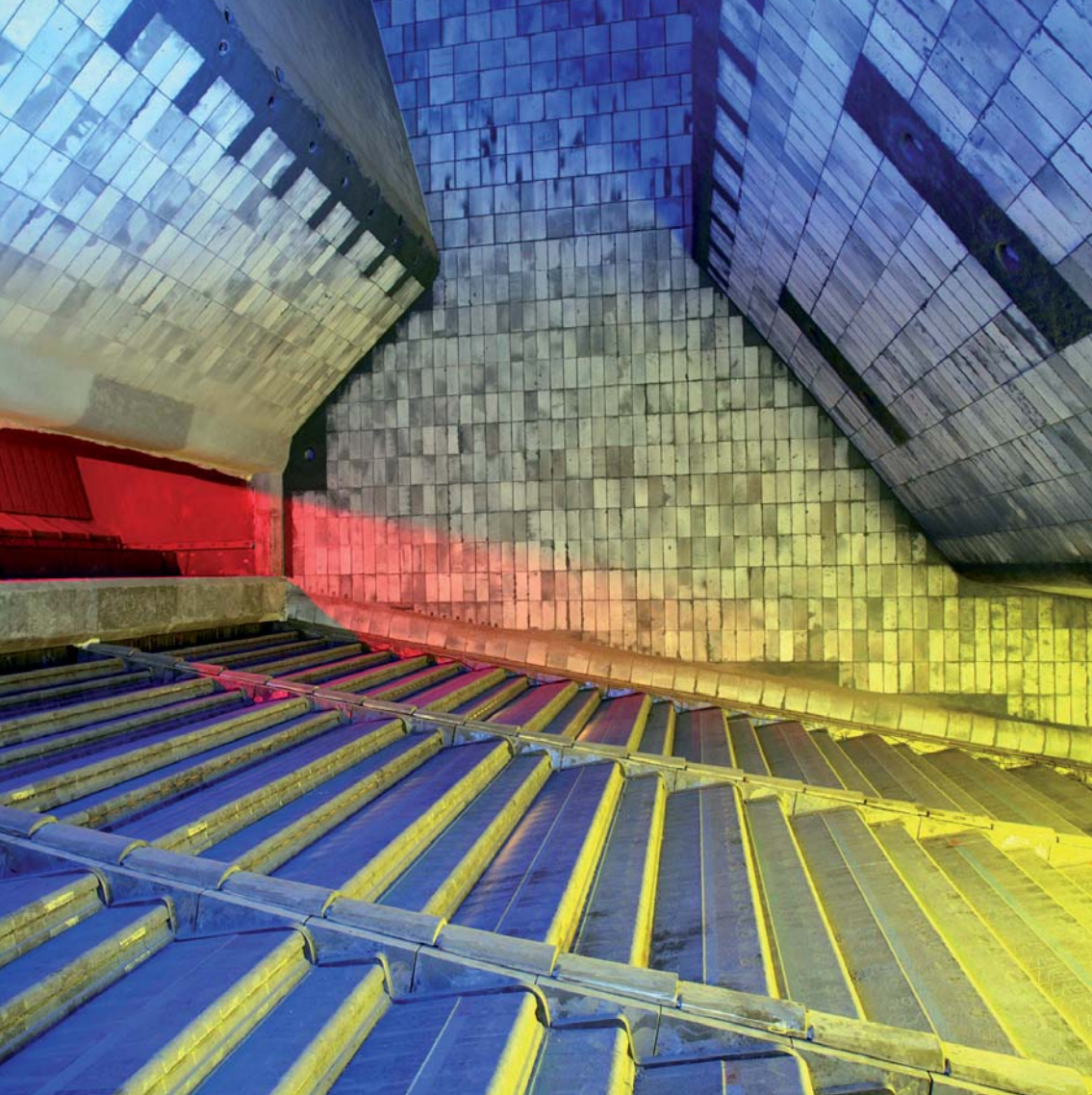




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DEGUSSA

Hydrocyanic Acid Reactors, Degussa N.V., Antwerp [Belgium]

Degussa AG built new reactors and ventgas flares for the production of hydrocyanic acid in Antwerp/Belgium. J+G provided the engineering for the steel construction, the vessels, refractories, supplied and installed all refractories including required steel construction and conducted the dry-out procedure. 160 tons of steel construction and more than 500 tons of refractories having very complex geometries and shapes had to be produced and erected within a period of 30 weeks. Perfect transportation, delivery and construction site logistics were required to ensure on time completion of the project without any personal injuries in December 2004.

Planning + Realization:	September 2003 – December 2004
Order volume:	4.100.000 EUR
Performance/services:	Engineering (steel construction+refractories) Supply of materials (steel construction+refractories) Installation (steel construction+refractories) Dry-out

MVB GMBH

Circulating Fluidized Bed Furnaces for Biomass, MVB GmbH, Hamburg [Germany]

Foster Wheeler Energie, Düsseldorf, Germany, awarded J+G the contract for the refractory lining in two new biomass power plants located in Hamburg and Emlichheim. The biomass power plants generate 63.0 and 67.0 MW, respectively. These plants are operated with the circulating fluidized bed process. Old timber chips (class A1 to A4) serve as solid fuel. These are blown with air over the nozzle grate together with the inert bed materials (sand+ash) and combusted. More than 160 tons of refractories with high abrasion resistance and thin wall thicknesses were installed in each furnace. The entire J+G expertise was required to ensure efficient and precise placement of all forms and molds.

Planning + Realization:	December 2004 – November 2005 (for both furnaces)
Order volume:	800.000 EUR
Performance/services:	Refractory Engineering Supply of materials Installation



JuSyS®

Grate Furnaces for Thermal Treatment of Municipal Waste

For the various boiler types in waste-to-energy plants and biomass power plants J+G offers for over 20 years different tube wall protection linings based on silicon carbide (SiC). Consequently, J+G is among the pioneers in this sector and was able to continuously develop and patent their own system solutions as alternative to the traditional lining systems such as SiC castable, SiC mix on ceramic caps or refractory gunned castable on steel anchors. We offer tailored, highly efficient complete solutions starting with the adhesive system JuSyS® Standard, the rear-filled system JuSyS® SL and the rear-ventilated system JuSyS® Air with very long service life. Our reference list includes all renowned plant and boiler engineering companies and operators.

Approximately 100.000 m² installed tile area during the past 20 years in over 100 boilers and combustion chambers of various designs speak for itself.

LONZA AG

Residue Incineration Plant, Lonza AG, Visp [Switzerland]

J+G remodeled the existing post combustion chamber in the residue incinerator at the Lonza AG chemical plant in Visp which is located in the Wallis region of Switzerland. This included the redesign of the existing steel construction and replacement of the combustion chamber casing. The square cross-section was substituted by a round one. J+G provided the complete steel construction and refractory engineering, static, supply and installation of the refractory lining. J+G was able to observe the tight time schedule given by Lonza AG. The complete project was accomplished in a record time of only five weeks from the day of plant shutdown to renewed startup.

Planning + Realization:	May 2003 – October 2003
Order volume:	850.000 EUR
Performance/services:	Engineering (steel construction+refractories) Supply of materials Installation Dry-out



SALDANHA STEEL, POSCO STEEL, BAOSTEEL

Iron Ore Direct Reduction Plants COREX® and FINEX®

The COREX®/FINEX® process is a smelting reduction process developed by SIEMENS VAI to produce pig iron on the basis of fine ore and cheap non-metallurgical coal. The reduction process takes place in large fluidized bed reactors and so-called smelting gasifiers that are lined with refractories.

J+G provided the refractory engineering for almost all plant parts of the FINEX® 1.5M-Plant at Posco Steel in Pohang/South Korea. The patented J+G ceramic nozzle grate is one of the main components of the fluidized bed reactors.

Plant performance FINEX® 1.5M annually: 1.5 million tons pig iron

Weight of the refractory lining: 12.000 tons

NYRSTAR BUDEL ZINK

Zinc Roasting Furnaces L2101 & L220, Nyrstar Budel Zink, Budel [Netherlands]

At the Budel-Dorplein/Netherlands location Nyrstar operates two fluidized bed furnaces to roast zinc ore. J+G already built these two furnaces in 1974 and they have a self-supporting dome of each 13 meters diameter. These big constructions were built without the use of forms and molds. This was only possible due to the special design developed by J+G. In 1999 and 2001 the refractory lining of the fluidized bed furnaces and waste heat boiler was completely broken out and replaced. More than 500 tons of refractories were installed in a record time of only 20 working days per furnace. The very large self-supporting dome is a specialty of J+G and such domes have been built by our company in over 50 plants worldwide.

Planning + Realization: Furnace L2101: July 1998 – October 1999
Furnace L2201: April 2000 – October 2001

Order volume: approx. 1.500.000 EUR

Performance/services: Refractory Engineering
Supply of materials
Installation

OUR REFERENCES

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