

Coldservice, Netherlands

# Cold storage system



**Körber successfully stepped in with a solution for dense storage of frozen products for Coldservice. The goal was to install a multiple-depth storage solution using a freestanding racking system within a high-bay warehouse, minimizing the empty space which would otherwise represent a large amount of wasted energy.**

## Project description

Coldservice, established in 2013, is a young company focusing mainly on dealing with temperature-sensitive products, performing activities such as shock freezing, packaging, transport, order picking and storage. The company's flexibility since its establishment brought with it a rapid growth that led to several building expansions and a continuously increasing demand for higher storage capacities. Its site in Veghel, The Netherlands, is currently servicing dairy products, potatoes and dyes which may be refrigerated or frozen.

## Features and benefits

- **Automated solution to deal with low-temperature sensitive products, including shock freezing, packaging, transport, order picking and storage**
- **To increase demand for higher storage capacities**
- **Automated system will double the input and output rates**
- **Rapid growth and energy saving**
- **Flexibility, reliability and adaptability for possible future requirements**



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To support this active growth, Körber stepped in with a solution to densely store the frozen products within a simple system which focuses on maximizing the amount of stored product relative to energy spent on refrigeration, while considering the site's future requirements.

#### **System features / functionalities**

When thinking about a cold-storage warehouse, the main points to keep in mind are storage density and handling efficiency.

Körber proposed a multiple-depth storage solution using a free-standing racking system within a high-bay warehouse, minimizing the empty space which would represent a large amount of wasted energy. Using two 22m-high stacker cranes, which store the goods up to 8 pallets deep into the rack using satellite vehicles, the system ensures that expedition orders are always prepared in time. For maximum convenience, the pallets are brought to ground level for interface with pallet trucks, where they can be picked up or stored in pairs. The system also has a connection with the adjacent building, so that the stacker cranes can distribute pallets that may be needed in other areas of the site.

#### **Customer benefits**

As a company focused on the storage of products with specific warehousing requirements, it is important for Coldservice to optimize this process as much as possible, since, especially in low-temperature conditions, every bit of space is invaluable.

An automatic storage and retrieval system is ideal to complement this requirement, while allowing storage at heights that would otherwise be impossible.

A warehouse management system with incorporated visualization software allows for a much simpler organization of input and output orders, and readily provides a way to verify exactly what's happening within the warehouse, granting high levels of convenience and ease of access.

The interface with the adjacent building provides a way to directly connect the new storage and retrieval operations with the existing ones – this allows the new installation to build upon the customer's current activities instead of needing to change them.

While the system is highly reliable and fine-tuned to the customer's current needs, its simplicity brings flexibility, reliability and adaptability for possible future requirements.

#### **Project-specific characteristics**

As a cold-storage system, the tight fit of the new high-bay warehouse ensures that no space is wasted. The system is designed in such a way that the storage and retrieval equipment fit in with the cooling machinery without sacrificing accessibility for maintenance procedures or throughput – it is expected that the automated system will double the input and output rates, and will as such be dedicated to the storage of fast movers. By embedding the interface conveyors into the racking system, the space usage is further optimized.





Safety is a priority in this site – all automatic equipment is isolated from the general working area by fencing with access-controlled gates. All openings for conveyors are safeguarded with light barriers which make sure no unauthorized person can be in danger at any time.

By pairing up pallets at the output points and being able to receive paired pallets from inputs, the system minimizes the workload on warehouse operators. By bringing the pallets to the ground level, using both mini-lifts and sloped conveyors, these are easily accessible with pallet trucks for both input and output orders.

**“After building years of experience elsewhere, I started Coldservice in 2013 together with some partners. We focus on frozen/cooled products. As we aim for the highest levels of flexibility; we saw our first 16,000 pallet locations filling up within 4 weeks.”**

**Maickel Versantvoort**  
Managing Director at Coldservice

## Facts and figures

### 1. Industry

Cold storage

### 2. Products handled/stored

- a. Products: temperature-sensitive food products
- b. Handling units:
  - Euro pallets (800mm x 1200mm)
  - Closed pallets (1000mm x 1200mm)

### 3. Operation temperature

-25°C

### 4. General contractor / main scope of works:

- Racking system (by Dexion)
- Conveyor system
- Automatic storage and retrieval stacker cranes
- Automation
- Warehouse management and visualization software

### 5. Warehouse characteristics:

- a. Storage type: multiple depth
- b. Length x width x height: 93m x 24m x 22m (racking storage area)
- c. Storage capacity 12,000 euro pallets

### 6. 3rd party equipment/products

Racking system



“Currently we have 38,000 pallet locations available, but that is not enough. The new high-bay warehouse will provide another 12,000 pallet locations. Our current warehouse already had a high storage density due to the use of mobile pallet racks,” highlighted Maickel Versantvoort, Managing Director at Coldservice.

“In our search for the right system for the new warehouse, we ended up with analyzing and preferring a fully automated system. Given the high degree of flexibility in our operations, this outcome was not entirely anticipated. However, the figures do not lie. We will now be able to process 120 pallets per hour, which is twice as much as today. This speed and capacity are also a big advantage towards our carriers. It is no surprise therefor, that our high-bay warehouse will store fast movers. It turned out that Körber, Costo and Dexion all had considerable experience with the processes in a cold store application,” Maickel explains.

## About Coldservice

Coldservice is a company established by Maickel Versantvoort and some partners in 2013 after years of experience in the area.

The initial site, focused on storage of refrigerated or frozen products, quickly filled its 16.000 storage locations, calling for several expansions over the years up to the current point with a capacity for 38.000 pallets before the new automatic storage and retrieval system.

Coldservice is now looking to expand and build new sites in new locations in order to serve new markets and expand its capabilities.

### System throughputs

Product	Main elements	Product quantity	Handling device	Handling performance
<b>Conveyor system</b>	Roller conveyors	9	89 mm diameter rollers	0.2m/s
	Chain conveyors	24	3 x double chains	0.2m/s
	Transfer tables	10	Roller conveyer	-
	Mini-lifts	2	Roller conveyer	0.25m/s hoisting
	Aisles	Quantity	Loading device	Loading performance
<b>Stacker crane system</b>	2	2	Satellite vehicle	60 pallets/hour in 60 pallets/hour out

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