

MIVOR LATSCH/ITALY



MIVOR



THE CUSTOMER

March 1954: Twelve farmers from Latsch create the „Mittelvinschgauer Obsterzeugergenossenschaft“, short MIVO. The quick success brings on a competing event in 1960: the foundation of the second Latsch association Ortler, named after the highest mountain in South Tyrol.

After decades the quite fruitful competition soon gives way to a gradual harmonization, at first 1979 in the form of new, neighboring locations. In 2007 finally the fusion to MIVOR follows.

Today the 400 MIVOR members produce about 500 million apples per year on an area of 1,100 hectares. Half of this amount is exported – to a total of 49 countries in Europe, North Africa and Asia.



In the climatic favored Val Venosta region a high-bay warehouse saves valuable cultivable area.

**500.000.000 TIMES
MAXIMUM FRESHNESS**

**EUROPE'S BIGGEST FRUIT PRODUCER
IMPLEMENTS THE FIFO-METHOD**

A short glance at the amounts harvested by the fruit association MIVOR is enough to show the dynamics of the project which is presented here: 2006: 60,000 tons of apples. 2011: 80,000 tons of apples.

Significant improvement in cultivation methods and harvest on the one hand, tightened international competition on the other hand encouraged the seven local associations of the South Tyrolean fruit growing region Val Venosta at the beginning of 2007 to centralize the commercialization of the fruit in the umbrella organization VI.P.

The responsibility for a preferably efficient production stays with the

individual associations. In the same year two of them, namely the former rivals MIVO and Ortler, merge to Europe's biggest fruit processing company MIVOR and thus create "the critical mass for a logistical quantum jump", as CEO Dr. Martin Pinzger likes to put it.

THE PROJECT

Shortly after the merger, the MIVOR planning staff takes up its work, supported by the logistics consulting company KDL from Hamburg. Part one of the project is an innovative sorting system which MIVOR developed in cooperation with the Dutch specialist Greefa. Important findings from this process are introduced into the second part of the project: an automatic



MIVOR CEO Dr. Martin Pinzger: "We are farmer-oriented. Being a technological leader does not end in itself. The economical result has to add up."



The new sorting system classifies up to 65 apples per second on the basis of a 3D model, which is assessed out of 60 pictures for each single apple.



Automation only takes place, where a distinctive advantage is achieved. The connection of the high-bay warehouse to the packaging is still carried out by forklifts.

high-bay warehouse (HBW), which shall be built up in the middle of the densely developed area. Only few suppliers even dare to take this technical challenge. At the beginning of 2010 the LTW concept is awarded as the winner in a fastidious and complex point system.

Before LTW is able to get started, the plenum of the association has to agree with the ambitious plans. Due to former experiences, which were made in South Tyrol with two high-bay warehouses in the fruit sector, other concerns come up – which the board of management is able to dispel, not least thanks to a convincing visualization of all material flows made by LTW.

In April 2011 LTW arrives on the building site, in order to hand over the total installation ready-for-use at the end of September – two weeks earlier than planned.

MATERIAL FLOW

Fruit production in Latsch follows a seasonal cycle. During the apple harvest in September over 300,000 bins with apples are cooled to 2 °C within a very short time. The oxygen-reduced CA-cells (Controlled Atmosphere) allow long-term storage with almost no loss of fresh-

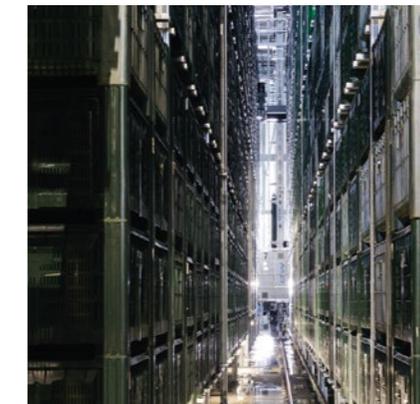
ness. Over the year nearly the whole harvest is settled, which means sorted by size, color, quality and then packaged.

As a buffer between sorting system and packaging hall, where more than one hundred employees accomplish ultrashort delivery periods, the high-bay warehouse comes into play. Compared to the stacking character of the usual handling cells, six automatic LTW stacker cranes implement the FIFO-method (First In, First Out); which brings a freshness benefit of up to one week.

THE OUTCOME

Martin Pinzger after the first harvests calls it a "continuing wow-factor – everything is running better and faster than planned."

Full process and product security; retraceability of every apple back to the orchard; customer complaints and dwell times at all-time low; one third energy saving at the storage disposal: Meanwhile nearly every day Martin Pinzger has the possibility of listing the strong points of the concept to industry colleagues from all over Europe on the visitors' gallery of the HBW – while LTW has already implemented seven further projects in the fruit sector.



Between the sorting system and the cooled high-bay warehouse for fruit bins LTW places a second, one-aisle stacker crane for 1,650 empty bins.



The two-storey, automatic conveyor system between the sorting system and the high-bay warehouse with two transfer cars (picture) and two vertical lifts.



Best evidence for customer satisfaction is a follow-up project: In 2014 LTW installed 16 fully automated fruit dumpers in the pre-zone of the packaging area.

PROJECT OUTLINE YEAR OF CONSTRUCTION 2011 / 2014



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/s²
- ▶ Lifting speed: 40 m/min
- ▶ Lifting acceleration: 0.5 m/s²
- ▶ Load handling device: Telescopic fork single-deep

CONVEYOR SYSTEM (2011/2014)

- over 2 levels including storage and retrieval stations on the ground floor
- ▶ 4 transfer cars on the ground floor (sorting system, packaging)
- ▶ 1 transfer car on the upper floor (high-bay warehouse for fruit bins)
- ▶ 4 vertical lifts
- ▶ 16 fruit dumpers

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/s²
- ▶ Lifting speed: 60 m/min
- ▶ Lifting acceleration: 0.7 m/s²
- ▶ 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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