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Wastewater Heat recovery: HUBER Solutions for Local and Short Loops

On-site recovery of service water and heat from freshly generated wastewater has obvious advantages. This applies to domestic, commercial and industrial wastewater. Freshly generated wastewater is generally warmer than sewage in sewers, which is a blend of wastewater with cool infiltration and storm water.

There are two options:

- We can treat fresh and warm wastewater on-site and reuse it as warm service water. This option has the advantage that both, the water itself and the heat contained therein are recovered;
- We can withdraw heat from warm wastewater through heat exchangers, lift it with a heat pump to a higher temperature level, and reuse it for water heating. This option has the advantage that the recovered heat is provided at a higher temperature.

It depends on the local situation whether one or the other option, or a combination of both, is preferable.

Examples

Examples for Local and Short Loops

As experts in the field of wastewater management, we supply not only technologies for the treatment of domestic, commercial and industrial wastewater, but also systems for recovery and reuse of wastewater heat.

- **Domestic Wastewater:** Grey water from bathrooms as well as from dish and laundry washers is warm. If we collect and treat grey water separate from black water, we recover not only the grey water as service water, but also its contained heat. The same applies in principle for combined domestic wastewater, but combined wastewater is cooler than grey water alone. (see also our [HUBER Solutions for Wastewater Reuse](#)). The majority of the recovered service water is reused for toilet flushing or irrigation, and does not need to be warm. For this reason we add a heat recovery system to our on-site treatment plant; we provide a [heat pump](#) for service water cooling and freshwater heating.
- **Commercial Wastewater:** A good example is a commercially operated laundry. Wash water is discharged more or less continuously and is hot in comparison to rinsing water. We treat warm wash water on site with a chemo-physical process and recycle it. Our customers have the benefits that they save not only freshwater and heating energy, but also some detergents. In addition, with a [heat pump](#), we recover energy from the remaining surplus wash water flow, before it is discharged into the sewer.
- **Industrial Wastewater:** Many industries generate and discharge warm or even hot wastewater, e.g. beverage producing, food processing or pulp and paper industries. Hot wastewater must often be cooled before it may be discharged into a sewer system, e.g. by blending with other cool wastewater flows, in order to maintain a maximum discharge temperature of usually 35 °C. Hot wastewater is often wash water from various processes and only moderately polluted. We provide on-site treatment for process water recycling, with the additional benefit of heat recycling. In some cases, we provide heat pumps for heat recovery of and reuse at elevated temperature. Of course, our optimal solution is site-specific.

Video



Video: Waste water heat recovery - reuse of process heat

[https://www.youtube.com/watch?](https://www.youtube.com/watch?v=JLLsLvEGFH8)

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Case Studies

- Sustainable heat recovery for wellness oasis
- HUBER SE supplies ThermWin® system for heating and cooling with wastewater at a museum
- Wastewater heat utilisation and reuse of process heat at Munich university hospital "Klinikum rechts der Isar"
- Use of heat from locally generated sewer wastewater: case study old-age home Hofmatt, Switzerland
- RoWin for a win-win: Various application possibilities for heat recovery
- Energy from wastewater - the HUBER RoWin Heat Exchanger is becoming increasingly popular
- Leukerbad in Switzerland uses HUBER Heat Exchanger for heat recovery from thermal spa wastewater
- Three HUBER projects for wastewater heat recovery in Switzerland
- First HUBER ThermWin plant for wastewater heat recovery in Switzerland

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