RainXchange:
What is that?

Clayton Graba
Ok, what is it?

Rainwater Harvesting System

The Rainwater Harvesting System is a revolutionary design that combines an Aquascape decorative water feature with a sub-surface rainwater harvesting storage system.
What do we think of?

Or

You could have....
This…

Or…
This...

Or...
This...

Or...
This...

Or...
Even This...
Why the RainXchange?

• Clean, Filtered Water Storage – While you enjoy the benefits of a decorative water feature, the Rainwater Harvesting System filters the stored water, providing access to clean, clear, usable water.

• The Rainwater Harvesting System reveals only a beautiful water feature that integrates seamlessly into existing landscapes and permeable paver systems.

• Locating and storing water underground maintains the integrity and beauty of your home and landscape.
Water Feature Lifestyle

Water Features provide soothing sights and sounds that help you relax and de-stress in today’s busy world.
Wildlife Habitat

A small portion of the stored water is brought to the surface for aeration and allows the water to become available for wildlife interaction.
Environmental Conservation

Captured, filtered rainwater can be accessed at any time for irrigating surrounding landscape and garden beds.
Other Benefits!

- Irrigate Vegetable Garden
- Help Manage Stormwater Run-Off
- Top off Swimming Pools and Hot Tubs
- Wash Car, Deck or Patios
- Of Course you get to enjoy a water feature
Why Harvest Rainwater?

**Water Conservation**

• According to the World Wildlife Fund, 1.1 billion people worldwide lack access to water and by 2025, two-thirds of the world's population may face water shortages.*

• Capturing and reusing rainwater reduces the community’s demand on the municipal water supply, reduces the owner’s water bills, and helps avoid strict water schedules.

Stormwater Management

• According to the EPA, stormwater run-off is one of the main reasons that our lakes, rivers, and estuaries are not clean enough for fishing or swimming.

• Rainwater harvesting is a solution for managing stormwater run-off and decreasing flooding.

• Federal, state, and local regulations are requiring stormwater to be managed at the source. The Rainwater Harvesting System provides a solution to help meet these governmental regulations.
Fun Facts

Did you know?

>2% of earth’s H2O is potable and only half of that is currently accessible.
Urban Run-off: Just how much?

- 1” of rain on 1 acre generates 27,000 gallons of water

- 1” of rain on a 20 x 50 mile heavily urbanized city will generate 17.4 billion gallons of water!

- Increased volumes = <velocities = < erosion =< sedimentation. While groundwater levels decrease.
EPA 2017 Report to Congress

- 46% of Stream miles
- 47% of Lake acres
- 32% of Estuary and Bay

Are in poor biological condition
Rainwater harvesting with Aquascape's RainXchange® Rainwater Harvest Systems shown with Pondless® Waterfall

**Irrigation System**
- Natural water is filtered with rainwater and compounds that will make your plants flourish.
- A healthy garden consumes more greenhouse gases and properly irrigated soils allow for greater water infiltration and reduce overall soil profiles.

**Aquatic Plants**
- Providing food and shelter for a great number of birds, insects and amphibians and the cornerstone for maintaining our biodiversity.

**Connecting Pipe**
- Carries the water via gravity to the main storage chamber (and separately).

**Rain Filter**
- Captures and removes pollutants flushed into the system during a rain event.
- Coarse filter screen removes leaves, debris, and trash.
- Smaller suspended particles are captured in a fine mesh which can easily be removed for cleaning.

**Modular Storage Basin**
- Modular design can be configured for a wide variety of applications and settings.
- The storage basin consists of modular plastic tanks that are assembled on-site.
- EPDM rubber membrane creates a water-tight basin.

**Biological Filter**
- Biological filtration and aeration reduces organic waste and pollutants to less toxic substances that can be absorbed by plants, thereby creating a perfect cycle of nutrient reuse.

**Flexible PVC**
- Easy installation with minimal head pressure, which equates to overall efficiency.

**Overflow Infiltration**
- Excess water is sent to a storage area that facilitates the infiltration of water into deeper soils and aquifers.

**Snorkel® Vault & Centipede® Module**
- Optimized soil utilization within the system and a convenient access point for yearly maintenance and cleaning.

**High Efficiency Pumps**
- Submersible re-circulation pumps function 24 hours a day, and can be utilized for the delivery of water to your landscape.
The RainXchange Dowsnpout Filter

Filters Rainwater Before Entering Storage Bin

Smaller particulates are captured in a 300 micron, easy to clean debris net.

Molded hose-tail stub fits 3” or 4” corrugated drain pipe.

Grated lid and layer of gravel removes large debris, such as leaves and twigs.
Recirculating Filter System

• Pondless® Waterfall Vault and Pondless Waterfall Vault Extensions optimize water utilization and recirculation within the system.

• The removable cap provides a convenient access point for inspection and maintenance.

• An energy efficient submersible pump recirculates the water.

• Beneficial bacteria and enzymes throughout the system reduce organic wastes and pollutants to less toxic substances that can be absorbed by plants, creating a perfect cycle of nutrient reuse.
Recirculating Filter System
Aquablox Storage Modules

- Aquablox® Water Storage Modules create the structure of the storage basin.
- Durable EPDM waterproof liner surrounds the Aquablox creating a water-tight storage basin.
- The modular design of the Aquablox allow the storage basin to be configured to fit a wide variety of applications.
- Aquablox are assembled on-site, making shipping and handling extremely efficient.
Aquablox installed:
High Pressure Pump:

The Booster Pump is connected to the system to provide easy access to the stored water.
Other Components:

- 45 Mil Liner
- Underlayment
- Flex PVC
Lastly- Your Decorative Piece
Just How Much Can You Capture?

1 inch of rainfall on a 2,000 sq. ft. roof = 1,250 Gallons of Water
Just How Much Can You Capture?

• That same roof in a region receiving 30 inches of annual rainfall generates 41,000 gallons of reusable water.

• The average U.S. household with a 10,000 square foot lot uses up to 3,000 gallons of water weekly for landscape irrigation.

• Running a sprinkler for 2 hours can use up to 500 gallons of water.

• Seventy percent of water used at home is used outdoors.

• 66,175 gallons of water are used outdoors per household, per year.
Avg Roof Capture:

<table>
<thead>
<tr>
<th></th>
<th>Average RainFall in Inches</th>
<th>Roof Yield in Gallons</th>
<th>Demand in Gallons</th>
<th>Potential Rainwater Storage</th>
<th>Supplemental Water Needed</th>
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<td>January</td>
<td>3.64</td>
<td>408.19</td>
<td>350.64</td>
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<td>June</td>
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<td><strong>Total:</strong></td>
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<td><strong>5,278.43</strong></td>
<td><strong>4,371.30</strong></td>
<td><strong>n/a</strong></td>
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*Potential Rainwater Storage is an estimate based on ideal conditions and may not be accurate in all situations.
How much is my investment?

500 Gallon System - Bubbling Feature w/ Booster Pump:

Professionally Installed: $7-$10,000

3000 Gallon System - Bubbling Feature w/ Booster Pump:

Professionally Installed: $15-$20,000
Is it worth it?

• The short term savings of from municipal water costs or well water costs are unlikely to offset the costs of a RWH System

• Environmental gains of water conservation and storm water management.

• Filtered and aerated water for your Garden

• Create a habitat for local wildlife
Thank you!

Questions? Anything!