AB InBev, UK

Automated storage solution

Körber provided a significant storage solution to maximize storage density, improving the vertical space usage.

Project description

AB InBev employ over 1000 people across two UK breweries, one of which is their Magor Brewery. It was built in 1979 by Whitbread and came into the ownership of AB InBev (Interbrew as it was back then) in 2000. It produces keg, bottled and canned beer, including the Stella Artois and Budweiser brands for the British market.

Automating the site's warehouses is a big step towards storing, managing and distributing their products more efficiently. This project will automate the brewery's main warehouse while maintaining its accessibility from existing production lines and other warehouses, both on- and offsite.

Features and benefits

- **Flexibility combined with accessibility**
- **The automatic storage and handling system guarantees that all orders are ready on time and at the correct location, with minimal human effort**
- **Expandable system**
- **Improvement of space utilization in the existing warehouse building**

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There will be a significant storage density increase while allowing input and output orders to be performed from both ends of the 5.800 m² building.

System features / functionality
The main purpose of this system is to maximize storage density (improving vertical space usage, allowing a change from block storage of 2 pallets in height to 6 pallets in height) in the existing warehouse building, while maintaining the demanding throughput requirements.

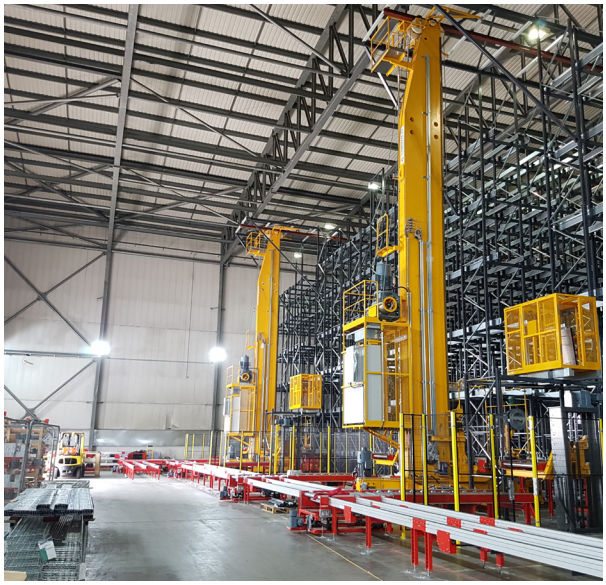
A multiple-depth storage solution allows reduction of the stacker crane aisles and maximizes the available storage space; Körber's stacker cranes with double satellite vehicles are able to handle 2 pallets at a time in order to achieve the required throughput performance.

Körber was awarded the contract for this project for providing a simple yet efficient and flexible solution while keeping the current needs of the site in mind.

To further optimize the system, a shuttle car running along the adjacent building connects inbound pallets from north and south ends of the system. Similarly, expedition is performed at both points using the same shuttle car, thereby centralizing the pallets at one side of high bay without impacting the performance of the stacker cranes.

Automatic pallet quality and load control stations are installed at all infeed points, checking that only pallets and loads with the defined characteristics are stored in the high bay. Re-arranging stations are installed to allow operators to make the necessary corrections in rejected pallets without the need for further manual handling.

A series of gravity roller conveyors brings outbound pallets to the main expedition docks outside the front of the building, making the truck-loading stations more accessible and convenient.



A loop with conveyors in front of the high bay and expedition docks guarantees the fine sequencing of the pallets to be loaded in the trucks, as well as an additional buffer.

With a high degree of redundancy and flexibility, the system is prepared – and expected – to work reliably around the clock while maintaining safety, quality and performance standards.

Customer benefits
The system greatly improves space utilization of the existing warehouse building. The multiple-depth storage solution using satellite vehicles allows the customer to maximize storage density in both surface area and height.

By being fully integrated with the ABI management software, no changes needed to be made to the existing production processes.

The automatic storage and handling system guarantees that all orders are ready on time and at the correct location with minimal human effort. Keeping the system simple makes it both accessible and flexible. As more demanding requirements arise in the future, the system may be easily expanded upon, to the point where it may be simply duplicated in storage capacity and in its performance capabilities.

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Project-specific characteristics
To be able to meet the required specifications and maintain the work methods already implemented on site, the system is designed to be able to handle all pallets in pairs. This includes the stacker cranes, satellite vehicles, shuttle car, the whole conveyor system, and the infeed and output feed stations where the interface with double-forked forklift trucks is made.

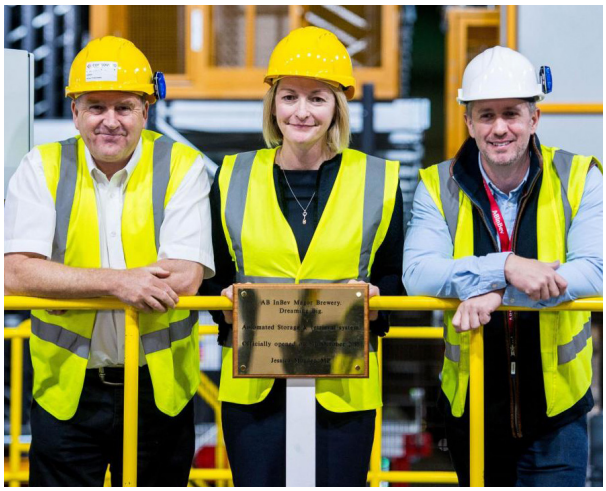
These interfaces are fully prepared to ensure the workers' safety, and to protect the equipment by elevating pallets before being placed on or removed from the system.

This ensures nothing is moving when the handling units are being transferred between forklifts and conveyors, and maintains correct orientation of the load barcode labels. The implementation of a complete access control and planned maintenance procedures ensure a safe work environment across the whole building.

About AB InBev

AB InBev UK is the UK trading subsidiary of Anheuser-Busch InBev, an international beverage and brewery company based in Leuven, Belgium.

It is currently the world's largest brewer, following a series of mergers which brought together some of the world's most popular beer and soft-drink brands, including Budweiser, Corona, Stella Artois, Antarctica, Beck's, Hoegaarden and Leffe, among hundreds of other global or local leading brands.The company's origins lie in pioneering breweries that date back as far as 1366. Today, AB InBev employs approximately 150,000 people across 24 countries.



Facts and figures

1. Industry
Beverage

2. Products handled/stored
a. Products: Beverages/beer
b. Handling units:
- Europallets (800mm x 1200mm)
- Closed pallets (1000mm x 1200mm)

3. Operating temperature
Room temperature

4. General contractor / main scope of work:
- Racking system
- Conveyor system
- Stacker cranes
- System controls and visualization software
- Warehouse management system

5. Warehouse characteristics:
a. Storage type: Multiple depth
b. Length x width x height: 73m x 60m x 15m (racking storage area)
c. Storage capacity 14,400 closed pallets

6. Third-party equipment/products
- Racking system
- Gravity roller conveyors

System throughputs

Product	Main elements	Product quantity	Handling device	Handling performance
Conveyor system	Roller conveyors	20	76 mm diameter rollers	0.2m/s
	Chain conveyors	75	3 x double chains	0.2m/s
	Transfer tables	44	Roller conveyor	-
	Rotating tables	2	Chain conveyor	-
	Mini lifts	6	Roller conveyor	0.25m/s hoisting
	Double shuttle car	1	2 x chain conveyors	3m/s
	Gravity roller conveyors	12	-	-

	Aisles	Quantity	Loading device	Loading performance
Stacker crane system	3	3	Double satellite vehicle	135 pallets/ hour in 200 pallets/ hour out

Körber Supply Chain Automation:
Our impartial consultants will advise on, and help you select, the right automation solution for your organization. We have our own range of competitive products, but we are equally willing to procure and implement other products if they are better suited to your needs.

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