

# Stormwater Solutions



# The experts you need to solve your stormwater challenges



**Contech is the leader in stormwater solutions, helping engineers, contractors and owners with infrastructure and land development projects throughout North America.**

Stormwater management is becoming ever more complex as regulations get more strict with each permit cycle. It's no longer enough to simply move water away from a site — we are now often required to retain and treat it. Traditional methods and BMP's simply aren't enough.

To succeed in this rapidly changing environment, you need a partner to help you navigate the complexities of local, state and federal regulations — who is responsive to your requests and provides innovative solutions that save your clients money and accelerate the design process.

In addition to stormwater expertise, Contech offers a wide range of innovative, flexible product solutions engineered to solve your site's unique challenges and reduce long term maintenance costs. From traditional BMP's to LID solutions, our ongoing investment in robust laboratory and field evaluations ensure we have a variety of solutions to comply with local regulations so your projects get approved the first time.

With our responsive team of stormwater experts, local regulatory expertise and flexible stormwater management solutions, Contech is the trusted partner you can count on for stormwater management solutions.

**Contech is your partner in stormwater management solutions**





## STORMWATER CONSULTANT

*I work with you to recommend the best solution to meet permitting requirements*



## STORMWATER DESIGN ENGINEER

*I help develop your final design and deliverables*



## REGULATORY MANAGER

*I understand the local stormwater regulations and what solutions will be approved*



## SALES ENGINEER

*I make sure our solutions meet the needs of the contractor during construction*

### DESIGN

Provides engineers with technically focused recommendations



- Preliminary product recommendations
- Feasibility screening
- Layout assistance
- Cost estimates and options analysis

### SPECIFICATION

Helps engineers develop an efficient solution



- Engineering calculations
- Specifications
- Site-specific drawings
- Submittal packages

### PERMITTING

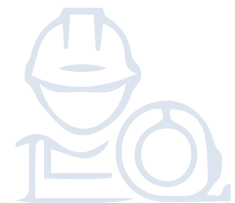
Makes sure all recommendations are approved locally



- Product approvals
- Regulatory stakeholder engagement
- Field and lab evaluation
- Project-specific regulatory support

### INSTALLATION

Supports contractors and owners through the entire process



- Pricing and value engineering assistance
- Project coordination
- Installation guidance
- Issue resolution
- Customer service

# Everything you need for compreh

## EXAMPLES OF SUCCESSFUL PROJECTS WE HAVE BEEN INVOLVED IN :



**Robertson Ranch, Carlsbad, CA:** We helped reduce the land space required for stormwater treatment in this residential development, allowing for increased site amenities and improved aesthetics by providing 20 Filterra® Bioscape® Vaults that blended into the surrounding landscaping.



**United Airlines Terminal, Houston, TX:** Engineers first considered a 12-foot hydrodynamic separator from a competitor, but we showed how our smaller, eight-foot CDS® could meet the regulatory requirements of 70% TSS removal and lower costs for the owner.



**U.S. Bank Stadium, Minneapolis, MN:** Being built downtown, there was limited footprint for stormwater storage. We worked with the engineer to design a 144" diameter perforated, corrugated metal pipe retention system that provided the required storage in a constrained footprint.



**Crossroads Parkway, City of Industry, CA:** We provided seven Filterra® Bioretention Systems to meet the biofiltration requirement of the Los Angeles County MS4 permit; reducing the BMP footprint required in this highly developed, high land value site.



**SR-28 Improvements, Incline Village, NV:** A Jellyfish® Filter was installed to remove nutrients and fine sediment particles less than 16 microns to help improve the water quality of runoff entering Lake Tahoe.



How do I reduce total cost of the stormwater system?



How do I incorporate bioretention on a highly developed site?





# Comprehensive stormwater management



How do I maximize land value for the owner?



How do I meet phosphorus removal requirements?

CHECK OUT ADDITIONAL CASE STUDIES ON OUR WEBSITE - [WWW.CONTECHES.COM/CASESTUDIES](http://WWW.CONTECHES.COM/CASESTUDIES)

**City of San Jose, CA:** We helped the City meet “Full Capture” trash regulations by providing seven CDS® hydrodynamic separators. Over 5,000 acres of San Jose is now protected by CDS systems, and trash from these areas will no longer make it into San Francisco Bay.



**Walgreens, Ewing Township, NJ:** We addressed invert constraints of the existing infrastructure and met regulatory requirements of 80% TSS removal using a CDS® hydrodynamic separator, a Peak Diversion Stormwater Management StormFilter® and a Jellyfish® Filter.



**LaQuinta Inn, Portland, Maine:** We helped solve a flooding problem and cut installation time in half by recommending an underground detention system CMP as an alternative solution to plastic crates. A combination of 84” and 96” CMP was used to provide 100,283 cf of storage in a very limited footprint.



**Renton Middle School #4, Newcastle, WA:** A large storage volume, fast installation, and our ability to provide a stamped structural design for the CON/SPAN® vault were all factors in selecting the Contech® solution for this large detention system.



**Bucks County Justice Center, Doylestown, PA:** The contractor was under a tight timeline to get this project completed on time. We helped retrofit the existing site with seven Filterra® Bioretention Systems. All seven systems were installed and activated in a total of two days.





# Bioretention and biofiltration



Bioretention and biofiltration use the physical, chemical and biological mechanisms found in nature to capture and filter stormwater. Providing both water quantity and quality benefits, biofiltration is ideal for Low Impact Development (LID), Green Infrastructure, and Environmental Site Design projects. Plus, the presence of plants increases biological activity and enhances the appearance of your site.

*The Filterra® Bioretention System is an engineered, prepackaged bioretention system incorporating high performance biofiltration media and plants. Its high media flow rate reduces the footprint significantly when compared with traditional bioretention systems and allows for easy integration into highly developed sites such as commercial areas, residential communities, parking lots and streetscapes.*

Learn more:

[www.ContechES.com/filterra](http://www.ContechES.com/filterra)

**Engineered bioretention systems can reduce footprint up to 95%**





## APPLICATION TIPS

- Modular, prefabricated bioretention systems like the Filterra® System can be used for both new construction and urban retrofits.
- They can be deployed in a variety of applications, both standalone and as part of an overall site plan (with other stormwater control techniques).
- Filterra meets regulatory pollutant removal goals for treatment of TSS, nutrients and metals.



SELECT APPROVALS	FILTERRA
Washington Department of Ecology (GULD) – Basic, Enhanced, Phosphorus, and oil	✓
New Jersey Department of Environmental Protection (NJ DEP)	✓
Maine Department of Environmental Protection	✓
Maryland Department of the Environment - Environmental Site Design (ESD)	✓
North Carolina Department of Environmental Quality (NC DEQ)	✓
Texas Commission on Environmental Quality	✓
City of Portland, Oregon Bureau of Environmental Services	✓
Virginia Department of Environmental Quality	✓



filtrerra®  
Bioscape®

filtrerra®  
Bioretention Systems

The Filterra® Bioscape® system at the Manchester Stormwater Park in Kitsap County, Washington treats stormwater for approximately 100 acres of the Manchester community before it is discharged into Puget Sound.

# Detention and infiltration



Detention and infiltration involves the use of vaults, chambers and pipes to temporarily store runoff. These structures often have open bottoms or perforations, allowing the excess water to be released slowly over time. In urban environments where there are competing demands for land, underground storage can provide many of the benefits of landscape-based systems but without requiring dedicated land area, thus maximizing the land value for the owner.

*Subsurface infiltration in urban environments meets the objectives of LID by reducing runoff and recharging groundwater.*

**Storing runoff underground frees up valuable land space**





## APPLICATION TIPS

- Our online Design Your Own Detention System (DYODS) Tool provides instant access to project specific drawings for the creation of plans and specifications.
- Corrugated metal pipe (CMP) is the most economical solution for underground storage.
- Increasing the depth of a detention system allows for more storage in the same footprint. Doubling the diameter of pipe yields four times as much storage volume in the pipe and reduced excavation and backfill costs.
- Outlet control devices can be incorporated within a CMP detention system, saving money by eliminating the need for a separate structure.
- A pretreatment device can prolong the life of a detention system by removing debris and sediment that can collect on the invert and within the stone backfill voids
- Reduced long term maintenance or replacement cost of the infiltration system can help offset pretreatment construction costs.



## CONTECH<sup>®</sup> CMP DETENTION SYSTEMS

The Contech<sup>®</sup> CMP detention system can be fully or partially perforated and sized and shaped to meet site-specific needs.

Learn more:

[www.ContechES.com/dyods](http://www.ContechES.com/dyods)

## CHAMBERMaxx<sup>®</sup>

Our ChamberMaxx<sup>®</sup> system is a corrugated, open-bottom plastic infiltration chamber providing economic infiltration below grade.

Learn more:

[www.ContechES.com/chambermaxx](http://www.ContechES.com/chambermaxx)

## DuroMaxx<sup>®</sup> STEEL REINFORCED PE TECHNOLOGY

DuroMaxx<sup>®</sup> steel reinforced polyethylene (SRPE) pipe combines steel and polyethylene to make an exceptionally strong and durable pipe that can be made watertight.

Learn more:

[www.ContechES.com/duromaxx](http://www.ContechES.com/duromaxx)

DuroMaxx Rainwater Harvesting Cisterns are available in sizes up to 120 inches in diameter and are leak tested and certified to be in compliance with the Uniform Plumbing Code (UPC<sup>®</sup>) to ensure a reliable long term storage solution.

Learn more:

[www.ContechES.com/rwh](http://www.ContechES.com/rwh)

## CON/SPAN<sup>®</sup> DETENTION SYSTEMS TERRE ARCH<sup>™</sup>

The CON/SPAN<sup>®</sup> and Terre Arch<sup>™</sup> precast detention systems combine a large storage volume with fast installation.

Learn more:

[www.ContechES.com/conspan-detention](http://www.ContechES.com/conspan-detention)  
[www.ContechES.com/terre-arch](http://www.ContechES.com/terre-arch)



# Filtration



Stormwater filtration systems use media or membranes to remove total suspended solids (TSS), hydrocarbons, nutrients, metals and other common pollutants from stormwater runoff. They can be housed in a vault, manhole, or catch basin and are used for both commercial and residential development, redevelopment and stormwater quality retrofit applications. They can also provide pretreatment for Low Impact Development, infiltration and rainwater harvesting and reuse systems.

*Contech® provides two of the best known stormwater filtration systems. The Stormwater Management StormFilter® uses customized, rechargeable, media-filled cartridges while the JellyFish® Filter uses high surface area membrane filtration. Both systems can be used to improve water quality and to remove pollutants prior to discharge.*

**Filtration provides the highest level of treatment for stormwater runoff**





## APPLICATION TIPS

- For applications targeting phosphorus, Contech® developed PhosphoSorb®, a filter media designed to remove both dissolved and particulate phosphorus.
- All filters will require periodic maintenance to ensure water quality. Selecting a device with a long maintenance cycle and low maintenance cost will result in healthy waterways and happy property owners.



## The Stormwater Management StormFilter®

*The Stormwater Management StormFilter® has been field tested more than any other manufactured stormwater filtration device. Its performance has been verified by the State of Washington Department of Ecology and New Jersey Department of Environmental Protection.*

See the StormFilter in action:  
[www.ContechES.com/stormfilter](http://www.ContechES.com/stormfilter)

## Jellyfish® Filter

*Jellyfish® Filter is a stormwater quality treatment technology featuring high flow pretreatment and membrane filtration in a compact standalone system. High design treatment flow rate per cartridge – up to 80 gpm (5 L/s).*

Learn more:  
[www.ContechES.com/jellyfish](http://www.ContechES.com/jellyfish)

SELECT APPROVALS / CERTIFICATIONS	STORMFILTER	JELLYFISH FILTER
Washington State Department of Ecology (TAPE) GULD – Basic, Phosphorus	✓	
New Jersey Department of Environmental Protection (NJ DEP)	✓	
North Carolina Department of Environmental Quality (NC DEQ)	✓	
Maryland Department of the Environment (MD DOE)	✓	✓
Texas Commission on Environmental Quality (TCEQ)	✓	✓
Virginia Department of Environmental Quality (VA DEQ)	✓	✓
Canada ISO 14034 Environmental Management - Environmental Technology Verification (ETV)		✓
Maine Department of Environmental Protection (ME DEP)	✓	
St. Louis Metropolitan Sewer District	✓	

# Hydrodynamic separation



Hydrodynamic separators effectively remove sediment, hydrocarbons, trash and debris from stormwater runoff. These systems are often used as standalone and end-of-pipe treatment in both new and retrofit applications. They are also used as pretreatment to detention, infiltration, reuse and biofiltration to increase the service life of these systems by removing pollutants upstream.

*Contech® hydrodynamic separation products have been providing reliable stormwater treatment for more than 20 years. Whatever your site constraints may be, Contech's family of HDS systems has you covered. CDS® provides 100% trash capture, Cascade Separator™ excels at sediment capture and Vortechs® is best suited for shallow applications.*

**TSS & trash removal are the focus of many stormwater regulations**





## APPLICATION TIPS

- The Cascade Separator™ is optimized to capture and retain sediment resulting in a small footprint treatment device.
- The CDS® uses both swirl concentration and a nonblocking screen to capture and retain 100% of floatables and neutrally buoyant debris 4.7mm or larger.
- The Vortechs® system is the ideal solution for projects that require a shallow treatment device due to groundwater, utility or bedrock constraints.



With over 40,000 installations and verifications from some of the most stringent stormwater technology evaluation organizations, Contech's CDS® provides superior trash and sediment removal; capturing and retaining 100% of floatables and neutrally buoyant debris 4.7mm or larger.

For more information on operation, design and performance:  
[www.ContechES.com/cds](http://www.ContechES.com/cds)

## CASCADE separator™

The Cascade Separator™ is the latest innovation in hydrodynamic separation from Contech. The Cascade uses advanced sediment capture technology to provide the highest sediment removal efficiency of any Contech HDS product. Cascade also captures trash and hydrocarbons.

Learn more:  
[www.ContechES.com/cascade](http://www.ContechES.com/cascade)



Both the CDS and the Cascade Separator incorporate internal bypass weirs and have options for multiple inlet pipes and grate inlets which can reduce the overall number of structures required on a project.

SELECT CERTIFICATIONS	CDS	VORTECHS
Washington Department of Ecology (GULD) - Pretreatment	✓	✓
New Jersey Department of Environmental Protection (NJ DEP)	✓	
Canadian Environmental Technology Verification (ETV)	✓	
California Statewide Trash Amendments Full Capture System Certified*	✓	

# A partner you can rely on



STORMWATER  
SOLUTIONS



PIPE  
SOLUTIONS



STRUCTURE  
SOLUTIONS

Few companies offer the wide range of high-quality stormwater resources you can find with us — state-of-the-art products, decades of expertise, and all the maintenance support you need to operate your system cost-effectively.

## THE CONTECH WAY

Contech® Engineered Solutions provides innovative, cost-effective site solutions to engineers, contractors and developers on projects across North America. Our portfolio includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products.

## TAKE THE NEXT STEP

For more information: [www.ContechES.com](http://www.ContechES.com)

Contact your local representative:

[www.ContechES.com/localresources](http://www.ContechES.com/localresources)

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