

# HUBER GreyUse® – The solution for Greywater



- Your grey water is a reliable source for safe recycled water
- Reduce your fresh water consumption & costs
- Use our water resources more sustainably

## ➤➤ HUBER GreyUse® – Grey-water Recycling with MBR

Greywater is the name given to the part of domestic wastewater which is free of faeces. Compared to black water, greywater is less polluted and easy to treat with the efficient MBR system. The excellent quality of the treated greywater, alone or combined with rain water, allows its safe reuse as service water in households or for outdoor purposes. Saving fresh water results in not only an ecological benefit, but also an effective economic benefit, with an especially favourable effect on industries with a high service water demand.



## ➤➤ Greywater production and service water demand

The volume of greywater produced depends strongly on the consumer behaviour.

The total water consumption of accommodation facilities increases with the standard of the facility.

A hotel for example produces on average 312 l greywater daily per bedroom. The greywater produced makes approximately 50% of the total wastewater production thus covering the toilet flushing water demand completely.



## ➤➤ The treatment system

The HUBER GreyUse® plant treats greywater according to the MBR principle. The submerged ultrafiltration membranes (38 nm pore size) reliably retain all solids and bacteria and virtually all germs.

The systems consists of three main components:

- Buffer tank with pre-screening
- Membrane bioreactor (MBR)
- Treated water storage for recycle use



## ➤➤ Operation and effluent parameters

The greywater is treated using a combination of biological processes (utilising bacteria naturally present in wastewater) and physical ultrafiltration with flat sheet membranes. The treated water is almost crystal clear and virtually germ-free.

The treated greywater can be stored without problems, and it meets the standards specified in sheet H201 (fbr, 2005) for the reuse of treated water for toilet flushing, laundry washing and irrigation.

Parameter	Reference value as per fbr-H201 (limit value of RL 6/160/EWG)	Effluent from HUBER GreyUse® Plant
<b>BOD<sub>7</sub></b>	< 5 mg/l (-)	< 2.4 mg/l
<b>Oxygen saturation</b>	> 50% (80 - 120%)	> 50%
<b>Total coliform bacteria</b>	< 100/ml (100)	< 1/ml
<b>Faecal coliform bacteria</b>	< 10/ml (20)	< 1/ml
<b>Pseudomonas aeruginosa</b>	< 1/ml (-)	-

*Quality requirements for reuse of treated greywater for toilet flushing and irrigation*

## ➤➤ Features

The main features of the HUBER GreyUse® plant:

- Small space requirement
- Minimum noise level
- No odour and moisture
- Modular design
- Automatic operation with low maintenance requirements



## ➤➤ Reuse of treated greywater

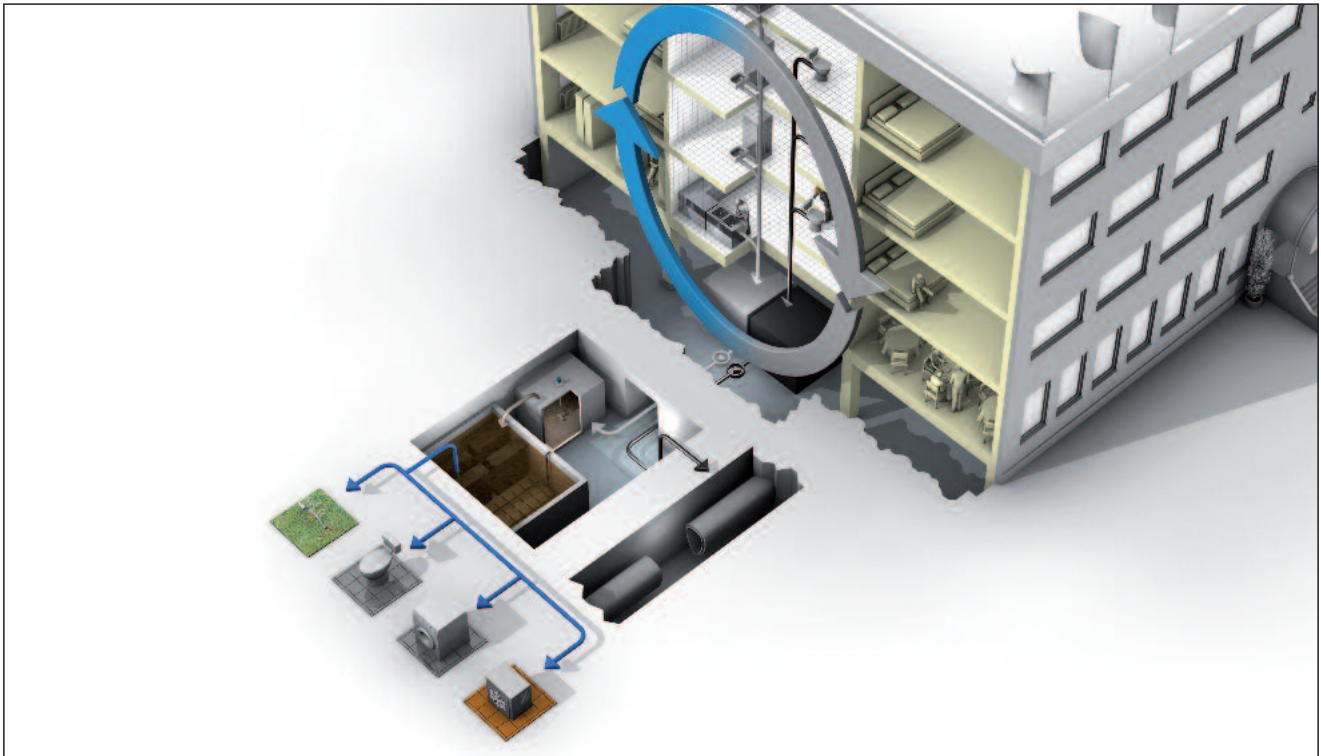
Both in urban and rural areas, treated greywater can be used for a variety of applications, such as:

- Toilet and urinal flushing
- Feeding of cooling systems
- Irrigation of lawns and golf courses
- Vehicle washing
- Fire protection





➤➤ An example of the complete system in a hotel



① Buffer storage Tank    ② MBR Tank    ③ Treated water recycle uses

➤➤ Application examples

- Shopping centers, residential and office buildings
- Hotels, holiday resorts and camping sites
- Sports and leisure parks
- Metropolitan areas in arid regions
- Developments on islands with supply problems
- Districts of fast growing metropolitan areas



Office building of HUBER SE in Berching



Housing development

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