

# cpg planungsgesellschaft mbh

www.cpg-engineering.com / Borsseanger 10, 09113 Chemnitz GERMANY / Phone:+49 371 3381610



## Engineering Services in Plant Engineering

### Dimensioning

- Process dimensioning
- Calculation of pressure and heat loss
- Component calculations

### Design Engineering

- Detailed design of pipework
- 3D design of pipework systems
- Support and steelwork design engineering

### Structural Engineering

- Pipe stress / steelwork stress analyses
- FEM analyses
- Dynamic analysis of impact loads
- Examination of dynamic loads from earthquakes and vibrations

### Construction Site Engineering

- Construction management plant engineering
- On-site engineering and damage analysis
- Preparation of as-built documentation

### Piping Construction Engineering

- Installation and planning for permission to build
- Specification of technical equipment
- Procurement of piping systems
- Order documents

### Power Engineering (power & heat plants)

- Steam and condensate piping systems
- Turbine pipelines
- Pressure booster stations
- Thermal insulated bonded pipe systems
- GRP laying systems

### Chemical & Pharmaceutical

- Product pipelines in petrochemical plants
- Ultra-pure pipes for pharmaceuticals and foods
- Hydraulic transport of solids

### Environmental Engineering

- Water and waste water pumping stations
- Anaerobic digestion plants
- Sewage treatment plants

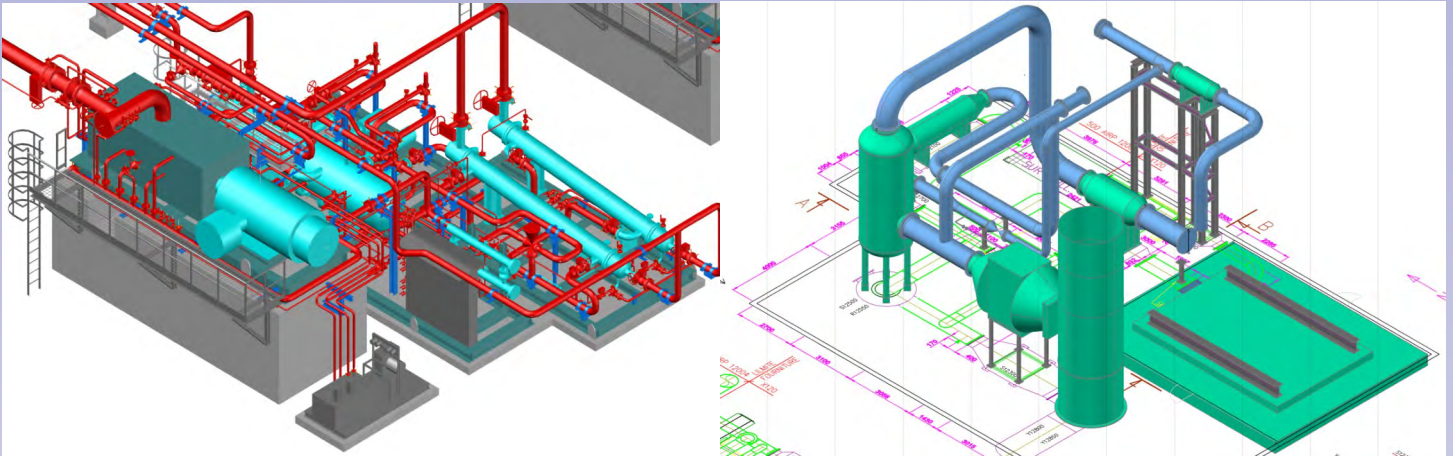
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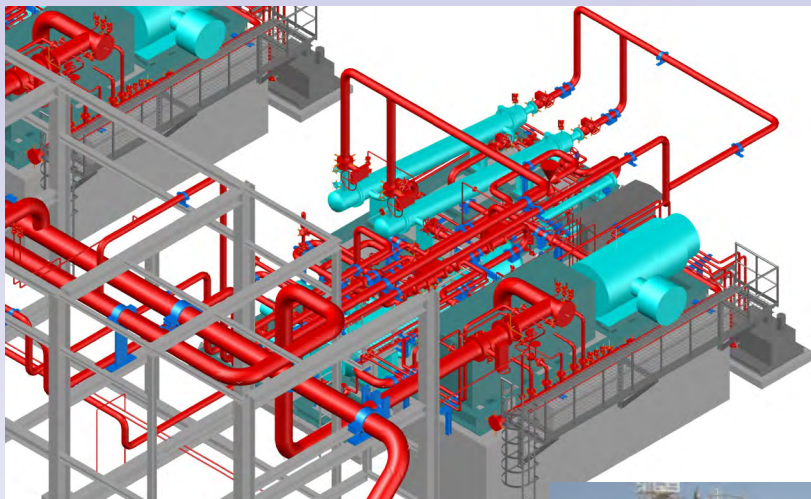
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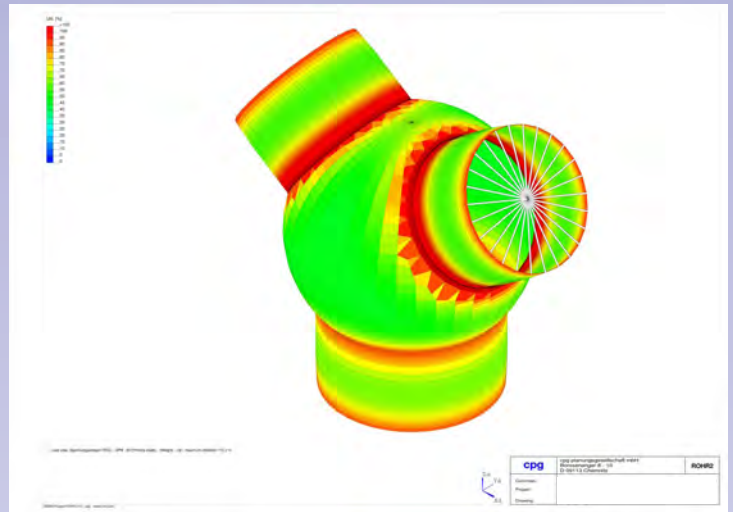
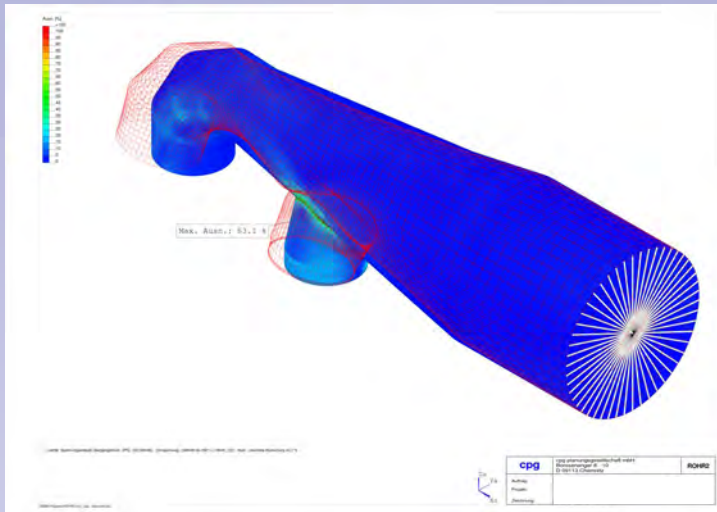
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## 3D Design Engineering

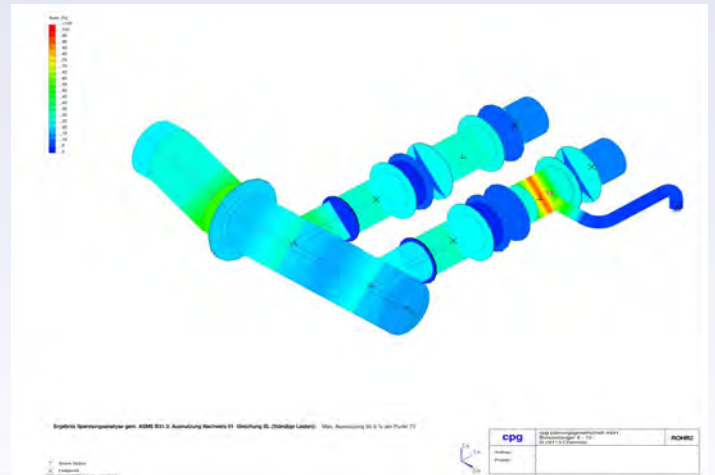
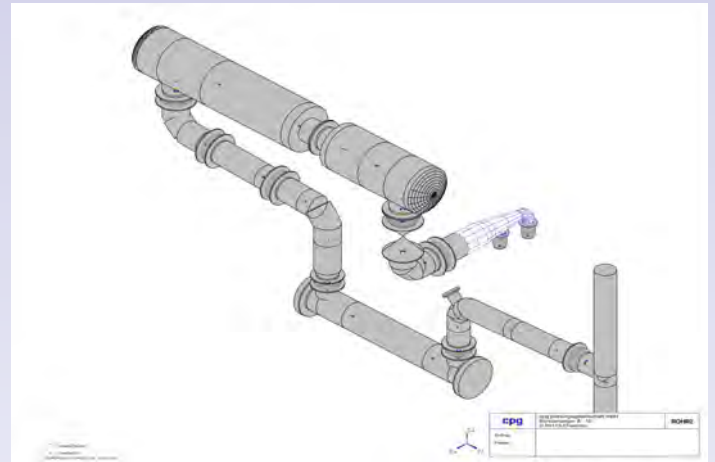
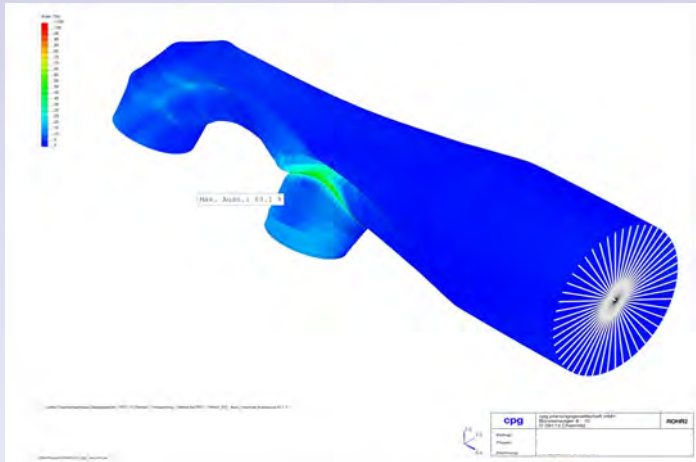
- Installation and detail planning
- 3D design of piping systems based on pipe classes
- Interfaces to pipe statics, preparation of isometric drawings and material management

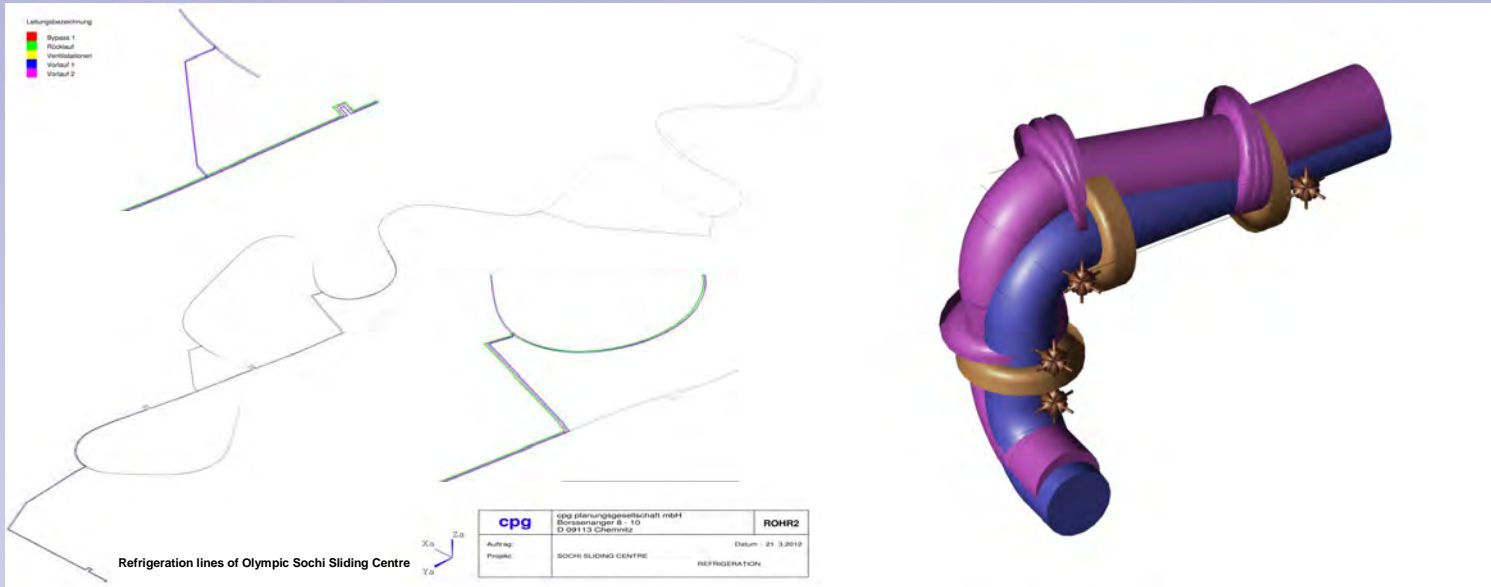




## Pipe Stress Analyses / FEM-Analyses

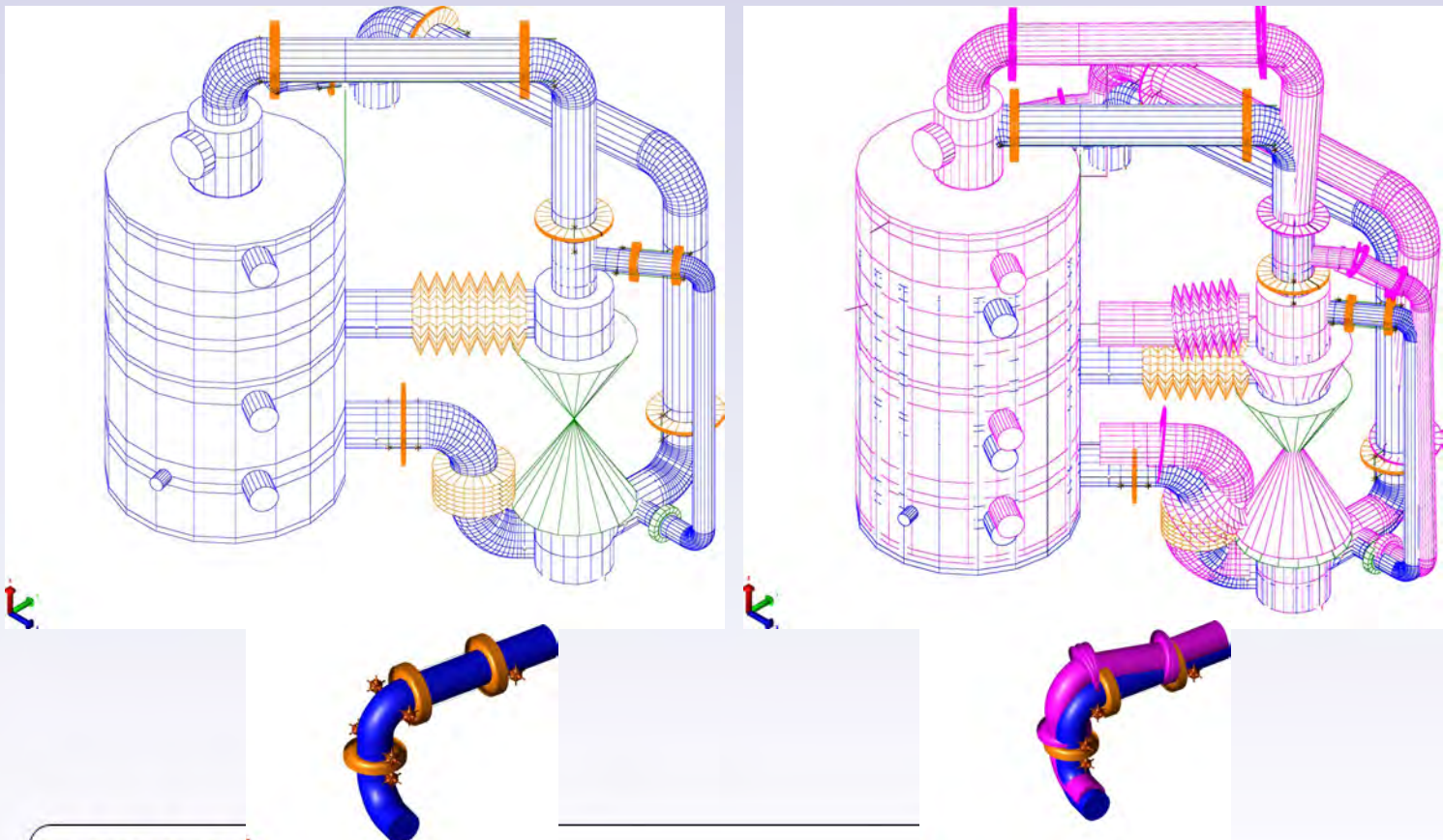
- Pipe stress calculations according to the standards EN13480, ASME B31.1, ASME B31.3, FDBR, AGFW
- Component design according to Finite Element Method (FEM)
- Examinations concerning dynamic loads from earthquakes and vibrations
- Assessment of resonance behaviour of pipe systems via eigenfrequency analysis

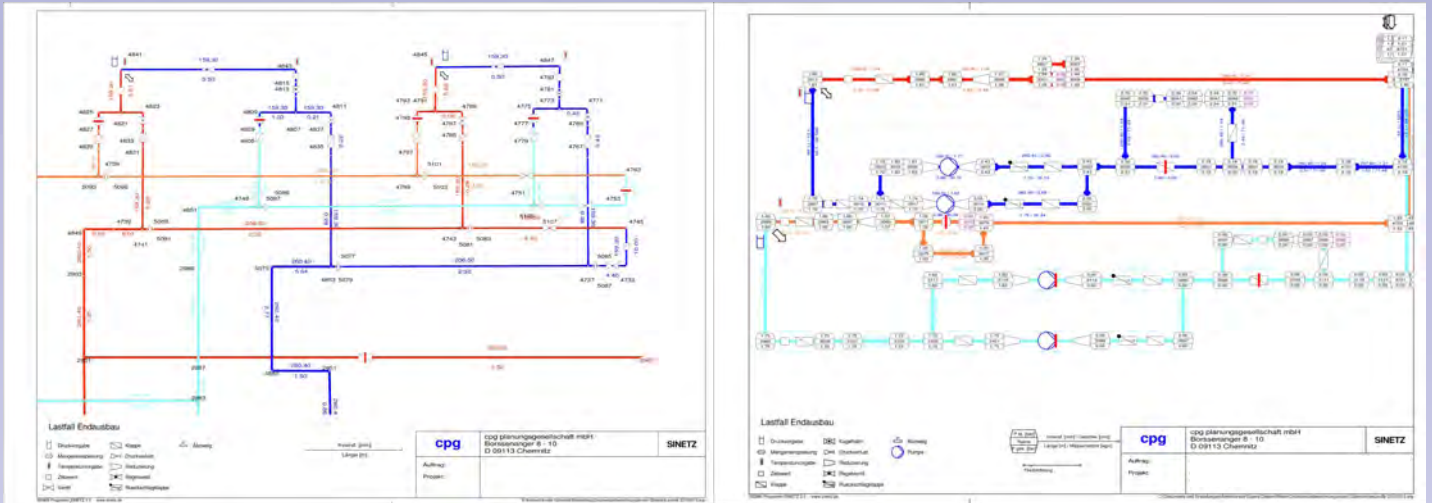




## Statics / Stress Analyses

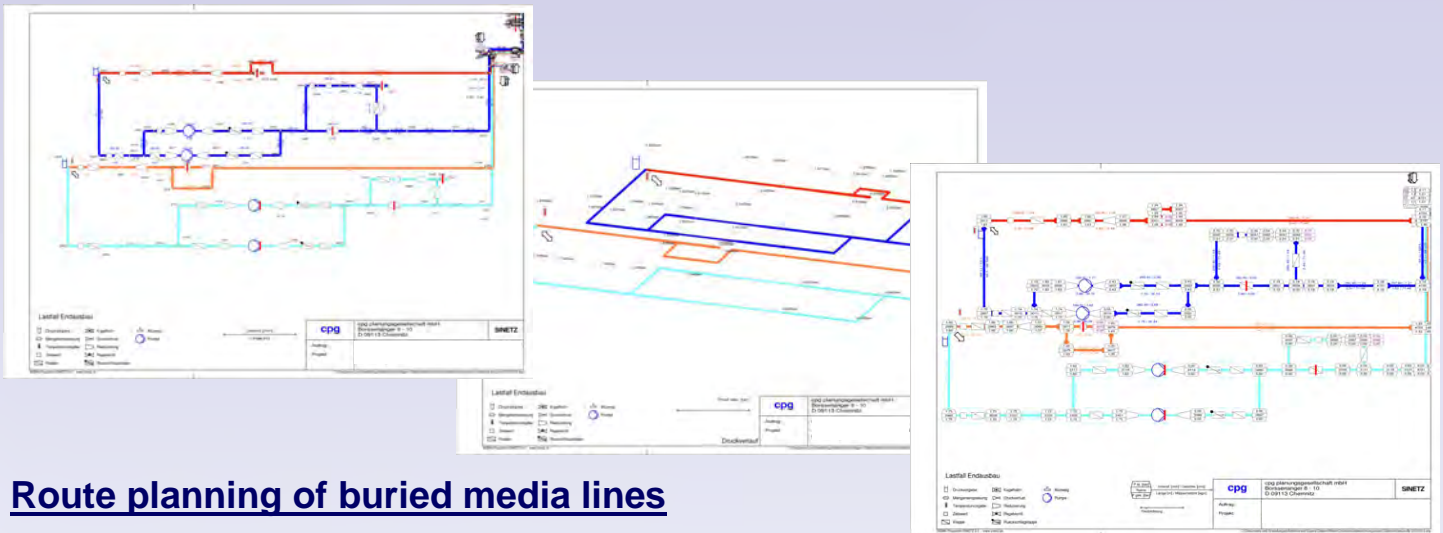
- Pipe stress calculations according to the standards EN13480, ASME B31.1, ASME B31.3, FDBR, AGFW
- Static and dynamic analysis of load case conditions
- Modelling of gas channels with lens compensators including corresponding tie rods





## Process Engineering / Component Calculation

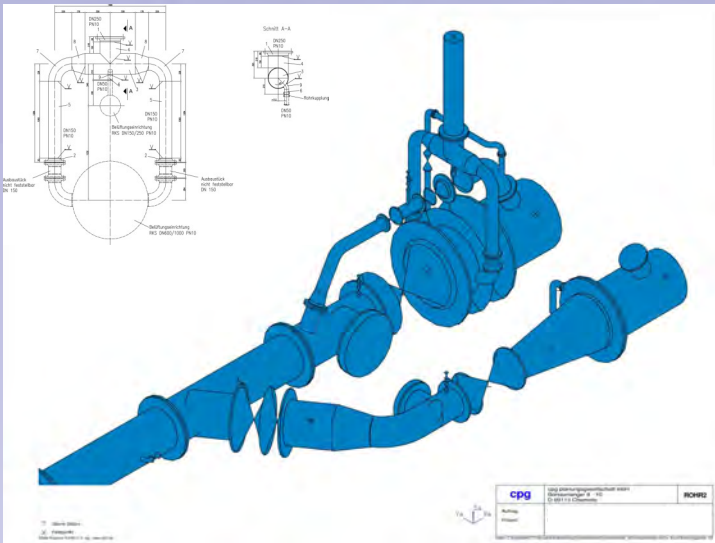
- Calculation of pressure and heat loss
- Pipe network calculation
- Pump dimensioning



## Route planning of buried media lines

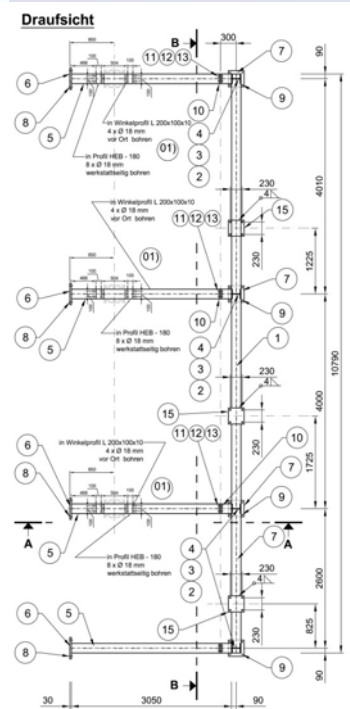
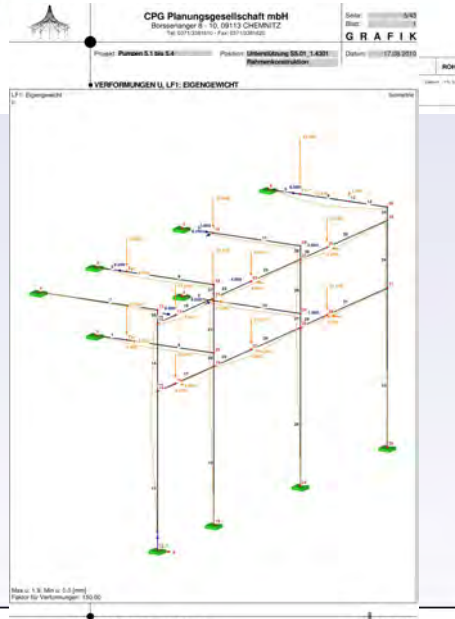
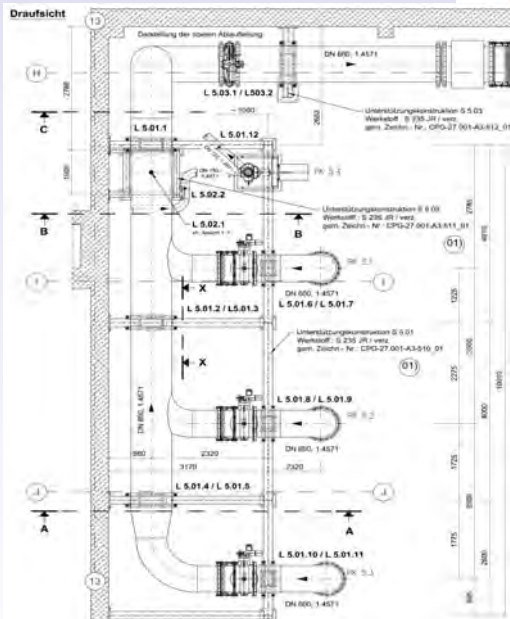
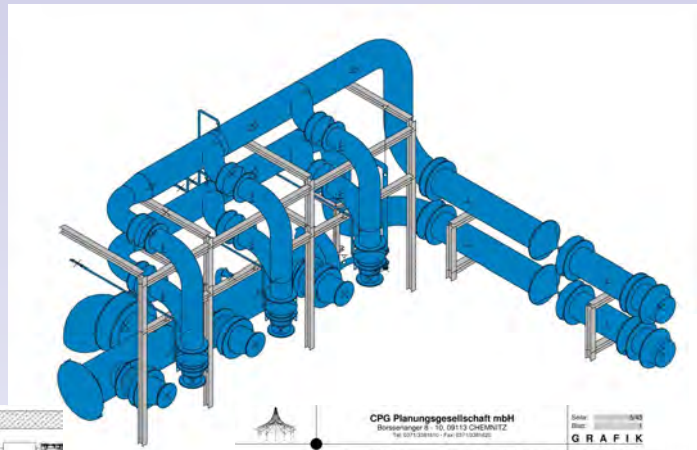
## Component Calculation

- based on EN13480, AD, TRD, AGFW and DVGW standards
- Preparation of pipe classes
- Calculation of flanges and flange connections
- Verification of tightness and bolt tightening torque
- Preparation of order documentation
- Technical procurement



## From Approval Planning to Construction Site Management

- Installation planning / pipe stress analysis and steelwork stress analysis
- Preparation of pipe plans and isometric drawings
- Planning of the supportive steelwork structure







## Engineering Services in Plant Engineering

### *cpg planungsgesellschaft mbh, that means:*

- qualified planning engineers in the field of piping construction
- a state of the art hard and software equipment
- an experience potential of "100-man-years" in piping construction
- inexpensive and fast planning services oriented to your profit

### *We provide the following engineering services:*

- Preparation and support during the procurement of piping plants
- Approval planning / planning for permission to build
- Process dimensioning / calculation of pressure and heat loss
- 3D design of pipe systems (AutoCAD / CADWORX / PDS)
- Pipe statics / statics and dynamics calculations (Rohr 2 / CAESAR II)
- Dynamic analyses of impact load according to the method of direct integration
- Examinations concerning dynamic loads from earthquakes and vibrations
- Component calculation according to Finite Element Method (FEM)
- Steelwork stress analysis (RSTAB)
- Preparation of pipe classes and technical procurement
- Calculation of flanges and flange connections
- Conceptual and detailed design of pipes and supportive structures
- Preparation of required equipment lists, workshop drawings and order documents
- Construction supervision / management plant engineering on-site
- Preparation of as-built documentation





## Engineering Services in Plant Engineering

### Our fields of activity are:

Pipelines in power and heat plants

- Live steam pipelines
- Steam and condensate pipelines
- Cooling water piping
- Oil and gas pipelines

Pipelines in chemical and pharmaceutical plants

- Product pipelines
- Steam and condensate pipelines
- Operating materials piping
- Pipelines for hydraulic transport of solids

Pipelines and plants for transport of heat and for refrigeration

- Heat pipelines for hot water as well as steam and condensate using any type of installation
- Mixing and conversion units
- Condensate pump units
- Pressure reducing stations
- Pressure boosting station
- Cooling systems

Pipe systems in industrial objects and in environmental engineering projects

- Pipelines in water storage and treatment
- Sewage treatment plants and anaerobic digestion engineering
- Chemical, paper and textile industry

Pipe systems in local supply industry and pipelines

- Medium pressure and high pressure gas pipelines
- Drinking water and district water lines
- District heating networks



## Engineering Services in Plant Engineering

### Selected projects of recent years:

#### Power plants

- Start-up station turbine 1 at PCK power plant in Schwedt
- Steam and condensate pipelines for the biomass power plant in Eberswalde
- District heating pressure maintenance at the combined heat and power (CHP) plant in Chemnitz
- Coolant lines for the DOW power plant in Stade

#### Chemical and pharmaceutical plants

- Calculation of GRP pipes for the electrolysis plant in Navoi / Uzbekistan
- Pipe stress analysis for hydrogen plants in Burghausen / Germany and Estarac / France

#### Pipelines and systems for transport of heat and for refrigeration

- District heating and cooling lines for Berlin / Potsdamer Platz
- Cooling lines for the Olympic bobsled run in Sochi and for the bobsled run in Königsee / Germany

#### Pipe systems in industrial objects and in environmental engineering projects

- Anaerobic digestion plant in Singen and Peine / Germany
- Waste water pumping plant in St. Petersburg / Russia
- Waste water pumping plant in La Caldera and Caracol in Mexico-City

#### Pipe systems in local supply industry and pipelines

- High-pressure gas pipeline Thum - Schneeberg / Germany

#### Construction site engineering

- Air separation plant in Ijmuiden / Netherlands and Helwan / Egypt
- Petrochemical plant in Secunda / South Africa
- Natural gas processing plant in Arabian region



## Engineering Services in Plant Engineering

Our documentation and information centre ensures permanent access to and consideration of latest publications and required standards at our professional field, inter alia:

- DIN EN and ASME standards
- Guidelines of technical regulations (TRD; FDBR)
- AD-data sheets
- AGFW-requirements
- DVGW-regulations
- DVS-welding requirements
- significant trade journals

We work in accordance with a quality management system and are certified according to DIN EN ISO 9001 : 2008

*cpg planungsgesellschaft mbh, that is:*

***A high-performance engineering service provider  
in the field of pipeline systems planning***

***Take your chance and involve us in your planning activities !***

**cpg planungsgesellschaft mbh**

Borsseanger 8-10

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ZERTIFIKAT

Die Firma

# CPG Planungsgesellschaft mbH

Borssenanger 8 - 10  
09113 Chemnitz

wurde auditiert und hat nachgewiesen, dass die  
Anforderungen der Norm für QM-Systeme

## ISO 9001:2008

erfüllt sind.

Die Zertifizierung gilt für die Bereiche:

**Planung von Anlagenbauprojekten einschließlich  
Konstruktion, Statik und Bauüberwachung,  
verfahrenstechnische Auslegung, statische und  
dynamische Berechnung von Rohrleitungs- und  
Stahlbausystemen**

Reg.-Nr.: Q-00109-16-2-1

Gültigkeit des Zertifikats: 14.09.2018



Deutsche  
Akkreditierungsstelle  
D-ZM-17333-01-00



Für die TÜg Prüf- und Zertifizierungsstelle  
Dipl.-Ing. Martin Lindenberg  
Ausstellungsdatum: 20.06.2016  
TÜg-GmbH, Basler Str. 115a, 79115 Freiburg



CERTIFICATE

The organisation

# CPG Planungsgesellschaft mbH

Borssenanger 8 - 10

09113 Chemnitz / Germany

has been audited and has proven, that the  
quality management system complies with

## ISO 9001:2008

This certificate is valid for the following areas:

**Engineering of plant construction projects  
including process engineering, construction, stress  
analysis and on-site supervision, process design,  
static and dynamic analysis of piping and structural  
systems**

Reg.-Nr.: Q-00109-16-2-1

This certificate is valid until: 2018-09-14

On behalf of TÜg Certification body

TÜg

