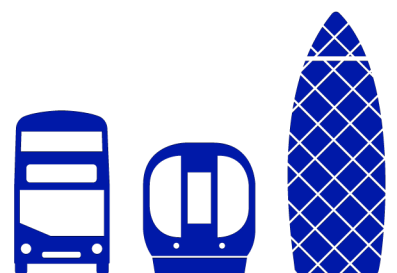


Distribution Centres in London



Contents

Executive Summary.....	3
Introduction.....	4
London Analysis.....	6
M25 Area Analysis.....	10
Great Britain Analysis.....	14
Appendices.....	16



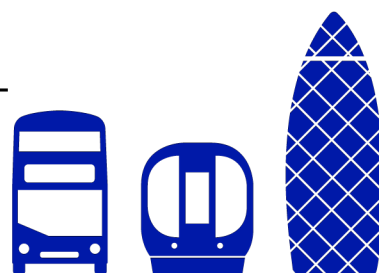
Executive Summary

This report examines the location, type of use, size and potential vehicles movements for RDC/DC's in three areas:

- London
- M25 area
- Great Britain

Overall, the reports conclusions provide evidence for general assumptions within the industry. Namely these are:

- The greatest concentration of DC's in the London area is around the A13 with the London Borough of Barking and Dagenham having the highest number of DC's of any single London Borough. The greatest number of vehicle movements also occurs in this area.
- 64% of London Boroughs have at least one DC within their border, which suggests that London is well served by this type of business. It also means that DC's contribute to a significant number of localised vehicle movements. Those Boroughs without DC's tend to have higher land values, e.g. City of London. However, there is no pattern to this as Boroughs such as Bromley and Redbridge are shown to have no DC's.
- General and mail logistics dominate the number of sites both in and around London. Supermarkets have a smaller number of sites, but these are larger in size. This suggesting a more consolidated business model.
- 79% of all DC's in London cluster north of the river, with around 80% of all DC's in London less than 150,000 sqft. The location north of the river suggests a preferred connection to transport links to the Midlands and northern Britain. The smaller size of DC's is reflected both in and outside of London. Within the GLA boundary, 5 DC's are 500,000 sqft or above. In the M25 area the figure is 6. In both cases, supermarkets dominate this larger DC category while courier and logistics firms dominate the smaller category.
- This report suggests that the number of vehicle movements for any site is 10% of its overall size. E.g. a 100sqft DC would be expected to have around 10 vehicle movements per day
- Less analysis was produced for Great Britain as a whole, but the maps within the appendix confirm that most DC's cluster around the Leeds – Birmingham – Manchester triangle.
- All maps showing the data can be found in **appendices A - H**



Introduction

This report examines the locations of regional and local distribution centres (RDC/DC) in Great Britain focusing on London and the M25 area.

What is a Distribution Centre and how does it add value to the supply chain?

A DC is defined as a “Facility that is usually smaller than a firm's main warehouse and is used for receipt, temporary storage, and redistribution of goods according to the customer orders as they are received”. DC's allow businesses to store products near to the customer base before moving goods to the end user or smaller retail stores. Large retailers often have many DC's across the country to serve a defined geographical area. As DC's are often outside urban areas, the traffic they produce has consequences for the road, rail or water connections used by them.

DC's act as regional consolidation centres, receiving a variety of deliveries before larger vehicles make trips to many smaller outlets to complete the onward distribution chain.

Why have we divided into this report into sections that examine London, the M25 area and GB?

With the suburbanisation of warehousing in Britain it is important to investigate a wider area than just the GLA boundary. Many stores, like John Lewis, have large DC's outside of London where land is cheaper, and use the motorway network to ferry goods into retail outlets.

DC's are divided by:

- Type, (e.g. food and drink, clothing etc)
- Size
- Vehicle movements associated with each site

The aim of this report is to:

- Establish where these sites are located in and around London and Great Britain
- Identify key freight trip generation hot spots to inform the IOP and pre-empt any high risk areas of conflict with other scheme designs
- Inform the land use planning agenda by setting a baseline for the locations of DCs against which we can observe the effect of suburbanisation of warehousing



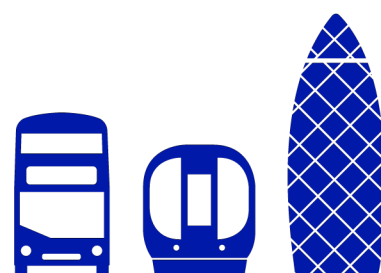
- We have no reliable origin and destination for modelling freight trips. Therefore, this approach seeks to define that issue for the largest and most obvious trip generators
- Establish any patterns or clustering
- Verify which road, rail or water routes are most effected by these sites
- Determine the vehicle movements associated with each site and ascertain what level of vehicle movement can be associated with each site

Methodology

This research only shows DC's from the largest companies in Britain and a full list of those companies can be found in **appendix J**. Therefore, some DC's will be omitted from this research. **Appendix J** represents companies that employ 80% of those working in the distribution industry. Therefore, while this research is not exhaustive it is comprehensive.

Information from larger companies has also been more readily available and this has led to an over representation of some types of distributors, e.g. mail logistics. Removal businesses are underrepresented as they tend to be smaller.

It is anticipated that this report will form part of a live project that is updated annually, or every two years, in order to ensure the data remains relevant.



I. London area

I.1 Background

This section analyses where London's D.C's are located and what impact they have upon the areas in which they sit. It is not possible to define the exact impact each has on a given road as this is out of the scheme scope.

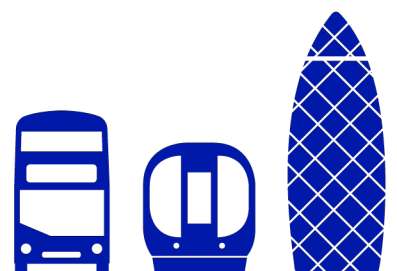
92 DC's are located within the M25 area concentrated around Dagenham, Barking, Edmonton, Enfield and Heathrow. Within the M25 area, DC's are clustered around major road links such as the M1, M25 and M2. Although, most sites in the east are located close to both rail and water infrastructure. There is also a cluster of six DC's in the Croydon area. This is the only cluster in the south London area shown in the available data.

Analysis by London Borough shows:

- Barking and Dagenham has 10 DC's all centred on the A13, this is the greatest number of DC's in any single Borough.
- Enfield has the second highest number in a single Borough with nine – mainly due to the proximity of the M25 and North Circular Road
- Hillingdon and Hounslow have a cluster of DC's, numbering 12, centred around Heathrow
- 14 DC's are located within easy reach of the Thames

London Boroughs where the data shows no existing DC's:

- Westminster
- Kingston
- Bromley
- Harrow
- Barnet
- Redbridge
- Hammersmith and Fulham



- Kensington and Chelsea
- Lambeth
- Hackney
- City of London
- Islington

The available data suggest that 64% of London's Boroughs have at least one DC within their borders. Of the DC's shown, 79% are north of the river which suggests that most DC's in London are located within easy reach of road connections to the midlands and northern Britain.

1.2 Types of use

The predominant type of DC within the M25 area is:

- General logistics: 32%
- Mail logistics: 27%
- Food and drink: 18%

Mail and general logistics, which includes business like DHL, are fairly evenly spread across the capital, where as food and drink DC's have a cluster in south east London from Dartford to Greenwich and around the M25 in Enfield.

All Food and drink DC's are within easy reach of the Thames in south east London. Historically, land may have been cheaper in these areas, but an opportunity exists to harness this waterway as a route into central London for this sector.

Courier DC's tend to cluster in inner London areas in or around the SRN/ TLRN network close to the City.

Only seven construction consolidation centres are shown, which is an indication that these are under-represented. However, these show a cluster in the east London area in Dagenham, and two are connected by rail/ water interchange – the Tar Mac site in Greenwich and Kings Cross.

No removal logistics businesses are shown, as these were unlikely to appear in large listed companies. It is accepted that this is a limitation of the available data.

The companies with the greatest number of DC's within London are shown below:

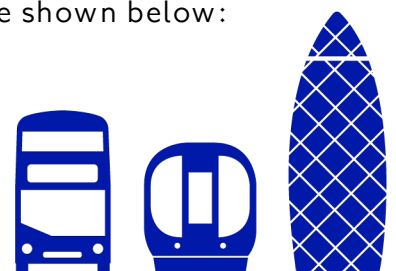


Table 1.2.1 Top five businesses with DC's in London by type of business

Number of DC sites	Company name	Type of business	Total Estimated vehicle movements per day	Total sqft
8	Kuehne and Nagel	General Logistics	1,040	1,0040,000
8	FEDEX	General Logistics	1,040	1,0040,000
7	TESCO	Supermarket	706	1,148,633
6	DHL	Courier	715	714,986
5	Sainsbury	Supermarket	2,025	2,025,000

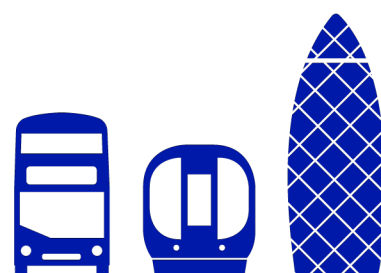
The above suggests that TESCO, despite having one of largest sqft has the lowest vehicle movements. Therefore, TESCO is either very efficient or consolidated, or both.

Sainsbury's has the largest sqft with the largest number of vehicle movements, with the fewest sites. Sainsbury has consolidated its operation into large DC's which suggests it makes longer trips, but fewer vehicles serve its stores.

1.3 Size of RDC/ DC

For those sites where data is available, the largest RDC/ DC's are located in outer London by the M25, or in east London. However, data for this section suggests:

- Largest DC's, (500, 0000 sqft and above) make up only 5.5% of the total and are mostly located in the east of London.
- Second largest DC's (300,000 – 500,000 sqft) make up 5.5% of the total and cluster in east London and Wembley/ Park Royal areas.
- The largest number of DC's (79%) are 150,000 sqft or smaller and spread across London. This reflects a general trend in London for small DC's which cluster



around central points such as Enfield, Heathrow and Wallington.

- Central London has only one DC that appears in this data, Royal Mail’s Mount Pleasant site – which is over 500,000 sqft. Inner east and south east London has a cluster of DC’s, possibly due to easy location of the Blackwall and Rotherhithe tunnels.
- Larger DC’s within London are located in the Park Royal area.

1.3.1 Companies with largest single site DC’s by SQFT in London

SQFT	Company name	Estimated Vehicle movement at site per day	Location	Type of business
4,742,579	Wincanton	4,742	Greenford	Consolidation
700,000	Sainsbury’s	700	Enfield	Supermarket
575,000	Sainsbury’s	575	Dartford	Supermarket
560,000	OCADO	560	Erith	Supermarket
516,668	Royal Mail	517	Farringdon	Post Office

The map showing sizes of DC’s can be found in **appendix C and D**

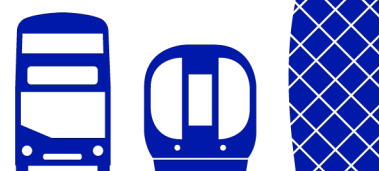
1.4 Vehicle movements

This report has attempted to attribute a rough number of vehicle movements to each site. *Table 1.3.1*, above, suggests that about 10% of total floor space could be translated as vehicle movements; however this is an estimated calculation and needs further research.

Vehicle movements are clustered by areas 1-9, as shown in **appendix D**

The available data suggest:

- An estimated 14,207 vehicle movements per day can be attributed to DC’s across the London area.
- The highest number of daily vehicle movements occurs in east London, which makes up an estimated 38% of all vehicle movements



attributable to DC's in the London area. If inner east London is included, areas 6 and 7 account for 47% of all movements.

- The lowest number of DC vehicle movements occurs in Surrey, just inside the M25, shown as area nine accounting for just 3% of all movements. This is made up for Amazon and TNT courier businesses
- The Heathrow area is significant as this accounts for 10% of all DC vehicle movements in London, all managed from small DC sites.
- The DC's producing the most vehicle movements are follow the pattern outlined in *Table 1.3.1* above

2. M25 area

2.1 Background

This section examines DC's outside of the Greater London area, but within easy reach of the GLA boundary. The maps showing this area are located in **appendix E**

The aim of this section is to establish if the location of DC's outside of London are serving the capital. By assessing freight movements along these corridors it may be possible to assess which DC's have the greatest impact upon the capital.

There are 125 DC's in this category. The largest number cluster in the south east area in Kent and Essex close to, or by, the Dartford crossing M2 and M20 for easy access to London and the Channel ports. A cluster of DC's exists around the north and south sections of the Dartford crossing which would indicate both cheaper land and good road links.

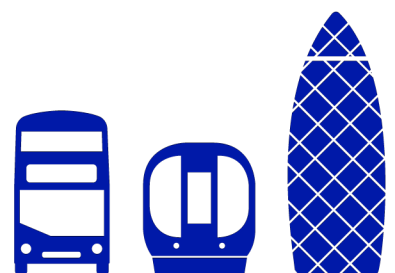
Of the existing DC's outside of London about 67% are located near to rail lines which may indicate possible mode shift indications. Only 39% of DC's shown are located on, or very close to, the national motorway network. This indicates rail and water may be used to a greater extent outside of London, or that A roads play a greater role in logistics distribution than previously thought. Another alternative is that these DC's were established before the motorway network and this is a historical trend.

Of those that are located near motorway networks, most cluster by the A/M1 network reflecting the easy road access to the Midlands.

2.2 Types of use

The majority of the DC/RDC's outside of London are classed as:

- 47% general logistics
- 12% mail logistics



- 11% food and drink

General logistics D.C's cluster around the Dartford Crossing and M1/ A1 area, reflecting good road links to wider Great Britain.

Food and drink D.C's are represented at north, south east and west points around the M25, with a small group on the M20 corridor with easy access to the Channel ports, south and east London. Mail logistics sites are fairly evenly spread across the south east

Removals and construction consolidation centres are significantly under represented in this data and if better quality were available this would impact on any analysis.

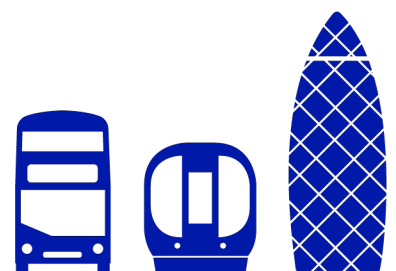
Table 2.2.1 Top five companies in M25 area by number of sites

Number of DC sites	Company name	Type of business	Total Estimated vehicle movements per day	Total sqft
17	Kuehne and Nagel	General Logistics	2,210	2,210,000
12	Norbert Dentressangle	General Logistics	1,560	1,560,000
11	TNT	Courier	1,430	1,430,000
8	Eddie Stobart	General Logistics	1,040	1,040,000
7	DHL	Courier	910	910,000

Sites outside the M25 tend to be smaller DC's of around 130,000 sqft. Although Kuehne and Nagel have 17 sites outside the M25 area, their whole operation in this area is only slightly larger than Sainsbury's total DC space in London, of which there are just five sites.

Appendix F shows location of DC's outside the M25 area.

2.3 Size of DC/RDC



DC's outside of the M25 area reflect the trend seen within London. Of those for which data was available:

- 87% were 150,000 sqft or under
- 4.8% were over 500,000 sqft.

By percentage, larger DC's (over 500,000 sqft) were comparable to London, which may reflect high land costs in the south east in general or a move to smaller DC/RDC's in this part of Britain.

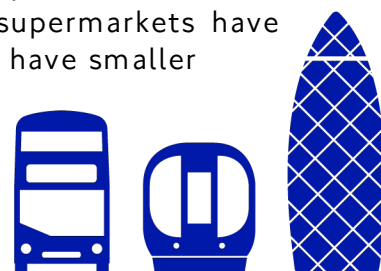
The largest sites in the M25 area are shown below:

Table 2.3.1 largest single DC sites within M25 area by size and business

SQFT	Company name	Estimated Vehicle movement at site per day	Location	Type of business
1,300,000	John Lewis	1,300	Milton Keynes	Clothing retailer
1,200,000	OCADO	1,200	Hatfield	Supermarket
920,000	Morrison	920	Sittingbourne	Supermarket
900,000	TESCO	900	Reading	Supermarket
650,000	ASDA	650	Bedford	Supermarket

Table 2.3.1 shows that supermarkets comprise of the largest DC's by sqft in the M25 area.

Of the largest by size, three are situated close to the M1 corridor bolstering the assumption that this corridor is a vital link in mainland Britain's DC network. The largest single DC within this area is John Lewis, and is the only one of the top five to not deliver food and drink. Therefore, it is possible to assume that most supermarkets have fewer, but larger, DC's in and around London while logistics firms have smaller DC sizes, but a greater number.



2.4 Vehicle movements

Based upon available data the following suggest that:

- 22,512 vehicle movements can be attributed to DC/RDC's in the M25 area
- 46% of all vehicle movements occur in area one, the A/M1 corridor. This is 32% higher than the second highest area. Therefore, this corridor is by far the most active which again reflects the importance of access to the Midlands and norther Britain. This mirrors Highways England data which suggests that 20% of traffic on the M1 corridor north of London is classed as a HGV. This indicates that London is being served by DC's in the corridor between London and Birmingham
- The second highest vehicle movement area is section four, the Dartford Crossing and A13 corridor with 14% of all movements. This could be an overspill from the east London area, which has the highest number of DC's within the GLA boundary.
- Area six, the M23 area just north of Gatwick, has the fewest number of vehicle movements in the M25 area at 1.7%.

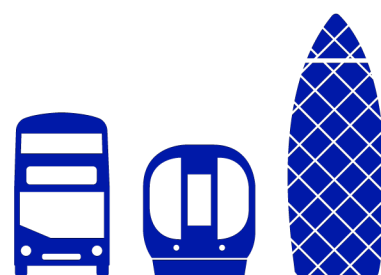
Outside of London John Lewis in Milton Keynes has the largest single site with the greatest number of vehicle movements. Kuehne and Nagel have the greatest number of sites, and the largest number of vehicle movements.

Highways England data from 2014 shows that the M25 has the busiest traffic flow of any Motorway in Britain with all the counties that boarder London experiencing the highest traffic growth of any Local Authority.

What does this mean for London?

Traffic growth is rising fastest in the counties that border the GLA boundary. This may be in part due to the suburbanisation of warehousing, where DC's are contributing increased traffic growth on these routes, or part of a more general trend.

London is dependent on the national motorway network, especially links to the Midlands, to supply its demands. This is mirrored on rail, where the busiest freight routes are from Daventry. The second busiest rail freight routes are from the Channel Ports into London. This may be a contributing factor as to why no evidence of larger DC's could be found in the Dover/ Folkestone area where most freight comes directly from Europe via the Channel Tunnel into Barking.



3. Great Britain

3.1 Background

The location and types of DC located around Great Britain has been briefly analysed as it has been possible to do so and no know map of this type exists. The aim of this section is to identify where DC's cluster nationally. The size and vehicle movement elements of analysis has been removed as this has less relevance for TfL and would require much greater work. These maps, found in appendix G and H, concentrate on the location and types of use. The exact impact upon London is largely unknown but some analysis has been done on what can happen to the national road network.

There are 407 DC's located in Britain, excluding London. Most cluster in a triangular area from Birmingham– Manchester – Leeds. Scotland's distribution network is concentrated between Edinburgh and Glasgow and Wales has the majority of its DC's on the M48 corridor.

With the exception of eastern England nearly all the DC's are close to the national motorway network.

The available data suggests that there are no DC's in the Dover or Folkestone areas, or in Sussex. This is may be a result of limited information as the business Channel ports would likely have some kind of distribution infrastructure.

Case Study: M&S Castle Donnington – example of a DC's outside of London

As 900,000 rp es sgr t 83 l kkm DC lr b'o`akd ne oqndrrhrf nnd l kkm
pqrctbr dudox c`x, v hsg `qntnc lmd-sg hpc ne sgdrd bnl hrf sgqntfg
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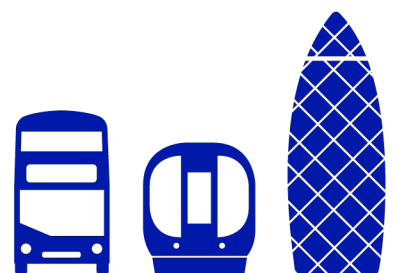


3.2 Types of use

The available data suggests that 54% of the DC's in Great Britain are classed as general logistics, with mail logistics the second largest making up 14% of the overall total and courier logistics making up 11%.

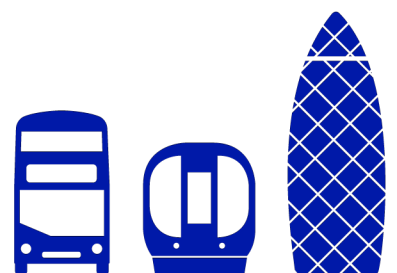
3.3 General vehicle movements

While we have no data for vehicle movements from DC's in Britain, data from Highways England from 2014 shows that 66% of all HGV movements are made on the SRN (A roads and Motorways) which accounts for 2.4% of the English road network. **Appendix I** shows the busiest roads in Britain which mirrors the clustering locations of DC's. This suggests that the SRN is vital to the transportation of goods around England, and for supplying London with roads such as The M25, M1 and M11 carrying far more freight than other roads. The location of DC's mirrors the busiest sections of SRN's, although it is not possible to make a cause and link factor as a result. However, this suggests that London is dependent on goods being transported from the north into the capital.



Appendix

- A – DC locations in London
- B – DC type located in London
- C – DC size and vehicle movement in London
- D – DC locations in M25 area
- E – DC type located outside of M25
- F – DC size and vehicle movements outside of M25
- G – DC locations in Great Britain
- H – DC type located in Great Britain
- I – Average annual daily flows in Britain
- J – Full list of companies used in report





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