

Linde Material Handling

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# A GREENPRINT FOR SUSTAINABLE WAREHOUSING

AN INDUSTRY DEBATE HOSTED BY  
LINDE MATERIAL HANDLING

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# INTRODUCTION

Sustainability is a goal that all businesses are striving to achieve – for reasons of efficiency as much as a common desire to meet carbon-free targets. But what does a greener logistics supply chain look like?

Latest figures from the UK Warehousing Association show that warehousing space in the UK has grown by nearly a third over six years to more than 500 million sq ft. With such a sizeable carbon footprint, the onus is on the intralogistics sector to dramatically reduce its environmental impact.

Linde Material Handling UK brought together an expert panel with experience across the intralogistics supply chain to discuss the elements essential to a genuinely sustainable warehousing operation.

The discussion, hosted by former BBC producer Dave Harries, ranged from the strategic location and in-depth modelling of warehouse operations to reviewing forklift fleets and the impact of leasehold arrangements on sustainable energy choices.



# WITH THANKS TO OUR PANEL



**Clare Bottle,**  
Chief Executive of  
the UK Warehousing  
Association.



**Stuart Cairns,**  
**Environmental, Social  
and Governance  
Project Manager, C&C  
Group**



**Tracy Clarke,**  
Business Solutions  
Director, Linde Material  
Handling UK



**Steve Porter,**  
Simulation Manager,  
Linde Material  
Handling UK



**Stephen Barrett,**  
Managing Director and  
Founder, Solarsense



# ELECTRIC FORKLIFTS TAKING THE STRAIN

*“Re-use is the key to sustainability, not recycling” – Tracy Clarke.*

*Many intralogistics operators are now reviewing their forklift fleets, moving from gas and diesel to electric power.*

*“If the fleet is already electric but powered by lead-acid batteries, there’s now a very big shift towards lithium-ion, which is 20-30% more efficient again,” says Tracy Clarke. “For those customers who cannot easily switch from internal combustion, hydro-treated vegetable oil is compatible with 99% of our diesel trucks.”*

*Sustainable operations are not all about the power source, she cautions. “At operational level, reducing speeds and limiting travel distances can have a dramatic effect on costs and will have a more positive environmental impact. Changing how and when vehicle batteries are recharged has benefits for sustainability and efficiency too.”*

*Medium and longer-term considerations also come into play, as Tracy is at pains to point out: “As an intralogistics industry we must all now be asking hard questions of suppliers and manufacturers about what to do with lithium-ion batteries. They have a long life in forklifts – five or seven years - but they cannot be throwaway items. Re-use is the key to sustainability, not recycling.”*





## POWERING UP THROUGH ROOF-TOP SOLAR

**“Long-term solar power purchase agreements require long-term property leases” – Stuart Cairns.**

*Many businesses want to improve the sustainability credentials of their warehouse operations.*

*Drinks manufacturer and distributor C&C Group has installed the largest rooftop solar panel farm in Ireland, contributing up to 10% of electricity used on its site at Clonmel.*

*The company, which produces beer and cider brands such as Tennent’s and Magners, have nothing of that scale in the UK, although 98% of C&C Group’s electricity consumption comes from renewable sources and most of the warehouse fleet is electric.*

*Stuart Cairns says: “One of the biggest issues we have is around infrastructure. We are finding that as we move to more electrified processes. How do you retrofit that into a warehouse and make it more sustainable from that point of view?”*

*“We believe in solar but if you don’t own the building you have to convince the landlord that a rooftop solar array is a good idea. That can be tricky when you don’t have a long-term lease. How do you pay for that when a lot of these arrays are paid through long-term power purchase agreements?”*

*From the perspective of one of the country’s oldest solar companies, Stephen Barrett agreed it was one of the biggest issues but offered some hope: “We have noticed a difference in the last year, with larger landlords now putting it in themselves, which is often the best way. It’s a win-win.”*

# SUSTAINABILITY BY DESIGN

“Sustainability and efficiency go hand in hand,” – Steve Porter.

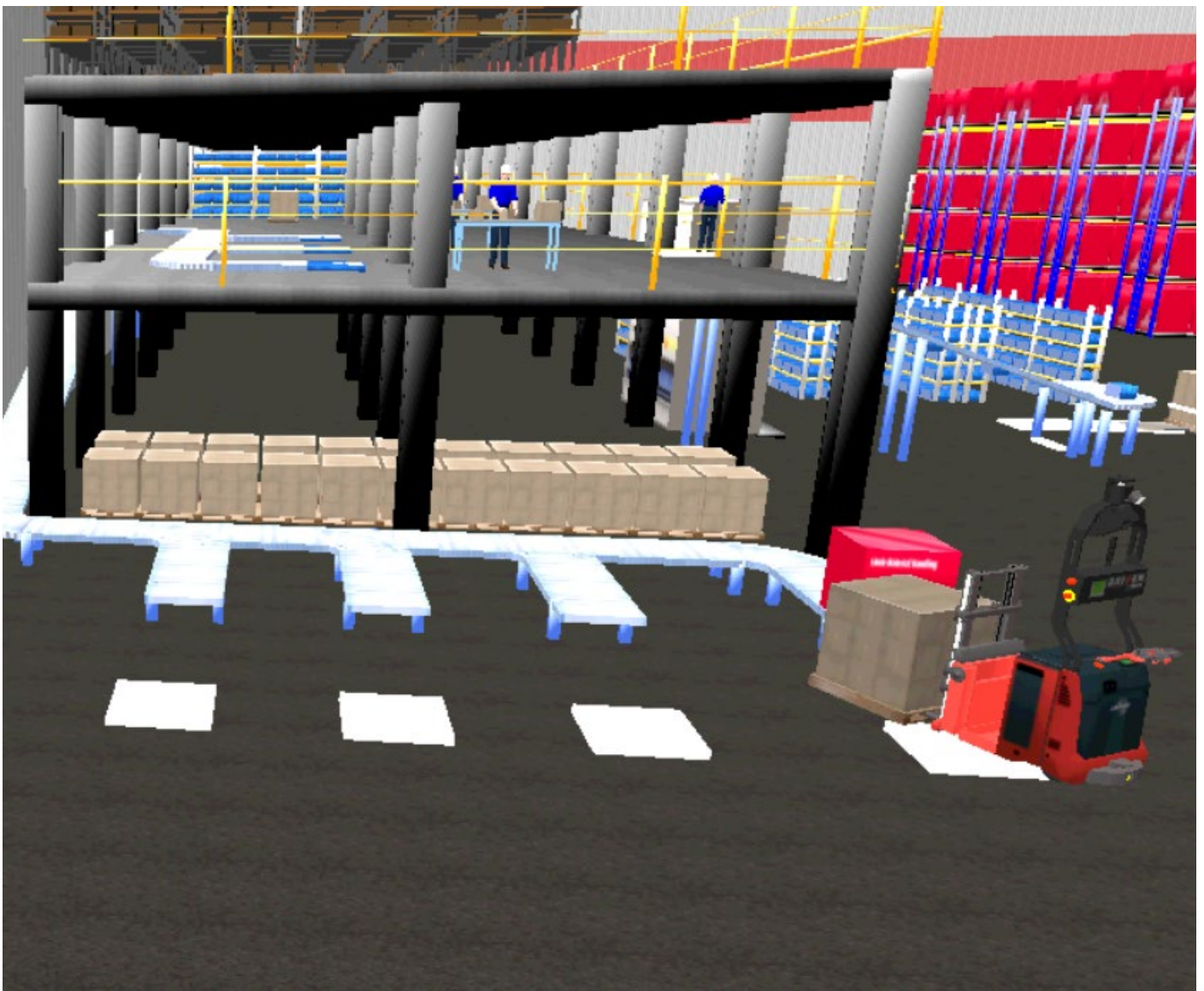
Simulation modelling has a key role in ensuring that warehouse operations are designed to be efficient in every way.

Steve Porter has been running simulation exercises for customers for 30 years, with sustainability an increasingly important element of his team’s work.

He observes: “At a basic level it establishes how many vehicles are needed along with their performance capability, but in the context of what is happening in the entire warehouse.”

Understanding of what’s needed is guided by the customer but also influenced by trends in the technology.

Steve adds: “If we design a warehouse that has the best product-based methodology and therefore the best footprint for that area, and we put the best truck and get the most efficient use from that truck, then we are ticking all the right boxes. They are all connected.”



# LOCATION, LOCATION, LOCATION

**“Site your warehouse in the right place” – Clare Bottle.**

*However advanced and efficient a new facility and its technology might be, achieving a low-carbon warehouse solution can be undermined simply by choosing the wrong location in the first place.*

*Clare Bottle explains: “Thinking about the overall carbon footprint of logistics operations, some of the considerations will involve questions around planning permission, for example, not building in the wrong place and compromising an area’s bio-diversity.*

*“And beyond that is proximity to freight networks. Putting it very simply, if you put a warehouse in the wrong place and end up with a lot of additional transport requirements, whether for the goods or your workers, that’s bound to have a detrimental effect in terms of carbon footprint.*

*“Another, more recent consideration is about the availability of electricity. There’s a greater demand for electricity in warehousing, particularly power for robots.”*

# THE CRITICAL ROLE OF THE WORKFORCE IN DRIVING A SUSTAINABLE WAREHOUSING ENVIRONMENT

**“One of the biggest things that can positively impact a company’s carbon footprint is education of and engagement with those who work within the business” – Stuart Cairns.**

*Stuart sees employee engagement and education as key to driving a sustainable warehousing environment. He says: “At C&C Group we have ESG ambassadors who have an interest in sustainability and they convey what’s happening from a sustainable standpoint to teams across the business.”*

*The company has also introduced a range of environmentally-friendly measures for staff to benefit from so that sustainability becomes part of the mindset of the workforce. It provides a cycle to work scheme, including sheltered cycle facilities, and has also installed electric charging points.*

*Stuart says that when trials of sustainability initiatives – from decarbonisation of fleets to industrial processes - take place, they do so across the business, engaging workers from different operations.*

*Tracy added that it’s important that operators of their forklift trucks are empowered to use solutions that are more sustainable, for example embracing telematics data. She said: “It’s key to highlight the benefits of any new environmentally-friendly solution to the operator.”*

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