SPEL Basin
Modular Bioretention

Nature and technology working together in perfect harmony.
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INTEGRATED WATER SOLUTIONS

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Product 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.

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 Wetland System is the only biofilter that can be installed downstream of detention systems.

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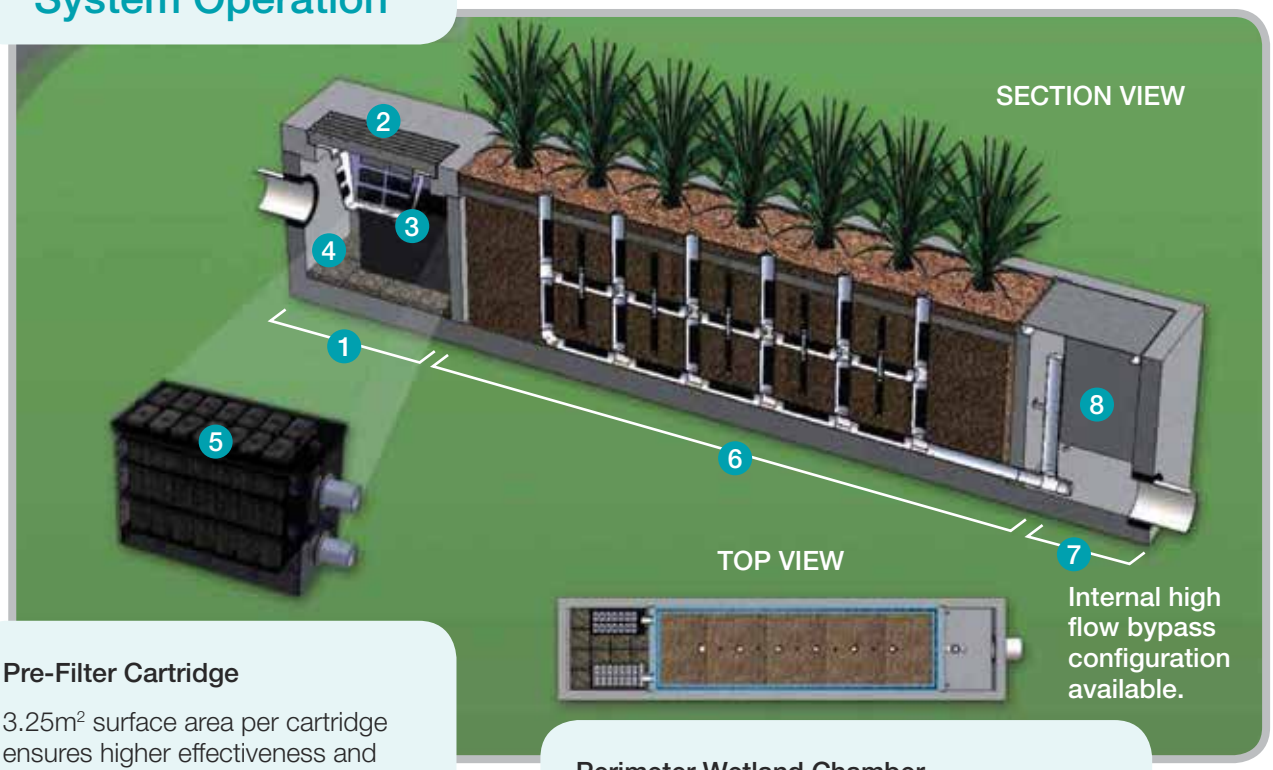
MODULAR WETLANDS MW®

Tested Removal Efficiencies

Pollutant	Efficiency
TSS (mean particle size 8 microns)	82%
Total Phosphorus (TP)	68%
Ortho-Phosphate	48%
Total Nitrogen (TN)	75%
Total Kjeldahl Nitrogen (TKN)	34%
Copper	>52%
Zinc	79%
TPH	>99%
Turbidity	71%
E.Coli	83%
Fecal Coliform	72%

System Operation



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Pre-Filter Cartridge

3.25m² surface area per cartridge ensures higher effectiveness and lower maintenance requirements.

This pre-filter eliminates maintenance in the Wetland Chamber.

Perimeter Wetland Chamber

Pre-filtered runoff entering the wetland chamber flows into a peripheral void area, maximising the media surface area.

Over 2x to 3x more surface area than traditional downward flow bioretention systems.

Features

1. **PRE-TREATMENT CHAMBER**
   Captures incoming runoff and contains the first three stages of treatment.
2. **GRATE TYPE CATCH BASIN INLET**
   A standard grate type traffic rated catch basin opening directs stormwater into the system.
3. **CATCH BASIN INSERT FILTER**
   Provides the first stage of treatment by capturing trash & litter, gross solids, and sediment.
4. **SETTLING CHAMBER**
   Provides the second stage of treatment by separating out larger suspended solids.
5. **PRE-FILTER CARTRIDGE**
   Provides the third stage of treatment by physically and chemically capturing fine TSS, metals, nutrients, and bacteria.
6. **WETLAND CHAMBER**
   Provides the final stage of treatment through a combination of physical, chemical and biological processes.
7. **DISCHARGE CHAMBER**
   Contains flow control, high flow bypass and optional drain down filter.
8. **MULTI-LEVEL FLOW CONTROL**
   Orifice plates and/or valves are used to control the flow through the treatment stages.

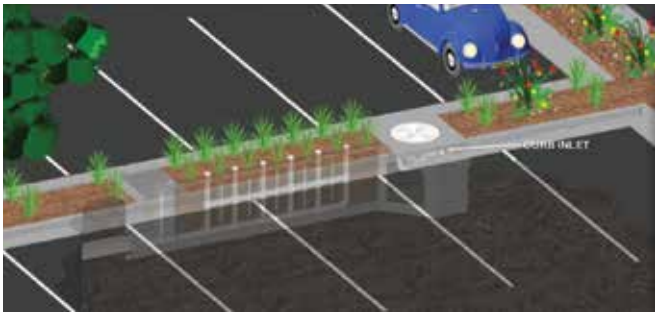
Available Configuration

The Modular Wetland System – Linear 2.0 (MWS-L 2.0) is an advanced stormwater treatment system that works with natural forces to provide superior pollutant removal. Delivered as a precast, compact and self-contained treatment system, the MWS-L 2.0 utilizes HORIZONTAL FLOW subsurface wetland technology and multistage pre-treatment. Easy to size, install and maintain, the MWS-L 2.0 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 MWS-L 2.0 is clearly the most versatile and innovative stormwater treatment system.

Built-In Bypass Available with All Configurations

All Configurations Utilize a Pre-Treatment Chamber Which Contains:

Trash Rack, Sediment Chamber & Pre-Filter Cartridges



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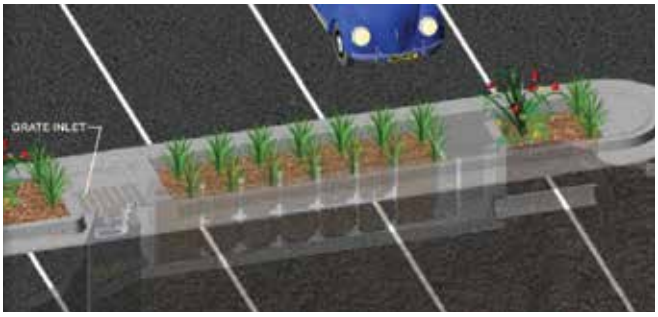
Curb Type

The Curb 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 catch basin using the DVERT trough.



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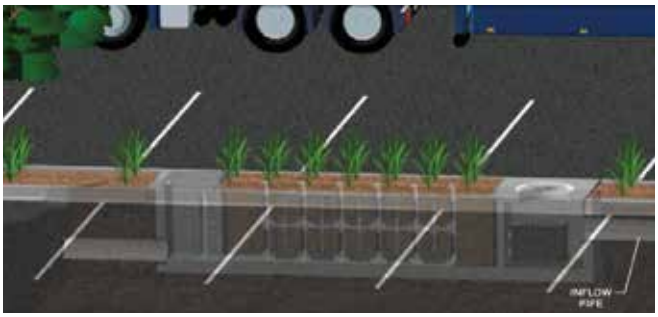
Grate/Drop Inlet Type

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 catch basins.



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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 LID features. This exceptional and unique feature makes it the ONLY biofilter that can be installed downstream of detention or storage, therefore treating only pre-developed or attenuated flow.

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Downspout Type

The Downspout 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 immobilized 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.

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