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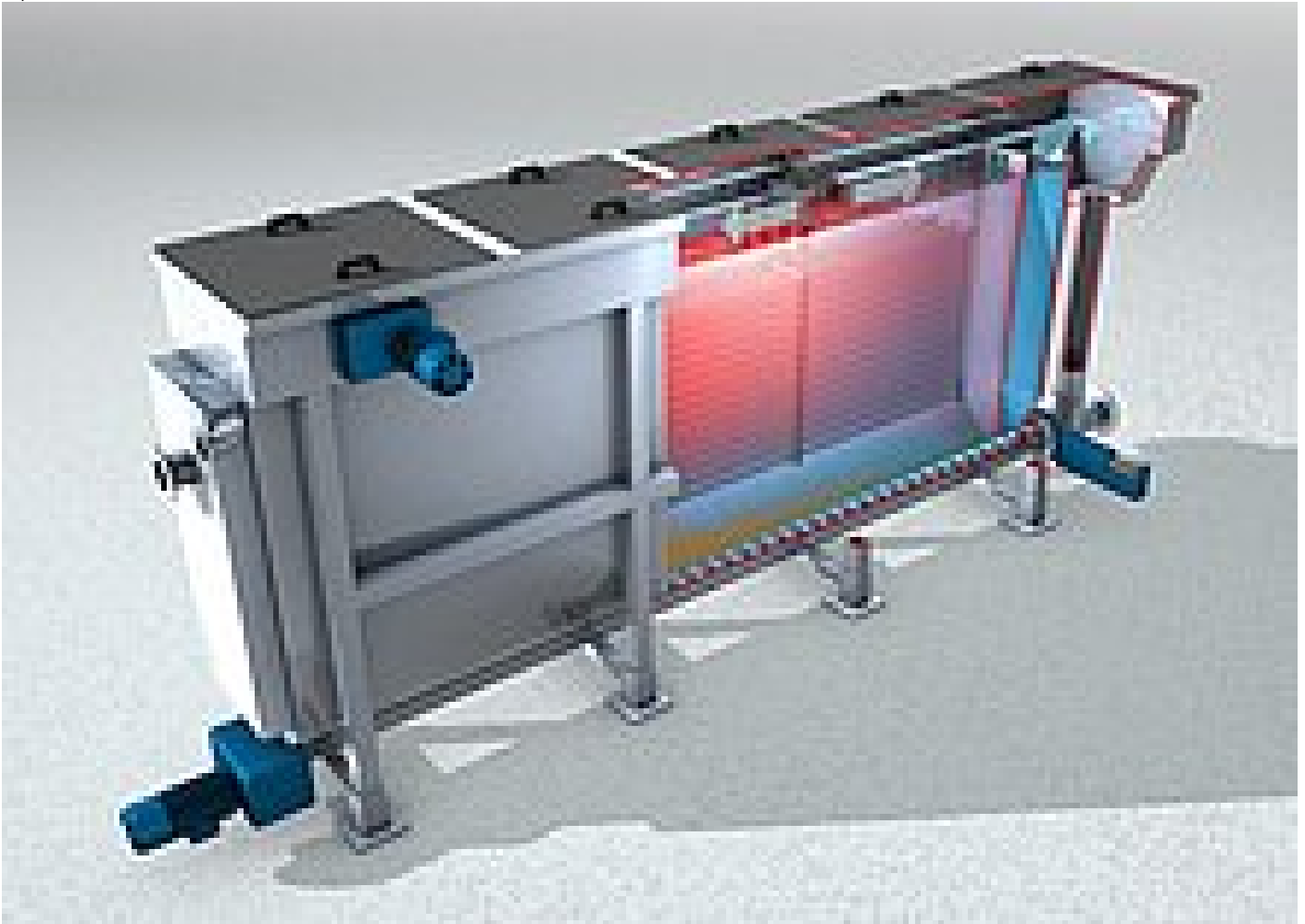
Heat recovery from raw sewage



A HUBER Heat Exchanger RoWin installation on the Côte d'Azur

[HUBER ThermWin® System consisting of a HUBER Heat Exchanger RoWin and ROTAMAT® Pumping Stations Screen RoK 4](#)

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Principial sketch: HUBER Heat Exchanger RoWin

Environmental disasters, such as the oil disaster in the Gulf of Mexico, the global economic crisis and ever decreasing resources remind us that we urgently need a safe, eco-friendly and financially attractive energy source. Right below the ground, in sewers, is an unnoticed hidden source of energy that fulfils all these criteria: municipal wastewater. The HUBER Heat Exchanger RoWin has been developed especially for this application.

Heat pumps use environmental energy sources, normally groundwater or air. But both elements have the disadvantage that their energy level decreases in winter whereas in summer the air and groundwater temperature rises. This makes it difficult to use them as energy source or sink for the climatisation of buildings, while wastewater possesses a huge heat potential even during cold months. The intake of shower and wash water ensures that the temperature level in the sewer rarely falls below 12 °C. In summer, the soil serves as isolation against the warm sun and ensures that the maximum temperature does not exceed approx. 20 °C. This narrow range between minimum and maximum values makes municipal wastewater the ideal medium for the operation of heat pumps.

The reason why wastewater heat recovery has hardly been used by now is probably the fact that the coarse material and contaminants contained within wastewater impair the function of heat pumps, and clarifying the wastewater would mean an unjustifiable expense. The HUBER Heat Exchanger RoWin has been developed by specialists with a completely different approach: transfer of the energy contained within the wastewater to a medium that is suitable to operate heat pumps. The patented HUBER ThermWin® system includes not only the wastewater heat exchanger HUBER RoWin but in addition optimised extraction of wastewater from the public sewer.

A tangential shaft installed near the wastewater collector both ensures that wastewater can flow by gravity into the shaft and serves as intermediate storage tank for the pump feeding the HUBER Heat Exchanger RoWin. A HUBER ROTAMAT® Pumping Stations Screen RoK4 ensures preliminary clarification of the wastewater and protects the HUBER RoWin® system against coarse material. The coarse material retained by the RoK 4 screen is returned downstream to the sewer along with the cooled down wastewater.

To prevent negative influences of biofouling caused by microorganisms contained within the wastewater, the HUBER Heat Exchanger RoWin is equipped with a cleaning system which periodically cleans the surface of exchanger pipes and therefore prevents the growth of fouling. Such preventive cleaning guarantees a continuously high heat transfer. The coarse material contained within the wastewater settles in the HUBER Heat Exchanger RoWin and can be discharged from the system by means of a screw conveyor.

The core of the HUBER wastewater heat exchanger RoWin lies inside the system: Specially manufactured exchanger pipes guarantee the ideal heat transfer and the compact design ensure an optimal flow around the pipes. The basic HUBER Heat Exchanger RoWin version consists of a tank that integrates the pipe modules. It can be installed virtually everywhere. The resulting process engineering advantages are beneficial especially on industrial plants. As an option, the modules can be installed directly in a channel or tank. In this case, no additional energy is necessary to pump the wastewater. The energy-rich water flows directly around the pipes giving off its energy to the cooling medium. No additional floor space is required.

Due to its modular design the HUBER Heat Exchanger RoWin can be adapted to meet specific site requirements. The pipe modules can be installed in a tank; this keeps all options open. Wastewater is available in many places. Due to its energy level it is an ideal possibility to heat and cool schools, hotels, sports halls or industrial facilities.

Related Products:

- [HUBER Heat Exchanger RoWin](#)

Related Solutions:

- [HUBER Solution for Heat Recovery from Sewers \(ThermWin\)](#)

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