

Weckenmann Anlagentechnik GmbH & Co. KG, 72358 Dormettingen, Germany

# Austrian building contractor Habau invests in the future

The Habau Group, a family-owned building contractor, can look back on many years of successful growth and is one of the top 4 in the Austrian building industry. Despite its size, the company still belongs exclusively to the Halatschek and Heindl families. Through various company acquisitions and the establishment of new companies, the Habau Group is represented today with its own companies or through holdings not only in Austria, but also in Germany, the Czech Republic, Hungary, Romania, Slovakia, Belarus, Russia and Sweden. The company was established in 1913 and its fields of activity are building construction as well as underground, pipeline and tunnel construction. The Group has around 4,300 employees and carried out construction work worth 991 million euros in the financial year 2013/2014. Habau operates one of Austria's most efficient precast plants in Perg, Upper Austria, producing large-sized precast concrete elements for industrial, commercial and agricultural construction as well as for stadia, bridges and other demanding structures.

## Modernisation to secure competitiveness

In recent years the company began to consider modernising the existing production, which took place above all on stationary tables. In co-operation with the Prilhofer planning office, a plant concept was developed that has slotted optimally into the existing works structure. The objective was to secure not only the company's leading position in Austria, but also the Habau company itself through quality, adherence to delivery dates and competitiveness.

The idea was to manufacture the wide product range of large precast concrete elements on a modern pallet circulation plant using the transfer table principle. By using the transfer table as the central transport system, pallet stations can be driven to in any desired order. This is a proven system in the mixed production of the most diverse products.

In this way the need to be able to implement different cycle times for different work

steps is conformed to. The pallets can overtake one another as desired during the individual process steps.

Things started to move fast once the meeting of shareholders had given the green light for the investment. The call for tenders followed in June 2013 and one month later the contract had already been awarded to the machine and plant manufacturer Weckenmann Anlagentechnik as the general supplier. Habau built 4 workshop buildings with a floor area of 7,500 m<sup>2</sup>, of which two workshops with an area of 3,500 m<sup>2</sup> were earmarked for the circulation plant. The manufacture of the columns, beams and façade elements as well as their planning was carried out by the company's own departments. The result was a presentable example of successful prefabricated workshop buildings.

As early as February 2014 the preliminary on-site work had been completed by the highly motivated and perfectly operating

team from Habau to the extent that Weckenmann was able to commence with the installation a week earlier than planned.

## Concrete distributor with spiked roller

The concrete distributor, which is equipped with a container lift-and-turn unit, had to be installed first due to the cramped spatial conditions on the existing works site.

It is the tried-and-tested spiked roller distributor, which is characterised by the optimum dosage of the most diverse concrete recipes as well as being subject to little wear and easy to clean.

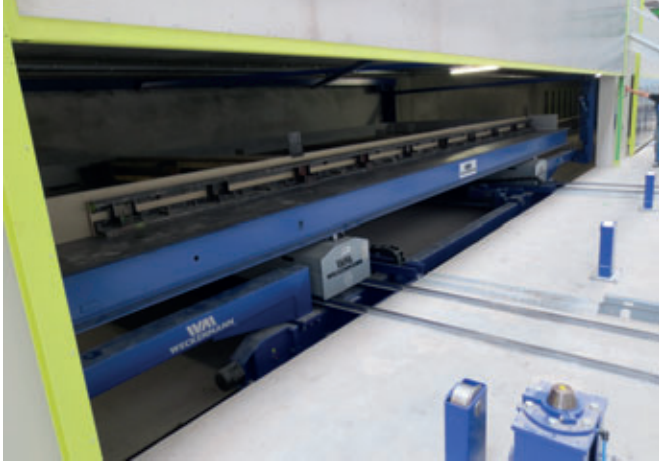
For the upper concrete layers that cannot be compacted by the pallet vibrating station, the distributor has five internal vibrators that can be immersed individually in the concrete. The upper concrete layer is levelled by means of a levelling device. High frequency vibrators help to additionally compact the concrete and close the surface.



Concrete distributor



Rack storage and retrieval unit



Central transfer table – outlet



Central transfer table – tunnel

#### Technical data – concrete distributor

- Capacity: 2.4 m<sup>3</sup> set
- Outlet width: 1,500 mm
- Container stroke: 500 mm
- Container rotation range: 90°
- Number of slide valves: 10

#### Hardening chamber and rack storage and retrieval unit

The rack storage and retrieval unit (load bearing capacity 28 t), which can take up the pallets measuring 10.5 x 4.5 m with a specific pallet load of 1,000 kg/m<sup>2</sup> both lengthwise and crosswise, was installed at

the same time as the hardening chamber. A fully automatic controller maintains an overview of where each pallet is at all times. The chamber is fully insulated and offers sufficient height for up to 36 pallets with a high structure.

#### Transfer table as central transport system

The central transfer table moves fully automatically in a tunnel on whose top side the manual workstations are located for the preparation of reinforcement, formwork and built-in components. Safety doors with

no lifting drive of their own are located at the outlet and inlet openings. They are actuated by moving gate openers on the transfer table.

Depending on the precast concrete element that is being manufactured, the pallets take different routes through the plant. The master computer creates so-called work plans for this, which are then assigned to the individual pallets. Habau can create new plans itself if the end product should demand modified production processes. Following each work step the next pallet position to be moved to is automatically defined.



# Total process optimization

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*Dave (54) gets his precast concrete elements to the right place at the right time. Integrating design and detailing with manufacturing and project management enables control from sales to erection with zero errors and efficient change management. Sharing the Tekla model allows all the project team members to stay in the building information loop real-time.*





Shuttering station with projection laser



MagVib vibration system

### Maximum positioning accuracy using lasers

A total of four overhead laser projectors help the workers to correctly position the formwork, built-in components and reinforcement on the pallet. The pallets are precisely adjusted mechanically beforehand. Various items of information can be displayed via radio remote control. This facilitates orientation and reduces the flickering of the laser beams.

### MagVib vibration system

The MagVib compaction system, developed by Weckenmann and already used successfully in several plants, met with great interest on the part of the works management. Due to the direct frictional connection between the high frequency vibrator and the pallet at the ideal points for vibration, very good compaction results can be obtained, even with the large number of different concrete elements that might be on the pallet. Of course, control of the speed by frequency converter additionally helps here. Positive and desired side effect: noise is considerably lower than with conventional technology.

### Tilting station and rework

The demoulding station, which is equipped with a hydraulic pallet tilting station, is located in the second aisle of the workshop. The precast elements are given the necessary finish and subjected to quality checks before being taken to the storage yard.

### Summary

Concreting took place for the first time on 30 April 2014, only about 10 months after the call for tenders. The plant was ramped up in the weeks that followed and handed over to Habau by Weckenmann.

The Habau company of Perg has created an exemplary plant that further strengthens its jointly leading position in Austria. Habau had a reliable and competent partner at its side in Weckenmann as the machine and plant outfitter. The project teams from both companies pursued the common goal hand in hand.

Works Manager Walter Preisinger and Project Manager Alfred Barth are extremely satisfied: "We have ensured our competitive-



Demoulding area

ness with the modernisation of our existing production line." "Both the tight schedule and the budget were met. This shows us that we chose the right partner in Weckenmann."

### FURTHER INFORMATION



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