

HUBER Solutions for Water Reuse and Heat Recovery



Complete solutions for buildings

- Grey water treatment and Recycling
- Total wastewater treatment and Recycling
- Heat recovery from wastewater

►► Our world

- “Earth is a water planet on which the quality of water defines the quality of life. Good water, good life. Poor Water, poor life. No water, no life.”
Sir Peter Blake
- The ancient Romans had better water quality than half the people alive now (www.water.org).
- “We simply must balance our demand for energy with our rapidly shrinking resources. By acting now we can control our future instead of letting the future control us.”
Jimmy Carter
- “The cheapest energy is the energy you don't use in the first place.”
Sheryl Crow
- More people in the world have cell phones than access to a toilet (www.water.org).



►► Our Buildings

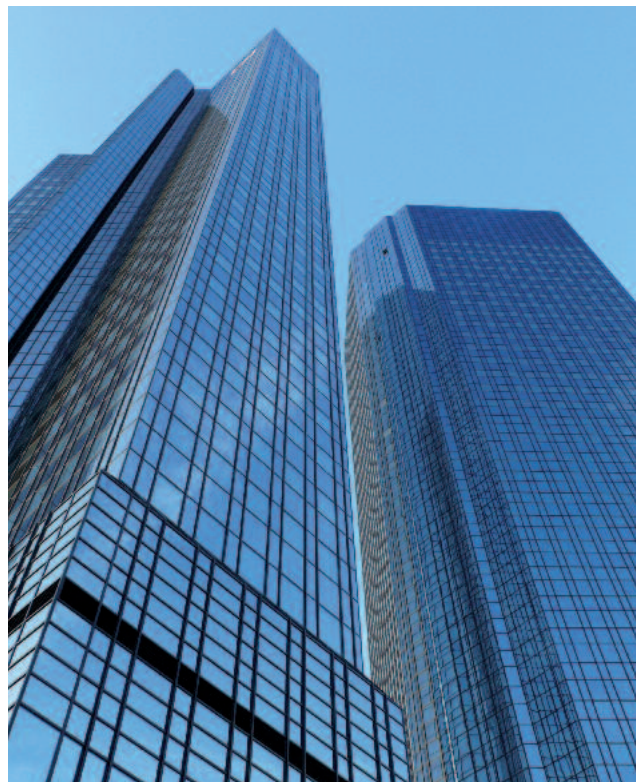
Large buildings such as hotels, shopping malls, office or residential high-rise buildings use large amounts of energy and water.

Conversely they also generate large amounts energy-rich and nutrient-rich wastewater. However this valuable resource is typically discharged straight to the sewer and then the water, the energy and the nutrients are all lost.

How do change this?

HUBER have the answers!

- Wastewater has value and should not be wasted.
- Wastewater is a dependable source of water, nutrients and energy.
- Wastewater should be treated and reused.
- HUBER SOLUTIONS are closing loops.



►► Our Clients

Your Typical Issues

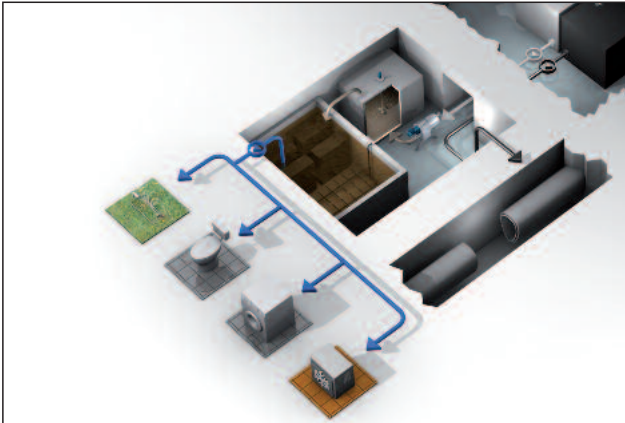
- Is a lack of water infrastructure stopping your project?
- Is a lack of water capacity limiting the size of your building?
- Do you need to comply with sustainability standards?
- Is your site in a sensitive environment?
- Do you want to reduce your energy costs?
- Do you want to operate more sustainably?

If your projects face these issues, HUBER can help.

Your Typical Buildings

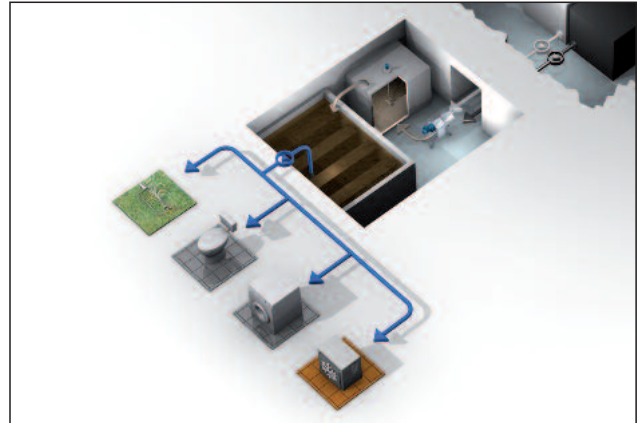
- Hotels
- Universities
- Apartment Towers
- Office Towers
- Golf Courses
- Camping Grounds
- Shopping Malls
- Residential Developments

►► Our Solutions



Grey water recycling: HUBER GreyUse®

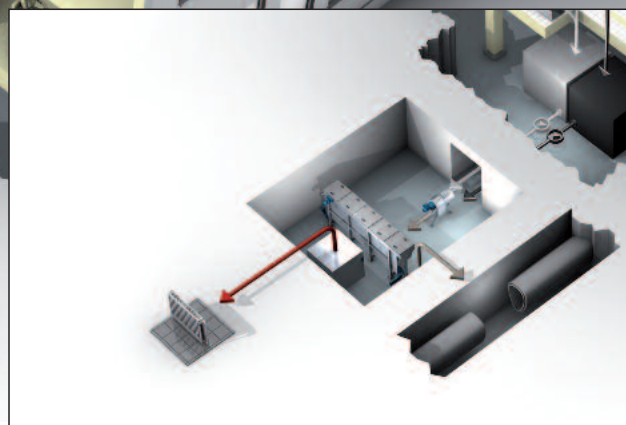
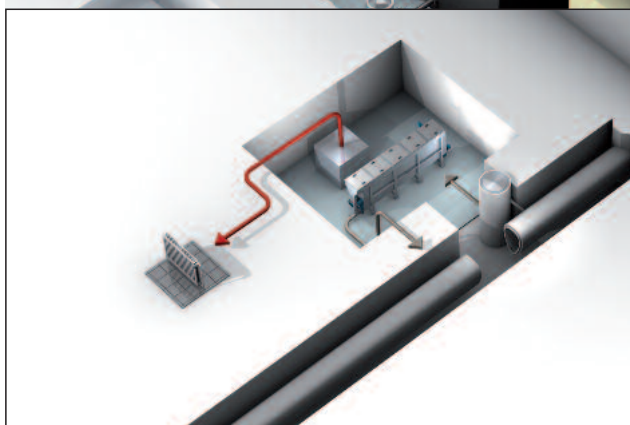
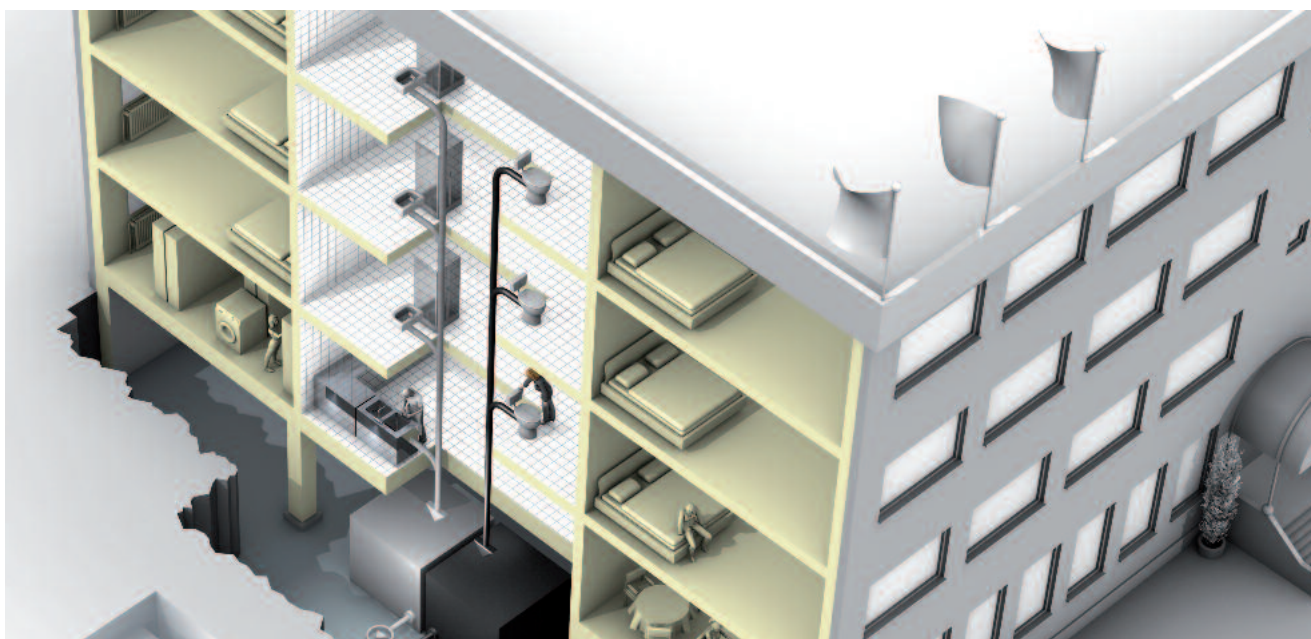
The grey water (lightly polluted wastewater from bath, showers, wash hand basins and laundries) is pre-treated to remove coarse pollutants, and hairs. An intermediate storage tank serves as a hydraulic buffer and ensures uniform feeding into the membrane plant. The heart of this plant is the Membrane Bio Reactor (MBR) where the biologically degradable wastewater pollutants are removed. The ultrafiltration membrane plant filters not only solids but also bacteria and germs. The treated water (permeate) is available for recycling as non-potable water. The waste water from toilets and kitchens is discharged untreated directly into the sewer.



Total wastewater flow treatment

In buildings without sewer connection, the total wastewater flow must be treated, i.e. not only grey water but also black water. Depending upon the project demands we can offer a range of solutions using MBR, SBR, Fine Screening, Micro Screening and Dissolved Air Flotation.

With this range of solutions HUBER can provide the most appropriate over all solution for any project.



Recovery of heat from sewers: HUBER ThermWin®

Municipal wastewater is a rarely used, but excellent heat source for effective and economical operation of heat pumps. Generally the temperature of wastewater is in a range of 10 °C - 20 °C all year round. However to utilize municipal wastewater as a heat source, some special provisions must be made:

- good pre-screening of the wastewater is essential to allow use of a compact heat exchanger and prevent blocking of the heat exchanger pathways
- specially designed heat exchangers must be used which are robust, and free flowing (to minimize solids fouling)

HUBER ThermWin® is a sewer mining system, which enables tapping into large municipal trunk sewers to utilize this water as an energy source for heat pumps. All components of the HUBER system, (i.e. the screen as well as the heat exchanger), are located outside of the sewer and are thus easily accessible for operation and safe maintenance.

Recovery of heat from wastewater: HUBER RoWin

Wastewater from large buildings is a rarely used, but excellent heat source for effective and economical operation of heat pumps. Generally the temperature of wastewater is in a range of 10 °C - 20 °C all year round.

HUBER RoWin is an energy exchange system for buildings to utilize the wastewater as an energy source for either heating or cooling via a heatpump, prior to the wastewater being discharged to sewer.

The RoWin system comprises:

- Prescreening to remove hairs, fibres and large solids
- Specially designed heat exchangers which are robust, free flowing and fully automatically self cleaning

➤ Some Example Projects



- Romanos Hotel, Greece
- Black Water Treatment
- MBR Ultrafiltration
- Treated Water Recycled for Irrigation



- Marriott Medan Hotel, Indonesia
- Black Water Treatment
- MBR Ultrafiltration
- Treated Water Recycled for Irrigation



- Los Cabos Hotel, Mexico
- Black Water Treatment
- MBR Ultrafiltration
- Treated Water Recycled for Irrigation



- Office Tower, Switzerland
- 500 – 800 kw Energy Recovery From Wastewater



- Plaza Indonesia Shopping Mall, Indonesia
- Black Water Treatment
- MBR Ultrafiltration
- Treated Water Recycled for Cooling Towers & Irrigation



- Medview Beach Villas, Cyprus
- Black Water Treatment
- MBR Ultrafiltration
- Treated Water Recycled for Irrigation

►► Information about HUBER

HUBER is a globally active company in the field of water, wastewater and sludge treatment. At our headquarters in Berching, Germany, more than 500 employees develop system solutions, manufacture products and manage projects for commercial, industrial & municipal clients.

With more than 25,000 installations worldwide HUBER is one of the leading companies worldwide in this field. HUBER's adapted treatment processes significantly contribute to the solution of our global water problems.

As a pioneer, HUBER has established many patented innovations worldwide while HUBER service has built an expert support group. With a total of approximately 900 employees HUBER was able to generate a turnover in excess of 130 million € for the business year 2008.

HUBER supports its customers in approximately 60 countries around the world through subsidiaries, offices or representatives. The company has been family owned for more than 175 years and today manufactures a wide

range of high quality products for the international markets using the most advanced manufacturing technology and by highly qualified employees.

As a result of continuous further improvement of its products HUBER offers a full range of products for the whole water sector and the worldwide markets. Our systems are then backed up by the HUBER Global Service team to ensure problem-free and reliable operation.

Sustainability in the field of water utilization is a primary concern of HUBER and is reflected in a variety of HUBER Solutions offered for wastewater reuse and recovery of nutrients from wastewater and sludge.



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