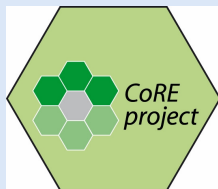


# Logistics and Waste







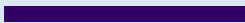

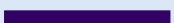

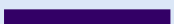

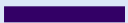

**Adrian Blumenthal – Constructing Excellence**



# Effective Construction Logistics

## Logistics Centres

# Input required

Project management		KPIs	
Stakeholders		Demand	
Regional and international initiatives		Intermodal transport	
Drivers and barriers		Market conditions	
Ancillary services		Locations	
Business case		Scenarios	
Cost model		Report	

# Logistics (Kuene and Nagel)

## Inbound Logistics

- Collection services
- Milk runs
- Track and trace
- Carrier management
- Customs brokering

## In-House Logistics

- Multi user operations
- Dedicated operations
- Vendor managed inventory
- Production logistics
- Kitting
- Light sub-assembly
- ISO 9002

## Distribution Logistics

- Pick / Pack / Ship
- Inbound
- Outbound
- Network design
- Transport management
- Container management
- Cross docking

## Reverse Logistics

- Container management
- Returns management
- Re-working
- Re-Packing

- Re-labeling
- Testing
- Repair management



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# Methods of logistics in construction

Go to supplier to pick up materials	10%
Have materials delivered to site	50%
Use portfolio analysis to segment ordering processes and call-off arrangements	35%
Co-ordinate start-to-end processes and tag information, people and material flows	5%

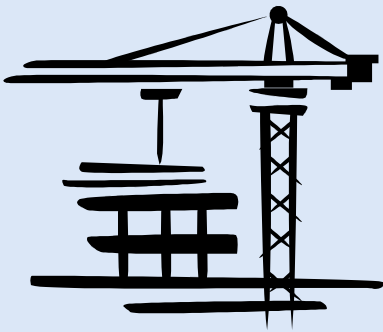


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# Current practice

**TRADE CONTRACTORS** order bulk materials

**TRADE CONTRACTORS** call off

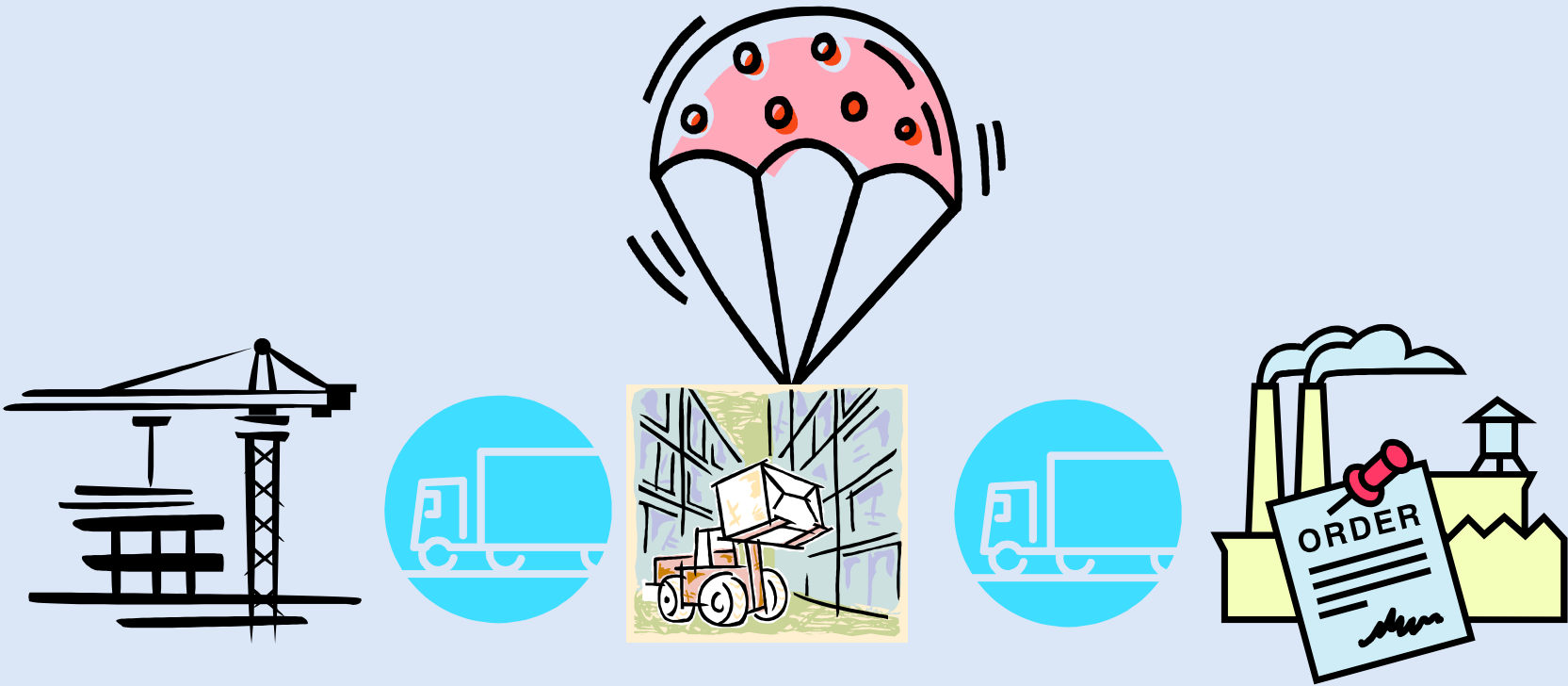


Chaos at the gate  
and on the site

# Techniques of modern logistics

- Logistics planning across the full supply chain
- Consolidation centre
- Just-in-time delivery to the work place
- 4<sup>th</sup> party logistics
- Logistics specialist on site
- Demand smoothing
- Integrated ICT system across the full supply chain

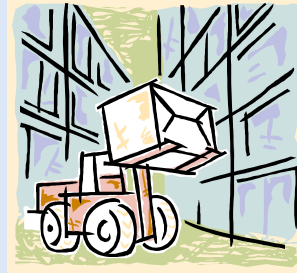
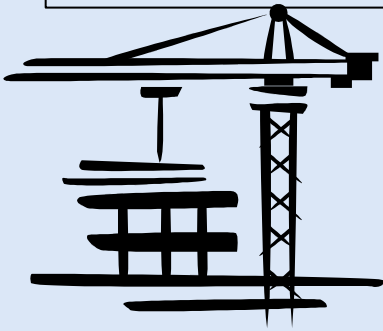
# Consolidation



# Consolidation

**TRADE CONTRACTORS** order bulk materials

**TRADE CONTRACTORS** call off



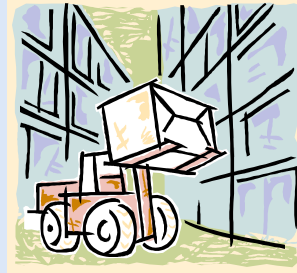
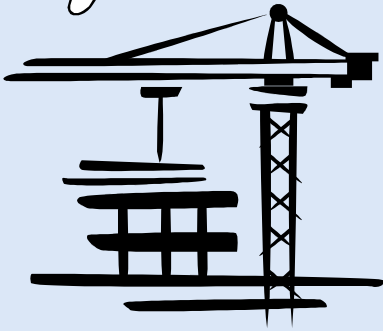
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# The business case for consolidation

## BENEFITS

- **Environmental** – local traffic, pollution and nuisance – typically 50% or better – MEASURED (LONDON)
- **Productivity on site** – typically 0.5 hour per day - MEASURED (LONDON)
- **Productivity of hauliers** – typically 1.5-hour saving in a driver's typical 10-hour day - MEASURED (LONDON)
- **Materials** – up to 15% saving - POTENTIAL

# Why consolidation alone is not enough



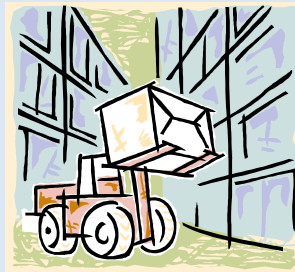
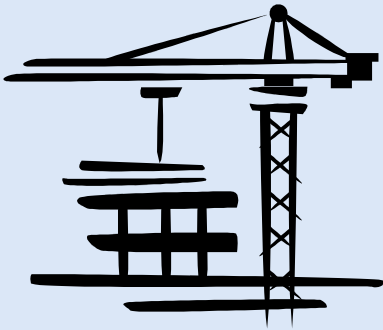
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# Complete supply chain management

**LOGISTICS SPECIALIST** plans and orders bulk materials

**LOGISTICS SPECIALIST** calls off JIT

**LOGISTICS SPECIALIST**  
manages distribution on site



**INTEGRATED ICT SYSTEM** across the full supply chain



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# Cost model for CCC

- An indicative cost model
- Scale, CAPEX and OPEX
- Revenue projections, payback times, profit requirements of a commercial operator
- Requirements for gap funding

# KPIs for CCC

- Environmental
- Site productivity
- Distribution productivity
- Materials savings
- Others?

# Not just a shed!

## POTENTIAL ANCILLARY SERVICES

- **Reverse logistics** – recovery for return to vendor, re-use elsewhere or recycling
- **Pre-assembly** – value-adding activities that reduce the overall cost and duration of construction
- **Training** – skills in demand for construction, logistics and the many services that the new communities need
- **Soil remediation** – value-adding processes for non-hazardous waste that cannot be treated on site
- **Business park and centre of excellence** – a focus for innovation and best practice in the built environment and Franco/British knowledge exchange

# Supporting Economic Strategy

GLOBAL COMPETITIVENESS	
Global businesses and foreign direct investment	<ul style="list-style-type: none"><li>• Efficiently built infrastructure for export goods and services</li><li>• Efficient routes for other goods</li></ul>
Knowledge transfer and business expenditure on R&D	<ul style="list-style-type: none"><li>• Leading region in the UK for R&amp;D in construction logistics</li></ul>
Innovation and creativity	<ul style="list-style-type: none"><li>• Catalyst to more construction projects in the region migrating to modern methods of logistics</li></ul>
Infrastructure	<ul style="list-style-type: none"><li>• Enables the infrastructure needed for sustainable development</li></ul>

# Economic Strategy

SMART GROWTH	
Enterprise	<ul style="list-style-type: none"><li>• Construction SMEs more sustainable</li></ul>
Skills	<ul style="list-style-type: none"><li>• Training for logistics, construction and support services</li></ul>
Competition and business regulation	<ul style="list-style-type: none"><li>• Economic solution to inevitable increased regulation</li></ul>
Transport	<ul style="list-style-type: none"><li>• Much less CO<sub>2</sub> and congestion</li><li>• Transport hub, inter-modal potential</li></ul>
Physical development	<ul style="list-style-type: none"><li>• Only modern methods of construction and logistics are sustainable</li></ul>
Employment	<ul style="list-style-type: none"><li>• Increased local employment and productivity</li></ul>

# Economic Strategy

<b>SUSTAINABLE PROSPERITY</b>	
Climate change and energy	<ul style="list-style-type: none"><li>• 75% less CO2 in local distribution</li><li>• Less material needed, less energy</li></ul>
Sustainable production and consumption	<ul style="list-style-type: none"><li>• Less waste</li><li>• More re-use and recycling</li><li>• Long-term potential via ICT</li></ul>
Natural resources and the environment	<ul style="list-style-type: none"><li>• Less congestion</li></ul>
Sustainable communities	<ul style="list-style-type: none"><li>• Enabler to sustainable construction, jobs and communities</li></ul>