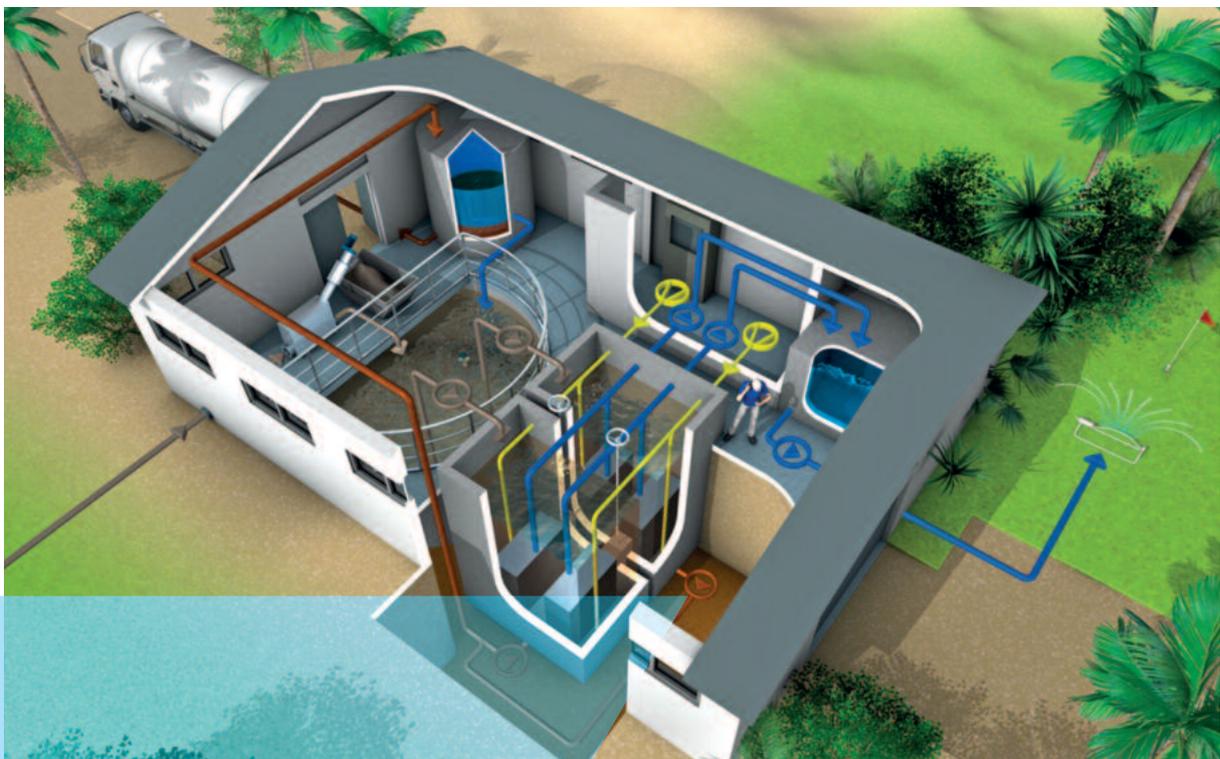


HUBER BioMem® Compact MBR System



- Compact complete solution for semi-centralized and decentralized applications up to 3000 PE
- Various ecological and economical benefits due to various reuse options
- High flexibility due to modular design providing for various system options

►► The situation

Rapid population growth, old sewage systems and the progressing climate change are the ever increasing challenges that densely populated metropolitan areas are faced with all over the world.

Even if centralised sewage treatment facilities still provide for reliable wastewater disposal in many cities in the world, they turn out to be not flexible enough where settlement structures are changing and adaptable solutions are required.

Furthermore, due to water shortage, arid urban areas are increasingly faced with shortages in the supply of service water of sufficient quality, with the result of continuously rising costs for cooling water, wash water and irrigation water.

Moreover, discharge standards are anticipated to be soon tightened significantly in many countries in the world or even have already been tightened recently.

In view of these developments, we will have to pursue new ways of sewage disposal and consider wastewater as a valuable resource.

Compact decentralised sewage treatment concepts that provide for water reuse in urban areas are therefore gaining in importance.

Such solutions can be used in modern, sustainable green building applications but as well in the periphery of

rapidly growing metropolitan areas and container villages where uncomplicated yet reliable wastewater treatment systems are particularly needed.

But, in the long run, also thinly populated rural areas and remote villages need safe wastewater disposal solutions.

Long distances and difficult access lead to high construction and maintenance costs for sewer systems so that it is frequently neither economical nor ecological to operate centralised sewage treatment plants.

A particular challenge are remote hotels and holiday resorts as it is not only the mere disposal of wastewater that matters for them.

Water consumption is very high in the hotel sector, hotel keepers can therefore benefit ecologically and economically if they reuse treated wastewater as service water.

Instead of using precious potable water permeate is an ideal alternative for non-drinking uses, such as for cleaning or water features, and operators can save the purchase costs for expensive water.

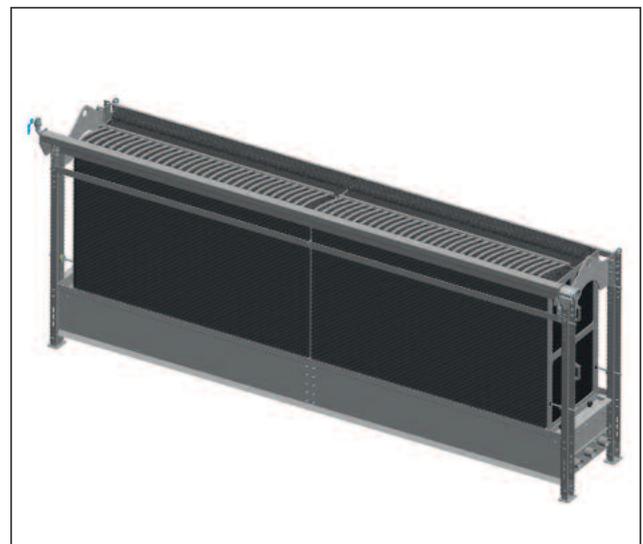
►► The solution

Due to its excellent cleaning performance with minimal space requirements the HUBER BioMem® Compact MBR system represents adapted solution for the implementation of decentralised water cycles. The system combines the well-proven activated sludge process with modular ultrafiltration units. This combination eliminates the need for conventional secondary clarification in a settling tank.

The filtration unit of the HUBER BioMem® Compact MBR system consists in a compact unit of high-quality membrane packages which are fully submerged in the activated sludge.

The bacteria in the aeration system decompose the organic pollutants contained within the wastewater under aerobic conditions. Slight underpressure is applied on the membranes via a permeate pump so that the clear water fraction is separated from the activated sludge. At the same time, the biomass and virtually all germs and bacteria are reliably retained by the membrane.

Scouring air is blown in just under the membrane to prevent the formation of covering layers on the membrane surface. Due to the turbulences which are created as the mix of air and sludge streams upwards through the gaps between the membrane plates, fouling and particles are continuously removed from the



The new HUBER BioMem® 300

membrane surface. In this way, the HUBER BioMem® Compact MBR system ensures stable filtration and constantly high effluent qualities with minimum space requirements.

The produced permeate is hygienically safe, odourless and free of particles and thus can be reused for e.g. toilet flushing, cleaning, cooling or irrigation.

➤ Applications

Membrane filtration plant for semi-centralized and decentralized applications with

- stringent effluent standards (karst areas)
- uneconomical sewer connection
- a high demand for of service water
- dry climate conditions and water shortage

Typical areas of application:

- remote hamlets and mountain villages
- residential developments and large building developments
- sustainable, modern green building applications
- hotels and holiday resorts
- container villages and labour camps

Types of wastewater:

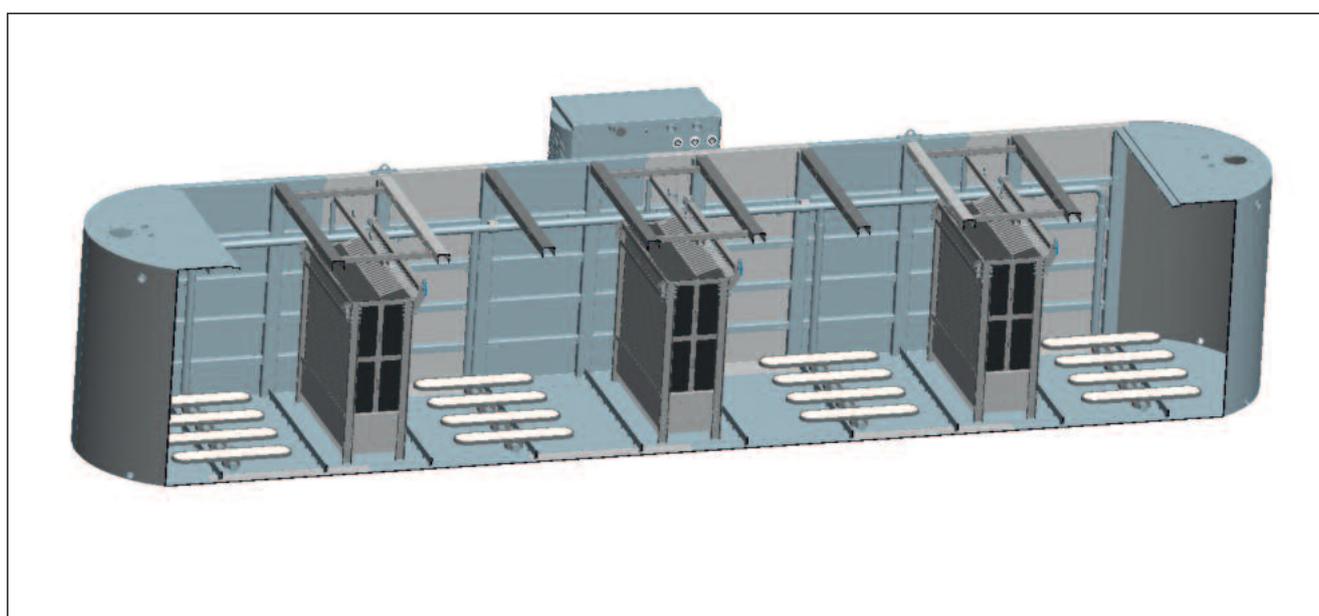
- municipal wastewater
- grey water
- certain industrial wastewaters



HUBER BioMem® Compact MBR system in Roc, Croatia

➤ Technical data

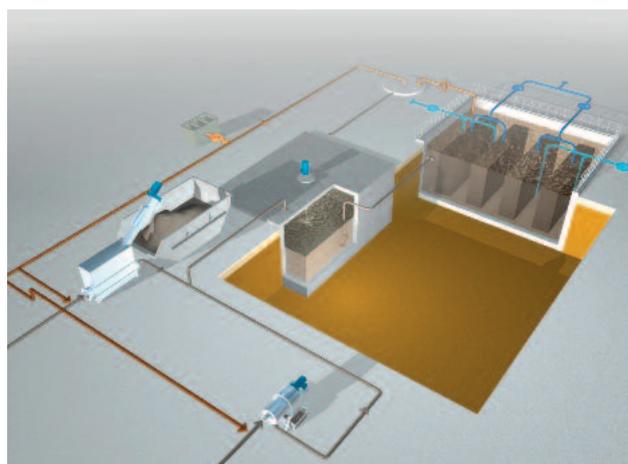
System size	BioMem® 75	BioMem® 125	BioMem® 300
Membrane surface	75 m ²	125 m ²	300 m ²
Dimensions (L x W x H)	1.30 m x 0.8 x 1.80 m	1.80 m x 0.8 x 1-80 m	3.60 m x 0.8 x 1-80 m
Continuous throughput	max. 32 m ³ /d	max. 55 m ³ /d	max. 130 m ³ /d



The filtration units of the HUBER BioMem® are at the heart of the new, standardised HUBER smartMBR system.

►► The user's benefits

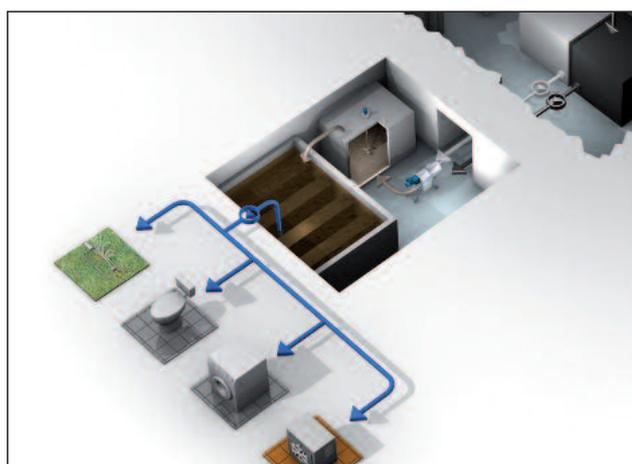
- compact complete solution for semi-centralized and decentralized applications up to 3000 PE
- ideal for villages, hotels and large remote buildings
- high-quality ultra-filtration membrane retaining all particles, bacteria and germs
- various ecological and economical benefits due to various reuse options
- hygienically safe effluent for reuse as service water
- meets all applicable effluent standards (e.g. European Directive for Bathing Water)
- high flexibility due to modular design providing for various system options
- can be tailored to suit any specific customer requirements (e.g. seasonal operation)
- reliable system operation, even with varying flow rates
- high operating reliability due to multi-line system design and remote control
- mobile containerised units and special designs available on request



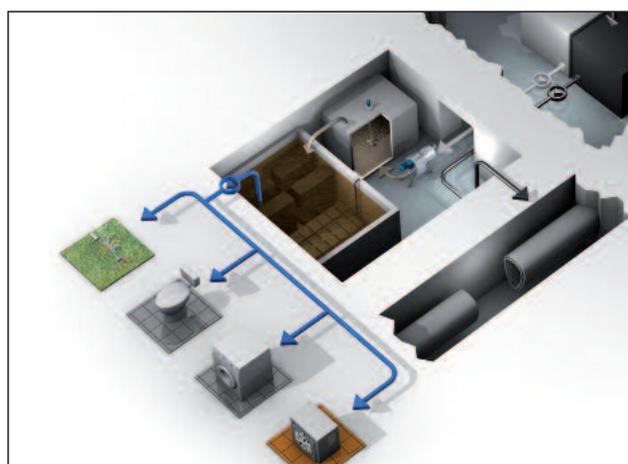
HUBER BioMem® Compact MBR System



Containerised HUBER BioMem® system



HUBER BioMem® for black water treatment



HUBER BioMem® for grey water treatment

HUBER SE

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