

Greywater Recycling

PAYS

Hotels
Schools, Offices
Apartment Buildings
Sport and Fitness Centres

With over 20 years experience and the most economical solutions, we are your leading partner for commercial projects.



INTEΨA

New Water Source



Up to 65% of our water needs comprise showering, bathing, washing hands and washing machine usage. The resulting waste water from these activities is the so-called greywater.





This greywater can be very economically and easily recycled, for example treating it for reuse in toilet flushing and irrigation.

Reference Apartment Building

Munich, Germany

Greywater source:	Shower, hand washing
Use:	Toilet flushing, irrigation
Treatment amount:	7,200 L/day

Germany is a water-rich country, but german frugality means installing AQUALOOP was a great investment. These apartment blocks in Munich are the first of many to squeeze as much value from recycled water as possible. The system will produce enough water to flush the toilets 800 times daily.



RAINMASTER Favorit-SC Duplex
AQUALOOP controllers
AQUALOOP blowers

New Water Source

INTEUJA



Reference Apartment Building

Tehran, Iran

Greywater source:

Use :

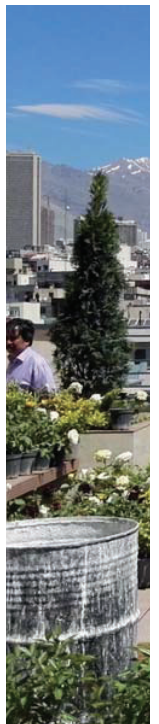
Treatment amount:

Shower, hand washing

Toilet flushing, irrigation

1,800 L/day

Currently, the million person metropolis is a blazing hot concrete desert with rapidly growing water problems, as the view over the city rooftops shows. The AQUALOOP technology enabled an immediate re-think and from the concrete roof desert, a green oasis in the middle of the city was created. In addition to irrigating the beautiful roof gardens, toilets are also flushed with treated greywater.



Profitable Advantages



Double savings

By reusing greywater, you save not only the mains water but also the wastewater costs. This makes amortization of projects possible in less than 5 years.

Sustainable investment

With greywater recycling, you can achieve a better assessment with „Certifications for Sustainable Building“. This can increase the value of your property and can mean tax advantages as well. Market your building as „Green“.



Smaller space needs

A greywater system needs very little space for the tanks since the water is collected daily and directly reused for the building needs.



Profitable Advantages

INTEΨA

System Construction - Greywater Recycling

The principle with AQUALOOP



Greywater



Tank



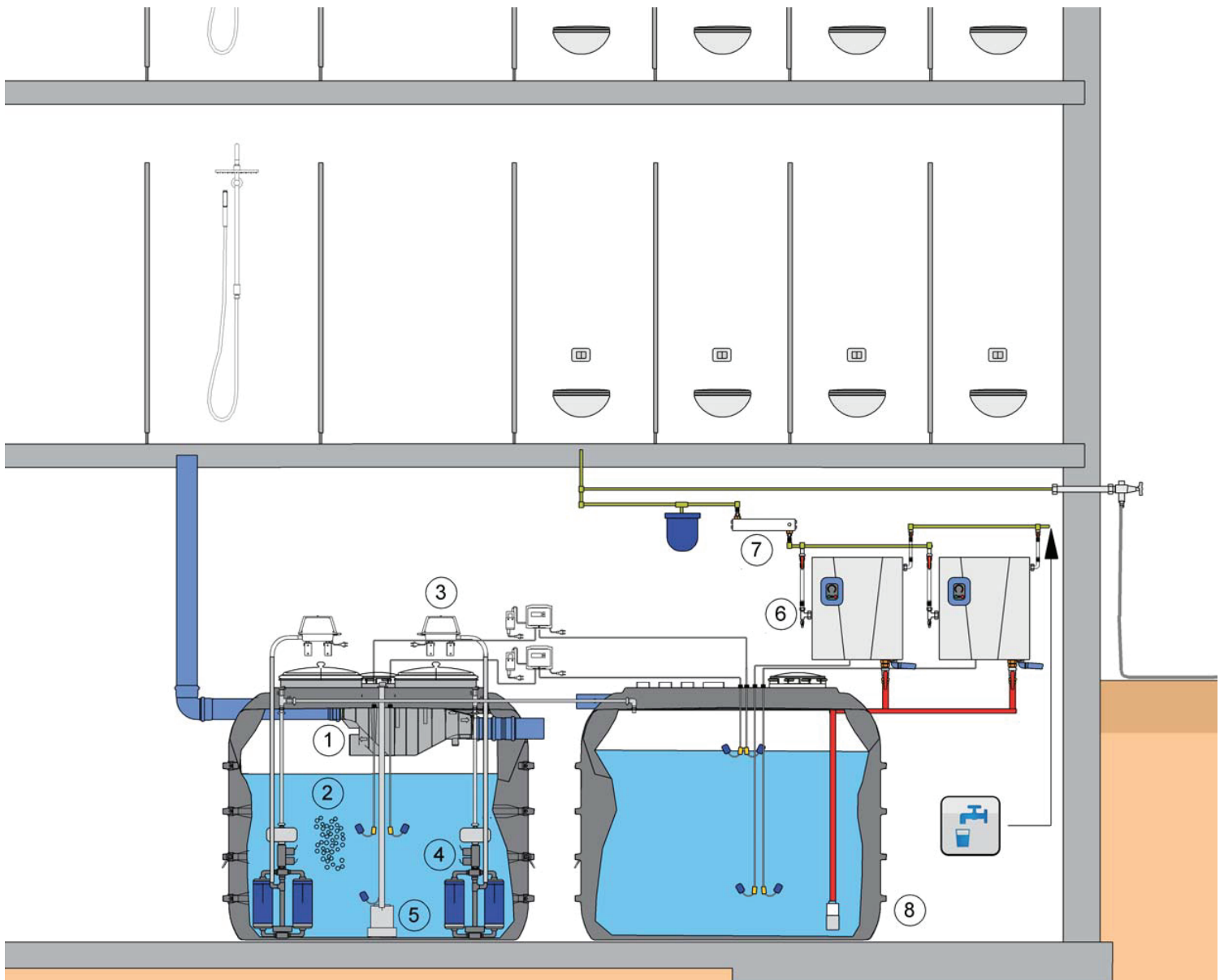
AL-Water treatment



UV disinfection



WC, garden +++



Functionality

The greywater from showers, bathtubs and hand washing is pre-filtered through the highly efficient PURAIN filter before entering the bioreactor. The integrated PURAIN skimmer overflow removes surface contaminants. Biological degradation is achieved with a combination of AQUALOOP growth bodies and aeration by AQUALOOP blowers. The treated greywater is then ultra-filtered through the AQUALOOP membranes and delivered to the clear water tank by the AQUALOOP station pumps. Bio-waste is periodically drained by the automatic sludge pump.

The economical and quiet-running RAINMASTER Favorit-SC pumps the water from the clear water tank to the connected fixtures such as toilets, washing machines

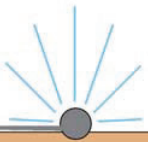
and irrigation systems. The RAINMASTER can operate in parallel by Bluetooth, ensuring the highest operational safety. If treated greywater is not available, the RAINMASTER automatically switches to a DVGW-certified mains water backup. For added piece-of-mind the treated and ultra-filtered greywater passes through a final disinfection step, ultraviolet irradiation through the in-line UV unit.

Your system

The modular and expandable system is designed for greater water needs in your commercial project. It is therefore also possible to install the system in underground or free-standing above-ground tanks. Indoor-tanks are pictured opposite.

System components

1. PURAIN pre-filter
2. AQUALOOP growth bodies
3. AQUALOOP blower
4. AQUALOOP membrane station
5. Sludge pump
6. RAINMASTER Favorit-SC
7. UV unit
8. Tanks



System Construction

INTEUJA

Components for greywater recycling

The patented AQUALOOP is the heart of water treatment



▶ AQUALOOP membrane station

The AQUALOOP membrane station is mounted within the bioreactor. This station comprises a platform for mounting the membranes. A filtration pump, backwash pump, backwash tank and blower connection are all integrated here.

The AQUALOOP membrane station holds up to six membrane cartridges, to flexibly scale treatment capacity. For even higher demands multiple stations can be used in parallel.

▶ AQUALOOP membrane

The specialized hollow membrane fibres reliably prevent passage of bacteria and viruses. The innovative construction and design allows for long-lasting operation up to 10 years with only minimal maintenance effort.

In terms of chemical additives (for example health-impairing chlorine) the AQUALOOP dispenses of their need in water treatment. This is positive for both the wallet and environment.

▶ AQUALOOP controller

Each membrane station is provided with a fully-automatic controller for regulation and monitoring of the treatment and filtration processes.

The operating status can be easily read from an illuminated LCD display.





PURAIN filter

PURAIN high-efficiency, self-cleaning filters with integrated skimmer overflow are for installation in tanks with automatic cleaning.



AL growth bodies

On the AQUALOOP growth bodies develops a so-called biofilm, which is responsible for the degradation of organic compounds in the greywater.



AL blower

The blower supplies the treatment process in the bioreactor with oxygen. At the same time, the membrane fibres within the cartridge are optimally cleaned by the directed air bubbles.



Sludge pump

This pump serves to automatically remove sludge from the bioreactor.

Accessories

Suction filter, floating switches, cleaning kit, suction hose, expansion vessel.



UV unit

The UV unit, through its disinfection effect, provides an additional level of safety for the end use of treated water.



RAINMASTER Favorit-SC

The RAINMASTER Favorit with speed control pumps the treated and filtered water from the clear water tank to your fixtures such as toilets, showers, outdoor taps, washing machines, etc.. In addition, the RAINMASTER Favorit-SC is incredibly durable, quiet and saves on energy.

Reference EATALY Store

Los Angeles, California, USA

In addition to being passionate about all things culinary, Eataly and their partners have a strong environmental conscience. Especially when it's about water and its preservation and conservation.

Housed inside this marvel of modern cuisine sits another true first for the city of Los Angeles, the very first commercial NSF-350 certified greywater system.



Greywater source:
Use for:
Treatment amount:

Hand washing, condensate
Toilet flushing, irrigation
3,600 L/day

Water Quality

INTEWA greywater systems deliver the cleanest water through the ultrafiltration process.

Certified Safety

The INTEWA greywater system is the first and only system worldwide to be certified to both the NSF-350 Class C for commercial application and the British Standard BS 8525-2:2011 for spray application, the two most recognized and stringent greywater standards in the world.

The RAINMASTER pump and control units are DVGW-certified, providing the INTEWA system the highest operating safety in the world.



Requirement and approval results of effluent quality according to NSF/ANSI 350-2014

	Influent range source water ⁴	Requirement effluent NSF/ANSI 350-2014 Class C		AQUALOOP effluent Test results NSF approval Class C	
		Test Average	Single Samples Maximum	Result Average	Single Sample Maximum
CBOD ²	130-180 mg/l	--	--	--	--
BOD ²	--	10 mg/l	25 mg/l	5 mg/l	17 mg/l
TSS	80-100 mg/l	10 mg/l	30 mg/l	2 mg/l	7.8 mg/l
turbidity (NTU)	50-100 NTU	2 NTU	5 NTU	0.57 NTU	3.89 NTU
E. coli ²	10 ² - 10 ⁴ cfu/100 ml	2.2 MPN/100 ml	200 MPN/100 ml	1.0 MPN/100 ml	13.0 MPN/100 ml
pH	6.5 - 8.0	6.0 - 9.0	NA ¹	7.38	NA ¹
total phosphorous- P	1.0 - 3.0 mg/l	--	--	--	--
total Kjeldahl nitrogen-N	3.0 - 5.0 mg/l	--	--	--	--
color	--	MR ³	NA ¹	MR ³	NA ¹
odor	--	Non offensive	NA ¹	Non offensive	NA ¹
oily film and foam	--	Non detectable	Non detectable	Non detectable	Non detectable

¹ NA: not applicable

² Calculated as geometric mean

³ MR: measured and reported only

⁴ System for treating bathing and laundry source waters (combined)

Reference Student Apartments

Ismir, Turkey

Greywater source:

Shower

Use:

Toilet flushing, irrigation

Treatment amount:

8,000 L/day



When Bayindir University went searching for technology to fulfil their „Domitory Greywater System“ they found the INTEWA AQUALOOP system perfectly adaptable to their specific needs.

Due to the modular components, AQUALOOP could be installed and meet their stringent space and water quality standards. Over 100 students now use greywater to save 8 m³ of drinking water every day.



Reference Al-Tashatha Secondary School

Francistown, Botswana

Greywater source: Shower, hand washing
Use: Toilet flushing, irrigation
Treatment amount: 5,000 L/day

Shortly after Christmas, Botswana commissioned its very first INTEWA AQUA-LOOP greywater system. The beautifully built campus experienced periods of water stress and officials decided that non-priority water could be easily supplied year-round with constant greywater sources.



Now, even during dry periods the school campus blooms with gardens watered with greywater.



References

INTEWA

MORE applications for water treatment with AQUALOOP

The necessity but also the possibilities to save considerable amounts of drinking water have grown strongly in the last few years. Besides obvious measures, such as water-saving fixtures and simply using less drinking water, it is also clear that little will be accomplished without treating already-used or slightly-polluted water.





Drinking water from rainwater

With AQUALOOP ultrafiltration, rainwater collected from roofs becomes valuable drinking water.



Processed water from a wastewater treatment plant

With AQUALOOP the effluent from wastewater treatment systems can be cleaned and disinfected and reused for example for toilet flushing or irrigation of plants.



Drinking water from surface water

Surface water sources such as lakes, rivers and streams can be processed with AQUALOOP technology for numerous other uses.



Groundwater with iron and manganese

The iron and manganese often found in groundwater can be directly oxidized in the filtration tank with a suitable pH value and atmospheric oxygen with the help of AQUALOOP technology.



Adiabatic cooling

With SOFT rainwater 80% of the energy to cool buildings and costs for water AND softeners are reduced.



Laundry and washing machine water

AQUALOOP is suitable for treating water from washing machines and laundromats.



Recycling water for Aquaculture and fish farming

AQUALOOP is suitable for treating water for aquaculture and fish farming.



MORE Applications

INTEUJA

Our Service

Your project will be successful

- Concept creation and preliminary pricing
- Support for exporting companies
- Compilation of tenders
- Commissioning service support
- Maintenance
- Support with licensing questions
- INTEWA Wiki, the online knowledge portal

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