

Automation of prestressed hollow-core slab production at the Habau Group

The modernisation of production facilities is of central importance in the construction industry in order to remain competitive and meet the increasing demands of the market. The Habau Group, Austria's fourth largest construction company, has recognised this and carried out a comprehensive renovation of the production plant for prestressed hollow-core slabs at the precast plant in Perg. With many years of experience in the production of precast concrete elements, it was time to replace the old plant, which had been in use for over four decades, with a modern, automated solution. This investment brings significant improvements in terms of efficiency, quality and cost savings.

Modernisation of the precast plant in Perg

The precast plant in Perg is an important part of the Habau Group, a family-owned company with around 6,700 employees. Although the plant in Perg, with 170 employees, is a small part of the overall structure, it is one of the largest and most modern precast plants in Austria. The plant produces pre-fabricated prestressed hollow-core slabs, foundation blocks, columns, beams, wall panels and other concrete elements,

primarily for industrial and commercial construction. Large construction projects such as furniture stores or logistics centres, some of which require up to 50,000 m² of floor slabs, are among the plant's main projects.

The need for modernisation

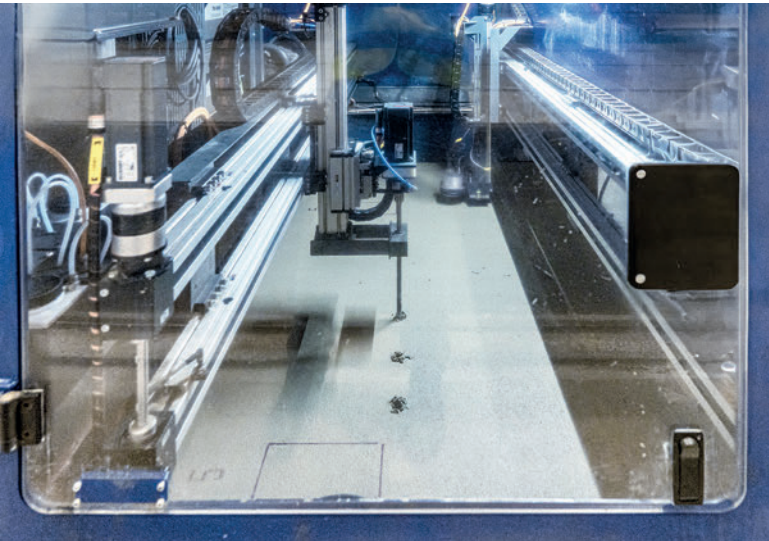
The decision to modernise the production plant was primarily due to the technological progress made in recent decades. "After 40 years, our old plant was simply getting on in years," explains Manfred Karl, Division Manager of the precast plant in Perg, Habau Group. "A lot has happened on the market and in order to be able to continue working in a progressive way, we have completely modernised the plant." The main aim was to make production more efficient and improve product quality. New technological possibilities that automate the production process have made this step essential. Technological innovations and advantages of the new plant The new plant features numerous technical innovations that not only increase production speed, but also significantly reduce costs. Precast prestressed hollow-core slabs with a thickness of up to 40 cm can now be produced, for example.



Manfred Karl, Division Manager of the Habau Group's precast plant in Perg.

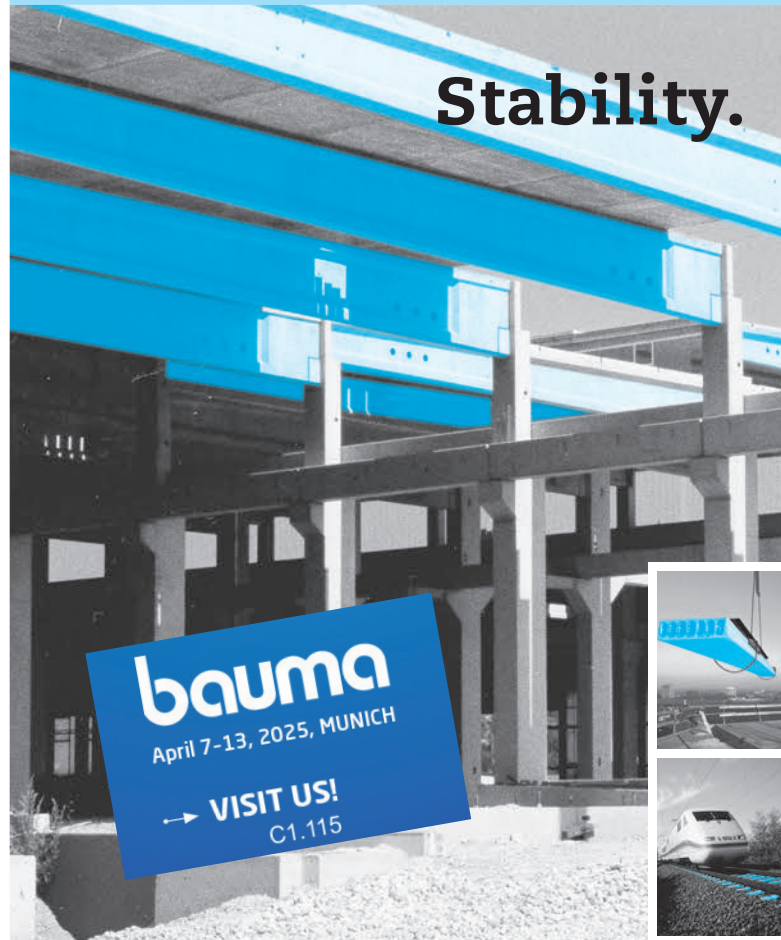


The 2.40 metre wide lines make a wide variety of products possible - for example, two 1.20 metre wide slabs can be produced in parallel on one line.



In addition to the printing device, the SmartJet plotter is equipped with an additional drilling device.

The option of producing different ceiling thicknesses on 3 lines with a width of 2.40 metres offers customers additional flexibility. The S-Liner® slipformer, the centrepiece of production, is characterised by its modular design. Different heights within a product range can be realised effortlessly. To switch to another product, simply replace the production-specific module. Thanks to its special design and the use of earth-moist concrete, the S-Liner is particularly economical and impresses with its simple operation and ease of maintenance. A central element of the new plant is the automated multi-stressing technology, which enables the prestressing of the strands in a single work step. This ensures a more even distribution of tension and increases the structural integrity of the slabs. The use of a multifunctional trolley, which places the strands and oils and cleans the production lines, also helps to optimise the production process. The automated concrete aspirator and the right-angle cutting machine complete the production process.



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The rail-guided sawing machine produces clean, precise cuts in hardened concrete elements and fresh concrete.



The battery-powered multifunctional trolley is used to set up a (new) line: for cleaning, oiling and pulling the strands/wires.



Thanks to its specific design and the use of earth-moist concrete, the S-Liner® slipformer is considered cost-efficient, easy to operate and easy to maintain.

Other important innovations include:

- CAD-controlled plotter: Data such as cutting angles, project labelling and areas to be cut off can be drawn and printed on the precast concrete elements. These processes previously had to be carried out manually.
- Automatic cutting and drilling equipment: Automating these processes not only reduces the workload, but also minimises errors and increases production efficiency.
- Concrete saving: Thanks to modified slab cross-sections, the plant saves up to 25 % concrete compared to the old production method.

The savings are not only noticeable on a technical level. "By automating many steps, such as the new automatic drilling system, we were also able to achieve a significant reduction in costs and therefore also prices," Karl continues. "Work has also become easier for employees, as many manual and physically demanding tasks are now performed by machines."

Development opportunities with the Progress Group

Cooperation with the Progress Group, which had already supplied a mesh welding plant to the Habau Group several years ago, played a decisive role in the modernisation. The



The concrete spreader with bridge is designed for the automatic supply of fresh concrete via a bucket conveyor.



The concrete extraction machine is primarily used to remove concrete from recesses and openings.



Mainly large-scale projects such as furniture markets and logistics centres are built with the elements from the Perg plant.

plants, coupled with the positive experiences and the existing trust in the Progress Group, were therefore decisive for the choice of a suitable technology supplier.

With the new plant, the precast plant in Perg is very well prepared for the future challenges of the construction industry. The improved production capacity and increased flexibility make a decisive contribution to taking a leading role in industrial and commercial construction. ■



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FURTHER INFORMATION

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Video about the report

