

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

Significant increase in production and shorter production times with new concrete distributor

Precast plants are not usually created on the drawing board, but are the result of development and investment processes lasting many years. As a consequence of that the production conditions are not always ideal, in particular in view of constantly new challenges and increasing pressures of competition. It is therefore all the more important, particularly in medium-size enterprises with limited investment possibilities, to clearly define optimisation needs and to successfully implement them with concepts that are both technically and financially feasible. With the help of a new tailor-made concrete distributor, the Hessen-based company Betonelemente Schmidt has succeeded in achieving a production increase of about 30% while at the same time reducing the working time by about 2 hours per day. Managing Director Dipl.-Ing. Oliver Schmidt is satisfied and draws a positive balance.

■ Daniel Breitbach,
Weckenmann Anlagentechnik, Germany ■

A family-run company with tradition

"We are a stable family-run company with around 50 employees today and we are very much aware of our responsibility toward employees and customers. A company of our size cannot afford to make bad investments. We can only hold our own in future with good employees and state-of-the-art technology", says Schmidt, explaining his company philosophy. The beginnings of the company go back to 1990, when the founding family Schmidt began with the production of the first precast concrete elements in the tightest of spaces. The majority of the parts were still manufactured manually at that time.

Dipl.-Ing. Oliver Schmidt, son of the founding family, has been managing director of the company since 1994 and has continu-

ously developed its business activities: Today, computer-controlled machines as well as modern transport and lifting equipment in spacious production buildings ensure an efficient manufacturing process. The company is also well set-up on the sales side: apart from the headquarters in Bad Salzschlirf near Fulda, a branch sales office in Nuremberg guarantees customer orientation and market presence.

High-quality products for individual customer requests

As the owner of a medium-size enterprise, Schmidt was aware from the very beginning that his company would not be able to compete with the mass production of its large competitors. "Our strength lies in the production of high-quality custom parts and the fulfilment of individual customer requests. There is quite a bit that we can offer our customers, particularly with regard to product variety, various surface

finishes, material, colour, load case and installation situation", says Schmidt. The company's broad product range encompasses among other things steel reinforced concrete U-channels, steel reinforced concrete frame profiles, ecological rainwater tanks/cisterns, block steps, corner and round angle elements as well as L-shaped retaining wall elements.

Optimisation of the production process for L-shaped retaining wall elements: yesterday and today

Lastly, Managing Director Schmidt and Works Manager Chomiak saw room for improvement with regard to the production process and in-plant logistics for the production of L-shaped retaining wall elements, which occupies one of the company's two production buildings. "Our production process was quite time and space-consuming until well into last year, and that was standing in the way of an urgently required



Since the 1990s Betonelemente Schmidt has specialised in the manufacture of high-quality custom parts, including the most diverse L-shaped retaining wall elements according to customer request.



Managing Director Dipl.-Ing. Oliver Schmidt (r) and Works manager Darius Chomiak (l) are satisfied with the production increase achieved while at the same time saving time.



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increase in production capacity, forcing us to act", explains Schmidt.

The production process yesterday

The in-plant transport of the concrete from the mixing plant to the production buildings took place simultaneously with the aid of two to three fork-lift trucks, each equipped with a 0.5 m³ bucket. The mixing plant is situated half way between the two production buildings, which stand about 150 m apart. Two fork-lift trucks were occupied with the transport of the concrete between the mixing plant and the production building just for the manufacture of the L-shaped retaining wall elements. In order to deliver the concrete into the formwork the fork-lift drivers had to drive directly up to the foot or back of the formwork. Another employee manually adjusted the concrete discharge by opening and closing the bucket slide valve. Since the concrete discharge could often only be adjusted inaccurately by hand, the concrete regularly had to be redistributed with the help of a shovel. In order to pour the concrete into an approx. 10 m long mould, it was additio-

nally necessary to approach and manoeuvre several times with the fork-lift truck – a process which on the one hand had a negative effect on the concreting accuracy and cleanliness in the building and on the other required relatively wide passageways. Schmidt sums up: "Our production process for L-shaped retaining wall elements had simply reached the limit of its capacities".

The production process today

In order nevertheless to find a way out of the situation and to achieve the urgently required increase in production, the company chose a concrete distributor solution from Weckenmann Anlagentechnik GmbH & Co. KG following numerous considerations. "Due to our production conditions we placed many demands on the machine, which was to be specially developed to meet our needs", Schmidt recalls.

Now, a few months later, a gantry concrete distributor with a span of 17 metres allows formwork to be filled at any point inside the production building. Since the

company's moulds for the L-shaped retaining wall elements have differing heights, in addition to which they must be filled in two production steps (first a relatively flat and broad base, then in a later step a narrow and considerably higher support back), the concrete distributor was equipped with a 2-metre hoist, which allows precise adaptation to every production height. In order beyond that to fill the individual moulds with pinpoint accuracy, the concrete distributor was additionally equipped with a chute, which can be controlled from the remote control of the concrete distributor. Last but not least, a further difficulty was that the moulds are not all positioned in the same direction in the production building, and so a further requirement was for the concrete distributor bucket to be rotatable by 270° in order to be able to drive to each mould quickly and simply.

"We were a little sceptical at first", explains Works Manager Chomiak, "but with the help of the concrete distributor technology, which is new land for us, we were able to place the moulds closer together and thus create extra capacity for 6 further moulds



All mould heights can now be driven to flexibly and with the utmost accuracy by just one operator with the new concrete distributor.



The bucket of the concrete distributor is still filled by fork-lift truck; in the near future the concrete will be filled directly into the concrete distributor via a branch line from the new mixing plant, which is currently being planned.

each with 15 L-shaped retaining wall elements with a height of up to 3.05 metres. Through this change alone we were able to increase our production by about 25-30%." The previous time-consuming transport of the concrete in the building by fork-lift truck was also eliminated. "Despite increasing production by about 30%, we finish our production nowadays about 2 hours earlier every day. Since we now use a 1 m³ bucket for the transport of the concrete from the mixing plant to the concrete distributor, we can employ one of the fork-lift truck drivers elsewhere in production, which has contributed to a further facilitation of work", says Managing Director Schmidt, summarising the successful implementation. The modernisation has also brought with it a considerable benefit for the production employees: the portion of manual labour has been considerably reduced.

Looking to the future

In order to complete the commenced optimisation process, the company is aiming by the end of the year to completely do away with the in-plant transport of concrete in the L-shaped retaining wall element production area. A new mixing plant will then directly fill the concrete distributor bucket via a branch line, so that a completely self-sufficient production process can take place at a constant building temperature even in the winter months without constantly having to open the doors of the building to drive in the concrete and deposit it in the concrete distributor bucket. ■

FURTHER INFORMATION



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