LTW INTRALOGISTICS

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CASE STUDY | FOOD INDUSTRY | SPECIAL SOLUTION

OBSTGENOSSEN-SCHAFT MIVOR

ITALY

FIRST IN – FIRST OUT

ULTIMATE FRESHNESS BENEFIT OF UP TO A WEEK

The MIVOR fruit cooperative processes 80,000 tons of apples annually in South Tyrol. It is the freshness of the apples that plays a paramount role – and that's where optimal storage comes into play. The high-bay warehouse serves as buffer storage between the apple sorting system and the packing hall. Thanks to the six automatic stacker cranes, the FIFO principle can be applied with ease, resulting in a freshness gain of up to one week.

After the merger of the two fruit cooperatives MIVO and Ortler to form MIVOR, Europe's largest fruit processing company, the fruit cooperative decided to take a logistical quantum leap. Although the seven local cooperatives in the South Tyrolean fruit-growing region of Vinschgau opted to centralize the marketing of their fruit under the VI.P umbrella organization, the responsibility for keeping production as efficient as possible still lies with the individual cooperatives.

After a long period of planning, one thing became clear: only a high-bay warehouse could optimize fruit processing and the degree of freshness even more.

Planning

Despite the densely built-up area, we were able to present a flawless concept. In the first step, MIVOR developed an innovative sorting system together with a partner. Important findings from this project were incorporated into the planning of the high-bay warehouse. After a thorough selection process, our concept won over the client. Our visualization of all material flows played a significant role in this.

MIVOR Südtirol Vinschgau

Obstgenossenschaft MIVOR
Industriezone 7, 39021 Latsch, Italy

Merger of MIVO and Ortler: 2007
Members: 400
Cultivated land: 1,100 hectares
Harvest: 80,000 tons of apples, pears and apricots annually

We are farmer-centric; being a technology leader is not an end in itself. The economic result has to add up. Even after the first harvest period, a lasting wow factor has set in – everything runs even better and faster than planned.

Dr. Martin Pinzinger CEO

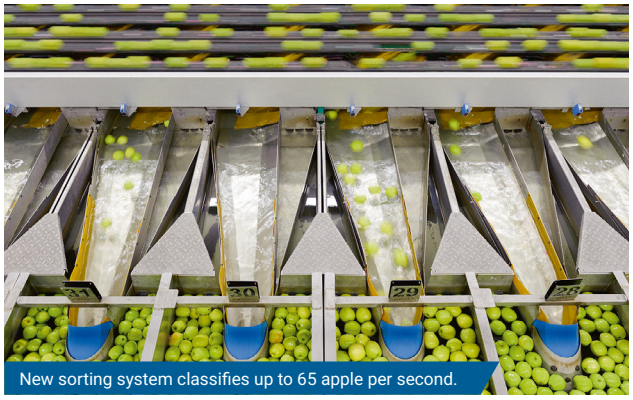
Stacker crane for 1,650 empty bins.

Vertical lift connects the two-story conveyor system.

Material flow

The fruit processing cycle in Latsch is dictated by the seasons. During the apple harvest in September, more than 300,000 crates of apples are cooled to 2°C in a very short time.

Oxygen- reduced CA cells (controlled atmosphere) allow long-term storage with virtually no loss of freshness. Over the year, the entire harvest is then gradually worked through, which means sorted and packed by size, color, and quality.



New sorting system classifies up to 65 apple per second.

FIFO principle

Between the sorting system and the packing hall, where over a hundred employees manage ultra-short delivery times, the fruit crates stack up. That's why the company decided to take a new approach: using a high-bay warehouse as buffer storage. The biggest advantage of this is that in contrast to normal stacking operations, the six stacker cranes in use here apply the FIFO principle (first in, first out). This results in a freshness benefit of up to a week!

Transfer cars connect the sorting system with the high-bay warehouse.

The outcome

It's not only the additional freshness gain that brings a big plus, our fully automated high-bay warehouse also offers full process security and product safety.

Every apple can be traced back to the orchard – customer complaints and standing times are at an all-time low. The new intermediate storage solution saves an additional one-third on energy too. And the icing on the cake: the turnkey system was handed over two weeks earlier than planned.

Mehr Infos unter:

LTW.AT/en/references/detail/mivor

OUTLINE OF THE PROJECT

HIGH-BAY WAREHOUSE

FOR FRUIT BINS

- Galvanized steel rack
- Silo structure
- L x W x H: 80 x 25 x 27 m
- 6 rack aisles
- Single-deep storage
- Approx. 18,600 fruit bins
- Payload: 1,200 kg
- Climatization: + 2 °C

STACKER CRANES IN THE FRUIT BIN WAREHOUSE

- 6 aisle-bound stacker cranes
- Single mast construction
- Driving speed: 180 m/min
- Driving acceleration: 0.5 m/s 2
- Lifting speed: 40 m/min
- Lifting acceleration: 0.5 m/s 2
- Load handling device: Telescopic fork single-deep

CONVEYOR SYSTEM

over 2 levels including storage and retrieval stations on the ground floor with

- 1 transfer car on the ground floor (sorting system)
- 1 transfer car on the upper floor (high-bay warehouse for fruit bins)
- 2 vertical lifts

HIGH-BAY WAREHOUSE

FOR EMPTY BINS

- Galvanized steel rack
- Combination of silo and inhouse structure
- L x W x H: 80 x 5 x 16 m
- 1 rack aisle
- Single-deep storage
- Approx. 1,650 empty bins
- Payload: 320 kg

STACKER CRANE IN THE EMPTY BIN WAREHOUSE

- 1 aisle-bound stacker crane
- Double mast construction
- Driving speed: 200 m/min
- Driving acceleration: 0.7 m/s 2
- Lifting speed: 60 m/min
- Lifting acceleration: 0.7 m/s 2
- Load handling device: 2 telescopic forks single-deep

SOFTWARE

- Warehouse management system
- Visualization
- Interface to the superior PPS (production planning system)

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