Raschka Engineering

Fluidized Bed Technology

Raschka Engineering -History-

Dipl.-Ing. Georg Raschka Ingenieurbüro GmbH & Co.KG
Founded in 1946 by Dipl.-Ing. Georg Raschka, Heidelberg, Germany
Acquired by Lonza Engineering AG in February 2011

Lonza Engineering AG
Used to be part of the engineering organization of Lonza Group Ltd
Registration as independent company in 2008 in Basel, Switzerland

Renamed as

Raschka Engineering AG
On April 8th, 2013 in Basel, Switzerland
Change of registered address: Liestal, Switzerland

Raschka Technology

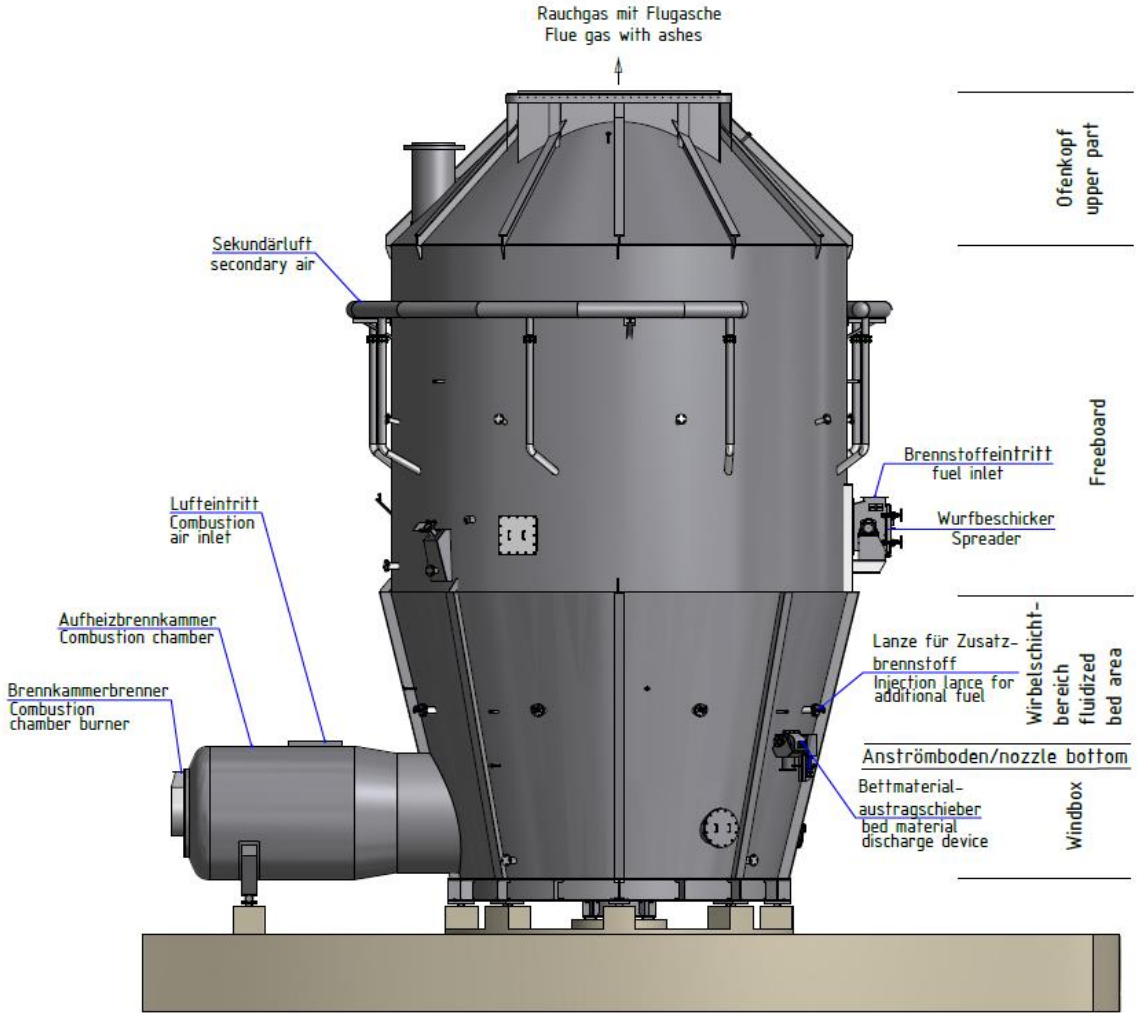
- More than 60 years of experience
- Planning and construction of fluidized bed incineration plants for
  - Environmentally friendly thermal waste disposal
  - Energy recovery and utilization
  - Energy generation
- Efficient disposal and utilization of liquid, pasty and solid materials
  - Municipal and industrial sewage sludge and waste
  - Waste from chemical, pulp and paper industry
  - Inferior and low grade coal
  - Refinery and coal slurries, oil sludge, contaminated soil
  - Biomass, bark
  - Pyritiferous ore / pyrite roasting
- More than 100 references in Europe and Asia

The solution

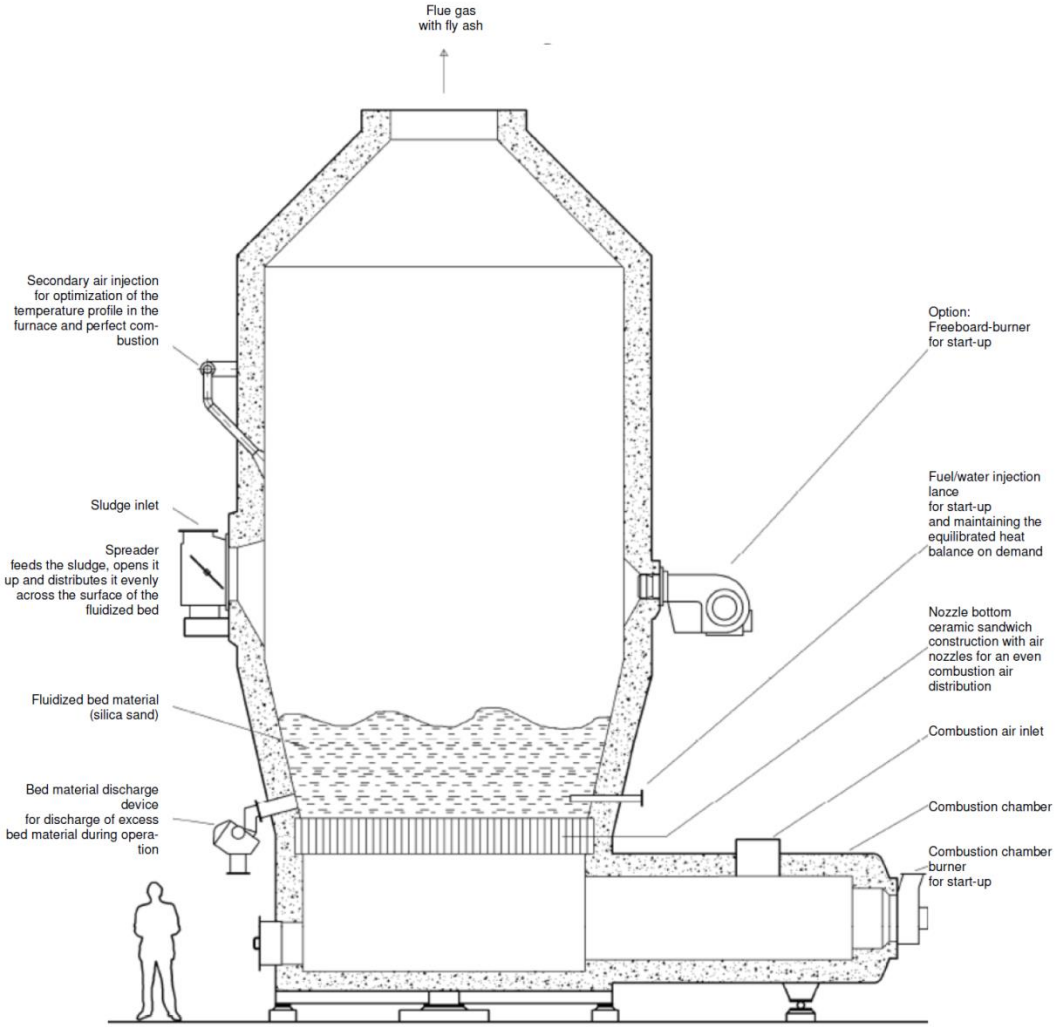
Thermal disposal and utilization of waste materials = Combustion in Raschka fluidized bed incineration plants

- evaporation and superheating of the moisture
- complete combustion of the organic substances/pollutants
- inorganic pollutants are glowed and discharged as concentrated residues of the flue gas cleaning
- environmentally friendly disposal
- energy recovery
- auto-thermal incineration process without additional fuel
- surplus energy utilization = power generation, heating …

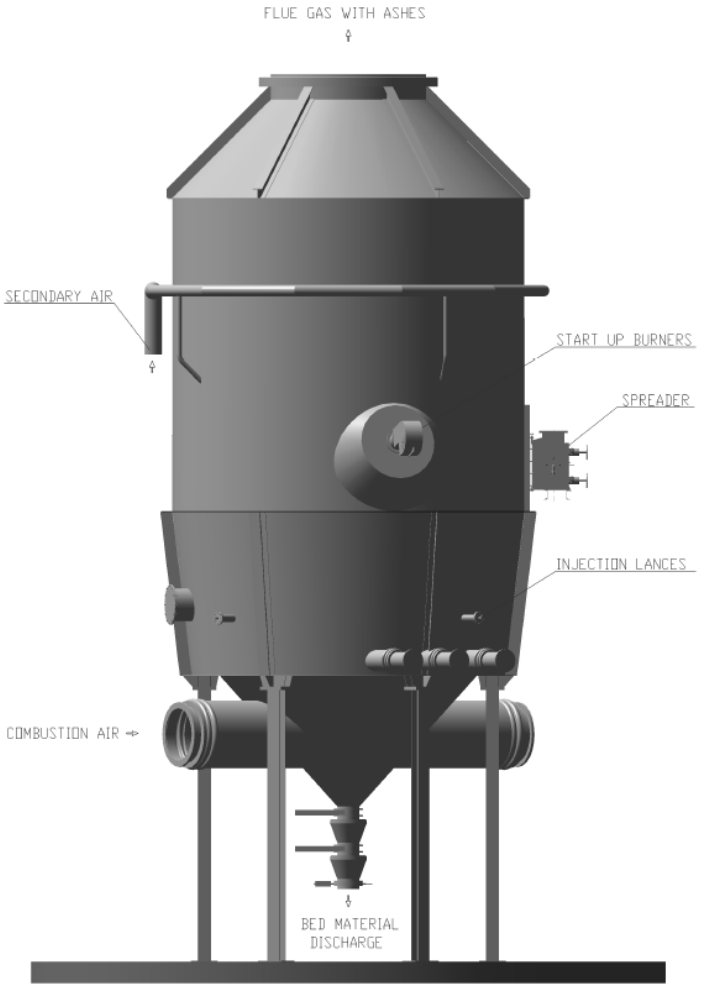
Core component: Raschka fluidized bed incinerator

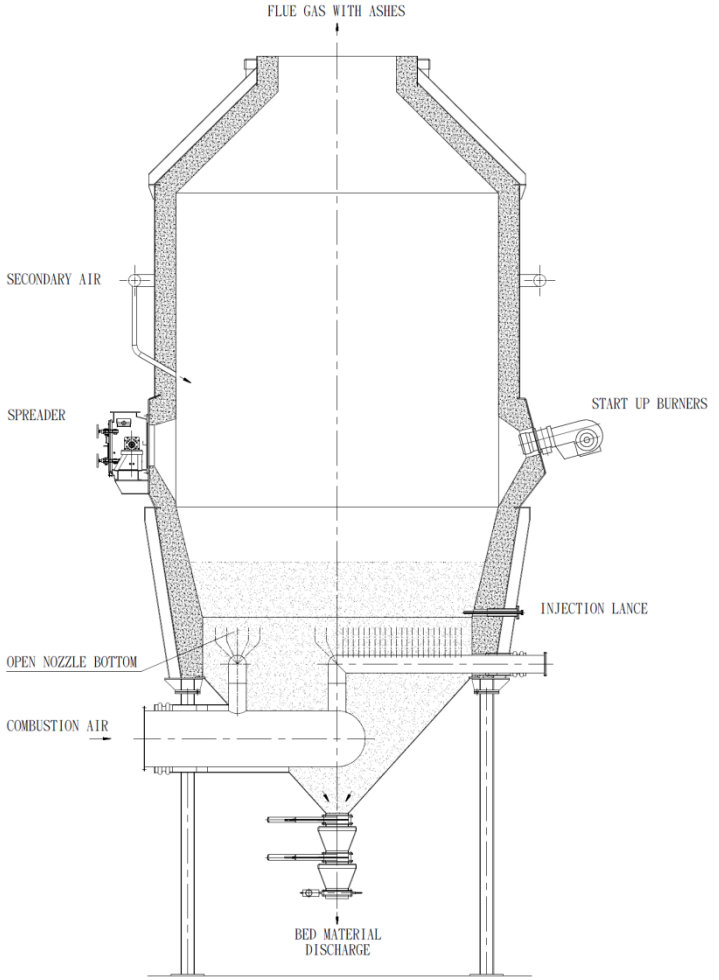


Core component: Raschka fluidized bed incinerator



Core component: Raschka fluidized bed incinerator for material containing foreign matters





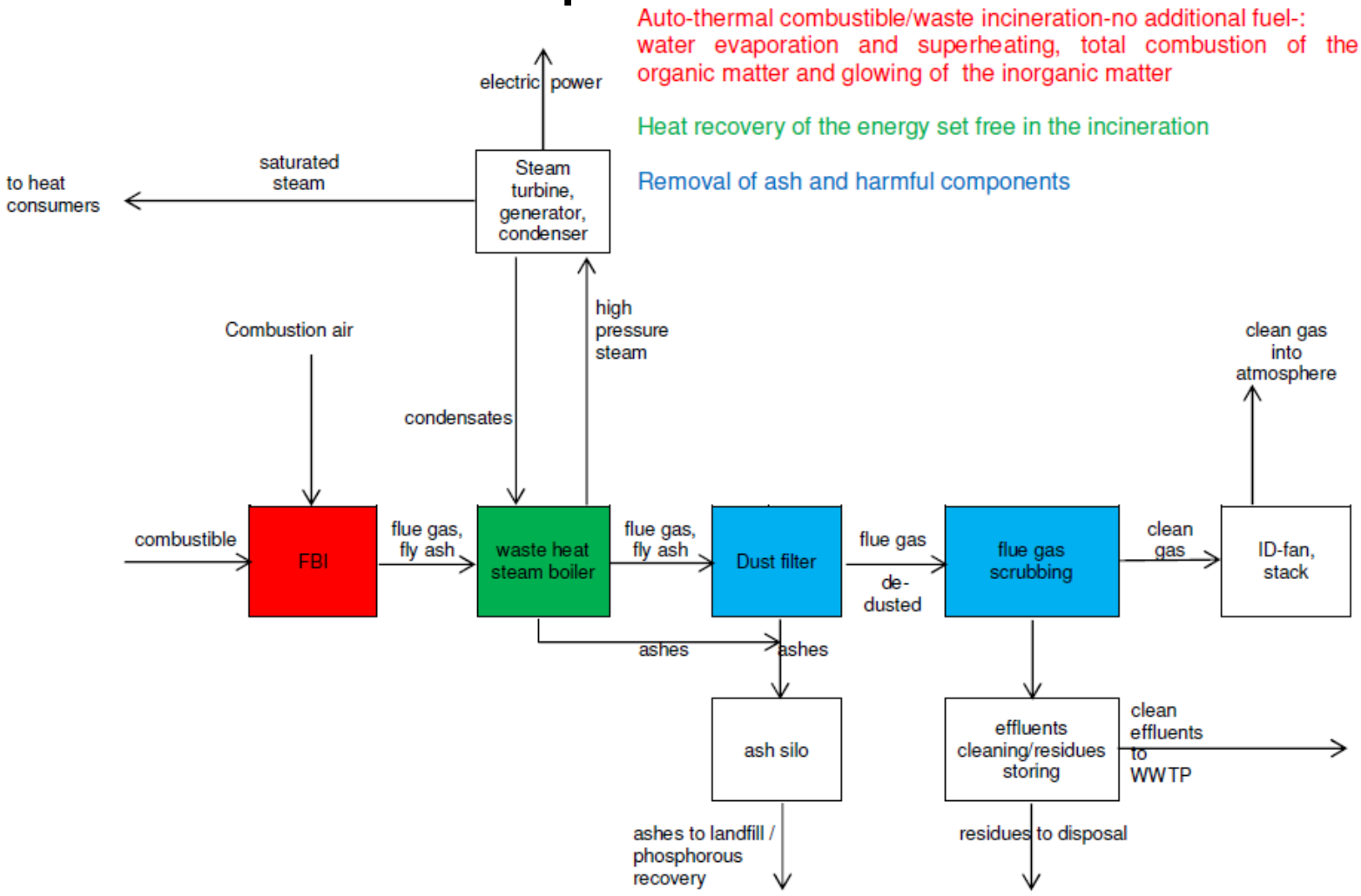
Process examples depending on the heating value of the combustible in order to achieve auto-thermal incineration conditions at equilibrated heat balance

Example: heating value of the combustible is sufficient (~ 4 MJ/kg):
All energy recovered is available for steam or hot oil production, power generation, heating purposes

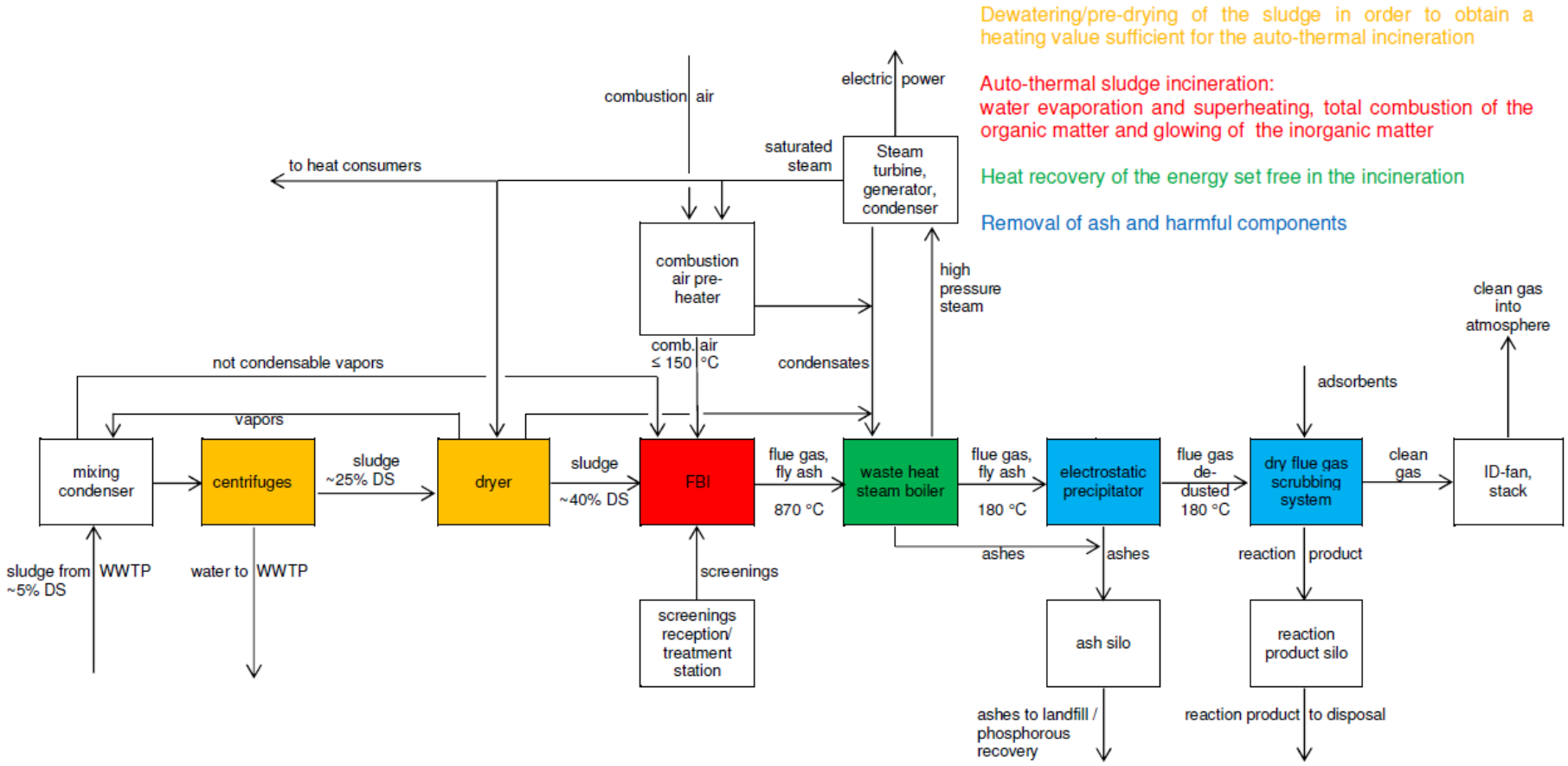
Example: heating value of the combustible is not sufficient:
The energy recovered partly is utilized to increase the heating value by mechanical dewatering and -if necessary- drying the combustible and/or to pre-heat the combustion air, surplus energy is available for power generation, heating purposes

Example: heating value of the combustible may lead to excess heat:
Excess heat is discharged e.g. by special evaporation bundles inside the furnace producing steam, all energy recovered is available for steam production, power generation, heating purposes

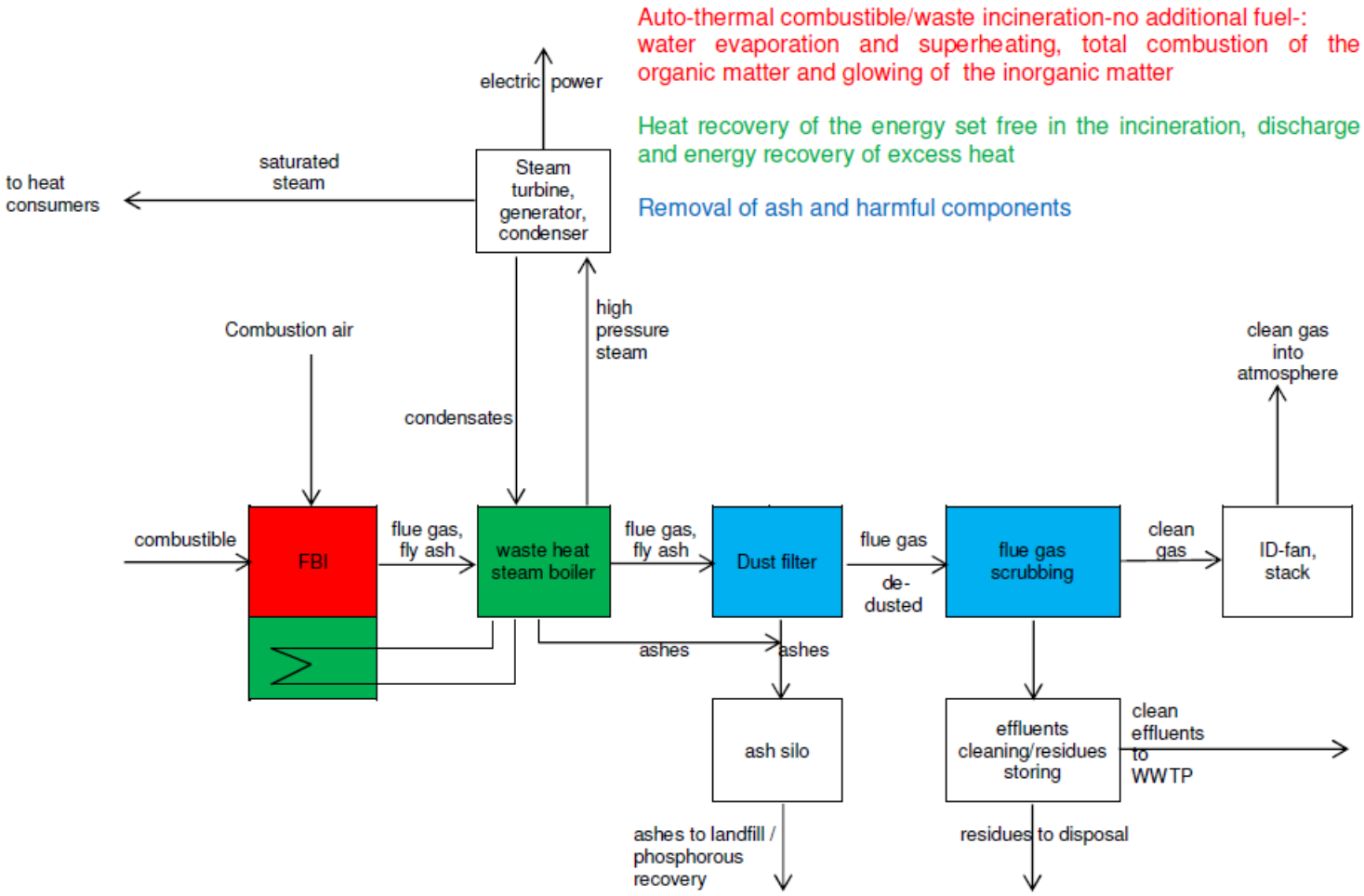
Example: heating value of the combustible is sufficient for an auto-thermal incineration process:



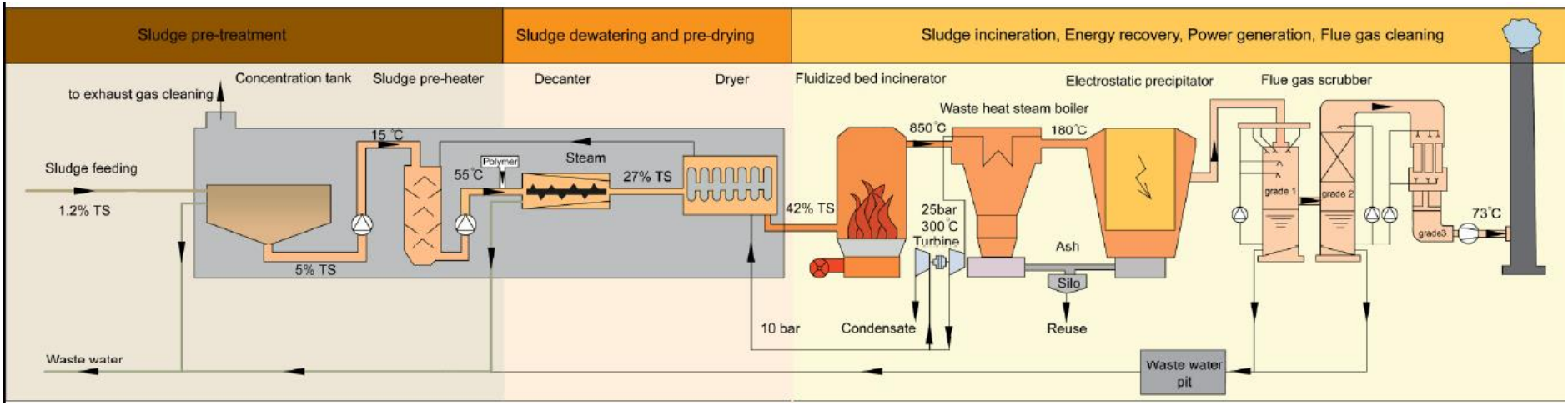
Example: heating value of the combustible is not sufficient for an auto-thermal incineration process:



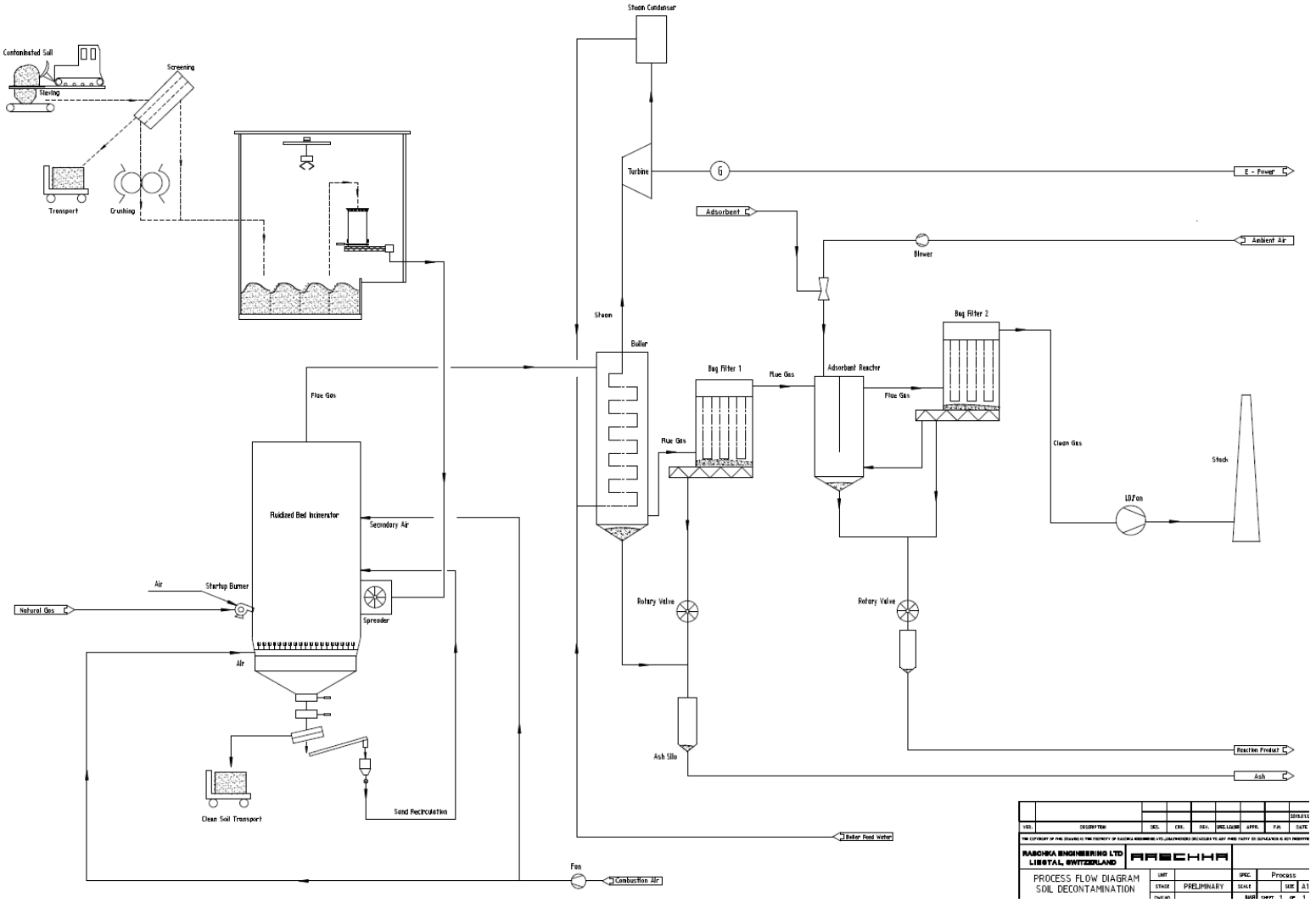
Example: heating value of the combustible is more than sufficient for an auto-thermal incineration process:



Example: municipal sludge incineration



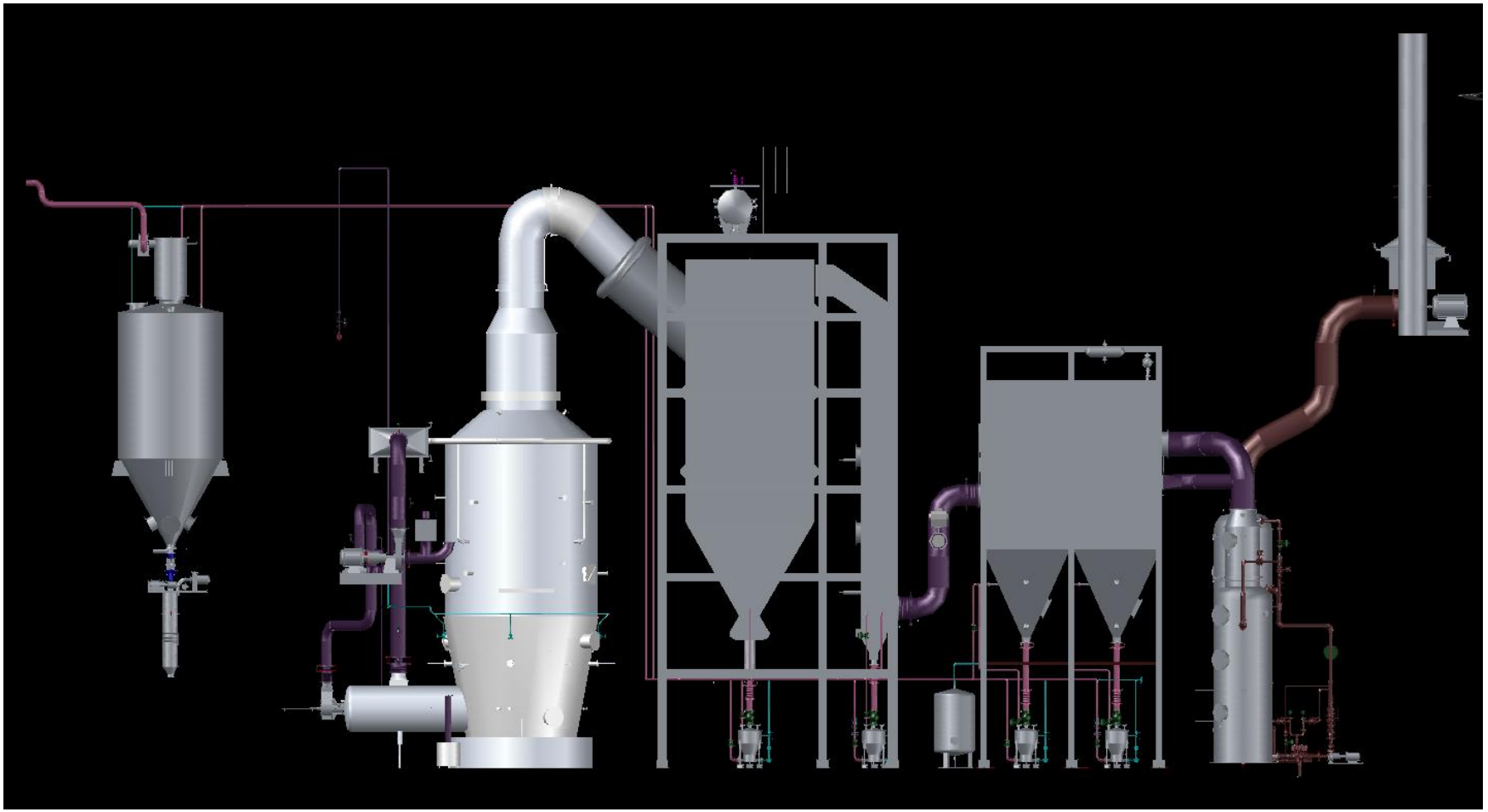
Example: soil decontamination



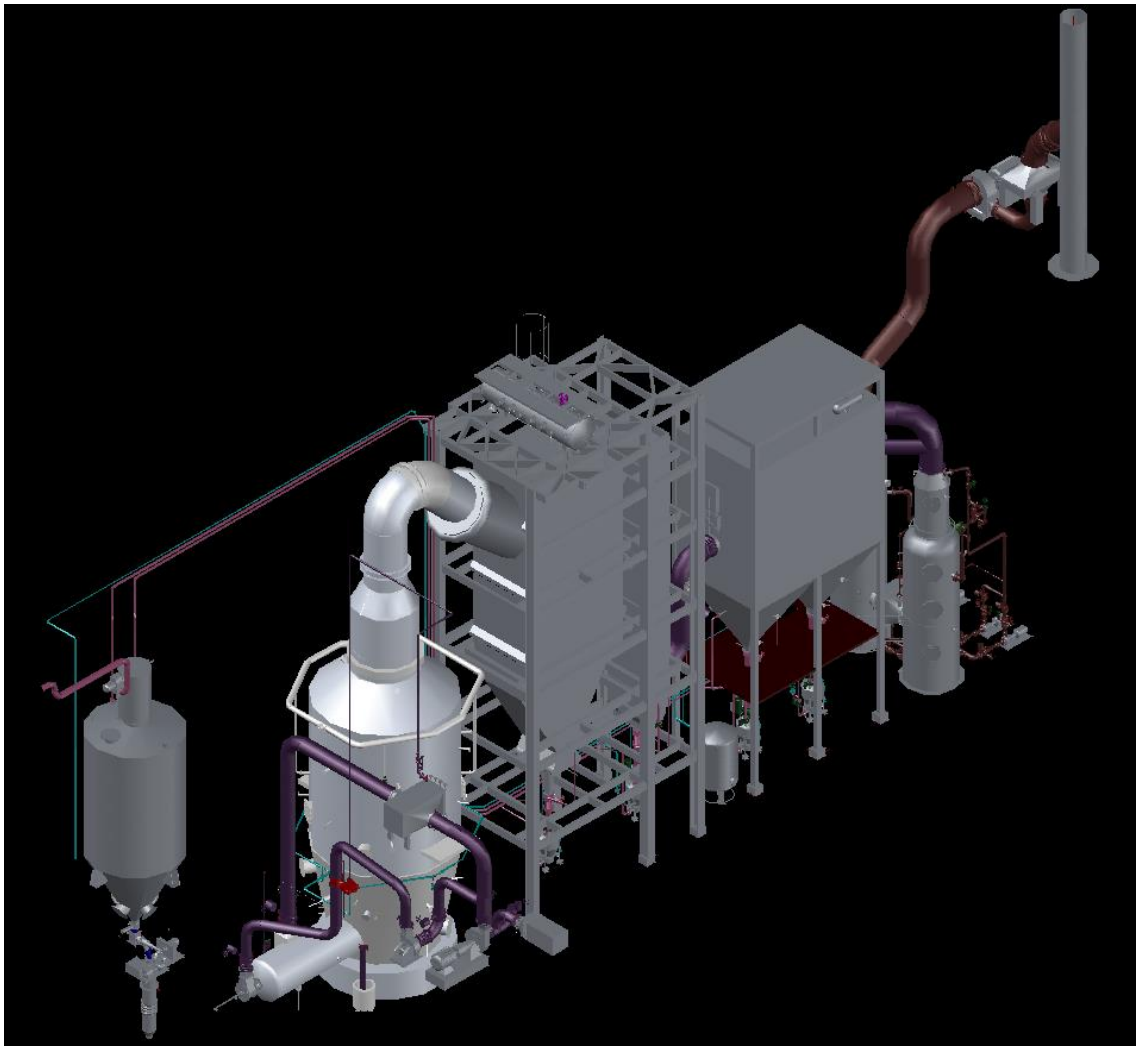
Advantages of the Raschka Fluidized Bed Technology

- ✓ **Efficient, proven, reliable**
- ✓ **Individual, tailor-made solutions**
- ✓ **Environmentally friendly**
- ✓ **Auto-thermal process without additional fuel**
- ✓ **Energy recovery and energy utilization for the process, power generation, heating**
- ✓ **The emission limits (17.BImSchV / Directive 2000/76/EC) / local regulations are kept reliably**
- ✓ **Experience: NO_2 - limits are kept without any NO_x reducing measures (e.g. SNCR)**

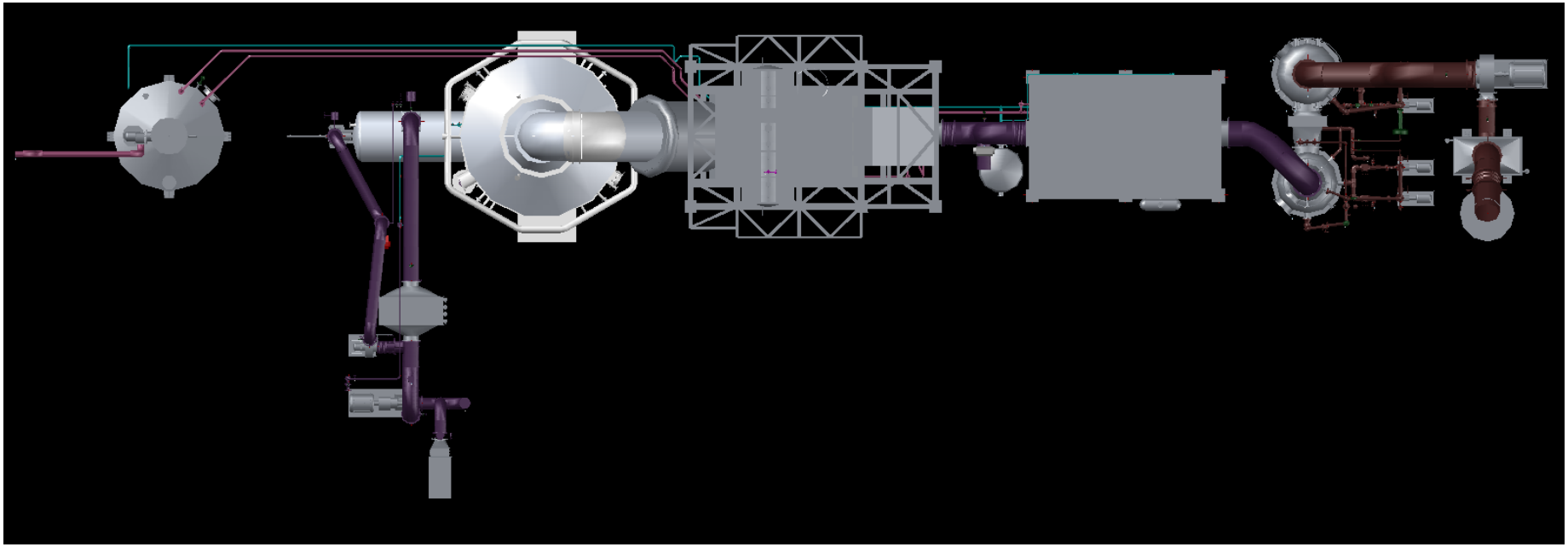
Plant design example



Plant design example



Plant design example



Dimensions incineration plant: length 35 m, width 7 m
Overall dimensions building: length 49 m, width 22 m, height 22 m

Thank you for your kind attention !







Raschka Engineering Ltd
6373 Ennetbürgen, Switzerland
www.raschka-engineering.com