



Case study: DHL

Mecalux installs a new logistics centre for DHL on the outskirts of Madrid

Location: Spain



The warehouse, with a capacity for more than 90,000 pallets, has two areas allocated for palletised products. Another, formed by a two-level mezzanine floor, is earmarked for hanging garments. Its strategic location allows DHL to respond quickly to all its main customers' stores within the Iberian Peninsula (Spain and Portugal).

Storage of products on pallets

Due to the fact that the majority of orders delivered by DHL to these stores are full boxes and they move very few pallets with a single item type, it was necessary to allocate the bottom level of the conventional pallet racks for picking activities. Reserve palletised goods are stored on higher levels.

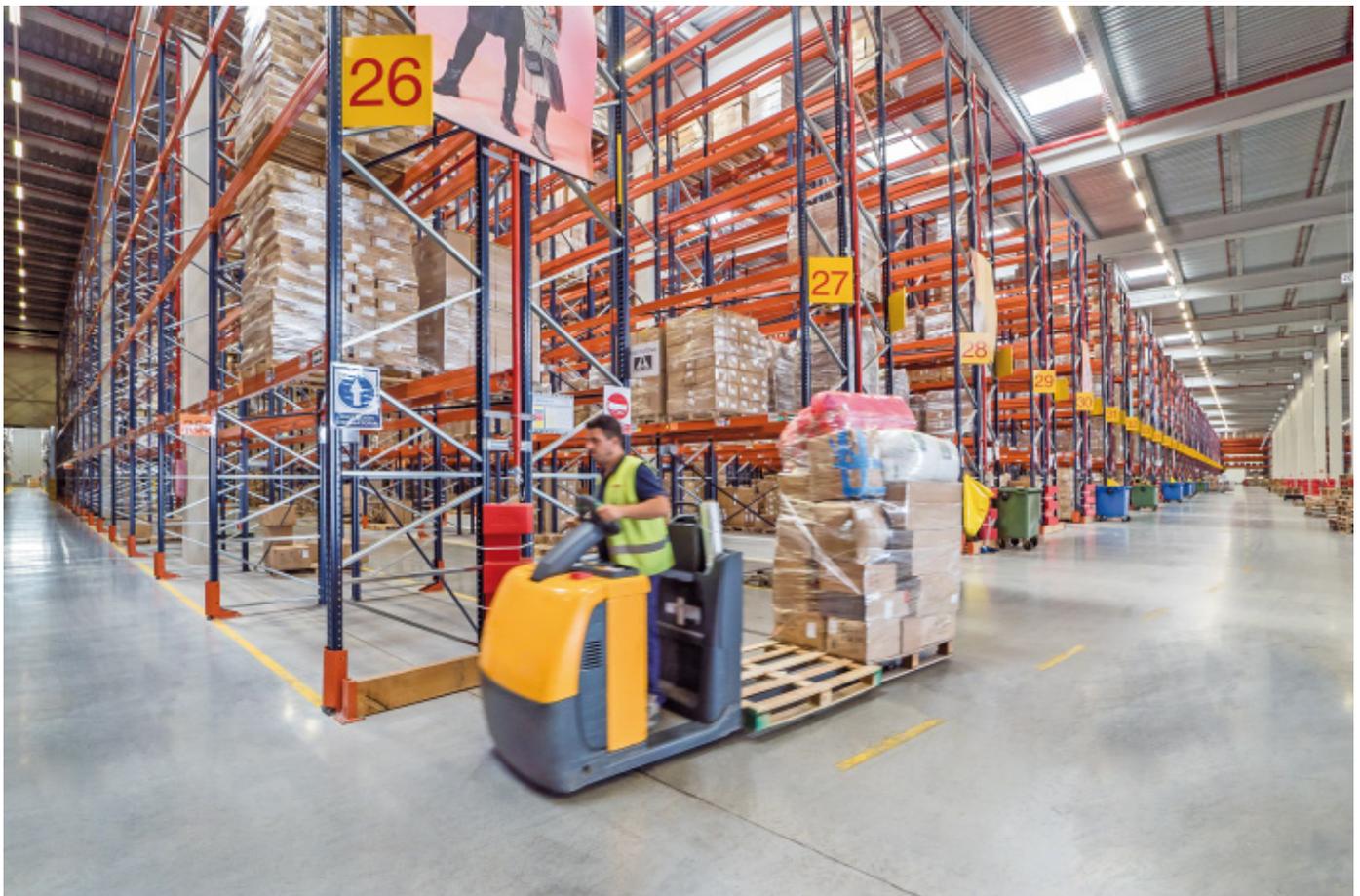
Handling equipment used to place the pallets on the racks are reach trucks. However, during order preparation, specific machines are used that have the capacity to transport up to two pallets at a time.



Operators maximise streamlining routes inside the logistics centre thanks to the WMS (Warehouse Management Software), which divides the warehouse so that each operator is responsible for a single zone. This means that an order can be prepared by several people at the same time. Once their part of the order is finished, each operator will transfer it to one of the consolidation areas according to the assigned dock.

Full use of the racks was made to install fire protection system pipelines and sprinklers. These coincide with the rack beams or girders to waste the minimum space possible.

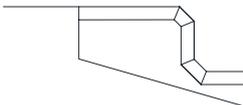
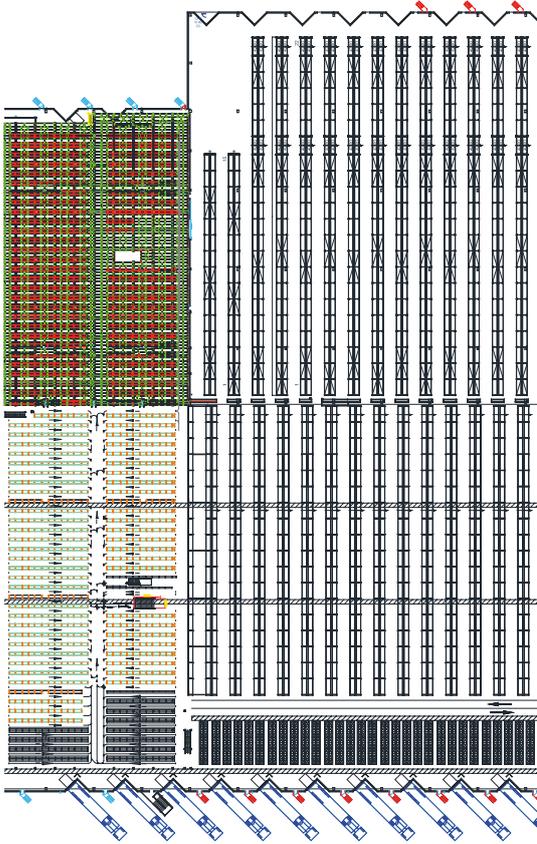
Conventional pallet racks are an ideal system to quickly replenish locations that have been left without product



Assembly by phases

Mecalux adapted to the company's needs, thus they decided to build the warehouse in phases. So, DHL could make a tailored, gradual investment as it ran each project phase.

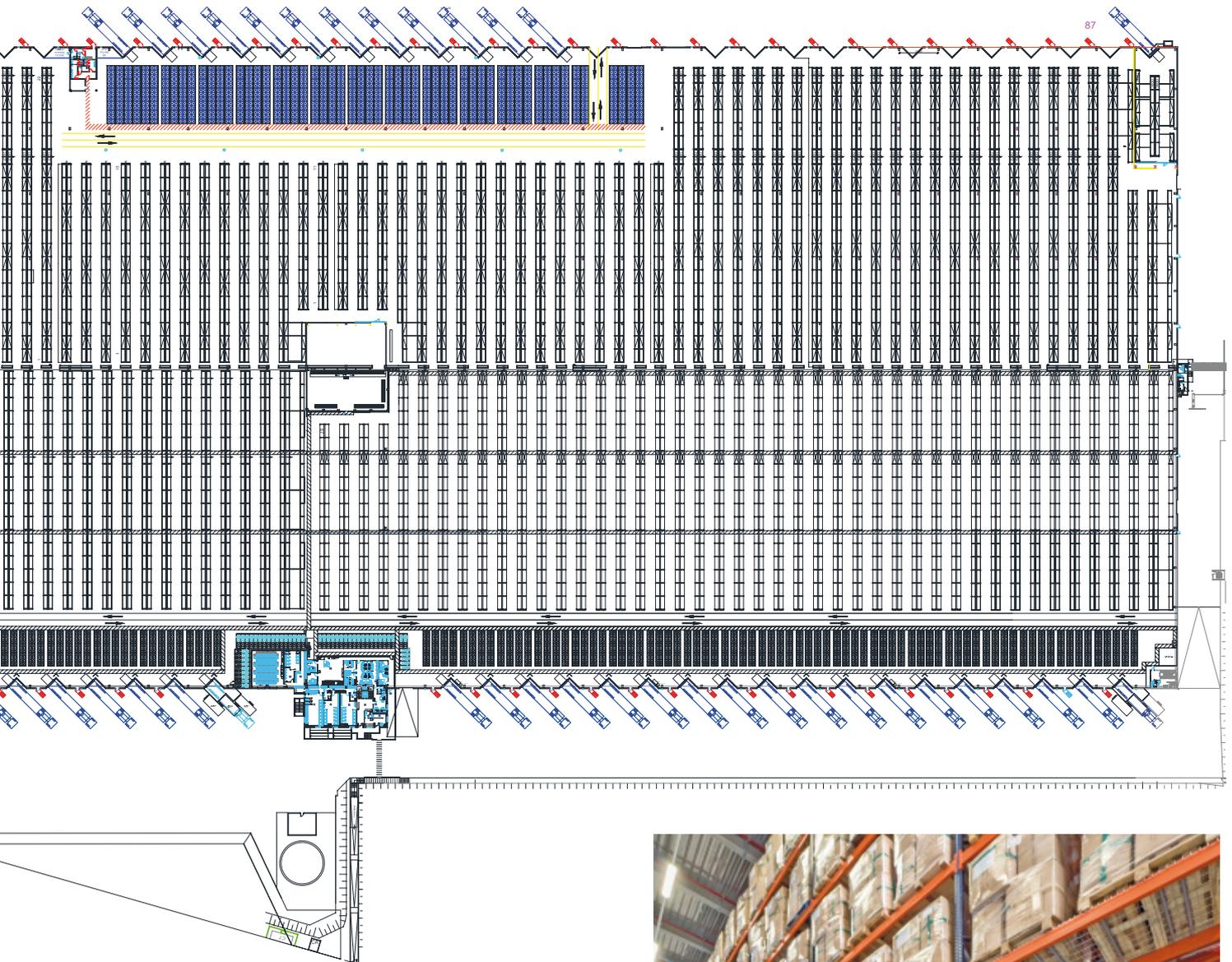
Aisle length forced them to build intermediate passageways wide enough to give two pieces of handling equipment the ability to cross each other at the same point.



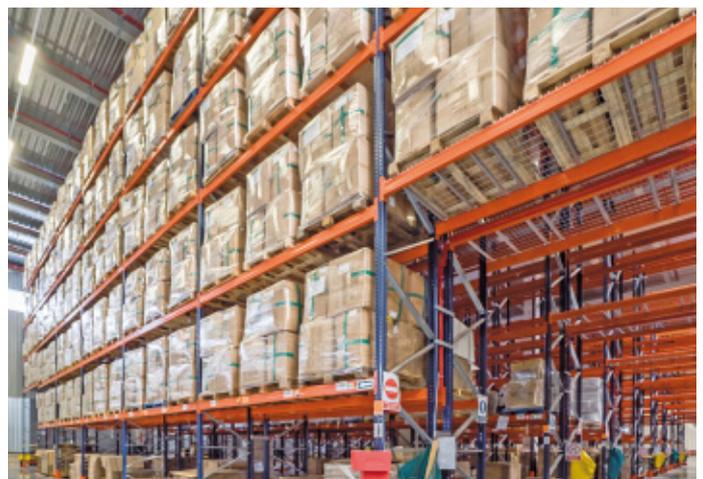
Each sector of the warehouse has its own loading docks in order to avoid large displacements and significantly reduce operating costs. The warehouse is also compartmentalised for security reasons.

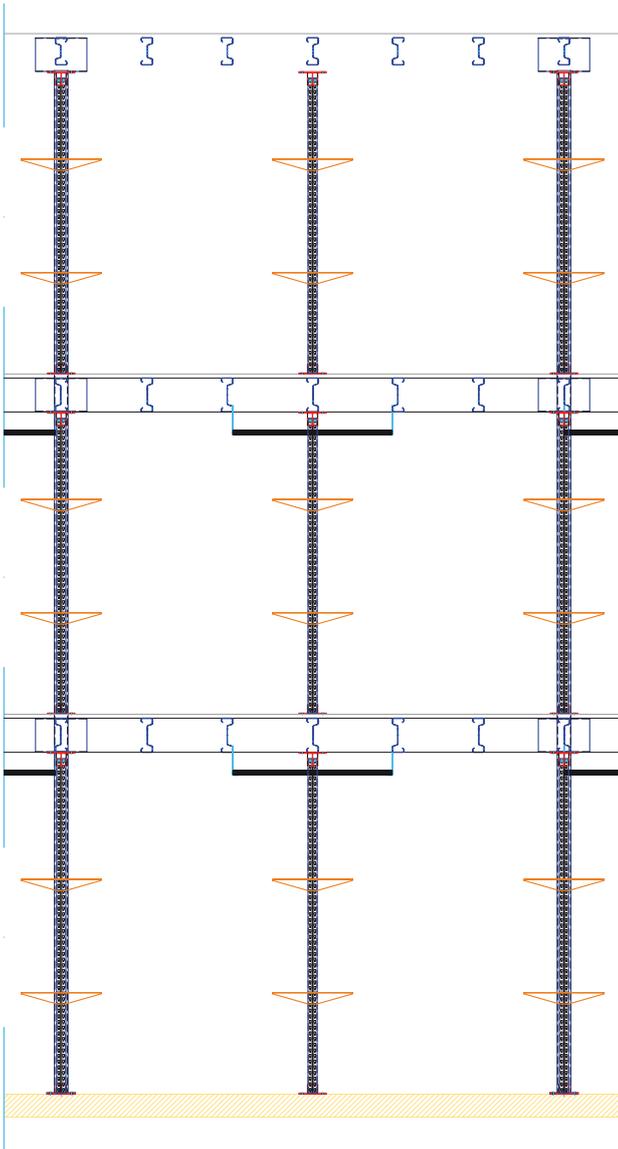
The breadth of consolidation areas, and the laying of pre-loads on the floor just in front of their assigned dock, allows for speedy loading of transport vehicles.





The total storage capacity of more than 90,000 pallets and more than 30,000 metres of profiles used to hang garments on the racks





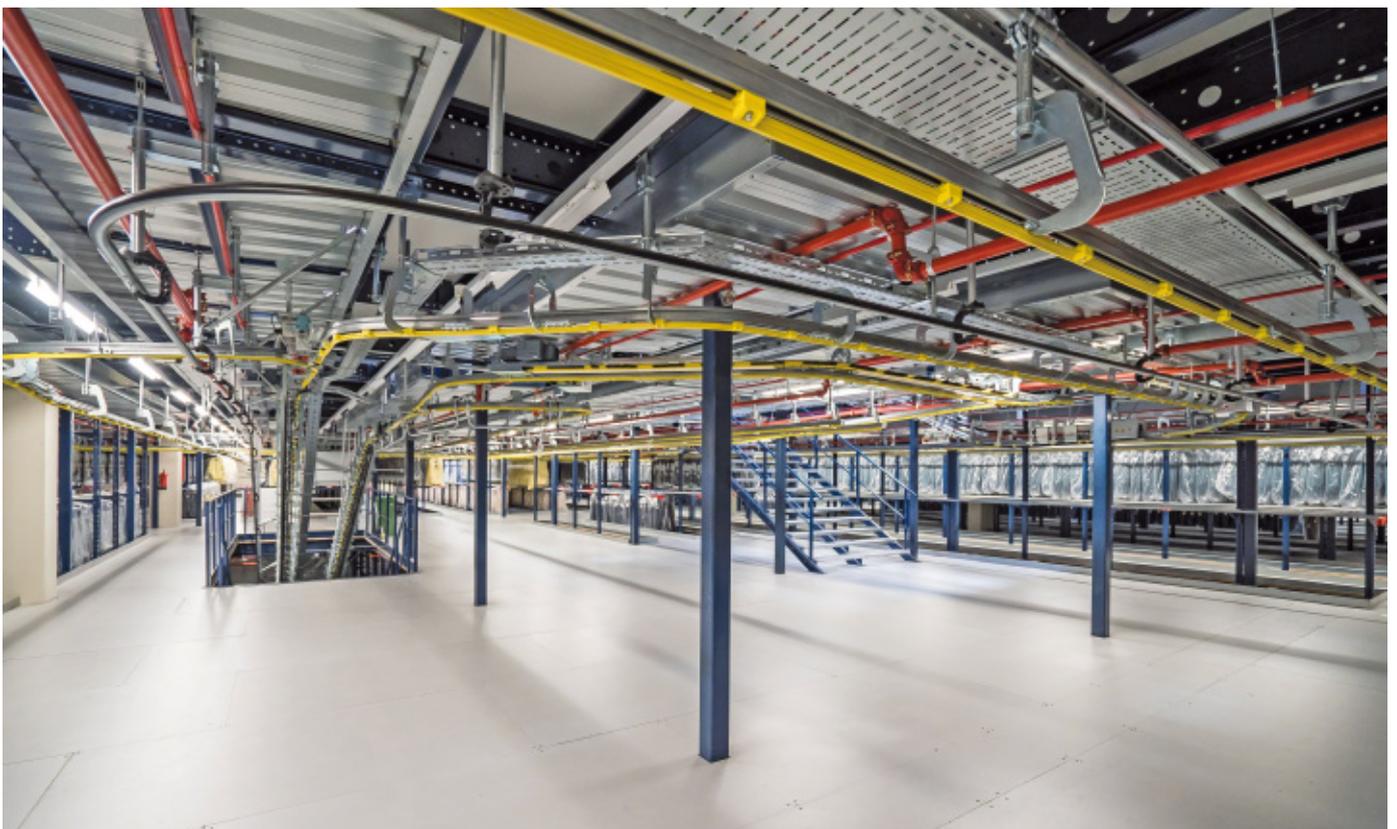
The garment hanging area

Racks specifically for hanging garments are on the mezzanine floor and are two, fully interconnected, levels high. On each floor, a space has been left without racks to allow for the circulation and classification of garments.

Thanks to the mezzanine floor, the productive surface area was multiplied, adding two extra floors that are perfectly suited to the space available.

The connection of the operators with the different warehouse floors is done via a pedestrian access staircase. On the other hand, conveyors have stairs and spaces specifically for automatic access to overhead carriage that transports hanging garments.

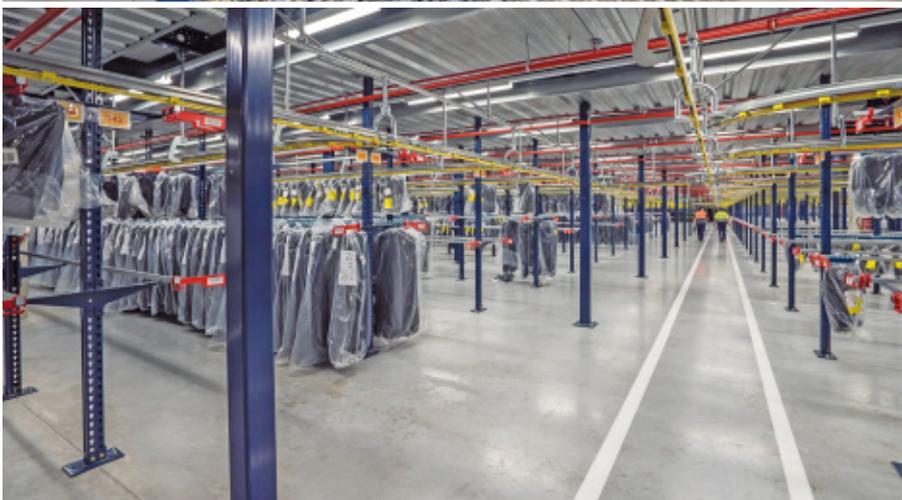
The Sigma profiles used for the mezzanine floor construction system join all the uprights in the installation, as well as attach the rails of the overhead conveyor system to the hanging garments





The tubes used for hanging garments on the racks are located at an optimum height from an ergonomic point of view and, although they have bearings every 2.2 m, the hangers slide and are grouped by items without producing any kind of interference.

Both the fire safety system tubes, sprinklers and the warehouse lighting are attached to the structure. The overhead shuttle transportation rails that are situated in the central area of the aisles hang there upon.



Spaces between pedestrian aisles are protected to avoid garments falling from one floor to another



Advantages for DHL

- **Streamlining the space:** the DHL warehouse is set up to store more than 90,000 pallets and more than 30,000m of hanger profiles.
- **Increased productivity:** the compartmentalisation of items, the breadth of consolidation areas and the location of pre-loading zones are some of the factors that help increase the volume and efficiency of the movement of goods.
- **Cost savings:** each sector has its own loading dock, thus avoiding large displacements and notably reducing operation costs.
- **Efficient service:** thanks to this new logistics centre, DHL has met the high level of service demanded by its customers and is capable of offering fast delivery without errors in the goods sent.



Technical data

Conventional pallet racking		Hung garment area	
Storage capacity	90,000 pallets	Surface area occupied	3,000 m ²
Pallet size	800 x 1,200 mm 1,000 x 1,200 mm	Surface area of the 3 floors	9,000 m ²
Maximum weight per pallet	1,000 kg	Hanger profiles	> 30,000 linear metres
Handling equipment	reach truck		
Order picker	ground floor with forks for 2 pallets		