

# NEWS

 PRECAST CONCRETE PLANTS  INTRALOGISTICS SYSTEMS  SHUNTING SYSTEMS  SERVICES

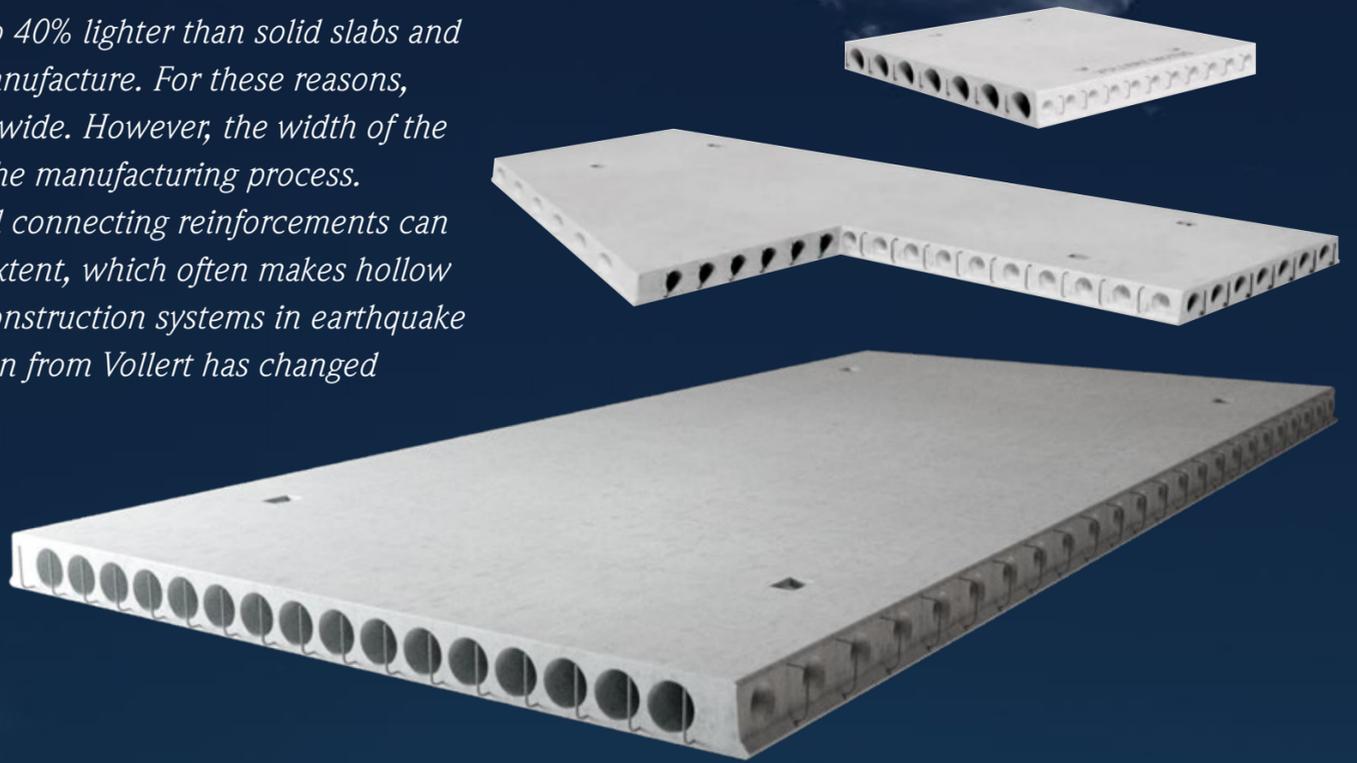
PRECAST CONCRETE PLANTS

## NEW METHOD FOR PRODUCING PRESTRESSED HOLLOW-CORE SLABS [> page 2](#)

 **FINNISH BUILDING MATERIALS SPECIALIST** RAKENNUSBETONI- JA ELEMENTTI EXPANDS ITS CAPACITIES IN PRODUCTION OF SERIALLY PRE-FABRICATED BATHROOM MODULES. HIGH-PERFORMANCE ROOM MOULDS ENSURE WATERTIGHT DAMP CELLS. [> page 7](#)  **GIGA COATING GMBH** RECENTLY BUILT A COMPLETELY NEW SURFACE TREATMENT PLANT IN TWIST. HERE, UP TO 15.7 M LONG AND 9 T HEAVY LARGE PARTS ARE NOT ONLY COATED, BUT ALSO BLASTED, DIPPED, SWIVELED AND HEAT TREATED IN HANGING FURNACES. [> page 8](#)

# MOTUS CONSTRUCTION SYSTEM OFFERS MANY NEW OPTIONS

*Hollow-core slabs are up to 40% lighter than solid slabs and require less concrete to manufacture. For these reasons, they are widely used worldwide. However, the width of the slabs is strictly limited by the manufacturing process. Reinforcement meshes and connecting reinforcements can only be used to a limited extent, which often makes hollow core slabs unsuitable for construction systems in earthquake regions. Now, an innovation from Vollert has changed all that.*



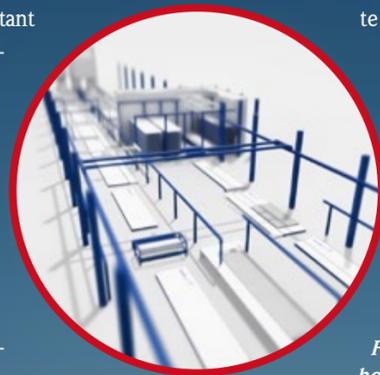
Modern precast architecture is changing building methods all over the world. New residential and office complexes, universities, hospitals, logistics centers and multi-story car parks are emerging in the growing megacities of Asia, South America and the rest of the world with industrially prefabricated walls, slabs/floors and special elements. However, using this building system economically in high-risk seismic zones as well requires new technologies.

## NOMINATED AS A BAUMA INNOVATION AWARD FINALIST

In 2015, Vollert, together with the construction company BauMax, developed a special construction system for earthquake-prone Chile, based on solid concrete elements. At bauma 2019, an earthquake-resistant construction system with prestressed hollow-core slabs has now been presented for the first time. These hollow-core slab elements are no longer produced in an extrusion or sliding mold production process, but in a pallet circulation system. Each hollow core slab is manufactured to the precise geometry and dimensions required, without the need for cutting, instead of the conventional post-manufacture sawing of an over-size slab to size on the construction site. Reinforcement meshes and connecting reinforcements produce a friction-locked earthquake-proof connection of the slab parts later on the construction site. In addition, the larger slab width reduces the laying time and the crane lifts on the construction site. It is also possible to install additional lifting rings, enabling the hollow core slabs to be lifted more easily. Up to now, the lifting process has only been possible with special lifting equipment (lifting tongs), which represent a considerable accident hazard due to the risk of falling loads.

The hollow-core creators are only inserted temporarily during the concreting process. This means that the number and geometry of the hollow cores can be adjusted extremely flexibly, which is not possible in continuous casting. Electric, water or ventilation shafts or special built-in parts can also be installed. Structural engineers or TGA planners thus have completely new options than with the conventional prestressed hollow-core slabs. The patent-pending MOTUS manufacturing process has been nominated for these reasons as a bauma Innovation Award finalist.

The Uzbek company DSK Binokor will shortly be producing up to 500,000 sq.m of wall and floor space annually on the basis of the new construction system, comprising an intelligent combination of special sandwich concrete elements, solid concrete elements for the interior walls and the new hollow-core slabs. Residential buildings of up to 12 stories are currently in the further planning phase in close cooperation with Vollert civil engineers.



*For the first time, prestressed hollow-core slabs can be produced in a circulating system using the patent-pending MOTUS manufacturing process*



*This QR code leads to the MOTUS movie*

**DEAR  
READER,**



---

*bauma 2019 with more than 600,000 visitors in Munich was for 7 days the hot spot of the construction and building material machinery industry in April. We also welcomed numerous customers and partners from all over the world, who not only experienced virtual in 360° the most modern machine technology close up, but also learned about the novel **MOTUS building system**. A real innovation step in the production of earthquake-resistant hollow-core slabs. Find out more in this issue of our customer magazine.*

*In addition to innovation, dialog and trust are important cornerstones for us. **Mercedes-Benz** has relied on our know-how for many decades. At the beginning of the 1990s, Vollert had already delivered the first high-bay racking system to the press shop of the car manufacturer in Bremen. Gradually, a high-bay warehouse for coils and other intralogistics systems for fully automated material supply to the presses followed. The current project includes a high-bay warehouse for sheet blanks storage. But we have also proven our technological lead over and over again in the transport of large components, weighing several tons, in paint shops. In Grevenbroich, **Giga Coating** pre-treats and powder-coats truck trailer components weighing up to 9 tonnes. Vollert technology ensures the right circulation.*

*We always see ourselves as an accelerator of success for our customers: **Engineering Your Success**.*

*I hope you enjoy reading this issue.*

A handwritten signature in blue ink that reads "Hans-Jörg Vollert". The signature is fluid and cursive, written in a professional style.

*Yours*

*Hans-Jörg Vollert*

---

# CLEAR & BRIEF

## PRECAST CONCRETE PLANTS

# KERKSTOEL 2000+ PRODUCES COMPLEX PRECAST CONCRETE PARTS

 There are new interesting precast projects in Europe. Kerkstoel 2000+ and Vollert with Prilhofer Consulting are currently working together in Belgium a highlight in the industrial **series production of architecturally sophisticated precast concrete parts**. Various precast elements of the Kerkstoel Group can be found in modern residential and office complexes, but also in shopping centres, railway stations and airports. “This ranges from Ericsson headquarters in Zaventem, Eurostation II in Brussels to the **Justice Building in Antwerp**.” Pascal Kerkstoel describes a “**real architectural highlight**”.

In order to continue setting trends, the Belgian building materials specialist is investing in a production facility for solid, double and sandwich walls in Grobbendonk for a wide range of geometries and customer designs. This means that precast elements with very different degrees of complexity can be produced in the same period of time, and this without reducing the plant productivity.



*This QR code leads you to the report on our website.*



*Justice building in Antwerp ©Kerkstoel 2000+ Contractor: MBG*



## SHUNTING SYSTEMS

# LOADING GRAVEL ENVIRONMENTALLY FRIENDLY



 Tons of bulk material are moved daily in the quarry of the French building materials specialist **Eqiom in Bayel**. At the heart of the logistics concept for shipment of gravel to Europe-wide customers are fully automated shunting processes. A Vollert KR 100 shunting robot moves the wagons placed in readiness through the filling station over a distance of about 500 m by use of a cable. Material flow and maneuvering speed are bidirectionally tuned by radio signal and target and is matched in real time. **Up to 16 waggons with a train mass of 1,500t** become even and pulled precisely through the filling station.



*This QR code leads you to the report on our website.*

## INTRALOGISTICS SYSTEMS

# SPECIAL CRANE FOR HAI ALUMINUM EXTRUSION PLANT

 Hammerer Aluminium Industries is investing in a high-end production line at its site in Ranshofen, Austria. The aim is to produce aluminum profiles of the highest quality for the promising field of **e-mobility**. With an automatic crane and a fully automated buffer store, Vollert ensures damage-free material flow between the existing and expanded production facilities.



*This QR code leads you to the report on our website.*



## ON A PERSONAL NOTE

## FOLLOW US!

> With our printed customer magazine we offer you now already in the 19th issue current information to exciting projects from South America to India and the latest innovations in machine technology. Between the issues you can also follow us on our social media channels, give feedback and communicate actively with our experts.

That's why you will not get it on Twitter, LinkedIn, Xing or Instagram just the last news in near real time, but we are happy too through a lively exchange with you on the trends and top topics the industry. **Follow us!**



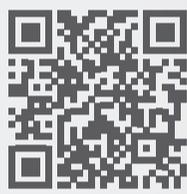
<https://www.xing.com/companies/vollertanlagenbaugmbh>



<https://www.instagram.com/vollertanlagenbau/>



<https://www.linkedin.com/company/vollert-anlagenbau-gmbh?trk=>



<https://twitter.com/vollertanlagen>



<http://www.youtube.com/VollertAnlagenbau>

## EVENTS IN 2019

**CONCRETE SHOW  
SOUTH AMERICA**

14.08. – 16.08.2019  
São Paulo, Brazil  
Booth 5 – 51

**KAZBUILD**

04.09. – 06.09.2019  
Almaty, Kazakhstan  
German Pavilion

**ALUMINIUM USA**

12.09. – 13.09.2019  
Nashville, USA  
Booth 907

**TRAKO 2019**

24.09. – 27.09.2019  
Danzig, Poland  
German Pavilion

**BAKUBUILD 2019**

22.10. – 25.10.2019  
Baku, Azerbaijan  
German Pavilion

**PHILCONSTRUCT 2019**

07.11. – 10.11.2019  
Manila, Philippines



PRECAST CONCRETE PLANTS

# MODULAR BATHROOMS EFFICIENTLY AND VARIABLE PRODUCED

*Finnish building materials specialist Rakennusbetoni- ja Elementti expands its capacities in production of serially pre-fabricated bathroom modules. High-performance room moulds ensure water-tight damp cells.*

 Paving and concrete bricks for the horticultural and landscape gardening, room cells for civil defence shelter or AKO hollow-core separation walls are produced in Finnish Hollola, near Lahti. **“Many of our high-quality special concrete products are found in building projects across Scandinavia today. We say**

**that quite proudly”** reports Sami Konsti, General Manager of building material specialist Rakennusbetoni- ja Elementti. **“Demand in modular room cells specifically is increasing right now.”** The decision to expand the capacities in production of modular, pre-produced sanitary modules was made in 2017.

## HIGH-PERFORMANCE MOULDS FOR ROOM CELL PRODUCTION

Serial pre-production of the bathroom modules will use a new L-angle battery mould and a room cell mould in future. For the basic module with slab and side walls, the room cell mould has a square 6 mm thick steel-covered core and movable L-shaped side moulds. The floor mould is height-adjustable. Up to four

differently sized inner modules up to 3.60 m high can be produced at the same time. For this, the L-walls can be moved sideways by up to 24.50 m. To avoid tripping hazards, the running rails for electrical movement are recessed into the base. A sophisticated hydraulic system tensions the L-walls after supplying and absorbs the hydrostatic pressure when concreting. For optimal compaction of the fresh concrete in the chambers, high-frequency vibrators are installed for extreme compaction. Heating spirals integrated in the inner core and side moldings ensure short hardening times. The installation pattern and system developed by Vollert ensures heating of the concrete elements at minimal energy expenditure. The heating pipes are installed according to the Tichelmann principle, which leads to constant water pressure and always consistent volume flows.

In order to supplement the basic module into a complete room cell, the inner walls are produced on an L-angle battery mould. The L-battery mould is made of 6 separate, steel-paneled molding chambers with a total chamber length of 16.5 m. The outer and bulkhead walls have a siderail that can be customized in height and inclination. Each wall can be moved with an integrated electro motor-powered circulation chain. Special reinforcements and interim shutter profiles can be installed easily, as in the basic module, along with insulations, window and door cut-outs. The walls are hydraulically clamped with coupling rods during concreting and compaction. The high-frequency vibrators are integrated fully reversibly in the walls of the battery mould, making their effect 3-dimensional and active concurrently in two chambers.

Rakennusbetoni- ja Elementti



Accessible Avaava Elementtikylpyhuone bathroom module

## WITH A VIEW TO THE FUTURE

The accessible Avaava Elementtikylpyhuone bathroom module is a fully mature building element. Tests have shown that it is entirely water-tight and resists even high humidity for a long time. **“All production processes, including sanitary and electrical installations, take place industrially and in a controlled factory environment. Outer influences such as weather, or a complex construction site situation, are excluded from the beginning”** Sami Konsti explains.



State-of-the-art bathroom modules are produced by the use of room cell moulds

PRECAST CONCRETE PLANTS

# STEPLESS 1040: THE EFFICIENT SHUTTERING SYSTEM



*Covering a maximum of different shuttering combinations with just 10 longitudinal stops is now possible with the new Stepless 1040 modular system from Vollert.*

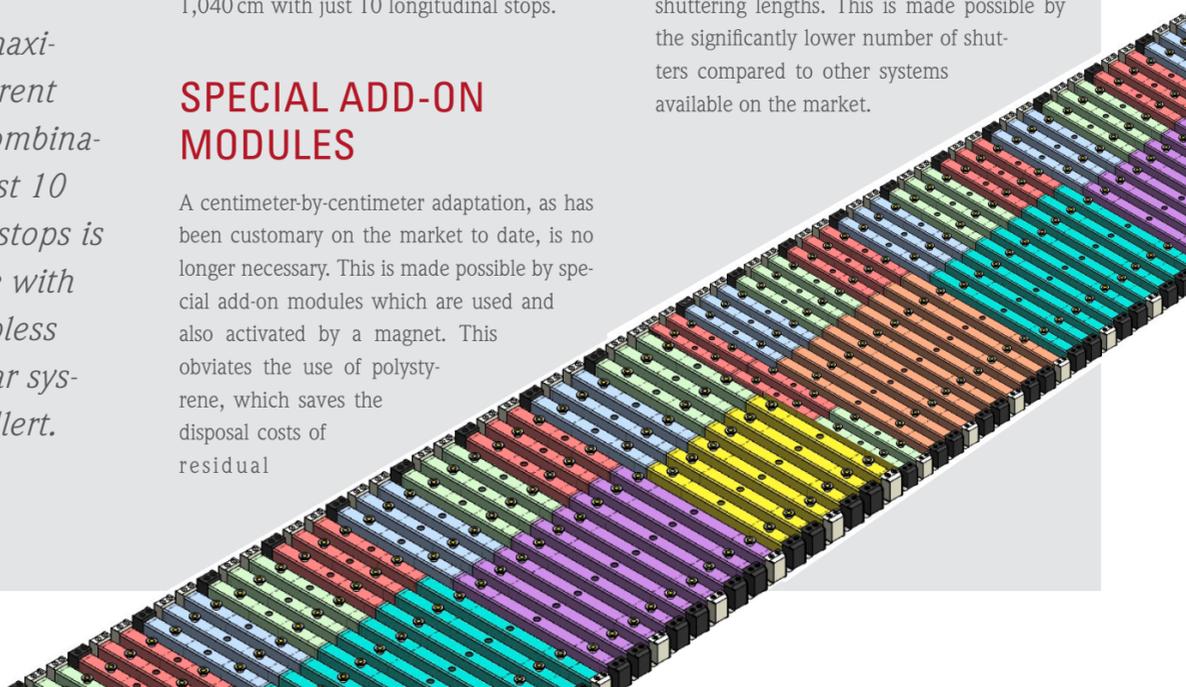
 Shuttering systems with integrated magnet automation have established and proven themselves worldwide in the production of precast concrete elements. The shuttering profiles can be adapted to customer-specific requirements for all geometries, heights, chamfers, sloping edges, bearing and robot supports as well as bracing plates. With the new Stepless 1040 series from Vollert, it is now possible for the first time to achieve a maximum of different shuttering combinations from a shuttering length of 1,040 cm with just 10 longitudinal stops.

## SPECIAL ADD-ON MODULES

A centimeter-by-centimeter adaptation, as has been customary on the market to date, is no longer necessary. This is made possible by special add-on modules which are used and also activated by a magnet. This obviates the use of polystyrene, which saves the disposal costs of residual

material and prevents polystyrene imprints on the metal surfaces. The longitudinal shutters do not have a negative bevel at the front, as the bevels of the transverse shutters are covered by the add-on modules. As is customary, the height of the shutters can be individually adjusted from 50 to 100 mm depending on the concrete element.

The newly developed Stepless 1040 shuttering system makes it possible to significantly reduce the storage capacities of different shuttering lengths. This is made possible by the significantly lower number of shutters compared to other systems available on the market.



## INTRALOGISTICS SYSTEMS

# FOURTH SHEET METAL BLANKS HIGH-BAY WAREHOUSE FOR AUTOMOBILE PRODUCTION

*Vollert erects a new material flow system with high-bay warehouse. It is already the fourth warehouse of the intralogistics specialist at the Mercedes-Benz press shop in Bremen.*



*As an intermediate buffer, the warehouse has 135 rack spaces or 270 rack spaces for smaller pallets with a total capacity of 2,700 tons.*

## INTRALOGISTICS SYSTEMS

# PLEASE BLAST, DIP, POWDER A 100 TIMES

*Truck trailers are useful, but also big and heavy. This does not make their transport in the paint shop easy. Giga Coating GmbH recently built a completely new surface treatment plant in Twist.*

Whether semi-trailers or trailers - the demand for truck trailers in Europe is high. At System Trailers Fahrzeugbau GmbH in Twist in Lower Saxony, more than 3,500 of these leave the production line every year. The specialist designs and manufactures on behalf of well-known manufacturers. *“We had been thinking for some time about taking over also the coating of components ourselves”* explains Ralf Saatkamp, Managing Director of System Trailers Fahrzeugbau. The dimensioning of the new coating plant was planned with buffers for external orders and at the same time the subsidiary Giga Coating was set up as a contract coater.

At the heart of the system are two cathodic dip painting furnaces and two powder kilns, around which the blasting cabin, dipping basin, buffer stations and powder booths are grouped. Seven manipulators with spans up to 18m pick up the goods carriers for lateral travel and distribute them to the workstations. In the longitudinal direction, stationary friction wheel drives convey the workpieces. Buffer positions between the areas allow different dwell times and also allow individual workpieces to be pulled forward and overhauled as required. *“Another special feature of the*

*system is that the goods carriers pass through all work stations”* reports Jochen Keinath, Senior Sales Manager at Vollert. *“The product carriers are not exchanged after dip painting, but accompany the workpiece along the entire path from cathodic dip painting until into the furnaces.”*

At Giga Coating the trailer parts can reach dimensions of up to 15.70x2.70x1.50m. After these have been turned in a belt turner to remove residual blasting material, a loading manipulator from Vollert takes them over. The stator racks with the workpieces are moved to two buffer locations and picked up by two dip manipulators. These serve a length of 55m 12 tanks for pre-treatment and for cathodic dip painting.

## HANGING FURNACES

To avoid heat loss as much as possible, the ovens are suspended. Since hot air rises and a lot of heat would escape when the workpieces are moved in and out, the furnaces are closed at the top and on the sides and are operated from below instead. A total of two KTL and two powder furnaces are

For the intralogistics specialist Vollert, this is already the fourth time it has been implemented in the press shop in Bremen since the 1990s. At that time Vollert had delivered the first high rack system. Gradually, a high-bay warehouse for coils and other intralogistics systems for fully automated material supply to the presses followed. The current project includes a high-bay warehouse for sheet blanks storage. As general contractor, Vollert supplied and installed the system technology before and after the press for the fully automated storage and delivery and servicing of the sheet metal blank load carriers weighing several tons and the pressed parts racks. Load transfer units, lift trucks and an automated guided vehicle (AGV) ensure smooth interlinking right through to acceptance of the finished components at the end of the press line.



There are load carriers in two sizes in circulation, which are transported either individually or in pairs to the warehouse via a transfer trolley and a pair of lift trucks. Centering stations and position controls ensure the correct alignment of the load carriers in circulation. A stacker crane stores the stacks fully automatically in the high-bay warehouse and, in the next step, prepares them for delivery to the new press line on request. Four inputs and outputs are available for this purpose. As an intermediate buffer, the warehouse has 135 rack spaces or 270 rack spaces for smaller pallets with a total capacity of 2,700 tons. The transport is carried out by an automated guided vehicle (AGV). A load transfer unit with gripper unloads the AGV, supplies the press and picks up empty load carriers for return transport to the high-bay warehouse.

Analogous to the existing press line, Vollert also takes care of the fully automated acceptance of the finished sheet metal parts at the end of production. For this purpose, the logistics system transports empty transport containers from below to robot-controlled stacking stations. The transport takes place via longitudinal and transverse roller conveyors as well as corner transfer units. A total of eight lifters work in parallel.

## AUTOMATED MATERIAL FLOW IN THE PRESS SHOP

The Vollert intralogistics system provides empty load carriers on a cutting press for stacking the blanks. The blanks can be stacked in different sizes and thicknesses up to a weight of 20 tons.

installed in parallel next to each other. A manipulator guides the workpieces into the ovens from below, lifts the parts weighing up to 9 t to a height of 10m and hooks in the goods carriers.



*At Giga Coating the trailer parts can reach dimensions of up to 15.70x2.70 x 1.50m.*