

# Water ReUSE System



# Why use a Gustavo Preston Water ReUSE System?

There are many water ReUSE systems in the market. They boast superior filtration technology, pumps, tanks, adaptable controls, and 3D renditions of every system. They contain all the necessary parts to create a good water ReUSE system.

## What makes our system different?

Our superior filtration system along with our customizable design gives you superior water quality and flexibility.

The Gustavo Preston Company Water ReUSE system uses groundbreaking technology that provides water quality on par only with Reverse Osmosis. The Triple Clear Force Field™ filter purifies and protects water using mechanical filtering, carbon filtering and electroadsorptive technology.

Independent testing has proven that Force Field filters remove greater than 99.9% of viruses, bacteria and parasites. In addition, the filters effectively remove a wide range of submicron particulates, heavy metals, trace pharmaceuticals and other chemical residues.

The Gustavo Preston Company Water ReUSE system is customizable. Our team of engineers creates a system that is specific to your needs and building layout. It is our job to make sure your rainwater reuse goals are met whether it be to capture and hold rainwater due to ordinance regulations or to use in irrigation, cooling or toilet flushing. In addition, this system will produce consistent water quality results independent of the standard of the incoming water and will not degrade over time as other technologies can.

Gustavo Preston has worked with building owners and engineers throughout the City of Boston to create the perfect system for their needs. The Gustavo Preston Water ReUSE system is a complete and thoroughly customizable system.

## Removing all that is harmful

Water conservation and safety are at the forefront of today's commercial building design challenges. One of the most crucial design considerations is how to clean the collected water to make it consistently safe to use. Some systems do a good job of cleaning reclaimed water but have other issues like low water pressure or high energy costs.

## Defining reclaimed water

Reclaimed water generally comes from a roof drain or ground drain and can contain the following contaminants:

- Debris/suspended solids
- Volatile Organic Compounds (VOC's)
- Synthetic Organic Compounds (SOC's)
- Fungi
- Bacteria/ Viruses
- Parasites

It is important to clean water of the most harmful contaminants to ensure that when the water is used again it doesn't cause a public safety issue. As we review the various cleaning stages of the GPC Water ReUSE system, be aware of all the contaminants that are removed from the water to safeguard against any potential issues.

## What you can rely on

### Standard features on all GPC Water ReUSE Systems

- Consistent filtered water quality
- An integrated system
- Pre-filtration and advanced technology filtration
- Level controls in all storage tanks
- Integrated control valves
- Remote valves
- Complete single point control package
- Single point, 480V / 3 phase electrical connection
- Aeration of raw water tanks to prevent bacteria
- Alarms for failed equipment or maintenance of filters
- BMS interface
- Customer tailored panel displays
- C.I.P. safety protocol



## Pre-Filtration Stage

Pre-filters separate medium to large sized debris (leaves, sticks, bugs) from the flow of water before the water flows into the raw water tank. There are two types of pre-filters. Gravity filters use the force of gravity to pull the water through the filter. Vortex filters push any material with a density greater than water to the outside and allows cleaner water to flow through a central fine mesh packet. Pre-filters can be manually cleaned or automatically flushed clean via spray nozzles.

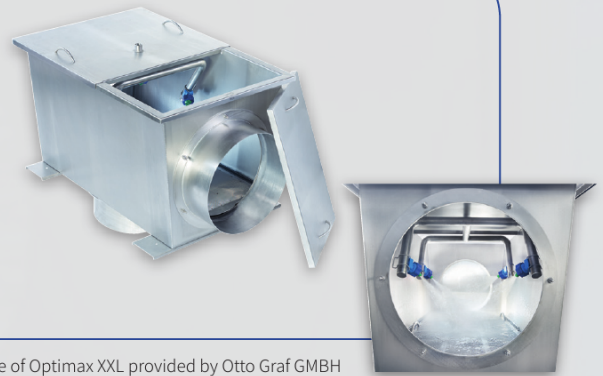


Image of Optimax XXL provided by Otto Graf GMBH

## Storage Tanks



Image of RainFlo storage tank provided by RainHarvest Systems

Storage tanks are available in plastic, steel, or fiberglass and can be modular in a variety of types and sizes. We can provide above ground and below ground tanks that can store raw water or filtered water.

Its not always necessary to have dirty water storage and clean water storage. In some cases, cleaned water can be pumped directly to a final destination.

## Pumps

The raw water is pumped from the holding tank, which may include an end suction, vertical multistage or submersible pump and sends water through the filtration system. The clean water either goes to a clean holding tank or is sent directly to it's final destination which could be cooling towers, toilets and/or irrigation. However, there are other possible uses depending on the need.

When a clean holding tank is required, an additional delivery booster pump is provided. This is typically an end-suction or vertical multistage pump set.



Image of Wilo CO-Helix provided by WILO USA LLC

## Filtration Skid

Gustavo Preston utilizes three filter types to create superior water quality with our state-of-the-art commercial water filtration systems. Each stage of filtration adds value to the system as a whole. The water passes through a combination of sediment filtration, carbon filters and the Triple Clear Force Field filters, removing specific impurities at each stage.

### Sediment Filtration

The purpose of the sediment filtration is to reduce the particle size of the contaminants. The sediment filter is the first stage of the filtration skid. Its function is to further reduce particle size before entering the Force Field filter elongating the filter life. It can be comprised of autoback-flushing filters, cartridge type filters and/or bag filters. The purpose is to remove particulate matter.

### Carbon

The second stage of filtration is comprised of granular activated carbon. The purpose of the carbon is to remove organic compounds and odor.

### Force Field™ Filtration

The last stage of the filtration skid is the Force Field filtration technology. Using electroadsorptive technology, these filters remove a wide range of submicron particulates, pathogens, trace pharmaceuticals, cellular debris, and heavy metals. A naturally occurring positive charge field that essentially puts a “force field” over the pores that attracts and captures negatively charged contaminants in the water (and most contaminants are negatively charged).

### Triple Clear filters:

- 99.9% of viruses, bacteria, and cysts
- 98% of lead and other harmful metals
- 99.9% of cellular debris that causes biofilms

It is like a magnet that attracts, captures and kills the pollutants in the water. Unlike other submicron filters, Force Field filters have very little pressure drop making them the perfect choice for most plumbing applications. The GPC water ReUSE system uses maintenance friendly, reliable mechanical filters.



Image of Evoqua V-Series™ Automatic Screen Filters provided by Evoqua



Image of Force Field filters and Triple Clear Filter provided by Triple Clear Water Solutions



## Integrated Control Panel & Accessories

The integrated control panel is the brains of the water ReUSE system and the single point of control for the entire system. The panel includes programmed logic that controls and communicates to each piece of equipment directing water through the system. The system has BMS interface capabilities and also provides alarms to notify customers of potential issues or hazards.



### Control Valves and Accessories

The control valves in each system may control the water flowing in one or all instances:

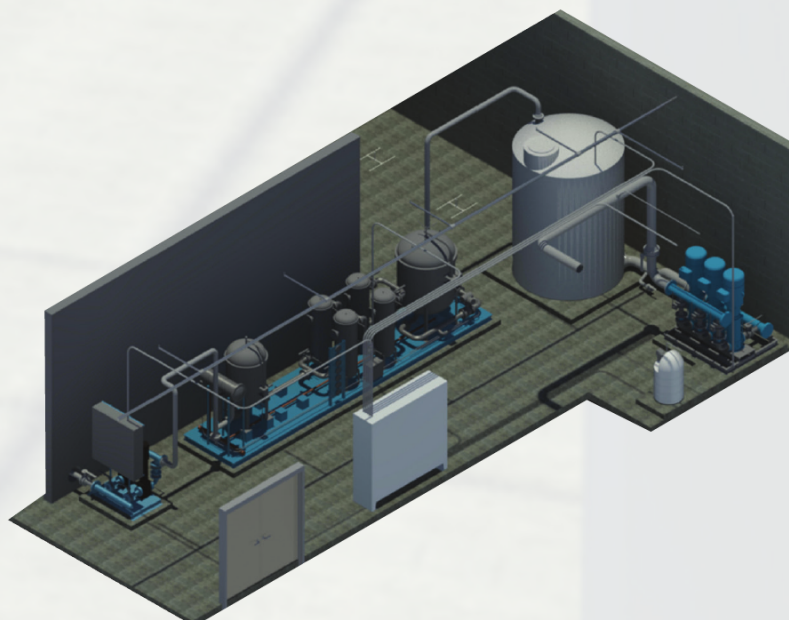
1. As an inlet control which allows storm water into the water ReUSE system.
2. As an outlet control which allows storm water to flush out to waste water drains.

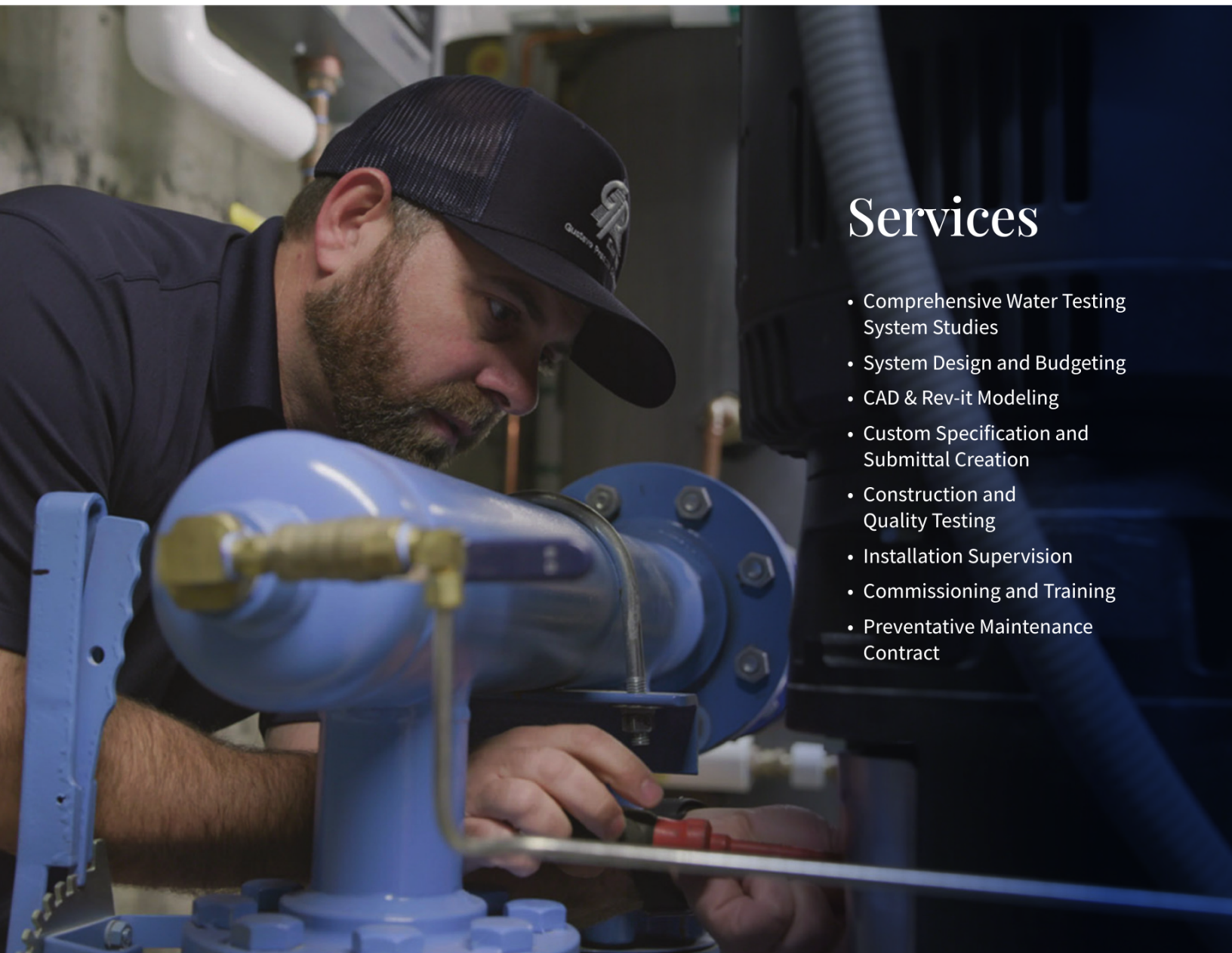
### Dye Injectors

Dye injection systems are used to add dye to water in order to signify that recycled water is being used and is generally used in toilet flushing.

### Tank Circulation and Aeration

Aeration or tank circulation pumps are available to prevent bacteria growth in stagnant water of the holding tank.





## Services

- Comprehensive Water Testing System Studies
- System Design and Budgeting
- CAD & Rev-it Modeling
- Custom Specification and Submittal Creation
- Construction and Quality Testing
- Installation Supervision
- Commissioning and Training
- Preventative Maintenance Contract

