

Unitechnik extends and modernises the circulation system at Schwörer Bausysteme GmbH in Haigerloch-Stetten.

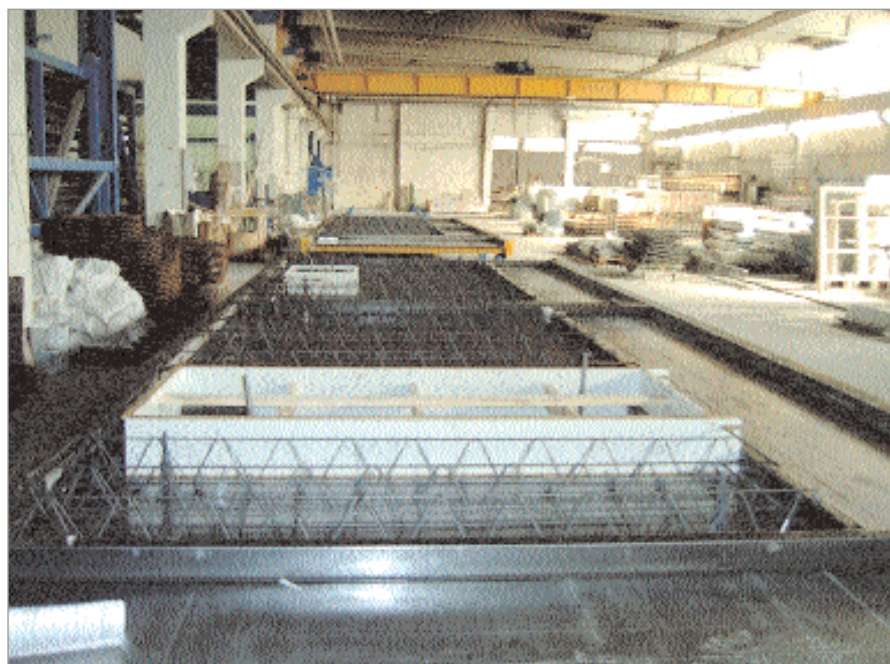
Production machinery extended without any loss of production

The rotation plant at Schwörer Bausysteme was extended by 15 positions and modernised at the same time. Unitechnik carried out the complex conversion during the 2-week summer shutdown. The majority of the control engineering was changed from S5 to

S7 and the UniCAM master computer changed for the latest version. With the new layout of the machinery and the most modern technology, Schwörer Bausysteme is prepared for the future.

Schwörer Bausysteme GmbH in Haigerloch-Stetten is one of the most innovative manufacturers of precast concrete elements in Germany. They have continued to extend their range of product over recent years. Now as well as double walls, precast floor slabs and solid walls, they are producing a thermal wall and their "DämmWertDecke" on the rotation plant that has been there since 1993. As these elements are to a large extent used for the cellar of "Schwörer houses", it is of great importance to have as high degree of prefabrication as possible. Whether installing electrical systems or plumbing, the aim is that at the building site, things are just plugged in.

Things that please the Sales Department are often difficult for Production. That's how it is at Schwörer Bausysteme too. The different processing



Processing line



Releasing line

steps for different products, many special fittings and manual processing stages that take different times to complete, all these disrupt the operation of the rotation plant. All too often a pallet had to wait until the next station was free. The old plant layout was not conceived to provide relocation areas. This situation gave birth to the idea of extending the plant. "The main goal of this investment was to increase flexibility and quality" reports deputy managing director Karl-Heinz Schneider. He continues "This was how we expect to increase throughput." This goal should be achieved with a second parallel processing line, a new releasing line and a new tilting station acting as a pass by station too, together with a lifting station. The idea for this came from foreman Elmar Schneider, the staff and the plant management. The new layout was drawn up together with Christian Prilhofer

Consulting, a design bureau. At the end of it all, 15 rotation positions were added, doubling the existing number.

A new formwork system from Weckermann provides the ideal back up the range of different products, where the integrated magnets bring gains in both time and quality.

“It is part of Schwörer Bausysteme’s company philosophy that when making investments we ensure that technology is brought up to date” said Karl-Heinz Schneider. Consequently the company took the decision to replace the majority of the Simatic S5 electrical controls with Simatic S7. The heart of the plant was changed too - the Unitechnik UniCAM master computer was exchanged for the latest version. Thus at a stroke a whole set of new functions were available to the plant. “A high degree of equipment availability together with a secure supply of spare parts are important basic conditions for us, to ensure that the operation of the plant is future proofed” stressed the managing director.

Schwörer Bausysteme carried out the required engineering alterations themselves. Elevating platform trucks had to be moved, others extended. Walls were broken through to connect different workshops. Supports were re-



Wall breakthrough

placed by steel cross girders, which placed extremely high demands on the stress analyst, the Schwörer steel construction team and the fitters.

The real challenge in this project lies in combining the existing plant with the new stations, whilst at the same time completely changing the control and instrumentation. This task was entrusted to Unitechnik. Under no circumstances could production be

interrupted by the project. The time window planned for the reorganisation was a two-week factory shut-down in August.

Progress of the project:

Already in the spring the new formwork system had been brought in, together with the mono gripper system. The old master computer and the controls for the formwork robot were modified in such a way that the new formwork system could be set automatically. Only the activation of the magnets had to be carried out manually for a temporary period.

The structural engineering alterations on the plant followed. The new components could be cabled up ready and put into operation, independent of the existing plant.

So it was on one Friday afternoon that things got exciting. The last pallet moved to the removal station. For the staff, the well-earned factory shut-down began. For the experienced Unitechnik crew, a weekend shift began. Coupling the two parts of the production machinery, changing the controls and the master computer, re-wiring the switchgear cabinet - in one weekend the old plant had been “doubled” and brought up to date technically.



New elevating trucks



On Monday the Unitechnik engineers responsible for the programming of the controls and the master computer arrived. Their task was to load the software and get it working. Both the existing plant functions and the new functions were initialised, tested and optimised. Special attention was given to the special functions specific to this plant. Unitechnik project manager Uwe Schmidt winked as he said: "Although all precast concrete element plants manufacture similar products, we have never come across two with the same software, out of 100 projects we have completed." The modular structure of the software allows these special functions to be easily integrated in the new system.

When the "dry run" was successfully completed, the first pallets moved through the plant. Now the new formwork system finally became fully effective. The formworks are put together with a patented procedure and aligned accurately without any gaps. Then the robot releases the magnets.

The formworks no longer knock together, extending the life span of these valuable pieces of equipment.

The new processing line, which is intended for the processing of especially complex elements, was equipped with a laser projection system with image processing and remote control, provided by Lasercon. This can traverse over three rotation stations automatically using radio remote control, providing maximum flexibility.

Monday morning after the factory shutdown: The plant is running again! Personnel training, the last adjustments and the job is complete for the Unitechnik personnel.

Deputy managing director Karl-Heinz Schneider stated, "The conversion ran well, we are very happy with how the different companies involved worked together. Now it is our staff's job to link the old circulation plant with the new extended one as well as possible during production, so that the stated

targets can be achieved as quickly as possible, and the entire multi-function production machinery forms a closed flexible production unit in itself."

Further information:

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