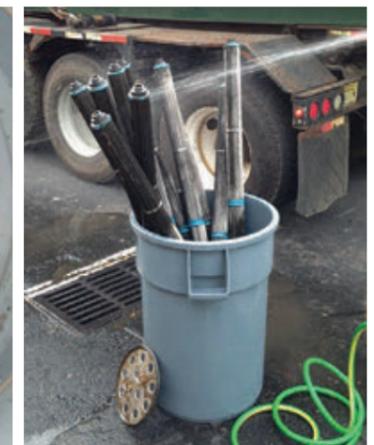
APPROVALS

- ✓ 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



USE OUR ONLINE PROJECT CALCULATOR for instant DIY sizing, drawings and technical specifications.

Visit www.stormwater360.co.nz

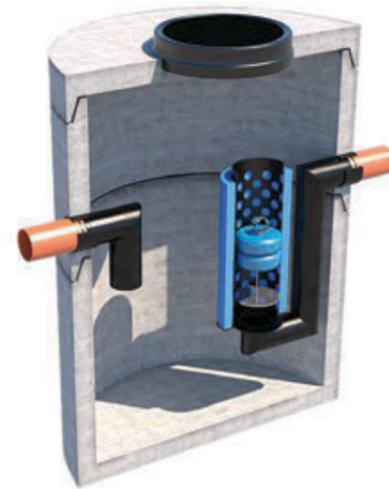
Oil & Water Separators

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

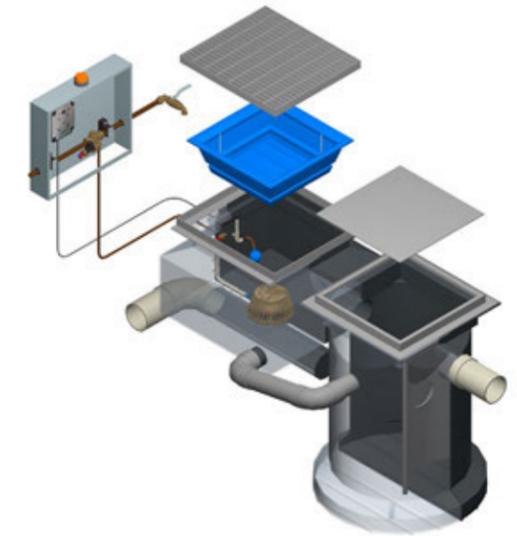
- » Easy to install and maintain
- » Reusable and washable media



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 5m²

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



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.

AVAILABLE MODELS

UNIT	DESCRIPTION	APPLICATIONS	NEED POWER	LITRE/SEC
FOX DD600	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
FOX FF600	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
FOX SCS600	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
FOX CMS600	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

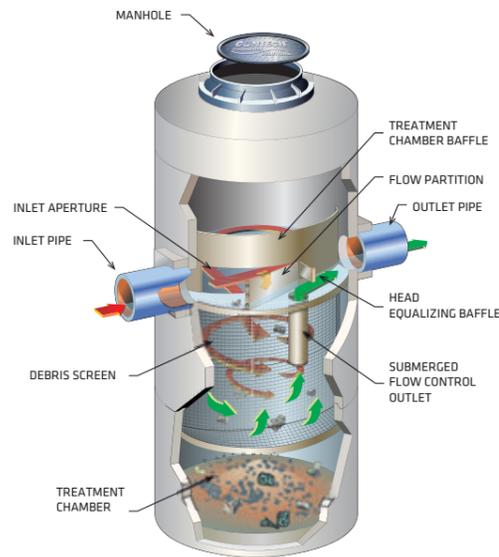
Flexible, compact design ideal for congested sites

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

Integrated screen to remove neutral buoyant debris.

APPLICATION

- » 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 ³	m ³
VC40	1200	2.0	450 (900")	39	0.9	0.5
VC50	1500	2.3	450 (1050")	69	1.5	0.8
VC60	1800	2.6	600 (1200")	109	2.3	1.2
VC70	2050	2.8	750 (1500")	185	3.4	1.6
VC80	2300	3.1	750 (1500")	283	4.7	2.1

Custom design on request for high flow solutions. Contact sales@stormwater360.co.nz

VORTSENTRY HS™

The VortSentry HS™ system employs a helical flow pattern that enhances containment of pollutants and provides effective removal of settleable solids and floating contaminants from urban runoff.

APPLICATIONS

- » Stormwater quality control and hydrocarbon removal
- » Inlet and outlet protection
- » Ideal pretreatment for other stormwater management products

Moderate Sediment Removal

Compact footprint

Helical flow pattern enhances trapping and containment of pollutants

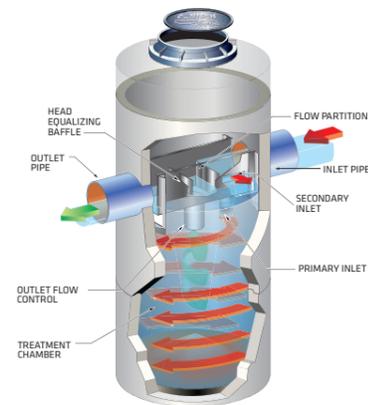
High treatment and bypass capacities

Compact footprint ideal for congested sites

Lightweight design easy to install

Available in both inline and grate inlet configurations

Quick manufacturing turnaround time



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

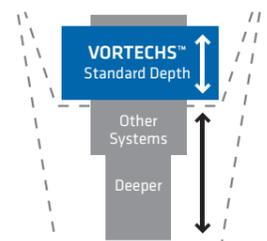
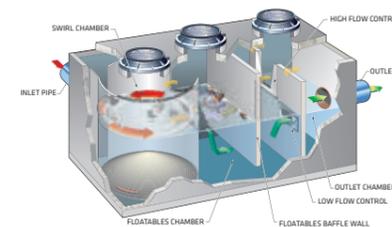
Largest treatment zone surface area of any hydrodynamic system available

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.



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.



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.

Moderate Sediment Removal

Easy hand maintenance

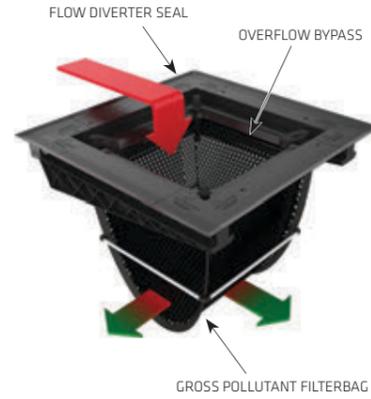
Easy to install

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™

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

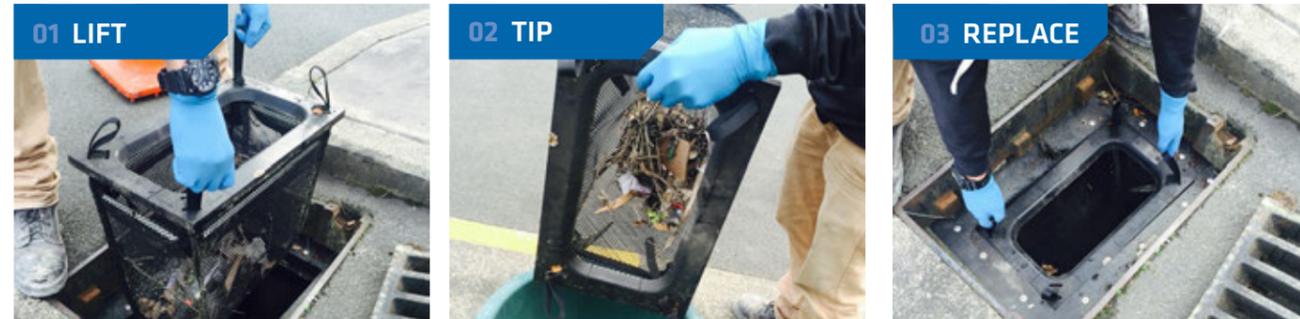
2.1m³ of storage per chamber

Easy installation - no heavy lifting equipment required

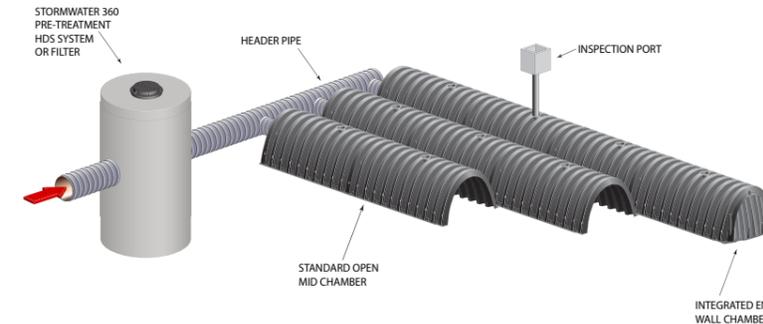
Lightweight, low profile shape (770mm rise)

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

Modular configuration with flexible layout options



LITTATRAP EASILY MAINTAINED BY HAND



Reduce Auckland Council SMAF zone raingarden size

ENVIPOD®

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.

Moderate to High Sediment Removal

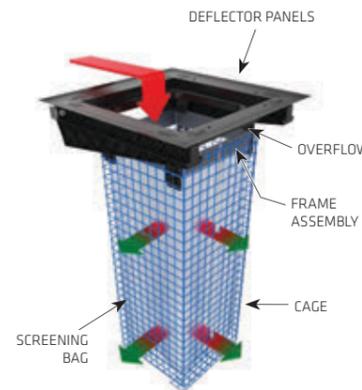
High performance catchpit insert

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



ENVIPOD™



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®

Filterra® is an advanced biofiltration system. With components that make it similar to bio retention in pollutant removal and application, the system has been optimised for high volume/flow treatment and high pollutant removal. The high flow rate media allows a small footprint and the biological treatment mechanisms remove and store pollutants mimicking nature.

Pre-engineered and manufactured - the system is easy to install and maintain, and with a range of planting design options, the Filterra® can enhance any urban landscape.

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

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=0.3-0.75m/d) and the Filterra® (k=2.5m/d).

Talk to us about Filterra Bioscape®: an option for the large scale drainage projects.



Device Selection Guide

Stormwater can have a range of contaminants entrained in the runoff. Stormwater360 treatment devices target these different contaminants in their different forms.

The below table is a guide to the types of contaminants removed by our devices.

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			✓				
VSHS	✓		✓	✓			
VortCapture	✓	✓		✓			
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
VSHS	Low	Low - Medium			0.25m - 1m
VortCapture	Medium	Low - Medium			0.25m - 1m
VorTechs	Low	Low - Medium	✓		0.25m - 1m
LittaTrap	Low	Low	✓		Min (pipe cover)
Enviropod	Low	Medium	✓		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 calculator

Visit www.stormwater360.co.nz

360Maintenance

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.

CARTRIDGE EXCHANGE SERVICE



Stormwater360 offer a cartridge exchange service on StormFilter cartridges. Refurbished cartridges are filled with the appropriate approved filter media and swapped with emptied exhausted cartridges from your site.

Stormwater360 recommend that StormFilter cartridges are inspected once per annum.



LEARN MORE

Talk to us about a maintenance option and more detailed technical information about Stormwater360 products and solutions.

Contact maintenance@stormwater360.co.nz or Freephone 0800 STORMWATER for more information.

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BETWEEN SKY AND SEA

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