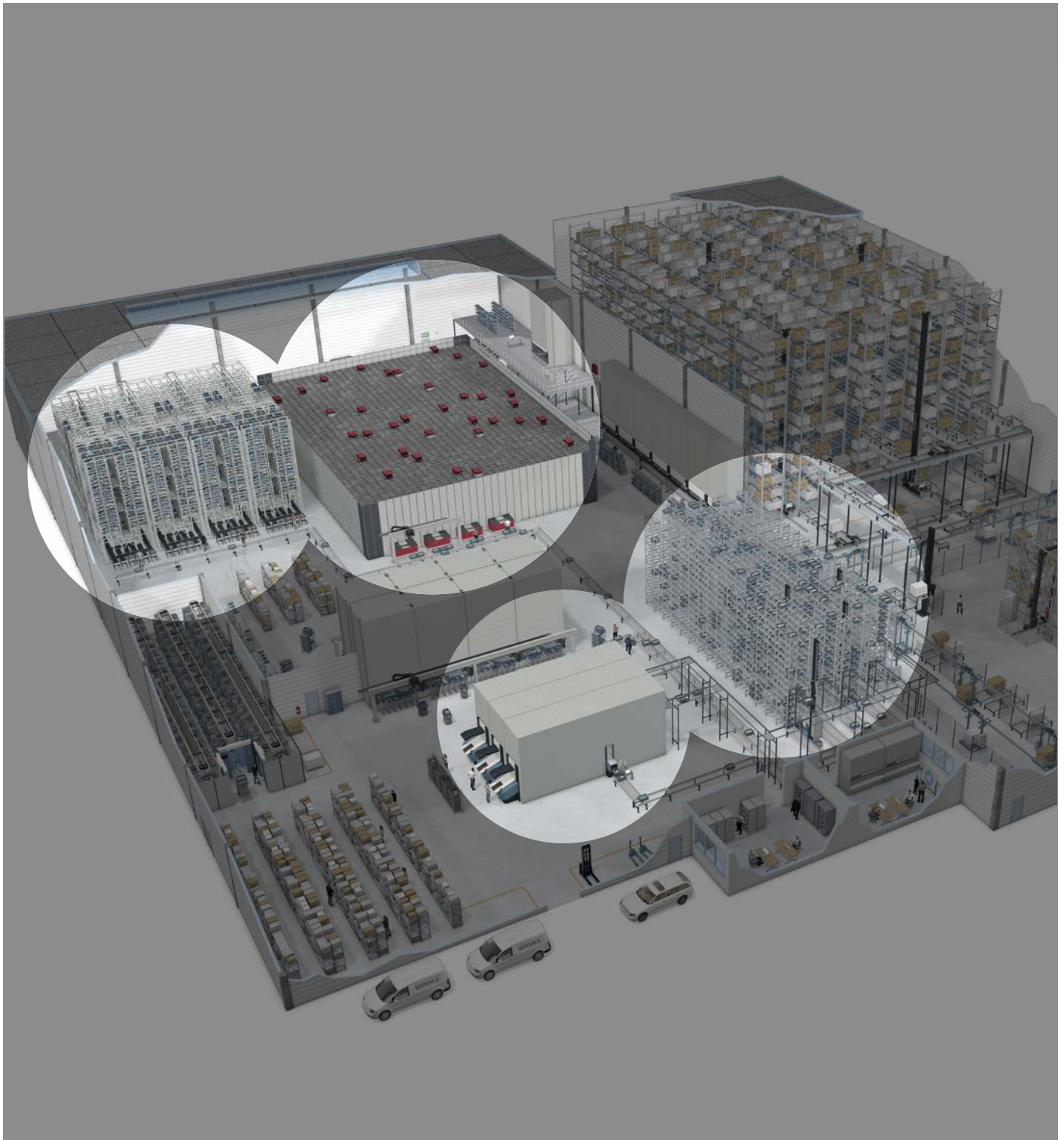


Solution Guide

Optimal Storage of Small Parts in Bins



Which system is best?

Space-efficient and cost-effective storage of small parts in bins, combined with short access times, is a critical competitive factor. Replenishment requirements from production or customer orders must be met quickly in warehouse management without losing sight of the cost factor.

Many solutions promise just that. However, with major differences between the storage systems available in the market, you can only receive objective advice from providers whose portfolio includes all the different variants. In addition, the optimal method for each specific case must also satisfy future requirements and be adaptable. Combinations of systems are an option as well.

This Solution Guide is intended to be a valuable decision-making support. It provides an overview of the available storage solutions for bins and describes the parameters by which the right system can be selected in each case. The Guide also includes illustrative and practical examples to help make your final choice.

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Scalability



Storage capacity



Throughput requirement



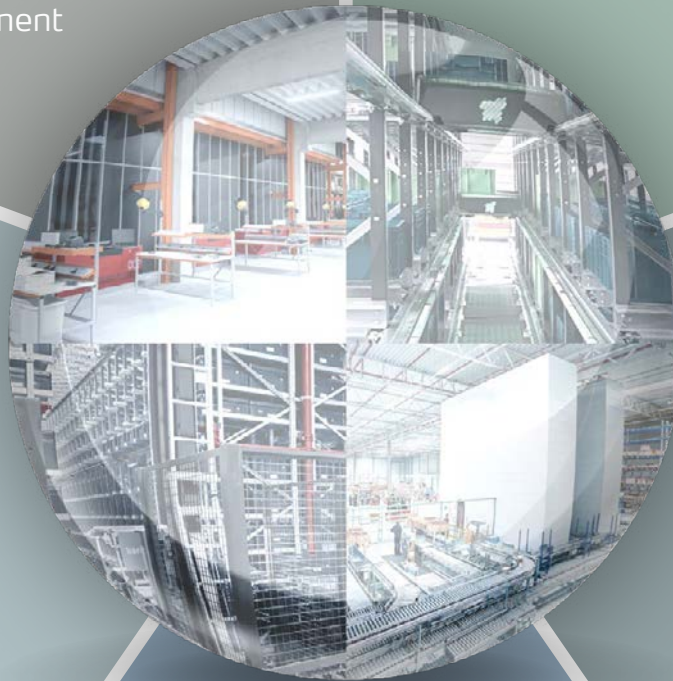
Picking quantity



Accesses per SKU



SKU count



Item weight



Item size



Effort for system design



Time for delivery/
implementation



Available free height



Available footprint

Parameters in system selection

What are the requirements regarding the system's performance, storage capacity, and flexibility?

An efficient storage system considers not only the current storage capacity required but also of future demand. The system must be scalable to accommodate growing warehouse stocks. In addition, the throughput performance should be based on the actual requirement, and must be neither too small nor too big. This optimizes operating costs and maximizes productivity. Such a system optimally supports the operator's long-term strategy.

How extensive is the range of articles, and how frequently are they accessed?

The number of different articles in the warehouse significantly impacts the complexity of warehouse management. As the number of articles grows, so does the requirement for efficient administration to make optimal use of the available space. Frequently required articles, for example, must be easily accessible to enable fast picking and seamless order processing. Bottlenecks and delays in operations are avoided if withdrawals can be processed efficiently. The weight and size of the stored articles are also crucial factors in selecting the right storage system since they determine carrying capacity, space utilization, handling and efficiency during picking.

What are the construction prerequisites at the site?

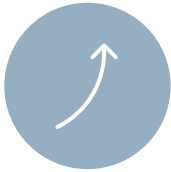
In many cases, new storage systems are integrated into existing buildings, so the solutions must be adapted flexibly to the existing floor plan and make optimal use of the building height.

How quickly is the automated solution required?

The planning effort depends on the complexity of the requirements and processes and on the modularity and scalability of the system in real-time operation. The total time required to commission the completed storage system also depends on the delivery time and the implementation of the technology. With a competent partner at hand, it is possible to save time and resources at each stage of the process.

Bin storage solutions

Miniload system with stacker crane



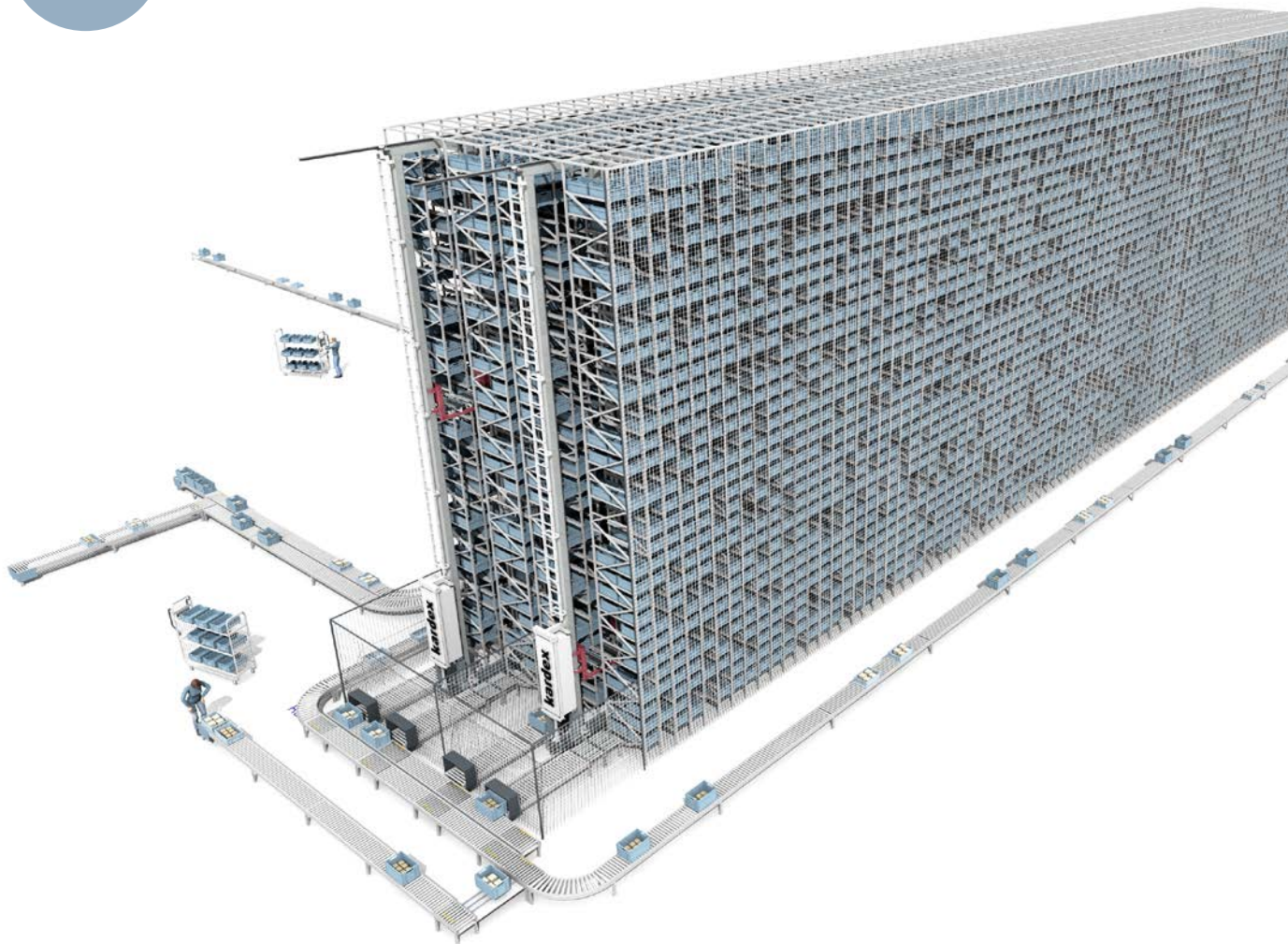
Optimal space utilization
with up to 24 m height



High storage capacity with
optimal price-performance ratio



High throughput requirements
with load capacity of up to 50 kg

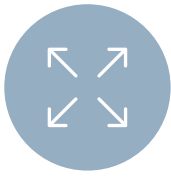




Best practice: Food production

The production area of a manufacturer in the food & beverage industry reached its capacity limits. The shipping area was expanded by a miniload system and a connected conveying technology to create more space for production. Automating manual storage areas, previously located in the production area, and centralizing them into a single storage system, saved a large amount of space in both areas. Overall, the miniload system aids the complete order-picking process, and the factory is now equipped to cope with constant growth.

AutoStore system



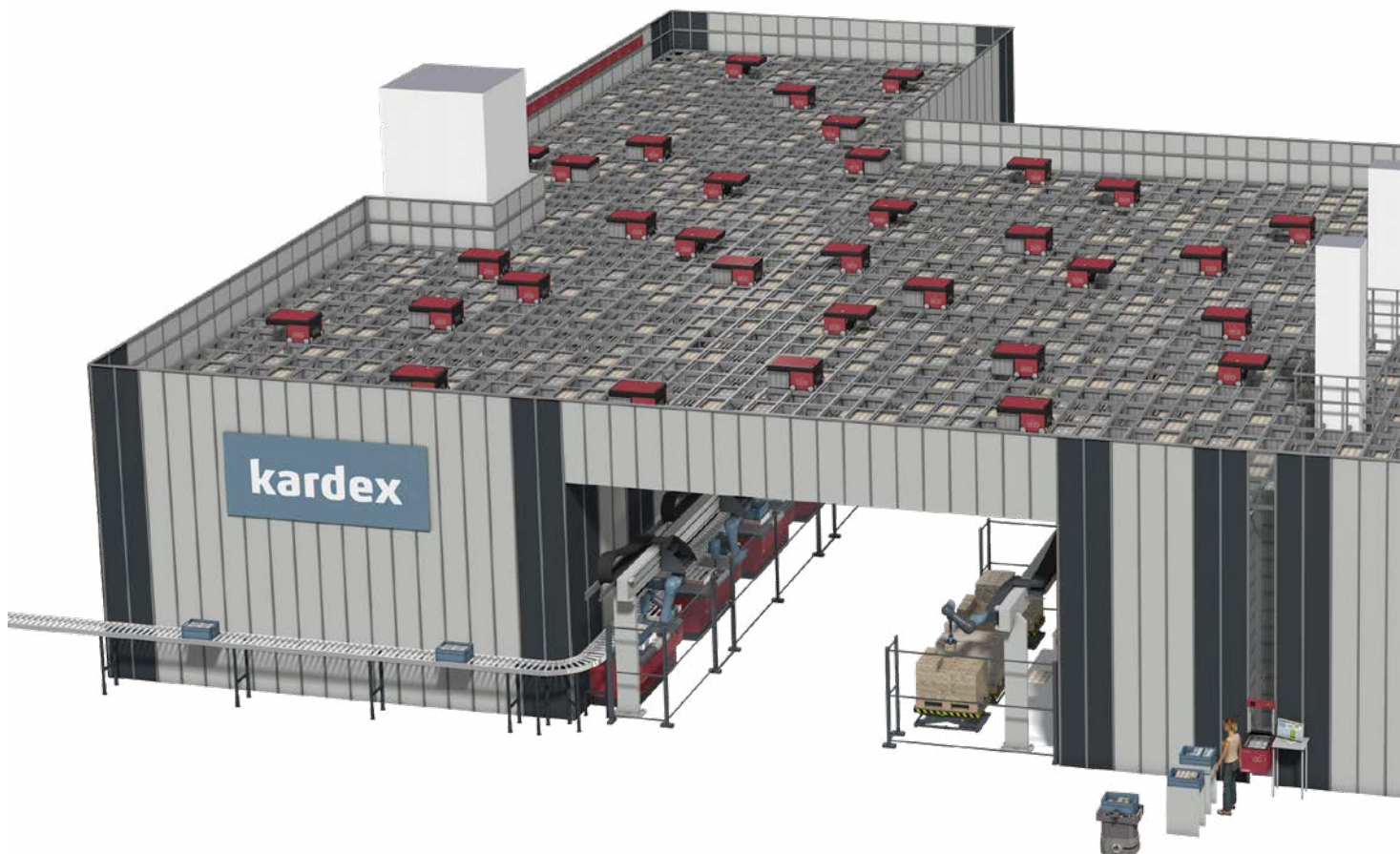
High scalability regarding storage capacity and throughput

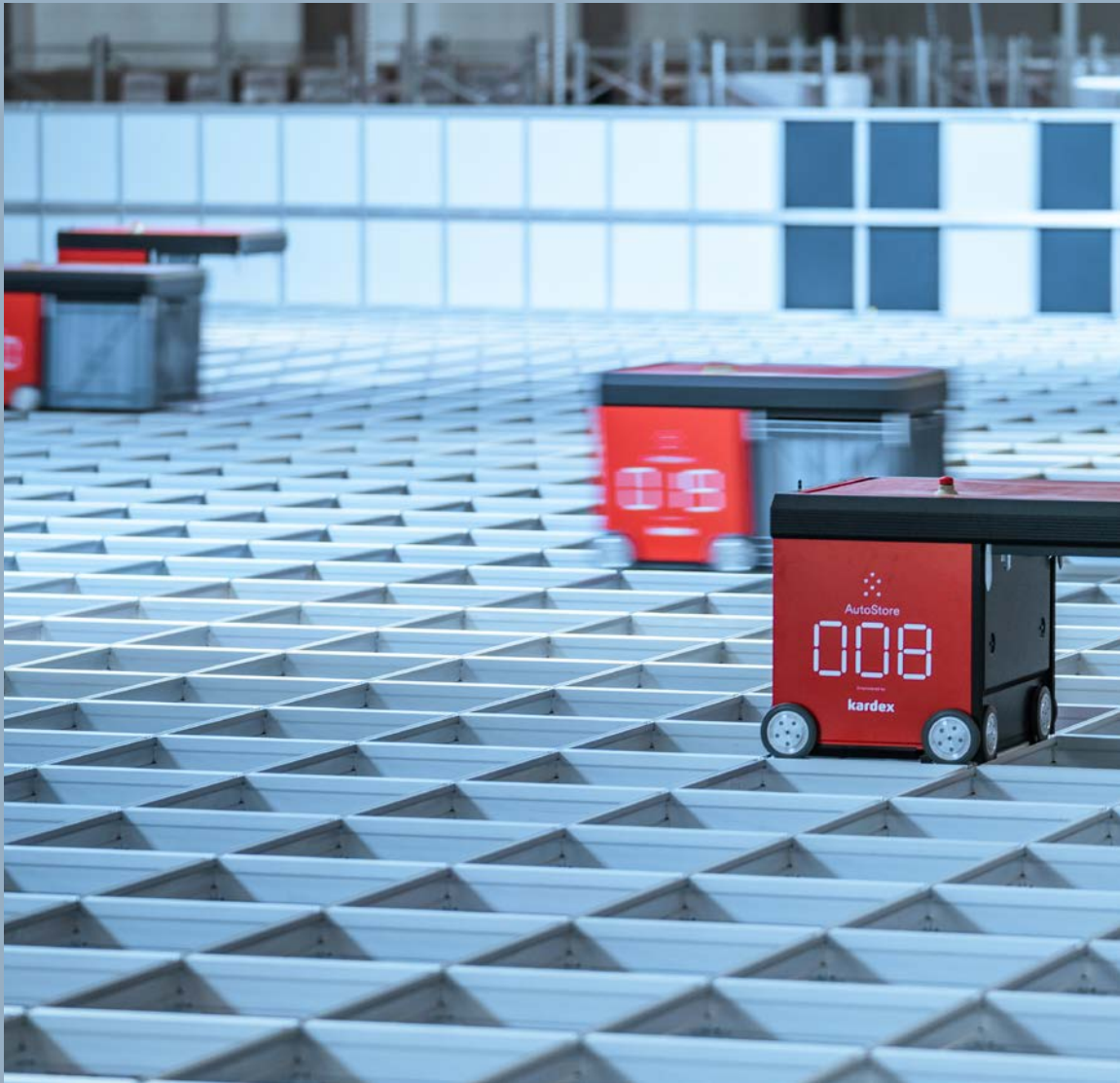


Maximum storage density on minimum floor space, even for buildings with challenging geometrical conditions



Short planning and implementation times, and extension capability





Best practice: E-Commerce

A medium-sized e-commerce company opted for automated order processing to keep pace with strong sales growth and continue to supply its customers quickly and reliably. The existing racking warehouse was replaced with an AutoStore system empowered by Kardex. Previously, the company used a storage area of 3,000 m², operating at more than 100% capacity. Today, the AutoStore system accommodates an even greater number of articles on a floor space of only 1,400 m². With a current storage space occupation rate of 60%, there is great potential for further growth.

Vertical Buffer Modules (VBM) – Kardex Miniload-in-a-box



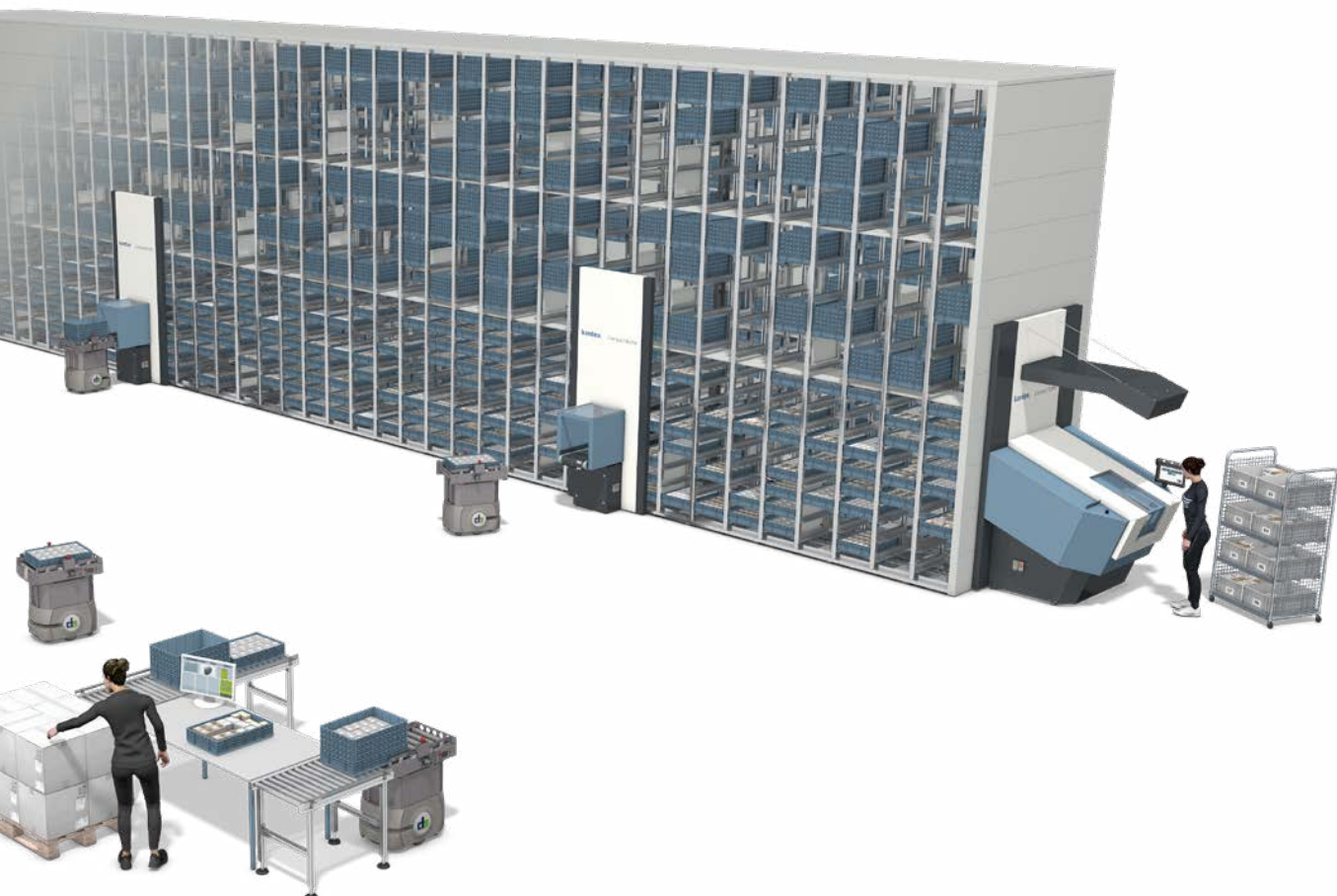
Short implementation time combined
with low level of investment



Process buffer – high storage density



Utilization of the full height of the existing building





Best practice: Sale of machine components

A Belgian company specializing in selling standard machine components for the mechanical engineering sector required a space-saving storage solution. On minimal floor space, the company wanted more storage space for picking small parts, larger articles, and cartons. To fully exploit the available storage space, the static racking was replaced by three Vertical Buffer Module Kardex Miniload-in-a-box. These three 18-meter-long machines have doubled the available storage capacity.

Bin shuttle system powered by ROCKETSOLUTION



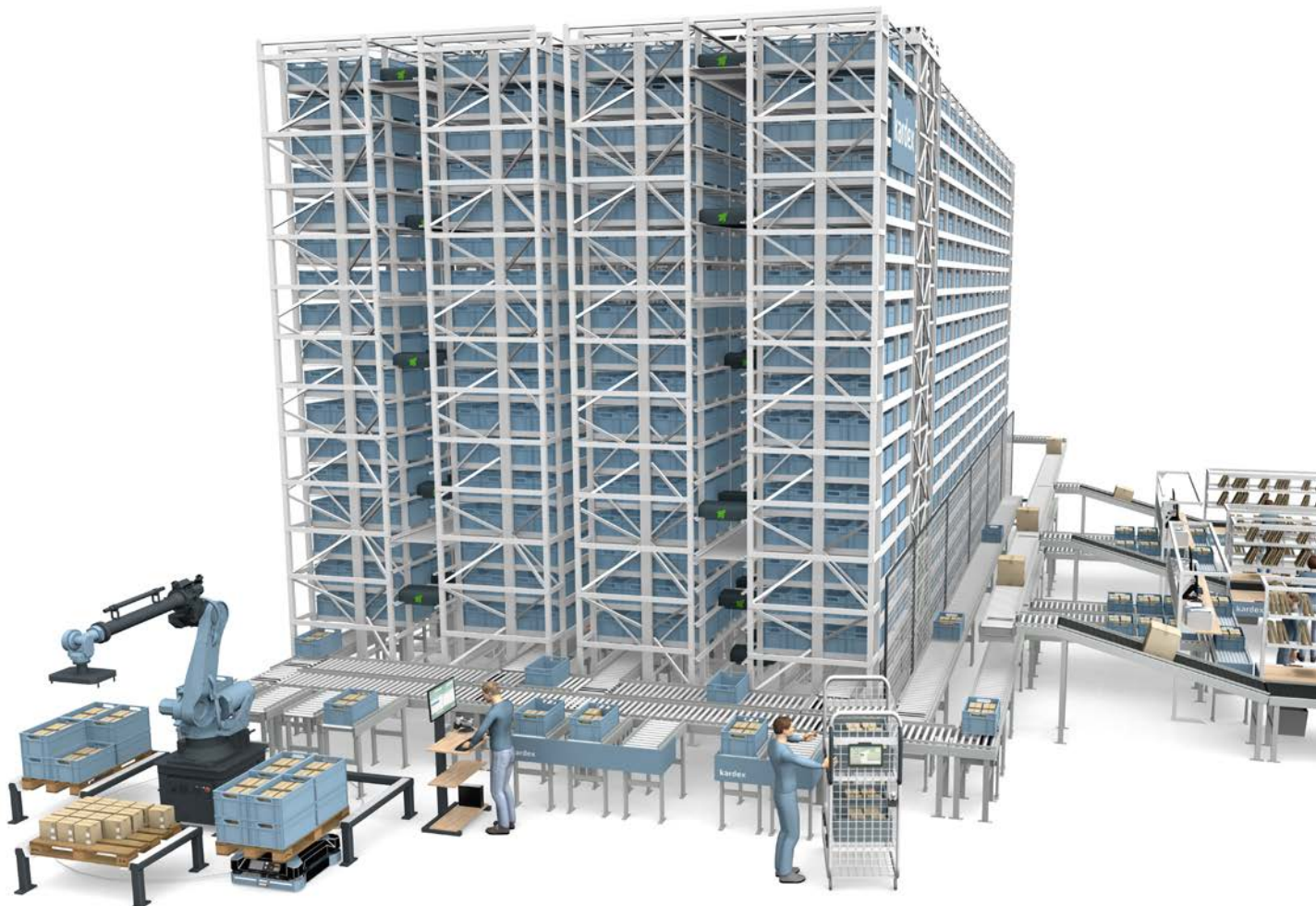
High, sequenced performance



Compact regarding storage density,
construction height, and depth



Load capacity of up to 50 kg

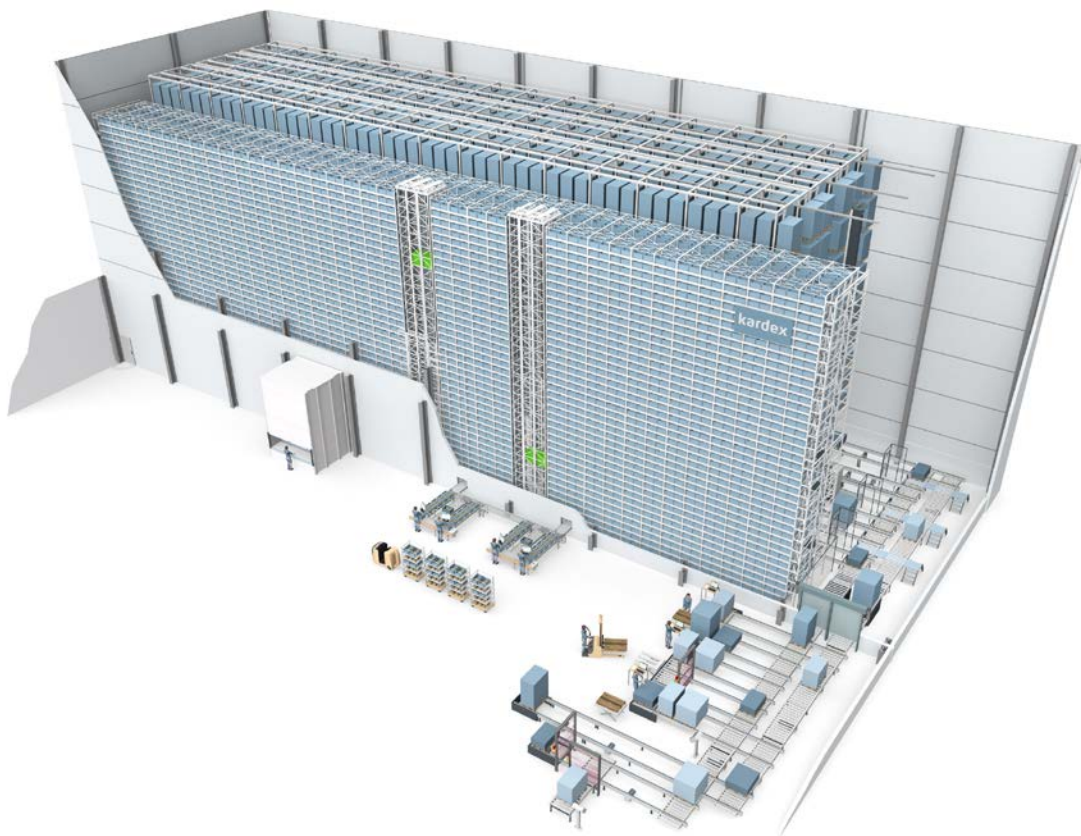


**Best practice: Fashion industry**

A well-known clothing company faced the challenge of optimizing its warehouse for different distribution channels (retail and wholesale market, online sales, and marketplaces), while centralizing the storage space in-house. Due to the bin shuttle system powered by ROCKET SOLUTION, the utilization of space was optimized and an area of 2,750 m² was saved, which can now be used otherwise. With the help of the shuttle system, seasonal fluctuation peaks can be handled smoothly. With a system performance of 500 totes in and out per hour and aisle, the customer benefits from a better performance as well as lower labor costs through automation and better time efficiency.

Combinations of systems

Space-saving warehouse management for internal supply



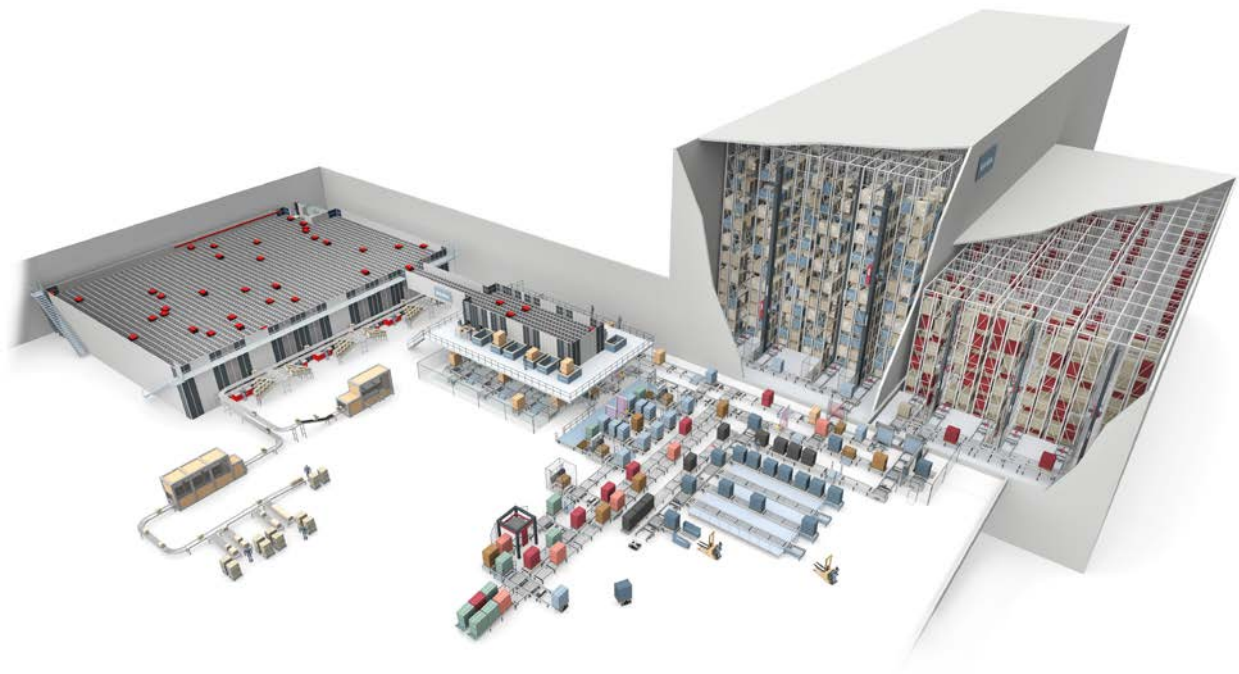
Challenge

Storage of electronic components of various sizes and weights.

Solution

Two separate storage areas were created: One for large and heavy parts and another for small electronic components, enabling targeted and efficient warehouse management. Our unique bin shuttle system powered by ROCKETSOLUTION facilitates extremely compact, quadruple-deep storage for maximum space utilization with minimum space requirement. An automated high-bay warehouse serves as the ideal add-on for the storage of large and heavy goods.

Efficient warehousing for order picking and replenishment



Challenge

Storage of diverse products with different access frequencies and volumes

Solution

Articles that are available in large quantities, heavy articles, and hazardous goods are managed in two zones in the pallet storage area. Articles present in smaller quantities, with greater product diversity and with frequent access, are stored in an AutoStore system. At ergonomic workstations, pallets coming from the high-bay warehouse get depalletized ensuring efficient replenishment of the entire warehouse. The concept aims to ensure short access and delivery times and short lead times.

Summary

Selection of the optimal storage system not only reduces the operating costs but also increases productivity and thus ensures long-term competitiveness.

Practical examples of the use of individual or combined solutions demonstrate how companies in diverse industries can achieve significant improvements using tailored storage strategies. Whether in food production, in e-commerce or in the fashion industry – automation and optimization of storage processes ensures smooth operations and adaptability to future challenges. The correct storage solution is the key to greater efficiency, floor space savings, and satisfied customers, who can be supplied quickly and reliably.

In order to best attain these goals, it is important to take account of many factors during the planning phase for bin storage. You should choose a partner who can advise you impartially – a partner who can implement any kind of solution, and who can design the optimal bin solution for you from all the options available.

About Kardex

Kardex is a leading intralogistics solution provider of automated storage, retrieval, and material handling systems in an attractive and growing market. With two entrepreneurially managed divisions, Kardex Remstar and Kardex Mlog, as well as Corporate Ventures (Rocket Solution, SumoBox, Kardex AutoStore Solutions) offering complimentary cutting-edge technology, Kardex developed into a global industry partner.

Efficient and reliable warehouse management software solutions are as crucial for the productivity of modern warehouses as hardware components. Kardex offers modular IT concepts tailored to our individual intralogistics processes and warehouses.

