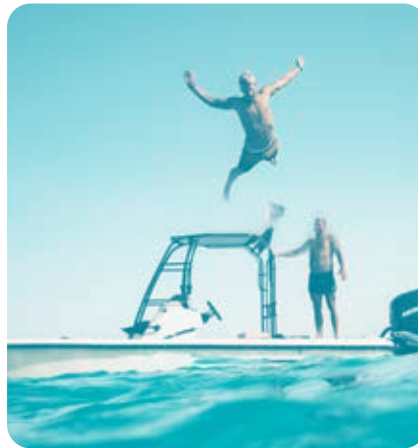




spelstormwater
joy in water



SpelBasin

Modular stormwater storage



spel.co.nz

Modular Bio-retention Basin

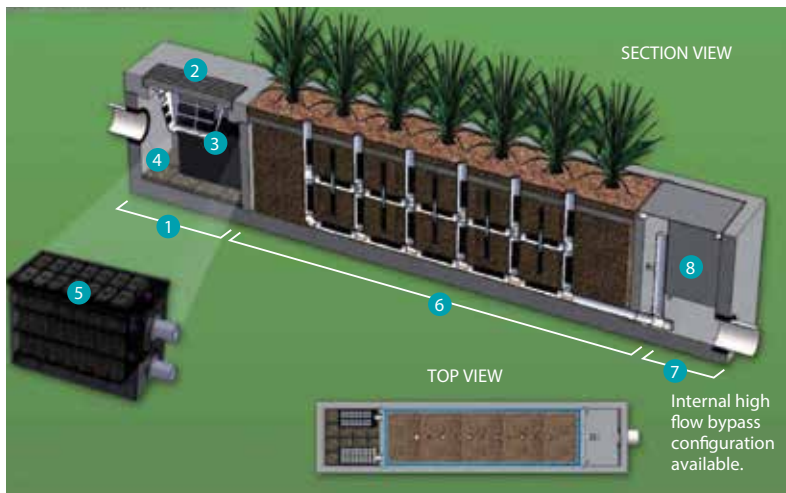
Overview

The need for a new stormwater treatment system is evident. Federal and state requirements on cities and industry to reduce stormwater runoff increase every year as our population explodes. The EPA is now reporting that stormwater runoff represents the nation's number one water quality problem, and is the reason why nearly half of our rivers and lakes are not even clean enough to support fishing or swimming. Nearly half.

To combat this catastrophe, we turned to the expert in this field: Nature. By developing technology that imitates the processes found in nature, we've created the most advanced stormwater filtration system available. Years ahead of current EPA requirements, our clients understand that when they invest in our new technology, they are investing in the future. For all of us.

Features

- | | |
|--|--|
| <p>1 Pre-treatment chamber
Captures incoming runoff and contains the first three stages of treatment.</p> | <p>5 Pre-filter cartridge
Provides the third stage of treatment by physically and chemically capturing fine TSS, metals, nutrients, and bacteria.</p> |
| <p>2 Grate type catch basin inlet
A standard grate type traffic rated catch basin opening directs stormwater into the system.</p> | <p>6 Wetland chamber
Provides the final stage of treatment through a combination of physical, chemical and biological processes.</p> |
| <p>3 Catch basin insert filter
Provides the first stage of treatment by capturing trash & litter, gross solids, and sediment.</p> | <p>7 Discharge chamber
Contains flow control, high flow bypass and optional drain down filter.</p> |
| <p>4 Settling chamber
Provides the second stage of treatment by separating out larger suspended solids.</p> | <p>8 Multi-level flow control
Orifice plates and/or valves are used to control the flow through the treatment stages.</p> |



Sunshine coast field test site installation

APPLICATIONS

- Car Parks & Shopping Centers
- Council Depots
- Industrial Estates
- Heavy Vehicle Maintenance
- Transport Depots & Loading Bays
- Tunnels
- Highways & Transport Corridors
- Recycling Yards
- Airport Aprons & Tarmacs

Modular Bio-retention Basin

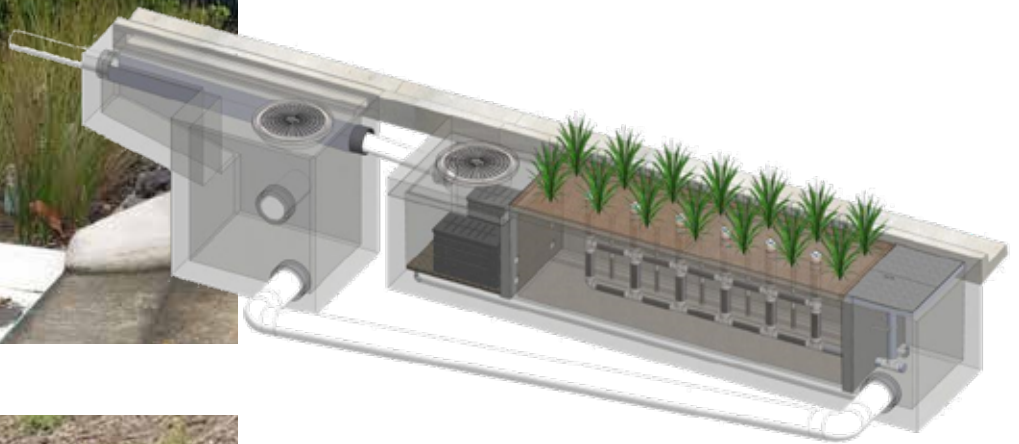


Sizing

The SPELBasin Modular Bioretention System is modeled [typically in MUSIC] for each project based on the site specific requirements.

Volume Sizing

The SPEL Basin Modular Wetlands system can be designed to treat flows from detention systems or directly off hardstand surfaces. Contact SPEL for more information



Tested Removal Efficiencies

Pollutant	Efficiency
TSS (mean particle size 8 microns)	86%
Total Phosphorus (TP)	65%
Total Nitrogen (TN)	50%
Total Petroleum Hydrocarbons	0%
Gross Pollutants	99%

Modular Bio-retention Basin

Available Configuration

The SPELBasin is an advanced stormwater treatment system that works with natural forces to provide superior pollutant removal. Delivered as a pre-fabricated, compact and self-contained treatment system, the SPELBasin utilizes HORIZONTAL FLOW bioretention technology and multistage pre-treatment. Easy to size, install and maintain, the SPELBasin is ideally suited for the urban environment – treating runoff from parking lots, roadways, residential and commercial developments and/or retrofit applications. Available in numerous sizes and various inlet configurations, including internal high flow bypass, the SPELBasin is clearly the most versatile and innovative stormwater treatment system.



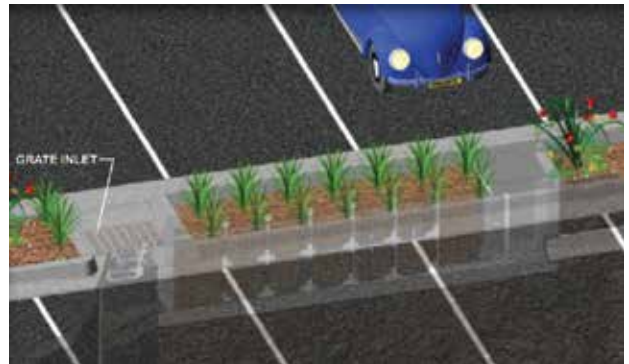
Benefits

- Built-In Bypass Available with All Configurations
- All Configurations Utilise a Pre-Treatment Chamber Which Contains:
- Litter Capture, Sediment Chamber & Pre-Filter Cartridges



Curb Type

The kerb Inlet configuration accepts sheet flow through a typical curb opening. This configuration is typically installed along road ways or parking lots. This configuration can be placed in a sump condition or connected to an existing kerb inlet drain using the DVERT trough.

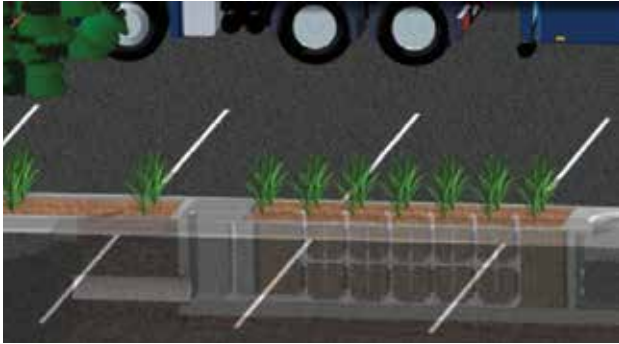


Grate/Drop Inlet Type

The Grate Inlet configuration accepts runoff on-grade or in a sump condition through a grated or drop inlet making it ideal for landscaped parking islands, strips or set aside areas. This configuration also accepts inflow pipes from upstream gully pits.



Modular Bio-retention Basin



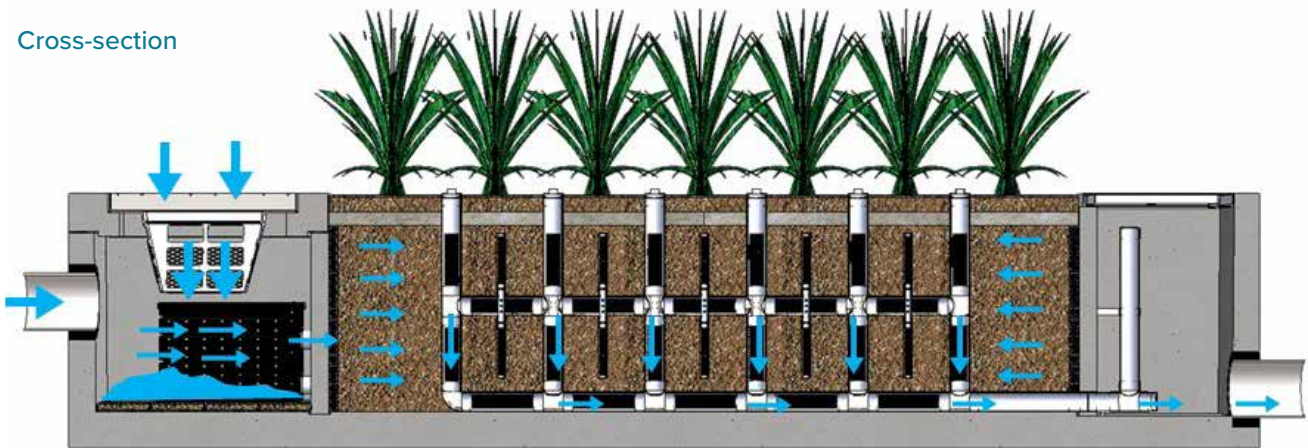
Vault Type

The Vault configuration accepts piped flow from upstream drainage basins, wet ponds or underground detention systems. This configuration is a cost-effective solution to the unique challenges faced by systems that require sheet flow - including most proprietary biofilters, tree box filters, rain gardens and/or other WSUD features. This unique feature allows the SPEL Basin Modular Bioretention to treat attenuated flow downstream of underground detention systems without the filter surface dropping metres below the finished surface level.

Downpipe Type

The Downpipe configuration is a highly anticipated and welcomed addition to our configuration types. Roof top pollutants, such as Zinc, Copper, and Lead are effectively treated and immobilised by our subsurface flow wetland technology. Installed above or below the ground, this configuration offers a compact, yet aesthetically pleasing system that seamlessly integrates into the residential, commercial or industrial settings.

Cross-section



The SPELBasin is an advanced stormwater treatment system that works with natural forces to provide superior pollutant removal. Delivered as a pre-fabricated, compact and self-contained treatment system, the SPELBasin utilizes HORIZONTAL FLOW bioretention technology and multistage pre-treatment.



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