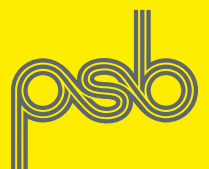




BEST PRACTICE

CB

—→ Multi Access Warehouse
for book wholesale trade



CREATING YOUR
INTRALOGISTICS



MULTI ACCESS WAREHOUSE

SHUTTLE WAREHOUSE WITH
150,000 TOTE STORAGE LOCATIONS

CB is the central logistics service provider for books in the Netherlands and Belgium, acting as the link between publishers and bookstores throughout the Dutch speaking region. With approximately 730 employees, the company generates annual revenue of 110 million Euro and delivers an exceptionally high level of service, achieving an on-time delivery rate of 99 %. CB's portfolio comprises more than 120,000 titles and continues to grow steadily, driven in part by the increasing integration of foreign-language books.

The structural change of the book market, characterized by a combination of store-based retail and online business, creates new challenges for logistics, particularly due to the steadily increasing product variety and customers' expectations regarding product availability and delivery speed.

To meet these requirements, CB expanded its distribution center in Culemborg, the Netherlands, by implementing an automated

shuttle warehouse with a storage capacity of 150,000 totes, supplied by psb intralogistics. The system is primarily used for batch picking of slow-moving D- and E-items and for replenishing other picking areas. The implemented Multi Access Warehouse is characterized by a high degree of flexibility, as well as easy extensibility and adaptability to future business requirements.

The three-aisle shuttle warehouse is equipped with in total 45 *vario.sprinter* shuttles (15 per aisle) distributed across 66 storage levels. The system measures 75 m in length, 30 m in height and 15 m in width and uses triple-deep storage along the longitudinal axis to maximize storage density. Totes measuring 505 × 383 mm and weighing up to 35 kg are stored and retrieved with a total throughput of 2,000 double cycles per hour.

INFORMATION +
VIDEO ON OUR
WEBSITE

CUSTOMER

CB
Culemborg | NL

SYSTEM

30 m high Multi Access Warehouse (3 storage aisles), shuttle lifts and integrated tote lifts with 2 LHU, 4 multi order picking workstations, conveyor system

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↓ Multifunctional multi order picking workstations:
Storage, consolidation of storage totes, order picking





↑ Shuttle warehouse with 150,000 storage locations and a direct conveyor connection at mid-warehouse height

Efficient material flow integration is achieved at the intermediate warehouse level. Each aisle is equipped with one shuttle lift and two internal tote lifts, each fitted with two load handling devices (LHD). This configuration enables the simultaneous transport of two totes. The separate operation of the upper and lower storage sections significantly increases throughput capacity. The shuttles can also transport two totes simultaneously, further enhancing the overall system performance.

Four Multi Order Picking Stations (MOPS) and two multifunctional workstations are available for order picking. Each MOPS achieves a picking rate of up to 500 picks per hour, enabling the system to reach an overall throughput of approximately 2,000 picks per hour.

A key technical feature of the system is its innovative energy concept. Both the shuttle lifts and the tote lifts are equipped with energy recuperation technology and supercapacitors (supercaps). During deceleration of the load handling devices (LHD), kinetic energy is converted into electrical energy and temporarily stored in the supercaps. This energy is then reused for subsequent acceleration and lifting operations. As a result, overall energy consumption is significantly reduced, while the required connected load of the system is substantially lowered. This was a decisive factor in the feasibility of this strategically important project for CB, as the electrical power required for a conventional system could not be provided by the local utility company.

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