RAINWATER HARVESTING

AQpure
water treatment systems

MODULAR AND AUTOMATED
ULTRAFILTRATION WATER TREATMENT
FOR **SUSTAINABLE WATER SERVICES**
IN COMMERCIAL BUILDINGS

be
think
innovate

GRUNDFOS

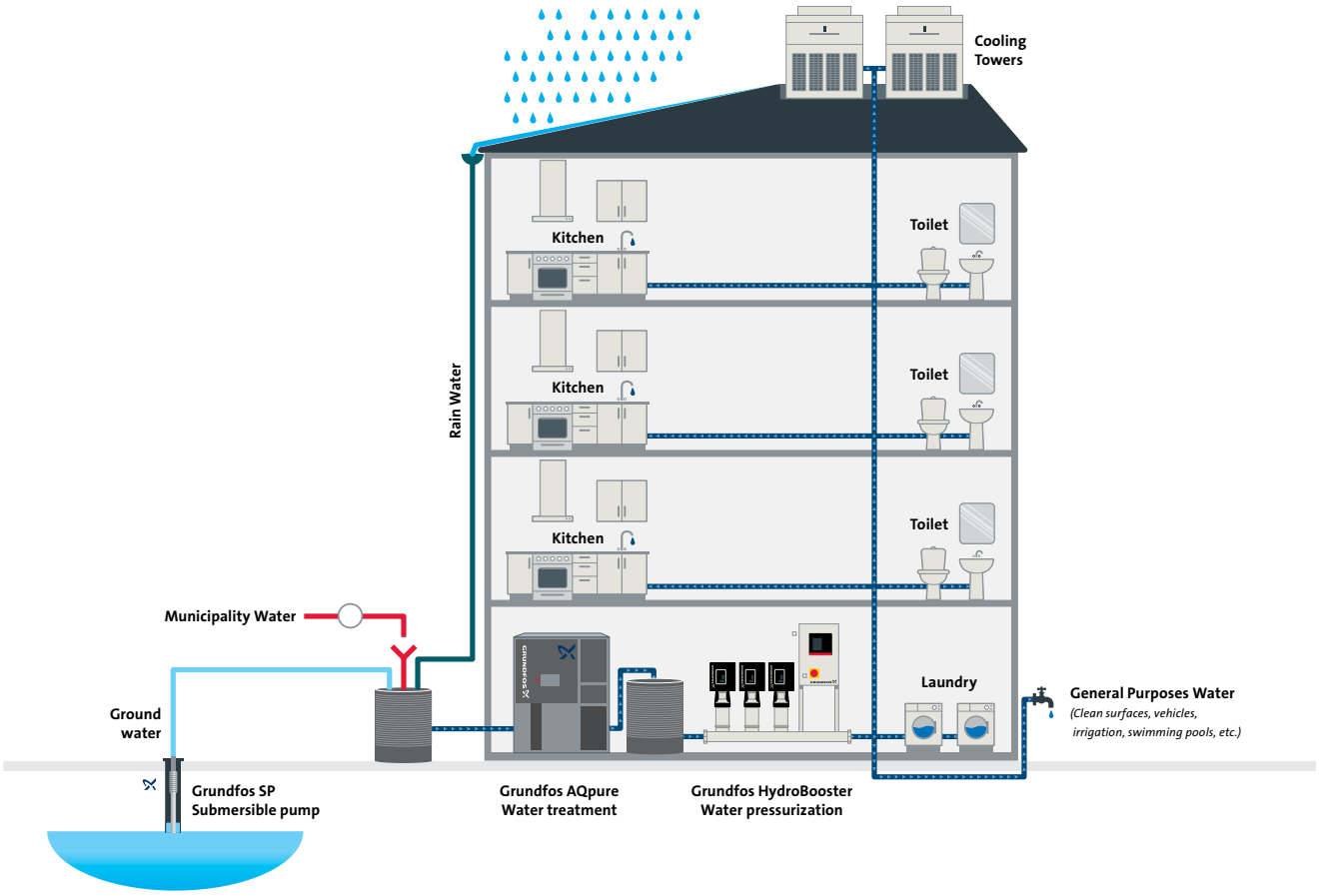
ONSITE WATER TREATMENT
FOR WATER SERVICES IN COMMERCIAL BUILDINGS

Grundfos AQpure is an ultrafiltration-based water treatment system optimised for onsite treatment of groundwater, municipal supply or harvested rainwater. For commercial, industrial or apartment buildings, AQpure can operate as a stand-alone and self-driven water treatment system.

Onsite treatment of, for example, harvested rainwater can support sustainable water services and deliver both financial, environmental and municipal benefits, including:

- **Save money by reducing the water bill**
- **Reduce groundwater extraction and make efficient use of a valuable natural resource**
- **Control the excessive amounts of rainfall in urban areas**
- **Reduce flooding and erosion locally**
- **Reduce stress on municipal wastewater systems and treatment**

TYPICAL COMMERCIAL BUILDING APPLICATIONS



RAINWATER HARVESTING ADDRESSES **CHALLENGES FOR WATER SERVICES**

With a growing population and greater stress on our water sources, there is an increased demand for environmental protection and sustainable use and re-use of water. Harvesting rainwater and treating it for reuse is one way to address these challenges. In addition, such a solution can support building owners and industrial companies in becoming more sustainable and reducing costs for water services.

Sustainable and certified green buildings

There are many reasons why interest in sustainable buildings is growing. If you work with water services in commercial buildings, you are under pressure to reduce clean water consumption and – at the other end – reduce sewage costs. To fulfil government regulations and take advantage of available incentives, meeting green building certifications is now an important part of the planning process.

The Leadership in Energy and Environmental Design (LEED) is one of the most popular green building certification programs used worldwide. The Porta 100 Building located in Bogota, Colombia, shows the importance of this approach. See page 6.

Alternative sourcing of drinking water supply

On industrial sites, finding alternative sources of drinking water can be necessary, to ensure a safe supply for employees. This may be due to a remote location or need to reduce costs of a new connection to a municipal supply. If the raw water supply is pumped directly from a borehole, then water polishing may be required. Grundfos AQpure meets this need perfectly.

MEETING A SOUTH AFRICAN COMPANY'S NEEDS FOR POTABLE WATER AND WATER SERVICES

M/S Incledon, a distributor of quality pipes, fittings and valves, installed a Grundfos AQpure to treat on-site borehole water. By removing solids, bacteria and physical impurities (turbidity and suspended solids), needs are met for potable water and water services.

This was done by integrating a Grundfos pressure-boosting pumping system with Grundfos AQpure, feeding the 25,000 l raw water storage capacity and 40,000 l polished water storage buffer, which meets onsite requirements.

REDUCING COMPLEXITY
FOR ROBUST AND RELIABLE WATER TREATMENT

Grundfos AQpure is built on a modular concept allowing for customisation of each AQpure system to the specific raw water quality at the site. The system produces water for water services in buildings by filtering bacteria, viruses and particles from the raw water source.

An AQpure water treatment system benefits everyone involved in ensuring water supply for services in commercial buildings:

If you are a **specifier** or **contractor** working on a water treatment project, you get:

- Plug-and-play water treatment system on a modularised and standardised skid
- Small footprint
- Easy to retrofit on conventional installations

If you are a **building owner** or **administrator,** you can:

- Ensure drinking water quality
- Reduce utility bills and increase sustainability
- Meet and exceed local government regulations

For **facility and maintenance managers,** AQpure offers:

- Integration into your Building Management System (BMS) for remote monitoring
- Reduced operational costs
- Low use of chemicals and consumables
- Long service intervals

AQPURE WATER TREATMENT MODULES

Common to each customised Grundfos AQpure system is the ultrafiltration (UF) based water treatment operation, using membrane technology with a pore size of 0.03 micrometer. Each of the other modules are optional and must be included according to specific requirements.

Configuration of your Grundfos AQpure system is an easy two-step process:

Step 1: Analyse the quality of the raw water source

Step 2: Select the combination of modules that fits with the quality of your raw water and with your preferences.

MODULES FOR COMBINATION:

1 Self-cleaning prefilter
Long life membrane
Long service intervals

2 Standard UF
Self-regulation
High energy efficiency
Flexible installation

3 Air scouring
Long service intervals
Reduced chemical consumption for CIP

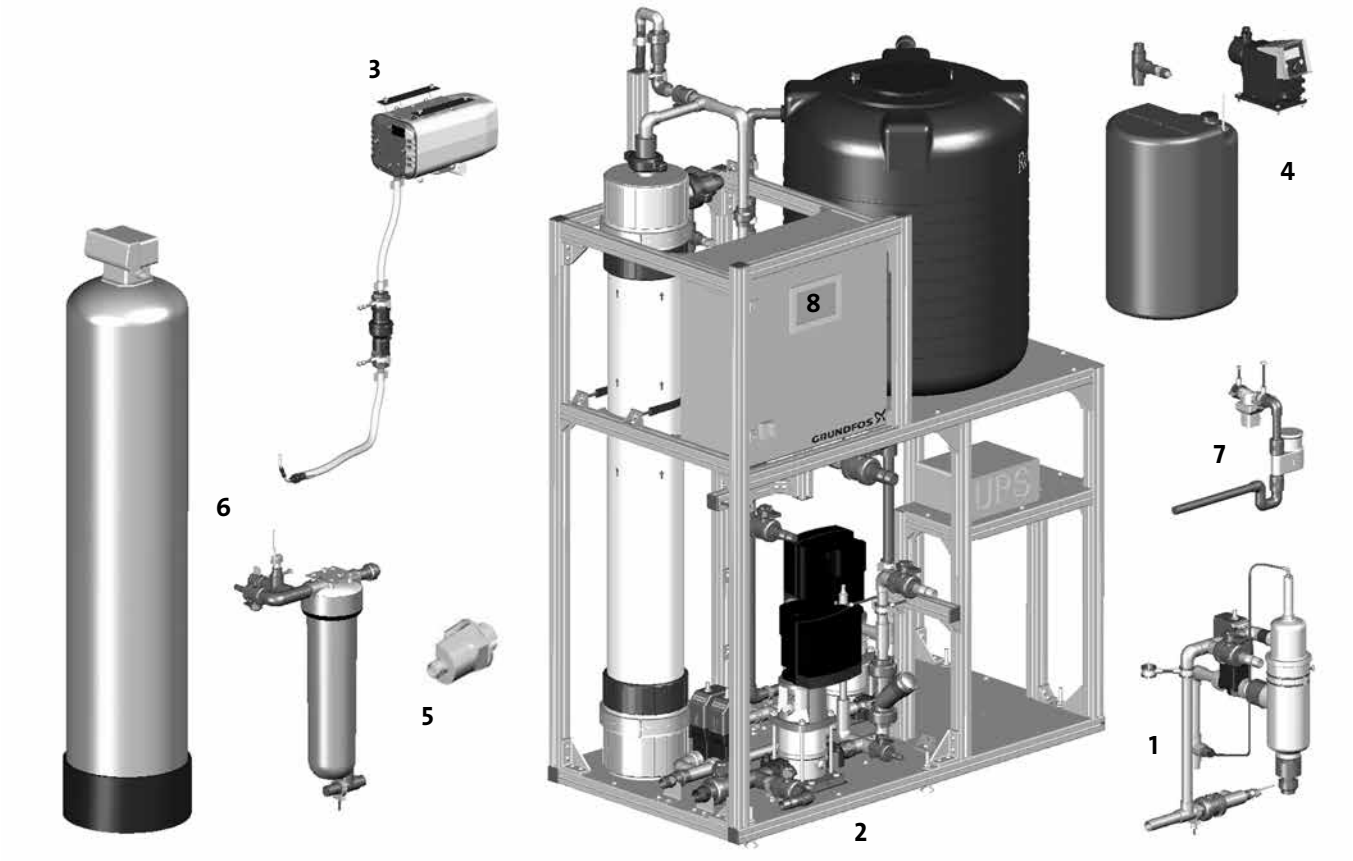
4 Chlorination
Long service intervals. Residual chlorine in purified water

5 Level sensing
External tank level control

6 Activated carbon filter
Removal of chlorine, dissolved organics, pesticides, taste and odour

7 Distribution
Direct water tapping or pumping to an external tank

8 Remote management
Remote monitoring of operational status and performance



RAINWATER TREATED AND REUSED

IN A COMMERCIAL OFFICE BUILDING IN BOGOTA, COLOMBIA

Inside the Porta 100 Building located in Bogota city, Colombia, an AQpure water treatment system treats and reuses rainwater for toilets, laundry, irrigating green areas, and other uses. The Grundfos customer, Prabyc Ingenieros SAS, chose the AQpure system as an alternative to conventional rainwater treatment for several reasons.

Aside from its low energy consumption and the fact that it does not require much maintenance, the system also frees up space which can be used for parking lots. Its ultra-filtration process ensures treated water that meets the highest quality standards.

The building's owners are also applying for LEED certification, a green rating system for buildings. LEED certification serves as a benchmark for commercial buildings, and for developing a sustainable building with a low environmental impact, from construction through to operation.

The building reduces its environmental impact with the aid of a bio-sensitive architectural design, which permits water and energy savings. The building has 30 offices on 12 floors, a private parking area for more than 150 cars, and 74 parking spaces for bicycles.

"The AQpure solution meets and exceeds what is required by the project, giving the owners maximum reliability and support. Their water quality efficiency and space optimisation facilitated their implementation in the PORTA 100 project, allowing the incorporation of new technologies and modifying the traditional concept in Colombia."

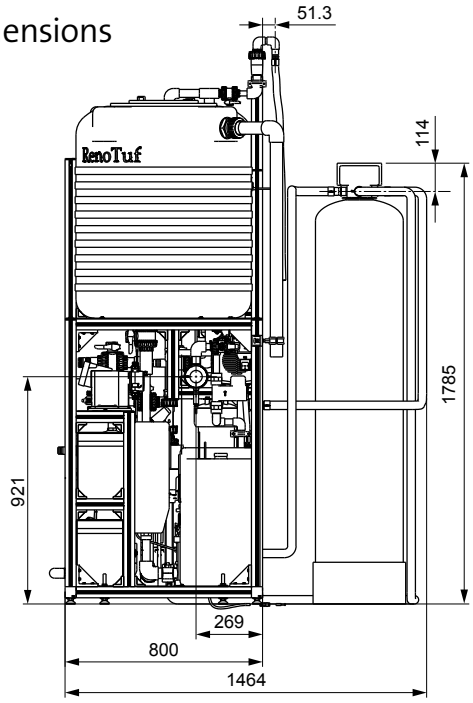
Juliana Quintero,
Prabyc Ingenieros SAS Resident Architect for Porta 100.

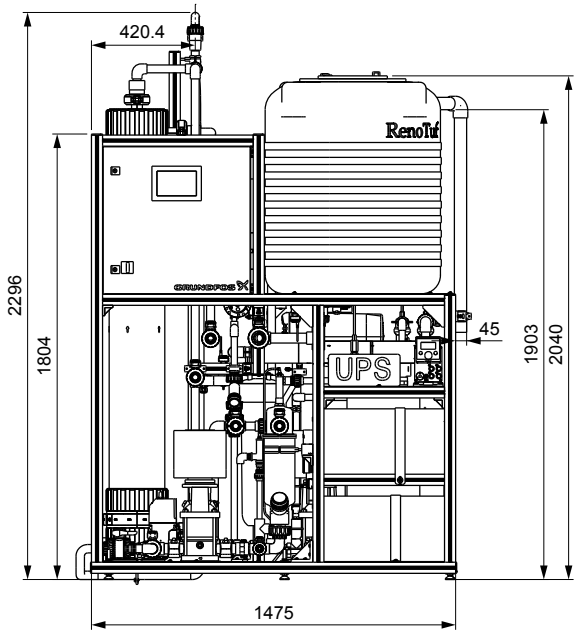
TECHNICAL SPECIFICATIONS

Water production	Up to 2 m^3/h
Membrane type	Hollow fibre, dead-end, outside-in
Membrane material	PVDF
Membrane pore size	0.03 µm
Control strategy	Parametric to be very flexible
Inlet pressure	Max. 1 bar at 1 m^3/h
Power supply	200-240 V, 1-phase, 50/60 Hz
Control interface	PLC based 7" touchscreen
Weight	Empty: 400-615 kg; Filled: 750-1165 kg
Dimensions	Max. length 1600 mm, max. width 800 mm, max. height 2300 mm

CE Marked

Dimensions





CONTACT GRUNDFOS

Contact your local Grundfos company or partner for personal advice on how to customise your AQpure system to match the specific treatment requirements.

For detailed and technical information, please visit Grundfos Product Center, our digital product catalogue and sizing tool, offering one-point access for all product information including pump curves, CAD drawings, and service manuals.

Simply search 'AQpure' at: **product-selection.grundfos.com**

ABOUT GRUNDFOS

Grundfos is a global leader in advanced pump solutions and a trend-setter in water technology. We contribute to global sustainability by pioneering technologies that improve quality of life for people and care for the planet. With an annual production of more than 16 million pump units and more than 80 companies in 55 countries, we offer a full range of modular, energy-efficient and intelligent products and services for applications within buildings, industries and water.

Our commitment to sustainable development ensures we can help you adapt to changing and challenging water situations through our range of proven products that build reliable and sustainable water supply systems.

Contact Grundfos, or read more at **grundfos.com**

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