



RAINWATER HARVESTING

Complete Solutions for RAINWATER HARVESTING





WHAT IS RAINWATER HARVESTING?

Rainwater harvesting is just what it sounds like: The process of capturing rainwater to supplement the non-potable water needs of businesses, institutions, industrial facilities, and agriculture.

Although the idea of capturing rainwater for secondary use has been around for thousands of years, today it offers building owners, architects, and design engineers a number of important benefits.

Implementing a rainwater harvesting system in your next project can help supplement existing stormwater management plans and ensure adequate water for operations. By reducing dependence on municipal water supplies a rainwater harvesting system can help lower water bills. Adding a rainwater harvesting system to your specifications for energy-efficient plumbing and water-saving equipment can also help your project achieve LEED certification and serve as an important cornerstone in a corporate sustainability strategy.

Typical rainwater uses

- Irrigating landscapes
- Commercial process water
- Cooling tower make-up
- Flushing toilets
- Laundry systems
- Onsite water storage for fire suppression
- Agricultural process water
- Public fountains
- Washing vehicles
- Custodial services
- Ice rinks
- Chiller make-up supply



Case Study: Rainwater Harvesting Systems in Action

Border Patrol facility captures rainwater for flushing toilets and irrigating plantings

Every drop of water counts in the Chihuahuan desert, which straddles the U.S.-Mexico border. So when the Naco, Arizona Border Patrol designed its new \$40 million, 58,000 sq. ft. facility, sustainability was a key design criterion. The solution: A BRAE rainwater harvesting system with three main components: Inlet filtration (rainwater capture), storage tanks, and a Rainset™ for pumping & treatment. The system's rainwater capture equipment is buried just below grade (and accessed via a manhole cover), and rainwater is stored in two underground 25,000-gallon fiberglass tanks. The system's Rainset™, found in the mechanical room, serves as the



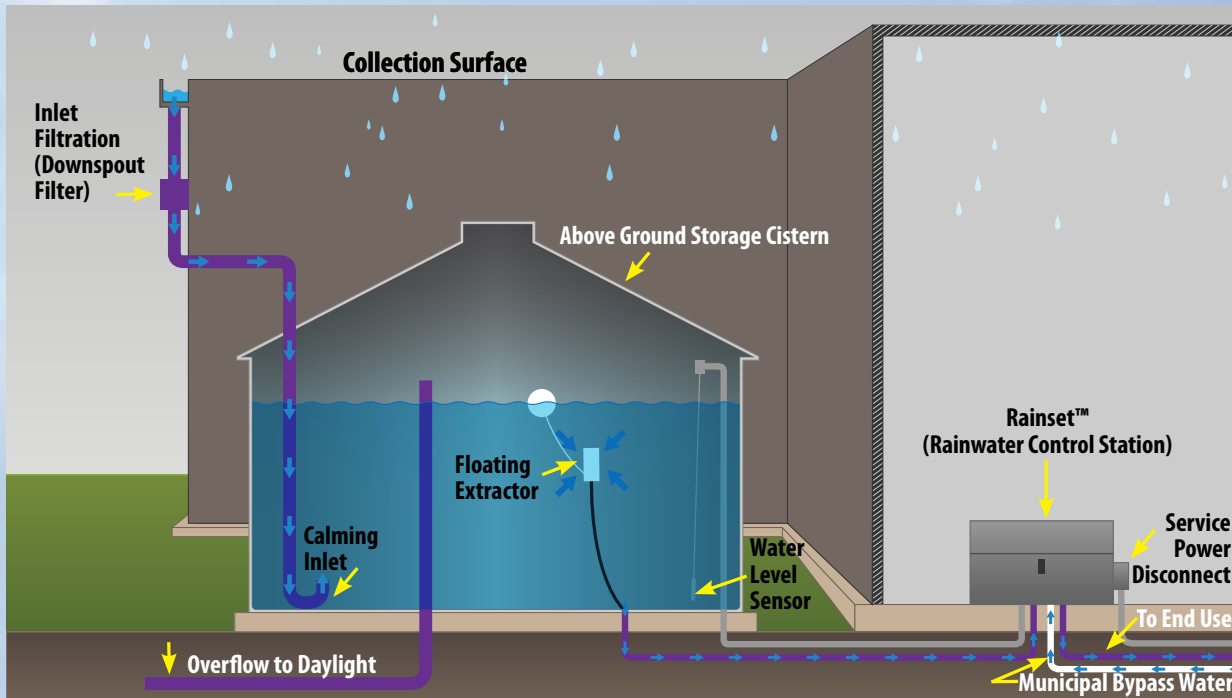
control station, the treatment station, and the pressure booster pack all in one; the skid containing the Rainset™ also includes monitoring, pumping, and cleaning controls. The NACO Border Patrol expects to collect nearly half a million gallons of rainwater each year which it will use for flushing toilets and irrigating outdoor plants.

What form do rainwater harvesting systems take?

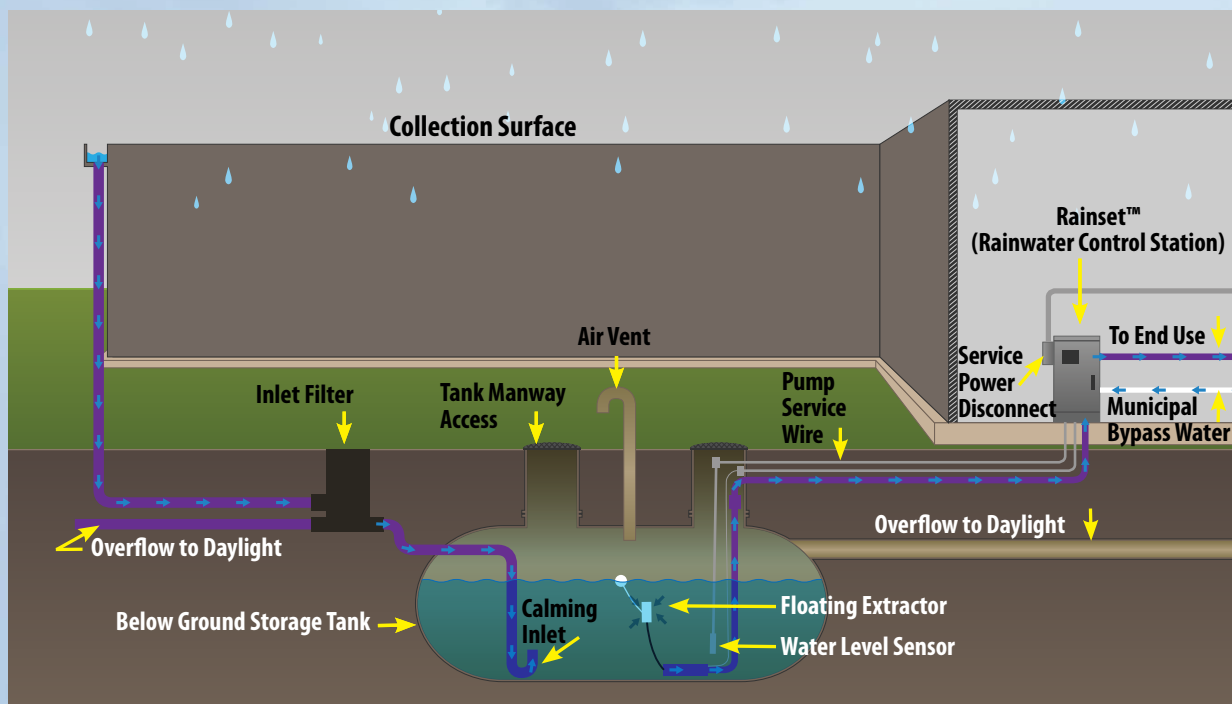
Rainwater harvesting systems can be very simple: An above ground storage tank attached to a downspout for irrigating landscapes. They can also be complex: A fully-engineered series of storage cisterns with custom

data and power supply management delivering water to multiple end uses—including toilets, irrigation, cooling towers, and process water—while at the same time supporting a site's stormwater management objectives.

BRAE Typical Above Ground System



BRAE Typical Below Ground System



How do rainwater harvesting systems work?

All rainwater harvesting systems must do three things: Capture rainwater, store rainwater, and pump & treat rainwater.



Step one: Capture rainwater

Rainwater is captured off rooftops and other surfaces, then sent through an inlet filtration device designed to remove debris before storage in a tank. Inlet filters can be located in a variety of locations depending on site constraints.

BRAE's line of inlet filtration products can be used for a diverse range of projects, regardless of size or scope. The line includes:

- Commercial rain heads designed to filter out mosquitoes, vermin, and debris
- Commercial downspout filters designed to remove sediment, gravel, and oil and grease from stormwater runoff



Step two: Store rainwater

Collected rainwater is stored in a tank or cistern which can be located above or below ground. Depending on the project's requirements, tanks are available in a variety of materials, with plastic (polyethylene), fiberglass, or galvanized steel the most common.

BRAE's storage tank & cistern product line includes a range of solutions for above and below ground rainwater storage. The line includes:

- Above and below ground high density polyethylene (HDPE) tanks offering superior corrosion resistance and a wide range of storage capacities
- Below ground fiberglass tanks designed to meet AWWA D120, NFPA 22, NSF 61, and IAPMO standards
- Above ground galvanized steel cisterns with capacities up to 600,000 gallons/tank



Step three: Pump & treat rainwater

All rainwater harvesting systems require a rainwater control station to manage the system as well as treat and pump water. Water is distributed from the storage tank via pumps. Many applications also require filtering the water before pumping in order to safeguard non-potable water quality.

BRAE refers to rainwater control stations as Rainsets™, and ours are designed to manage pressurized pumping for water distribution, filter/disinfect rainwater for non-potable use, and manage power supplies/connections to ensure continuous operation. The BRAE Rainset™ line includes:

- Compact Rainsets™ offering an economical and space-saving design
- Compact Rainsets™ with integrated constant pressure pump controls
- Modular Rainsets™ designed for indoor installations with limited mechanical room space
- Custom skid-mounted systems



Making the business case for rainwater harvesting systems

With the growing recognition that water is a precious natural resource, making the business case for implementing a rainwater harvesting system (and demonstrating return on investment) is stronger than ever. Consider these benefits associated with rainwater harvesting systems:

- **Leverage stormwater management costs for secondary benefits**
Your project most likely already requires a stormwater management system, and that stormwater management system requires drains, piping, and some form of storage. You can leverage this existing infrastructure to implement a rainwater harvesting system by adding inlet filtration and pumping & treatment components. Justifying the cost of a rainwater harvesting system just got easier.
- **Safeguard business operations**
For businesses where water is a critical component of operations, a rainwater harvesting system can provide the water necessary to ensure continuous operations during times of drought, water-use bans, or other restrictions
- **Lower water bills**
Supplementing a facility's water supply with rainwater can potentially reduce reliance on municipal water, in turn lowering water bills
- **Demonstrate commitment to sustainability**
Implementing a rainwater harvesting system can serve as an important component in a corporate sustainability strategy. In addition, using an above ground water storage tank can serve as a visible declaration of an organization's commitment to sustainability and create educational opportunities regarding water conservation
- **Achieve LEED certification**
Rainwater harvesting systems can help businesses achieve LEED certification. Up to 24% of credits needed for LEED certification can potentially be obtained by implementing a rainwater harvesting system



Why is BRAE the right choice?

BRAE is the perfect partner for implementing a rainwater harvesting system, and here's why.

Unlike many of our competitors, who offer individual components, we provide BRAE Complete™ turnkey rainwater harvesting systems

- Our single-source strategy provides single-call service, single-product warranty, and single-point liability
- There's no need to source individual components, perform due diligence to ensure reliable operation, or contact multiple vendors for service and support
- Our pre-engineered solutions are designed to reduce specification and installation time, saving you valuable time and potentially reducing client project costs

- Our rainwater harvesting systems can be retrofitted into existing buildings/facilities or built into the structure's design from the initial specifications
- Our team provides expertise on design specs and local rainwater regulations and codes
- Our water filtration and disinfection expertise ensures the right water quality for the intended end use
- We're experts in this field: We are members of the American Rainwater Catchment Systems Association (ARCSA), the U.S. Green Building Council, and the American Institute of Architects (AIA). We offer rainwater harvesting workshops in collaboration with ARCSA and the AIA that provide CE credits

Case Study: Rainwater Harvesting Systems in Action

Non-profit agency harvests rainwater for landscaping

The mission of CHRIS Kids is reflected in its name: To heal at-risk teens and children, strengthen families, and build communities in and around Atlanta, Ga. In an effort to develop a stronger foundation for care, the non-profit agency undertook a \$12.1 million dollar renovation and new construction project for its Summit Trail development and housing community. CHRIS Kids implemented a BRAE rainwater harvesting system to meet all its irrigation needs. A 20,000-gallon above ground rainwater cistern stores rainwater which is then piped to a control station for metering and distribution to the irrigation system. The decision to implement the rainwater harvesting system aligns closely with the non-profit's mission:

"We see rainwater harvesting as the ultimate meta-



phor for our core mission here—sustainability of young people, and the environment as well," says Kathy Colbenson, CEO for CHRIS Kids.



RAINWATER CALCULATOR

GETTING STARTED

To experience one-stop access to quality rainwater harvesting systems and system design, call us at **1.800.772.1958**. Together we can work to achieve your water resource goals. We look forward to helping you find your balance. Visit www.braewater.com.

TRACE YOUR BUILDING AND SEE HOW MUCH RAINWATER YOU COULD COLLECT.



Discover Your Rainwater Potential



Visit braewater.com to calculate the rainwater harvesting potential of your site. You'll be surprised.

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About BRAE

Founded in 2003, BRAE specializes in rainwater harvesting system solutions for residential, commercial, and educational applications. Using collected water for flushing toilets, irrigating lawns, and watering gardens can reduce water consumption by up to 65% in homes and buildings. BRAE is an active participant in the rainwater community and assists customers in adopting this technology for their applications.

PARTNERSHIPS



A Watts Water Technologies Company