New thrust by automating a logistics centre!

For a number of years economy has been changing and the pace of change is consistently increasing. Just as the society as a whole, economy has to face numerous changes as well. These changes confront companies with new challenges. When searching for tomorrow's economic conditions science has looked into many of the ongoing trends and bundled them into the so called mega-trends. These are the trends that will have sustainable effects on the economy at the same time shaping it as they materialise. Some of these factors that cause fundamental changes are globalisation, urbanisation, demographic change, energy efficiency, sustainability and rapidly developing technical progress. Knowing about these trends bears a chance for companies to react early to such changes and maintain a competitive position in the future. The importance of automated intralogistics processes has been increasing dramatically in the recent past.

STILL has recognised this development at an early stage and is by now known as a specialist for automated standard trucks. Opposed to makers of conventional driverless transport systems, STILL automates its own standard trucks. After automating these trucks they can be operated automatically as well as manually by a driver (dual use). In this STILL is unique. The modification of standard trucks offers a solution to customers who are looking for an automatic system, but still want to maintain their flexibility to be able to react at short notice to changing work requirements.

STILL has already implemented automating concepts for a number of different industries. A recent example from the food industry is the diary Heideblume in Elsdorf. This year the company concentrated its external delivery warehouses to an automated central logistics centre.

Heideblume Molkerei Elsdorf-Rotenburg AG looks back over a history of more than 100 years. Today the company from Elsdorf has virtually all major discount and retail chains in its list of customers as well as leading fast food and catering companies. Around 190 000 tonnes of dairy products and delicacies are loaded and despatched from Elsdorf every year. In order to be able to handle the annual growth of turnover and to save warehouse space and costs, the management of the diary decided to centralise the external delivery warehouses. As said it was done: This year STILL turned the vision of Heideblume's new logistics centre with automated reach trucks in Elsdorf into reality.

The importance of automating internal transports is rapidly growing. Automated solutions present customers with means to handle increasing turnover volumes efficiently and to save warehouse space and costs at the same time. STILL provides automation of its standard truck. Opposed to conventional driverless transport systems (AGV) the automated standard trucks are fit for dual operation. I.e. they can be operated automatically as well as manually by a human driver. For the customers this means maximum flexibility.

This also applies for Heideblume: STILL organised and optimised the procedures and the processes in the new logistics centre with three autonomous FM-X 14 reach trucks. The automated high bay rack and the new consumables warehouse as well as the two storey building for despatch and order picking, the new logistics centre offers space for some 4 500 pallets of finished goods and 3 000 pallets of raw materials, consumables and process

materials. The order picked articles are supplied to provision lanes in the cooled despatch hall from where STILL double-decker trucks immediately load the goods into waiting refrigerated trailers. The daily throughput amounts to 1 000 pallets. The automated operation allows solutions that would be impossible for manual operation. This way it was possible to build up large storage capacities on very little space.

The width of the aisles in the warehouse operated by the reach trucks is only 2 900 millimetres and for storage or retrieval the smart reach trucks only require 60 millimetres of space for manoeuvring. “Having to steer the trucks that precisely in manual operation would require extremely high levels of concentration by the drivers and would be very time consuming. Also the risk of accidents would be very high,” explains Frank Domke, project manager at STILL, one of the major benefits of the automated transport of materials. An important factor in this way of handling goods is that damage caused by collisions are minimised; a factor that saves considerable amounts of time and money. Less work is needed for repairs and technical maintenance caused by collisions, transport and service costs are saved and the related exhaust emissions are reduced to a minimum. Centralisation, automating and process optimisation of consumables logistics also lead to a transparent warehouse management, cost reductions and additional valuable warehouse space, Domke added.

Automating is implemented by the following basic principle; the trucks operate computer controlled and are connected to the STILL warehouse control computer by access points and wireless LAN. The interfaces of the truck control system with the warehouse management system as well as the conveyor equipment have also been programmed by STILL. This ensures that the individual steps in the process are perfectly harmonised. The software of the autonomous trucks does not only control the direction of travel of the trucks, but also dynamically plans and controls the warehouse traffic through narrow passages and at crossroads. Magnetic reference points installed in the floor enable the warehouse trucks to navigate independently in the warehouse and flexibly react to changes in the environment. The forks of the trucks are fitted with light emitting distance measuring devices that constantly monitor the distance between the truck and objects surrounding it. In combination with special sensors for the integrated lift height control, pallets can be lifted and precisely stacked in the top level of the rack 7 200 millimetres above floor.

Dual operation of the trucks deployed was very important for the responsible management, in order to be able to flexibly react to changing requirements at any time:

“This is why we only use automated standard trucks that we can also operate manually at any time as driverless transport systems,” explains Michael Sievers, Logistics Director at Heideblume. The customer is more than satisfied with the result. Sievers sums up: „All transport, storage and retrieval movements in the new wide aisle warehouse are handled frictionless. It is a very intelligent and delighting solution”.