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IN ASSOCIATION WITH:

Adapting to Change: The Logistics Challenge

SCCG
THE SUPPLY CHAIN CONSULTING GROUP

The Chartered Institute of Logistics and Transport

INSTITUTE OF CONSULTING
RECOGNISED PRACTICE

COLD CHAIN FEDERATION

QMS ISO 9001 REGISTERED

The Supply Chain Consulting Group

The Supply Chain Consulting Group (SCCG) is a leading, UK based, Supply Chain and Logistics Consultancy company, operating in the UK, Europe, Asia, Africa and the USA.

500+	260+	10+	20+
Projects Completed	Clients	Industry Accolades	Countries Worked In

- FMCG Retail
- E-fulfilment Operations
- Food Processing and Production
- Food Service and Drinks
- Fashion Retail
- Third Party Logistics and Outsourcing
- General Industrial and Manufacturing
- Automotive and Aerospace
- Utilities and Construction
- Life Sciences and Technology

What We Do

Strategy

- Logistics Network Design
- Number, location and function of facilities
- Scenario Modelling
- Cost to Serve Analysis

Transport

- Solution design and development
- Fleet Profiling & Route Optimisation
- Operational improvement
- Systems selection

Outsourcing

- Supplier selection
- Detailed scope development
- Proven effective tender process
- Contract review

Warehouse and Fulfilment

- Detailed CAD design
- Optimised workflows and layouts
- Process Optimisation
- MHE and Automation Specification
- WMS specification and selection
- Implementation support

Inventory

- Optimisation
- Root Cause Analysis
- Product Classification
- Product Location
- Holding Cost v's Service Level
- Policy Development

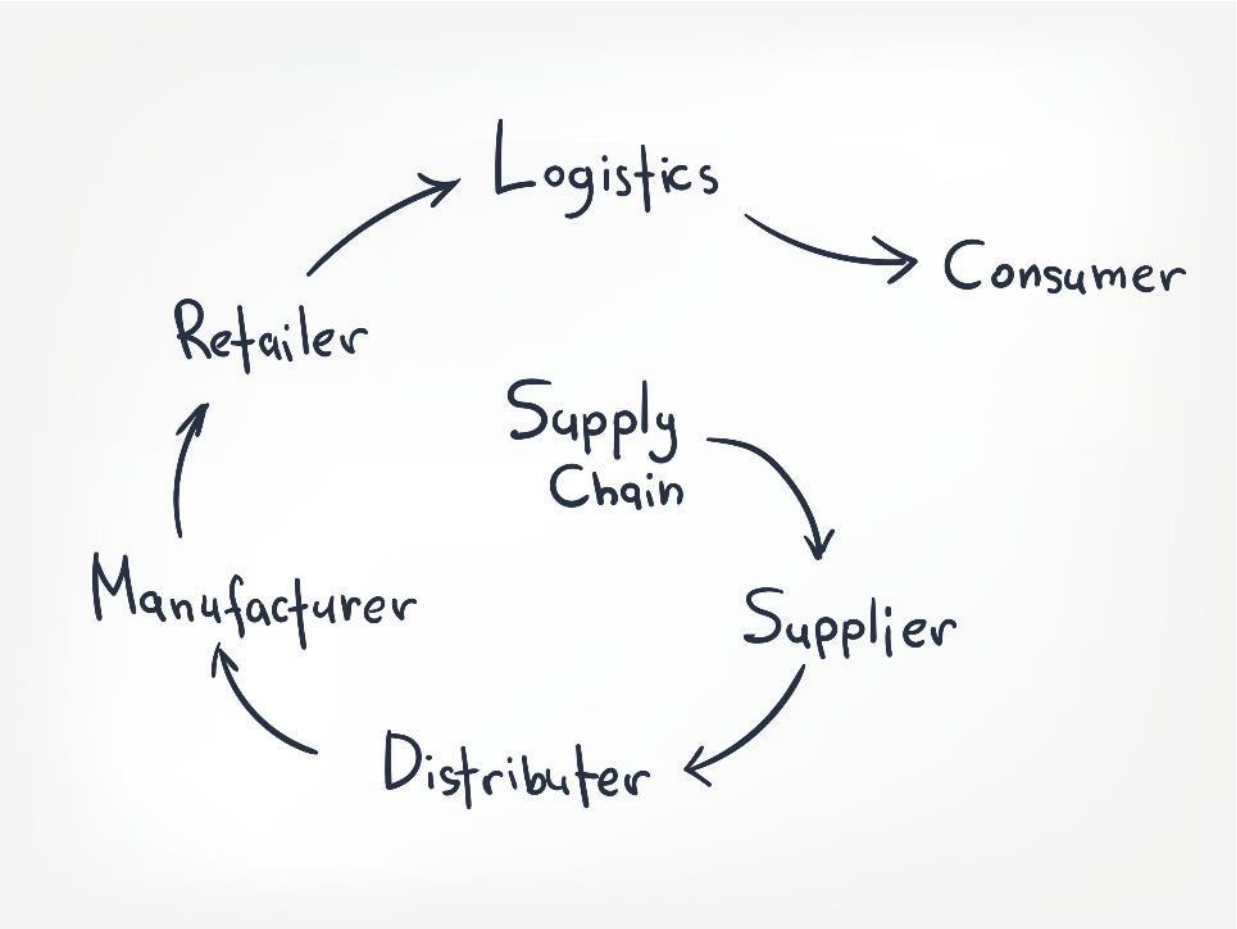
International

- Multimodal Assessment
- Supply Chain Integration
- Cost to Serve Analysis
- Freight Benchmarking
- HMRC Compliance audit
- Duty/VAT Optimisation

Logistics Strategy and Operational Improvement

Our Key Focus

- Creating a logistics platform to support companies' overall business strategy.
- Giving the right service to customers at the right cost
- Increasingly: Helping companies to operate with a reduced carbon footprint
- Look beyond the organisation and consider the meaning of 'supply chain management'
- Companies need to look up and down the supply chain and communicate well with their partners to understand how the benefits can be shared and avoid creating accidental consequences
- Industry bodies and government are key



Efficient Use of Space and Resources = Lower CO_2 Emissions

The CO_2 Waste through the lens of The 7 / 8 wastes of 'Lean'

- Overproduction/Overprocessing/Defects
  - ***Additional carbon footprint from producing and disposing of excess products.***
- Inventory
  - ***More carbon footprint from building, equipment and energy used to cool.***
- Motion/Transportation
  - ***More carbon footprint from equipment/vehicle/electricity/fuel.***
- Under-utilisation
  - ***Extra carbon footprint due to assets/people being under-utilized.***

Shopping Habits and Route to Market Changes are Moving the Goalposts

Key issues and Opportunities: Basket size, Last Mile Transport**.**

Also: Huge impact on warehousing operations

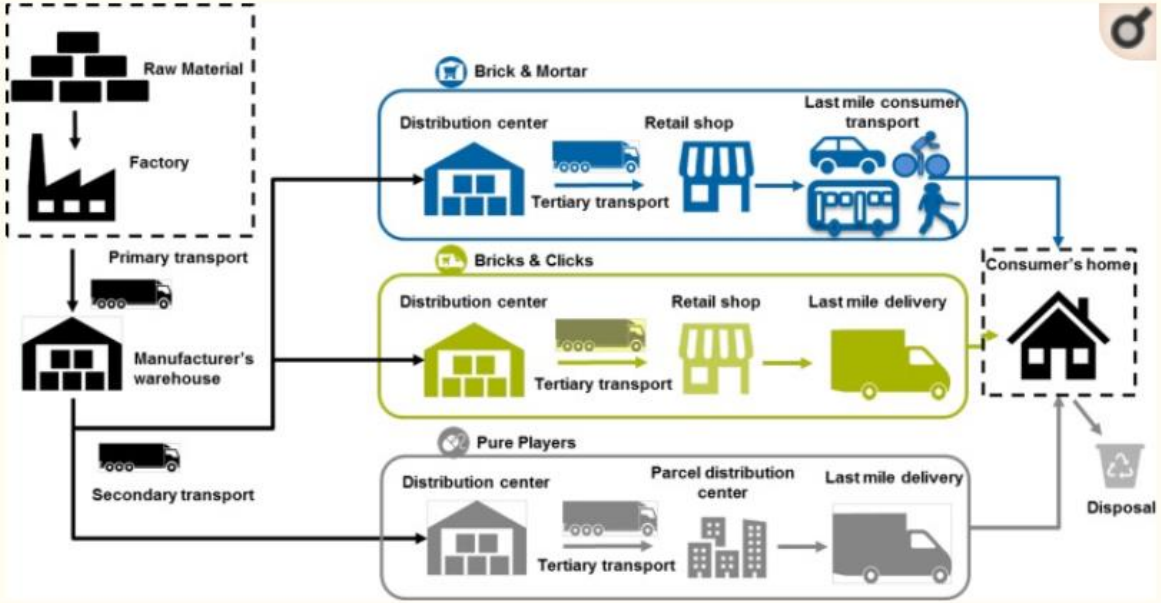


Figure 1

Scope of the study: U.K. market. Variables presented in the dashed box are excluded from this study. Only disposal of the delivery packaging for the pure-play channel is included in the model.

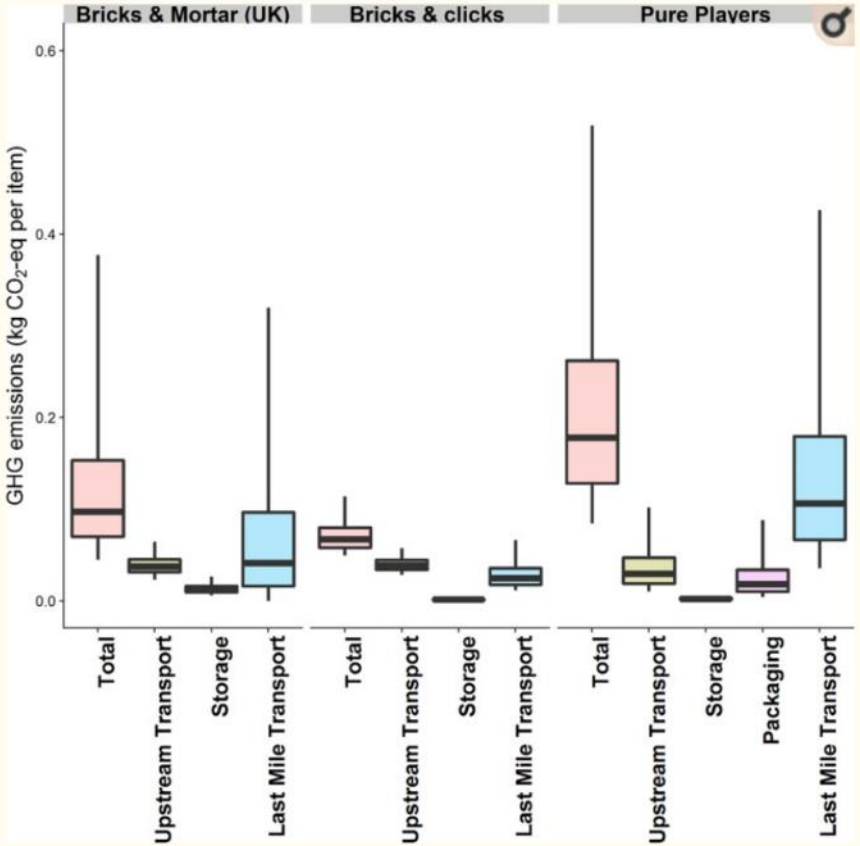


Figure 2

GHG footprint of different retail channels by phase in kg CO2eq/item. (Boxplots show the 5th, 25th, 50th, 75th, and 95th percentiles.)

Comparative Greenhouse Gas Footprinting of Online versus ...
www.ncbi.nlm.nih.gov › pmc › articles › PMC7081612
by S Shahmohammadi · 2020

Regular Review Of Logistics Networks Lowers CO^2 Emissions

Strategic Solutions

- Increased online activity leads to an increased logistics carbon footprint with more warehousing and small vehicles required to deliver.

Modal switch on last-mile in urban environments; transport innovations to reduce CO2 in last mile transport; economic incentives to change behaviours (e.g. basket size, general merchandise via grocery retailers etc. Different challenge for warehouses: single item pick, pack and despatch vs case picking etc.

- The location, size, function and operation of a logistics network infrastructure must be modelled to arrive at an optimum solution.

Holding inventory across multiple sites will generally result in more inventory being held, larger overall warehousing and associated energy costs/carbon footprint. This will trade off vs transport costs – inbound may benefit from fewer sites, while outbound will generally increase

- In the case of a major food manufacturer, consolidating to a single site brought significantly reduced overall costs and carbon footprint as the benefits in primary transport and inventory consolidation hugely outweighed the additional delivery miles – but this would not be true in every case.

Operational Improvement Lowers CO_2 Emissions

Operational Solutions

- Overproduction and associated wastes.

  Better forecasting, improving change-overs to facilitate smaller batch sizes and better-quality control - similar disciplines will reduce inventory and hence the size of warehousing required.

- Motion and carbon footprint within the warehouse.

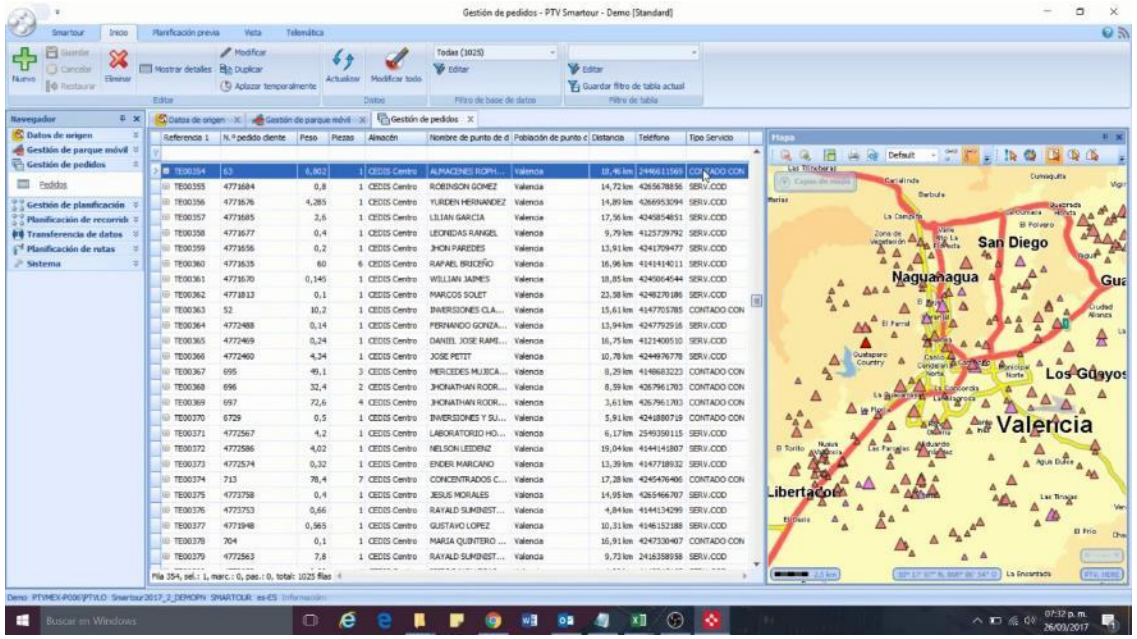
  Optimised layouts and picking methods will reduce motion within the warehouse and associated carbon footprint relating to labour and mechanical handling equipment (MHE).

- Under-utilisation

  Improving storage density through use of appropriate storage media and MHE; shared-user facilities to smooth fluctuations in stock levels; working across multiple shifts to increase throughput capacity and use assets effectively.

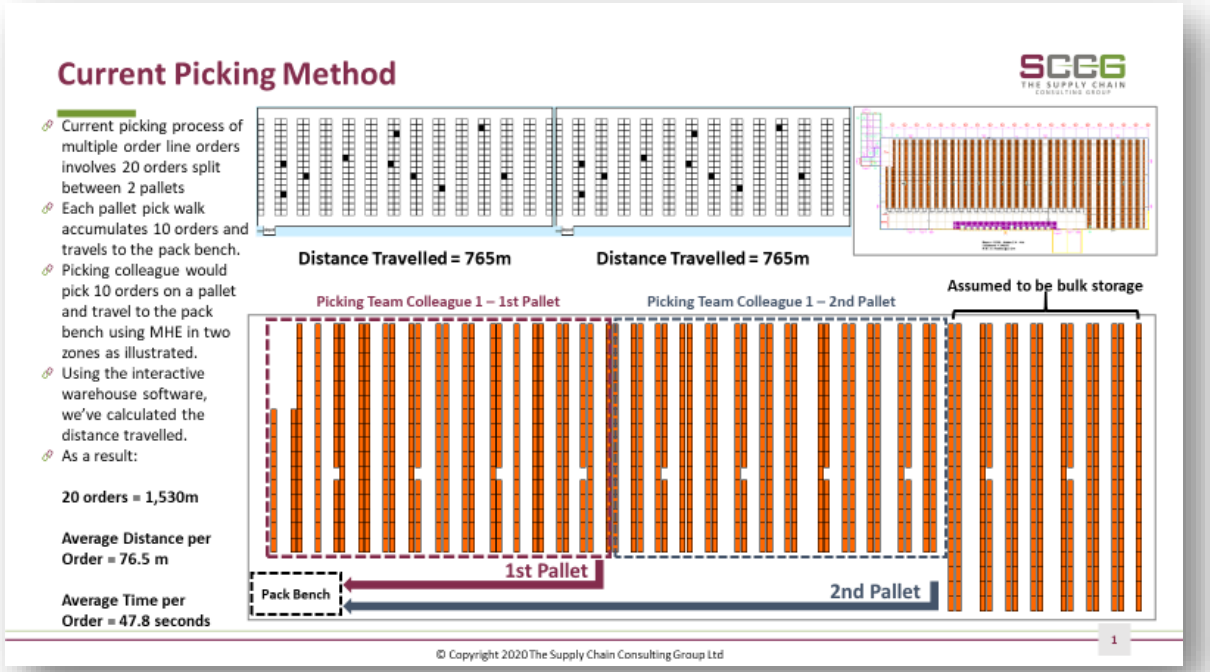
- Transportation

  Better transport planning through centralisation and use of software; right solutions e.g. shared user / network fleets for smaller consignments etc.

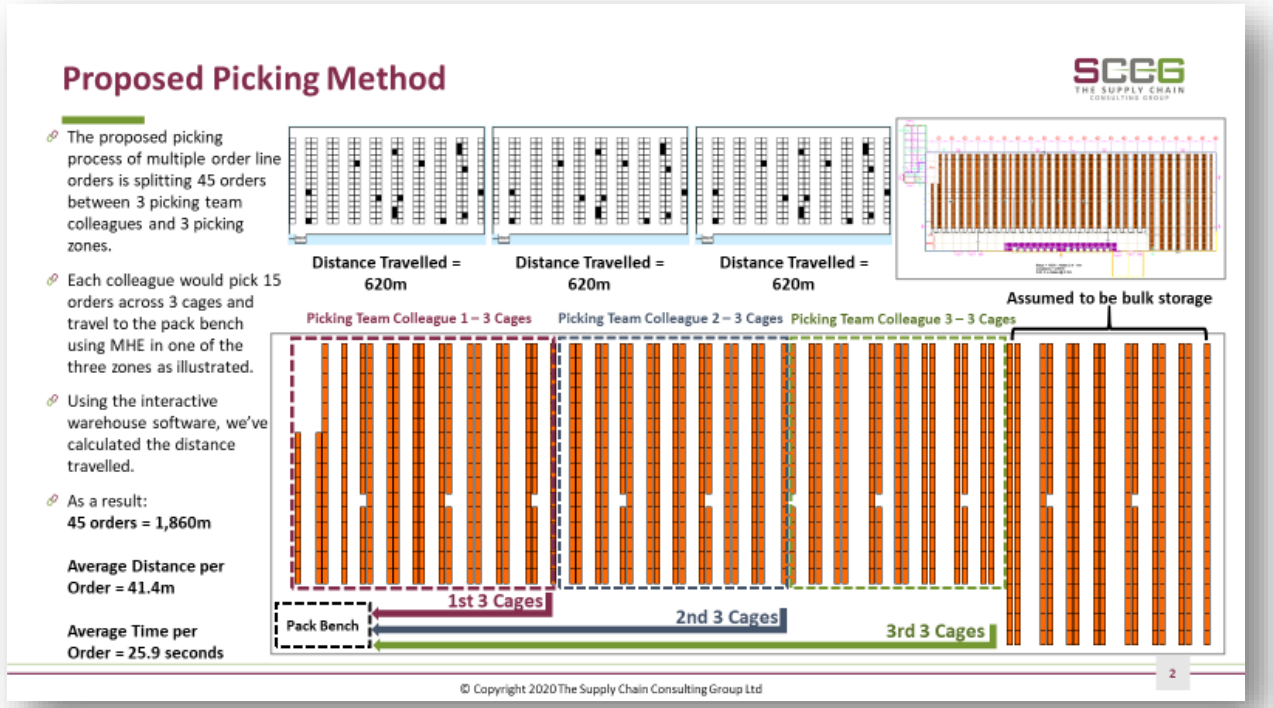


- 10 - 15% reduction in CO2 emissions is typical through route optimisation
- Companies think they are doing it but they are not!

Example of a 19% Reduction in Picker / MHE Travel



Example of a 19% reduction in picker travel through small change to operating process



↑Storage Density → ↓Warehouse Size, But Beware of Utilisation and Productivity Impact

Double deep

+33% vs Single Deep Wide Aisle

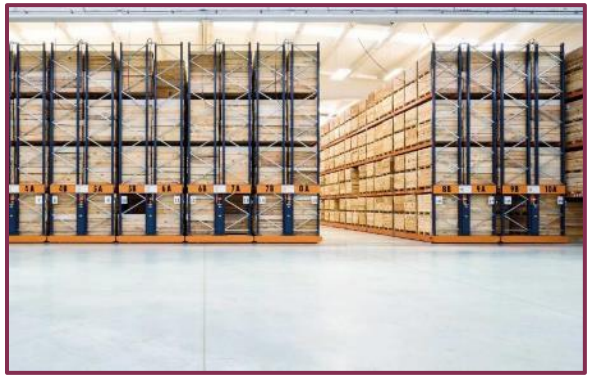
Narrow Aisle Double Deep

+ 50% vs Single Deep Wide Aisle

Drive-In Racking

+40%* vs Single Deep Wide Aisle

*Depends on depth of course



Mobile Racking

+100%* vs Single Deep Wide Aisle

*Depending on configuration

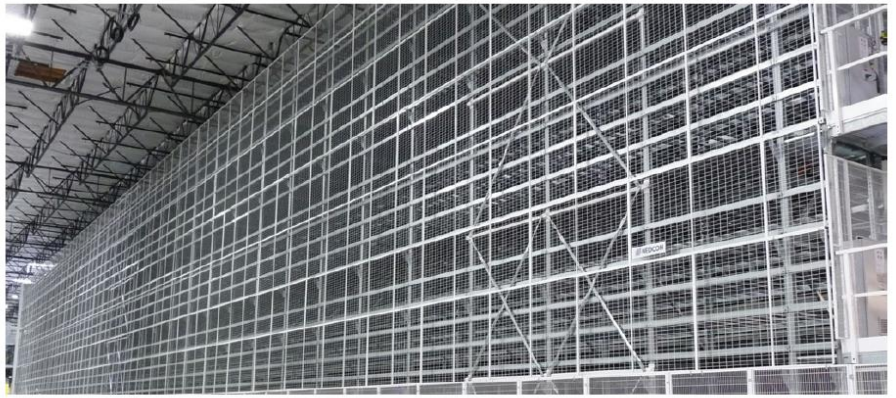
Technical Solutions

Building

- Leading companies are driving innovation in Cold Storage that improves operations and reduces carbon footprint, including some of our fellow CCF members and sponsors
- 'Green' warehousing solutions in general, such as local sourcing of building materials, rooftop solar panels, on-site wind turbines, rooflights, LED lighting etc. can generate c. 15% five-year savings in warehouse operating costs, and typically pay back in c. 8 years. They also increase asset value by c. 5%. (Source: Source: Dodge Data & Analytics, World Green Building Trends 2018. Based on all types of green buildings. Via JLL.)

Warehouse Automation

- Warehouse automation companies are experiencing substantial growth – so what does that mean for the warehouse sustainability agenda?
- Potential Environmental Benefits include:
  - Increased storage density and efficient use of space generally, reducing warehouse size and associated energy use e.g. for cooling, lighting
  - Dark storage chambers i.e. no lighting required
  - Reduction in personnel and associated CO2 footprint, e.g. travel to work
  - Automated control systems remove waste movement by taking most efficient routes etc. Integrated system allows energy monitoring
  - Regenerative braking and other energy recovery initiatives



(above) KNAPP OSR Shuttle™ racking
(below) aerial view of REI facility showing the solar panels

Source: KNAPP

Thank You / Q&A

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