



## Open-trench rehabilitation of a sewer with SIMONA® PE 100 Ovoid Pipes



Top: two welded ovoid pipe modules with socket band fitted; bottom left: CoEx shaft with light-coloured inner layer and ovoid pipe connection; bottom right: storage of the ovoid pipes without a base on the construction site

Over a length of 1.3 km an ovoid sewer was rehabilitated as part of external services development for Göttingen University Medical Centre. It also included a construction stage in which the ovoid sewer was renewed by the open-trench method over a length of 100 m. To be able to ensure that the system remains permanently watertight and to achieve a high pipelaying rate, they opted for the SIMONA® PE Ovoid Piping System.

### The project at a glance

#### Project

Renewal of a sewer over a length of 1.3 km and connection of the Göttingen University Medical Centre ('UMG') to a gravity sewer operated by Göttingen Waste Disposal Services

#### Client

Göttingen Waste Disposal Services

#### Contractor

Laudemann GmbH, Sontra

#### Planner

Rinne & Partner, Engineers, Rosdorf

#### Technical consultants

SIMONA AG  
Division Pipes and Fittings  
Applications Technology

#### Products used

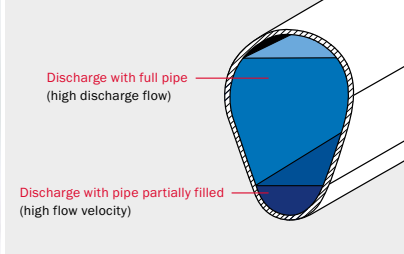
- SIMONA® PE 100 Ovoid Pipes
- Module length: 2.5 m
- Total length: 100 m

#### Method of laying

Rehabilitation

#### Project duration

6 months



From left to right: factory pre-welded ovoid pipe trains undergoing the client's welding and cooling process in a welding machine; ovoid pipe without base in the open trench; special aspect of geometry leads to excellent discharge characteristics depending on the level of sewage in the pipe

## SIMONA® PE 100 Ovoid Pipes with light-coloured inner layer for camera inspection

### Initial situation

To avoid pollution of the groundwater by leaking sanitary sewage pipes, the city of Göttingen has been using polyethylene sewer pipes since the middle of the 1990s, without exception. As part of an external services development project at Göttingen University Medical Centre it therefore also became necessary to rehabilitate the connected sewer that had become antiquated.

### Task

Alongside the customer-specific requirements for the piping system, the SIMONA® PE Ovoid Pipes had to not only have excellent hydraulic properties but also meet the following specifications:

- Customised component length
- High flow velocity
- Corrosion-resistant, crack-resistant and abrasion-resistant
- Low risk of incrustation
- Easy handling when laying
- Simple joining with external saddles

### Solution

With SIMONA® PE 100 Ovoid Pipes it is possible to make absolutely watertight, root-proof, permanently bonded and axial-restraint connections by welding. For sewer rehabilitation in Göttingen a grey PE 100 ovoid pipe was used in dimensions 770 mm (width) and 1,187 mm (height), with a wall thickness of 34 mm, which is produced on the basis of DIN 4263. On account of the light-coloured inside surface of the ovoid pipe it is easier to assess the condition of the sewer in future maintenance work. For open-cut pipelaying the SIMONA® Ovoid Pipe modules are normally produced with a base, which prevents them from tipping over and later assists compaction. Standard module lengths are between 0.7 m and 2.5 m. To make it easier to weld the modules no base was fitted in production and the modules (2.5 m each) were welded to one another in twos. The welding bead inside was removed and the ovoid pipe train was delivered to the construction site in one piece. As a result, the pipelaying rate at the construction site was increased. Afterwards the trench was filled with liquefied soil. Owing to an absolutely waterproof welded joint without root penetration and excellent discharge characteristics with flushing and self-cleaning effects, the special shape and material combination of the SIMONA® PE 100 Ovoid Pipes proved to be the perfect solution for Göttingen Waste Disposal Services.

### SIMONA® Ovoid Piping System

#### Properties

- High flow velocity during dry weather discharge
- High load-bearing capacity and strength
- Service life up to 100 years
- Crack-resistant and abrasion-resistant
- Very good chemical resistance
- Low risk of incrustation
- Easy handling when laying
- Simple connection of external saddles
- Absolutely watertight, root-tight, permanently bonded and axial-restraint connection by heated-tool butt welding

#### Product range

- Ovoid pipes
  - Standard lengths: 0.7 m to 2.5 m for standard cross-sections (DIN 4263)
  - Special profiles available on request
- Internal saddles for service connection
- External saddles for service connection

### Further information

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