MINIMUM INTERVENTION
MAXIMUM EFFECT

RETROFITTING
BY LTW

The LTW Intralogistics Magazine | 14th Edition | Summer 2017 |
PROLONGING THE LIFE CYCLE

OUR CURRENT LIST OF REFERENCES NOW SHOWS 893 NEW CONSTRUCTION PROJECTS AND 378 RETROFITTING PROJECTS FOR HIGH-BAY WAREHOUSES MANUFACTURED BY US OR BY OTHER COMPANIES. OUR ACTIVITIES IN THE RETROFITTING SECTOR AND OUR EXPERTISE CONTINUE TO GROW WITH EACH NEW SYSTEM REALIZED.

REGARDLESS OF WHETHER NEW OR EXISTING, MANUAL OR FULLY AUTOMATIC, AISLE-BOUND OR AISLE-SWITCHING SYSTEMS – LTW IS YOUR CONTACT IN THE INTRALOGISTICS SECTOR.

NEW SYSTEM NO. 876

A new system in the Lake Constance region that we are proud of: Mohrenbrauerei Dornbirn. This project represents the state of the art at LTW – stacker cranes, transfer cars and belt-operated vertical conveyors; multi-level conveyor systems; application of cutting-edge software strategies in the warehouse control and the warehouse management system.

Since 2016 alone, LTW has initiated the life cycles of 12 new highly dynamic and fully automatic high-bay warehouses. By handling hundreds of thousands of pallets, they will make a valuable contribution to the activities of their owners for many years to come.

But what to do if the system has proven its reliability over decades, the initial novelty has worn off and the system no longer runs as smoothly as in the beginning? Regular care and maintenance is then often no longer enough to guarantee perfect operation of the system.

Minor breakdowns occur with rising frequency, and the need for action arises in one spot or another.

Different Life Cycles

Each system part has its own life cycle. While the steel structure of an LTW high-bay warehouse generally guarantees smooth operation over decades thanks to the high production quality, specific electronic components have a much shorter utilization time due to the rapid pace of new advancements. If entire control component series such as the Simatic S5 control have long been discontinued by the manufacturer, the supply of replacement parts can no longer be readily guaranteed.

Wide-Ranging Expertise

As the high-bay warehouse is a central interface in many companies, availability of intralogistics takes top priority. In many cases, customized system modernization restores the productivity to the level of a new system.

In projects such as these, our retrofitting team has assisted customers for many years with its expertise and capabilities. Half of the team has been with LTW for more than 15 years, during which time they have accumulated substantial expert knowledge. In addition, we can also handle the most extensive retrofitting projects with ease thanks to a wide variety of professional backgrounds ranging from mechanical and electrical engineers through to control engineers.

Customized Retrofitting Concepts

One installation may need a new distance measurement system and new control components to ensure its continued performance, while others may require replacement of the travel motors and the telescopic forks on the stacker cranes.

No two systems are the same, which is why each modernization project has its own specific characteristics. We tackle a wide variety of challenges and design customized retrofitting concepts that will enable you to overcome them. Then our project managers join in to implement the modernization measures with their established teams, ensuring the same diligence and workmanship as with our new systems.

On the following pages we will present the subject of retrofitting in detail and round the whole thing off with a practical experience report covering an extensive system modernization project.

Christian Baldauf, Division Manager Sales and Marketing

On behalf of the whole LTW company, I would like to welcome you to the current issue of NEWS FLOW.

We are pleased to introduce our retrofitting team as part of the sales department for the first time in this issue. What started out as a small offshoot of our customer service department to perform retrofitting activities has over time established itself as a dynamic team within our sales department.

With this step, we have positioned ourselves to tackle the constantly rising number of modernization projects. And now, you as the customer will experience all of LTW’s usual strengths to an even greater degree: competent contact persons, precise project planning and perfect implementation.

Thanks to the combined expertise from the old and new system sectors as well as the joint utilization of our sophisticated sales tools, we are confident that we can now assist you even better with your planned retrofitting projects.

We hope you enjoy this issue of NEWS FLOW!
**RETROFITTING BY LTW**  
**MINIMUM INTERVENTION**  
**MAXIMUM EFFECT**

If unplanned system standstills are increasing and if the performance is diminishing, action is required – it’s high time to thoroughly inspect the system. As an experienced retrofitting expert, we will assist you with this task. Independent of the system manufacturer – from appraisal to after sales service.

With older material flow systems, routine servicing and maintenance is often no longer enough to ensure optimum operation. Replacement parts are out of stock, faults occur with rising frequency – often resulting in decreased throughput and profitability.

To make sure it never comes to this, the actual state of the system must regularly be compared to the target state:

- Does the system still fulfill the legal requirements?
- Is the replacement parts supply secured?
- Is the performance adequate?

The sturdy foundation of the system, such as the steel structure, is preserved when retrofitting, because most system functions and processes remain the same even after retrofit is complete. This reduces the subsequent training time and effort for the employees.

Employees are largely familiar with the system being retrofitted, because most system functions and processes remain the same even after retrofit is complete. This reduces the subsequent training time and effort for the employees.

**THE ADVANTAGES OF RETROFITTING AT A GLANCE**

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Availability of Replacement Parts</th>
<th>Throughput</th>
<th>Maintenance Effort</th>
<th>Energy Costs</th>
<th>System Standstills</th>
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**Dismantling of components on the control cabinet of a stacker crane.**

The disconnection of the Simatic S control has resulted in an acute demand for conversion work in the drive section of the telescopic fork of a stacker crane. The discontinuation of the Simatic S control has resulted in an acute demand for conversion work in the drive section of the telescopic fork of a stacker crane.

Conversion work in the drive sector of the telescopic fork of a stacker crane.

**1. Extension of the System Life Cycle**

Exchanging obsolete components for new, technologically advanced ones in due time brings the system back in line with the state of the art.

**2. Low Financial Expenditure**

With retrofitting, you can precisely pinpoint the optimum cost/performance ratio – replacing an S5 control with modern S7 components or installing a barcode displacement measuring system can often help to breathe new life into a system.

**3. Reduced Construction Costs**

The sturdy foundation of the system, such as the steel structure, is preserved when retrofitting and can still be used. The high investments for greenfield construction of a foundation are avoided and the construction costs are reduced to a minimum. In addition, you can completely dispense with new, often lengthy approval procedures, as the existing verification of the safety and reliability of the system and buildings can usually continue to be used.

**4. Minimum Interruption of Operation**

Preparatory work can be carried out during operation. The new and the old system often run in parallel, with clearly defined fallback strategies. Switching over to the new system takes place during agreed times, such as weekends, company holidays or during operation.

**5. Reduced Training Time and Effort**

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**FROM PLANNING TO IMPLEMENTATION**

If the basic framework conditions meet the requirements for a retrofitting, we will draft the offer and carry out an initial system evaluation free of charge. We are not in favor of a remote diagnosis.

To ensure that the offer and the invoice match in the end, we would rather be on site to take measurements and photos and record details. These records are the basis for our future work.

**GOOD PLANNING IS CRUCIAL**

If our offer results in an order, we start with an extensive as-is analysis in which our specialists thoroughly evaluate the current state of the system. Present and new components must match, regardless of whether we are updating a tried-and-tested LTW system or modernizing the intralogistics facilities of a third-party manufacturer.

**MINIMAL INTERRUPTIONS**

Should you desire changes in the material flow, we will coordinate these with you. We will point out risks and possible bottlenecks involved in the planned conversion and draw up the technical specifications including a description of the requirements and measures, and the conditions for the planned system modernization.

**EXTENSIVE DOCUMENTATION**

Once we have cleared the site, we will update the documentation including replacement parts lists. After retrofitting, there are often more than a thousand cables or sensors to be labeled, while numerous planning documents and descriptions must be included in the documentation.

Drafting specific service and maintenance plans completes our job and ensures that the system will once again run reliably and efficiently in the years to come. Nonetheless, our customer service is standing by in case you experience any problems.

**Requirement to measure the throughput and profitability.**

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RETROFITTING OF AN EXTERNAL SYSTEM
IN PLUG & PLAY MODE

PRECISION LANDING AFTER
PERFECT PREPARATION

THE CUSTOMER
HERMES ARZNEIMITTEL
WOLFRATSHAUSEN/DE

Since its founding in 1907, the family-operated pharmaceutical company with headquarters in Pullach in the district of Munich has become Europe’s largest producer of pharmaceutical effervescent tablets. The company has two production facilities, one of which is located in nearby Wolfratshausen and is the workplace for 250 of the firm’s 800 employees. With the TOPO granulation process, which is unique worldwide, HERMES produces effervescent tablets, chewable tablets, lozenges and instant beverages from a variety of active pharmaceutical ingredients and foods. Besides distributing its own brands via pharmacies, HERMES also develops and produces active pharmaceutical ingredients and foods.

Despite consistent servicing and maintenance of the six-aisle system constructed in 1998, minor failures were starting to accumulate after almost 20 years of faultless operation. In particular, the supply of replacement parts for the control was turning into a risk. Besides the replacement of individual components, the entire system needed an overhaul, and in early 2015, the management team in charge decided that an extensive retrofitting project was in order.

This is where the positive experience gained on an earlier project at the Austrian HERMES facility in Wolfsberg came in. For the new high-bay warehouse (HBW) at this facility, LTW supplied three-stacker cranes and the entire conveyor system in 2007 together with the LTW warehouse control system, which has since become the gold standard at all facilities.

“The smooth and flexible cooperation in Wolfsberg, we trusted LTW to meet the ambitious schedule in Wolfratshausen as well,” says Albert Berghofer, coordinator of both projects. “Due to the smooth and flexible cooperation in Wolfsberg, we trusted LTW to meet the ambitious schedule in Wolfratshausen as well,” says Albert Berghofer, coordinator of both projects.

Time Frame
In accordance with an internal strategy, HERMES scheduled its two-week company holiday around Christmas and the turn of the year 2016/17 so that the conversion could take place. This enormous effort first started to become evident after an initial on-site inspection by the LTW retrofitting team to aid in preparing the offer. LTW coordinated the specifications with the HERMES management team on the basis of an assessment of the system’s status quo over several days and an entirely new electrical plan for the system, into which LTW invested approximately 100 man-days.

For both parties, on-time completion took top priority, which is why LTW developed recommendations to implement the new structures before the actual retrofitting phase parallel to operation of the old system.

In this period, the LTW team had to upgrade 17 control cabinets to Simatic S7 and install 14 new ones; replace 12 stacker crane runners and 18 travel lifting and fork drivers; lay and connect 3,600 meters of cable, 450 meters of bus bar and 550 meters of bar codes; correct 70 sensors, install 24 new control panels, and relabel 1,500 cables and 1,200 sensors.

These ideas also resulted in a great deal of commitment, confidence and internal coordination on the part of the customer. “No one was stalling, all parties cooperated perfectly in our company and at LTW,” concludes Albert Berghofer.

Performance Up 20 %
LTW remained on site for several weeks with up to eight people, completed the documentation and assisted with the performance assessments. Even though an increase of the system performance was not a defined objective of the project, the tests showed an increase of around 20%, compared to the original handover report. This is due to numerous details like the precise start-up behavior of the stacker cranes thanks to bar code distance measurement, as well as the optimized retrieval strategies of the new software.

Conversion to the new LTW warehouse control system took place without a hitch. On January 2, the package transport conveyor system was again operating as usual and transporting the first pallets to goods dispatch.

In this case, many sophisticated measures have resulted in a showcase project,” is Dr. Daniel Bracher’s highly satisfied conclusion. One week later, the high-bay warehouse was commissioned right on schedule. The HERMES team put the system right to the test on the first day by transporting all pallets back to the HBW from the external intermediate storage warehouses.
On April 10, 2017, LTW acquired the Viennese software company Metasyst Informatik and thus expanded its expertise in this area. This represents the merging of a long-standing successful partnership into a complete integration.

Metasyst has an industry-neutral warehouse management system that covers the requirements of standard logistic processes as well as dynamic order picking processes. In addition, the company also supplies comprehensive multi-language solutions in the field of material flow control and 3D visualization, forklift control systems, and software for optimizing inventory, packaging and dispatch processes.

Metasyst’s general structures will remain the same for the time being; LTW has taken over the company’s approximately 30 employees. Both companies will merge in the medium term. Metasyst’s head office will remain in Vienna.

“We are pleased that we will be able to offer our customers an even broader software spectrum through this merger,” concludes Konrad Eberle, CEO of LTW Intralogistics. Karl Kaufmann and Günther Laber, CEOs of Metasyst, also expect intensive synergies thanks to the even closer cooperation: “In a strongly changing competitive environment, this new orientation provides great potential for the successful further development of both companies.”

ENGINEERS OF FLOW
Interface-free material flow in high-bay warehouses: LTW develops, manufactures and installs turnkey intralogistics systems worldwide.