

# RECOVERY OF HEAT FROM WASTEWATER: HUBER TUBEWIN HEAT EXCHANGER

## CASE STUDY



Hot water is required in houses, apartments and public buildings all the year round. In addition to its use for heating in winter hot water is required for showers, cooking and laundry washing throughout the whole year. Even if excessive heat losses to the environment can be prevented through labour-intensive heat insulation of exterior facades and triple glazing, an enormous amount of energy still escapes through wastewater lines – energy which has been generated with the use of scarce resources and precious fossil fuels, such as oil or gas. A new approach must therefore be found: Recycling solutions are required similar to how the waste management sector has actively protected the environment for many years already.

### ADVANTAGES OF HUBER TUBEWIN HEAT EXCHANGER

The thermal energy contained within wastewater has previously been lost for the residents of houses, flats and apartments once the wastewater had disappeared in the depths of the sewer system. This can be avoided with the use of a HUBER TubeWin Heat Exchanger. With its heat exchanger elements, which are mounted directly on the sewer bottom, it is possible to transfer the high thermal energy of municipal wastewater to a carrier medium (usually water). This special technique achieves the use of energy by a heat pump.

A heat pump works like a refrigerator just the other

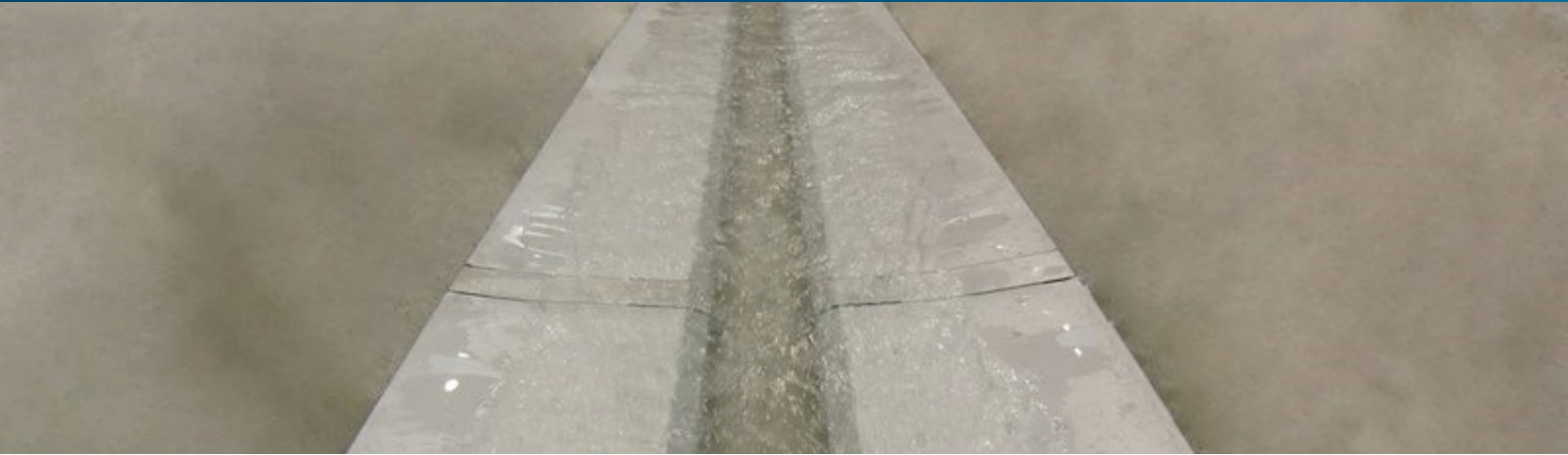
way round and using the energy of wastewater instead of cooling a room; to generate heat energy with a temperature of 35 to 55 °C for the heating systems of houses. This way up to 80% of the available energy originate from municipal wastewater. Such heat recovery saves money and protects the environment, both substantial arguments when it comes to the question of how to achieve climate policy goals.

Another advantage is that the heat exchanging elements do not need extra space as they are installed inside the sewer. The cooling water pipes up to the heat pump are installed underground and supply the pump with the required energy. Another advantage is that several HUBER TubeWin units can be installed parallel or in series. The system cannot only be adapted to sewer shapes but also to specific wastewater parameters. As all lines are inside the modules, sewer cross sections remain virtually unaffected due to their flat and compact design the heat exchanger modules can be installed in sewers as small as DN 1000. They are fully immersed even with small flows.

The optimised flow inside the modules ensures that the flow covers the entire surface and minimises pressure losses. The cooling water flow is ideally adapted to the heat transfer unit to ensure the constant transfer of energy to the heat pump.

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All components are made of V4A stainless steel for a long product life. The use of a HUBER TubeWin Heat Exchanger represents a sustainable and reliable solution of heat recovery from wastewater. Also this system can of course be used all year round, for heating and cooling. This is an aspect which significantly increases its economic efficiency additionally.

