



**AUTOMATED WAREHOUSING**  
**OPERATING THE**  
**WAREHOUSE**  
**OF THE FUTURE**  
**WITH AUTOSTORE**

case study



AutoStore is the global pioneer in the field of robotic cube storage systems. Their solutions are trusted by leading logistics firms around the world thanks to the flexibility, efficiency, scalability, and safety they offer. Rhenus chose to implement an AutoStore cube storage system at 'The Tube', the innovative flagship distribution centre in Tilburg, the Netherlands, because it wanted to tap into the synergies of having one process with a single end-to-end solution that serves multiple customers simultaneously. Other important goals included boosting efficiency while improving employee ergonomics and eliminating redundant tasks.



The Tube known for its futuristic design, it is one of the world's most sustainable storage building, with a Breeam Outstanding score of 98.48%. The Tube is a type-E bonded warehouse with over 60,500 square metres of surface area, including temperature-controlled areas, and 45 loading docks. To maximise efficiency, The Tube features many high-tech automated systems, including a facility management system based on internet-of-things technologies.

At The Tube, Rhenus picks and handles orders for over 30 different customers, mainly in the medical device and high-tech industries. To support future growth and improve productivity while also catering completely to its customers' needs, Rhenus partnered with robotics specialists Swisslog AG (part of KUKA Group) to install a very high-density AutoStore storage solution at The Tube in 2019.

## HOW THE AUTOSTORE SYSTEM WORKS

The AutoStore system is an automated, goods-to-person storage solution that uses robots and bins to quickly process small items. It is designed in the form of a vast cube-shaped aluminium grid. Goods enter the grid through two in-feed stations. Inside the grid, there are 21,000 product bins stacked on top of each other. Each bin contains up to 30 kilograms of stock and it is even possible to store multiple SKUs in the same bin. Whether the bin contains just a single item or thousands of very small parts depends entirely on the customers' individual requirements.

Along the top of the grid, 19 AutoStore robots are continually moving in both X and Y directions. For the robots, the grid functions like a rail track, allowing them to access any storage position in the system. The robots pick up the required bin from inside the

cube and transport it to one of the three picking stations. Up to 180 bins can be transported to each work station in a single hour. At the work station, employees pick the goods from the bins and place them directly into the shipping carton. The cartons then travel by conveyor belt for further processing at the value-added logistics services and packing areas.

The entire concept is designed to seamlessly combine multiple picks and packs, with order lines coming not just from the goods-to-person system, but also from the fast mover and odd-sized area. The system is supported by the flexible SynQ (short for synchronized intelligence) software that coordinates the flows in a reliable and stable way, ensuring maximum efficiency.

## A FAST, RELIABLE SOLUTION THAT CATERS TO CUSTOMERS' REQUIREMENTS

AutoStore is a mature, reliable solution that allowed Rhenus to implement a cutting-edge logistical concept at The Tube. Engineers, IT specialists and Operations Team members at Rhenus teamed up with the experts from system integrator Swisslog to collaborate continuously on optimising the system. Engineers from both organisations work closely together to develop a solution that meets the complex logistical requirements.

The Tube now has a reliable, scalable goods-to-person system that serves all its customers simultaneously while optimising storage space and eliminating walking distances for employees. The system also gives customers the flexibility to efficiently change their order profiles and other requirements. And because the AutoStore system is a dust-free storage solution, it is particularly suitable for sensitive technologies and other high-value items.

## CONTINUING TO GROW AND EMBRACE NEW TECHNOLOGIES

Arnold van Asten, Site Manager at Rhenus Warehousing Solutions says that by implementing the AutoStore, Rhenus has reduced order handling time at The Tube by 30%. The new system is also built to ensure maximum continuity. In case one of the robots needs maintenance, there are still plenty of others online to continue operating at normal speed.

"The AutoStore system, offers a scalable and competitive solution, ensuring continuity," says Arnold van Asten. Plans are already in progress to expand to a fourth work station at The Tube. Because the AutoStore system is modular and

quickly scalable, it can be continually expanded to meet the needs of Rhenus customers, even doubling in size if necessary.

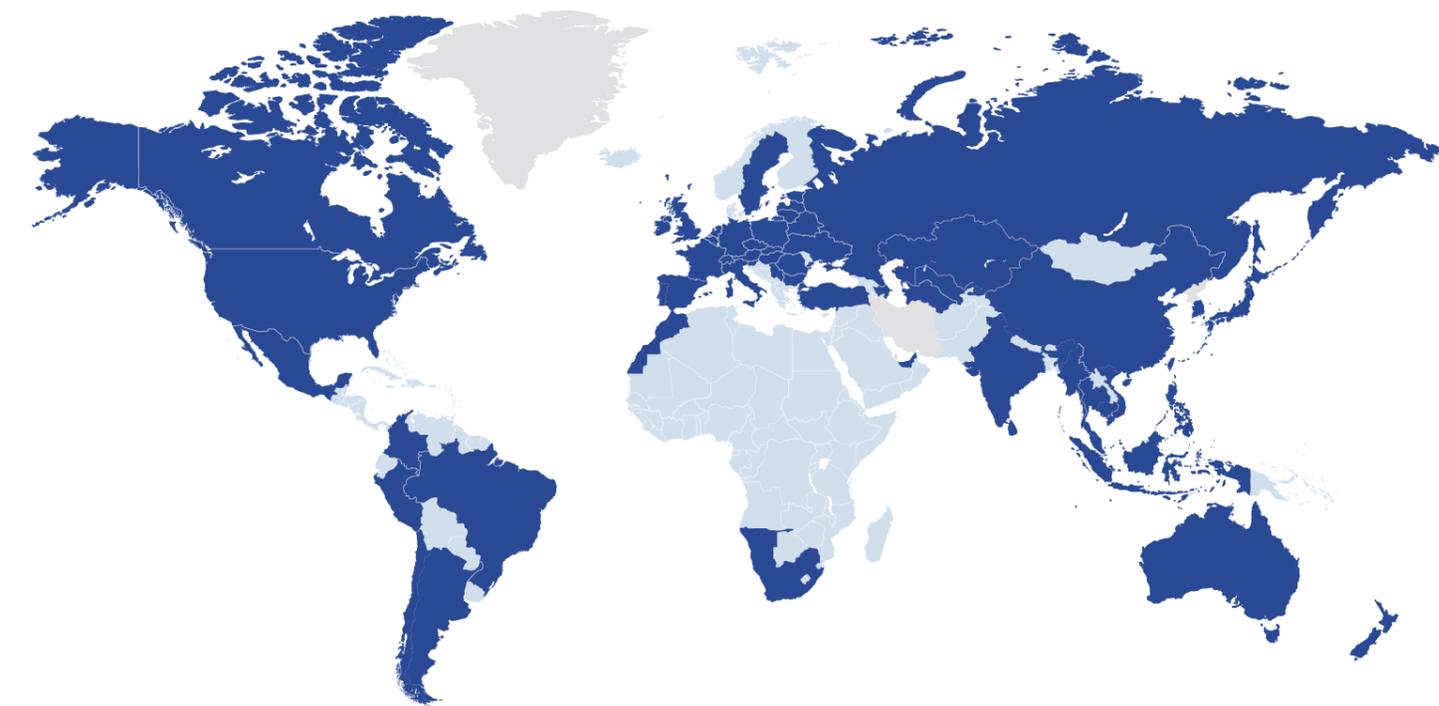
With the AutoStore solution in Tilburg, Rhenus is leading the way in automating operations in the logistics industry. The company has already embraced high-tech goods-to-persons solutions in the past, such as its multi-user shuttle in Eisenach and automated warehouse in Hong Kong. Solutions like these, in collaboration with world-class partners are paving the way for a more efficient automated future of logistics.



# THE RHENUS GROUP IS A LEADING LOGISTICS SERVICE PROVIDER WITH GLOBAL BUSINESS OPERATIONS AND AN ANNUAL TURNOVER OF EUR 7.0 BILLION.

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## AT A GLANCE

With an annual turnover of EUR 7.0 billion, the Rhenus Group is one of the leading global logistics service providers. Rhenus has 37,500 employees across 970 sites.

The Rhenus Group offers solutions for a wide range of industries along the entire supply chain, including multimodal transport, warehousing, customs clearance and innovative value-added services.

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