IBAU HAMBURG

Your efficient partner for modern and effective bulk material handling

PLANT DESIGN - ENGINEERING - EPC-CONTRACTING

CEMENT - THERMAL POWER - MINERALS

Central Cone Silos

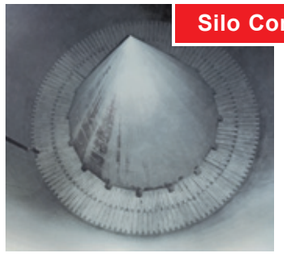
Single silos.
Ring silos.
Multicompartment silos.
From 2 to 22 chambers, diameters: 14 to 27 m.

EPC-Contracting

Piling.
Civil works.
Steel structure, supply/erection.
Electrical/ mechanical supply and erection.

Marine Cement Terminals

Floating terminals.
Mini terminals.
Silo systems.
Dome systems.
Flat storage terminals.



Silo Conversions

Economic modifications with advanced cutting-edge technology.

Cement Carriers

Advanced technology for self-discharging Cement Carriers including the Midship tunnel.

Components

The key for a well functioning plant: Components, all made to measure.

Ship Unloaders

Stationary or mobile types: From the 5,000 class up to the 60,000 class.

Spare Parts

High stock availability: Just-in-time supply of spare parts. After-sales Service.

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Z/12/15/IBAU In the Americas

IBAU HAMBURG

IBAU HAMBURG IN THE AMERICAS

A HAVER & BOECKER Company

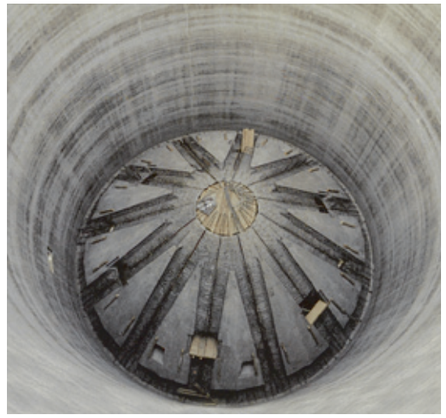
Central Cone Silos

When IBAU HAMBURG was established as an engineering company in 1975, we started with an immediate success, the CENTRAL CONE SILO.

At that time there were only very few people who believed that this type of silo could succeed.

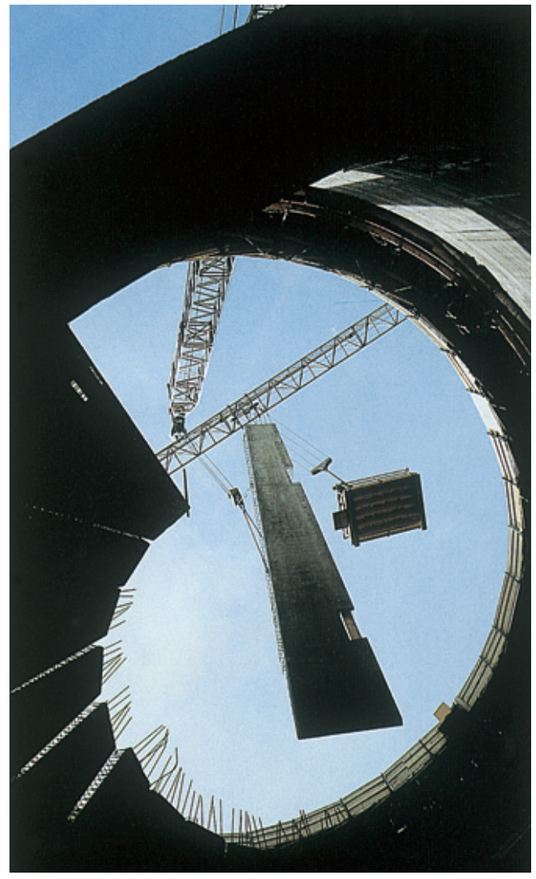
Now, after more than 30 successful, years, the IBAU CENTRAL CONE SILO can rightly claim to have had a major impact on the silo technology related to the storage and retrieval of powdered mineral bulk products.

In the pictures on the right the different steps of a silo building are shown, i.e. from the start of building the silo to its completion and its start-up.



Central cone during erection

Central cone after completion



Placing of the concrete cone segments

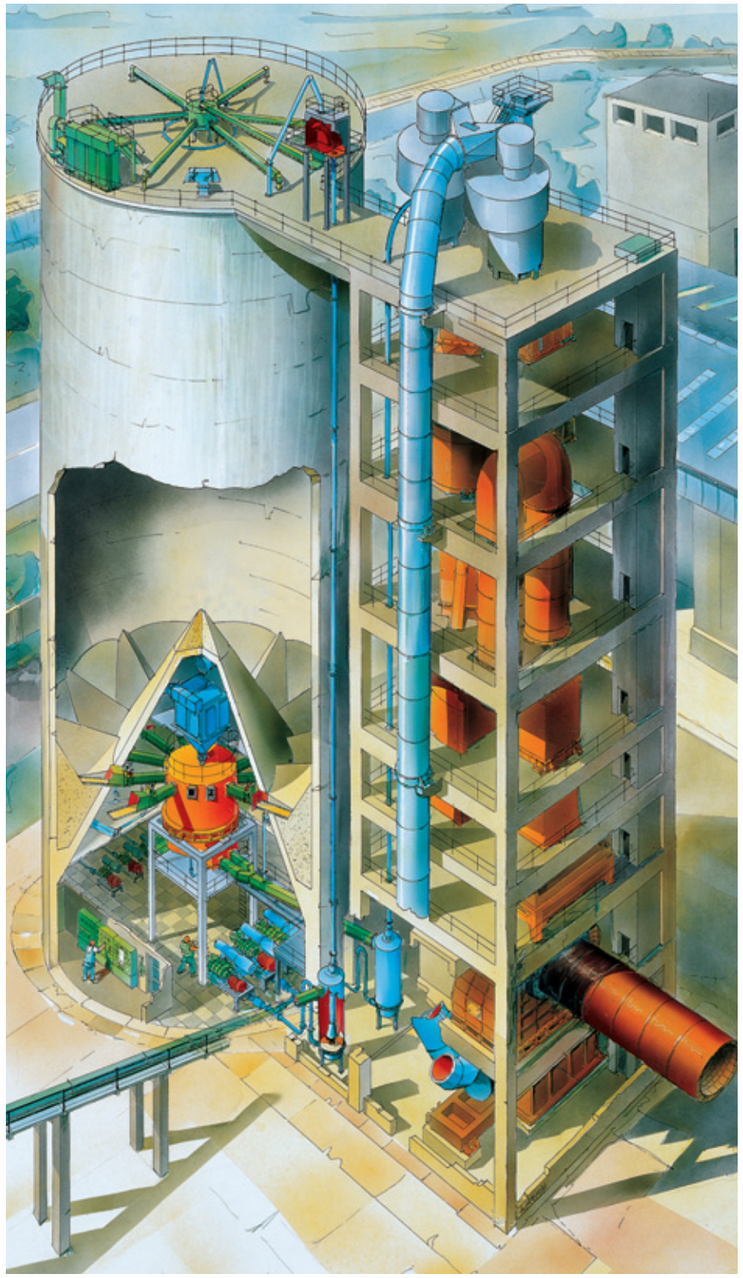
Aeration section and silo outlet

Central cone silo after feeding

Emptying degree > 99%

Inner view of a central cone silo of 30 m (98,5 ft) diameter

Raw Meal Silos



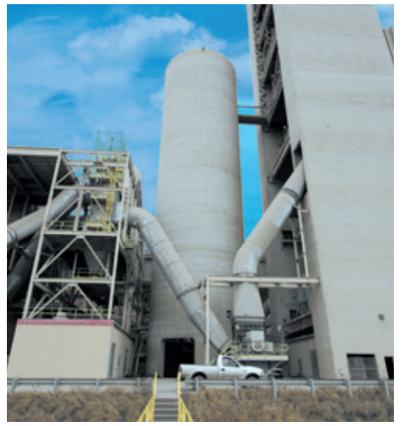
IBAU RAW MEAL SILOS are, in most cases, double purpose silos.

They serve as a combined storage and blending silo. The discharge technique of the IBAU CENTRAL CONE SILO simply creates a blending effect.

Expensive homogenizing silos with a high power consumption are not required, provided there is a sufficiently working preblending system for crushed limestone.

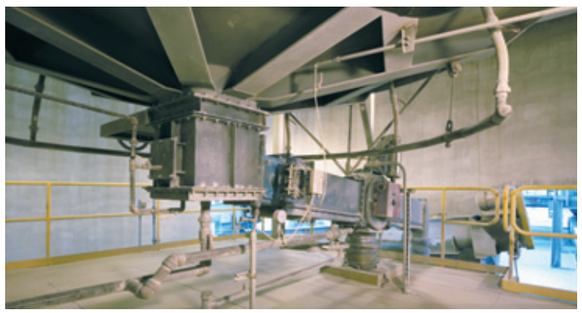
The pictures on the right show the raw meal silo for SIGNAL MOUNTAIN CEMENT, Chattanooga, Tennessee, with a silo diameter of 14 m (46 ft) and a total silo capacity of 4000 m^3 (141,000 cu.ft).

Plant view of SIGNAL MOUNTAIN CEMENT COMPANY, Chattanooga, Tennessee



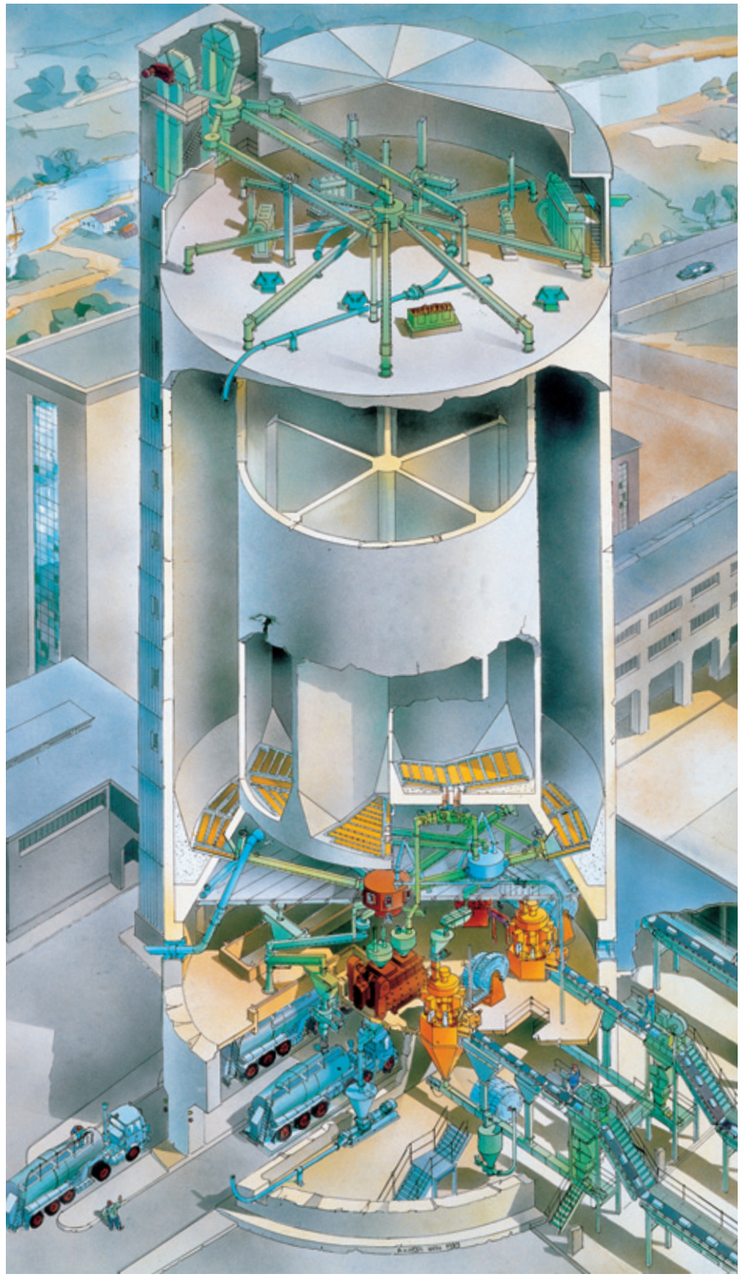
Raw meal blending silo

View from the preheater tower



Silo discharge and preheater feeding

Cement Silos



IBAU CENTRAL CONE SILOS – in many different varieties – are the most efficient silos for storage and dispatch of cement.

The central cone is used to accommodate the necessary machinery and equipment such as: blowers, filters, electric control boards, compressors, IBAU PUMPS, etc.

Silos with a raised bottom – built as drive through silos – are favoured, because no intermediate transport is required to feed the packer or the bulk loading facilities.

Different examples of cement plants with rail car unloading facilities and bulk loading stations are shown in the pictures on the right.

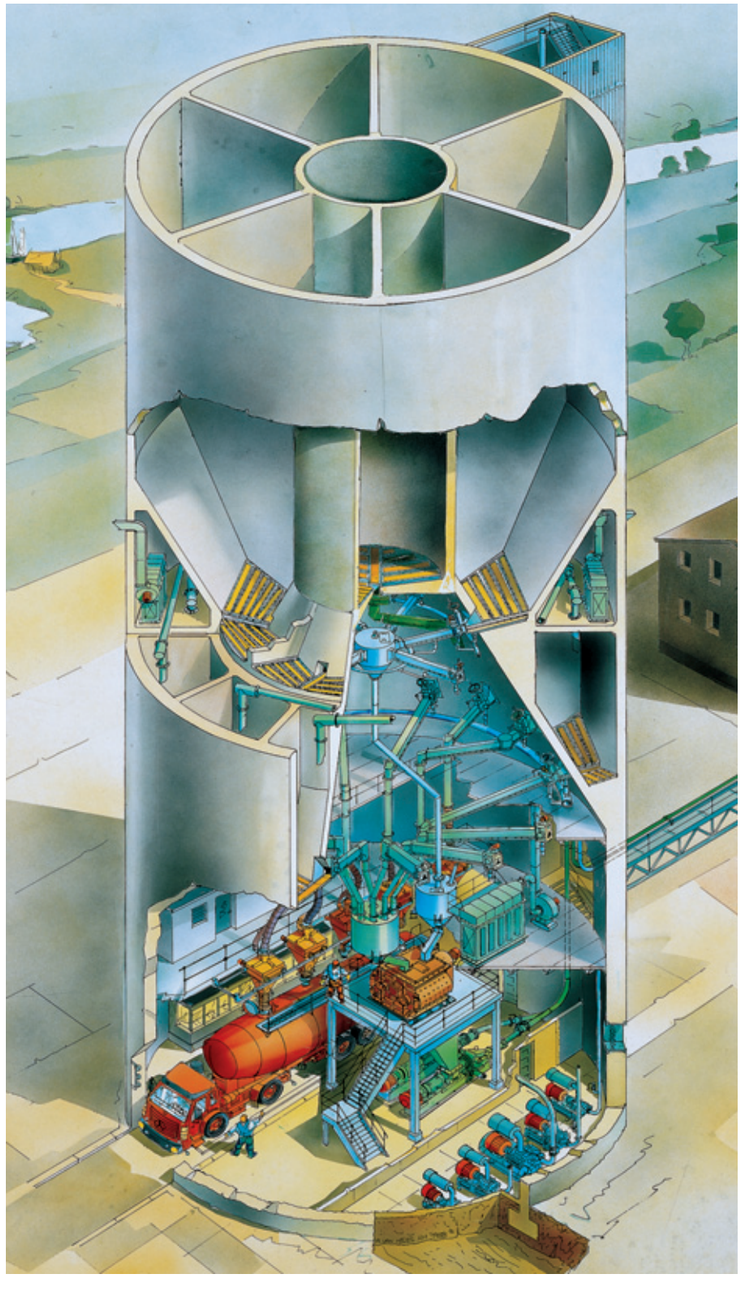
Cement terminal for GCC, Denver, Colorado

CEMEX, Maritima Terminal

Truck loading at Denver Terminal

Cement silo for LEHIGH CEMENT, Union Bridge, Maryland

Multi-Compartment Silos



The IBAU CENTRAL CONE SILO has, since it was first built in 1977, constantly developed, leading up to the huge multi-compartment silos of today.

MULTI-COMPARTMENT SILOS can be more than just a silo, they can be a major part of a production plant for a variety of building materials.

The production of special elements requires mixers, bin weighing stations, and finished-product transport equipment, all placed under the cone.

On the right can be seen the multi-compartment silos for GCC located in Samalyuca, Mexico, with 3 compartments, equipment and bulk loading facilities for road and rail carriers.

Batch type mixer

Material transport after the mixer via IBAU PUMP

Top view of a multi-compartment silo

Multi-compartment silo for GCC, Samalayuca, Mexico

Special Applications

Apart from the standard aspects of our business, IBAU also supplies elements or plants which are specifically designed to meet the special requirements of our customers.

This can, for instance, be a plant for the conveying, storage and bulk loading of paintdust, or the conversion of existing, inefficient silos for the storage of filterdust or fly ash, etc.

A special application is the coal dust storage in Union Bridge, Maryland, for LEHIGH CEMENT as well as the fly ash storage and handling equipment. For GCC, Denver Terminal is shown a hydraulic operated rail waggon discharge station.

Lump crusher at silo outlet

Coal dust storage for LEHIGH CEMENT

Fly ash silo for LEHIGH CEMENT, Union Bridge, Maryland

Rail waggon discharge station for GCC, Denver, Colorado

Shiploaders and -unloaders

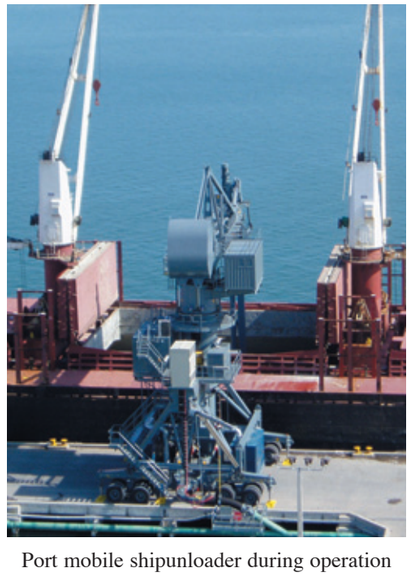
SHIPLOADERS AND -UNLOADERS for various kinds of pulverized bulk goods are another speciality of the IBAU product range. They can either be of the stationary or

IBAU equipment is custom-built to suit the specific conditions determining each project (i.e. product variety, loading capacity, transport distances and local market conditions). Standard parts and equipment are the main components of these units. They can be powered by diesel engines or receive electric power from local sources.

A high capacity shipunloader such as the IB 800 (depicted here) even unloads a large bulk carrier easily.

Shipunloader for CONTINENTAL FLORIDA MATERIALS, Port Canaveral

Inlet feeder



Port mobile shipunloader during operation

Connection between unloader and pneumatic conveying pipeline

Cement Carriers

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 completely enclosed cargo handling system, using a fluidized system in the cargo holds for cement unloading.

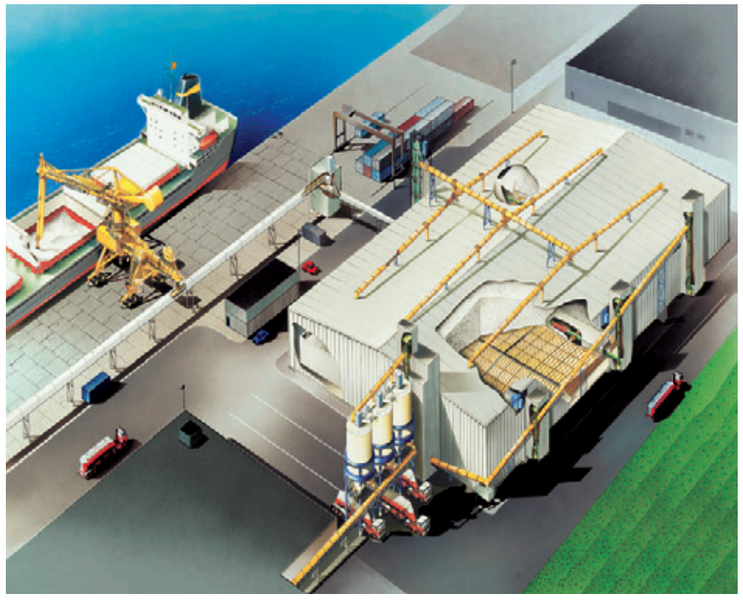
One example is given by the convertion of the M.V. GLEN VINE into a self-unloading cement carrier with a storage capacity of 60,000 dwt. For discharge, 7 IBAU PUMPS are installed. The total unloading capacity is approx. 1000 t/h.

Cement Carrier M.V. GLEN VINE

Cargo hold with aeration panels

Midship tunnel with screw conveyor

The IBAU PUMP in the midship tunnel



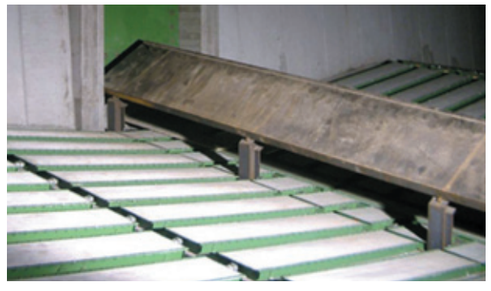
MARINE TERMINAL concepts by IBAU HAMBURG are based on a variety of advanced and reliable mechanical and pneumatic system components. Technical competence and engineering from a single source contribute to finding the most cost effective technical solution for each project and to ensure the subsequent functioning of the entire terminal system.

For ANTILLES CEMENT CORPORATION a discharge system has been designed with a bulk loading station and a special type of flat storage hall with a total capacity of 30,000 t.

In Providence, Rhode Island, IBAU HAMBURG built a dome silo with pneumatic discharge system for LEHIGH CEMENT.

Flat storage hall for ANTILLES CEMENT CORPORATION at San Juan Harbour, Puerto Rico

Truck loading station at a flat storage hall for ANTILLES CEMENT



Aeration panels in a flat storage hall

Dome silo for LEHIGH CEMENT