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How do

Octopi pick locks, store tools, solve puzzles and open jars?

Each arm has evolved a semi-autonomous brain for swifter more informed decision-making.

Control. Evolved.

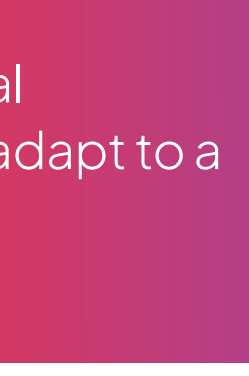


Automation Retrofits

A set of adaptations that enable each crane in your yard to operate automatically and remotely.

Automation Retrofit

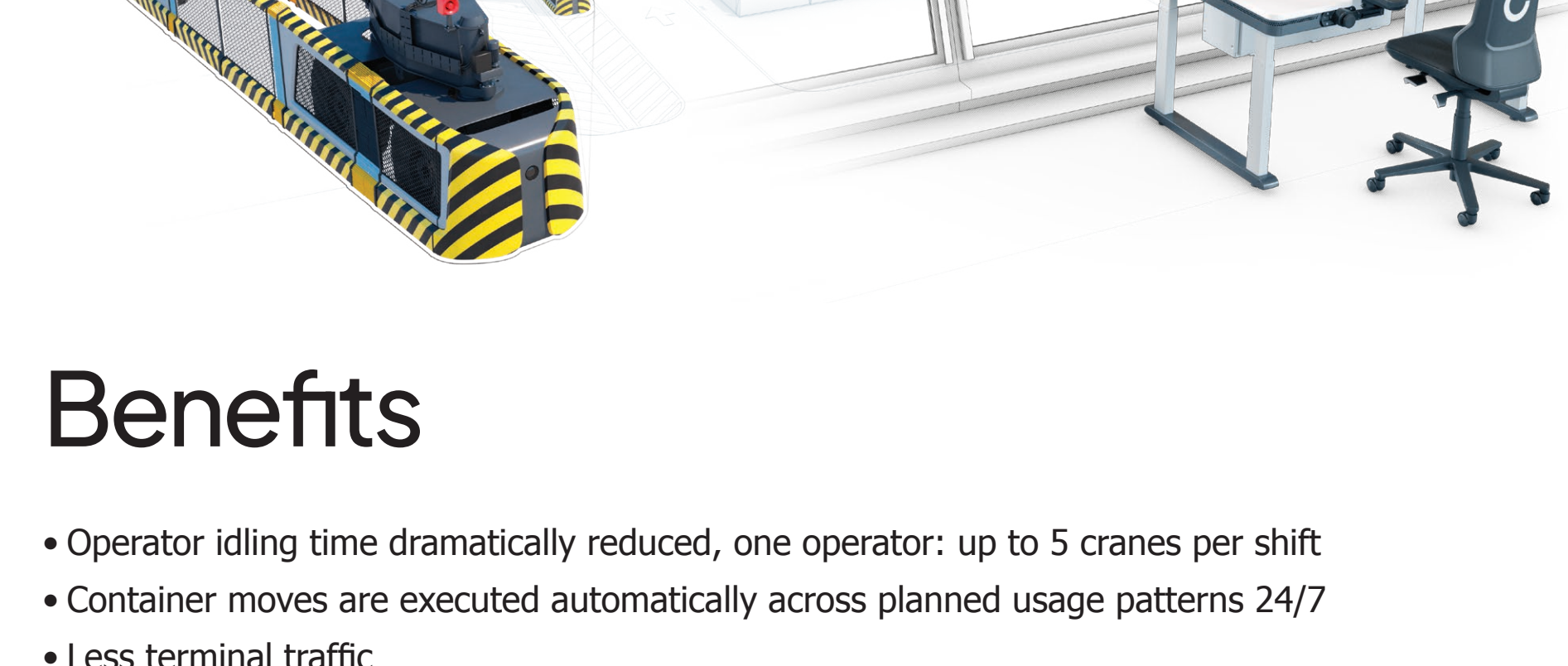
The complete suite of smart features, remote operation systems and automated yard infrastructure features.



Watch video at this link

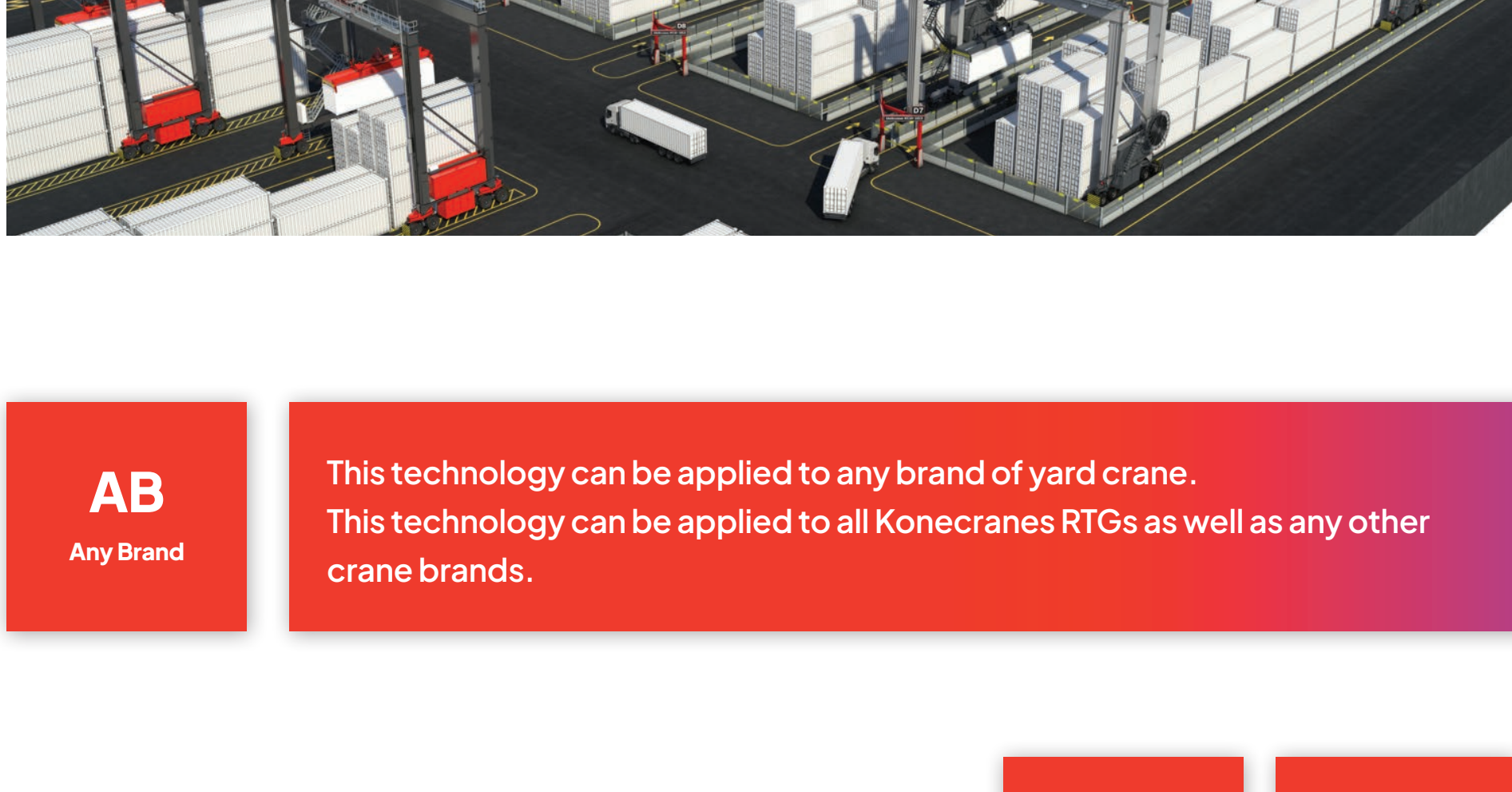
Adapt and thrive

Konecranes is the premier port services provider to brownfield terminal developments. Our range of retrofit products will enable your fleet to adapt to a fast-changing environment. Welcome to your evolution.



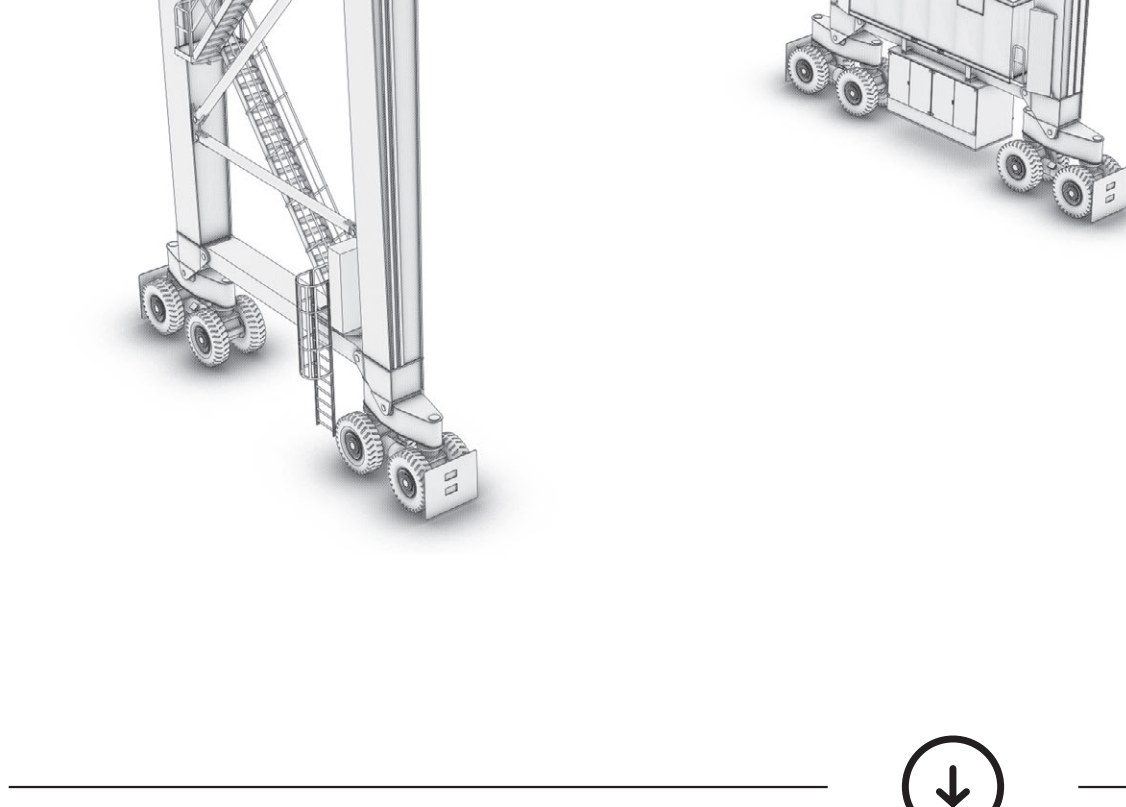
Benefits

- Operator idling time dramatically reduced, one operator: up to 5 cranes per shift
- Container moves are executed automatically across planned usage patterns 24/7
- Less terminal traffic
- Decreased operational cost
- Reduced environmental impact
- Our ARTG system can be introduced in controlled phases, at reasonable cost, with minimal interruptions to terminal operations.



AB
Any Brand

This technology can be applied to any brand of yard crane.
This technology can be applied to all Konecranes RTGs as well as any other crane brands.



AY
Any Yard

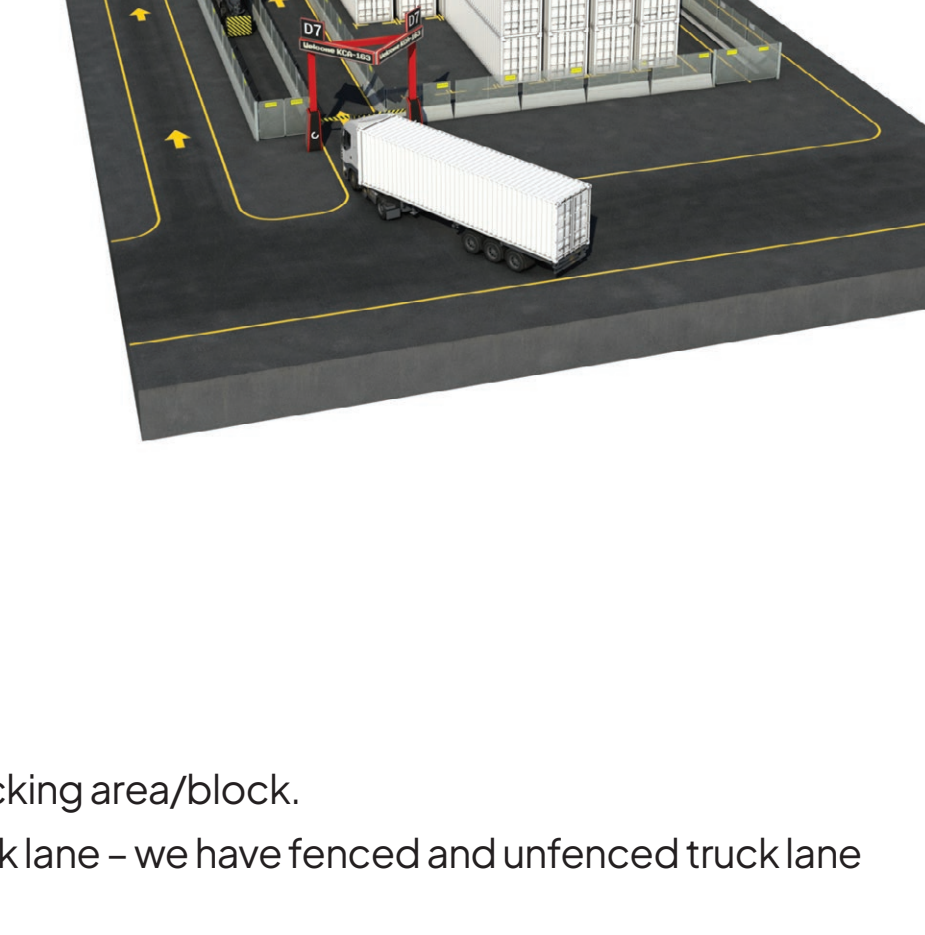
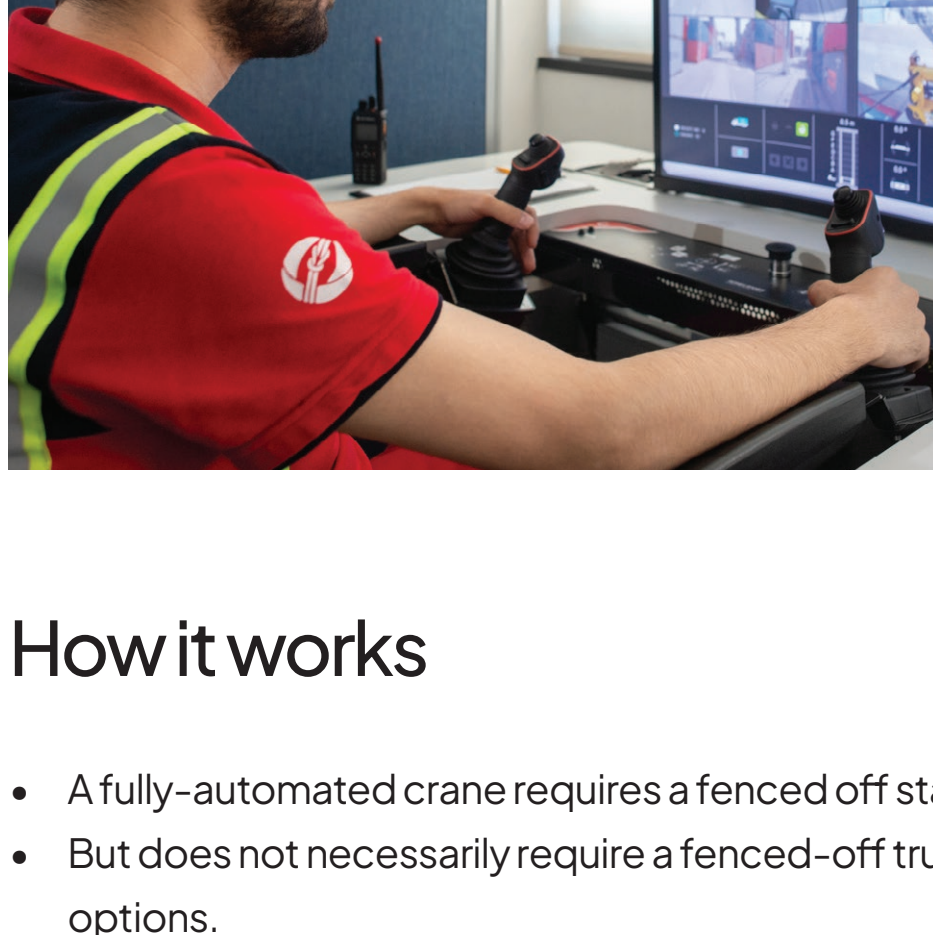
AT
Any TOS

RTG
Rubber-Tired Gantry Crane



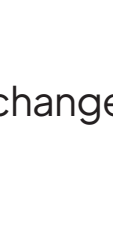
Why Konecranes Automation?

- Our automation system comes with a performance guarantee – an industry first
- Konecranes has the most field-proven retrofit/brownfield automation concepts
- Our proprietary Active Load Control technology is a huge advantage in converting manual yards to automated
- Field-proven entirely wireless communications technology for Konecranes video signals, enabling even diesel genset RTGs to be automated
- Deep technical support by way of a remote Crane Management System, as well as augmented reality technology in the field



How it works

- A fully-automated crane requires a fenced off stacking area/block.
- But does not necessarily require a fenced-off truck lane – we have fenced and unfenced truck lane options.
- When inside the fenced stacking area/block the crane will automatically move into position, pick up and drop off container based on instructions directly from the TOS.
- 1 to 2 Automated RTGs can operate in a block at a time.
- Operators only handle exceptional moves and truck loading and unloading.
- Truck lanes have entry and exit gates that use RFID tags to identify the correct truck, and use LED screens to issue instructions to the driver.
- Once verified the truck's movement triggers the work instruction from the TOS to the ARTG, which moves the crane and container into position above the truck.
- The crane then pings the operations centre and requests a remote operator to complete the lift or delivery of the container from or to the truck.
- When outside of the fenced area (for maintenance etc.) the crane is handled via remote operation or via the cabin.



What you need to know

- Converting to an automated yard is a systemic change – we recommend a strong planning partnership with our system engineers.
- Infrastructure and preparation by customer.
 - Network between crane and ROS is to be created by customer
 - Remote operating centre location and infrastructure
 - Fencing of stack
 - Cabling stacking area components
- Certain changes may need to be made to customer's TOS.
- It is advised that early on in the discussions the customer's existing IT network is reviewed with Konecranes engineers.

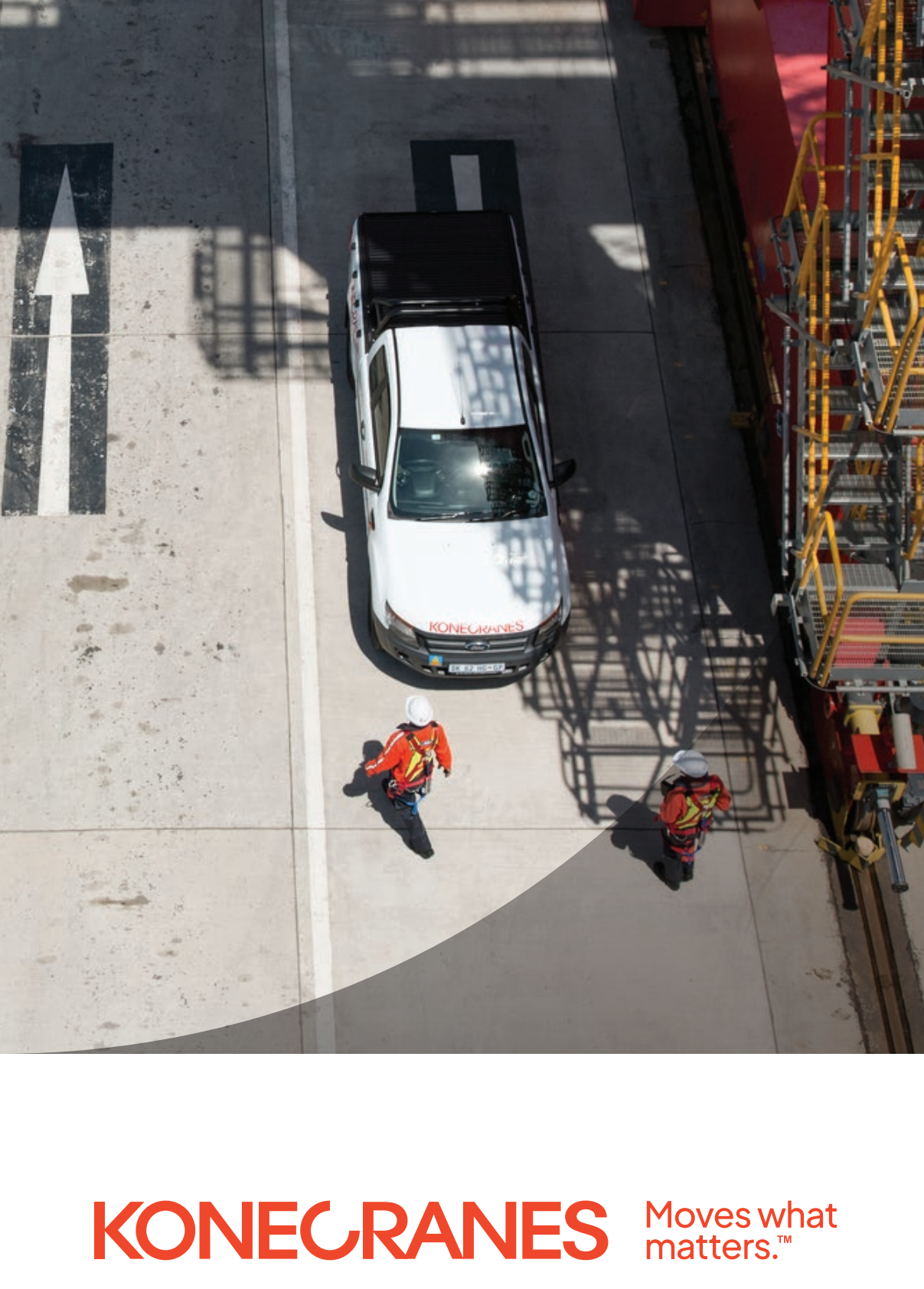


Selected References

(Click on for the full case study.)



Ports. Evolved.



Konecranes is a global leader in material handling solutions, serving a broad range of customers across multiple industries. We consistently set the industry benchmark, from everyday improvements to the breakthroughs at moments that matter most, because we know we can always find a safer, more productive and sustainable way. That's why, with around 16,600 professionals in over 50 countries, Konecranes is trusted every day to lift, handle and move what the world needs. In 2023, Group sales totalled EUR 4.0 billion. Konecranes shares are listed on Nasdaq Helsinki (symbol: KCR).

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