Götzelmann + Partner GmbH –
Your reliable partner for process and plant technology

As a specialist for the development, planning and implementation of innovative technological concepts for water supply and waste-water treatment, the engineering company Götzelmann + Partner GmbH is a consultant for the SusTreat Project.

The company is already a valuable partner of numerous industrial and communal sewage treatment plants. Thanks to the many years' experience and the know-how of our 25 construction engineers, process technology engineers, building technicians and draughtsmen, we are now consulting the Koblenz Municipal Water Works on their way to an energy self-sufficient large-scale sewage treatment plant.

GÖTZELMANN + PARTNER GmbH
CONSULTING ENGINEERS
water | waste water | environmental engineering | transport | energy |

Head Office:
Götzelmann + Partner GmbH,
Friolzheimer Str. 3, D-70499 **Stuttgart**
Telephone: 0049 (0)711/25707-0
Telefax: 0049 (0)711/25707-57
E-Mail: info@goetzelmann-partner.de

Balingen **Office**:
Hölzlestr. 11, D-72336 **Balingen**
Telephone: 0049 (0)7433/90469-0
Telefax: 0049 (0)7433/90469-9
E-Mail: j.hoelle@goetzelmann-partner-bl.de

www.goetzelmann-partner.de

Koblenz Municipal Water Works –
operator and builder

As operator of the plant, the city water works is entirely responsible for the SusTreat Project - with the exception of the concept development and planning – and is carrying out all the work. This includes supervising the building work on site, the commissioning and testing of the plant modules and the entire plant as well as the evaluation of the technology over a year-long cycle.

Renewable Energy has both a tradition and future at the Koblenz Municipal Water Works.

The Koblenz sewage treatment facility with a population-equivalent capacity of 320,000 is the second-biggest communal sewage treatment plant in Rhineland-Palatinate. The waste water of over 100,000 people as well as from companies and industry is reliably treated here. Thanks to systematic renovation and expansion measures, the plant is now already one of the most modern of its kind in Germany. For 40 years, gas from energy-rich sludge been produced in the digestion towers, 100 % of which flows directly into our own self-supply. Thus, the plant is already able to cover 54% of its own energy requirements. The implementation of the SusTreat project aims to make the plant energy self-sufficient in the medium to long term.

Address SEK:
Stadtentwässerung Koblenz
Bahnhofstraße 47, D-56068 Koblenz
Telephone: 0049 (0)261/129-3602
Telefax: 0049 (0)261/129-3600
E-Mail: stadtentwaesserung@stadt.koblenz.de
www.koblenz.de

Plant Address:
Klärwerk Koblenz
Kammertsweg 82, D-56070 Koblenz (Wallersheim)
Telephone: 0049 (0)261/129-4002
Telefax: 0049 (0)261/129-4000
E-Mail: klaerwerk-koblenz@t-online.de
www.sustreat.eu

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Pilot project for an energy self-sufficient large-scale sewage treatment plant - for a cleaner future

SusTreat – Use of Immanent Energy in Self-**Sus**taining Sludge **Treat**ment – a central step towards self-sustaining sewage treatment plants

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STADTENTWÄSSERUNG
EIGENBETRIEB DER STADT KOBLENZ

KOBLENZ VERBINDET.

Koblenz Sewage Treatment Plant –
from disposal company to innovation leader

Since 1970, the **Koblenz Municipal Water Works** has been making its reliable contribution to a clean, liveable and loveable Koblenz. Over 40 years later,

- **climate change,**
- **rising energy costs and**
- **the uncertain medium and long-term disposal situation for sludge**

cities and communities are facing new challenges. Koblenz Water Works has the answer to this! SusTreat* – the name given to the **conversion of the sewage treatment plant into a self-sufficient pilot plant.**

***SusTreat** – Use of Immanent Energy in Self-**Sus**taining Sludge **Treat**ment – a central step towards self-sustaining sewage treatment plants

Project duration: 01.01.2010 - 31.12.2019

Project participants: Stadtentwässerung Koblenz
Götzelmann + Partner GmbH

Investment volume: approx. 16 million Euros

The EU is supporting the pilot project as part of the "Life+"-Programme with over 2 million Euros.

SusTreat –
Sustainability at every stage

The central aspect is the volume reduction of the sludge occurring by 85 %. This corresponds to a reduction of the disposal and transport quantities of approx. 12,500 tonnes of sludge per annum.

THE PROCESS:
In an additional process stage, previously dried sludge is then converted into a combustible gas at approx. 1,000 °C.

THE INNOVATION:
SusTreat enables the drying and gasification without adding any additional external energy. At the same time, it reduces the CO_2-emissions by 25 %.

Energy self-sufficient Sludge Minimising - how is this possible?

Individual module solutions – which optimally use the internal energy currents – are intelligently combined. Both sludge and biogas exist in the waste treatment plant as CO_2-neutral energy sources, but are not yet fully developed for use.

SusTreat represents a complex system solution, which combines and utilises this energy potential.

Exemplary Energy Concept –
individual modules sensibly combined

- The construction of a new block heat and power unit to recycle the process gases
- Installation of photo-voltaic units
- Optimised sewage sludge treatment
- Use of modern, energy efficient building materials and plant parts

A process-control system ensures the perfect combination of all aspects and thus ensures the effective and independent control of the plant.

Environmental conservation - Cost reductions - Disposal security

With the realisation of this pilot project, we are nearing our goal to become the first disposal company in Rhineland-Palatinate to be entirely independent of external energy suppliers.

Medium-term expected benefits

- Disposal security
- Sludge recycling in the sense of the law on life-cycle management
- Cost reductions
- Reduction of the CO_2-Emissions by 25 %
- Reduction of the externally provided electricity by 25%
- Closing the heat requirement gap

long-term expected benefits 100%

- Energy self-sufficiency
- Disposal service for other sewage treatment plants
- Additional heating of adjacent industrial premises via district heating systems
- Possible value added by means of Phosphorus recycling from the sewage sludge ash