

# FRESENIUS MEDICAL CARE BIEBESHEIM/GERMANY





**THE CUSTOMER**

Fresenius Medical Care is the world's largest integrated provider of products and services for individuals undergoing dialysis because of chronic kidney failure, a condition that affects more than 2,100,000 individuals worldwide.

Through its network of 2,898 dialysis clinics in North America, Europe, Asia, Latin America and Africa, Fresenius Medical Care provides dialysis treatment to 233,156 patients around the globe.

Fresenius Medical Care is also the world's leading provider of dialysis products such as hemodialysis machines, dialyzers and related disposable products. Fresenius Medical Care is listed on the Frankfurt Stock Exchange (FME, FME3) and the New York Stock Exchange (FMS, FMS/P).



Manufacturing of hemodialysis machines

**CUSTOMIZED FOR THE FIRST TENANT**

**TAILOR MADE FOR THIRD-PARTY USERS**

In the face of dynamically growing flows of commodity Fresenius Medical Care started in the beginning of 2006 to implement a comprehensive intralogistics project – taking into account a further growth during the next 10 to 15 years.

The extrapolation resulted directly in the project of a high-bay warehouse. The management clearly gave precedence to a consequently designed automated new building with generous reserves near Biebesheim am Rhein rather than to the alternative of an extension of the two existing conventional distribution centers.

The investment company Alpha Industrial, specialized in the design of logistics buildings, gives its support to an innovative solution: it's the first time that in Germany an investor not only finances



Sustainable investment model on greenfield site

and rents a building but he also finances and rents the appropriate technology.

The plan will only work out for the investor if the building, after expiry of a commercial lease of 15 years, will be interesting also for new users.

High-bay warehouse, conveyor technology and software will be designed to meet general purposes beyond the requirements of Fresenius concerning the layout as well as the details: generous height of pallets spaces, dual or triple storage systems, roller spacing of conveyors, hall bottom floor executed with sealed pans for storage of liquids leading to water pollution.

The sustainability clearly offsets the additional costs for the investor. Fresenius Medical Care on the other hand has the advantage of a reasonable monthly rent.



Due to a universal layout even disposable pallets can be stored in the high-bay warehouse.

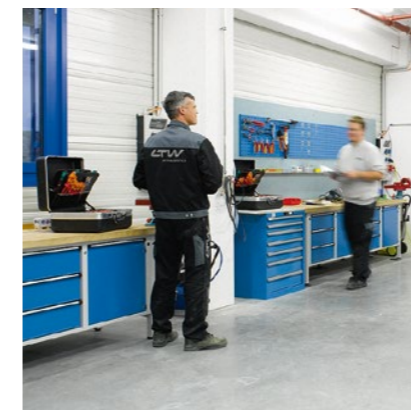
**98 % OF AVAILABILITY GUARANTEED FOR 15 YEARS**

Storage and order picking of medical equipments and materials require an especially high degree of reliability.

In this context it was a logical conclusion that LTW was awarded in September 2007 the contract as general contractor for intralogistics, including the construction of a silo and installation of an automatic sprinkler system.

According to Rainer Reichelt, logistics planner, LTW was able to submit an interesting quotation. "This was probably due to the slender structures and the close connection to Doppelmayr during production, a company who impressed us by its high level when we visited the premises in Wolfurt. From the point of view technology, LTW convinced us by a robust rigid construction of the stacker cranes with simultaneous weight optimization."

The ultimate criterion must be the availability for continuous operation. Jointly with Fresenius Medical Care, LTW elaborated an innovating full service concept: LTW guarantees a 98 % availability of the plant for the total rental term of 15 years.



On site, at least two LTW employees per shift assure a smooth running.

To this aim LTW implements in close cooperation with Fresenius a proper service team on site. All of five employees of LTW get acquainted with the plant right from the stage of assembling; at least two of them monitor continuously the operation and use the time for preventive maintenance work in order to reduce maintenance to once per year.

Rainer Reichelt: "We put our trust in LTW who negotiated very clearly and who went with us this new way without thousands of ifs and buts."

**MATERIAL FLOW**

The new distribution center brings together the two present central warehouses with different target regions and order structures.

70 % of the articles are exported as full pallets into 140 countries. In Central Europe the majority of articles is shipped as collated orders to backup warehouses, hospitals and individual patients.

All in all, the full pallet handling is prevailing – the ideal prerequisite for a high automation level of all material flows including automated small parts storage and fully automated identification point with pallet stacking and staging system.

Following the expansion of the high-bay warehouse by three aisles in 2011, ten aisle-bound stacker cranes are operated in two shifts and permit approx. 6,400 pallet movements per day. A possible third shift offers a generous capacity reserve.

Beside the mechanical equipment, LTW also delivers the PLC control system for all components and for the warehouse control unit with interface to the SAP-based warehouse management. Such a solution from one hand proves itself especially regarding maintenance, troubleshooting and fault clearance.



## PROJECT OUTLINE YEAR OF CONSTRUCTION 2008 / 2011



### HIGH-BAY WAREHOUSE (HBW)

- ▶ Galvanized steel rack
- ▶ Rack supported storage system
- ▶ L x W x H: 154 x 74 x 38 m
- ▶ 10 rack lanes
- ▶ Double deep 3-/2 storage
- ▶ Approx. 78,000 pallet spaces
- ▶ Maximum payload: 1,200 kg
- ▶ Air conditioning: +15 °C to +25 °C

### Stacker cranes

- ▶ 10 aisle-bound stacker cranes
- ▶ Driving speed: 240 m/min
- ▶ Driving acceleration: 0.4 m/s<sup>2</sup>
- ▶ Hoisting speed: 70 m/min
- ▶ Hoisting acceleration: 0.6 m/s<sup>2</sup>
- ▶ Load handling device: telescopic fork double deep

### CONVEYOR SYSTEM

On 2 levels with storage and retrieval points in hall 1 and hall 2

- ▶ 2 picking zones
- ▶ 2 labellers (vertically adjustable)
- ▶ 1 pallet wrapping machine
- ▶ 3 transfer carriages
- ▶ 4 vertical conveyors
- ▶ Automatic identification point including inhouse pallet handling

### AUTOMATED SMALL PARTS STORAGE

- ▶ L x W x H: 48 x 8 x 6 m
- ▶ 2 rack lanes
- ▶ Double deep storage
- ▶ Approx. 8,700 spaces for plastic boxes (400 x 600 x 220)
- ▶ Maximum payload: 50 kg

### Stacker cranes

- ▶ 2 aisle-bound stacker cranes
- ▶ Driving speed: 300 m/min
- ▶ Driving acceleration: 3 m/s<sup>2</sup>
- ▶ Hoisting speed: 180 m/min
- ▶ Hoisting acceleration: 3 m/s<sup>2</sup>
- ▶ Load handling device: KTC with double-sided output system

### SOFTWARE

- ▶ Warehouse control unit for high-bay warehouse and automated small parts storage
- ▶ Certified SAP interface for customized storage management
- ▶ Availability indication
- ▶ Emergency operation for goods retrieval to maintain delivery capacity