IBAU HAMBURG

ACTIVITIES

Plant Design. Engineering. EPC-Contracting.



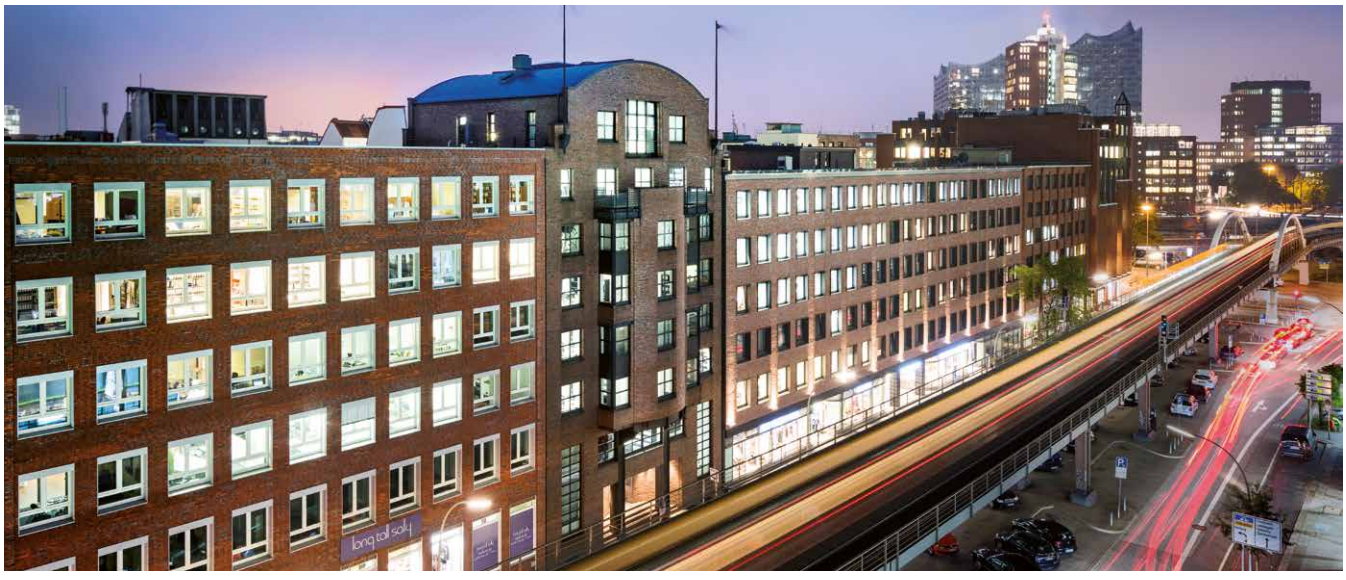
Storage, Mixing, Conveying, Loading and Shipping by IBAU Hamburg

Always state-of-the-art: We bring your best ideas to life
We supply worldwide proven advanced Silo Technology and economic Silo Systems, Silo Conversions, Terminals, Carriers, Ship Unloaders, all relevant Components and a Spare Part Service just-in-time. Also Plant Design with complete Engineering and EPC-Contracting, Supply and Erection, Technical Supervision of Pilling, Civil Works, Steel Structure and Electrical and Mechanical Works.

We have one principle:
To always find appropriate high quality customer-oriented solutions. We renew and improve all processes and products continually. With our excellence program we integrate new ideas and make them immediately fit for production: Always in close contact with our customers.

References make differences
IBAU HAMBURG has more than 40 years of experience in storage and transport of bulk material and is one of the world's leading companies. These years of experience help us to support our customers in implementing their projects by developing and applying customized systems and concepts of the highest quality.

Effective. Efficient: Quality, made in Hamburg, Germany



IBAU HAMBURG is situated right in the center of the City of Hamburg, with giant warehouses on more than 5.000 sqm in Hamburg-Allermöhe.

We offer individual economic solutions. All made to measure.



CEMENT



MINERALS



THERMAL POWER



Cement Australia Railton, Tasmania, Australia



Material distribution via two-way valves into silos



Limestone storage silo for ENBW Karlsruhe, Germany



Silo Plant CCB Gaurain, Belgium



Alumina silos with conveying systems and loading stations



Conveying systems for Alstom PPC Florina, Greece



Cement storage silo for Cement Australia



Road-mobile ship unloader with pneumatic conveying unit



RWE Fly ash storage silos, Eemshaven, Netherlands

The Original Central Cone Silo

Raw Meal Silos, Cement Silos and Multicompartment Silos, Cement Terminals, Cement Carriers, Ship Unloaders, Components

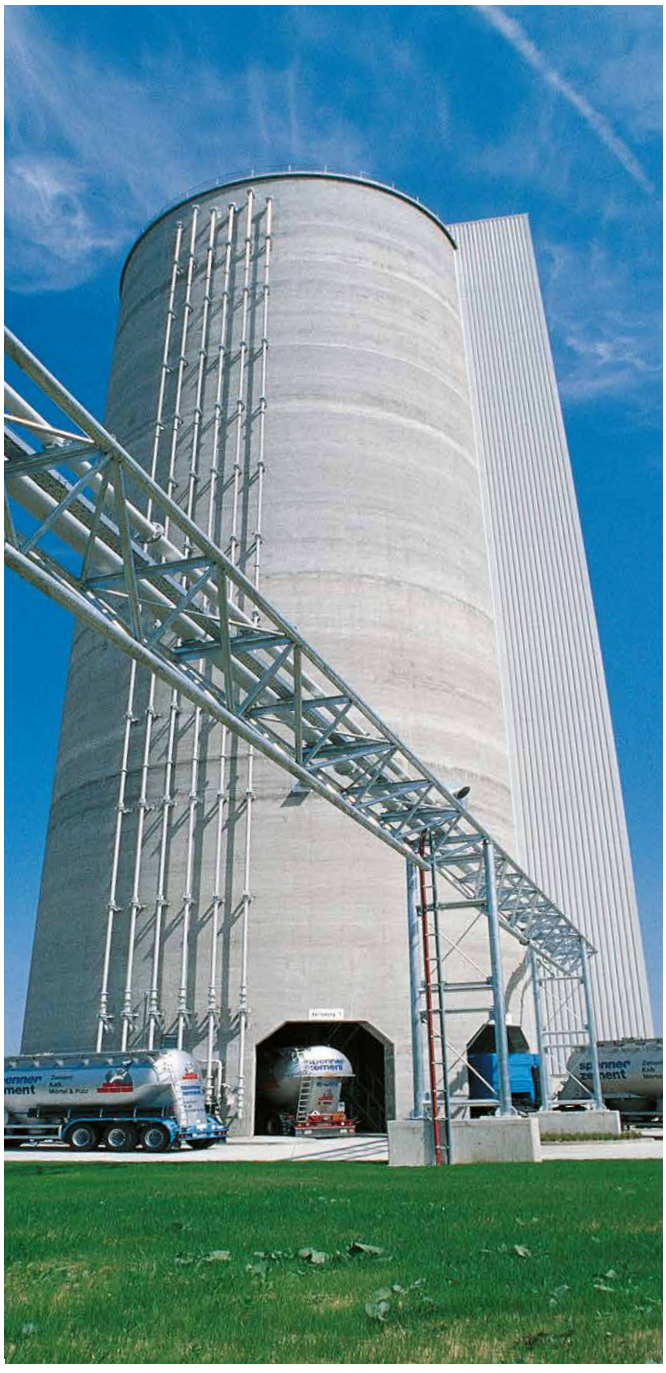
The original Central Cone Silo is in many different varieties – the most efficient silo for storage and dispatch of cement.

The design is mainly used for large storage silos in the cement industry and other mineral industries for cement, raw meal, fly ash, ground granulated blast furnace slag, alumina and similar products. Storage silos for these products have diameters of 10 m to 30 m and even more, with storage capacities up to 40,000 t and they require an efficient and trouble-free emptying.

The IBAU Central cone silo has proven to be extraordinarily successful. Today, more than 7,000 units are in operation by various customers around the world. In the original IBAU Design for large silos, the central cone forms a ring space on the silo bottom. This is divided into individual aeration sections that are slightly turned towards the discharge openings in the cone with a small inclination.

The central cone is used to accommodate the necessary machinery and equipment such as:

- Blowers,
- Filters,
- Electric control boards,
- Compressors,
- IBAU Pumps, etc.



Multicompartment silo with 15 compartments for Spenner Zement



Silo Plant CCB Gaurain, Belgium



Cement Australia Railton, Tasmania, Australia



Silo plant of Meridian Maplestar Sdn. Bhd., Malaysia



Raw meal blending silo for Dyckerhoff Zement



Cement storage silo for Cement Australia

Bulk material handling at aluminium smelter plants

Alumina Silos, Loading Stations, Loading- and Conveying- and Feeding systems, In-Plant Storage, Ship unloaders, Components

IBAU HAMBURG has proven itself to be a competent partner who offers the relevant technological expertise, advanced international experience and cutting-edge technology for such plants. As the base materials for molten-salt electrolysis fresh alumina (Al2O3) is required as well as aluminium fluoride (AlF6) and cryolite (Na3AlF6) as the fluxing agent.

Approx. 1.9 kg of alumina is necessary for 1 kg of primary aluminium. Accordingly, a 0.6 Mta plant uses approx. 1.15 Mta (million tonnes/annum) Al2O3 and approx. 0.01 Mta of the additive AlF6. Al2O3 is delivered by rail or ship. Transport by sea is generally via Handymax and Panamax ships with a capacity of up to 80,000 t.

The most important steps for bulk material handling include:

- unloading of ships or railway wagons
- mechanical or pneumatic material transport
- silo storage and loading equipment



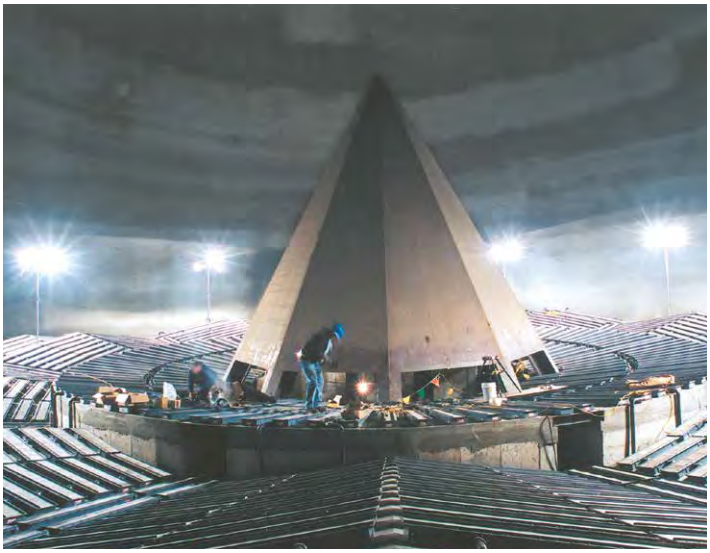
Alumina storage silos for Qatalum, Qatar



Material distribution via two-way valves into silos



IBAU Mechanical mixer



Central cone in segmental design



Silo floor with steel cone and central outlet



Road-mobile ship unloader with pneumatic conveying unit



Truck loading equipment with IBAU Simplex loader

Storage and conveying solutions for dry bulk material

Fly Ash silos, FGD-Product- and Dried Gypsum handling, Loading-, Conveying- and Feeding systems, Ship loaders and -unloaders, Components

IBAU HAMBURG is one of the worldwide leading companies supplying storage and conveying solutions for dry bulk material produced and used in flue gas cleaning systems of thermal power plants. IBAU HAMBURG not only supplies systems and components for power plants, but also complete customized solutions for handling fly ash, pulverized limestone, quicklime and gypsum.

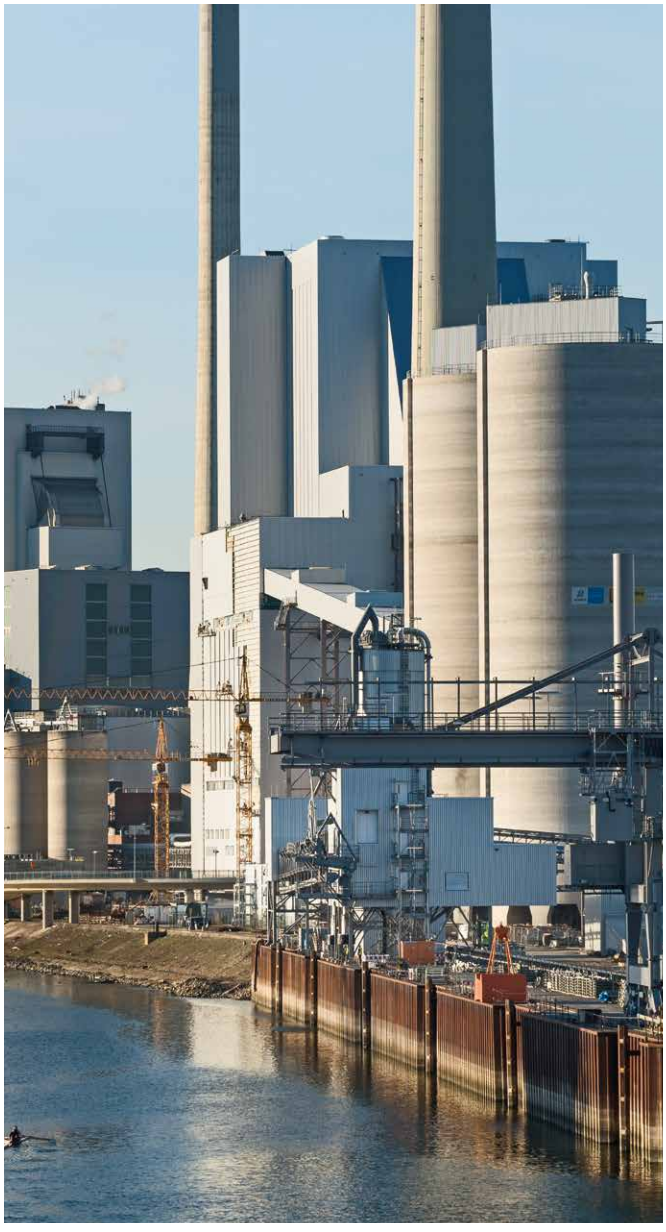
IBAU Components

Pneumatic conveying installations:

- Fluidslides
- Pressure vessels
- Screw pumps
- Rotary air locks
- Jet conveyors
- Pneumatic conveying with Fpipe
- Medium pressure conveying systems

Silo-, Storage-, Loading technology

- IBAU Large-storage silos
- Steel silos with aerated bottom
- Bulk loading systems for pressure vessel trucks, rail wagons and ships
- Discharge systems for pressure vessel trucks, rail wagons and ships
- Wet ash loading systems



GKM Mannheim, Germany, Limestone and fly ash storage silos, including ship loader



Conveying systems for Alstom PPC Florina, Greece



Limestone storage silo for ENBW Karlsruhe, Germany



RWE STKW Hamm, Germany, Fly ash limestone storage silos including truck and wagon loading stations



Fly ash processing, Castle Peak B, Hongkong



RWE Fly ash storage silos, Eemshaven, The Netherlands

Floating terminals, Mobile mini terminals, Silo plants, Dome systems, Flat storage systems

Terminals and marine cement terminals: Special solutions for special requirements

There is no terminal design applicable to all situations. Each concept has its advantages and disadvantages, which have to be weighed carefully against one another.

First of all it is necessary to consider the question of the anticipated service life.

- For a rapidly available, shortterm utilisation of only a few months the floating terminal is the most suitable technical solution.
- For medium – to longterm use with low handling capacities a mobile mini terminal can be advantageous.
- For medium – to longterm concepts with high handling capacities traditional silo plants, dome systems and flat storage systems come into consideration.

Each design can integrate mechanical and pneumatic equipment.

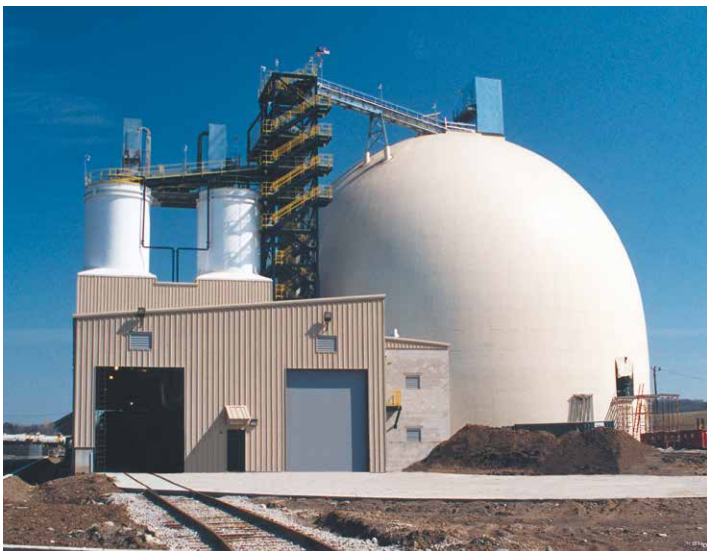
The best options have to be selected by knowing individual customer requirements and evaluating the specific handling costs per tonne of cement.



Cement Terminal for Cemex Maritima, Mexico



Cement carrier during loading at the Brunsbüttel terminal, Holcim, Germany



Dome silo station at Lehigh Cement Company, USA



Slag loading station for Civil and Marine Slag Cement, UK



Steel silos for Sacima, Port of Longoni, Mayotte, France



Cement Terminal for Golden Bay Cement, New Zealand



Silos and ship unloaders at Jurong Port, Singapore

Self-unloading cement carriers

Fully automated high loading/unloading rates with the efficient IBAU Midship tunnel system

The IBAU Midship tunnel concept
The trade of cement and similar products results in new ship capacities and more and more conversions of conventional bulk carriers into specialized cement self-unloaders.

Self-unloading cement carriers need no shore based ship unloading equipment and have a totally enclosed cargo handling system, using a fluidizing system in the cargo holds for cement unloading.

Cost reductions: Cargo holds with fluidization systems and IBAU Pumps
Up to now, the world fleet comprises about 300 units between 1,000 dwt and 60,000 dwt for seaborne cement transportation. Additionally, about 200 units exist in the <1,000 dwt range for lake and river transport.

In line with the market demand, IBAU HAMBURG has developed concepts for new ships as well as the conversion of bulk carriers into cement self-unloaders, which can be adapted for ship sizes up to 60,000 dwt.

Especially the cement carriers in the upper range require advanced systems, which are fully automated allowing to achieve high loading and unloading rates.



M/V Aotearoa Chief, cement carrier



M/V Cembrook during its crossing of the North Sea



The cement barge reaching the unloading station



M/V Furuvik built for Eureka Shipping



M/V Cemgulf, built for Brise Schifffahrtsgesellschaft mbH



Hold compartment with aeration panels



The IBAU Midship tunnel with the IBAU Pump

Highly efficient ship unloading technology

5.000 dwt class – 15.000 dwt class – 60.000 dwt class

Saving time and costs of energy with the smart screw conveyor technology

Since the 90s our company is one of the most important suppliers of ship unloaders for the cement industry. In addition, we took advantage of the decision to develop mechanical ship unloaders by applying the screw conveyor principle. Therefore, in comparison to the vacuum systems, 60 to 65 % of energy for the cement unloading is saved. According to the size of the ship and the terminal conditions, the following ship unloaders can be used:

- **up to 5.000 dwt** and 300 t/h unloading capacity
- **up to 15.000 dwt** and 400 t/h unloading capacity
- **up to 60.000 dwt** and 800 t/h unloading capacity

Self-supporting constructions are used for the capacity class up to 15.000 dwt. Supporting structures are needed for ship unloaders of the Handymax class with 20 m long unloading arms. The weight of ship unloaders installed on trailers is about 30 t, while bigger ship unloaders for Handymax ships weigh several hundred tons.









Example 5.000 dwt class: Ready for operation in 30 minutes

1 Road-mobile ship unloader in transport position. **2** Stabilization of the unit with outrigger and support jacks. **3** Moving the loading screw into the loading position, Supporting the loading screw on the landside outriggers. **4** Ready for operation.



High-capacity ship unloader with on-board pneumatic equipment



Port-mobile ship unloader for Tong Yang Cement Corp., Korea



Stationary ship unloader at Bamberg Harbour, Germany



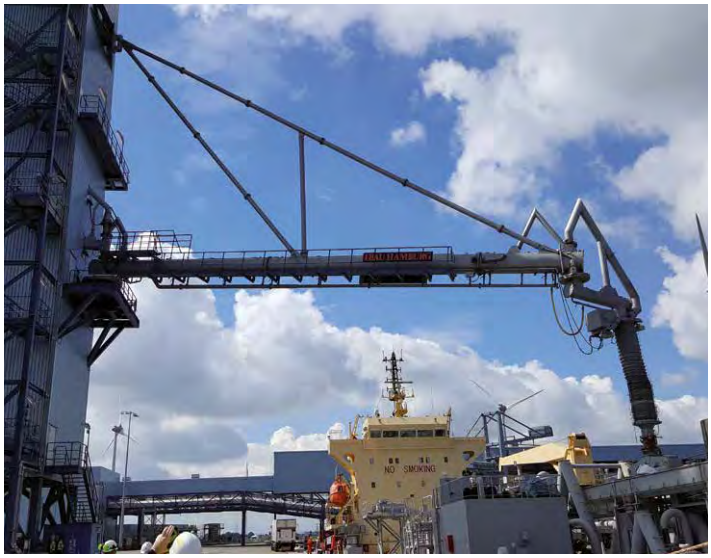
Port-mobile ship unloader for Colacem, Savona, Italy



Rail-mounted ship unloader for Decirom, Romania



Ship unloader on rubber tyres for Continental Florida



Fly ash ship loader for RWE Eemshaven, The Netherlands

With IBAU HAMBURG you are always in good company!

IBAU HAMBURG is an engineering company, well known as the inventor of the ORIGINAL CENTRAL CONE SILO

This was in 1975 the most important step towards the modern silo and mixing technologies.

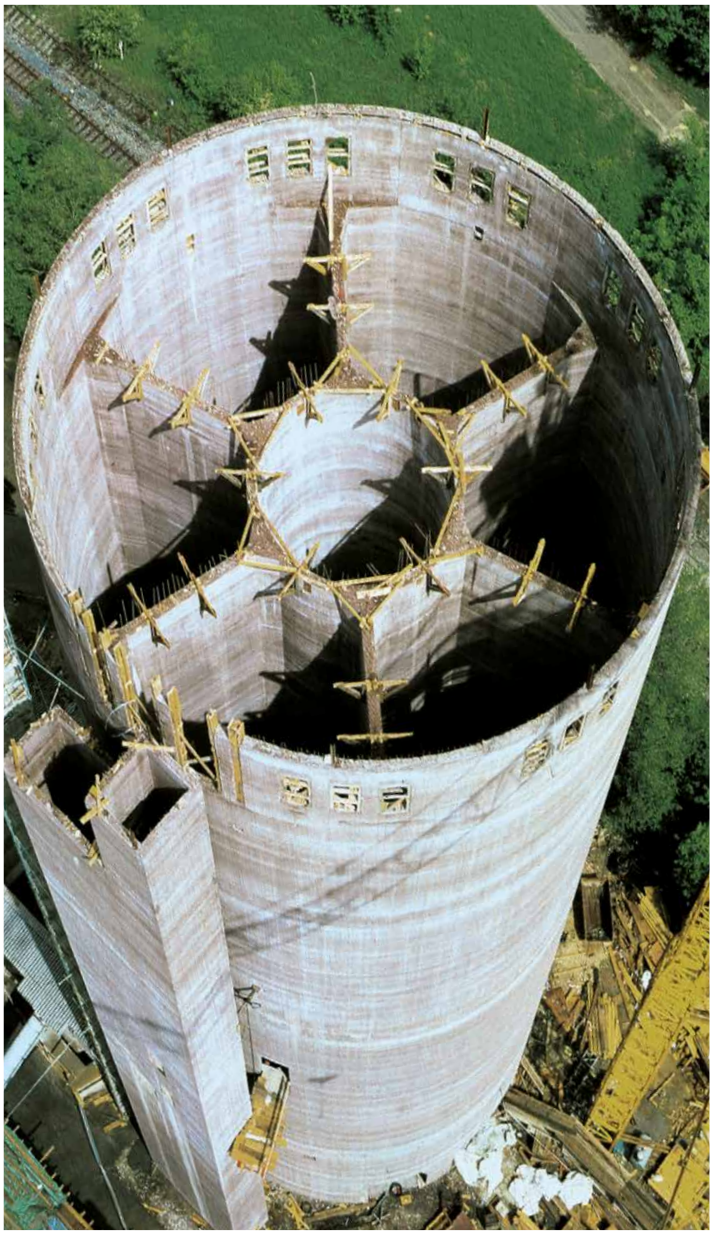
Consequently all the major suppliers have adopted this system.

More than 13,000 IBAU Silos of this type are working successfully worldwide.

As an innovative company, IBAU HAMBURG continually develops its products and components and undergoes continuous quality improvements:

- ECONOMIC.
- EFFECTIVE.
- EFFICIENT.

IBAU HAMBURG is certified with
ISO 9001, ISO BS OHSAS 18001, ISO SCC



Proven in all conditions: IBAU Multicompartment cone silos



Good engineering means: Permanent quality control and trouble-free operation

EPC-Contracting: Cement terminal for Cementa AB

Malmö, Sweden

The EPC-Contract, including:

- piling,
- civil works,
- steel structure supply and erection as well as
- electrical and mechanical supply and erection has been successfully commissioned in November 2011 without any delays.

IBAU HAMBURG successfully completed the 18 months construction and commissioning phase without any accidents.

The Cementa own ships can discharge at the terminal with up to 1,000 t/h.

The cement is fed to a multicompartment storage silo, which has a height of 90 metres, a diameter of 26 metres, consisting of 6 chambers with a total capacity of 30,000 tonnes.

The distribution takes place via three combined truck/wagon loading lanes, each with a capacity of 250 t/h.

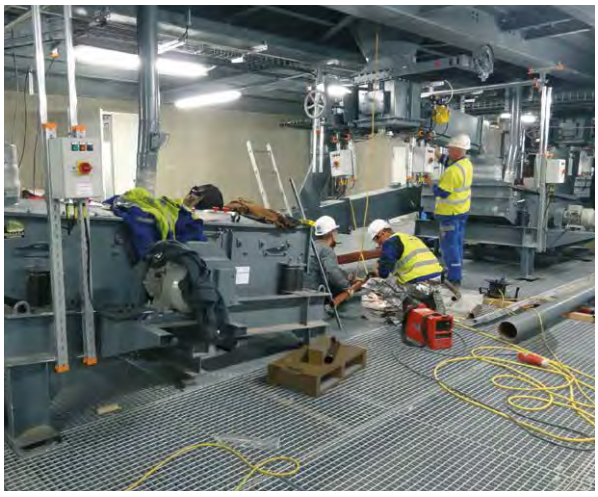
The whole Terminal can be operated 365 days/year and 24 hrs/day fully automatically.



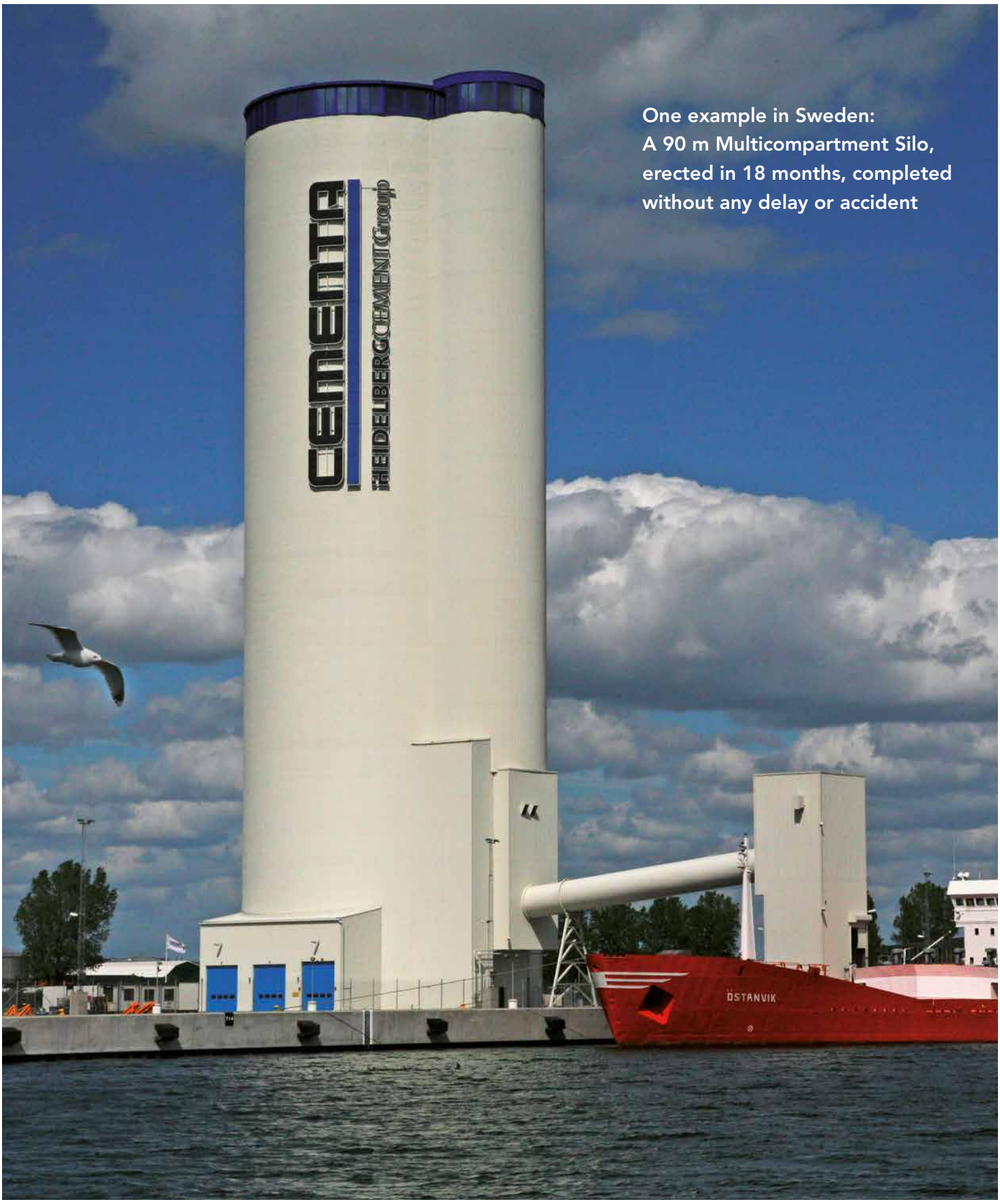
Civil works



Steel construction



Mechanical erection



One example in Sweden:
A 90 m Multicompartment Silo, erected in 18 months, completed without any delay or accident

One of the worlds largest Multicompartment silos (Diameter 26 m, 90 m high) for Cementa A.B / HeidelbergCement Group

Quality, made to measure, for trouble-free operations

Selection of IBAU HAMBURG key components.

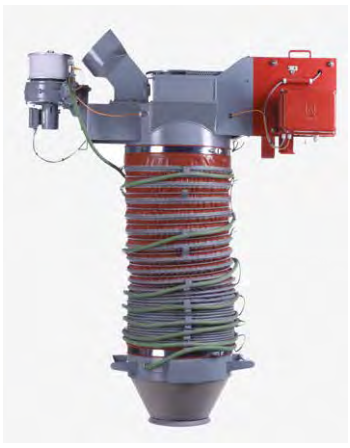
Components engineered by IBAU HAMBURG in connection with the IBAU plant engineering are the key for a well functioning plant.

Our scope of supply includes the planning of complex plants up to the development and construction of single components such as the

- Screw-type Pump
- Mixer
- Flow-control gate
- Cut-off gate
- Simplex loader
- Loading chute
- Lump crusher
- Roller-type discharger
- Jet conveyor
- Two-way valve
- Airlift

As an innovative company, IBAU HAMBURG continually develops its products and components and undergoes continuous quality improvements.





Bulk loading with IBAU Simplex loader and IBAU Loading chute



Two-way valve in a conveying line



View from inside the silo to the lump crusher



Silo feeding via roller-type bottom discharger





The original IBAU Pump: The screw-type pump with decisive advantages



Silo discharge with motor-actuated IBAU Flow-control gate



Functional test of an IBAU Flow-through mixer type IB-DM



IBAU Batch-type Mixer type IB-M

In our giant warehouses: Spare parts, Dispatch, Technical customer service, Training center and 24-hour Hotline



High stock availability of more than 75% for all necessary spare parts and components.



Most of the components are collated in the IBAU HAMBURG warehouse prior to dispatch.









In our training centre we can teach your personnel how to operate and maintain the equipment in a safer way and vastly improve the efficiency and reliability.









The 24-hour Hotline of our Technical Customer Service is always manned by qualified specialists 365 days a year, and they can be reached anywhere in the world at the following telephone number: +49 (0)2522-30-371

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