Assessing the potential of using construction consolidation centres across London

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SLFQP
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Construction Materials Consolidation for Croydon: an Opportunity to Deliver Sustainability?
Who we are?

- One of the UK's leading independent consultant engineering firms
- Offer a multi-disciplinary range of specialist consultancy and engineering services
- Principal areas - structures & civils development, land development, transport, environmental appraisal
- Freight & logistics a division within transport
CCC Study objectives

Completed for TfL with two key objectives:

- To assess the potential benefits of implementing a number of CCCs across London in order to supply large scale construction projects with their building materials.
- To assess whether using dedicated CCCs for large individual construction projects would improve materials management and reduce related freight traffic.
Approach and methodology

- Data on developments in planning stage or public domain
- CCC sites allocated to GLA Preferred Industrial Locations (PILs)
- Materials converted to pallet equivalent units (PEUs)
- Allocation of costs for CCC and transport
- Unilever House base case data
Modelling process

- Iterative modelling to estimate:
  - How many consolidations centres might be required?
  - Where might they be located?
  - What cost implications are there for the supply chain?
  - What level of environmental benefits could achieved?
  - Period examined 2007 to 2015, with 2011 as mid-point

Overall aim to achieve continuous use of CCCs over an extended period
Supplier locations & deliveries

- Deliveries between Nov ’05 & Nov ’06, incl.
- 697 suppliers - 10,713 pallets delivered
- 412 recognised addresses - 5,371 pallets delivered
Construction site & preferred CCC locations

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i. Is it desirable to have a CCC of this magnitude?
ii. Is there available space for a CCC of this size?
iii. There are significant transport implications for the local vicinity if a CCC of this size were contemplated - e.g. approximately 73,000 supplier and 40,000 CCC vehicle movements.
## Driven kilometres

<table>
<thead>
<tr>
<th></th>
<th>Direct delivery</th>
<th>Driven Kilometres</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>KM</td>
<td>10 CCCs</td>
<td>6 CCCs</td>
<td>4 CCCs</td>
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<tr>
<td>25% more deliveries, 75 minutes delay time</td>
<td>25,451,027</td>
<td>-2,273,025</td>
<td>-3,289,376</td>
<td>-3,227,878</td>
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<tr>
<td>50% more deliveries, 75 minutes delay time</td>
<td>27,592,351</td>
<td>-4,414,350</td>
<td>-5,430,700</td>
<td>-5,369,202</td>
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<tr>
<td>50% more deliveries, 100 minutes delay time</td>
<td>28,354,465</td>
<td>-5,176,464</td>
<td>-6,192,814</td>
<td>-6,131,316</td>
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<tr>
<td>100% more deliveries, 100 minutes delay time</td>
<td>33,077,911</td>
<td>-9,899,910</td>
<td>-10,916,260</td>
<td>-10,854,762</td>
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Note: CCC numbers are the difference in distance driven - i.e. 25,451,027 - 2,273,025 = 23,178002 km

|                                | Driven Kilometres - percentage reduction |                |                |                |
|                                | Direct delivery KM | 10 CCCs | 6 CCCs | 4 CCCs |
| 25% more deliveries, 75 minutes delay time | 25,451,027 | 9% | 13% | 13% |
| 50% more deliveries, 75 minutes delay time | 27,592,351 | 17% | 21% | 21% |
| 50% more deliveries, 100 minutes delay time | 28,354,465 | 20% | 24% | 24% |
| 100% more deliveries, 100 minutes delay time | 33,077,911 | 39% | 43% | 43% |

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CO₂ emissions: CCC vs direct deliveries

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Thank you