

RETAIL GIANT ESTABLISHES AUTOMATED DISTRIBUTION CENTER



Case Study
Coles Group Ltd., Sydney + Melbourne
Australia



Goods receiving and empty tote buffer



Automatic Small Parts Storage System (Miniload)



Aisle for order picking in Miniload



Pick-to-tote pick position of SC

Project Objective

- ▶ Safety
- ▶ Increased Productivity and Accuracy
- ▶ Resilience
- ▶ Store friendly deliveries
- ▶ Reduced building footprint
- ▶ Better possibilities to react during peak times
- ▶ Centralization of distribution and dispatch
- ▶ High availability of items
- ▶ Automation of flow of goods

Our Scope of Supply and Services

- ▶ Compilation of logistics concept
- ▶ Simulation
- ▶ Planning of realization
- ▶ SCS, Miniload (AKL)
- ▶ Pallet, tote and trolley conveyor systems
- ▶ Storage and retrieval machines
- ▶ Totes
- ▶ Visualization
- ▶ Warehouse management and control system
- ▶ Maintenance staff

Automatic Small Parts Storage System (Miniload)

| | |
|-------------------|--------------------|
| L x W x H | 107 x 45 x 7.2 m |
| Storage aid | totes |
| Storage positions | 98,752 |
| Weight | 25 kg per tote |
| Storage type | double deep |
| Type of tote | 580 x 385 x 280 mm |

Miniload – Storage and Retrieval Machine (SRM)

| | |
|------------------------|----------------------------|
| Number SRMs / aisles | 8/8 |
| Load acceptance device | Combi-telescopic fork |
| Traveling speed | 360 m/min. |
| Hoisting speed | 180 m/min. |
| Handling capacity | 124 totes per double-cycle |

Schäfer Carousel System (SCS)

| | |
|-------------------|---|
| Number Carousels | 8 for order picking 2 work positions 10 for consolidation |
| Storage positions | 6,656 plus 8,320 |
| Weight | 25 kg per tote |
| Type of storage | Horizontal carousels single deep |
| Type of tote | Collapsible tote FKE5280-VB5, 578 x 385 x 280 mm |

High tech for “Down Under”

With the creation of two central national distribution centers for Coles, one of Australia's leading retail chains, SSI SCHÄFER was able to complete a challenging project.

SSI SCHÄFER equipped both distribution centers with fully automated small parts storage as well as the Schäfer Carousel System. The eight storage and retrieval machines, one in each aisle of the Miniload, controlled by the SSI SCHÄFER warehouse management system provide quick storage and retrieval movements. Furthermore, four aisles for order picking are integrated in the Miniload.

The Schäfer Carousel System for automated order picking of slow to medium moving items forms the core piece of the warehouses. Delivering the maximum storage capacity in the minimum space, the SCS offers the quickest access to about half of the 8,100 different products



SCS-system with 18 carousels for automated order picking

Order Picking/Pick-Performance

| | |
|---------------------------|-------------|
| Pick position Miniload | 32 stations |
| Pick performance Miniload | 6,500 items |
| Pick position SCS | 2 stations |
| Pick performance SCS | 1,500 items |

Pallet Conveyor System (overall length approx. 300 m)

Components:
Roller conveyor, chain conveyor, feed-in/acceptance stations for fork lifts, acceptance stations for manual lift trucks, lifting-transfer units, pallet stacker/de-stacker, palletizing stations (robots), stretcher, label applicator, ergonomic de-palletizing stations

Tote Conveyor System

Components:
Belt, strap, roller conveyors, scales, re-packing tables, cam roller conveyors, cam belt conveyor, belt diverter, roller-lift tables, stacker/de-stacker machine, tote erector, label inserter, vertical conveyor, ergonomic goods-to-man order picking stations

Trolley Conveyor System

Components:
Chain conveyors, ground-level feed-in/acceptance stations, de-stacker, palletizing station (robots), strapper, label applicator

Warehouse Management System

| | |
|------------------|---|
| Hardware | 5 server, IBM P-Series 4 processors, 8 GB Memory |
| Operating system | UNIX AiX |
| Data base system | Oracle |

Functions

Warehouse management, goods receiving/issuing, order picking, control of material flow, visualization, optimization of performance



Ergonomic re-packing stations



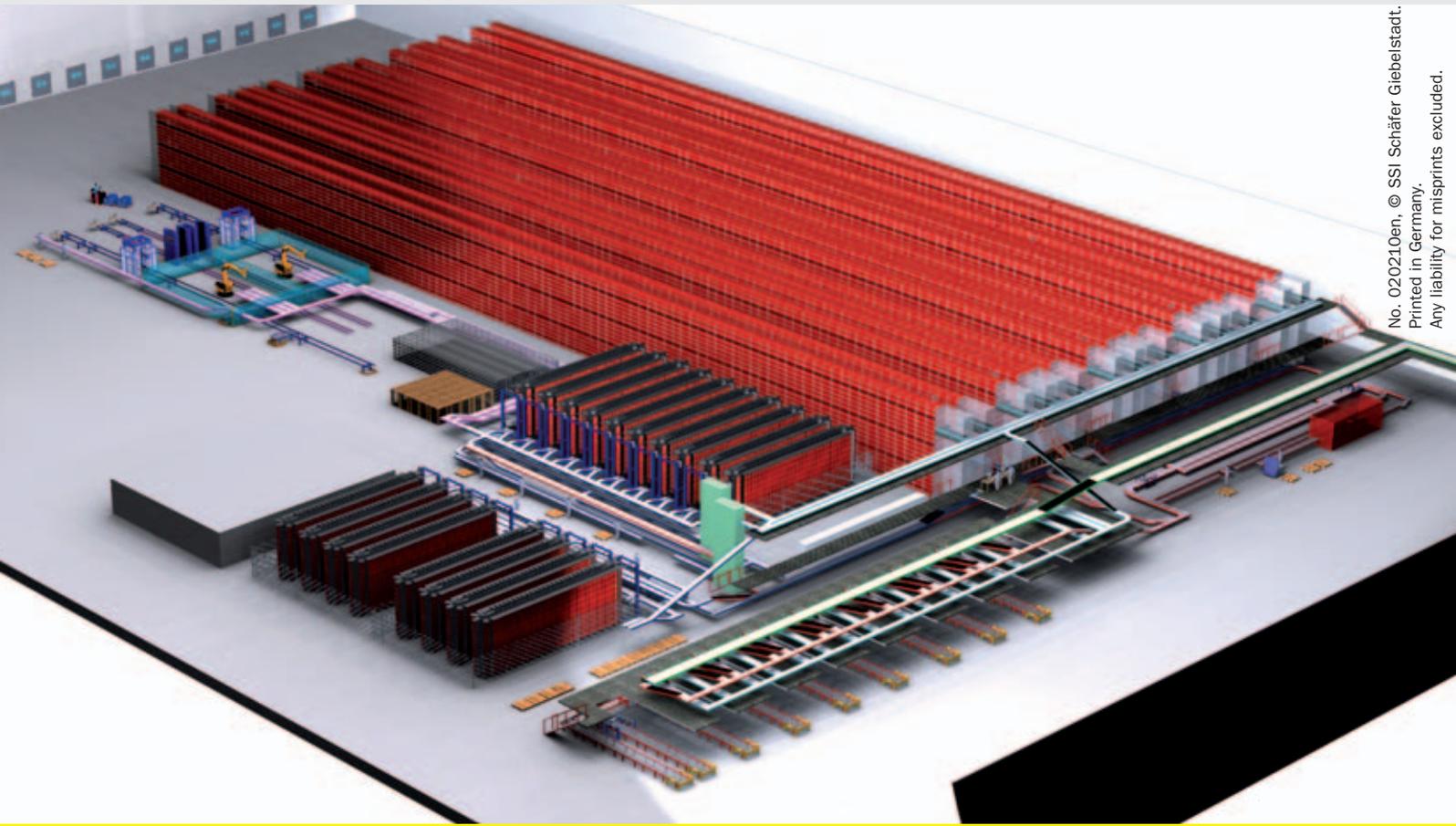
Robot-palletizing station



Tote conveyor system



Pallet conveyor system



- ▶ General contractor
- ▶ Planning and consulting
- ▶ Warehouse management system
- ▶ Control systems
- ▶ Steel structure / racking systems
- ▶ Storage and retrieval machines
- ▶ Conveyor systems
- ▶ Service and maintenance

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