

Facts and figures



System key figures

Orders per day	15,000
Conveyor performance per day	35,000 cartons
System size in m ²	28,000
Degree of automatization	20%
Products (SKUs)	12,000
Working hours per day	10
Ø Productivity (per line/employee/hour)	50

Scope of delivery and services

Conveying system

Total running meters	
Running meters	3,300

Picking systems

Automatic picking	
S-Pemat	720 channels

Semi-automatic picking

Pick-by-light	16 stations
Pick faces	2,700 displays
RF area	2 stations

ASRS (vertical lift)

Qty	8
Warehouse volume	350 m ³
Area in m ²	280 (13.5 m height)
Storage positions	1,000
Articles	6,000
Performance per hour	1,200 totes
Pick-to-Tote	2
SSI totes	10,400

System components

Checks	
Cartons	
Carton closing machines	2
Carton erecting machines	3
Brochure insertion devices	6
Spiral conveyors	4
Vertical continuous conveyors	2
Strapping machines	2
Label applicators	5
Ink Jets	8

Software solution

WCS

Computer hardware	IBM RISC
Operating system	AIX UNIX
Software	CONVEY 2005

WMS

for ASRS	
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- ▶ Logistic Concepts
- ▶ Paperless Picking Systems
- ▶ Conveying Systems
- ▶ Sorting and Shipping Systems
- ▶ Automated Picking Systems
- ▶ Logistics Software
- ▶ Tote Handling Systems
- ▶ Customer Service & Support
- ▶ Paper Handling Systems



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OFFICE DEPOT
MANCHESTER

Case Study
Office Depot Manchester –
one of Europe's most productive
warehouses

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Office Depot

Office Depot, Inc. is a worldwide leading provider of office supplies and services. The comprehensive product range includes office equipment (store brands and other brands), office machines and computers, computer software, office furniture and other business products and services. Sales are processed through multiple channels, consisting of office supply stores, a contract sales force, internet sites, direct marketing catalogs and call centers, all supported by a network of crossdocks, warehouses and delivery operations. In fiscal year 2006, Office Depot sold \$15 billion of products and services to consumers and businesses of all sizes worldwide.

The enormous expansion during the last decade and strengthened international operations through the acquisition of well-known suppliers such as Wilson Stationery & Printing Company, Eastman Office Product Corporation, Guilbert S.A. as well as the merger with Viking Office Products guarantee global presence and a 24-hour service worldwide.

Opening the new distribution center in Manchester in 2005 redefined the state-of-the-art logistics concept of the group, because the complex high-tech system technology sets the quality standard for future distribution centers. Office Depot Manchester contributes significantly to the company's profit with sales of up to £15,000,000 per month and stands for reliable and efficient order processing within the group.

Office Depot's requirements

An increasing number of orders through the call center, booming e-commerce orders through Viking direct and the necessary refurbishment and renovation measures in the warehouse prompted the Office Depot management to commission the comprehensive new construction of the Manchester distribution center. The following requirements for Office Depot Manchester had to be considered in implementing the project:

- ▶ Creating the most efficient supply warehouse in Europe
- ▶ Creating economic workplaces for the employees
- ▶ Reaching high quality standards
- ▶ Creating a reference system for customer's visits
- ▶ Reducing the power consumption
- ▶ Increased recycling of used materials
- ▶ Using state-of-the-art technology
- ▶ Basic concept for future supply warehouses

There are three different picking areas

1. Automatic picking

Frequently ordered products, so-called "fast moving products" are stored manually in about 720 S-Pemat channels and are dropped automatically onto a central conveyor upon digital order placement. The central conveyor transports the picked products to a transfer point where they put directly into waiting picking cartons or totes. SSI Schäfer implemented an additional foil bag system for more efficient picking of small parts by combining them in plastic bags. Attaching picked small parts in plastic bags to the total order ensures comfortable, customer-friendly removal from the order carton.

2. Semi-automatic picking "Pick by Light"

At Office Depot there are three separate picking areas for paperless, Pick-by-Light-supported picking of fast-moving and medium-moving products. The display-controlled system guides pickers with exact position indication and quantity to the relevant storage location in the dynamic rack warehouse. Picking is acknowledged simply by the push of a button and can be corrected directly on the display at the picking station. Very slow-moving products are picked by RF hand-held terminals.

3. Semi-automatic picking "Pick to Tote"

Two Pick to Tote picking stations guarantee easy, stress-free picking of slow- and medium-moving products at Office Depot thanks to short travel times according to the "goods to man" principle. The ergonomically enhanced workstations are supplied by an automatic storage and retrieval system (ASRS) with a capacity of up to 6,000 slow- and medium-moving products. The ASRS not only provides efficient space utilization through high storage density and use of the ceiling height, but also dust protection and theft-proof storage of valuable products. The storage totes are transported to the Pick to Tote picking stations, where the products are picked directly to the waiting picking cartons and totes at a rate of up to 1,000 picks/hour.

Exact and continuous weight checks with check stations ensure quality control of the picking processes in all picking areas. Separate check stations for picking cartons and totes before transferring the order cartons to shipping guarantee reaching zero-error target of Office Depot.

Before the ready order cartons reach the shipping area with 23 ramps, they are closed and labeled automatically. A high-performance Shoe Sorter as well as a Roller Switch Sorter distribute the order cartons across the ramps. On five ramps with telescope conveyors the orders cartons are transported directly into the trucks; this saves additional time as compared to manual sorting onto pallets. The crossdocking system in the warehouse management area serves to exploit the cost-saving potential.



„The new distribution center in Manchester is an extraordinary challenge for the Office Depot group and it was especially important to us to accomplish a trend-setting solution as basic concept for future distribution centers.

Office Depot and SSI Schäfer PEEM have been working together successfully for several years; the efficient implementation of the comprehensive project in only a short period of time proves this. A crucial issue for Office Depot was service after system start-up because new technologies had to be developed and implemented. In this decisive test phase SSI Schäfer PEEM proved itself to be a competent partner thanks to the high quality of the system and the employees' tremendous spirit of innovation. Office Depot's requirements were met in every respect, ideas were developed further and the desired technological advance was even surpassed. The new Office Depot distribution center in Manchester is one of the most productive warehouses in Europe and laid the foundation for future projects with the reliable partner SSI Schäfer PEEM."

Bernd Schiel
(Senior Project Manager Logistics Office Depot)



SSI Schäfer's solutions

Short throughput times despite highly variable order sizes and product quantities and optimum quality of delivery to the final customer called for a customized logistics concept for Office Depot Manchester and a automated overall solution of material flow and warehouse technology.

SSI Schäfer increased the throughput times of the orders by compact arrangement of picking areas, a state-of-the-art conveying system and the integration of specially developed technologies for small parts picking. Reliability of the 24-hour delivery service could be achieved by fast order processing, picking totes with compartments and increased picking performance thanks to optimum ergonomics at the workstations.

At **order initiation** empty cartons and totes in five different sizes are available on separate buffer conveyors; a Routing Label is automatically attached to guarantee correct routing of the transport units throughout the process. Since orders originating from different Office Depot sales branches arrive at Manchester the cartons are labeled with individual logos at so-called Ink Jet Stations.

