

B1 ROBOTICS

Robotic cask unloading system to reduce
risk of musculoskeletal injuries

December 2025



Irish Distillers
Pernod Ricard



At Irish Distillers we.....



Always Think
Safety First



Fully adhere to
the Safety Rules
at all locations



Stop and call
out unsafe
behaviours



Report and learn
from hazards, near
misses & accidents



Always look
out for each
other



IRISH DISTILLERS: A BRIEF HISTORY

After decades of industry decline, three families came together to form Irish Distillers in 1966, before joining the Pernod Ricard family in 1988. Then the Jameson global growth story truly began.

John Jameson & Son
founded in Dublin.
John Power & Son
founded in Dublin in
1791.
Midleton Distillery
founded in 1825.



1900-1960s

Irish Distillers formed in 1966
with the merger between the
last three remaining Irish
distilleries: Jameson, Powers &
Cork.



Jameson growth story begins -
Jameson reaches 1 million case
milestone in 1996. Launch of the
Jameson International Graduate
Programme in 1991. Jameson
Brand Homes open in Midleton &
Bow St.



1700-1800s

1966



As Irish whiskey exports
struggle, Irish
Distillers becomes a takeover
target. Pernod Ricard acquires
Irish Distillers. The Irish
whiskey renaissance begins in
earnest, with Jameson
prioritised as a key accelerator
brand.



Double digit growth for Jameson.
Expansion of Midleton Distillery and Fox
& Geese bottling plant. 5 million cases of
Jameson sold in 2015.
Jameson surpasses 10 million cases in
2022.



Irish Distillers
Pernod Ricard

WHO WE ARE

We are producers of some of the world's most well-known and successful Irish whiskeys and one of Ireland's leading suppliers of spirits and wines.

B1 BARRELS

ARE AMERICAN
BARRELS USED
IN MIDLETON FOR
WHISKEY
MATURATION

AMERICAN
BARREL

- Quercus Alba
(White Oak)
- 200 Litres

HEALTH AND SAFETY CHALLENGES ASSOCIATED WITH UNLOADING BARRELS

Delivered in
40-foot
containers

206
barrels per
container

Barrels
are stacked
3 high


Each barrel
weighs up to
60kg

During transport,
the **barrels** can
become dislodged
and unstable

Manually
unloaded by **two**
operators

Up to **1,000**
containers per
annum =
206,000 barrels



A man wearing a dark blue polo shirt, a high-visibility yellow safety vest with reflective stripes, and black gloves is leaning over a large wooden barrel. He is in a warehouse or storage area filled with many similar wooden barrels stacked in rows. The barrels are made of light-colored wood with dark metal hoops. The background shows the interior of a large storage container or warehouse with metal walls and a corrugated metal ceiling.

VARIOUS MEASURES HAD BEEN PREVIOUSLY INTRODUCED TO MITIGATE THE RISKS

**Rotation of
operational
teams**

**Additional
PPE**

**A layer of
plywood on the
bottom row
(for operators
to walk on)**

**Increased
manual
handling
training**

ORIGINAL MANUAL PROCESS



EXPLORING AUTOMATION SOLUTIONS

- Midleton Distillery partnered with Pilz in 2017 to explore automation options.
- A multi-disciplined project team was established to ensure the optimum result:
 - *Health and Safety,*
 - *Engineering*
 - *Operations*
 - *Pilz*
- The primary objective was to automate the unloading of 40 foot containers filled with empty barrels.
- The project team worked together from concept through design, commissioning and operational stages.



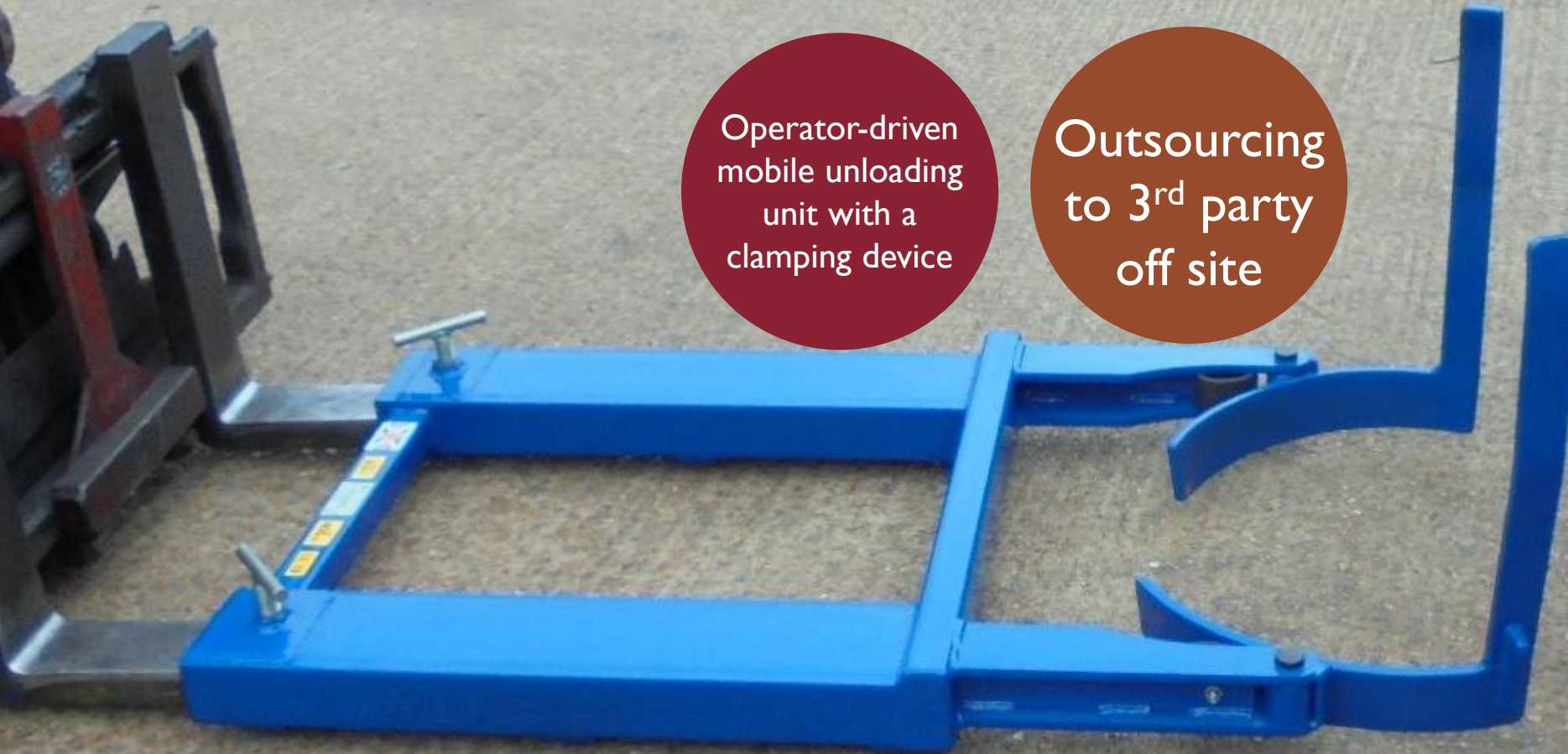
OTHER OPTIONS EXPLORED

Reducing
barrel layers
to one

Semi-automated
fork truck (AGV)
concept involving
clamping devices

Operator-driven
mobile unloading
unit with a
clamping device

Outsourcing
to 3rd party
off site



CHALLENGES TO AUTOMATION

- Could not rely on barrels being neatly stacked in each container.
- All barrels are slightly different in shape and size and loads can be packed into containers in different patterns.
- Maintain the operational output of 650 to 800 casks per shift.
- Unload full containers stacked 3 rows high.



AUTOMATED SYSTEM SOLUTION

- Was achieved through the deployment of a bespoke autonomous **Automated Mobile Robot (AMR)** guided by a **vision system** with the **AI** to traverse through a container and row by row select which barrel to safely grip and unload from the container.
- The system at its heart is a mobile 6-Axis Robot mounted on an **Autonomous Guided Vehicle (AGV)**.
- CE compliance was core throughout out the design process.



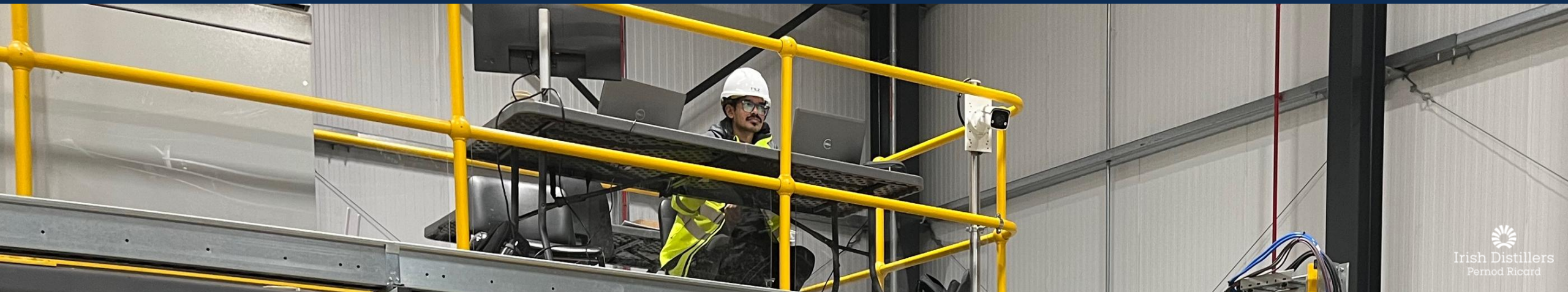
SYSTEM COMPONENTS

- **Vehicle restraint and docking system** ensures secure positioning of containers.
- **Automated Guided Vehicle (AGV).**
- **Robot Arm:** 250 kg payload robot arm mounted on the AGV featuring 360-degree flexibility and bespoke end of arm tooling (patent pending) for handling barrels.
- **Vision System** which is capable of safely and accurately identifying the cask profile and location.
- **Telescopic Conveyor System** extends to follow the robot into the container and transport barrels onto the conveyor.
- **Process Control and Safety Control Systems:** CE Marked
- **New loading bay** equipped with automatic doors and dock levellers



VISION SYSTEM

Is capable of safely and accurately identifying the cask profile and location



B1 ROBOT IN OPERATION



ENHANCED SAFETY SOLUTION



Unauthorised
entry
prohibited

**Light
Curtains**

**Trailer
Restraint
System**

E-Stops

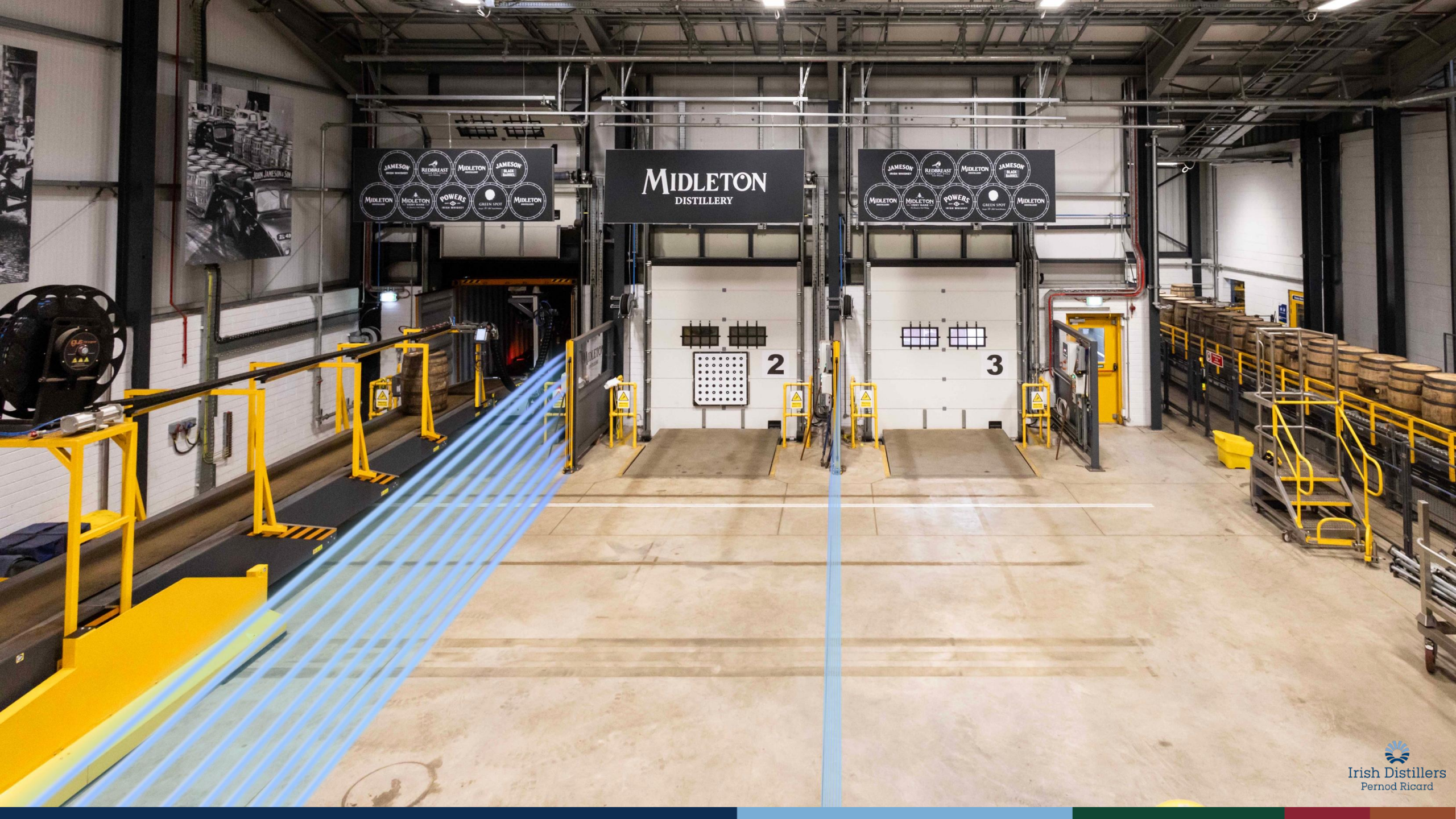
**2-D Floor
Scanners
(AGV)**

**Safety
Gates**

**Trapped
Key
Interlock
System**



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ENHANCED SAFETY SOLUTION – GUARDING & ACCESS



RESULTS ACHIEVED/ SUCCESS FACTORS

The BI robotics system was successfully installed and commissioned, going live in January 2024.

So far we have achieved:

- Significant risk reduction
- Container Capacity - unchanged
- Cask size variability: The system can effectively manage variations in cask sizes
- Minimal manual intervention
- Operators oversee the process from a safe zone
- Compliance with safety standards: CE and Pernod-Ricard safety standards.





EU GOOD PRACTICE AWARD 2025

WINNER

2025

Healthy Workplaces

GOOD PRACTICE AWARDS



Midleton Distillery

Robotic barrel unloading system
to reduce risk
of musculoskeletal injuries





THANK YOU



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