

It's time for change!

"For the future it is not a matter of predicting it, but of making it possible. „

Quote of Antoine de Saint Exupéry, Citadelle, 1948

COMPANY BROCHURE



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JUMBO BLOCK®

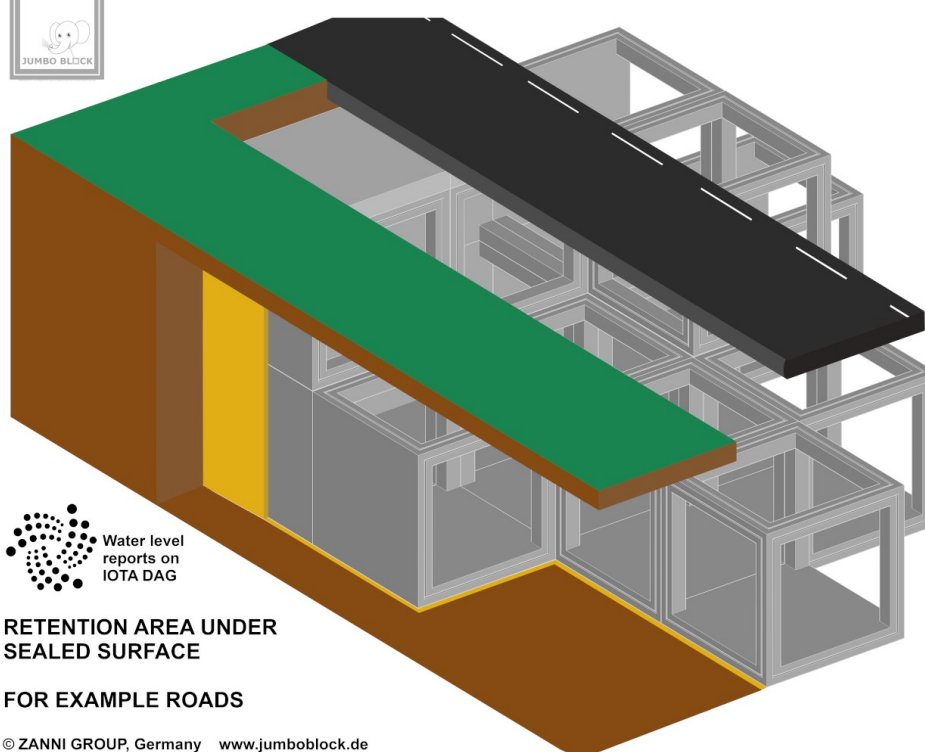
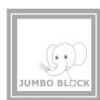
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





Water level reports on IOTA DAG

RETENTION AREA UNDER SEALED SURFACE

FOR EXAMPLE ROADS

© ZANNI GROUP, Germany www.jumboblock.de

JUMBO BLOCK® System for a healing nature
Flood and inundation protection
Water and infiltration storage

- 
JUMBO BLOCK® Closing plate
 Pos.: Top, Bottom, Side
- 
JUMBO BLOCK® Module Type 1 - Hollow block
 Pos.: Everywhere, as needed
- 
JUMBO BLOCK® Module Type 2 - 1 side closed
 Pos.: Wall/Floor/Ceiling
- 
JUMBO BLOCK® Module Type 3 - floor/wall block
 Pos.: As needed
- 
JUMBO BLOCK® Module Type 4 - Corner block
 Pos.: As needed
- 
 Green area (exemplary)
- 
 Clay liners (exemplary)
- 
 Soil

About us



Our mission

We are bidding the latest state of the art in contact with technologies for the protection of the environment.

Our focus

Our focus is on the environmentally friendly disposal of waste through incineration, flue gas and air treatment, as well as other industrial applications that require environmentally friendly solutions.

Customer relationship

We are fixated on our customers need. All our actions, our focus is exclusively on your well-being, your productivity and your business success. We do our best to meet the requirements and wishes of our customers.

Our way

We do not fail, we learn, we solve problems and we do not hide.

Join us

We will be there for you!

Our business areas

- Consulting,
- Environment,
- Combustion and
- Gas & Water

complement each other and enable us to find holistic solutions.

This enables us to offer excellent products that meet your and our expectations of high quality.

Why you should to work with us

ZANNI GROUP is active worldwide since 1994. Over the decades we have acquired a wide range of technical KNOW-HOW which is incorporated into the development of a wide range of technologies.

Our employees and freelancers have all the necessary skills and qualifications in their respective business areas. We are working in accordance to the ISO 9001:2015 quality standard.

We produce our goods according to highest quality standards in first-class workshops in Germany and all over the world if it is required by our customers. Our quality principles and our business philosophy ensure sustainable added value for our customers.

Our most important asset is our workforce and knowledge of technology, our many years of specialist experience, ensure our good reputation - in many countries throughout the world.

Our client portfolio ranges from international companies to governmental organizations.

Environment policy

The environmental challenges in our world are many and interlinked.

Air pollution caused into deaths, and millions people still do not have access to safe drinking water and adequate sanitation.

Added to these, releases of hazardous chemicals, climate change, effective engagement of the public in decision-making and access to environmental information and justice are among major concerns we need to address urgently.

To meet these challenges we work to improve the environmental situation with our projects and to reduce pollution and the damage it causes.

We believe that dealing with people, nature, and energy in a way that preserves resources will pay off in the long run.

Therefore, we make no short term decisions, but always consider the consequences of our actions.

Environmental protection for production processes and offered facilities

Consulting and development of a huge range of environmental impact product's is a part of our business.

Environmental protection as a primary goal describes very well how we develop our products.

Innovative environmentally friendly products

We exclusively offer products with the aim of minimizing pollutants and saving energy.

We use energy-saving and environmentally friendly production processes and facilities.

Gentle use of natural resources

We use natural resources as sparingly as possible.

Energy and water, raw and auxiliary materials may only be planned and used effectively and efficiently.

Continuous improvement

The aim is to continuously review and improve the existing environmental and energy management system, as well as all processes and energy-related performance.

Environmentally conscious project management

Environmentally conscious planning, specification and project implementation means permanent monitoring and compliance with all laws, official requirements, regulations and ordinances.

Environmental protection and the improvement of energy-related performance

The consideration of environmental protection, the optimization of energy efficiency, which also includes the reduction of energy consumption, must be achievable in all operational concerns.

For this purpose, it is necessary to constantly adapt the strategic and operational goals and to demand corresponding rules of conduct.

Avoidance of waste and emissions

Gases are purified and filtered to the maximum, liquid and solid residues are recycled or disposed of thermally, for example, without endangering people or the environment.

This also includes preventive handling of the environment and energy through comprehensive information.

Avoidance of environmental impacts

When new products and processes are introduced, their environmental impact and energy efficiency are assessed in order to avoid environmental, energy and safety risks.

To this end, we consider the entire service life of our products, including their disposal.

Involvement of customers, suppliers and other interest groups

In order to avoid environmental pollution and energy waste, we try to promote environmental and energy awareness through our information to customers, suppliers and other interest groups.

Our products and services demonstrate this philosophy.

Our clear statement on environmental protection

The Statement of Environmental Policy will be communicate to all sites and workplaces.

The organisation and arrangements for implementing the Policy will also be available at each site and workplace for reference by any employee as required.

Know-how and publications

Patents

1992 Publication number [DE000004213125C2](#)

Title [DE] Vorrichtung zum wahlweisen Umleiten einer Gasströmung in einem Gaskanal

Title [EN] Device for selectively diverting a flow of gas in a gas duct

[download](#) Original document

[download](#) Searchable text

1992 Publication number [DE000004213125A1](#)

Title [DE] Schwenklappe

Title [EN] Swivelling flap flow control for gas turbine - has convexly curved aerofoil shape constructed of stiffening ribs

[download](#) Original document

[download](#) Searchable text

1997 Publication number [DE000019737507A1](#)

Title [DE] Anordnung zur Beeinflussung des Dralls eines Abgasstroms

Title [EN] Twist influencing device of exhaust gas flow in turbine

[download](#) Original document

[download](#) Searchable text

1997 Publication number [DE000019718147C2](#)

Title [DE] Anordnung zur Überführung des eine Gasturbine verlassenden Abgasstroms zu einem Abhitzeessel und/oder zu einem Abgaskamin

Title [EN] Arrangement for transfer the exiting exhaust stream of a gas turbine to a waste heat boiler and / or to an exhaust chimney

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1997 Publication number [DE000019718147A1](#)

Title [DE] Anordnung zur Überführung des eine Gasturbine verlassenden Abgasstroms zu einem Abhitzeessel und/oder zu einem Abgaskamin

Title [EN] Waste gas diverter unit between gas turbine and waste heat boiler

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1999 Publication number [DE000019905818C2](#)

Title [DE] Gasturbinenkraftwerk

Title [EN] Gas turbine power plant

[download](#) Original document

[download](#) Searchable text

1999 Publication number [DE000019905818A1](#)

Title [DE] Gasturbinenkraftwerk

Title [EN] Gas turbine electrical power plant

[download](#) Original document

[download](#) Searchable text

2014 Publication number [DE202014008440U1](#)

Title [DE] Transportable und modulare Verbrennungsanlage

Title [EN] Transportable and modular incinerator unit

[download](#) Original document

[download](#) Searchable text

2015 Publication number [DE202015002160U1](#)

Title [DE] Transportable und stationäre Desinfektionseinheit

Title [EN] Portable and stationary disinfection unit

[download](#) Original document

[download](#) Searchable text

2020 Publication number [DE202020000033U1](#)

Title [DE] Waermetauscher mit austauschbaren Rohrbuendeln

Title [EN] Heat exchanger with exchangeable tube bundles

[download](#) Original document

[download](#) Searchable text

2020 Publication number [DE202020000952U1](#)

Title [DE] Verbrennungsrost mit gefuehrter Verbrennungsluft und Schindelaufgabe zur Verbrennung von festen und schlammigen Abfaellen

Title [EN] Combustion grate with guided combustion air and shingle support for the incineration of solid and sludgy wastes

[download](#) Original document

[download](#) Searchable text

2021 Publication number [DE202021002498](#)

Title [DE] Tiefbau Flutwasserauffangsystem

Title [EN] Civil engineering Flood water collection system

[download](#) Original document

[download](#) Searchable text

Source:

German patent information system (DEPATIS) provided by the German Patent and Trade Mark Office (DPMA).

Url: <http://depatisnet.dpma.de>

Quality management system

ISO 9001:2015 is a voluntary standard for quality management systems, issued by ISO, the International Organization for Standardization. ISO 9001:2015 has been designed to help organizations ensure that they meet customers' needs and that quality is consistently improved.

Certificates	Year	Certificate type	
	2020 *	ISO 9001:2015	* in progress
	2018	ISO 9001:2015	
	2017	ISO 9001:2008	
	2014	ISO 9001:2008	
	2011	ISO 9001:2008	
	2009	ISO 9001:2008	
	2008	ISO 9001:2000	

Quality principles

Our quality system is based on eight quality management principles.

These principles can be used by senior management as a framework to guide their organizations towards improved performance.

Principle 1 - Customer focus

Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

Principle 2 – Leadership

Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

Principle 3 - Involvement of people

People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.

Principle 4 - Process approach

A desired result is achieved more efficiently when activities and related resources are managed as a process.

Principle 5 - System approach to management

Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Principle 6 - Continual improvement

Continual improvement of the organization's overall performance should be a permanent objective of the organization.

Principle 7 - Factual approach to decision making

Effective decisions are based on the analysis of data and information

Principle 8 - Mutually beneficial supplier relationships

An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

Quality policy

Each partner company, each employee is responsible for the quality of their work themselves.

It / he knows the requirements to meet the required quality in its sphere of activity.

Missing information are to request from the supervisor or in the case of the partner companies from ZANNI GROUP immediately.

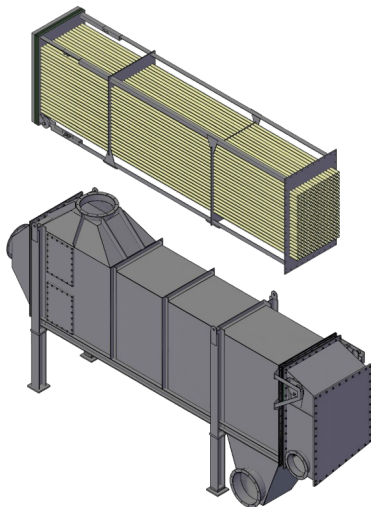
Through continuous improvements in organizational, operational and technical issues, we increase the quality of our services and products.

At the same time we keep our costs to as low as possible, secure and improve our market position.

Our target is for all our processes and supports an integrated business, environmental behavior of all stakeholders.

Our sub-contractors we accept as a partner with which we are in an open, performance-oriented maintain communication.

Easy and quick maintenance



In the past, we have also for the flue gas coolers and heat exchangers used old-fashioned technology that reliably fulfilled its tasks, but reached its limits in the area of wear and tear and also in maintenance. In the same order as we did with the combustion grate system we took a closer look at these problems and created a new type of flue gas cooler that is very easy to maintain.

But easy to maintain is not the only target what we had focused on.

The new design is long resistant against heat, abrasion and acids which is naturally dependent on selected materials.

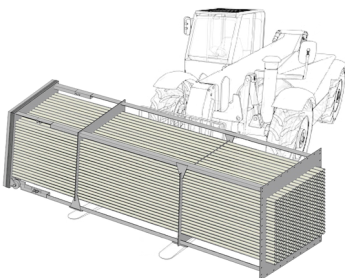
Since the cooling circuit is shielded from the flue gas and the heat and thus energy transfer to the cooling air is due to the engineering enormous, it is nearly inevitable that this cooling air can be used further and thus the efficiency of a plant can be increased.

Of course also the efficiency of an older, existing plant can be increased.

The design of the new cooler and the way it is implemented is both logical and consequent. The cooler design is an air/air cooler. In the design, the flue gas and cooling air side are considered as independent systems.

One system, the flue gas side, must be resistant to heat, abrasion and corrosion and the other, the clean cooling air side, to sometimes enormous temperatures, depending on the design of the plant. We have also constructively implemented the thermal, mechanical problems that arise on the cooling air side.

Of course, the flue gas pipes are still exposed to a great deal of stress and their durability can be increased by using special steels, but they are still nothing more than wearing parts from a classical point of view.



If you take this problem into account, then you inevitably have to create a simple maintenance option, which we have implemented in our cooler.

The entire rear chamber part can be easily removed and the tube bundles can be replaced just as easily on their sliding frame. This significantly reduces downtime and keeps maintenance costs to a minimum.

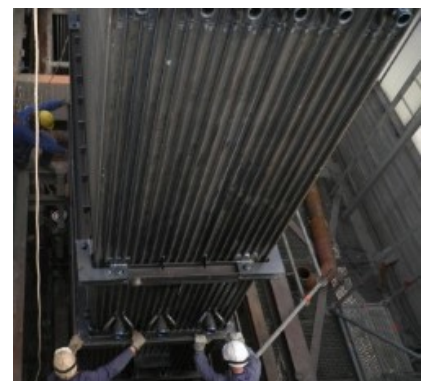
The temperature ranges for the flue gas side are, depending on the design of the upstream plant, between 850 - 1200 °C and the cooling air side between 300 - 650 °C.

Deviations are of course possible depending on the individual design of each plant.

Advantages of the new and patented cooler design

- Easy to maintain.
- Long resistant against heat.
- Long resistant against acids.
- Long resistant against abrasion.
- Heat recovery via clean cooling air possible.
- No material attack of the secondary air cooling circuit by aggressive media.
- Long service life.

Each system requires an individual configuration.



Of course larger boiler systems are also available!

Flue gas cleaning



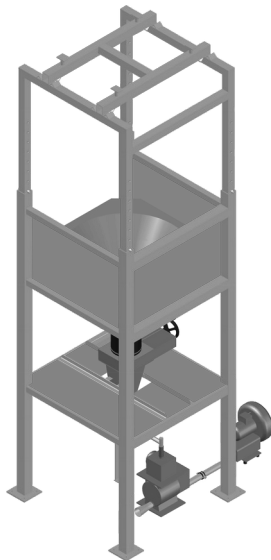
There are two ways to filter the exhaust gas.

On the one hand there is the wet and dry washing technology and on the other hand the electrostatic filter technology. For our systems we mainly use the dry washing technology.

For our dry washing technology we can offer ceramic filters and fabric filters. We prefer ceramic filters for our furnaces up to 400 kg/h, as these have a very high filter efficiency on the one hand and a very long service life on the other.

Which of these both filter technologies is suitable is mainly a question of the amount of exhaust gas and the media itself.

For our dry-washing systems we additionally recommend to use a dry-scrubbing-solvent injection system.



A dry-scrubbing-solvent injection by means of a dosing station is used to remove particles and gases from the exhaust gas streams via dusted air filters.

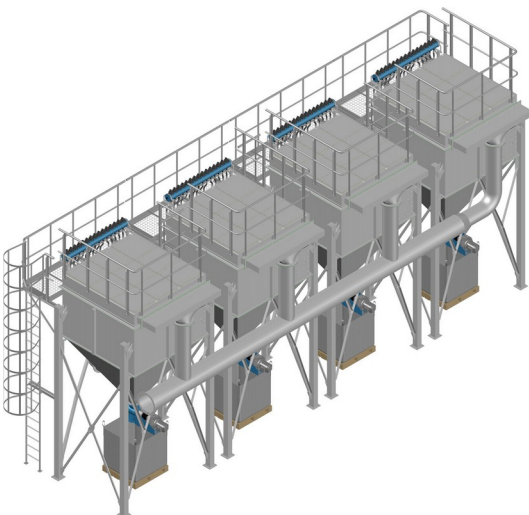
These dry scrubbing systems are used to remove corrosive and toxic gases (for example SO₂ and HCl) from the exhaust gas. They are very effective with low investment and operating costs.

Many acid gases, such as ammonia and hydrogen chloride are water soluble and react aggressively when moisture is added to the gas. Dry gas scrubbers add either no or very little liquid to the exhaust gas they are cleaning. This means that they are less prone to corrosion. This means that they do not require waste water disposal procedures or steam plumes - common scrubber accessories.

The dry gas scrubber simply injects a sorbent that efficiently captures and absorbs acid gases. Odorous, corrosive gas by-products can be additionally removed from the exhaust gas by adding activated compounds that treat certain pollutants.

Once it has absorbed all harmful compounds, it is removed from the filter elements together with excess sorbent by a control device.

Dry scrubbing systems are an important part of gas phase filtration and are therefore best suited for maintaining high environmental standards.



The functionality of the filter system is based on its filter in interaction with the dry scrubbing solvent system.

At a certain differential pressure level the filter will be cleaned by pressure air with a reverse jet cleaning system which clean the filter by a jet impulse and the dust layer on the outside surface of the filter will fall down.

At the bottom of the filter the ash feed by a rotary valve to a big bag or ash container.

Corrosion protection of filter systems

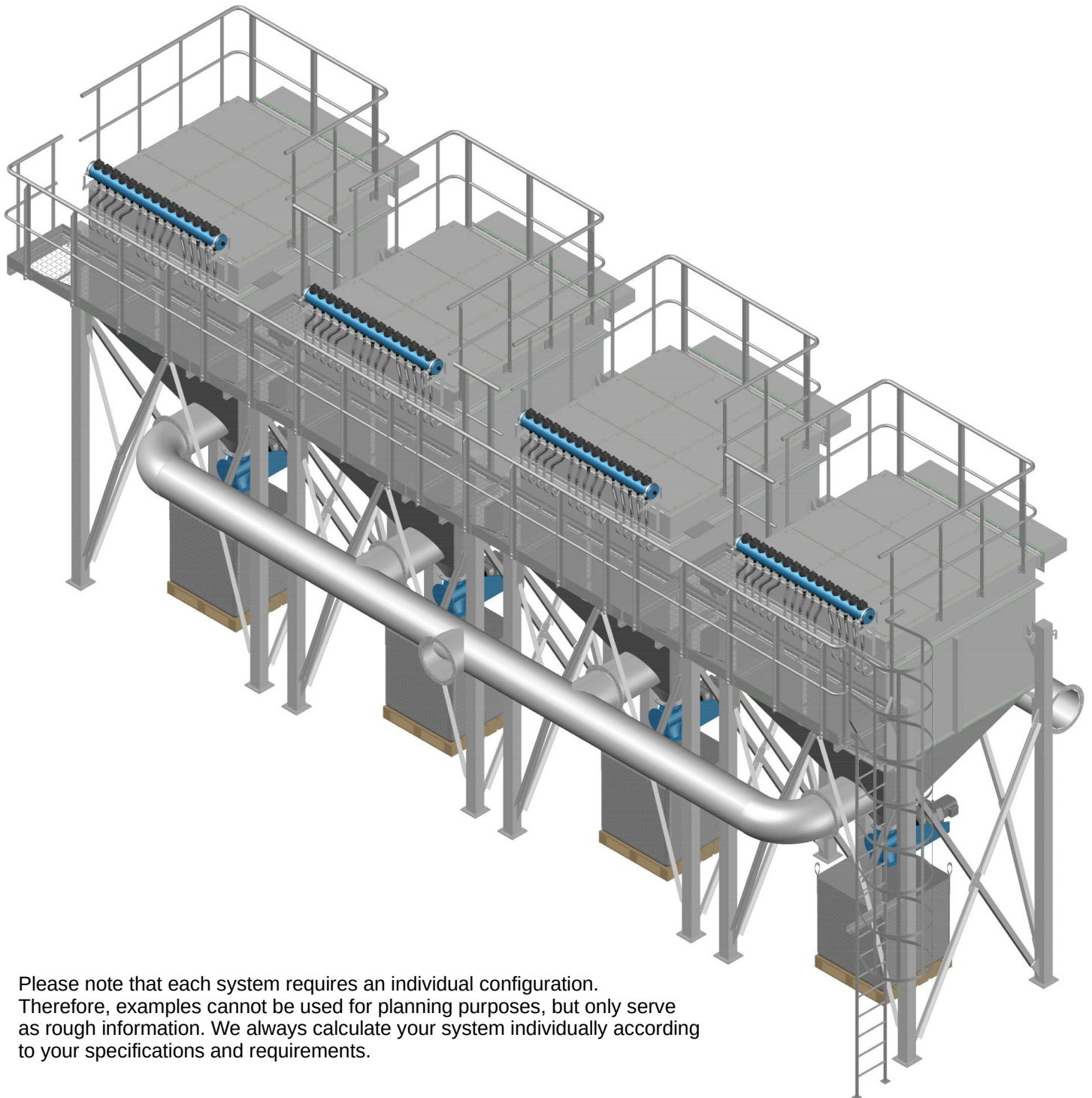
The insulation at the outside of filter body keeps it from corrosion, during shut down periods.

The dust inside is contaminated with sulphur and other components.

If the temperature falls below the dew point, corrosion could be happen.

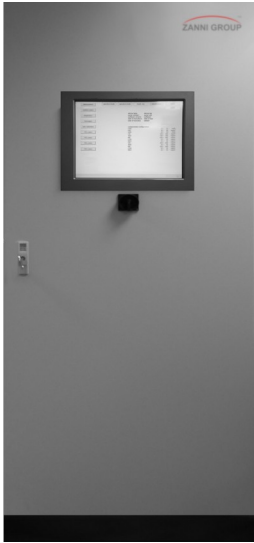
Therefore a standstill heater is additionally recommended to protect the housing from corrosion. This heater is only an option, because if it is necessary depends always only on local conditions.

The filter can easily removed when necessary.
It can be replaced by operation staff after training.



Please note that each system requires an individual configuration. Therefore, examples cannot be used for planning purposes, but only serve as rough information. We always calculate your system individually according to your specifications and requirements.

Continuous emission monitoring systems (CEMS)



CEMS are used as a tool to monitor flue gas for oxygen, carbon monoxide and carbon dioxide to provide information for combustion control in industrial settings.

They are currently used as a means to comply with air emission standards.

Facilities employ the use of CEMS to continuously collect, record and report the required emissions data.

Envisaged analyses could be for example

- HCl (hydrogen chloride),
- Cl₂ (chlorine),
- NO_x (nitrogen oxides),
- SO_x (sulfur oxide),
- CO (carbon monoxide),
- TOC (total organic carbon).

The standard CEM system consists ordinary of

- a sample probe,
- a filter,
- a sample line,
- a gas conditioning system,
- of course a calibration gas system,
- and at least a series of gas analyzers for monitoring of the required parameters.

In monitoring the emissions, the system must be in continuous operation and must be able to sample, analyze and record data at least every 15 minutes and then averaged hourly. That means the operation frequency can be either continuous operation or activation at a predefined frequency or upon demand.

Data Secured Transmission System (dsts)

Our preferred system "[Data Secured Transmission System \(dsts\)](#)" avoids manipulated data after the fact.

So far, we have used secured PC systems for this purpose and offered data access via modems or other connections if desired.

To achieve the same goal, we now also offer to develop a suitable solution for your plant via the [IOTA](#) network. The hardware requirements are reduced by the process.

[IOTA](#) provides a digitally secured infrastructure through which communication and payment can be made, e.g. for electricity, data, certificates, documentation. The transactions are free of charge.

As each facility is adapted to local conditions and configured differently, this dsts must be developed or adapted for your facility.

In the short term, it represents an additional expense, but in the long term it pays off for you.

Are you ready?

Please note that each system requires an individual configuration.

Therefore, examples cannot be used for planning purposes, but only serve as rough information.

We always calculate your system individually according to your specifications and requirements.



Our environmental protection and analytics team provides a wide range of services to assist you to save the ecosystem and to keep our environment clean.

Our services

- Environmental due diligence,
- ground and building recycling,
- security at buildings, plants and leisure facilities.

Environmental Due Diligence

Environmental Due Diligence, the examination on possible environmental risk or contaminated buildings, brings the facts to surface that you should know before you going into an investment. Possible risks of liability or need of cost-intensive redevelopment will be predetermined so the purchase price can be made conditional or the purchase contract can properly be secured.

The Environmental Due Diligence can be conducted according to international standards or to national laws, regulations and guidelines.

Ground and building recycling

Grounds for construction are limited and thus expensive. An interesting, economic alternative to this is rehabilitation of old construction sites for reuse instead of using valuable green areas.

Our range of services

- Soil and groundwater investigation,
- building checks,
- appraising of the actual condition,
- sanitation and demolition plan,
- reconstruction, recycling and utilization planning,
- sanitation of existing pollution, reorganization and planning,
- appraisal of pollutants,
- pollutant survey and classification,
- construction material investigation,
- preparation of bill of quantities,
- construction supervision,
- construction site management.



Security at buildings, plants and leisure facilities

We support you consistently by checking your compliance to legal requirements and adherence to your responsibilities. Our job site coordination offers you a package of safety-relevant aspects for planning, organization and controlling of the works through all building phases.

Our experts are at your service on plant safety topics, from risk-auditing of environmentally hazardous plants to plant examinations acc. to VAWs or boiler water and feed water investigations.

... and much more

Please visit our Homepage.
Thanks

Preventive flood protection system



Climate change is increasingly leading to floods and flood events with enormous damages to property.

It is also a huge risk for the people.

Preventive hazard protection plays an important role in all areas.

Let's think of **fire protection**, for example. Here, standards have prevailed that have prevented many disasters.

There are also possibilities for preventive flood protection, but these have not yet been applied in the less affected countries and areas.

This may be due to a lack of willingness to invest or simply a lack of understanding.

we are not talking about systems that act directly on buildings, such as sheet pile walls or other systems as water penetration protection, but about large-scale construction measures that have a general area effect.

Of course, we cannot build systems that can completely prevent floods, but we can buy time for evacuation measures and lower water levels and, at best, provide complete flood protection in certain areas. But that always depends on how such a system can be installed and what the local geological drainage conditions are.

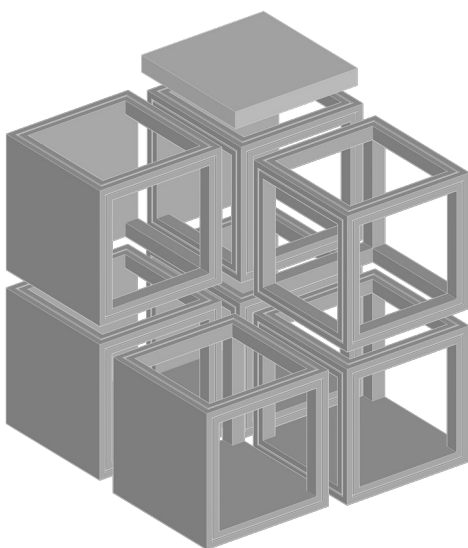
There are already underground shafts and catchment basins, such as in London or Tokyo, which specifically collect precipitation and surface water or, near the sea, storm water. This can mitigate and, at best, prevent damage.

The construction of such large catchment basins is mainly possible in undeveloped areas.

In sealed and built-up areas, retrofitted systems for hazard prevention make sense, but are often not possible in conventional construction.

We have already developed a system for this years ago, whose time has now certainly come.

It does not protect only individual buildings, but large areas, depending on how strongly we prioritizes area protection and how important the preservation of infrastructure is rated.



With our patented system, we can subsequently install large collection systems in areas and spaces inside and outside built-up areas, with which precipitation and surface water, or storm water near the sea, can be collected in a targeted manner.

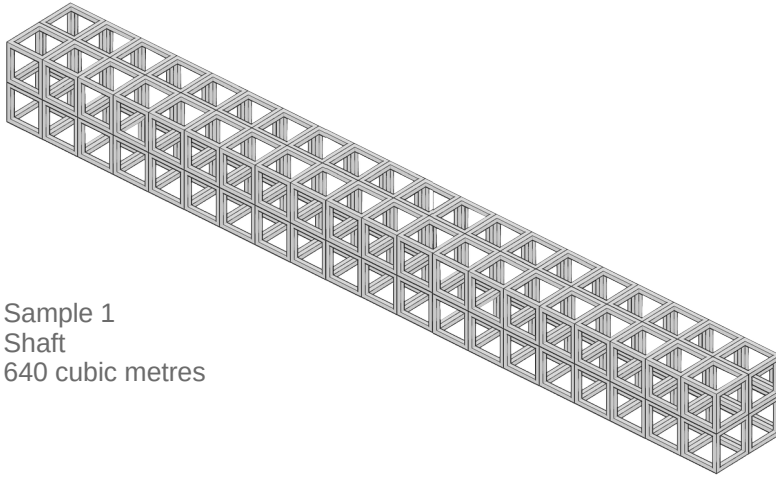
Construction projects can be implemented quickly and easily also in small spaces to relieve infrastructure and traffic flows during construction work.

Construction work can be carried out with lighter construction machinery in order to protect natural areas and avoid unnecessary soil compaction.

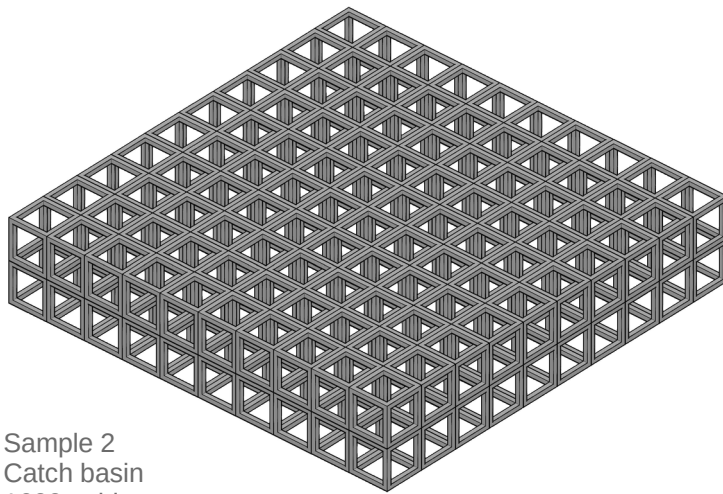
Flood spaces are created by prefabricated concrete skeleton blocks. The concrete skeleton blocks are designed in square or rectangular form.

They are also reinforced according to requirements and calculated loads.

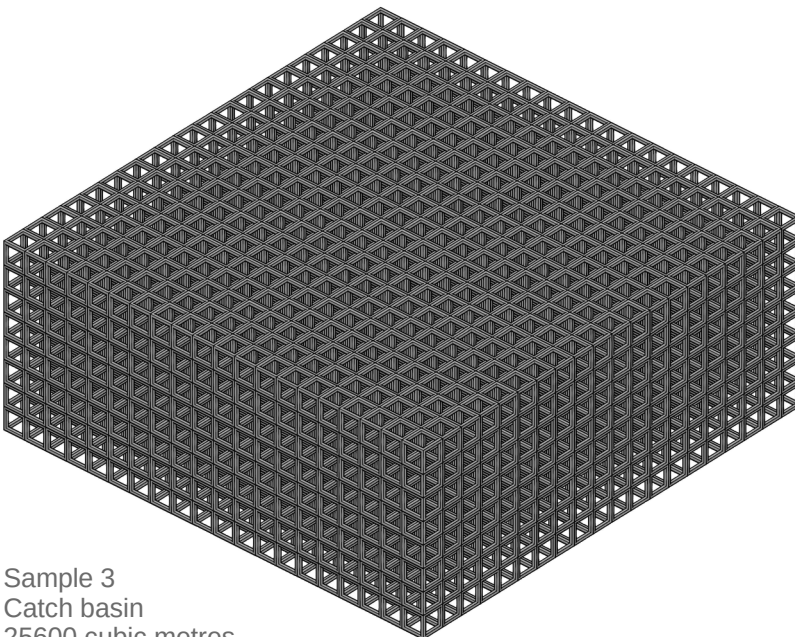
They can be stacked several times and thus form required shafts and catch basins.



Sample 1
Shaft
640 cubic metres



Sample 2
Catch basin
1600 cubic metres



Sample 3
Catch basin
25600 cubic metres

Depending on the defined size, they can be driven over underground.

The water inlet can be adapted constructively in a wide variety of ways as required.

Pumps, controllers, sensors with IDoT chips, for operating a plant and documenting events can be installed within the system.

Plant data can be sent and documented via a blockchain or the IOTA Tangle to participants such as authorities.

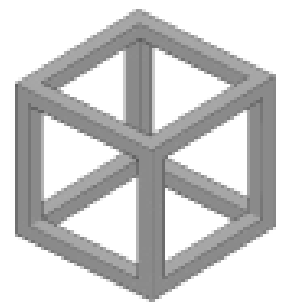
Advantages of the civil engineering system

- Easy and fast to install.
- Installation in the smallest space.
- Installation with small construction machines.
- No soil compaction by large construction machinery.
- Easy delivery of the prefabricated system by standard trucks.
- Very cost effective.
- Small or huge shafts and basins possible.
- Eliminates risks!

Potential target groups

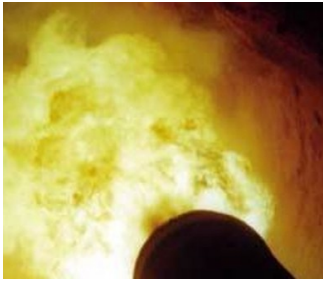
Certainly interesting for politics, investment companies, insurance companies, and so on.

**Reduce risks,
reduce costs,
safe lives.**



**ENGINEERING
MADE IN GERMANY**

Power plant and other equipment



We have extensive experience in power plant and energy generation sector. Thanks to our engineers, who spent more than 30 years in this field to make things better.

We supply mechanical, electrical, control and instrumentation engineering for any main or auxiliary system of a power plant as well as planning of a whole plant for you.



Our activities in this field is not limited to new power plants or their parts but we also do modernizing, retrofitting, refurbishment and upgrading of existing plants.

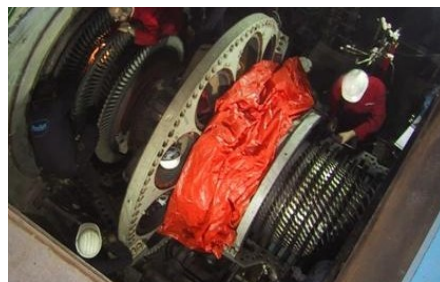


Know-How

Based on their many years of experience, our engineers have the know-how on power plants. Information on this can be found in chapter „Know-how and Publications“.

Some of the systems we are involved are;

- gas systems, such as gas pressure reducing stations,
- fuel oil systems such as pumping stations, etc.,
- air and flue gas systems, such as ventilators, desulphurization systems,
- steam and condensate systems such as steam reducing station, feed water tank and pumps, etc.,
- boiler equipment, such as burners, soot blowers, furnace camera, etc.,
- water systems, such as water treatment plant, waste water treatment plant, etc.,
- control and instrumentation of all systems including analyzers,
- all kind of valves, isolators and dampers,
- other power plant equipment and systems, such as emergency power plant, compressor station, and others.



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