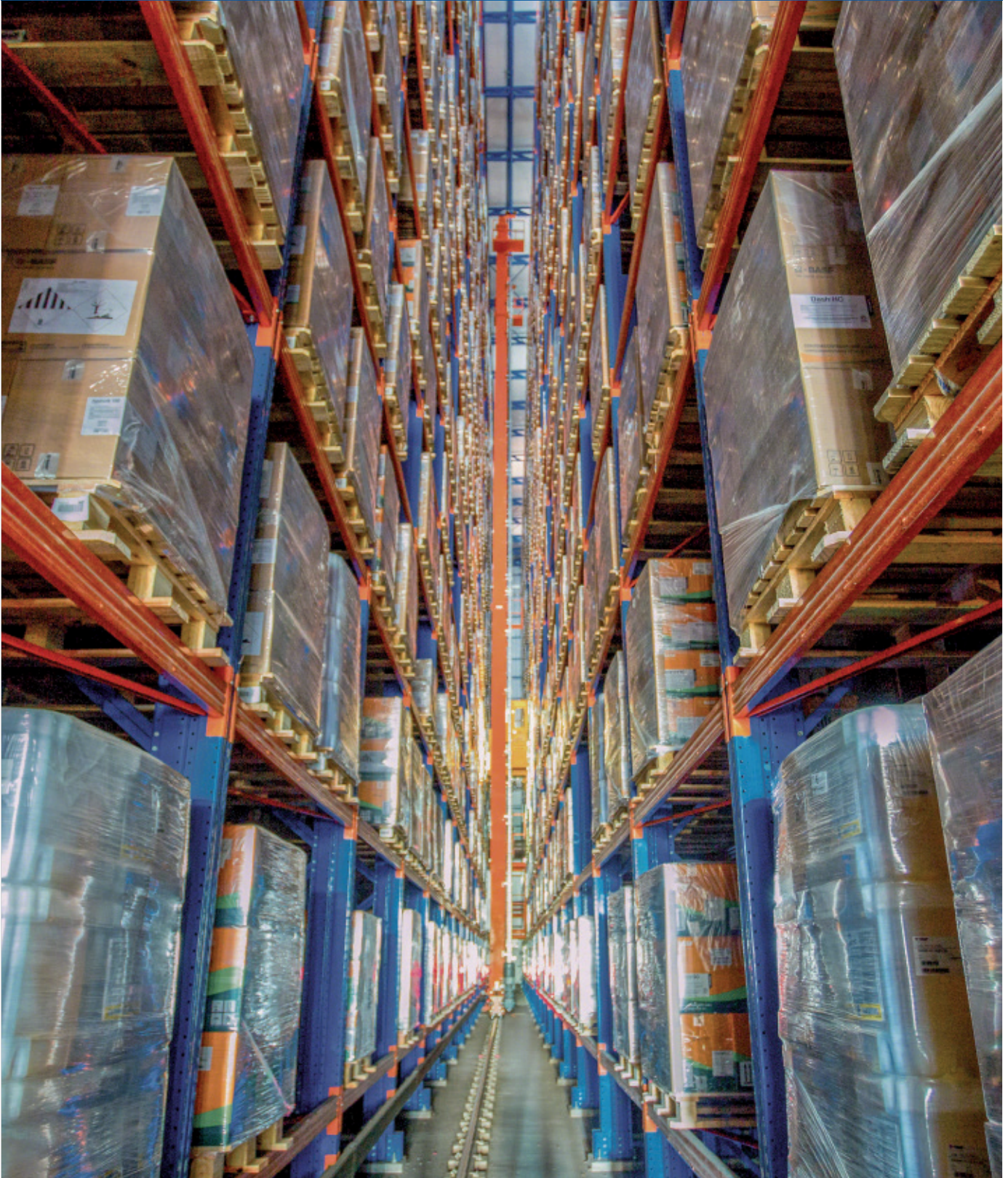


**Case study: BASF**

The competitive edge: international chemical powerhouse builds automated rack supported building

Location: Brazil



The BASF automated rack supported building in Guaratinguetá (Brazil), in operation since 2011, has a storage capacity of more than 8,160 pallets. It is made up of two double-deep aisles served by twin-mast stack cranes and a conveyor circuit, in addition to the picking area at the front of the warehouse. All operations are controlled and directed via Mecalux's Easy WMS warehouse management system.



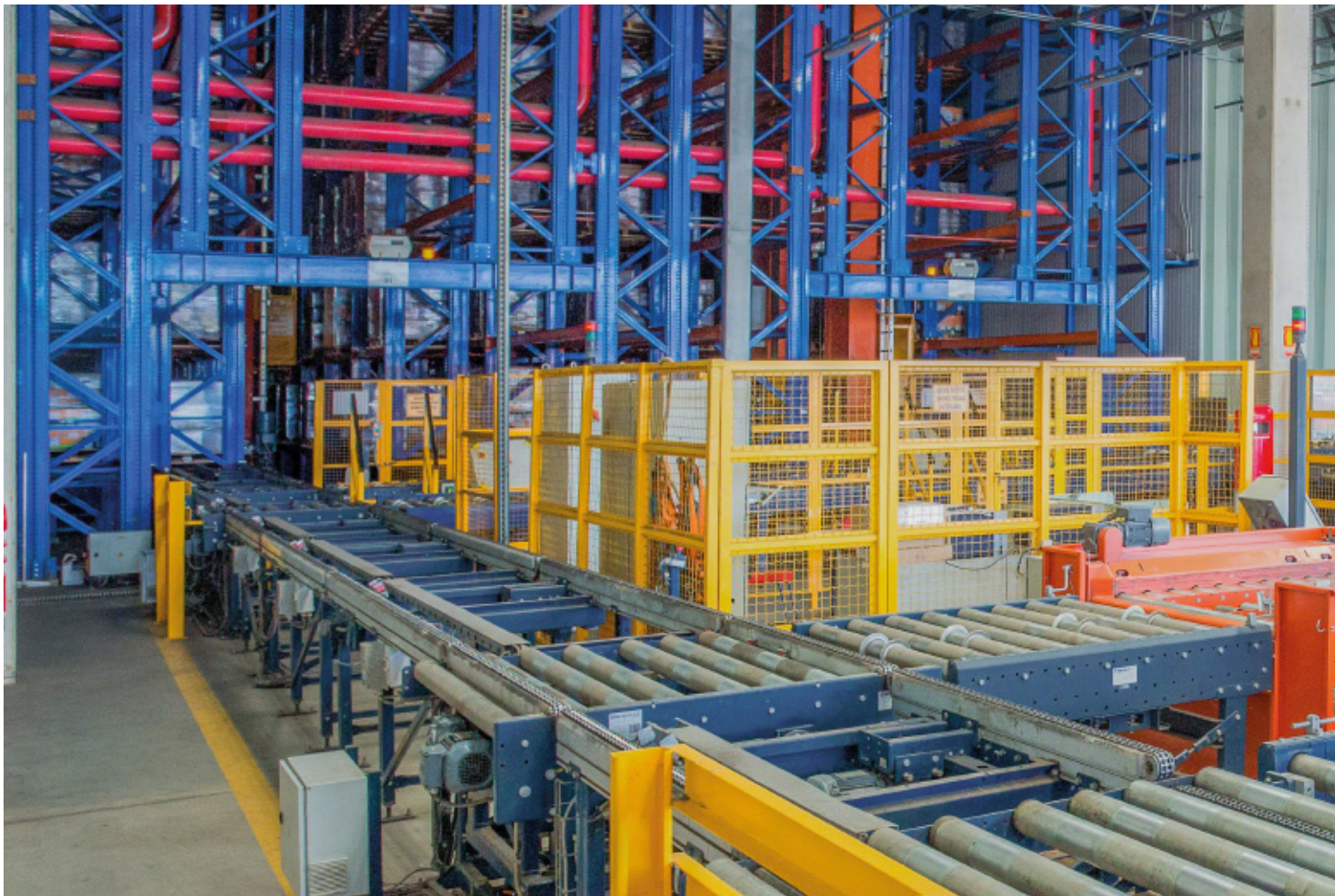
### Needs of BASF in Brazil

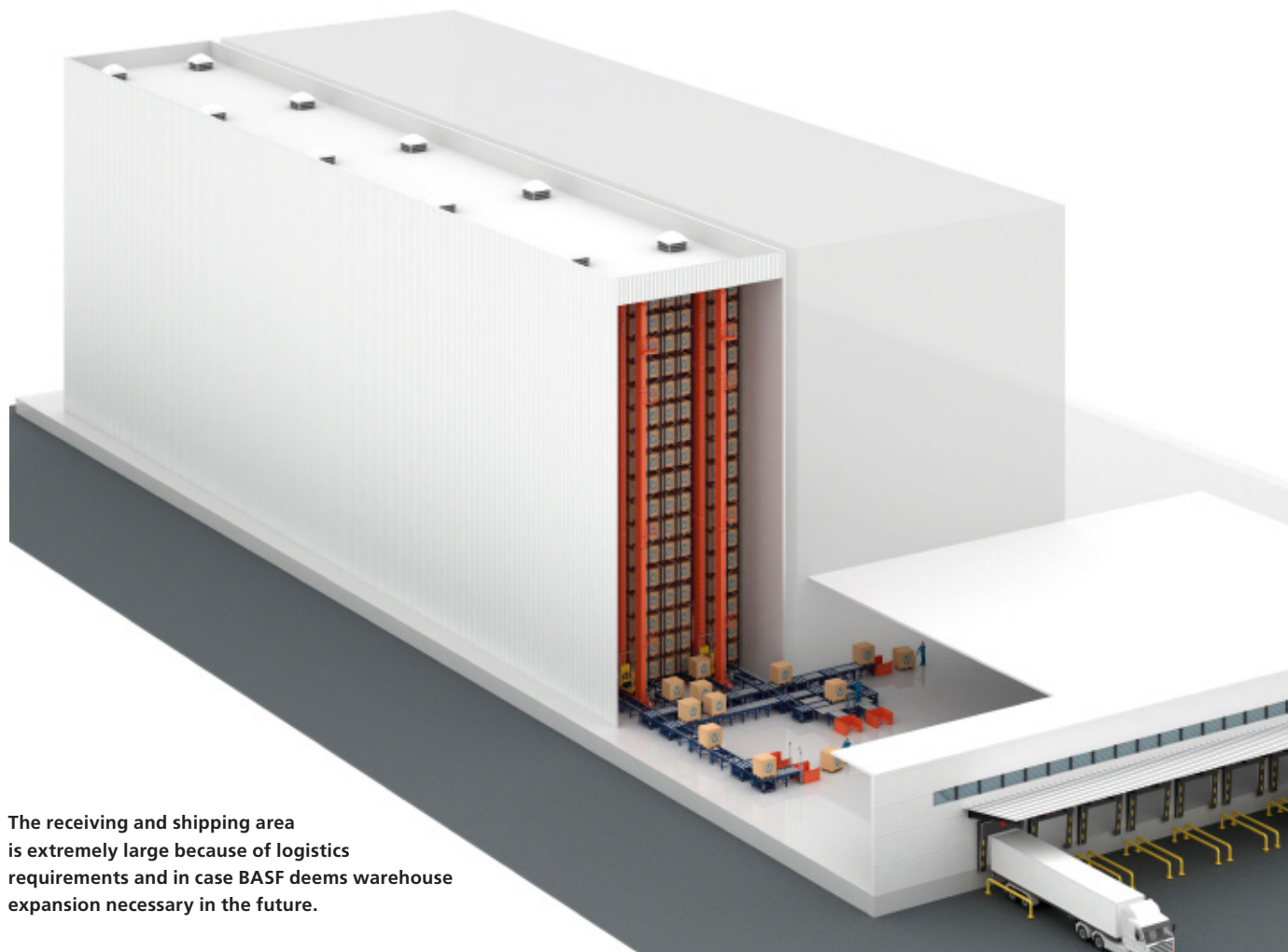
BASF is a company with a long history in the manufacture and distribution of industrial chemical products and a solid presence worldwide. It has always been committed to innovation, sustainability, and the pursuit of the best solutions designed to satisfy the current and future needs of society.

To adapt to market demands in the last few years, the company required a warehouse with sufficient capacity to deal with these needs.

Mecalux took the reins from the beginning of the project, which strengthened BASF's position in South America.

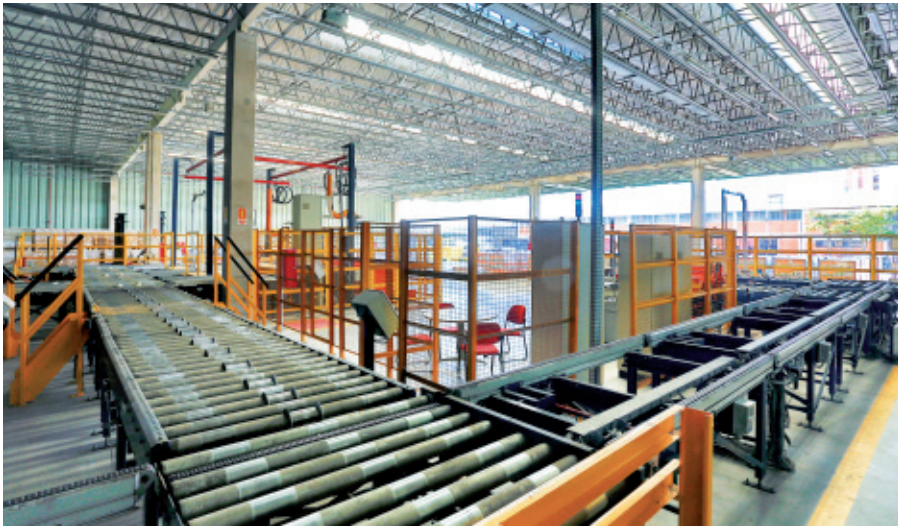
BASF chose to automate to increase its operational competitiveness in South America





The receiving and shipping area is extremely large because of logistics requirements and in case BASF deems warehouse expansion necessary in the future.



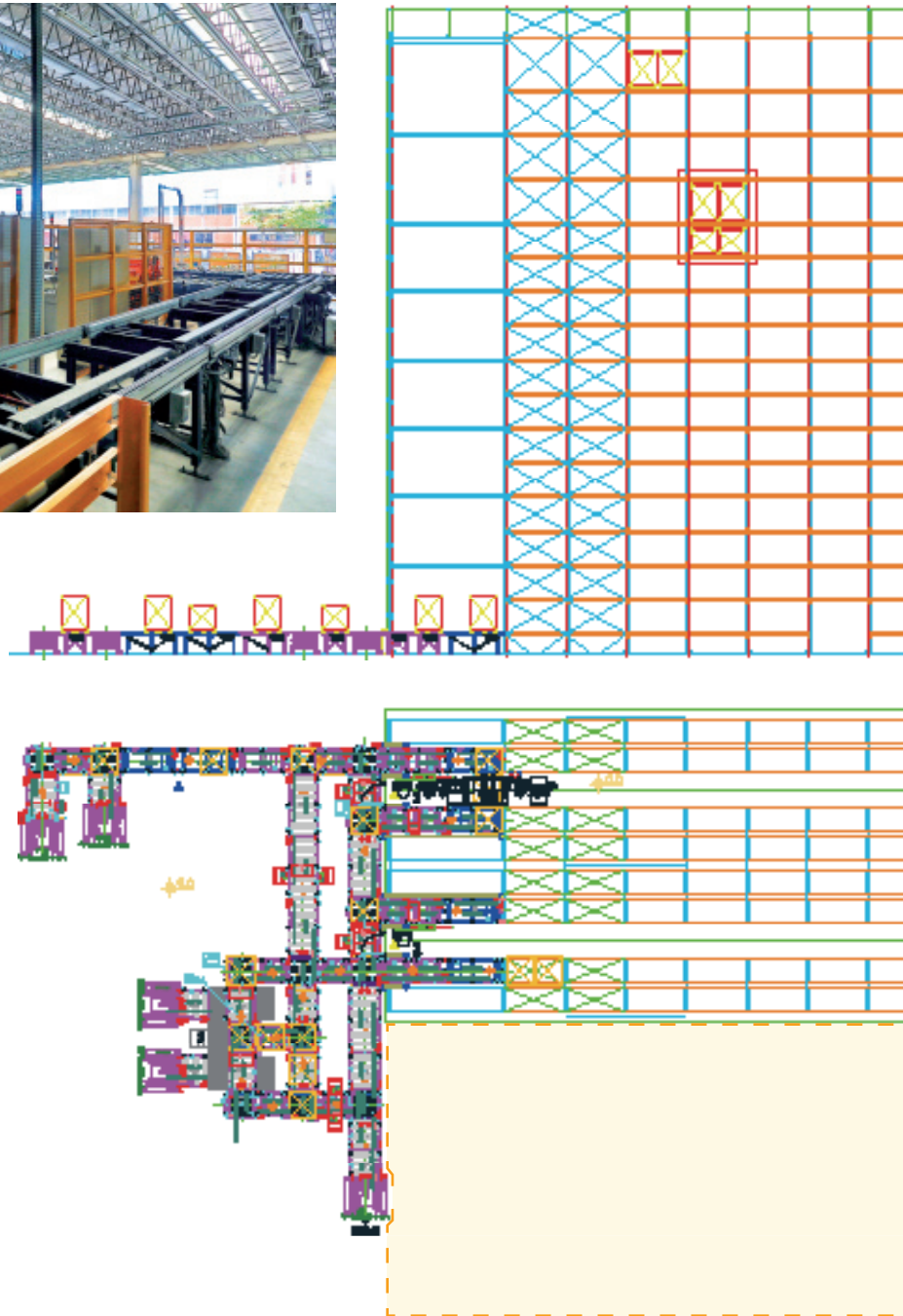


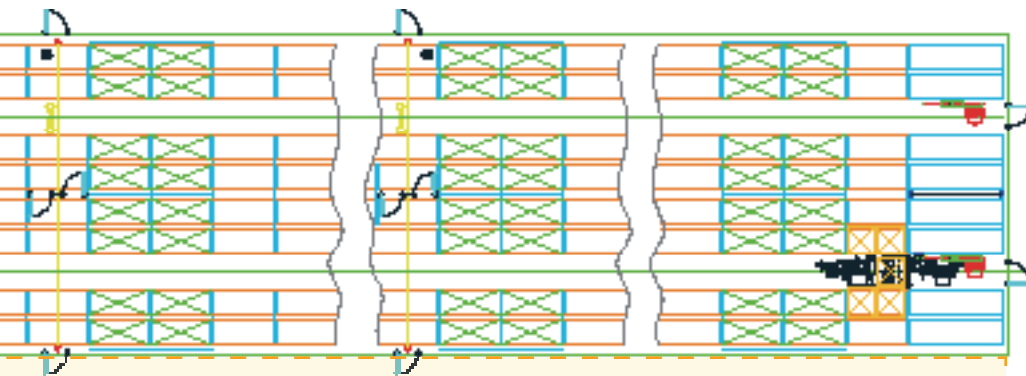
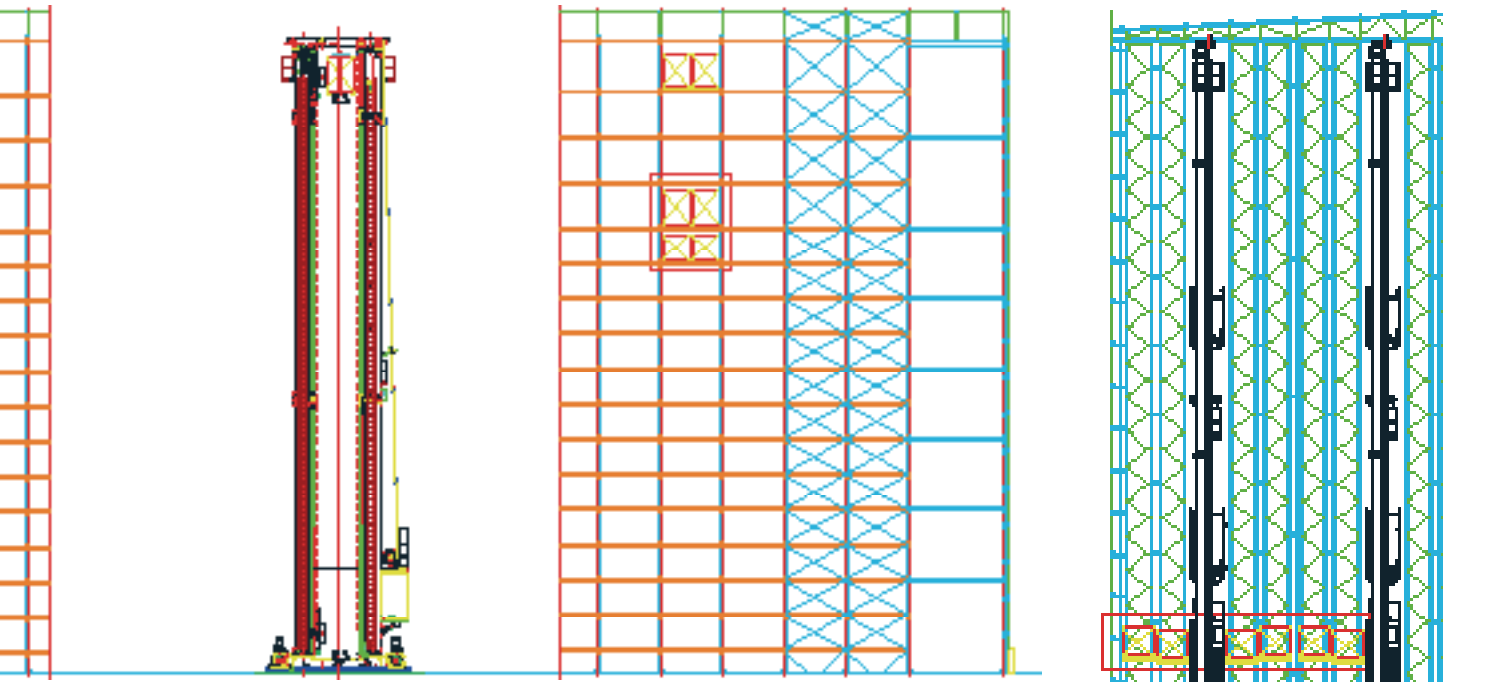
### BASF's automated warehouse

Mecalux designed and constructed a 15,070 ft<sup>2</sup> automated rack supported building measuring 98' high and 331' long. It consists of two aisles with double-deep racks on both sides, which have a capacity for more than 8,160 pallets without losing direct access to the merchandise.

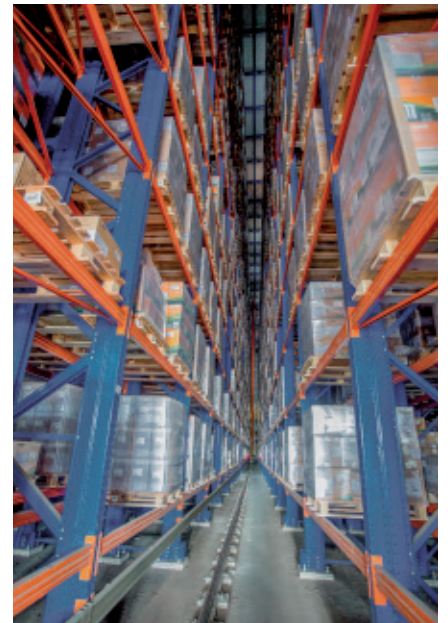
Each aisle is served by a twin-mast stacker crane that picks up pallets from incoming conveyors and deposits them in the location assigned by Mecalux's Easy WMS warehouse management system. Later, these machines perform the same movement but in reverse for outgoing goods.

Since this large-scale rack supported building is responsible for storing chemical products, safety was of the utmost importance. Emergency exits have been set up at strategic points. In the event of an incident, the automatic equipment stops, facilitating the evacuation of the operators.





Space for possible expansion



BASF constantly reviews and enhances its business; therefore, it always considered the possibility of expanding its current warehouse capacity in the future





### Incoming and outgoing goods

The operations in the warehouse stand out because of their simplicity: goods receipt and shipping are carried out automatically at the front of the warehouse via a conveyor or circuit with rollers and chains that controls the pallets at all times. This system allows goods to be moved independently, without the need for human intervention, and prevents logistics errors. Both processes are separated to avoid interference.

Before entering the automated warehouse, goods must pass through the checkpoint to validate that they fulfill the requirements established for their storage in the warehouse. Pallets that do not pass inspection are deposited on the rejects conveyor, placed in parallel, for their reconditioning.

Goods leaving the warehouse can go to the picking area installed at the front of the facility; alternatively, they are sent directly to the outgoing conveyor when an entire pallet must be shipped

## Picking area

At the front of the conveyor system, two picking stations were also set up.

Operators prepare orders with agility thanks to vacuum lifters that raise and move the heaviest goods.

Just behind the workstations are two lines of bidirectional conveyors.

These are assigned to supply empty pallets needed for operations and to dispatch completed orders.



Close-up of the area where the vacuum lifters are located



## Warehouse management software

Mecalux's Easy WMS is a powerful warehouse management system whose purpose is to coordinate and manage all internal operations. The functions it performs include receiving, assigning locations, and storing pallets based on turnover, picking, order preparation, and final shipment.

As BASF's warehouse is fully automated, the Galileo control module was installed.

This program is responsible for issuing movement commands to the various devices operating in the facility, as well as controlling safety measures.

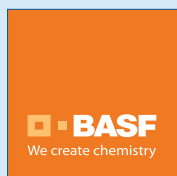
Easy WMS by Mecalux is in permanent and bidirectional communication with BASF's ERP system, transferring data and information to operate and manage the warehouse effectively and optimize logistics processes to the fullest.





### Advantages for BASF

- **Large capacity:** BASF's new rack supported building has the capacity to slot more than 8,160 pallets of different sizes and characteristics in 15,070 ft<sup>2</sup>.
- **Maximum agility:** operations are very simple, agile, and completely automated, minimizing human intervention.
- **Optimal management:** the warehouse is controlled by Mecalux's Easy WMS warehouse management system to optimize all movements and operations carried out.



### Technical data

Storage capacity	8,160 pallets
No. of stacker cranes	2
Type of stacker crane	twin-mast
Type of fork	double depth
Warehouse height	98'
Warehouse type	rack supported

