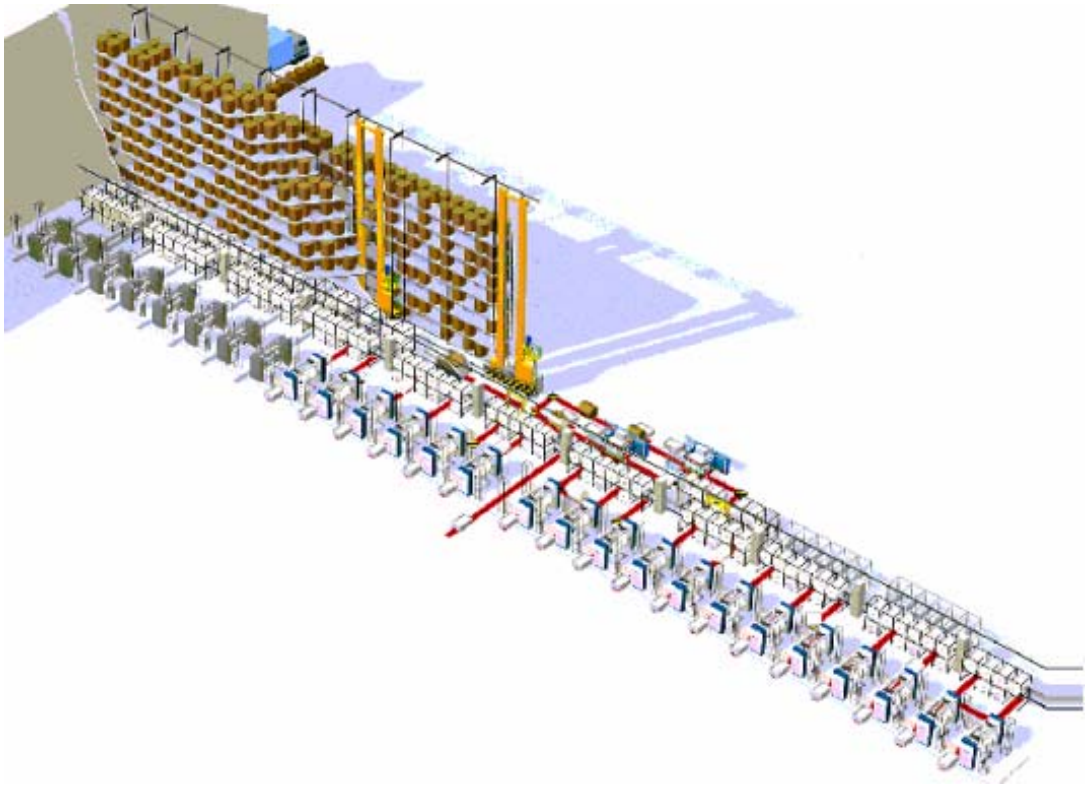
Pressehaus Stuttgart: Automatic Paper Logistics
Gerneral Contractor Koenig & Bauer



With the widest range of products in the industry, the Koenig & Bauer Group is one of the largest printing machinery manufacturers in the world. The parent company Koenig & Bauer AG (KBA) was established in 1817 and has plants in Würzburg, Frankenthal (Albert), Radebeul (Planeta), Trennfeld and Kusel. The KBA Group also has subsidiaries in Vienna, Berlin and Pennsylvania as well as service and distribution companies in Vermont (USA), Great Britain, France, Italy, Brazil, Russia, China and Malaysia. The core companies of the KBA Group employ a staff of approximately 7,400.

The project tasks

The project involves supplying a warehouse management and material flow computer for the fully automated supply and removal of paper rolls used by the high-performance KBA Commander printing machines at Pressehaus Stuttgart Druck GmbH. KBA, as primary contractor, was awarded the contract by Pressehaus Stuttgart Druck GmbH to supply the printing machines including the upstream automated paper logistics technologies. PSI Logistics implemented an integrated warehouse management and control system for optimum and efficient

supply and recovery of paper rolls used in the printing process. The system allows for cost-effective handling and short set-up times and ensures a reliable supply of materials for production.

After automatic unloading and receipt using barcode technologies, the paper rolls are transported to the high-bay warehouse by the conveyor system. The 28-metre high warehouse provides 1,600 storing positions for rolls as well as palettes of other articles, such as printing plates and replacement parts.

The high-bay warehouse is 28 m high and has 1600 storage positions

Fully automated processes

During the day, the required amount of prepared paper rolls are placed in the day warehouse based on the production plan data. An employee only has to intervene manually when unpacking the paper. During the nightly printing process, the printing machines and their 18 roll holders are supplied with paper rolls from the day warehouse – this optimised process takes place automatically and supplies the rolls just in time. The day warehouse is served by two shelf operating devices that run concurrently on a single track. The warehouse management computer is programmed with sophisticated strategies to optimise the parallel operation of the two shelf operating devices.

Demands on the software

At the heart of the system is the warehouse management and material flow computer. In order to supply the machines with the correct amount of paper, the PSI Logistics system is equipped with interfaces to the production planning and control system, to the shelf operating devices and conveyor system, to the roll preparation system and the automatic roll changers at the printing machines.

Newspaper production makes very high demands on the availability of printing machines and paper logistics. For this reason, PSI implemented a cluster system that allows all processes to continue even if a server stops working.

High availability is of prime importance in newspaper printing

The primary objectives of the strategies implemented by PSI Logistics involve optimisation of the transport tasks, planning the reserves held in the day warehouse as well as supplying the printing machines with the correct type and quantity of paper just in time and subsequently unloading the machines.

The calculation of the number of rolls needed per machine and print order is carried out dynamically. The system recognises changes in the print run during the printing process and organises the paper supplies automatically. A calculation of the quantity of paper remaining ensures a smooth transition to the next print order.

Besides implementing these special strategies, all the functions necessary for a modern warehouse management system are of course also in place.

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