

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

ZW Arnach gears up for the future with plant modernisation and extension

“if you don’t put anything in, you don’t get anything out.” This train of thought summarises the decision of managing director K.-J.Fassnacht to invest in his aging circulation plant (manufactured in 1989) for the production of precast slabs with in-situ topping and large special parts. In order to maintain a presence in the hard-fought precast market as one of the leading high quality companies, Ziegelwerk Arnach GmbH & Co. KG from the Allgäu decided in 2013 to optimise and modernise its existing production facilities. What began with an initial discussion between K.-J. Fassnacht, CEO of ZW Arnach, and Hermann Weckenmann, CEO of Weckenmann Anlagentechnik GmbH & Co. KG at the bauma in Munich in April 2013 can be termed a complete success today.

■ Dietmar Kiene, Weckenmann Anlagentechnik GmbH & Co. KG, Germany ■

Following this initial contact, Weckenmann promptly carried out an on-site inspection of the circulation plant. Although the initial goal was to take stock of the actual situation, intensive discussions also took place with the team from ZW Arnach at the same time. The plant was analysed and evaluated from top to bottom.

The status quo of the plant plus the discussions with ZW Arnach were accordingly analysed and summarised by Weckenmann. By means of a study and a transparent presentation, Weckenmann showed its customer the actual status and the possible potentials for improvement and extension. Everyone involved was pleased to see how considerable improvements could be achieved, whether through ergonomic or performance-enhancing measures, with little effort.

Weckenmann prepared the concept for plant optimisation and modernisation with a corresponding quotation at short notice and ZW Arnach placed the order only three months after the initial contact. The implementation of the plant modernisation took place in the period between mid-December 2013 and the end of January 2014. The first pallet was concreted at the end of January; precast element production at full capacity started on time at the beginning of February 2014.

In the course of the plant modernisation the following components were renewed or optimised:

- new lifting device above 2 pallet positions with new track
- additional run-off carriage with second and third destacking station
- new storage, cleaning and plotting device with track



■ Dietmar Kiene
Senior Sales Manager Weckenmann
Weckenmann Anlagentechnik GmbH & Co.
KG, Germany
Dietmar.Kiene@weckenmann.de

- additional circulation components for a better pallet transport sequence and flow of material
- new workplace system with tool trolley, gangway alongside the pallets and rack system
- new shuttering system with integrated magnets
- new shuttering transport system with cleaner and oil for the new shuttering
- Extension of the existing circulating components with appropriate safety devices
- Renewal of the controller for the machine and circulation plus master computer technology



Previously: Demoulding at only one pallet position and only one destacking station / run-off carriage



Afterwards: Demoulding at two pallet positions and three destacking stations and two run-off carriages

The modernisation in figures

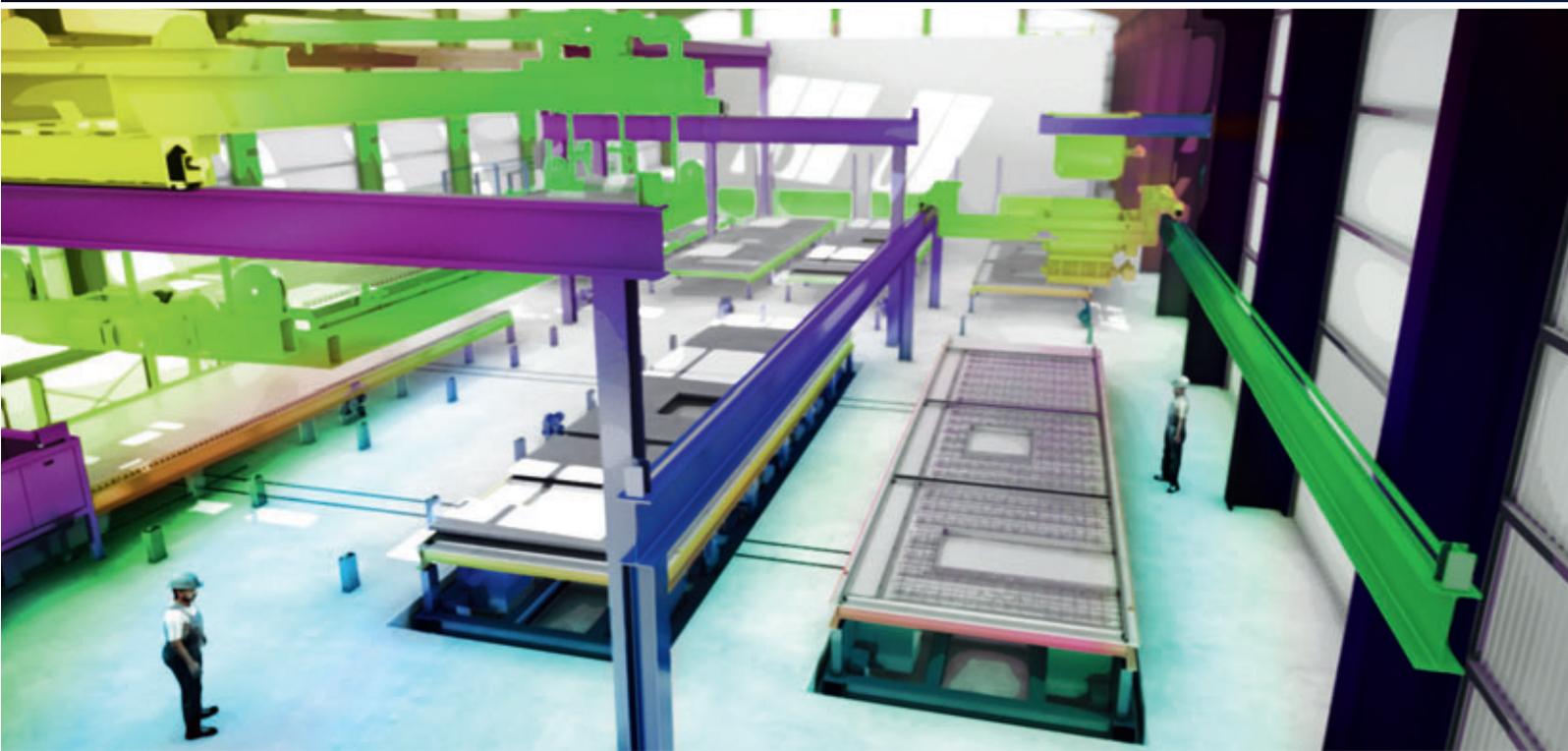
First goal: Increase in performance by at least 15 % with the same pallet cycle

Solution

- More effective utilisation of the pallet occupation through two additional stacking stations and an additional run-off carriage. This enables mixed occupation of the pallet.
- New lifting device spread across two pallet positions, with turning unit for narrow and short parts.
- Optimisation of the pallet flow through further intermediate positions and new pallet positions in the demoulding area.

Result

- The goal was even exceeded.

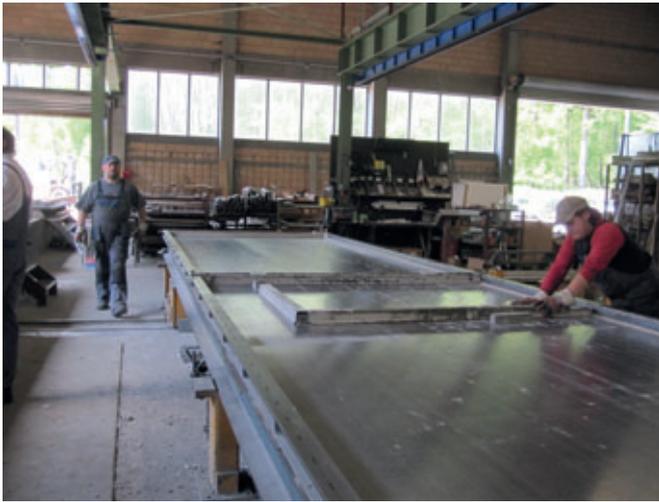


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Previously: Shuttering and magnets separate, storage of the shuttering parts and built-in components as well as tools such as glue gun, etc. took place from the front side of the pallet, hence long distances. Manual cleaning of the shuttering and magnets.



Afterwards: Shuttering transport with cleaner/oiler for shuttering with integrated magnets. Automatic cleaning/oiling of the shuttering and transport of the shuttering from the demoulding station direct to the shuttering station.



Afterwards: On the left the new state-of-the-art storage, cleaning and plotting device with new controller. On the right the manual shuttering station in the form of the workplace system with mobile tool trolley, hot-glue gun, manual oiler, rack system and gangway alongside the pallet. Control consoles for pallet movement directly adjacent to the work station. On the pallet is fresh shuttering with integrated magnets.

Second goal: More ergonomic and more effective working in the plant

Solution

- New shuttering system with integrated magnets
- New shuttering transport system with cleaner/oiler for the automatic transport of the shuttering from the demoulding station directly to the shuttering station.
- New workplace system with gangway at pallet level and rack system for the storage of the built-in components directly adjacent to the shuttering position alongside the pallet.
- Mobile tool trolley above the shuttering position with hot-glue gun for the



K.-J. Fassnacht
CEO of ZW Arnach GmbH & Co. KG, Germany

“The expectations held for the measure were fulfilled to the full and the investment was in every respect the right step in the right direction. We would do exactly the same again today. The conception, the handling of the project and the implementation by Weckenmann were excellent throughout and perfectly on time. The increase in performance, which was an immensely important specification for us, was even exceeded. The prior doubts on the part of the employees regarding the various modernisations and changes in production were fundamentally eliminated. Our employees are now more than satisfied and highly motivated, since their work is easier. Implementing this measure with Weckenmann was the right thing to do and it all went very well.”



Project discussion at Weckenmann with the team from ZW Arnach; from left to right: Mr Hensler (advisor), Mr Henkel (head of design), Mr Mühlebach (head of production), Mr Fassnacht (CEO), Mr Laub (proxy), Mr Mayer (head of marketing), all ZW Arnach; far right: Mr Kiene (Weckenmann sales)



- placement of built-in components and manual oiler.
- Optimisation of the work sequences for shuttering and demoulding.
- Relocation of the manual shuttering work to the machine.

Result

- Considerably less manual work in the shuttering and demoulding procedure compared to the conventional system (shuttering and magnets separate from one another).
- Manual cleaning and oiling of the shuttering with integrated magnets is no longer necessary; it now takes place by machine.
- Considerably shorter walking distances than before, where the storage of the magnets, shuttering parts and built-in components still took place from the front side of the pallet.

Third goal: Minimisation of the downtimes and malfunctions in the plant.

Solution

- Where necessary, renewal of the machines as well as the machine controllers and master computer technology
- Replacement of the safety devices to bring them up to date

Result

- A continuous work sequence is ensured in the circulation plant.

- The number of malfunctions has been drastically minimised.

Prospects

As predicted in the Weckenmann study, the modernisation resulted in a corresponding boost in the performance of the plant and as a consequence a bottleneck in the existing reinforcement plant. For this reason the preparation of the reinforcements will be replaced at the beginning of 2015 by modern equipment with a high degree of automation. ■

FURTHER INFORMATION



Weckenmann Anlagentechnik GmbH & Co. KG
 Birkenstraße 1
 72358 Dormettingen, Germany
 T +49 7427 94930
 F +49 7427 949329
info@weckenmann.de
www.weckenmann.de



Ziegelwerk Arnach GmbH & Co. KG
 Ziegeleistraße 1
 88410 Bad Wurzach, Germany
 T +49 7564 3080
info@zwa.de, www.zwa.de

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