

Bio  Clean

A Forterra Company

UrbanPond™

A Stormwater Storage Solution

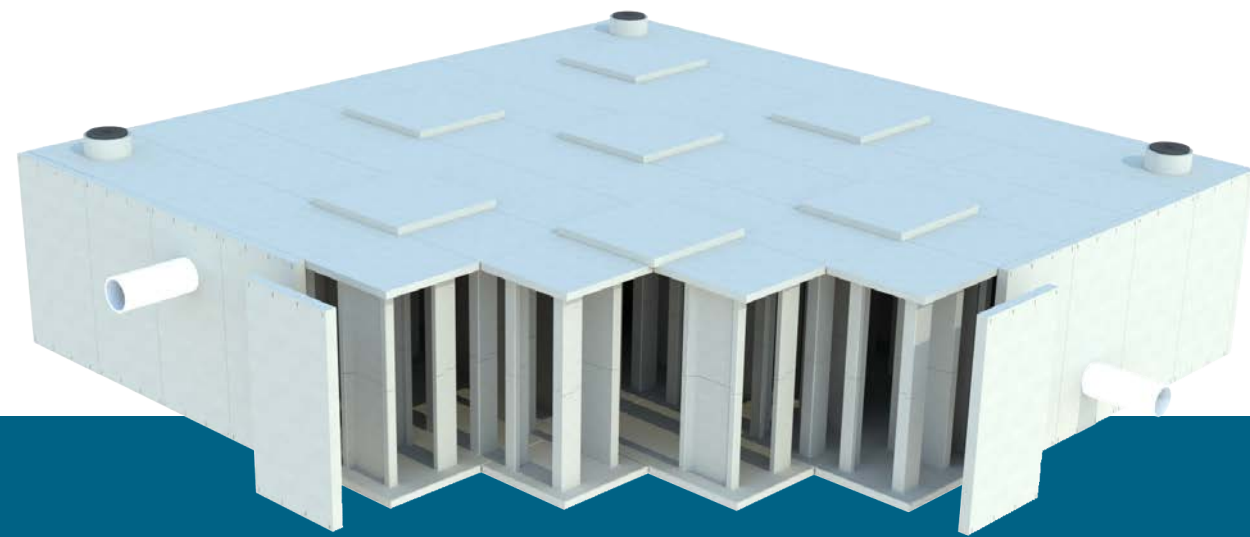


OVERVIEW

The Bio Clean UrbanPond™ is a technological breakthrough in underground stormwater management.

Its unique square tessellation assembly provides superior strength and material efficiency over traditional rectangular modules. Each module utilizes an offset 3-legged design with two narrow legs running parallel and one wider leg running perpendicular. This unique geometry allows for maximum strength and minimum material usage. The standard design is rated for H-20 loading.

UrbanPond has high void percentages to maximize stormwater volume, and its robust precast form allows systems to be buried deeper without the need for specialized backfill, increased wall thicknesses, or extra rebar reinforcement.



A BREAKTHROUGH SYSTEM FOR MANAGING STORMWATER RUNOFF

ADVANTAGES

- THE SQUARE TESSELLATION PROVIDES SUPERIOR STRENGTH AND LOAD CAPACITY
- DESIGNED TO MEET H-20 LOADING REQUIREMENTS
- CAN BE INSTALLED DEEPER WITHOUT THE NEED TO INCREASE WALL THICKNESS OR ADD ADDITIONAL REBAR
- EVERY MODULE DRAINS DOWN FULLY
- HIGHER VOID PERCENTAGES AND INCREASED MATERIAL EFFICIENCY FOR BEST IN CLASS COST PER CUBIC FOOT STORAGE
- LIGHTER WEIGHT, EASIER TO INSTALL
- A LINKUP SLAB ALLOWS ELIMINATION OF SOME MODULES, FURTHER DECREASING COST AND INSTALLATION TIME

APPLICATIONS

UrbanPond is engineered specifically for:

Detention with controlled discharge utilizing built-in outlet orifice structures.

Retention for long-term retention of runoff onsite to meet strict stormwater requirements.

Harvesting self-contained treatment and reuse of stormwater for irrigation and grey water needs.

Capture & Infiltration of runoff back into underlying native soils for recharge needs.

Treatment utilized as an underground extended detention basin or pond for advanced treatment of stormwater - integrates well with treatment train components (biofiltration, separation, etc.).

Flood Control of peak storm events to minimize downstream flooding and erosion.

Low Impact Development to maximize land use with underground storage - construct an urban infill without a pond at grade.

SPECIFICATIONS

UrbanPond is available from heights of 2 ft. (I.D.) to up to 14 ft. Single UrbanPond modules are available up to 7 ft. height, and the Double UrbanPond modules are available up to 14 ft.

The system's internal offset leg configuration provides channel-less water distribution for stormwater entering and exiting the system.

SINGLE URBANPOND

I.D. Module Height (ft.)	Module Storage Capacity (cu. ft.)
2	119
3	179
4	238
5	298
6	357
7	417

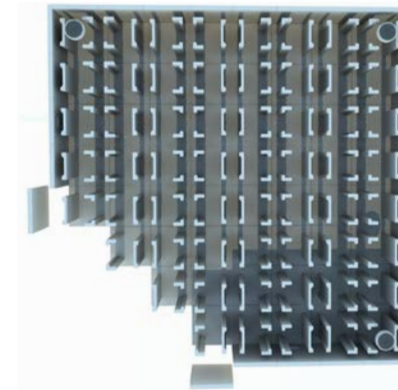
DOUBLE URBANPOND

I.D. Module Height (ft.)	Module Storage Capacity (cu. ft.)
4	238
5	298
6	357
7	417
8	477
9	536
10	596
11	655
12	715
13	775
14	834

CONFIGURATIONS

UrbanPond is a modular precast concrete structure which can be assembled from one to several hundred modules in various shapes and configurations to meet site specific constraints and volume requirements.

Each UrbanPond module is 8 ft. wide x 8 ft. long (O.D.) - specifically designed to fit on a standard flatbed truck. UrbanPond can be configured in a combination of modules from as low as 2 ft. to as high as 14 ft. inside height.



View looking down with top slabs removed.

URBANPOND ASSEMBLY

The UrbanPond is based on a square tessellation. A tessellation is created when a shape is repeated over and over again covering a plane without any gaps or overlaps. Because of the self-supporting characteristic of tessellated-shaped structures, Bio Clean has been able to further reduce material usage and costs up to 20% without sacrificing structural strength.

As shown in the image to the right, the offset leg configuration of the modules creates a very open and channel-less internal space.

Each module offers access walkways of greater than 3 ft. in each module and between modules for easy inspection and maintenance.

SINGLE URBANPOND MODULE

Available in heights from 2 ft. to 7 ft.



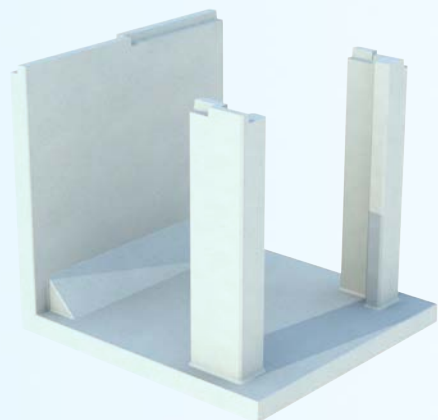
LINKUP SLAB

LinkUP Slabs span the open cavities in a 9-module array.



SIDE MODULE

Built-in perimeter wall

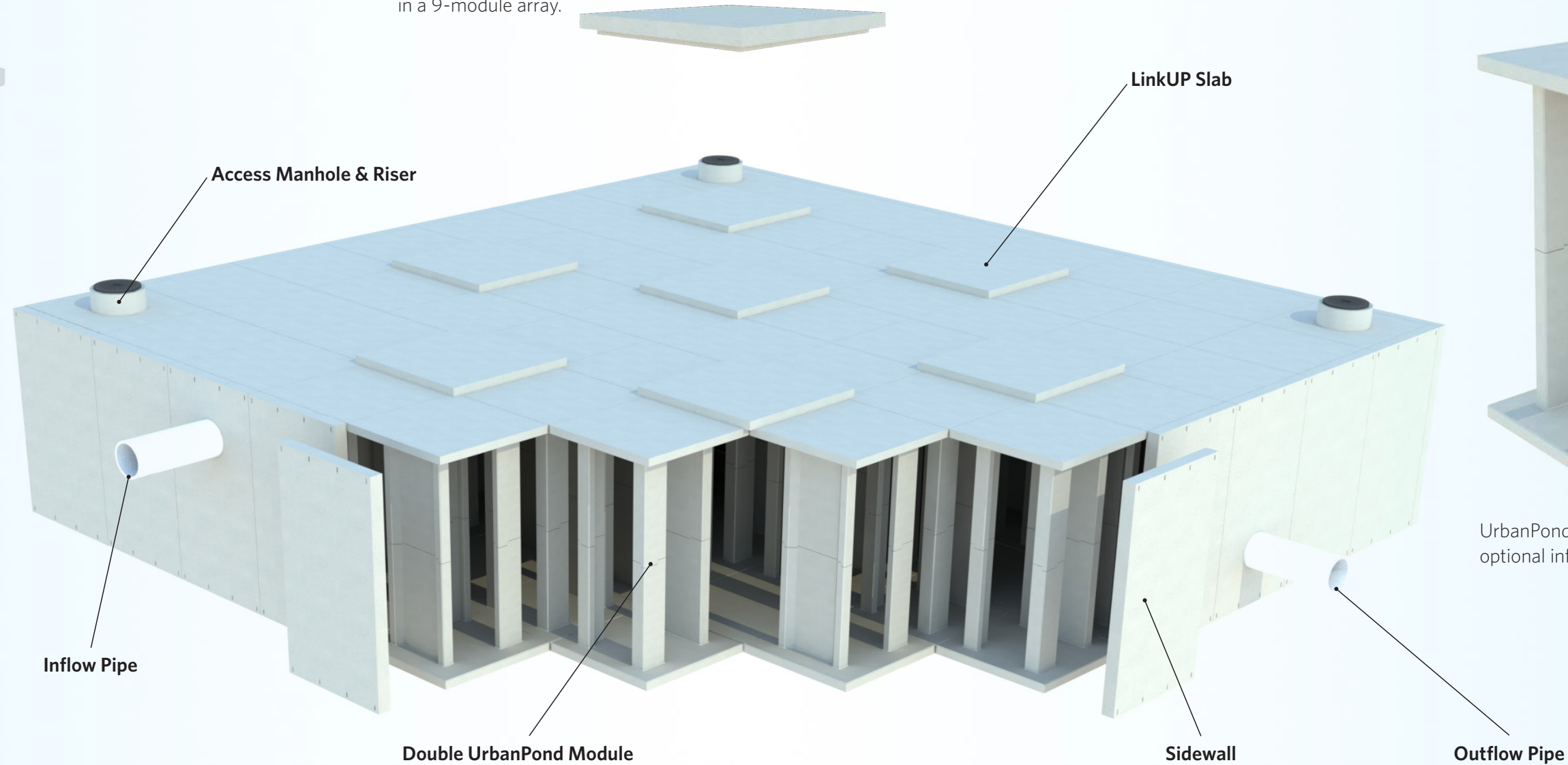


DOUBLE URBANPOND MODULE

Available in heights from 4 ft. to 14 ft.



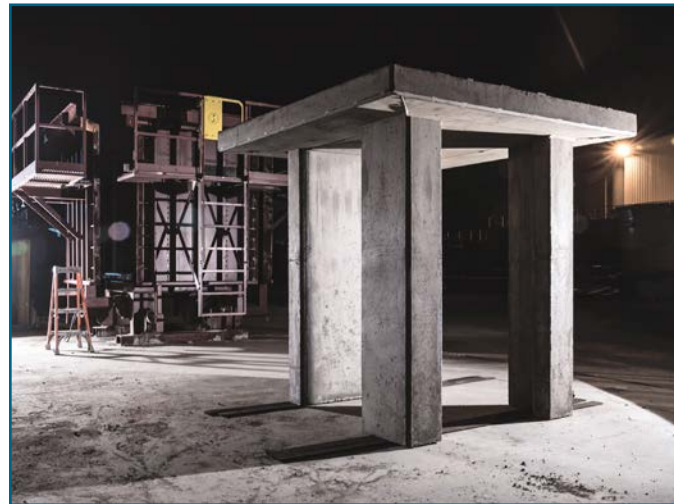
UrbanPond can be engineered with optional infiltration openings.



INSTALLATION



Each Single UrbanPond module is 8 ft. wide by 8 ft. long (O.D.) and easily fits onto a flatbed truck. This size maximizes the space on each truck load. A 10 ft. Double UrbanPond module (two pieces) weighs only 17,000 lbs. total or only 8,500 lbs. per piece.



At least 4 individual pieces can be delivered on a single truckload to reduce shipping costs and minimize crane requirements during install. Most units can be installed using a simple backhoe due to low weights.

MAINTENANCE



UrbanPond is designed to be easily accessed and maintained from finished surface via multiple access ports. Using a standard vacuum truck, each access point is conveniently located, as ports are strategically placed throughout the assembly.



Modules can be modified to act as clear wells or pretreatment chambers for capturing trash, debris, and sediment. This consolidates maintenance requirements to a select few modules. Standard manholes, hinged manholes, and other access hatches are available.





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