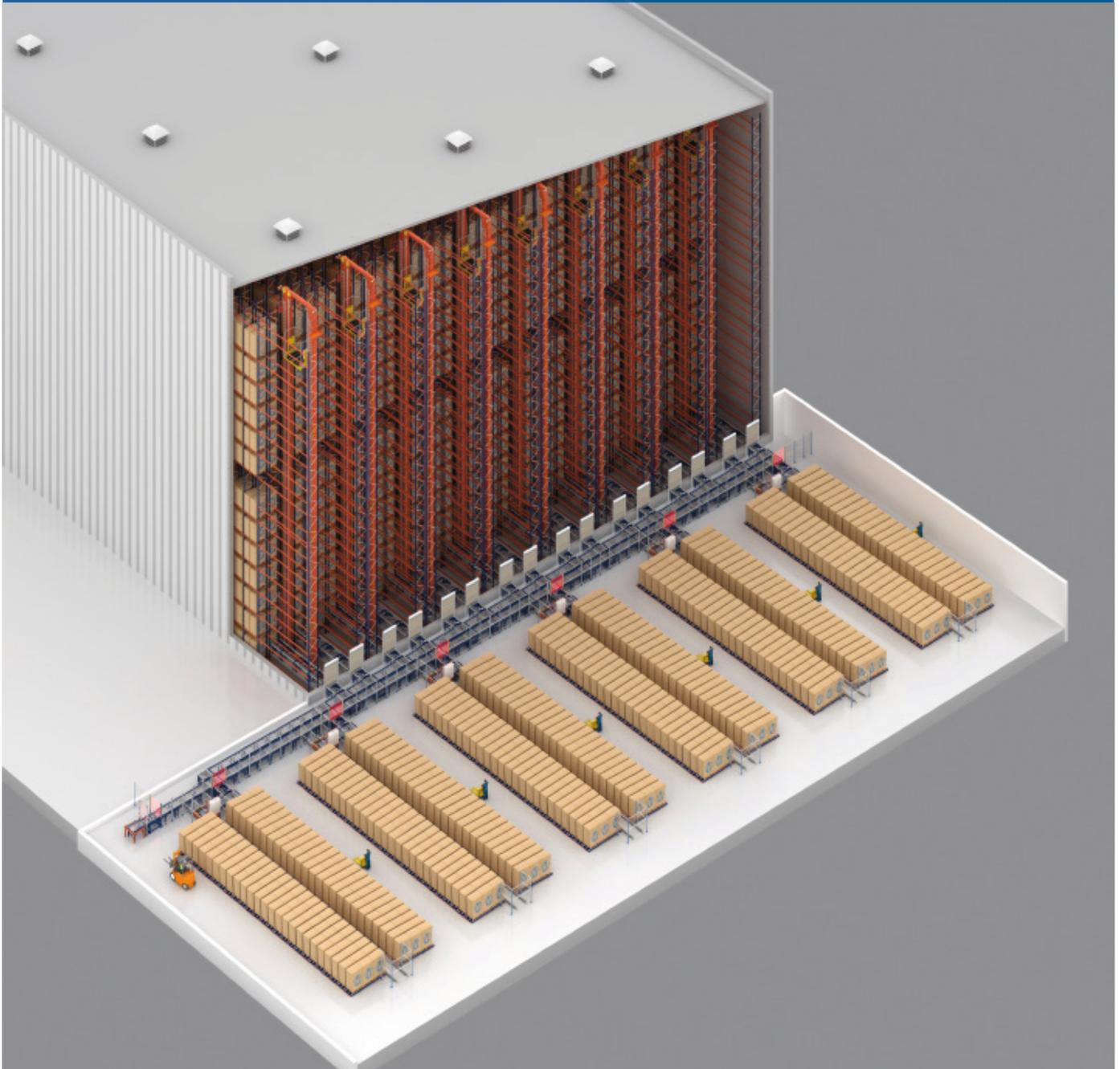# Case study: Ypê

Wide prep area for orders: a key Mecalux design feature for Ypê warehouse in São Paulo

Location: Brazil

Ypê, a company dedicated to the development of cleaning products for the household and personal hygiene, has hired Mecalux to install a 29.5 m high automated clad-rack warehouse with a 24,168 pallet storage capacity in its logistical support centre in Amparo (São Paulo).
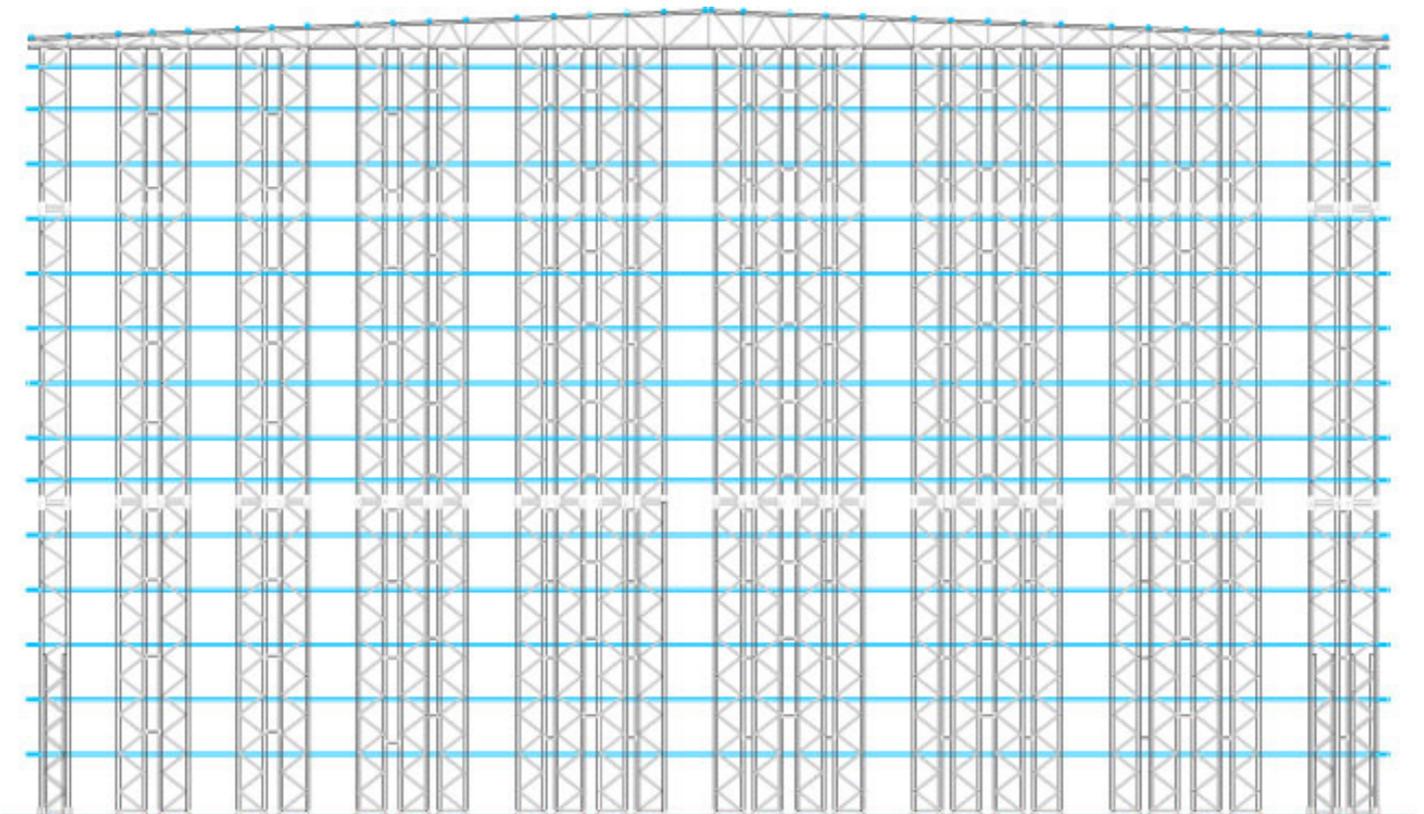
Analysing the needs

The main production centre of Ypê is located in Amparo, a town close to the city of São Paulo. The growing needs of the company required the construction of a large logistics centre next to the production plants, from which they could offer comprehensive service, and at the same time reduce costs.

Mecalux installed the racks and structures of the warehouse, the automatic internal handling equipment, the construction of a picking area and Mecalux Easy WMS software deployment, the warehouse management system which governs and controls the operations of the logistics centre.

The collaboration of Mecalux with Ypê has been very close from the development phase of the project to its execution

Picking channels

Direct outputs station

Warehouse area reserved to expand the storage capacity of Ypê

Main conveyor circuit

Entry points

Solution adopted: clad-rack warehouse

The most striking part of the project developed by Mecalux is the installation of a self-supporting construction warehouse with a total capacity of 24,168 pallets, 1000 x 1200 mm in size, each with a weight of 1,300 kg.

Being clad-racked, the racks are a fundamental part of the structure of the building and cladding is placed on them. In addition to its own weight, it must withstand the pallets stored, the force of the wind on the basis of the site characteristics, the pressure of the handling equipment and the seismic risk that corresponds to the zone in accordance with the country's regulations.

The traditionally constructed buildings are adjacent to Ypê's logistics centre, just besides the automated warehouse, where available space has been set aside for future expansion.

At present, this 29.5 m high, 107.5 m long and 49.5 m wide warehouse has a total of eight storage aisles, with racks on both sides, of which five are double-depth and three single-depth.

Each aisle is set up with a twin-mast stacker crane that automatically performs the movements between locations and the main conveyor circuit, placed at the header of the warehouse.

Warehouse

The warehouse is distributed into the following areas, as can be seen in the layout:

A. Warehouse

B. Input stations

C. Main conveyor circuit

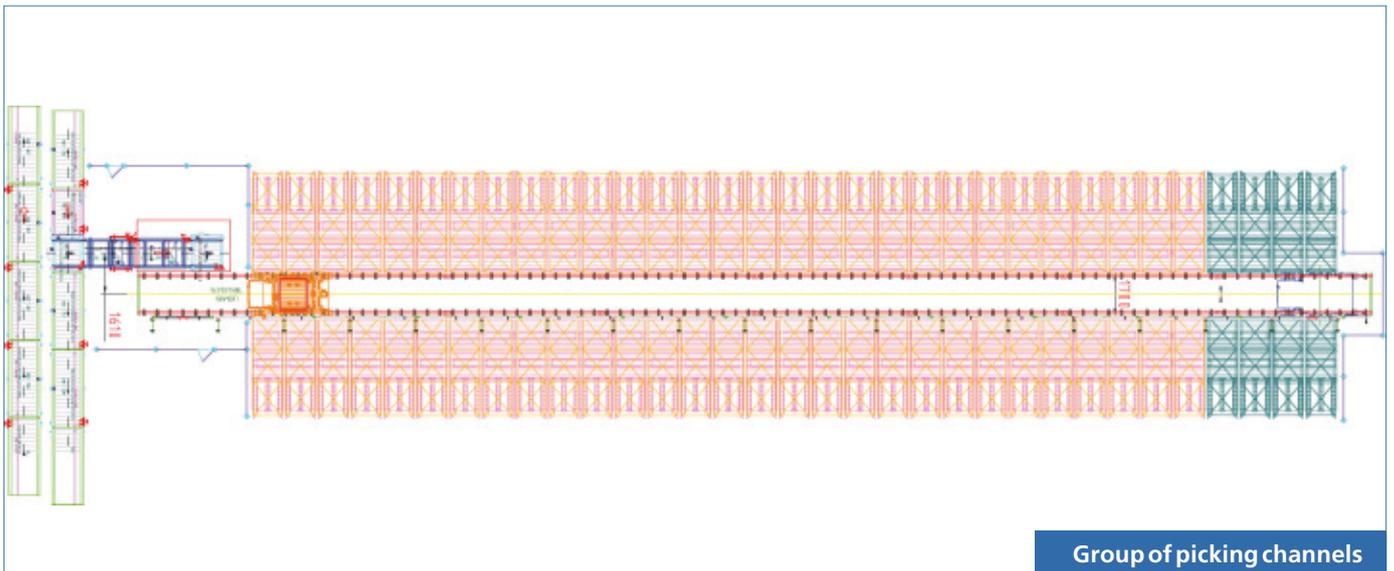D. Direct outputs station

E. Picking channels

The input of the pallets that go into the warehouse takes place via three stations readied with a gauge control and input checkpoint equipment. This space is located in the reception dock area for incoming goods, occupying one of the sides of the warehouse.

A conveyor with accumulation capacity transports them to the header, where the main conveyor circuits are placed.

A large percentage of the pallets that leave the warehouse do so designated for the picking area.

As of now, there are five groups of live channels outfitted and one for pallets placed on the floor of the warehouse.

Group of picking channels

Ypê's facility in São Paulo, with a 24,168 pallet capacity, is expected to achieve a total flow of 200 pallets/hour in inputs and outputs

Each grouping contains 66 channels with a three pallet capacity. The feeding is performed via transfer cars that automatically move from specific positions of the header to the live channels. The slight tilt with which channels are mounted allows the pallet to move by gravity to the closest free position in work aisles.

Among the five groups, there is a total of 330 channels with a capacity for 990 pallets; each channel is intended for a single SKU. Apart from that, there are 138 positions for pallets placed on the floor, which are directly supplied by forklifts.

The consolidation of orders, once the pallets have already passed by the balers, is carried out in the area allocated to preloads close to the loading docks.
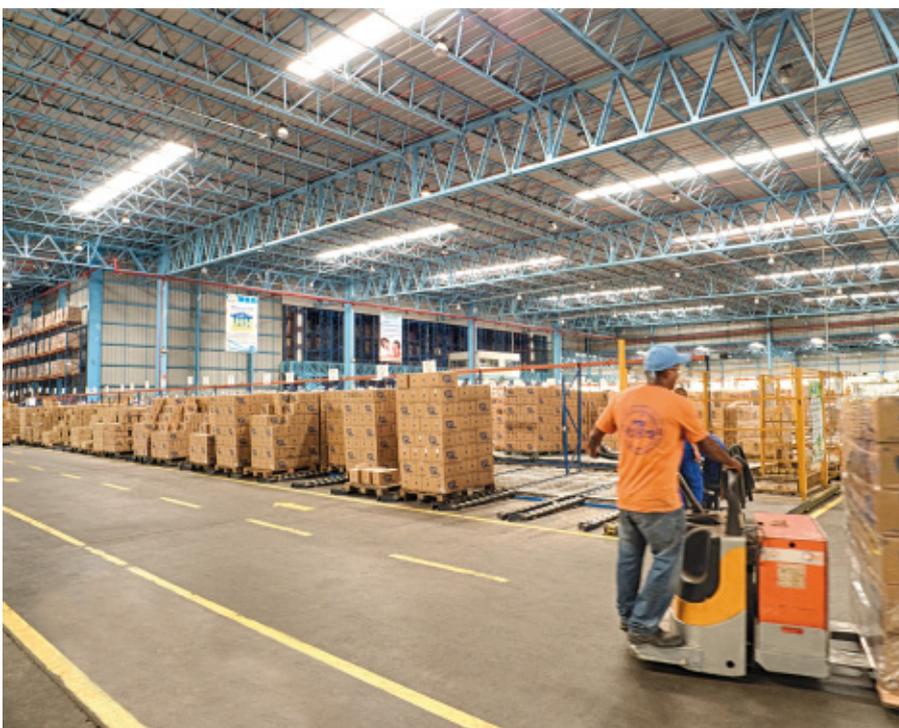
The logistics centre of Ypê also features live racks to store consumer products that do not enter into the automated warehouse. This area, next to the docks, works as cross-docking, the live racks acting as a buffer.

Easy WMS: the nerve centre of the logistics centre

Easy WMS is a powerful warehouse management system developed by Mecalux with which you can manage all the warehouse needs, stepping in from when the goods are received till the order has been dispatched.

Among all the functions that Easy WMS is capable of performing, the most important are: the receipt and registration of the pallets that enter into the warehouse, the management of the locations on the basis of rules or parametrisable algorithms, control of outputs in accordance with FIFO criteria and traceability, order preparation, consolidation, label issuing, documentation prior to delivery, etc. All of this with the major advantage of reducing the errors arising from manual management to a minimum.

Furthermore, the Mecalux Easy WMS warehouse management software is continuously and directly connected to the ERP of Ypê, from which it receives the background information and that reports the outputs executed.

Advantages for Ypê

- **High storage capacity:** the clad-rack warehouse of Ypê enables them to locate 24,168 pallets, 1000 x 1200 mm in size each with a weight of 1,300 kg, in a 5,200 m² area.

- **Cost savings:** automation of the different storage processes helps Ypê to boost efficiency while reducing operational costs.

- **Flexibility for future growth:** an area to the side of the automated warehouse has been prepared in order to expand storage capacity based on the future needs of the company.

- **Complete control:** thanks to the Mecalux Easy WMS, Ypê controls all the processes and operations that take place inside the warehouse.

Technical data

Storage capacity	**24,168 pallets**	Fork type	**single and double-depth**
Dimensions of the pallet	**1,000 x 1,200 mm**	Live picking channels	**330**
Maximum weight per pallet	**1,300 kg**	Pallets in picking positions	**1,128 pallets**
No. of stacker cranes	**8**	No. of transfer cars	**5**
Type of stacker crane	**twin-mast**	Preload	**on the floor**

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