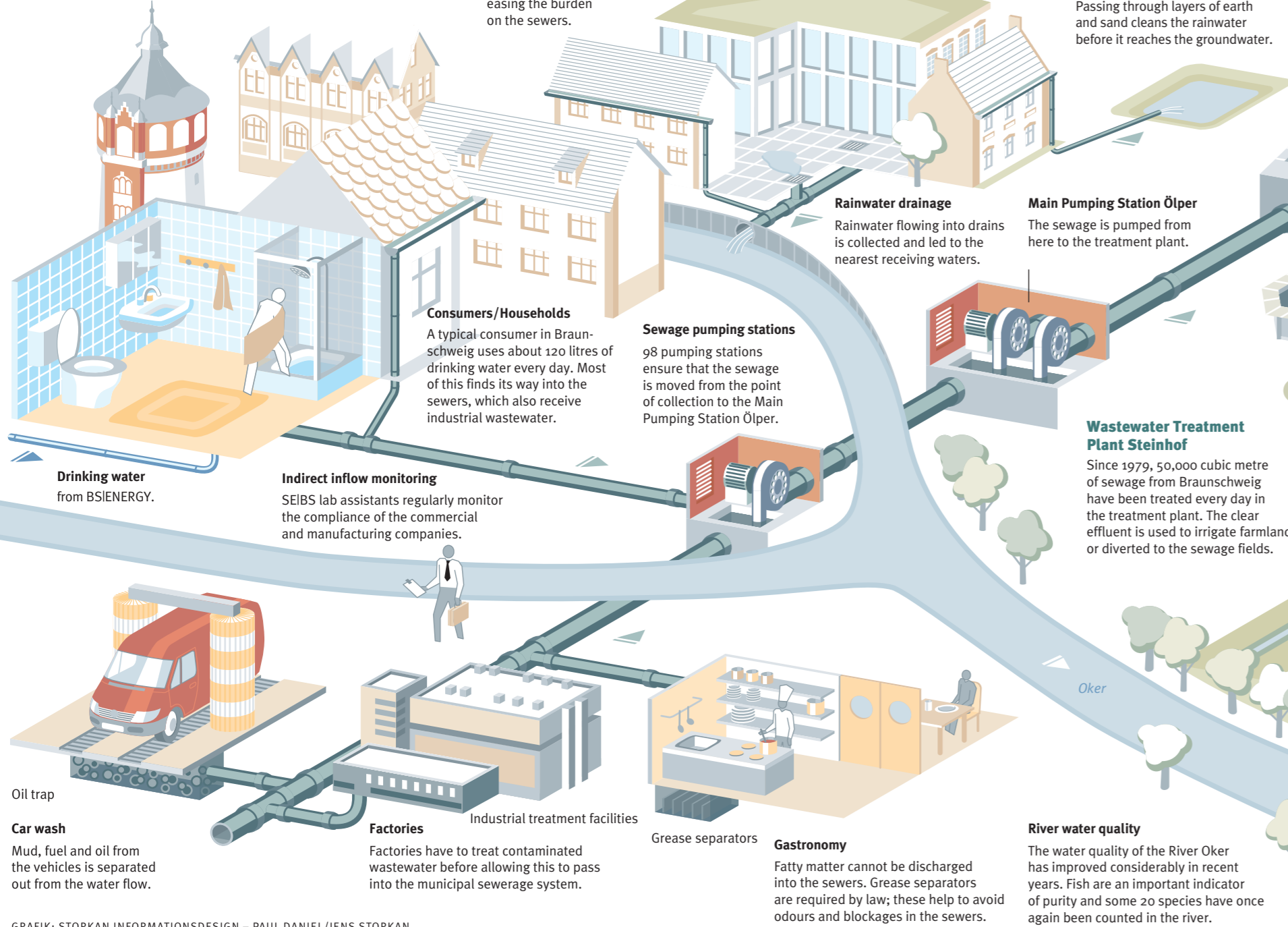
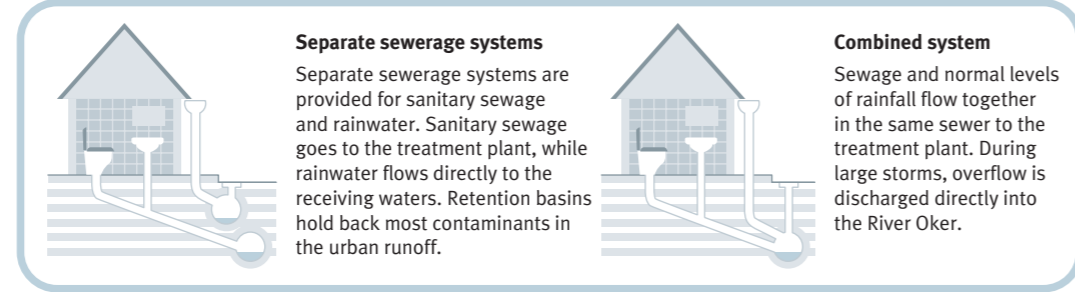


This is how it works

# WASTEWATER TREATMENT

The treatment of sewage in Braunschweig is closely linked to its location on the River Oker. Until the end of the 19th century, sewage was discharged directly into the river. The introduction of modern sewage treatment began with the construction of the first sewers in the inner-city. In 1895 a seven kilometre long cast-steel pipe was installed to a municipal sewage field near Steinhof. The sewerage system has now grown to a total length of 1,313 kilometre. Since 1979, sewage has been treated in the Steinhof Treatment Plant in accordance with environmentally friendly principles, and the outflow is then used to irrigate near-natural areas or farmland.

**Green roofs**  
Vegetation on the rooftops helps to retain rainwater, easing the burden on the sewers.



**Mechanical treatment**  
Bar screens, the sand and grease trap and the settlement basin remove debris sand, grit and wood.

**Worm pump**  
The pump raises the sewage to a height of 2.50 metre.

**1 Bar screen**  
Large debris such as paper, textiles or wood are removed and disposed of as waste.

**2 Sand and grease trap**  
The flow is slowed down and aerated. Sand and grit particles sink to the bottom, grease and oil float to the surface.

**4 Mixing basin**  
The raw sewage is mixed with some sludge from the secondary clarification basin. The biological treatment begins.

**5 Activation basin**  
Microorganisms degrade unwanted substances. Rotating agitators provide the oxygen they need.

**6 Secondary clarification basin**  
The bacterial sludge sinks to the bottom. The outflow is clear effluent.

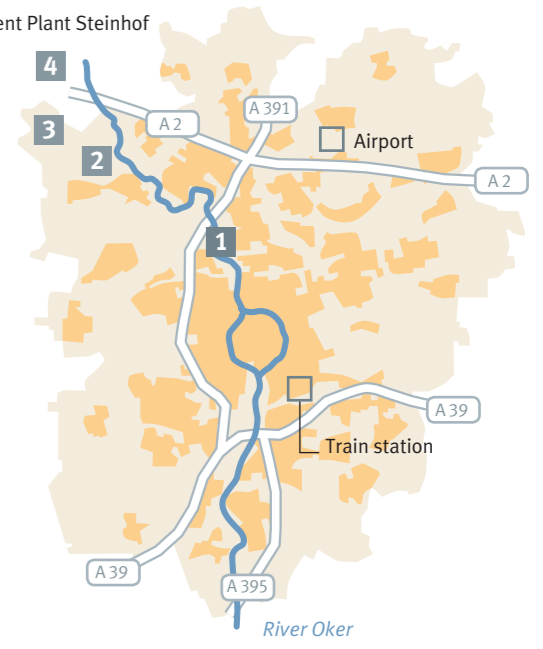
**3 Primary settlement basin**  
As the flow becomes even slower, fine organic matter settles to the bottom.

**7 Sludge digester**  
The sludge from the settlement and clarification basins is digested anaerobically to generate methane, which fuels the combined heat and power plant (CHP).

**Biological treatment**  
It takes around 36 hours for the microorganisms in the mixing, activation and post-treatment basins to degrade organic impurities and nitrogen compounds.

**Control centre / Lab**  
The composition of the incoming sewage is checked regularly in order to optimize the treatment process. The lab workers also monitor the entire treatment plant.

- 1 Main Pumping Station Ölper
- 2 Wastewater Treatment Plant Steinhof
- 3 Sewage fields
- 4 Irrigation area



**Combined heat and power generation plant (CHP)**  
The biogas fuelled CHP plant generates heat and power for the operation of the treatment plant.

**Winter operations**  
The sludge is dewatered in a centrifuge and stored. After the frost period, it is used to fertilise the fields.

**Summer operations**  
Irrigators distribute the clear out-flow on the fields of the Braunschweig Wastewater Association. Sludge is also applied as fertilizer.

**Biomass cultivation for energy**  
Crops and biomass are harvested from the irrigated areas and used to generate biogas. This powers the CHP plant to produce electricity and heating.