



Case study: Zbyszko Company

A high profit-automated warehouse: 200 pallets/hour and 18,000 pallets stored

Location: Poland



Aiming to keep pace with its growing business, the company Zbyszko wanted to expand the capacity and agility of their warehouse in addition to integrating their production and storage processes. In order to meet this demand, Mecalux built them an automated warehouse connected to the production plant via a 100 m long overpass equipped with conveyors. All this is coordinated and controlled by the warehouse management system Mecalux Easy WMS software.



Zbyszko Company and their needs

Zbyszko Company, a company specialised in the production of carbonated drinks, soft drinks and flavoured waters, was created by Zbigniew Bojanowicz in 1993 in the Polish city of Białobrzegi.

In just 10 years, the Zbyszko Company has experienced spectacular growth that has made it one of the most successful Polish manufacturers within the natural beverages market.

In the face of its incessant headway, Zbyszko Company has relied on Mecalux to provide it with a new storage centre to centralise all the company's logistical activities and which is equipped with the newest, most innovative technologies in order to deal with high production rates and save on logistics costs. Present and future growth demand it.

Speeding up internal transport was also a crucial prerequisite of the project, creating a direct connection between the warehouse and the production area. This was done via maximum automation of the storage processes in order to increase Zbyszko Company's market competitiveness.

The Zbyszko Company hired Mecalux to construct its newest warehouse located in the Polish city of Radom



Connecting the production area and the warehouse

Mecalux has set up an automated warehouse that connects the production area via a 100 m long overpass through which already palletised goods circulate on a circuit of roller conveyors.

The checkpoint, located at the beginning of the circuit and within the same production area, verifies that the dimensions and the quality of each pallet are appropriate.

The conveyors have two lines – one in each direction – working independently despite being placed in parallel.

Inside the warehouse two levels of conveyors are arranged. The upper level is allocated to the input of goods, while the lower level has been reserved for outputs.

There is also the possibility that outside goods, destined for the warehouse or the production area, can enter at this level. Not to mix operations, they have set up a conveyor just above the docks for inputs into the warehouse, with a lift placed at the end that raises the pallets to the upper level.

On the ground floor, so that throughput is as high as possible, a circuit of electrified

monorails capable of transporting SKUs at more than 100 m/min – and which links the warehouse with the preload area – was installed.

This system is ideal for connecting distant points of the installation at a steady pace, eliminating unnecessary movements between rack areas.

The Zbyszko Company warehouse is connected with the production area via a 100 m long overpass fitted with roller conveyors





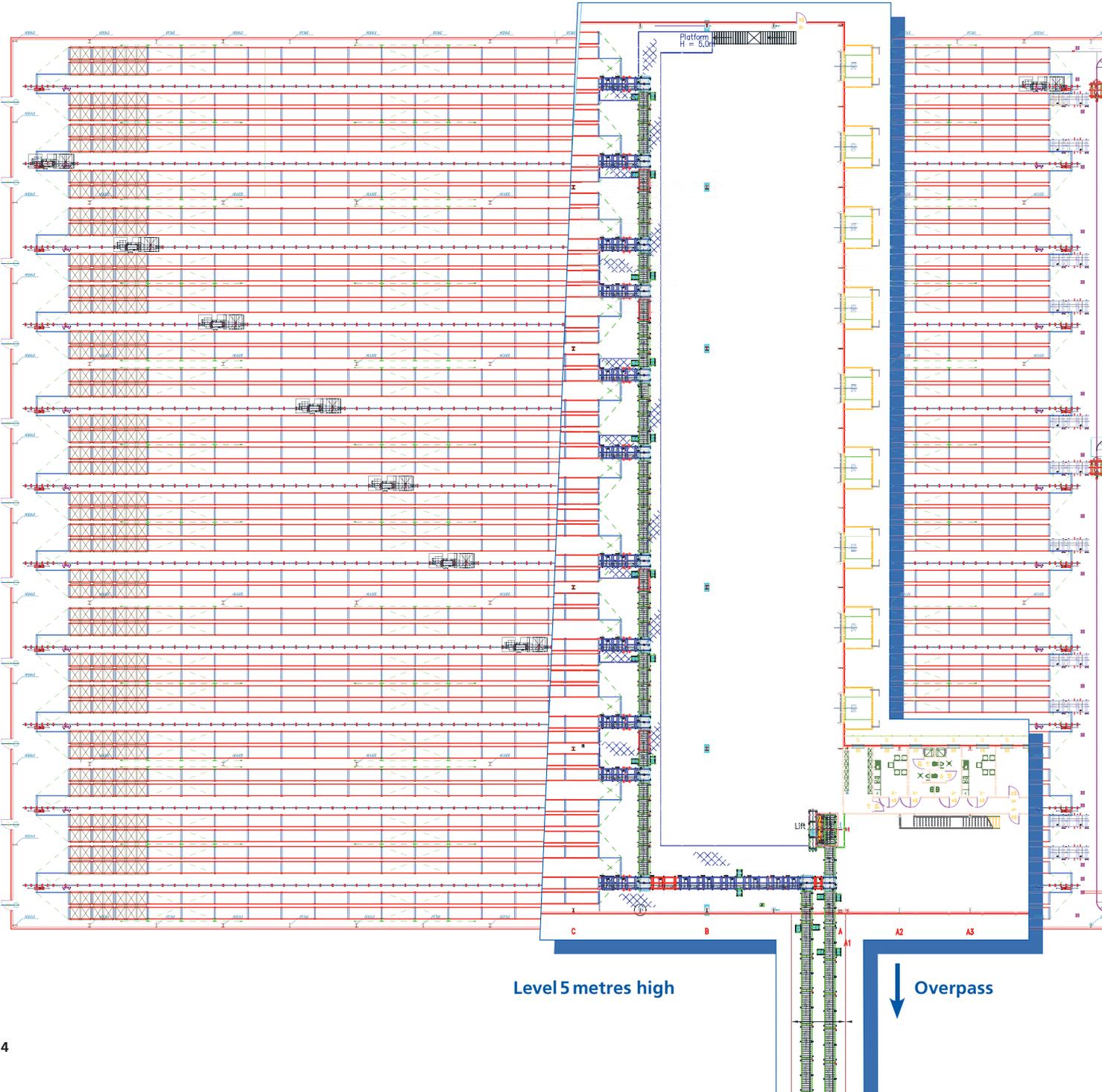
Inside the warehouse

The warehouse occupies a 7,000 m² surface area and is built in a facility only 11 m high.

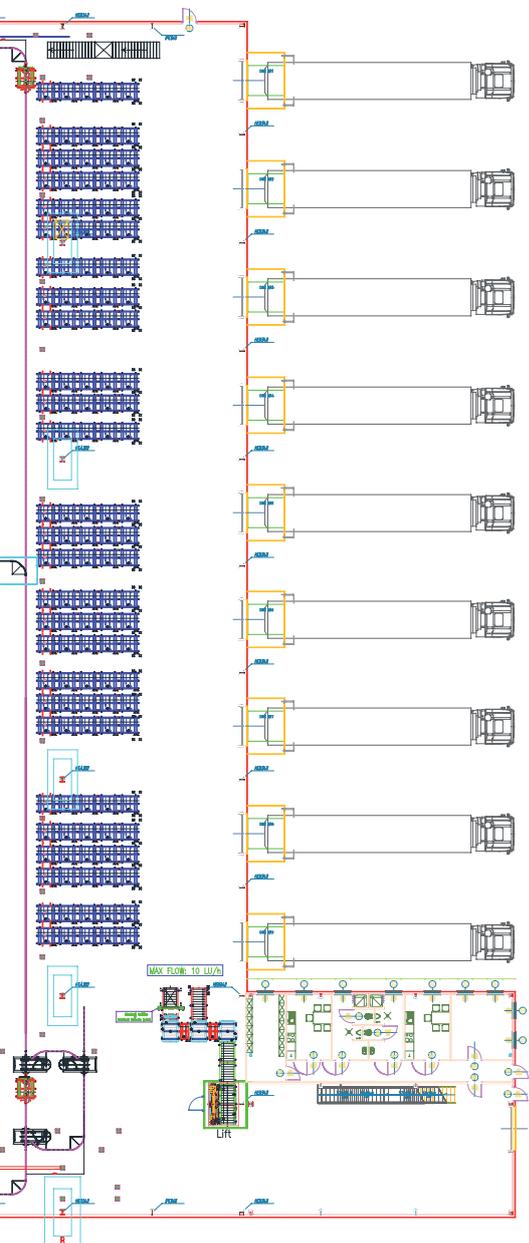
The installation of stacker cranes makes it possible to warehouse up to 18,000 pallets despite this limited height.

Having few SKUs, they chose to place double-depth racks, a very common method in automated logistics centres that require a large storage capacity.

The racks are served by eleven, fully automated stacker cranes, which move quickly along their respective aisles handling pallets weighing up to 1,000 kg each.



The seven stacker cranes that are located in the middle zone are 11 m high, while the remaining four left at either end of the warehouse have been retrofitted to the shape of the building, with a height of 9 m



Ground floor

Dispatches

The stacker cranes are responsible for automatically extracting stored goods from the production area and bringing them to the corresponding output conveyor. Once on the conveyor, the electrified monorails directed each pallet to their assigned pre-load area.

There are numerous options for creating an electrified monorail circuit. In Zbyszko Company's case it was decided that a simple loop circuit, operated by 21 individually controlled shuttles, was the most cost-effective, seamless solution.

The software that controls the machines is connected with the WMS (Warehouse Management Software) throughout the warehouse, and to the customer's ERP.

The image on the right is differentiated into the following areas:

- Warehouse
- Inputs into the upper level
- Electrified monorails
- Preloads area
- Input conveyors from the docks

The pallets are loaded onto the shuttles on one side of the circuit and are unloaded in the consolidation area located on the opposite side



Input conveyor on upper floor



Shuttle depositing goods in preloads



Warehouse Management System: Mecalux EASY WMS

Zbyszko Company uses the warehouse management system Mecalux Easy WMS to check each and every one of the movements that takes place in the logistics centre, and thus efficiently manage their storage space.

Easy WMS communicates with the customer's ERP SAP in order to be able to carry out the dispatch, reception, distribution, transfer processes, and other tasks related to the logistics centre.

This powerful system ensures the proper operation of the machines that are used in the automation of the warehouses, which simplifies transportation, eliminates human errors and reduces staffing costs.



Overpass between production and the warehouse



Advantages for Zbyszko Company

- **Maximum space utilisation:** the warehouse, only 11 m high, has an 18,000 pallet storage capacity in a 7,000 m² surface area.
- **Cost savings:** the overpass that connects the warehouse to the production area allows Zbyszko to save in logistical costs.
- **Increased productivity:** order preparation is fast and efficient thanks to the speed of the stacker cranes, the conveyor circuits and the electrified monorails installed, which can issue up to 200 pallets/hour.



Technical data

Storage capacity	18,000 pallets
Maximum weight per pallet	1,000 kg
Height of the warehouse	11 m
Warehouse surface area	7,000 m ²
No. of stacker cranes	11
Fork type	double-depth
No. of shuttles on the electrified monorails	21
Length of the overpass	100 m