

# **Energy from Wastewater with UHRIG THERM-LINER Project example: Stuttgart, Neckarpark, Germany**

#### 1. Framework data

Client	City of Stuttgart
Place	Germany, Stuttgart, Baden-Württemberg, 635,000 inhabitants
Building project	Neighbourhood development with residential and commercial use
Residential units	600+
Year	Installed in 2018
More information	Quartier am Neckarpark (stadtwerke-stuttgart.de)

# 2. Wastewater heat recovery

UHRIG Therm-Liner	Type A
Plant length	985 ft
Sewer dimension	Box profile 2,400
Wastewater temperature (min)	51 °F
Dry weather flow	170 l/s
Thermal output	2,109 kW heating
Multivalent system	Wastewater heat as base load cover
Electricity for heat pump	Proportionally via PV in the quarter
Operated by	Stadtwerke Stuttgart (Energy Service Company)

## 3. System design

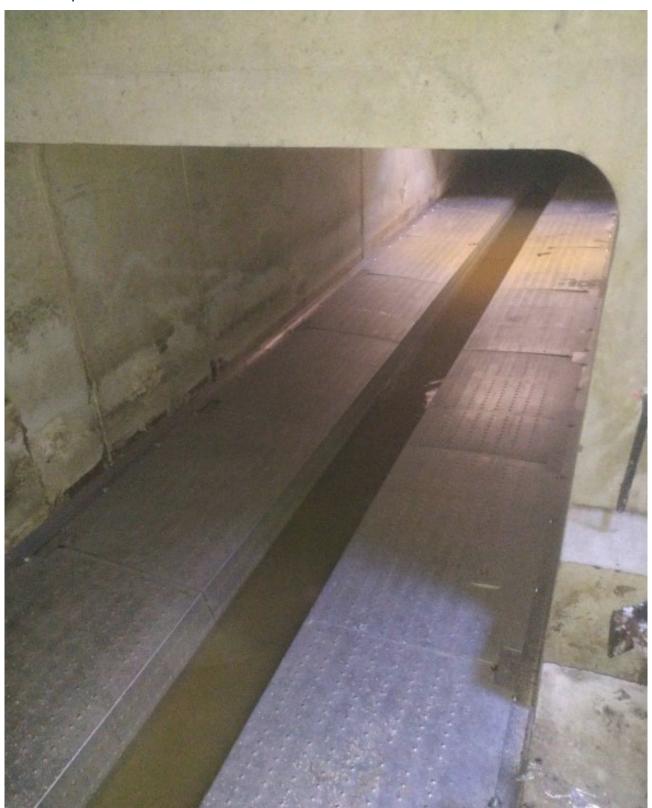
Sewer profile	Gravity Sewer	Вох
Profile width / height	2,400	mm
Minimum wastewater flow	170	l/s
Minimum wastewater temperature	51	°F
Thermal power Therm-Liner	2,109	kW
Total heating power (including heat pump)	2,970	kW
Inlet temperature Therm-Liner	32	°F
Outlet temperature Therm-Liner	39.2	°F
Coefficient of performance heat pump	3.45	COP
Medium primary circuit: Water-Glycol. Glycol share:	25	%
Total length Therm-Liner	985	ft
Maximum wastewater temperature drop	3.03	K

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## 4. Pictures

Intallation phase



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