

Industrial and Warehousing Land Demand in London

August 2004

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*A report by
Roger Tym & Partners, King Sturge and C2G Consulting
for the Greater London Authority*

August 2004

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**Greater London Authority
August 2004**

Published by
**Greater London Authority
City Hall
The Queen's Walk
London SE1 2AA
www.london.gov.uk
enquiries: 020 7983 4100
minicom 020 7983 4458**

ISBN 1 85261 651 2

This publication is printed on recycled paper

The views expressed in this report are those of the consultants and do not necessarily represent those of the Greater London Authority.

CONTENTS

EXECUTIVE SUMMARY

1	INTRODUCTION.....	1
	Study Objectives	1
	Key Issues.....	1
	The Report	3
2	THE USERS OF INDUSTRIAL AND WAREHOUSING SPACE.....	5
	Introduction	5
	The Industrial Classification.....	6
	The Occupiers of Industrial Areas	8
	Industrial and Warehouse Sectors: Revised Definition	13
3	LONDON'S ECONOMIES.....	15
	Introduction	15
	What Industrial/Warehousing Firms do in London.....	16
	What They Are Like	20
	What They Contribute	21
	Why They Are There.....	26
	Change	27
	Summary.....	30
4	LONDON'S INDUSTRIAL/WAREHOUSING PROPERTY MARKETS.....	32
	Introduction	32
	The Floorspace Stock	32
	Market Balance: Floorspace.....	35
	Market Balance: Land	38
	The Central Sub-Region.....	42
	The East Sub-Region	47
	The West Sub-Region	53
	The North Sub-Region	57
	The South Sub-Region.....	61

5	WAREHOUSING AND LOGISTICS.....	66
	Introduction	66
	The Importance of Logistics to London	66
	Functions and Types of Warehousing.....	68
	Transport and Sustainability	69
	Employment Generation and Labour Issues.....	78
	Warehouse Location	79
	Changing Organisation and Technology	83
6	DEMAND AND SUPPLY IN THE LONG TERM.....	88
	Introduction	88
	The Land Requirement for London.....	89
	Sub-Regional Land Requirements.....	96
	Sensitivity Tests	99
	Land Release by Borough	101
	Summary	105
7	CONCLUSIONS.....	106
	Background	106
	Policy.....	107

APPENDIX 1
INDUSTRIAL AND WAREHOUSING LAND 1985-2002

EXECUTIVE SUMMARY

Introduction

- 1 This study was commissioned in December 2003 by the Greater London Authority in conjunction with the London Development Agency. Its purpose, as stated in the study brief¹, is

'to assess the scale, nature and, in particular, the [geographical] distribution of future demand for industrial and warehousing land in London and to draw the policy implications'.
- 2 As shown in the brief, the strategic policies which the study is to inform include the final version of GLA Supplementary Planning Guidance on Industrial Capacity (currently in draft), London's emerging Sub-Regional Development Frameworks and the GLA's response to proposed PPG3 revisions on the transfer of former employment land to housing. The findings should also contribute to local policymaking, providing guidance to the Boroughs as they review Local Development Plans and prepare Local Development Frameworks.
- 3 The study updates and expands a body of earlier work addressing the same broad issues - including Industrial Land Demand in London (Roger Tym & Partners for LPAC, 1999) and Demand and Supply of Business Space in London (SDS Technical Report 21, Roger Tym & Partners for GLA, 2002) - which fed into existing strategic policies, including the London Plan and the current draft of Supplementary Planning Guidance (SPG). The GLA's brief sets out two key tasks for the study:
 - š To assess the balance of demand and supply for industrial and warehousing land, testing the earlier estimate that some 50 hectares per year London-wide could be released to other uses, and providing guidance for individual sub-regions and boroughs.
 - š To provide a description of current and future requirements for warehousing space, and recommend strategic planning policies for meeting these requirements over the next 15 years, translating into practical recommendations the draft SPG's aim that planning should take a positive approach to logistics and distribution.

The Users of Industrial and Warehousing Space

- 4 Close analysis demonstrates that the occupiers of industrial/warehousing land are drawn from a wider spread of SIC sectors than the traditionally used manufacturing and wholesale distribution. The additional sectors are all service activities; they include elements of transport and storage, construction, recycling and refuse disposal. We have added these sectors to the list of industrial and warehouse occupier sectors. This substantially alters our estimates of total demand for space. More important, it alters our forecasts of future change: because the additional sectors have better prospects of employment growth than manufacturing, we now forecast a slower reduction in the demand for industrial/warehousing land than we did in The Demand and Supply of Business Space.

¹ Contract Specification, GLA, 5 Dec 2003

London's Industrial and Warehousing Economies

- 5 Based on the 1999 study of Industrial Land Demand in London, the draft SPG² summarises the key features of London's industry and logistics as follows:
- '... Industries which are likely to find London a competitive location are those which:*
- § *Serve London markets.*
 - § *Are near the end of the physical production process, producing final [goods] rather than capital equipment or intermediate goods.*
 - § *Produce time-sensitive goods and services.*
 - § *Are high-productivity and high-value-added, but not necessarily high-technology.*
 - § *Are at the borderline of industry and services, with a high 'tertiary' content.*
- 6 The updated and extended analysis supports these conclusions. Furthermore it suggests that these features are becoming more marked over time, as London's industry and warehousing continues to shift from manufacturing to services, and in both categories towards higher value added, as productivity rises faster in London than elsewhere. One symptom of this restructuring is that London's industrial employment change since 1991, as in earlier periods, has consistently underperformed the GB benchmark, while its warehousing employment has closely followed the national trend.
- 7 London is a comparatively high-cost business location. Not only is land expensive, but other inputs, and especially labour, in general cost more than elsewhere in the UK. This is why industry, which is a relatively low-value sector, is under-represented in London, and why what industry there is tends to be biased towards firstly higher-value activities and secondly towards those that activities that have compelling reasons to be in London – generally because their markets are there. Routine work and primary production have no good reason to incur the high costs of operating in London.
- 8 For all these reasons, London is no longer the manufacturing centre it once was. Nor is there a reasonable prospect of London becoming a competitive location for primary manufacturing processes in the foreseeable future. It is likely that manufacturing industry will continue to decline in London, not only in absolute terms, but also relative to the national norm. The causes of this trend are largely beyond the reach of land-use planning. Even if planners were able to counter it, this may encourage firms to make sub-optimal location decisions, reducing efficiency and competitiveness.

London's Industrial and Warehousing Property Markets

- 9 London-wide, the pressure on demand for industrial/warehousing floorspace is relatively high compared to other parts of England. The pressure of demand for *land* is also relatively high, except in East London, and is reinforced by the fact that many development and redevelopment sites are affected by major constraints.

² Annex 2, paragraph 2.4

- 10 Within London, there are marked sub-regional differences in the pressure of demand. Central London is very tight and tightening. In the West and to a lesser extent the South, demand pressure is high, while in the North it is middling. In the East, there is much less pressure on floorspace, though even here industrial/warehousing rents are well above the national average.
- 11 Market demand for industrial/warehousing land in London has been falling for many years and continues to fall, and the planning system has been reducing supply accordingly, releasing land for other uses. But the high and rising pressure of demand in large areas of London suggests that, in these areas, there is a risk that the reduction in planned supply may run ahead of the reduction in market demand – so that the shift to other uses drives the contraction of industry and warehousing, rather than responding to it. The next section discusses the implications of this and possible policy responses.

Warehousing and Logistics in London

The Importance of Logistics to London

- 12 Just about everything that happens in London is dependent on the movement of materials, parts and finished goods. London's distribution sector provides more jobs than its industrial sector and has higher labour productivity. The capital's retail and leisure outlets provide a range and choice of goods and services unequalled in the UK. This vibrant consumer economy could not function without efficient distribution. Warehousing and logistics provide a vital support to the London economy and support a wide range of spatial, economic and transport policy objectives for London.

Transport and Sustainability

- 13 The key to a successful freight strategy is balancing the requirements of operators against impacts. Although operators are mainly concerned about certain road transport issues (since road is the dominant freight mode) land use planning could potentially be developed alongside changes to the road transport regulatory regime. One way this could happen could be by the development of Strategic Logistics Parks providing their operators with a less restrictive transport regime, potentially in return for best practice sustainable distribution.
- 14 Increasing rail freight terminal capacity in and around London is necessary to encourage a modal shift to rail.
- 15 There are opportunities to promote sustainable distribution in other ways, e.g. by encouraging relatively innovative logistics approaches, such as shared user consolidation centres where appropriate.

Employment

- 16 Average employment densities in warehousing in London are likely about three quarters of those prevailing in manufacturing. But this average conceals large variations within each sector. There is a need for up-to-date research on employment density ratios and on the quality of employment.

Changing Organisation and Technology

- 17 We expect the key organisational changes that have occurred over the past 10 years or so to continue at least over the next five years. This will mean further consolidation of inventory; greater 'just in time' logistics; a wider use of cross-docking; more outsourcing and the growth of home deliveries in certain markets.
- 18 In general, the key technology change will be the increasing use of the internet, which will promote 'e-logistics' but have relatively little impact on land and property issues. More important in this respect will be the greater use of automation in warehouses.
- 19 Despite improving efficiency, past experience suggests that economic growth will drive continuing growth in inventory and hence in the demand for warehouse space.

The Demand and Supply of Land in the Long Term

- 20 Our analysis confirms that the current Draft SPG, suggesting release of industrial/warehousing land at an average of 50 hectares per annum across London, is correct. This figure should be monitored and reassessed at regular intervals.
- 21 We have suggested different amounts of releases of land from all sub-regions of London, except for Central, where there should be no change or some release through intensification.
- 22 We would recommend that the final version of the SPG should place the onus on the Sub Regional Development Frameworks to allocate the totals across Boroughs. Broad guidance on how this should be done is provided by the threefold classification of Boroughs. We have reviewed this classification and suggested some changes.

Policy Recommendations

Land Release

- 22.1 This study confirms the earlier estimate that some 50 hectares of industrial/warehousing land can be released for other uses annually to 2016, compatible with meeting effective demand and not allowing industry and warehousing to be priced out of London by demand for other land uses.
- 22.2 We have also provided sub-regional benchmarks showing how this London-wide land release should be allocated across sub-regions. Our preferred scenario redistributes demand from sub-regions where supply is tight, especially Central, to the East sub-region, where there is a large supply of industrial and warehousing land. Nevertheless the East sub-region accounts for the bulk of land released – some 500 of the 740 hectares to be released London-wide in 2001-16. The North and South sub-regions release some 90-100 hectares each and the West 40. In Central, whilst our preferred scenario suggests no change, there could still be scope for some release through intensification.
- 22.3 We believe that strategic guidelines for land release should operate at this sub-regional level, leaving to sub-regional frameworks the task of allocating sub-regional totals between Boroughs. Broad guidance on how this should be done is provided by the threefold classification of Boroughs shown in the draft SPG. We have reviewed this classification

and suggested some changes, including transfer of Redbridge into the Restricted category and Croydon and Sutton into Limited.

- 22.4 All the benchmarks and guidelines above should be continuously monitored and periodically reviewed throughout the Plan period.

Managing Land Release and Renewal

- 22.5 The London-wide release target of 50 hectares a year is made up of two virtually equal components: a fall in occupied land because of continuing industrial decline and a fall in the existing total of vacant land to bring it in line with the minimum required for proper operation on the market. The latter element is largely a matter of judgment, as no hard data are available to help estimate what a healthy vacancy rate would be. We do know, however, that this 'natural rate' depends on the turnaround time required for vacant or derelict industrial/warehousing sites to be redeveloped for a new generation of space. The longer the turnaround time, the higher the desirable vacancy rate and the less the amount available for release.
- 22.6 If the release and renewal of industrial/warehousing land are to be managed efficiently, the public sector needs to intervene on a large scale to shorten this turnaround time, facilitating redevelopment through land assembly, infrastructure provision and active brokerage and management. This intervention is the proper task of the London Development Agency, and the London Boroughs, working in partnership with the private sector and other specialist public bodies. It is needed in areas of high demand, not just run-down blackspots. In these high-demand areas, active intervention should pay for itself in time, though it will often require advance funding of land assembly and infrastructure, to be recouped at later stages through clawback or equity participation.

Churn and Intensification

- 22.7 Our calculations also confirm the earlier estimate that some 50 hectares per year should be available London-wide for gross industrial/warehousing development, or 'churn'. If the capital's building stock is to renew itself, keeping ahead of physical decay and changing occupier requirements, yet again the public sector needs to intervene to facilitate redevelopment.
- 22.8 Industry and warehousing are more difficult to intensify than many other land uses. But there are clearly sites that are heavily underutilised, and could be redeveloped to provide many more jobs, or indeed – as advocated in a recent study for the South London Sub-Regional Partnership – both more jobs and new housing.
- 22.9 Sub-regional and Local Development Frameworks should actively identify areas and estates coming up for redevelopment and renewal, including intensification, and co-ordinate public action to facilitate this. Traditionally, planning has been largely passive, responding to development proposals from others but does not generate proposals itself. But in the present climate, where most development increasingly takes place on Brownfield land, planners need to play a more active role in managing and facilitating change.

Logistics

- 22.10 As noted earlier, the London Plan and draft SPG indicate that the planning system should be positive about warehousing in London. This is at variance with earlier planning policy, which has often discouraged warehousing on the grounds of its low employment densities and traffic generation. Our analysis of the contribution and impacts of warehousing and logistics supports the new policy stance. To put it into practice, we recommend that the GLA and its partners consider the following policies.
- i) The London Plan is confusing in the way it refers to the logistics sector as ‘wholesale distribution’ since it is unclear exactly what is meant by this. ‘Wholesale distribution’ does not capture the entirety of logistics activities in London and, therefore, under-estimates the importance logistics makes to the economy. A better descriptor would be warehousing and logistics, since warehousing is the best general description of the land use and logistics the best description of the activity.
 - ii) Whereas current policy seeks to protect a number of Strategic Employment Locations, dividing these between Preferred Industrial Locations (PILs) and Industrial Business Parks (IBPs), our analysis suggests a need for a third type of Strategic Employment Location, which could be called Strategic Logistics Parks (SLPs). This need arises not because warehouses operators are being crowded out from PILs, but because many operators, particularly those occupying large facilities, have specific requirements in terms of the size of plot they require, the operating environment they need and the more definite requirement they have for good access to the trunk road, or motorway, network.
 - iii) Strategic Logistics Parks could provide their operators with a less restrictive transport regime, potentially in return for best practice sustainable distribution. Particularly valuable would be a relaxation of the night-time lorry ban, making more efficient use of London’s road space. This should only be considered under controlled circumstances and in response to concessions from operators as to the use of dedicated routes and quiet vehicles.
 - iv) Policy should promote three to four strategic rail interchange sites, most probably around the periphery of London, coupled with a larger number of smaller rail terminals in London to complement these. Following SRA guidance these strategic rail interchanges sites should be capable of accommodating a ‘cluster’ of both rail-connected and non-rail connected facilities. If such sites can be identified in London, these strategic rail interchanges could be SLPs. A strategic approach across London, South East and Eastern regional bodies is required to identify and safeguard appropriate strategic rail interchange sites.
 - v) Policy should seek to encourage the development of shared user consolidation centres in appropriate locations [Benefits to SMEs sharing facilities, reduce costs etc]. As noted above, the BAA consolidation centre at Heathrow provides a good example of a way in which the total number of deliveries and therefore lorry movements has been reduced, and similar types of facilities are operational around major shopping centres, for example to service Bluewater (Dartford), Meadowhall (Sheffield) and the Broadmead Centre (Bristol).
 - vi) Policy should seek to identify a suitable location for a dedicated logistics park to meet the needs of airport-related uses around Heathrow. The potential for such a site

arises from the projected growth in air freight volumes and the shortage of existing land around the Airport.

vii) Finally, there is merit in looking further at the potential to intensify warehousing. The two main opportunities to do this are by developing higher warehouses, to incorporate mezzanine floors, or by developing multi-storey warehouses, as exist for example in Tokyo.

22.11 In relation to all these measures, there is a danger that new development will be blocked as premature while new strategic policies are being worked out. This should not be allowed to happen.

22.12 Finally, modern logistics operates at regional and wider scales, based on larger and larger warehouses serving large geographical areas. To a large extent, London can be served by warehouses located outside its administrative area. Planning for logistics needs a wide regional approach.

Qualitative Criteria

22.13 Our analysis supports the criteria in the draft SPG as to the qualitative features which should be considered in safeguarding or allocating sites for industry or warehousing. Sub-Regional and Local Development Frameworks should develop these criteria, and add site-specific policies, to take account of local and sectoral conditions. In Chapters 4 and 5, we have begun this local and sectoral analysis by providing market profiles of each sub-region and of the logistics sector.

22.14 To the existing SPG criteria, we would suggest the following additions:

- š An industrial/warehousing site might be deemed viable if it can be developed at normal industrial/warehousing land values as set by benchmark data for the sub-region, adjusted for any abnormal costs or other particular characteristics. This would help distinguish activity that is not competitive in London from activity that is driven out by higher value land uses.
- š A corollary is that, if a site needs infrastructure or reclamation which cannot be paid for by industrial and warehousing land values, this might constitute an argument against protecting it for purely industrial/warehousing use.

1 INTRODUCTION

Study Objectives

- 1.1 This study was commissioned in December 2003 by the Greater London Authority in conjunction with the London Development Agency. Its purpose, as stated in the study brief¹, is
- 'to assess the scale, nature and, in particular, the [geographical] distribution of future demand for industrial and warehousing land in London and to draw the policy implications'.*
- 1.2 As shown in the brief, the strategic policies which the study is to inform include the final version of GLA Supplementary Planning Guidance on Industrial Capacity (currently in draft), London's emerging Sub-Regional Development Frameworks and the GLA's response to proposed PPG3 revisions on the transfer of former employment land to housing. The findings should also contribute to local policymaking, providing guidance to the Boroughs as they review Local Development Plans and prepare Local Development Frameworks.
- 1.3 The study does not stand alone. It updates and expands a body of earlier work addressing the same broad issues - including Industrial Land Demand in London (Roger Tym & Partners for LPAC, 1999) and Demand and Supply of Business Space in London (SDS Technical Report 21, Roger Tym & Partners for GLA, 2002) - which fed into existing strategic policies, including the London Plan and the current draft of Supplementary Planning Guidance (SPG).
- 1.4 The findings of these recent studies for the most part are still valid, and it would be pointless at this stage to revisit or rediscover them. Accordingly, the focus of the present study brief is on updating earlier statistics and forecasts where necessary, and – more important – on expanding the scope of research to questions which earlier studies have not addressed. The resulting practical recommendations should similarly expand the scope of policy, to issues where existing plans and strategic guidance need to be extended or strengthened.

Key Issues

The Demand-Supply Balance

- 1.5 As suggested in the opening paragraph, one critical issue on which policy-makers need to know more is the balance of demand and supply for industrial and warehousing land, not only London-wide and but also for individual sub-regions and Boroughs.
- 1.6 Based on earlier analysis, the SPG estimates that London could lose 30-50 hectares of industrial/warehousing land annually to 2016, consistent both with fully meeting demand for occupied land and with retaining a sufficient margin of vacant land for the market to operate smoothly. This estimated 30-50 hectares is the surplus that can be released for other uses, especially to help meet the high demand and severe need for housing. It includes both currently

¹ Contract Specification, GLA, 5 Dec 2003

occupied sites and sites which are vacant at present, but identified by the planning system for industrial/warehousing use.

- 1.7 In this study, we review this London-wide benchmark of 30 to 50 hectares, testing it against the latest demand forecasts and supply statistics and against market realities. Further, and most important, we aim to improve on the limited guidance currently available on the distribution of the total land release across different parts of London.
- 1.8 For the five sub-regions, the existing guidance is in Annex 1 of the draft SPG², which shows three sets of benchmarks, illustrating alternative ways of distributing the land release. In the present study, we use more recent data and closer analysis to produce more definite benchmarks, which may be included into the final version of SPG.
- 1.9 At the local (Borough) level, the draft SPG uses categories rather than quantitative benchmarks. It divides the Boroughs into three groups, from the most restrictive to the most permissive stance towards the release of industrial/warehousing land to other uses. In this study, we review this classification, based on a combination of formal indicators and market experience. But the classification remains indicative. It should be tested and developed further in the forthcoming Sub-Regional Frameworks and kept under review in future.

Warehousing and Distribution

- 1.10 As a second key objective, the study brief requires us to provide a description of current and future requirements for warehousing space, and recommend strategic planning policies for meeting these requirements over the next 15 years.
- 1.11 As noted in the draft SPG, warehousing has often been considered unwelcome in industrial areas, based on the view that it provides fewer and lower-quality jobs than manufacturing. The draft guidance argues against this view, on the grounds that warehousing accounts for a large and growing share of employment, it provides a key service to London's economy, and its employment densities are moving closer to those in manufacturing. Accordingly, it provides that
'Planning policy must... take a positive approach to ... distribution in the context of the overall objectives [of the London Plan].'

- 1.12 We have aimed to translate this general instruction into more specific recommendations, investigating what kind of properties, sites and locations warehouse occupiers need to do their work effectively and efficiently, and what the planning system can do to help meet these needs.

Who Occupies Industrial and Warehousing Space?

- 1.13 A third area where this study aims to fill large gaps in earlier work is the relationship between economic sectors, or activities, and types of employment space.
- 1.14 If we are to forecast requirements for industrial and warehousing space, we need to know what economic activities occupy that space. To this simple question, there is a simple answer, on which earlier studies have relied: based on the labelling of activities in the official Standard Industrial Classification (SIC), factories are occupied by Manufacturing and warehouses by

² Annex 1, Table 2

Wholesale. Unfortunately, as we shall see, reality is more complex. In this study, we investigate a range of evidence to produce a finer-grained – though still approximate – SIC-based definition of the users of industrial and warehousing space.

- 1.15 The issue of economic sectors and types of space appears rather technical. But, as we shall see, it has significant impacts on the substantive results of the study, because our new sector definition makes a significant difference to the forecast demand for space.

The Report

- 1.16 Following this Introduction:

- š The report proper begins in Chapter 2 with this investigation of economic sectors and types of space – which has to be done before we can proceed with the substantive analysis.
- š Chapter 3 and 4 briefly profile London's industrial/warehousing economies, and property markets, reviewing recent history, current conditions and drivers of change. This analysis provides a qualitative appreciation of market requirements, showing what kind of buildings, sites and locations occupiers need and how existing supply measures up. It also prepares the ground for the later quantitative findings on future demand, supply and market balance.
- š Chapter 5 continues the qualitative discussion, considering the specific requirements for warehousing, as a function of the structure and development of the economic activities that use warehouses – which we refer to as 'logistics'.
- š Chapter 6 deals with the quantitative balance of the market, forecasting demand and comparing it with supply for London, sub-regions and local Boroughs.
- š Chapter 7 provides conclusions and recommendations.

2 THE USERS OF INDUSTRIAL AND WAREHOUSING SPACE

Introduction

- 2.1 As the first step, we need to define the subject of our study - industrial and warehousing space. Based on the requirements of the study brief, our definition comprises;
- i) Industrial and warehousing uses as classified to Use Classes B1c, B2 and B8 of the Use Classes Order.
 - ii) Offices and other land uses ancillary to these Use Classes, such as the office content of manufacturing plants or distribution depots, located on the same site as the main use³.
 - iii) Less obviously, any land uses which are not part of the 'industrial' use classes, but are similar in terms of physical characteristics and land and property requirements and typically share the same estates or employment areas.
- 2.2 This third category is difficult to define. One would expect it to include sui generis uses such as postal sorting offices. To see what these 'non-B' activities might be, we looked at the actual occupiers of a variety of industrial areas. The resulting findings are later in this chapter.
- 2.3 To proceed with our study it is not enough to define industry/warehousing in terms of land-use categories. We need a definition based on type of economic activity, as categorised in the government's Standard Industrial Classification (SIC (1992)). This is because our analysis of the demand for industrial space is largely based on analysis of the economic activities which occupy this space; and most of the available data about economic activity in turn is based on the SIC. In particular, both historical figures and forecasts of demand are derived from the government's Annual Business Inquiry (ABI), which provides numbers employed by SIC sector.
- 2.4 As noted in the Introduction, earlier land and property studies have used similar methods, based on the simple assumption that industrial space is used by activities classified by the SIC as Manufacturing (SIC 15-36), and warehousing space by activities which appear in the SIC under Wholesale (SIC 51). But this assumption may be misleading, for five main reasons:
- i) It is not clear whether SIC classifications used in the ABI describe the activities of *companies* or those of individual *sites (units, plants)*. In the former case, the head office of a manufacturing company, for example, would be classified as Manufacturing, and a distribution depot of a supermarket would be classified as Retail. In our task of assessing demand for business space, company-wide labels would not help. We need the industrial classification to be applied to site activity, so that we can count the retailer's distribution depot as a warehouse and the manufacturing head office as an office.
 - ii) One particular warehouse-based activity is difficult to locate in the SIC at all. This is third-party distribution; in which specialist contractors distribute goods on behalf of owners who may be manufacturers, retailers or wholesalers/importers. Third-party distribution is a large

³ In planning terms an ancillary use on the same site falls within the same use class as the main use

and fast-growing element of the service sector, yet we have failed to identify it in the indexes and descriptions which support the SIC.

- iii) There are many activities which seem likely to occupy warehouses, but fit into SIC categories other than Wholesale. Examples are Storage and Warehousing and Freight Transport by Road. But, unlike manufacturing or retail activities for example, these warehouse-based categories are not grouped together in one higher-tier (two-digit) heading or group of headings within the SIC. Rather, they are covered by a series of mostly lower-tier (four-digit) categories spread widely across different headings. This has made it difficult in earlier studies to provide robust figures on the distribution (logistics) sector as a whole.
- iv) There are also activities which clearly occupy industrial premises, but are not part of Manufacturing. For example, much Construction activity comprises the production of various goods in factory units, as opposed to the erection of structures on site.
- v) Conversely, some activities which do belong to Manufacturing or Wholesale do not occupy industrial/warehousing space. The most clear-cut example is publishing, which is classified with printing as a Manufacturing sector, yet is primarily office-based.

2.5 It may be that these actual and possible inaccuracies do not matter in practice, either because they affect small proportions of jobs and space, or because the errors they produce go in both directions and largely cancel each other. If that is the case, employment in Manufacturing and Wholesale could still be a good enough proxy measure of the demand for land and property, despite the imperfect fit between the industrial classification and types of space. In the remainder of this chapter, we aim to test whether this is the case, or alternatively whether a different definition of occupier sectors will produce a better measure of the demand for space.

The Industrial Classification

2.6 The first two issues at paragraph 2.4, and part of the third issues, are about the use of the Standard Industrial Classification (SIC). The easiest way to resolve them would be to choose a suitable sample of employment units, identify their actual activity and that of their parent company (if applicable) and compare these with each units' SIC classification in the Annual Business Inquiry. Unfortunately, this method is not practicable, because individual ABI records are strictly confidential by law.

2.7 As an alternative, we resorted to the Office of National Statistics (ONS), using its written documentation and discussion with its officials to investigate some of the potential problems listed earlier. This provided some answers to the first two questions asked earlier (paragraph 2.4), as follows:

- i) Are SIC categories in the industrial and warehousing categories in the ABI based on company or site activity?
- § The returns that collect employment counts for the ABI are addressed to business reporting units, which in the case of a multi-site business are normally company head offices. Accordingly, 'the returns are [initially] classified according to company activity. But the ONS then calculates local units' [sites'] employment, using local unit information held on the Inter-

Departmental Business Register (IDBR). The IDBR information used in this process is itself classified according to the local units' dominant activities, so a transition takes place between the corporately coded reporting unit data and the estimates that ONS publish⁴.

- § *In principle, therefore, ABI data should relate to the activity of individual sites, not the company as a whole. This certainly applies to distribution units, so that a warehouse belonging to a manufacturing or retailing company would normally be classified as distribution.*
- § *But the same principle apparently does not apply, or does not always apply, to the head offices of industrial companies. This may be because, where the reporting unit for say a manufacturing company is a free-standing head office, its own employment will be classified as manufacturing in line with the reported company activity, although the reporting unit is in fact office-based administration. Our discussion with ONS suggests that this is quite likely, though our informants were not sure.*
- § The view that manufacturing head offices tend to be classified as manufacturing is also supported by ABI statistics for areas dominated by office uses. The most clear-cut example is City of London, where there are virtually no industrial activities, yet the ABI records significant employment in the manufacturing categories of the SIC.
- ii) *How does the SIC deal with third-party distribution?*
 - § Our discussion with the ONS confirmed that the SIC (1992) does not provide a ready-made category for third-party distribution. In completing statistical returns, businesses self-classify, picking from the list of SIC categories that which most closely fits their dominant activity. In the case of third-party distributors, there is no category that fits perfectly.
 - § In these circumstances, different third-party distributors probably self-classify to different SIC categories, depending on individual judgment and the particular mix of activities in their particular business. Some will likely pick Freight Transport, because transport is one of the things they do. Others might choose Wholesale Distribution, because distribution is also part of what they do – though the description 'Wholesale' does not quite fit, since third-party distributors, unlike wholesalers, do not own the goods they handle.
- iii) *Why are warehouse-using industries spread so widely across the SIC?*
 - § The process of self-classification also helps explain why seemingly quite similar warehouse-based activities are spread across many parts of the SIC. In self-classification, only one choice is allowed for each unit. If a unit is involved in a mixture of activities, it is instructed to choose that activity which accounts for the largest share of the total. The result is that units which carry out much the same mix of activities can end up in distant parts of the SIC, due to quite small differences in the share of these different activities.

⁴ E-mail from ONS enquiry service, July 2003

The Occupiers of Industrial Areas

- 2.8 The remaining issues at paragraph 2.4 are not about definitions, but about the actual mix of activities that in practice occupy industrial space. To investigate the nature and importance of activities other than Manufacturing and Wholesale, we undertook case studies of industrial/warehousing areas in London. This analysis used two sources:
- š Employment statistics for to wards which we know to be predominantly industrial.
 - š Surveys of industrial estates in London.

Employment in Industrial Wards

- 2.9 The wards we investigated comprise two areas in Enfield (Freezywater and Brimsdown), Premier Park near Park Royal and Dagenham Docks in East London. For each of these areas, we extracted ABI employment statistics for the ward that most closely fitted the industrial area and analysed the sectoral structure of that employment. To avoid repetition, in the tables below we show results from just two of these areas; the remaining two areas show similar patterns.

Table 2.1 Employment in Dagenham Docks (River Ward), 2002
Activities accounting for more than 1% of jobs

SIC (1992)	% of Jobs
31.40: Manufacture of Motor Vehicles	65
63.12: Storage and Warehousing	7
60.21: Other Scheduled Passenger Land Transport	6
60.24: Freight Transport by Road	4
50.10: Sale of Motor Vehicles	3
80.10: Primary Education	2
55.30: Restaurants	1
55.52: Catering	1
74.84: Other Business Activities nec	1
91.20: Activities of Trade Unions	1
85.11: Hospital Activities	1
52.11: Retail: Non-Specialised Food Stores etc	1

Source ABI 2002

- 2.10 In Dagenham Docks, the weight of motor manufacturing reflects the presence of the Ford plant. The next four most important activities are transport and distribution activities which are likely to be based in warehouses but lie outside the Wholesale sector.

Table 2.2 Employment in Brimsdown, Enfield (Green Street Ward), 2002

Activities accounting for more than 1% of jobs

SIC (1992)	% of Jobs
63.12: Storage And Warehousing	15
74.60: Investigation And Security Activities	7
60.24: Freight Transport by Road	7
74.70: Industrial Cleaning	6
51.70: Other Wholesale	5
51.39: Non-Specialised Wholesale of Food etc	4
80.22: Technical/Vocational Secondary Education	4
52.54: Retail Sale: Electrical Household Goods	3
51.47: Wholesale of Other Household Goods	3
28.52: General Mechanical Engineering	3
24.13: Manufacture: Other Inorganic Chemicals	3
55.30: Restaurants	3
51.17: Agents: Sale of Food/Beverages/Tobacco	2
80.10: Primary Education	2
45.23: Construction of Highways, Road etc.	2

Source ABI 2002

- 2.11 In Brimsdown, the largest single activity is Storage and Warehousing, which again occupies warehouses but is not classified to the Wholesale sector. Freight Transport, and to a lesser extent Construction, are also significant occupiers of what is likely to be industrial or distribution space, but lie outside the Manufacturing and Wholesale sectors which are traditionally associated with such space.

Surveys of Industrial Areas

- 2.12 To supplement the ABI analysis, we reviewed local data on three industrial areas in London, comprising recent surveys of the Lower Lea Valley and industrial sites within the Thames Gateway Zones of Change and a Business Register covering Industrial and Business Areas in Hillingdon. We are grateful to the London Development Agency and London Borough of Hillingdon for providing these data.

Table 2.3 Land Use in the Lower Lea Valley, 2003

Land Use	Number of Sites	% of Sites	Land Area ha	% of Land Area
Food & Tobacco (SIC 15-17)	28	4	8.8	3
Textile (SIC 17-19)	10	1	1.1	0
Wood & Paper Products (SIC 20-21)	15	2	2.2	1
Printing (SIC 22)	57	8	5.5	2
Chemicals, Plastics & Non-Metallic Products (SIC23-26)	22	3	5.6	2
Metals, Machinery & Equipment (SIC 27-36)	49	7	11.8	4
Refuse & Recycling (SIC 37 and 90)	43	6	21.7	8
Construction (SIC 45)	31	4	9.2	3
Motor Vehicle Sale & Repair (SIC 50)	50	7	8.5	3
Wholesale (SIC 51)	56	7	14.7	6
Warehousing (SIC 63)	99	13	63.7	24
Transport (SIC 60-62)	18	2	21.9	8
Utilities (SIC 40-41)	68	9	16.8	6
Renting of Machinery & Equipment (SIC 71)	27	4	5.5	2
Vacant or Derelict – Industrial	81	11	39.4	15
Multi Use	44	6	13.2	5
Unknown	58	8	18.4	7
Total Industrial Land	756	100	268	100

Source URS Lower Lea Land Use Survey, 2003

- 2.13 In the Lower Lea Valley, as elsewhere, significant proportions of jobs are in activities which belong in the industrial/distribution category, but do not fall under the Manufacturing and Wholesale categories which are traditionally assumed to use factories and warehouses. These activities comprise Warehousing (SIC 63), Refuse and Recycling, Transport, Utilities, Construction, Motor Vehicles Sale and Repair and Renting of Machinery & Equipment.
- 2.14 The two tables that follow convey very much the same message. Both in the industrial areas which form part of the Thames Gateway Zones of Change and in Hillingdon's Industrial and Business Areas, the surveys show a similar range of activities which are outside the traditional list, yet account for significant proportions of employment of business units.

Table 2.4 Employment on Industrial Sites in the Thames Gateway Zones of Change

Zone	1	2	3	4a-b	4c	5a	5b	6	Total	%
Industrial sector	Isle of Dogs	Deptford, Greenwich & Lewisham	Greenwich Peninsula	Stratford & Lower Lea	The Royals	London Riverside	Barking Town Centre	Charlton to Crayford		
Food & Tobacco (SIC 15-17)	400	50	200	250	1,700	350	50	950	3,900	6%
Textile (SIC 17-19)	100	50	0	250	50	100	50	150	700	1%
Wood & Paper Products (SIC 20-21)	0	100	0	200	0	250	50	800	1,450	2%
Printing (SIC 22)	1,000	350	50	1,050	50	200	0	1,100	4,900	5%
Chemicals, Plastics & Non-Metallic Products (SIC 23-26)	50	100	50	450	1,100	350	250	1,250	3,600	5%
Metals, Machinery & Equipment (SIC 27-36)	250	300	900	1,300	150	7,550	300	4,150	14,950	21%
Refuse & Recycling (SIC 37 and 90)	150	300	0	300	250	350	100	1,050	2,550	3%
Construction (SIC 45)	1,000	900	350	1,950	700	1,700	400	3,050	11,700	14%
Motor Vehicle Sale & Repair (SIC 50)	150	200	50	450	150	800	150	1,500	3,500	5%
Wholesale (SIC 51)	1,500	650	250	2,100	1,000	2,400	350	2,050	10,550	15%
Utilities (SIC 40-41)	0	0	0	250	0	50	0	0	300	0%
Transport (SIC 60-62)	1,650	800	450	1,100	350	2,300	400	1,350	8,450	12%
Distribution (SIC 63)	950	200	50	450	1,000	1,800	550	950	5,900	8%
Renting of Machinery & Equipment (SIC 71)	100	150	50	200	300	400	100	400	1,700	2%
TOTAL	7,200	4,000	2,400	10,200	6,700	18,500	2,700	18,800	70,500	100%

Source ABI 2001 and URS analysis. Figures rounded to the nearest 50 for data confidentiality reasons

Table 2.5 Activity by Unit Hillingdon Industrial and Business Areas

	No. of units	% of Units
Vacant units	83	10.3%
Offices	89	11.1%
Offices /w'house/storage	3	0.4%
I.T.	16	2.0%
Business services/consumer services	15	1.9%
Engineering	62	7.7%
Printing/sign making	24	3.0%
Warehouse/ (incl. retail w'house)/ distribn./wholesale/wholesale suppliers/storage/	104	13.0%
Vehicle repairs/breakdown /servicing/leasing /mtce. storage/showroom /instruction	71	8.8%
Courier/postal services depot	19	2.4%
Car park/open parking & storage	19	2.4%
Freight forwarders/ & storage/road haulage	31	3.9%
Constructn./ constructn.services/mtce./contractors/building services/installation work	73	9.1%
Supplies/suppliers	12	1.5%
Manufacturing./industrial	39	4.9%
Retail/contractors store	15	1.9%
Food products/catering/food menu.	12	1.5%
Replacement/specialist windows/doors	5	0.6%
Laundry services/cleaning services/pest control	7	0.9%
Other	106	13.2%
Total No. of Units	803	

Source LB Hillingdon, RTP

Note: The table relates to 19 of the 22 Industrial and Business Areas identified in the Borough's UDP (adopted 1998). The three IBAs excluded are Stockley Park, which is an office area, and two areas for which the Borough Council's Register provides no data.

- 2.15 In summary, the areas analysed above house a range of activities which are rightly described as industrial/warehousing uses, yet do not belong to the SIC categories of Manufacturing and Wholesale. These activities are largely in the Construction and Transport headings. They account for significant shares of land use and employment. If we exclude them from the employment total which determines the forecast of land demand, we run a major risk of producing misleading figures.

Industrial and Warehouse Sectors: Revised Definition

2.16 Based on the above analysis, our recommended definition of industrial/warehousing sectors is as follows.

Table 2.6 Industrial Sectors

Sector	SIC (1992)	Activities
Manufacturing	15.11-37.20 (ex publishing) 22.11-22.15)	Includes all manufacturing, including recycling, but excludes publishing)
Some construction	45.33-45.45	Plumbing Other building installation Plastering Joinery installation Floor and wall covering Painting and glazing Other building completion
Motor vehicle activities	50.20, 50.40	Maintenance and repair of motor vehicles Sale, maintenance and repair of motor cycles and related parts and accessories
Sewage and refuse disposal	90.00	Sewage and refuse disposal, sanitation and similar activities.

Source RTP, Standard Industrial Classification of Economic Activities 1992, Central Statistical Office

Table 2.7 Warehousing Sectors

Sector	SIC (1992)	Activities
Wholesale	51.11-51.70	Wholesale on a fee contract basis Wholesale of goods
Freight transport by road	60.24	
Cargo handling	63.11	
Storage and Warehousing	63.12	
Other supporting land transport activities	63.21	
Post and courier activities	64.11-64.12	

Source RTP, Standard Industrial Classification of Economic Activities 1992, Central Statistical Office

2.17 The above activities are referred to in this study as 'industrial and warehousing sectors' and their employment is used as a proxy measure of the demand for industrial and warehousing space.

2.18 Two caveats should be noted:

- § Inevitably, our definition of industrial and warehousing sectors is a broad approximation. Employment in the sectors specified is only a crude proxy measure of the demand for industrial and warehousing space. But it should be a significant improvement on the proxy measure used in earlier studies.
- § The definition is broadly restricted to those activities that are based in buildings. It excludes land uses which may be loosely described as industrial or related, but largely use open land (such as open storage of containers) and/or structures other than buildings (such as the utilities and transport terminals). It would not be practicable within this study to forecast the demand for such open uses, because the study's analysis and forecasts of land demand are driven by employment and floorspace.

3 LONDON'S ECONOMIES

Introduction

3.1 This and the next chapter together profile Greater London's industrial/warehousing economies and property markets, considering recent history, current conditions and drivers of change. The analysis covers London as a whole and its five sub-regions, as defined in the London Plan and shown in the map below.

Map 3.1 London's Sub-Regions



3.2 These sub-regions are not equal in size; this should be borne in mind when reading the following section. Table 3.1 shows total employment by sub-region. Employment in the Central sub-region is more than four times greater than that in the North.

Table 3.1 Total Employment by Sub Region, 2002

Central	1,644,000
East	1,087,000
West	780,000
North	386,000
South	587,000

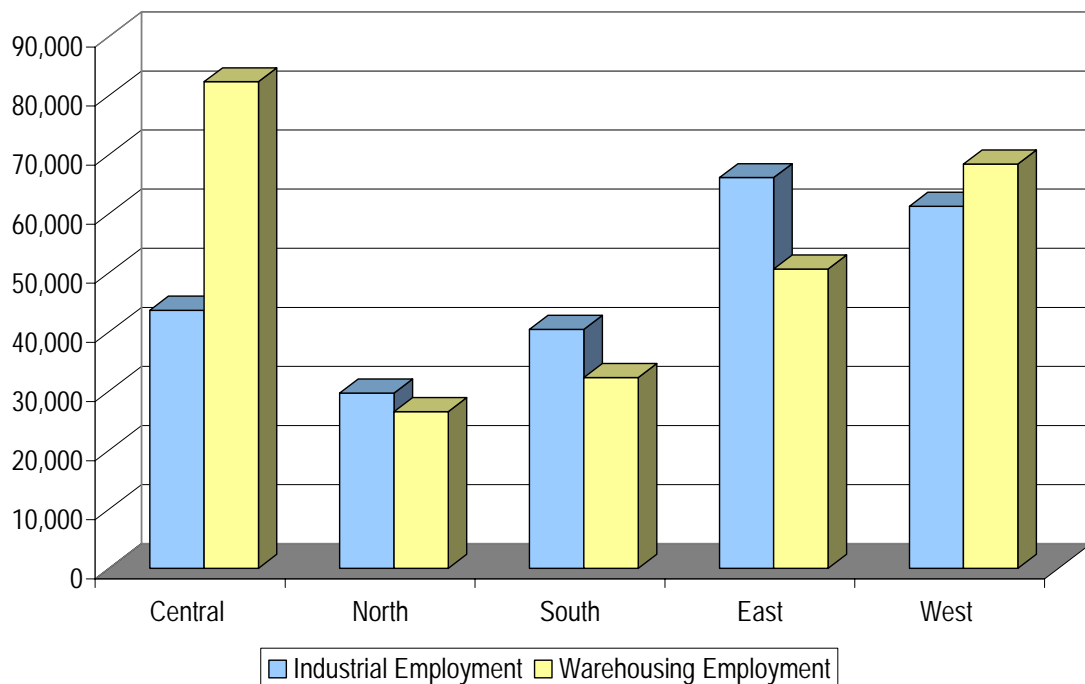
- 3.3 In the economic profile below, we aim to test, update and expand the findings of earlier studies, addressing the following questions:
- § What do London's industrial/warehousing businesses do?
 - § Why are they there?
 - § What do they contribute to employment and wealth creation?
 - § How has all this been changing?
- 3.4 The analysis of land and property markets in Chapter 4 will provide further, more detailed evidence on these demand-side questions, as well as considering the supply of space.

What Industrial/Warehousing Firms do in London

Employment by Sub-Region and Sector

- 3.5 Industrial and warehousing employment is shown at Figure 3.1 below.

Figure 3.1 Industrial and Warehousing Employment in London, 2002

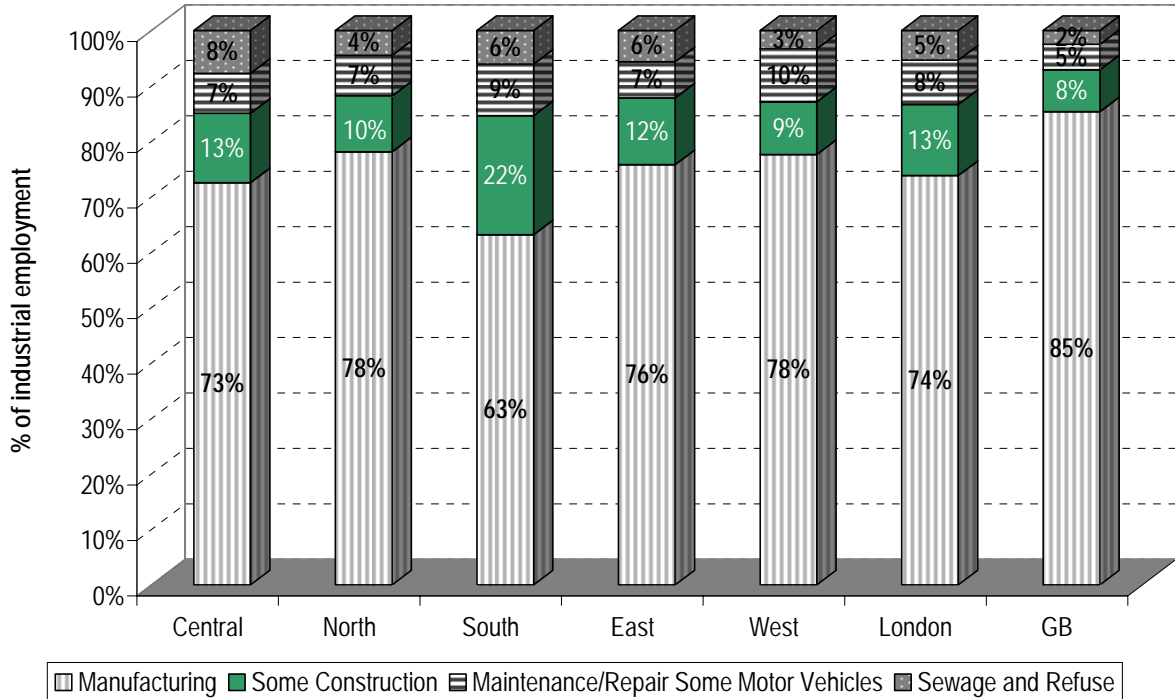


Source ABI, 2002

- 3.6 Industrial activities provide some 240,000 jobs in London, of which 178,000 are in manufacturing and warehousing activities some 260,000 jobs. Thus, the combined industrial and warehousing total is almost exactly 500,000 jobs. The sub-regional breakdown shows that Central London has twice as many warehousing as industrial jobs. This might be explained by Central London's role as a consumer rather than producer of goods. Sectorally the higher proportion of warehousing employment in post and courier activities in Central London (see Figure 3.3 below) offers a further explanation of the relative strength of 'warehousing' employment in Central London. In the other sub-regions, numbers in the two sectors are very roughly equal.

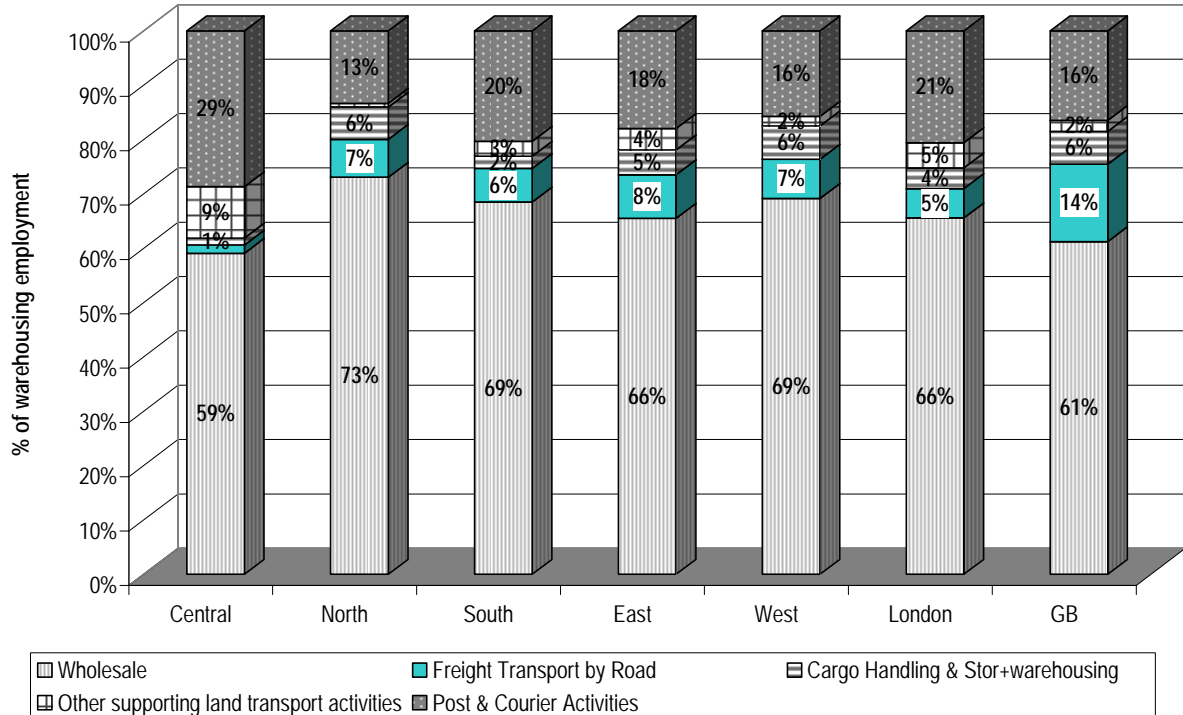
3.7 Figures 3.2 and 3.3 break down industrial and warehousing jobs into the finer-grained sectors defined at the end of Chapter 2.

Figure 3.2 Industrial Employment by Sector, 2002



Source ABI 2002

Figure 3.3 Warehousing Employment by Sector, 2002



Source ABI 2002

- 3.8 Within the industrial category, 26% of London's jobs are in non-manufacturing industries, comprising selected construction activities, motor repairs and sewage & refuse. The national share of non-manufacturing is considerably less at 15%. The figures confirm that adding non-manufacturing sectors to the traditional definition of users of industrial land makes a significant difference to total demand, and more so in London than elsewhere.
- 3.9 Within the warehousing sector, activities other than Wholesale contribute 34% of London's jobs and 39% of the UK's. Yet again, adding these sectors has a substantial impact on our total estimate of warehouse-based jobs, though this time the impact does not vary significantly between London and Great Britain.

Location Quotients

- 3.10 The location quotients (LQs)⁵ at Table 3.1 below show the relative importance of the industrial/warehousing sectors in London, compared to the national economy.

Table 3.1 Location Quotients, 2002

Industrial Activities	Central	North	South	East	West	London
Manufacturing	0.2	0.6	0.4	0.4	0.6	0.4
Some construction	0.3	0.8	1.6	0.7	0.8	0.7
Some motor repairs	0.3	1.0	1.1	0.6	1.3	0.7
Sewage & refuse	0.6	1.1	1.4	1.0	0.8	0.9
Warehousing Activities						
Wholesale	0.8	1.4	1.0	0.8	1.6	1.0
Freight transport by road	0.1	0.6	0.4	0.4	0.7	0.4
Cargo handling and Storage & warehousing	0.2	1.2	0.3	0.5	1.4	0.6
Other supporting land transport activities	3.7	0.4	1.2	1.4	1.2	2.1
Post and courier activities	1.4	1.0	1.1	0.8	1.4	1.2

Source ABI 2002, RTP

- 3.11 Manufacturing employment in London is heavily under-represented in London as a whole and in each of its sub-regions. By contrast, services, such as sewage & refuse, wholesale and post & courier activities are generally closer to the national average, except in the Central sub-region, where most are heavily under-represented. Wholesale is particularly well-represented in the West and North sub-regions, which enjoy better access to the motorway network and hence the rest of the UK.
- 3.12 Table 3.2 looks more closely at the manufacturing sector, showing LQs for London as a whole by individual industry.

⁵ Location quotients (LQs) measure the importance of an industry or sector in a geographical area compared to the national norm. The LQ equals the share of a sector in the area's total employment divided by that sector's share of national employment. If the LQ is more than 1, the sector is over-represented in the area under study. Conversely, an LQ of less than 1 point to an industry that is under-represented locally. If the LQ is 1, the industry's share of the area's total employment is in line with the national average.

Table 3.2 Manufacturing Employment, 2002

Manufacturing Sector	London Jobs	% of Manufacturing Jobs	Location Quotient
Mfg food & bev	29,191	16	0.43
Tobacco	0,159	0	0.31
Textiles	2,908	2	0.18
Apparel, dressing/dying fur	8,911	5	0.99
Tanning/dressing leather	1,244	1	0.47
Wood/products/cork	3,446	2	0.28
Pulp, paper & paper products	3,591	2	0.27
Some printing	32,303	18	1.11
Coke, refined petroleum products	0,195	0	0.05
Chemicals & products	14,049	8	0.40
Rubber & plastic goods	8,142	5	0.25
Other non-metallic products	3,555	2	0.20
Basic metals	1,802	1	0.12
Fabricated metal products	13,080	7	0.24
Machinery & equipment	11,742	7	0.25
Office machinery & computers	1,905	1	0.33
Electrical machinery/apparatus	8,323	5	0.38
Radio, TV/comms equipment	4,077	2	0.31
Medical, precision instruments	6,911	4	0.36
Motor vehicles, trailers etc	7,469	4	0.24
Other transport equipment	2,996	2	0.13
Furniture	11,241	6	0.39
Recycling	0,831	0	0.39
Total Manufacturing	178,071	100	0.36
Total London Jobs	3,921,491		

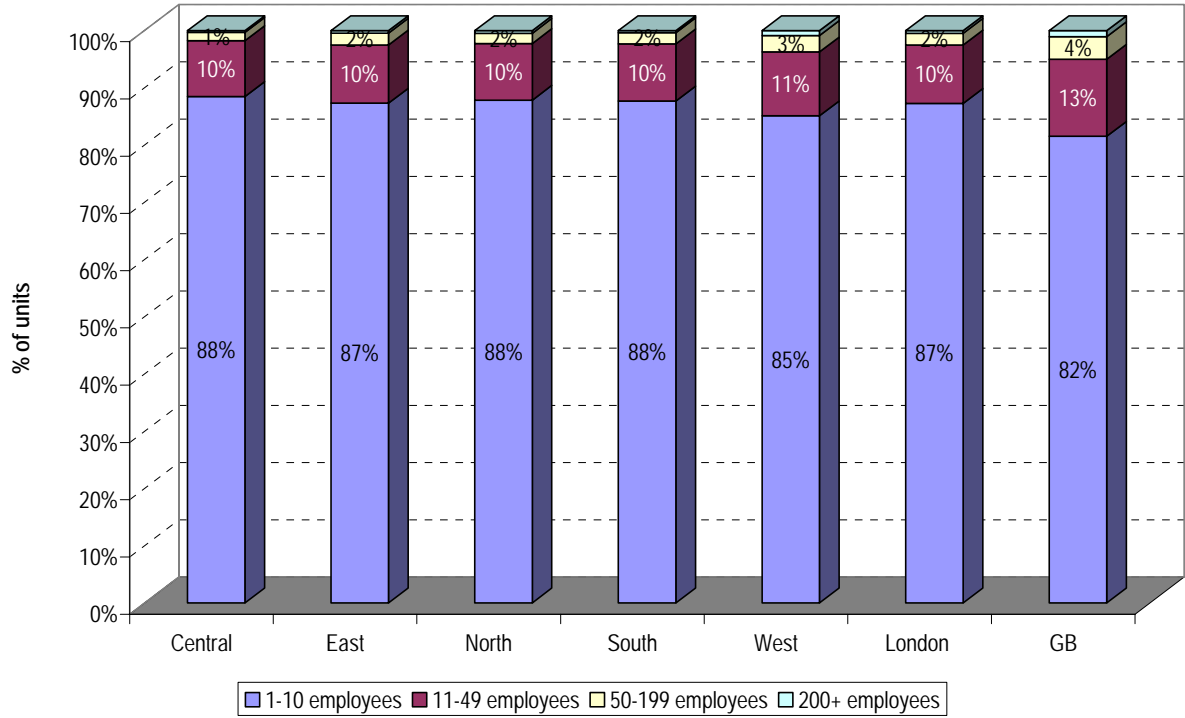
Source ABI 2002, RTP

- 3.13 Printing is the largest manufacturing industry, accounting for nearly one in five of London's manufacturing jobs. It is also the only industry with an LQ of more than 1, indicating that it is over-represented in London by comparison with the national economy. Apparel etc (the manufacture of clothes) has the second highest LQ at 0.99, indicating that its share of London's employment is close to the national average. All other manufacturing industries are heavily under-represented in London.

What They Are Like

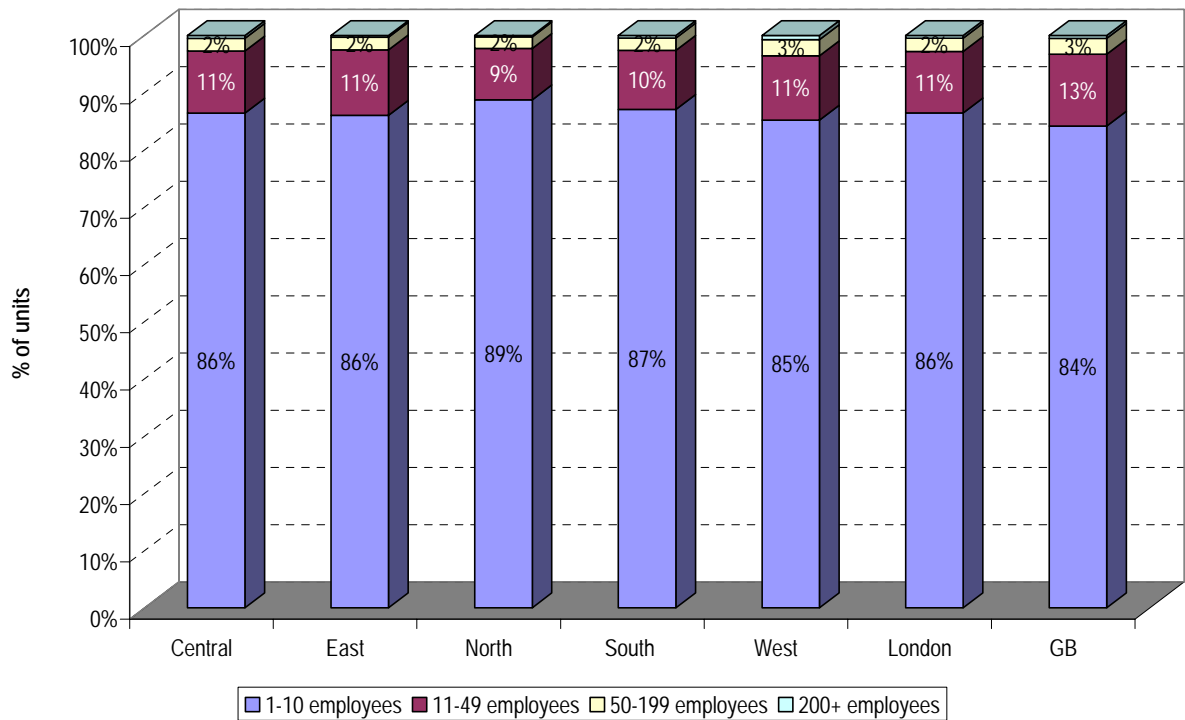
Unit Size

Figure 3.4 Industrial Units by Number of Employees, 2002



Source ABI 2002

Figure 3.5 Warehousing Units by Number of Employees, 2002



Source ABI 2002

- 3.14 Large majorities of London’s employment units (establishments), both in the industrial and warehousing categories, are small, with just 10 employees or fewer. This is also true of Great Britain as a whole, but in the industrial sector London and its sub-regions have an even greater proportion of small units. In the warehousing sector, there is almost no difference between London and the national norm.
- 3.15 99% of industrial and warehousing units in London have less than 200 employees and 97% have less than 50 employees. Over the past ten years, the share of smaller units has increased as losses have been concentrated on the larger categories.

What They Contribute

Employment

Table 3.4 Industrial and Warehousing Jobs as % of Total Employment, 2002

Total Jobs	London	%	GB	%
Industrial	241,100	6%	3,821,400	15%
Warehousing	260,100	7%	1,829,000	7%
All Industries and Services	3,921,500	100%	25,548,100	100%

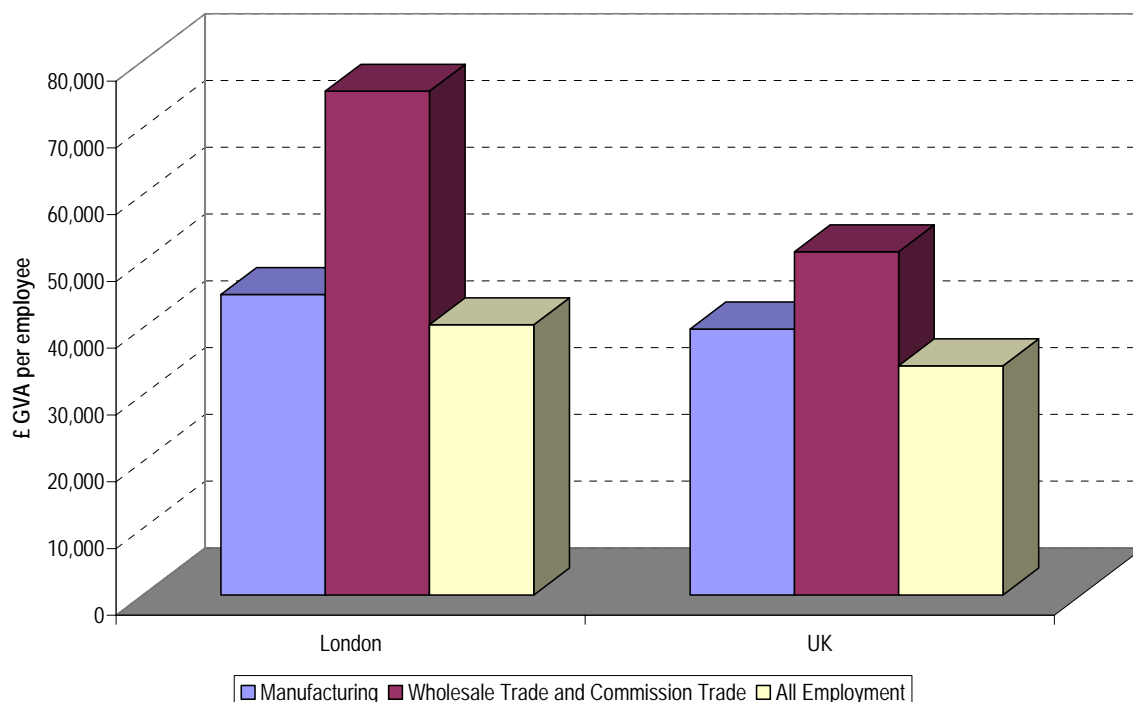
Source ABI 2002

- 3.16 Manufacturing contributes 4.5% of all London jobs, other industrial sectors 1.5%, and warehousing 7%. At national level, the share of manufacturing is much larger at 13%, while the shares of other industrial sectors and warehousing are close to what they are in London.

Value Added

3.17 Figure 3.6 below shows GVA (output) per employee, also known as labour productivity.

Figure 3.6 GVA per Employee, 2001



Source ONS

3.18 All-sector labour productivity is some 10% higher in London than in the UK. London's manufacturing productivity exceeds then national norm by a similar margin⁶. But in wholesale trade and commission trade, London appears to have a much greater advantage, with productivity about 40% above the UK's.

3.19 A similar point, though based on less detailed statistics, is made in *Understanding London's Sectors*⁷, which reports that London's labour productivity in Transport and Logistics is around 18% above the national average; while for manufacturing the difference is just 3%.

3.20 A likely explanation for the higher productivity figures is likely to be found in the nature of warehousing and logistics activity in London. Warehousing activity in London is serving increasingly sophisticated consumer demands. Premium prices are paid for the range quality and often 24-hour availability of goods. Warehousing is not just about basic provision of goods to the market but the provision of service. Consumers in London, whether households or businesses, can buy what they want when they want it.

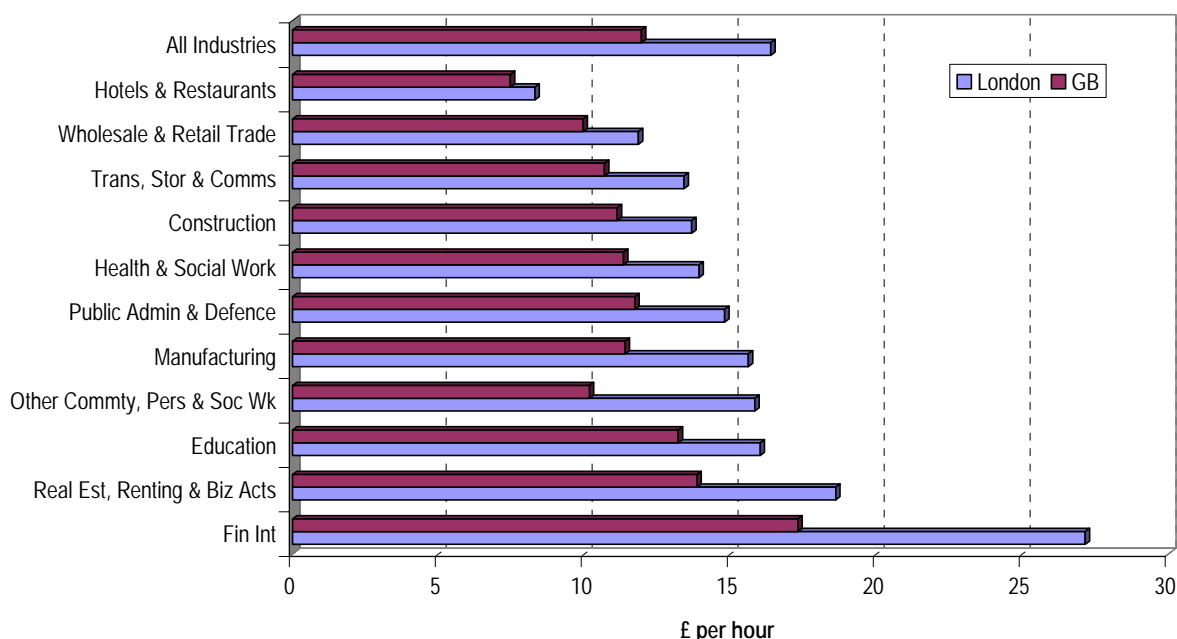
⁶ Here, manufacturing includes publishing, which is excluded from most of our analysis because it is mainly based in offices rather than industrial space.

⁷ *Understanding London's Sectors*, London Development Agency, November 2003

Earnings

3.21 Figure 3.7 below shows average earnings by broad industry group. Earnings in all groups are higher in London than Great Britain.

Figure 3.7 Earnings by Industry Group, 2003



Source New Earnings Survey, April 2003

3.22 From the data available, we have no information on earnings in the industrial and warehousing sectors as we defined them earlier. But the table does show earnings in manufacturing, which as we have seen provides the majority of the jobs we have called industrial. Manufacturing earnings are in the middle of the distribution, close to the all-sector average. Contrary to what is sometimes argued, we cannot make a case for resisting the loss of manufacturing from London on the grounds that it provides particularly high-paid job opportunities. On the other hand, average earnings in manufacturing are a little higher than in Other Community, Personal and Social Services, and much higher than in Hotels and Restaurants – which may be likely destinations for people who have lost manufacturing jobs.

Occupations

3.23 Figures 3.8 and 3.9 below show occupations in a selection of broad activity sectors in London and Great Britain.

Figure 3.8 Occupations in Selected Industry Groups, London, 2001

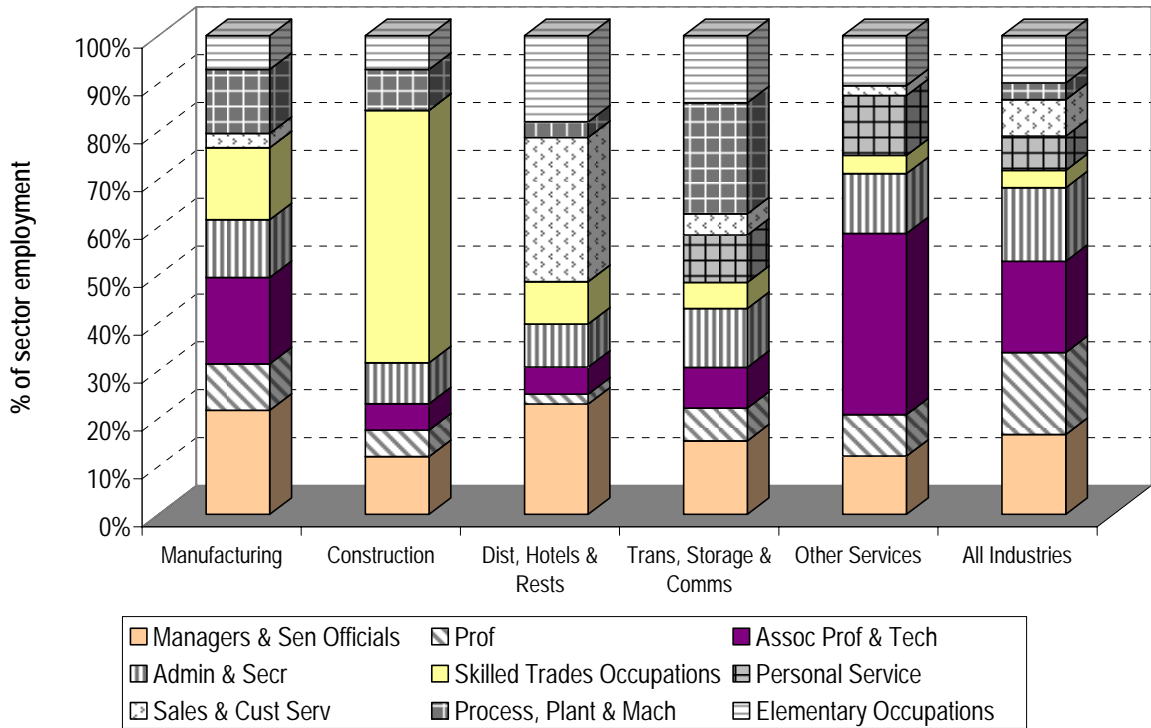
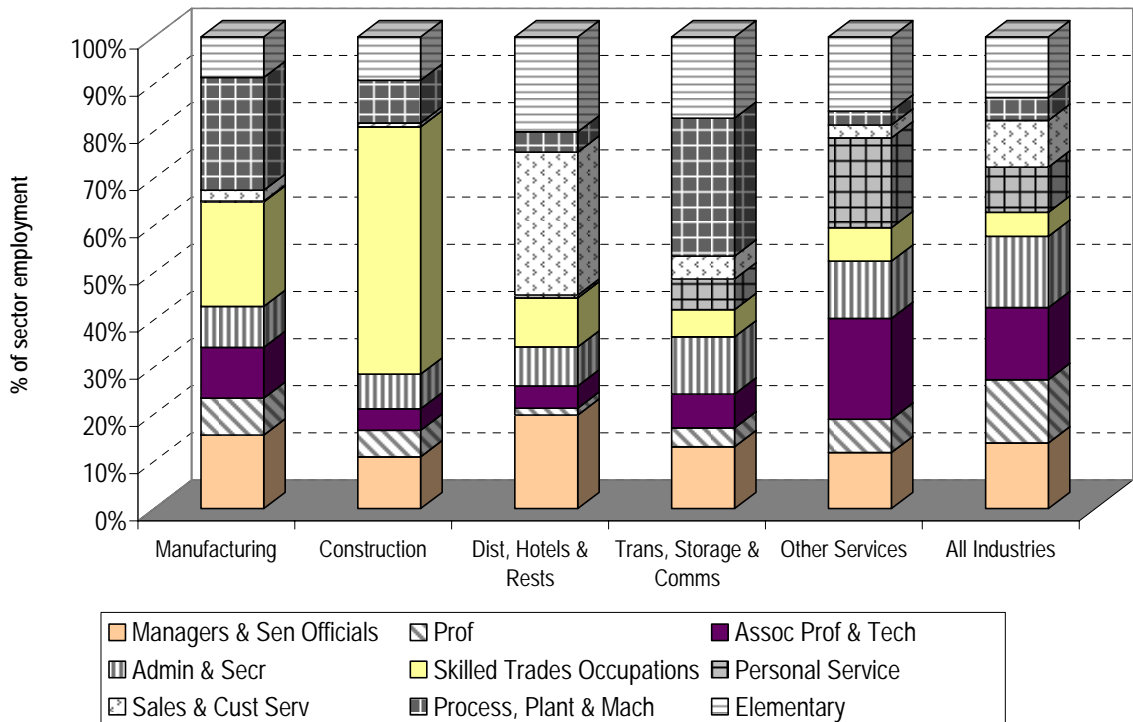


Figure 3.9 Occupations in Selected Industry Groups, Great Britain, 2001



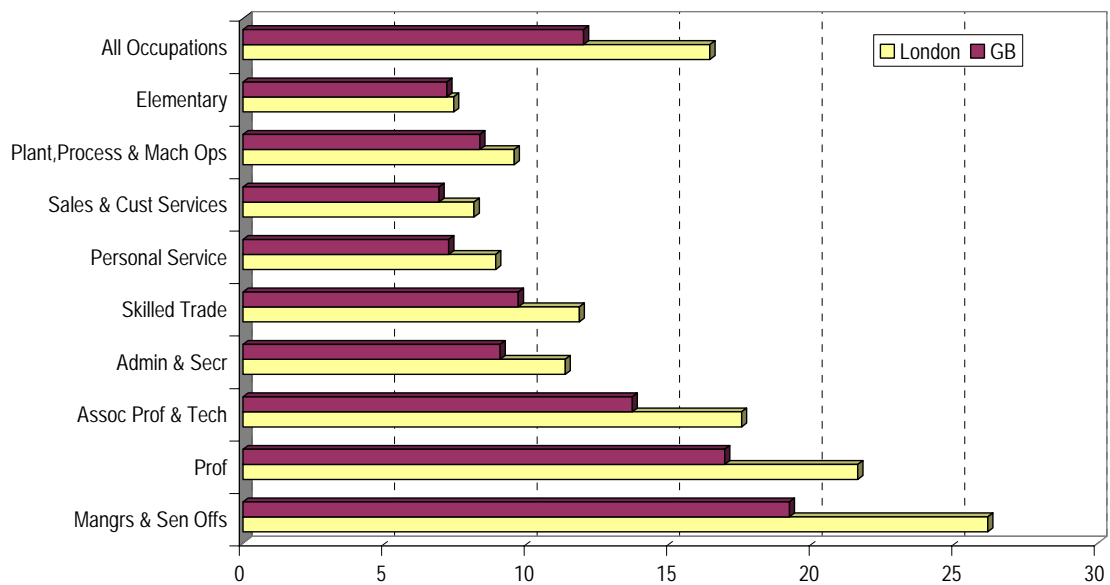
Source Labour Force Survey, 2001

3.24 In manufacturing, there are proportionally many more Managers and Senior Officials in London than in GB as a whole. This feature of London's manufacturing, by comparison with the national

norm, is also noted in *Shaping the Future*⁸. Again, it suggests that the small volume of manufacturing activity which London has retained is especially high-value, with high proportions of head office functions and tertiary activity. Given that the higher occupations attract higher earnings, this partly explains why manufacturing earnings are higher in London.

- 3.25 But the main reasons why earnings are higher in London than GB, not just in manufacturing but across all industry groups, is not different occupational structure. Rather, as shown at Figure 3.10 below, London earnings by occupation are consistently higher than Great Britain's.

Figure 3.10 Earnings by Occupation, £ per hour, 2003



Source New Earnings Survey, April 2003

- 3.26 The changing nature of logistics requires greater efficiency. Higher skills are demanded than previously, especially in high-tech operations. However, there was some disagreement as to the level of difficulty in recruiting staff.
- 3.27 Interestingly, the access to highly skilled workforce was highlighted at the manufacturing seminar as a positive aspect for London. The Members' Survey identified qualified engineers (41%), followed by skilled manual (37%) and skilled technical (32%) employees as being the most difficult to recruit. Furthermore, the survey indicates that poorly kept industrial sites and sheds discourage higher quality candidates from taking jobs, because of their poor image.

⁸ *Shaping the Future*, London Production Industries Commission, October 2003

Why They Are There

- 3.28 The above analysis confirms the findings of earlier studies. Typically, industry and warehousing are in London:
- š *Because* their customers are there.
 - š *Despite* the comparatively high costs they incur by being there.
- 3.29 Overall, manufacturing is heavily under-represented in London. Primary production, and more generally footloose industries, is highly and increasingly unlikely to locate there. The manufacturing industries which find London most attractive are those which produce final goods, either for the consumer or business markets, and/or need to be close to their customers, often because products have a short shelf life (e.g. food) or producers have to respond fast and flexibly to customer requirements (e.g. clothing, especially designer clothing, and printing). 'Industrial' services such as construction and motor repairs, and warehousing services (logistics) are in London for similar reasons: they serve the capital's population and businesses.
- 3.30 One recent study, the Lower Lea Valley Business Survey⁹, illustrates the customer-driven nature of much of London's manufacturing. This survey found that the most important single reason why firms located in the area was proximity to their customer base. Furthermore, of the local firms surveyed, just 22% had customers outside London.
- 3.31 Another recent study, *Understanding London's Sectors*¹⁰, highlights the key disadvantages of London for manufacturing firms as lack of appropriate skills, high land and property costs, high wages and poor infrastructure in the older industrial estates.
- 3.32 The above of course are broad generalisations. London does retain supply-side advantages for many industrial activities:
- š One obvious point is that many industrial firms in London are there for historical reasons. This, of course, is true of virtually any type of business anywhere. But, for larger process and primary manufacturing operations, the rationale for being in London is no longer compelling. Many of these firms have gone, either out of London or out of business.
 - š Smaller firms, particularly if owner-managed, are often where they are because of convenience to the owner's residence. This applies to any location, not just London, though in London, given the size of its population, it is bound to apply on a larger scale.
 - š Much more relevant, the availability and quality of skills in London is often and rightly cited as a positive reason for locating there. The reference is typically to high-level, high-value skills, such as fashion design to the clothing and furniture industries and foreign languages to international marketing and servicing operations.
 - š As noted in a recent report by the London Production Industries Commission¹¹, certain products earn a 'designer tag' attached purely by virtue of having been made in London.

⁹ *Lower Lea Business Survey*, London Thames Gateway, URS, January 2004

¹⁰ *Understanding London's Sectors*, London Development Agency, November 2003

This in some cases allows the products to be sold at a premium. Examples include some food products, designer furniture and designer clothing.

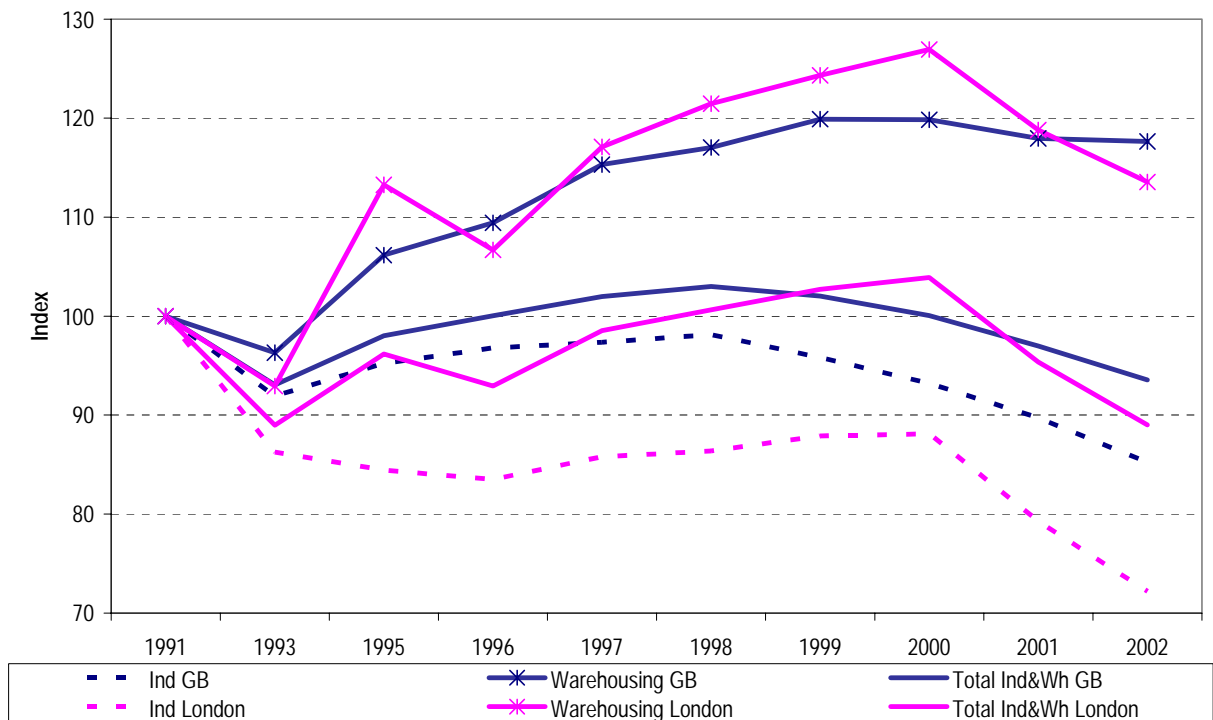
- 3.33 In general, London in the 21st century is not an efficient place in which to produce goods - except for those whose production requires certain specialist and/or high-level skills. But it is still a highly efficient to *supply goods* and *deliver services* to London's businesses and households from within London's boundaries.

Change

Employment

- 3.34 Figure 3.11 shows employment change in London's industrial and warehousing sectors in 1991-2002, benchmarked against the national trend. The data are taken from the Annual Employment Survey (AES) and the Annual Business Inquiry (ABI) and spliced to bridge the 1998 shift from AES to ABI. The lines show year-on-year change in the industrial and warehousing sectors, as well as the total of the two.

Figure 3.11 Employment Change 1991-2002



Source ABI 2002, RTP

- 3.35 London's employment in both sectors broadly followed the national cycle, with a marked trough in 1993 and a peak in the late 1990s-2000.

¹¹ *Manufacturing in London: where should development effort be focused?* London Production Industries Commission, January 2004

- 3.36 In the industrial sector London did worse than Great Britain, losing 28% of its industrial jobs against 15% for GB.
- 3.37 In warehousing the London long-term trend was close to the national benchmark. London's warehousing employment increased by 14% and Great Britain's by 18%.
- 3.38 Table 3.6 looks at industrial employment more closely, considering separately the periods 1991-98 and 1998-2002.

Table 3.6 Industrial Employment Change 1991-2002

		London	GB
1991-1998	Jobs	-45,500	-84,600
	%	-14%	-2%
	Annual %	-1.8%	-0.2%
1998-2002	Jobs	-47,300	-578,500
	%	-16%	-13%
	Annual %	-3.5%	-2.8%
1991-2002	Jobs	-92,900	-663,100
	%	-28%	-15%
	Annual %	-2.7%	-1.3%

Source ABI 2002, 1998, AES 1991, 1998

- 3.39 Between 1991 and 1998:
- š Industrial employment in GB fell marginally by 0.2% per year London's lost jobs nine times faster, at 1.8% per year, producing a total loss of 14% over the period.
 - š As is apparent from the graph, London's decline against the national average is accounted for by the early to mid-1990s. In London, the industrial decline associated with the early 1990s recession was both steeper and more prolonged than in Great Britain as a whole. The national industrial total troughed in 1993 and grew slowly for five years thereafter. London lost proportionally more jobs in 1991-93, and furthermore it continued to lose jobs until 1996, though at a slower rate.
 - š Between 1996 and 1998, however, London's industrial job growth paralleled the national trend.
- 3.40 Between 1998 and 2002:
- š London's loss of industrial jobs was only slightly faster than the national trend, at 3.5% pa against 2.8% pa for GB.
 - š In the first part of the period, 1998-2000, London did markedly better than GB. This is because, yet again, its cyclical turning point was later: nationally industrial employment

nationally declined from 1998 onwards, whereas in London in continued to expand until 2000.

š Once London's downturn had started, yet again it was faster than the national trend.

3.41 Table 3.7 provides the same close analysis of employment change in warehousing.

Table 3.7 Warehousing Employment Change 1991-2002

		London	GB
1991-1998	Jobs	49,100	264,800
	%	23%	17%
	Annual %	2.5%	2.0%
1998-2002	Jobs	-18,100	9,600
	%	-7%	1%
	Annual %	-1.3%	0.1%
1991-2002	Jobs	31,000	274,400
	%	14%	18%
	Annual %	1.1%	1.4%

Source ABI 2002, 1998, AES 1991, 1998

3.42 The story here is much simpler than for the industrial sector. As is clear from the graph, London's warehousing employment closely follows a similar long-term trend and cyclical pattern as the national total; both have the same turning points, in 1993, 1996 and 1999/2000. But change in London is more volatile: employment grows faster in upturns and declines faster in downturns. This is as one would expect; the larger the sum being considered, the smaller in general will be its fluctuations about its long-term trend.

3.43 To sum up, the two sectors under study over the last decade have been quite different in their patterns of employment change:

š Warehousing employment has closely followed the national trend, though, its cyclical fluctuations have been wider.

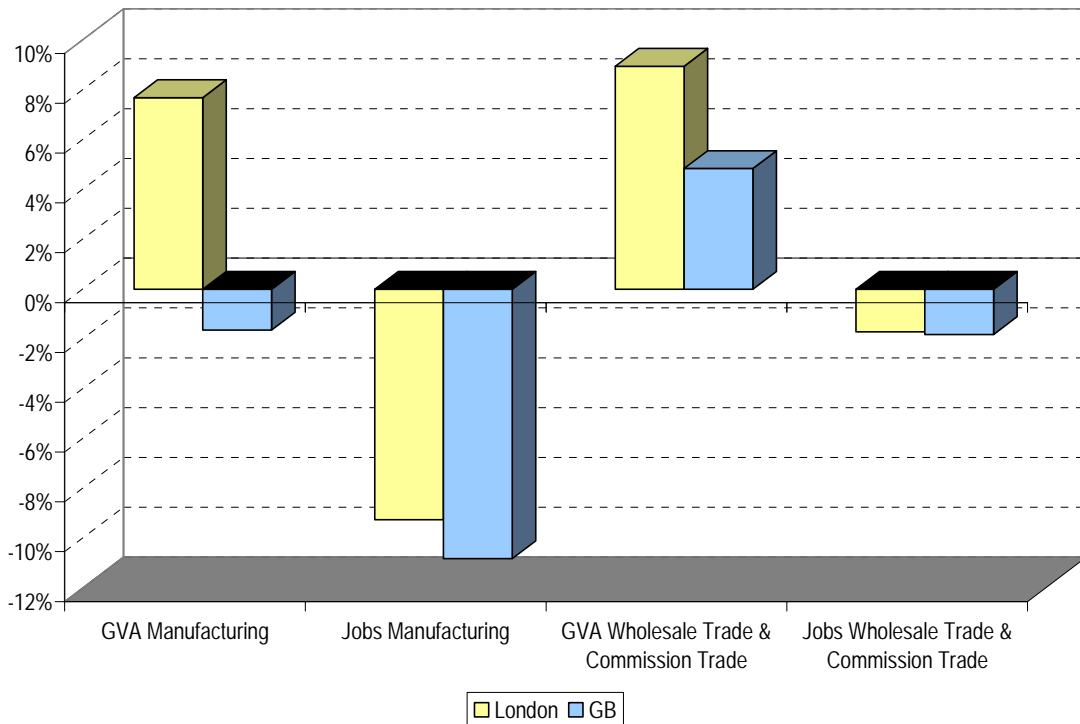
š Industrial employment has also followed the national trend, though with a two-year time lag and – like warehousing – with wider fluctuations. But, in contrast to warehousing, London's industrial employment seems consistently to have done worse than Great Britain's: in upswings its growth rate has been similar to the national benchmark, but in downswings its decline has been steeper.

3.44 It is not, of course, surprising, that London's industrial employment growth should under-perform the national benchmark. This relative decline has been an established long-term trend since the 1960s or before; our analysis confirms that it continued in the last decade. What is perhaps more unexpected is the good performance of London's warehousing sector.

Output and Productivity

3.45 The graph below shows changes in GVA and employment between 1998 and 2001 for Manufacturing and Wholesale (as before, because of data limitations, we use these industry groups as proxies for the industrial and warehousing sectors respectively).

Figure 3.12 Change in GVA and Employment, London, 1998-2001



Source ONS

N.B The manufacturing jobs decline includes publishing.

3.46 In Manufacturing London's output (GVA) grew by 8%, while employment fell by 10%, resulting in productivity (GVA per head) rising by 18% - considerably above the national increase of 11%.

3.47 Similarly in Wholesale London and Great Britain lost jobs at the same rate of 2% over the period. Both achieved growing output, but this, and hence the rise in productivity, was twice as high in London as GB.

Summary

3.48 Based on the 1999 study of Industrial Land Demand in London, the draft SPG¹² summarises the key features of London's industry and logistics as follows:

'... Industries which are likely to find London a competitive location are those which:

§ *Serve London markets.*

¹² Annex 2, paragraph 2.4

- š *Are near the end of the physical production process, producing final [goods] rather than capital equipment or intermediate goods.*
- š *Produce time-sensitive goods and services.*
- š *Are high-productivity and high-value-added, but not necessarily high-technology.*
- š *Are at the borderline of industry and services, with a high 'tertiary' content.*

3.49 The analysis in this chapter supports these conclusions. Furthermore it suggests that these features are becoming more marked over time, as London's industry and warehousing continues to shift from manufacturing to services, and in both categories towards higher value added, as productivity rises faster in London than elsewhere. One symptom of this restructuring is that London's industrial employment change since 1991, as in earlier periods, has consistently underperformed the GB benchmark, while its warehousing employment has closely followed the national trend.

4 LONDON'S INDUSTRIAL/WAREHOUSING PROPERTY MARKETS

Introduction

- 4.1 So far we have considered the economic forces that shape the demand for industrial and warehousing space. In this chapter, we look directly at that demand and the corresponding supply, for London as a whole and its five sub-regions. We describe the floorspace stock, occupier requirements and the sites and properties currently available. A key question is to gauge the pressure of demand against land supply in different markets, leading to recommendations (in Chapters 6 and 7) on the planning policies which determine that land supply.

The Floorspace Stock

Overview

- 4.2 London has some 27.6 million sq m of built industrial and warehousing floorspace. Well over half (58.0%) of this total consists of warehousing, a much higher proportion than in London's neighbouring regions, the South East and East, and nationally. The relatively high proportion of warehousing in London's industrial and warehousing stock compared with factory space reflects the de-industrialised nature of London's economy and highlights that, even within the 'industrial and warehousing' economy, the majority of activity is service-related.

Table 4.1 Total Built Industrial/Warehousing Floorspace, 2003

	Factories		Warehouses		All industrial & warehousing
	%of total	000 sq m	% of total	000 sq m	000 sq m
London	42.0	11,591	58.0	15,985	27,576
South East	55.4	23,053	44.6	18,534	41,587
East of England	56.1	20,123	43.9	15,726	35,849
England	59.4	211,627	40.6	144,453	356,080

Source ODPM

- 4.3 On average, London's stock of factory space is older than in its neighbouring regions and England as a whole. At 2000 only 20.4% of London's factory space had been built since 1971, compared with 41.0% in the South East, 43.7% in the East and 34.5% nationally.
- 4.4 The same is true of London's warehouse space. At 2000 only 44.0% had been built since 1971, compared with 62.6% for the South East, 58.5% for the East and 51.6% nationally.

Table 4.2 Built Factory Floorspace by Age, 2000

	London		South East		Eastern		England	
	%	000 sq m	%	000 sq m	%	000 sq m	%	000 sq m
total pre 1939	40.4	5,256	17.0	3,824	12.1	2,443	29.4	63,302
total 1940-70	39.2	5,099	42.0	9,438	44.2	8,963	36.1	77,725
total 1971-00	20.4	2,647	41.0	9,206	43.7	8,863	34.5	74,368
total number	100.0	13,002	100.0	22,468	100.0	20,269	100.0	215,395

Source ODPM

Table 4.3 Built Warehouse Floorspace by Age, 2000

	London		South East		Eastern		England	
	%	000 sq m	%	000 sq m	%	000 sq m	%	000 sq m
total pre 1939	27.1	4,034	10.7	1,868	8.9	1,270	19.8	26,307
total 1940-70	28.9	4,301	26.7	4,684	32.6	4,639	28.5	37,878
total 1971-00	44.0	6,539	62.6	10,975	58.5	8,313	51.6	68,489
total number	100.0	14,874	100.0	17,527	100.0	14,222	100.0	132,674

Source ODPM

Unit Size

- 4.5 Small units make up a much higher proportion of London's factory space compared with the South East, East and England. Some 28.6% of London's factory floorspace is in units below 500 sq m compared with 19.1% in the South East, 17.9% in the Eastern region and 14.9% across England. The relative significance of small factory units in London reflects the capital's business base, which is dominated by micro and small businesses. It is also likely to reflect the pressure on land in London, which limits the potential for large buildings.
- 4.6 London's built warehouse stock is more similar in terms of its size profile when compared with the South East, East and England. That said, London's large warehouses (10,000 sq m +) make up a lower proportion of London's total warehouse stock than they do in its neighbouring regions and nationally. This reflects a lack of large sites capable of accommodating large warehouses.

Table 4.4 Built Factory Floorspace by Size, 2003

<i>Sq m</i>	London		South East		Eastern		England	
	%	000 Sq m	%	000 Sq m	%	000 Sq m	%	000 Sq m
Below 500	28.6	3,314	19.1	4,396	17.9	3,605	14.9	31,562
500-1,999	24.4	2,827	21.9	5,042	20.5	4,132	18.6	39,451
2,000-4,999	13.1	1,515	15.2	3,503	15.0	3,016	14.9	31,466
5,000-9,999	8.3	965	10.6	2,439	12.4	2,490	12.3	26,106
10,000+	25.6	2,970	33.3	7,672	34.2	6,880	39.2	83,042
Total	100.0	11,591	100.1	23,053	100.0	20,123	99.9	211,627

Source ODPM

Table 4.5 Built Warehouse Floorspace by Size, 2003

<i>Sq m</i>	London		South East		Eastern		England	
	%	000 sq m	%	000 sq m	%	000 sq m	%	000 sq m
Below 500	16.3	2,601	16.2	2,998	16.5	2,587	15.4	22,206
500-1,999	29.1	4,659	29.7	5,511	27.4	4,311	26.4	38,157
2,000-4,999	21.6	3,449	22.0	4,074	21.3	3,349	20.0	28,882
5,000-9,999	14.6	2,340	12.4	2,290	13.0	2,047	13.0	18,828
10,000+	18.4	2,935	19.8	3,661	21.8	3,432	25.2	36,379
Total	100.0	15,985	100.1	18,534	100.0	15,726	100.0	144,453

Source ODPM

Spatial Distribution

- 4.7 Within London, the East sub-region has the largest industrial and warehousing stock, at around a third (32.6%) of the total, including some 36.5% of London's factory accommodation. The West is the next largest industrial and warehousing area with 28.5% of the total, followed by Central (14.5%) and the North (12.8%). The South has the lowest level of total industrial and warehousing floorspace (11.6%).

Table 4.6 Total Built Industrial/Warehousing Floorspace by Sub-Region, 2003

	Factories		Warehouses		All industrial and warehousing	
	% of London	000 sq m	% of London	000 sq m	% of London	000 sq m
Central	14.2	1,645	14.8	2,360	14.5	4,005
East	36.5	4,230	29.8	4,766	32.6	8,996
West	23.7	2,744	32.0	5,111	28.5	7,855
North	13.1	1,515	12.5	2,004	12.8	3,519
South	12.6	1,457	10.9	1,744	11.6	3,201
London	100.1	11,591	100.0	15,985	100.0	27,576

Source ODPM

Floorspace Change

- 4.8 Between 2000 and 2003, London's industrial and warehousing floorspace declined by 300,000 sq m, or -1.1%. London's factory floorspace fell by -10.9% but the amount of warehouse floorspace increased by 7.5%. All sub-regions experienced a decline in factory floorspace but an increase in warehousing, with the exception of Central London which also experienced a decline in warehousing.

Table 4.7 Change in Built Industrial/Warehousing Floorspace, 2000-2003

	2000		2003		Change 2000-2003	
	Factories	Warehouses	Factories	Warehouses	Factories	Warehouses
	000 sq m	000 sq m	000 sq m	000 sq m	%	%
Central	1,947	2,419	1,645	2,360	-15.5	-2.4
East	4,669	4,302	4,230	4,766	-9.4	10.8
West	2,982	4,734	2,744	5,111	-8.0	8.0
North	1,786	1,777	1,515	2,004	-15.2	12.8
South	1,617	1,640	1,457	1,744	-9.9	6.3
London	13,002	14,874	11,591	15,985	-10.9	7.5
South East	22,468	17,527	23,053	18,534	2.6	5.7
East	20,269	14,222	20,123	15,726	-0.7	10.6
England	215,395	132,675	211,627	144,453	-1.7	8.9

Source ODPM

Market Balance: Floorspace

- 4.9 The demand for industrial and warehousing floorspace has been improving since the second-half of 2003 following two years of more subdued demand which coincided with below trend economic growth nationally, a recession in manufacturing and weak business confidence. This upturn in floorspace demand is highlighted by an increase in the number of enquiries for industrial and warehousing property received by King Sturge's London office since Quarter 2 2003, see Table 4.8.

Table 4.8 Industrial/Warehousing Enquiries received by King Sturge's London Office, 2003

	Floorspace (sq m)	No. of enquiries
Q1 2003	33,916	29
Q2 2003	19,742	11
Q3 2003	40,270	30
Q4 2003	48,452	31
Total	142,380	101

Source King Sturge

- 4.10 Within London, most demand is for warehousing rather than production, although manufacturers servicing time critical markets are an important source of demand. These include fresh food producers and printers.
- 4.11 In general, demand is largely driven by small to medium-sized requirements, reflecting the business base, which, as highlighted in chapter 3, is dominated by small firms. Among the UK regions, London has the highest business formation rate whether measured in terms of new VAT registrations as a percentage of the existing business stock or expressed per 10,000 of adult population.¹³ New business formation and expansion are key drivers of demand in this market, whilst the reduction and closure of businesses contribute to the churning of floorspace. Small and medium-size businesses create demand for a range of

¹³ London Development Agency /Business Link, The London Annual Business Survey 2003

different types of industrial and warehousing accommodation, including managed workspace, light industrial space and studio space.

- 4.12 The demand for freehold properties has been strong for units up to between 2,000 sq m and 3,000 sq m. This is partly a reflection of low interest rates and also the fact that a sizeable proportion of London's manufacturing businesses is family-owned.
- 4.13 Various measures show the balance between the demand for, and supply of, industrial and warehousing floorspace, including:
- § The absolute level of available floorspace and how the level of available floorspace compares with the total industrial and warehousing stock (i.e. the vacancy rate).
 - § How long it takes to lease or sell a vacant property to an occupier, i.e. the void period.
 - § Rental levels and rental change.

Vacancy Rates

- 4.14 At December 2003 there was around 2.274 million sq m of available industrial and warehousing floorspace across London according to vacancy data provided to the GLA by the London Boroughs, which exclude premises below 500 sq m. This equates to an overall vacancy rate of 8.2%. This compares with an estimated vacancy rate of 6.7% in 1998, when there was some 1.849 million sq m of available floorspace across London.¹⁴

Table 4.9 Industrial/Warehousing Property Vacancy, December 2003

	Vacant Floorspace sq m	Stock sq m	Vacancy Rate %
Central	170,426	4,005,000	4.3
East	1,043,860	8,996,000	11.6
West	485,123	7,855,000	6.2
North	286,757	3,519,000	8.2
South	287,642	3,201,000	9.0
London	2,273,808	27,576,000	8.2

Source London Boroughs, ODPM

Void Periods

- 4.15 Across London, void periods vary by type and age of industrial and warehousing property and by location. Table 4.10 shows data from Investment Property Databank (IPD) on average void length, in terms of the number of days spent vacant by properties within the IPD portfolio.
- § For properties vacant as at 31 December 2003, the average void length across London was 60 weeks compared with 61 weeks for the UK.

¹⁴ Available floorspace sourced from London Boroughs. The vacancy rate for 1998 has been calculated from an estimate of the built stock in 1998 since no official figures exist for this year. Between 2000 and 2003 Greater London's industrial stock declined by 100,000 sq m per annum. Using this same rate of decline, the stock figure for 1998 was estimated to be 200,000 sq m more than in 2000, ie 28.076 million sq m.

§ For properties let during 2003, the average void length was 52 weeks in London compared with 57 weeks across the UK.

4.16 On both measures the average void length for industrial and warehousing property was significantly less than the corresponding void period for offices.

Table 4.10 Average Void Length of Industrial/Warehousing Property compared with Offices

	Properties vacant as at 31/12/2003 Average void length (days)	Properties let during 2003 Average void length (days)
Industrial / warehousing		
London	421	362
UK	428	401
Office		
London	565	495
UK	541	507

Source Investment Property Databank (IPD)

4.17 The figures on industrial/warehousing void periods support King Sturge's 'Agency view', based on market experience, which is that currently a 'typical' void period for a standard new development in London is around 12 months, with void periods for second-hand stock varying more significantly depending on location and the condition of the premises. In addition, in the current market, developers will typically grant a three-month rent-free period for leases up to five years, and a six-month rent-free for leases up to 10 years.¹⁵

4.18 On average, void periods for speculatively developed large warehouses are currently longer than this. This is not so much an indicator of lack of demand but rather reflects the fact that most demand for this type of facility is satisfied by companies entering into a Design and Build contract with a developer or acquiring land themselves. Moreover, void periods may not be a particularly good indicator of the pressure of demand in this market because of the protracted decision time involved in acquiring additional premises.

Rental Levels and Rental Change

4.19 London includes some of the highest industrial/warehousing rent locations in the UK, indeed in the world. As Table 4.11 shows, prime industrial/warehousing rents in London are in some cases twice those in the major regional cities of Birmingham, Manchester and Leeds. For example, rents are around £11 per sq ft in Wandsworth compared with £5.50 per sq ft in Birmingham. Even locations in London that have relatively low rents from a London perspective have higher rents than in any of the major regional centres.

¹⁵ The current typical void period of 12 months is longer than five years ago, when the vacancy rate was lower. Five years ago an industrial void period was more typically between six to nine months, with a rent-free period of three to six months. In King Sturge's judgement the typical void period is likely to remain broadly stable in the short-term in line with an improving economic outlook.

Table 4.11 Prime Industrial/Warehousing Rents, March 2004

	£ per sq ft
Central (Wandsworth)	11.00
East (Dagenham)	7.50 – 7.75
West (Park Royal)	10.00
North (Enfield)	7.50
South (Croydon)	8.50
Birmingham	5.50
Manchester	5.25
Leeds	5.00
Bristol	6.75

Source King Sturge

- 4.20 The relative pressure of demand on industrial/warehousing floorspace in London is also highlighted by data showing rental change. As Table 4.12 shows, over both the past five and 10 years, industrial/warehousing rents in London have increased at a faster annual average rate than in the South East, East of England and UK as a whole.

Table 4.12 Industrial/Warehousing Rental Value Growth, % pa

	London	South East	East of England	UK
1999	7.5	6.2	4.9	4.4
2000	8.1	5.5	4.5	4.6
2001	3.8	3.3	4.1	3.2
2002	2.2	1.0	2.6	2.1
2003	1.0	-0.2	0.4	0.4
5 year average	4.5	3.1	3.3	2.9
10 year average	3.5	2.5	1.7	2.1

Source IPD

Market Balance: Land

- 4.21 At present, the market for industrial and warehousing land is characterised by strong demand from both developers and occupiers looking for development opportunities. In general, developers are able to identify sites more readily than occupiers and, therefore, many of the best sites are tied up with developers. This may constrain the availability of land to occupiers since, in some instances, occupiers wish to purchase sites to develop their own facilities rather than lease or buy a building from a developer. Most developer demand is for sites with B8 potential which reflects where occupier demand is strongest.

Gross Demand

- 4.22 We have estimated the gross level of industrial/warehousing land take-up from data on the industrial/warehousing floorspace completions. According to the London Development Monitoring System (LDMS), which monitors development completions involving schemes of 1,000 sq m and over, slightly over 2 million sq m (2,071,717 sq m) of industrial and warehouse development (B2 and B8) was completed in Greater London between 1992 and 2001, the most recent year for which a full set of data exists. This period does not

correspond with a full peak-to-peak cycle but reliable statistics back to 1988 are not available to produce such a match.

Table 4.13 Industrial/Warehousing Completions by Sub-Region (B2 & B8), sq m

	Central	East	West	North	South	London
1992	17,575	30,934	92,473	12,745	18,478	172,205
1993	0	83,251	72,597	7,618	8,492	171,958
1994	15,207	72,084	29,791	17,967	38,665	173,714
1995	10,866	74,969	71,395	28,437	26,467	212,134
1996	19,674	22,387	115,915	8,096	18,252	184,324
1997	25,035	55,552	73,436	26,570	15,396	195,989
1998	26,946	24,416	104,796	17,058	44,991	218,207
1999	20,845	41,087	129,492	51,447	39,582	282,453
2000	8,077	50,590	102,807	17,995	43,049	222,518
2001	24,975	86,905	85,268	19,322	21,745	238,215
Total	169,200	542,175	877,970	207,255	275,117	2,071,717
Annual average	16,920	54,218	87,797	20,726	27,512	207,172

Source London Development Monitoring System (LDMS)

- 4.23 Sub-regionally, the West accounted for 42.3% of the total industrial and warehousing floorspace developed over the 10 years, highlighting this area's attractiveness to developers and occupiers.
- 4.24 The data on industrial and warehousing completions can be converted to gross land take-up by using an assumption about the overall development density. If this density is assumed to be 45% then an annual average level of completions across London of 207,172 sq m generates an average gross level of industrial and warehousing land take-up of 46 hectares per annum, see Table 4.14¹⁶. An alternative data source, the ODPM's Land Use Change Statistics, for the longer period 1985-2002 puts this figure at 69 hectares per annum, see Appendix 1.

Table 4.14 Industrial/Warehousing Land Take-Up (B2 & B8), Hectares

	Central	East	West	North	South	London
1992	3.9	6.9	20.5	2.8	4.1	38.3
1993	0.0	18.5	16.1	1.7	1.9	38.2
1994	3.4	16.0	6.6	4.0	8.6	38.6
1995	2.4	16.7	15.9	6.3	5.9	47.1
1996	4.4	5.0	25.8	1.8	4.1	41.0
1997	5.6	12.3	16.3	5.9	3.4	43.6
1998	6.0	5.4	23.3	3.8	10.0	48.5
1999	4.6	9.1	28.8	11.4	8.8	62.8
2000	1.8	11.2	22.8	4.0	9.6	49.4
2001	5.6	19.3	18.9	4.3	4.8	52.9
Total	37.6	120.5	195.1	46.1	61.1	460.4
Annual average	3.8	12.0	19.5	4.6	6.1	46.0

Source LDMS, King Sturge

¹⁶ Industrial development densities clearly vary quite significantly. For example, large modern distribution developments are often developed at a density of around 35% to accommodate large yard areas, but smaller standard industrial buildings may be developed at higher densities of say 45% to 50%. In London the shortage of land and high land values often lead to higher than average densities. In addition, older buildings generally are likely to be more densely developed than new buildings. Having regard to these considerations, we believe an average industrial density of 45% is reasonable for Greater London as a whole, but this figure may be less robust at a local level.

Supply

- 4.25 At the end of 2003 there was some 853.7 hectares of vacant industrial/warehousing land across London according to Borough estimates provided to the GLA. Close to three-quarters (72.4%) of this total was in the East sub-region.
- 4.26 Assuming an average floorspace density of 45%, this indicates that the total built upon industrial and warehousing land is around 6,128 hectares and that, therefore, the overall stock of land (both built-upon and vacant) is 6,981.7 hectares. Therefore, across London the level of vacant industrial/warehousing land equates to a vacancy rate of 12.2%.

Table 4.15 Vacant Industrial/Warehousing Land, December 2003

	Built on industrial and warehousing land, ha	Vacant industrial and warehousing land, ha	Total industrial and warehousing land, ha	Industrial and warehousing land vacancy rate (%)
Central	890.0	38.6	928.6	4.2
East	1,998.9	618.1	2,617.0	23.6
West	1,745.8	103.7	1,849.5	5.6
North	782.0	62.6	844.6	7.4
South	711.3	30.7	742.0	4.1
London	6,128.0	853.7	6,981.7	12.2

Source London Boroughs, ODPM, King Sturge

- 4.27 By taking the 10-year annual average rate of industrial/warehousing land take-up shown in Table 4.14 above, we can calculate the approximate years supply worth of available industrial/warehousing land across London and sub-regionally. These are shown in Table 4.16 below. Across London, the level of vacant industrial/warehousing land (853.7 hectares) represents some 19 years of available supply against a 10-year average annual level of take-up of 46 hectares per annum.

Table 4.16 Industrial/Warehousing Land Take-Up and Supply at December 2003

	10 year annual average take-up (ha)	Vacant land at December 2003 (ha)	Years supply at December 2003
Central	3.8	38.6	10
East	12.0	618.1	52
West	19.5	103.7	5
North	4.6	62.6	14
South	6.1	30.7	5
London	46.0	853.7	19

Source LDMS, London Boroughs, King Sturge

- 4.28 On this calculation, the West and South sub-regions have only five years worth of industrial/warehousing land supply with the Central and North sub-regions having 10 and 14 years respectively. The East sub-region has 52 years worth of available land supply.
- 4.29 A second indicator of the demand-supply balance is the value of land for industrial/warehousing use. Table 4.17 shows King Sturge estimates of these land values for selected locations in London's sub-regions. Values are highest around Heathrow Airport, where values as high as £2 million per acre have been paid on the south side of the Airport in locations with good access to the cargo terminal.

Table 4.17 Prime Industrial/Warehouse Land Values, March 2004

	£ per acre
Central (Wandsworth)	
East (Dagenham)	850,000 – 900,000
West (Park Royal)	1,000,000 – 1,250,000
West (Hounslow -Heathrow)	2,000,000
North (Enfield)	850,000 – 900,000
South (Croydon)	750,000 – 800,000
Birmingham	350,000 – 400,000
Manchester	150,000 – 250,000
Leeds	200,000
Bristol	200,000

Source King Sturge

Summary

- 4.30 London has some 27.6 million sq m of industrial/warehousing floorspace, a relatively high proportion of which (58%) is warehousing. In general:
- § London's stock of factory and warehouse space is relatively old compared with its neighbouring regions and England.
 - § Small units account for a relatively high share of total factory floorspace.
 - § Large warehouses account for a relatively small share of total warehousing.
- 4.31 The East accounts for around a third of all London's built industrial/warehousing floorspace. Thereafter, the ranking is West, Central, North and South.
- 4.32 Between 2000 and 2003 London's industrial/warehousing stock declined by -1.1%, as a decline in factory floorspace offset a general growth in warehousing.
- 4.33 Indicators generally suggest a relatively tight market for industrial/warehousing *floorspace*, although, as we discuss subsequently, this clearly varies between sub-regions and Boroughs.
- § The overall vacancy rate is 8.2%, which is around the level we believe is an efficient 'frictional' rate¹⁷.
 - § Prime industrial/warehousing rents are comparatively high.
 - § Rental growth has been comparatively strong. Over the past five and ten year's industrial/warehousing rents in London have increased at a faster rate than in the South East, East of England and UK.

¹⁷ An efficient frictional vacancy rate is similar in concept to the natural unemployment rate or Non-Accelerating Inflation Rate of Unemployment (NAIRU). With an efficient frictional vacancy rate, where the market is in equilibrium, we might expect real rental value growth to be stable at around zero. In 2002 real (inflation-adjusted) industrial rental values in Greater London fell by -0.7% and by -1.8% in 2003. These figures suggest that the vacancy rate is close to an efficient rate, but slightly on the high side. According to Investment Property Databank the real decline in rents of -0.7% in 2002 was the closest to zero the real annual rate of growth has been over the 23 years for which it has record.

- 4.34 Indicators suggest a relatively tight market for industrial/warehousing *land*, with the exception of the East sub-region.
- § The overall vacancy rate (excluding potential land) is 12.2% with all sub-regions below 8% other than the East, where around 24% of its total stock of land (excluding potential land) is vacant.
 - § Industrial/warehousing and values are high, especially in the West around Heathrow.
- 4.35 Although current data do not exist to prove this, a significant proportion of the vacant supply of land across London is likely to be constrained, reducing the effective supply of developable land in the short to medium-term. Outside the Strategic Employment Locations, industrial/warehousing land is also generally subject to intense pressure from high value uses, particularly housing or mixed use proposals.

The Central Sub-Region

Floorspace Stock

- 4.36 The Central Sub-region has a total industrial/warehousing stock of around 4 million sq m, 59% of which is warehousing. Southwark has the highest level of stock (28.1% of the sub-regional total), followed by Wandsworth (17.5%).

Table 4.18 Total Built Industrial/Warehousing Floorspace in Central Sub-Region, 2003

	Factories		Warehouses		All industrial/warehousing	
	% of sub-region	000 sq m	% of sub-region	000 sq m	% of sub-region	000 sq m
Islington	19.8	325	13.8	325	16.2	650
Camden	12.1	199	10.6	249	11.2	448
Westminster	2.6	42	8.7	205	6.2	247
Kensington & Chelsea	3.8	63	4.6	109	4.3	172
Wandsworth	16.2	266	18.5	436	17.5	702
Lambeth	18.5	304	15.1	357	16.5	661
Southwark	27.1	446	28.8	679	28.1	1,125
Central	100.0	1,645	100.0	2,360	100.0	4,005

Source ODPM

- 4.37 Between 2000 and 2003 the Central sub-region lost some 360,000 sq m of industrial/warehousing floorspace, a decline of -8.2%, a larger loss than across London overall (-1.1%). The Central Sub-region experienced a loss of both factory and warehouse floorspace, whereas across London the stock of warehouse floorspace increased. Surprisingly, Kensington & Chelsea recorded the largest net increase in industrial/warehousing floorspace over this period.

Table 4.19 Change in Built Industrial/Warehousing Floorspace in Central Sub-Region, 2000-2003

	2000 (000 sq m)		2003 (000 sq m)		2000-2003 (% change)	
	Factories	Warehouses	Factories	Warehouses	Factories	Warehouses
Islington	422	372	325	325	-22.9	-12.6
Camden	228	287	199	249	-12.5	-13.5
Westminster	68	239	42	205	-39.3	-14.3
Kensington & Chelsea	66	98	63	109	-4.0	11.9
Wandsworth	303	423	266	436	-12.0	3.2
Lambeth	360	309	304	357	-15.7	15.6
Southwark	500	691	446	679	-10.8	-1.7
Central	1,947	2,419	1,645	2,360	-15.5	-2.4

Source ODPM

Market Balance: Floorspace

- 4.38 The Central sub-region has an overall vacancy rate of 4.3%, well below the London average (8.2%). The vacancy rate is particularly low in Wandsworth at just 1.8%, and is lower still in Kensington & Chelsea (1.5%), although this Borough has very little industrial/warehousing stock.

Table 4.20 Industrial/Warehousing Property Vacancy in Central Sub-Region, December 2003

	Vacant Floorspace	Total Stock	Vacancy Rate
	sq m	sq m	%
Islington	47,309	650,000	7.3
Camden	25,639	448,000	5.7
Westminster	29,778	247,000	12.1
Kensington & Chelsea	2,660	172,000	1.5
Wandsworth	12,473	702,000	1.8
Lambeth	17,281	661,000	2.6
Southwark	35,285	1,125,000	3.1
Central	170,426	4,005,000	4.3

Source London Boroughs, ODPM

- 4.39 Prime industrial/warehousing rents in the Central sub-region range from around £9.75 per sq ft in Lambeth and Southwark up to £12.00 per sq ft in inner Camden and Islington. Due to the lack of new industrial/warehousing stock in Westminster and Kensington & Chelsea, there has been no recent evidence of prime rents in these Boroughs. Indeed, there has been limited new industrial/warehousing development throughout the Central London sub-region in recent years and where development has taken place it has generally been in small units.
- 4.40 The Linford Street Business Estate in Battersea is one of the few examples of recent speculative industrial/warehousing development in Central London. This scheme, which is being constructed by Spacia beneath the Eurostar viaduct, will provide 17 units suitable for light industrial and storage uses from 97 sq m to 792 sq m, at rents of between £9.75 and £12.00 per sq ft.

Table 4.21 Prime Industrial/Warehousing Rents in Central Sub-Region, March 2004

	£ per sq ft
Islington	10.00-12.00
Camden	10.00-12.00
Westminster	-
Kensington & Chelsea	-
Wandsworth	11.00
Lambeth	9.75
Southwark	9.75

Source King Sturge

- 4.41 Rental value growth provides a further indicator of industrial/warehousing demand pressure, although IPD data do not provide full coverage at Borough level. Industrial/warehousing rental value growth in Islington, Wandsworth and Southwark exceeded the national average over the most recent past three, five and 10-years for which Borough data are available. These Central London locations have also performed well against the London market as a whole, with Southwark experiencing the strongest growth, reflecting strong levels of demand.

Table 4.22 Industrial/Warehousing Rental Value Growth in Central Sub-Region, % pa

	3 years to 2002	5 years to 2002	10 years to 2002
Islington	5.8	5.6	2.8
Camden	-	-	-
Westminster	-	-	-
Kensington & Chelsea	-	-	-
Wandsworth	4.9	6.5	4.4
Lambeth	-	-	-
Southwark	7.2	8.8	5.5
London	4.5	6.0	2.2
UK	2.9	3.6	1.0

Source IPD

Market Balance: Land

- 4.42 The gross take-up of industrial/warehousing land in the Central sub-region averaged just 3.76 hectares per annum over the 10 years 1992-2001. However, this is related to a lack of supply rather than lack of demand from occupiers or developers. Whilst take-up has been low in all Central London Boroughs, it was highest in Wandsworth and Southwark, where stock is also greatest.

Table 4.23 Industrial/Warehousing Land Take-up in Central Sub-Region, 1992-2001

	10-year annual average take-up (ha)
Islington	0.722
Camden	0.715
Westminster	0.346
Kensington & Chelsea	0.190
Wandsworth	0.866
Lambeth	0.098
Southwark	0.824
Central	3.760

Source LDMS, King Sturge

- 4.43 At the end of 2003 the Central sub-region had just 38.6 hectares of vacant industrial/warehousing land. This equates to a vacancy rate of 4.2%, well below the overall vacancy rate for London, which stands at 12.2%. Westminster has no vacant industrial/warehousing land at all, while Camden has the highest vacancy rate (10.2%).

Table 4.24 Vacant Industrial/Warehousing Land in Central Sub-Region, December 2003

	Built on industrial/warehousing land, ha	Vacant industrial/warehousing land, ha	Total industrial/warehousing land, ha	Industrial/warehousing land vacancy rate (%)
Islington	144.4	9.0	153.4	5.9
Camden	99.5	11.3	110.8	10.2
Westminster	54.7	0.0	54.7	0.0
Kensington & Chelsea	38.4	3.0	41.4	7.2
Wandsworth	156.1	3.7	159.8	2.3
Lambeth	146.9	0.9	147.8	0.6
Southwark	250.0	10.7	260.7	4.1
Central	890.0	38.6	928.6	4.2

Source ODPM, London Boroughs, King Sturge

- 4.44 Matching vacant supply with gross demand shows 10 years worth of supply across the sub-region as a whole. Wandsworth has just four years supply.

Table 4.25 Industrial/Warehousing Land Take-up and Supply in Central Sub-Region, December 2003

	10-year annual average take-up (ha)	Vacant land at December 2003 (ha)	Years supply at December 2003
Islington	0.722	9.0	12
Camden	0.715	11.3	16
Westminster	0.346	0.0	0
Kensington & Chelsea	0.190	3.0	16
Wandsworth	0.866	3.7	4
Lambeth	0.098	0.9	9
Southwark	0.824	10.7	13
Central	3.760	38.6	10

Source LDMS, London Boroughs

- 4.45 Industrial/warehousing land values are high across all Central London Boroughs, reflecting the tight supply of available land. Values are generally over £1 million per acre across the sub-region.

Table 4.26 Prime Industrial/Warehousing Land Values in Central Sub-Region, March 2004

	£ per acre
Islington	1,000,000-1,250,000
Camden	1,000,000-1,250,000
Westminster	-
Kensington & Chelsea	-
Wandsworth	1,250,000-1,350,000
Lambeth	1,000,000
Southwark	1,000,000

Source King Sturge

Summary

- 4.46 Central London Sub-Region has some 4 million sq m of industrial/warehousing floorspace, 14.5% of London's total. Southwark and Wandsworth have the largest industrial/warehousing stocks.
- 4.47 Between 2000 and 2003 the sub-region's stock declined by -8.2% compared with -1.1% for London.
- 4.48 The Central London sub-region's industrial/warehousing market is particularly attractive to companies servicing the West End and City retail and financial and business services industries. As a result, demand is high from fresh food distributors, printers and the express delivery operators.
- 4.49 Indicators generally suggest a relatively tight market for industrial/warehousing floorspace. In particular:
- § The overall vacancy rate is just 4.3%, and below 2% in Wandsworth and Kensington and Chelsea.
 - § Prime industrial/warehousing rents are comparatively high, ranging from around £9.75 per sq ft in Lambeth/Southwark to up to £12 per sq ft in Islington/Camden.
 - § Rental growth has been comparatively strong, particularly in Southwark which saw the highest Borough rate of growth over the past three, five and 10 years.
 - § Indicators suggest a tight market for industrial/warehousing land.
 - § The overall vacancy rate (excluding potential land) is just 4.2% with Lambeth below 1% and Wandsworth just over 2%.
 - § Industrial/warehousing land values are high at £1 million per acre and over in all Boroughs.
- 4.50 Outside the Strategic Employment Locations, industrial/warehousing land is generally subject to intense pressure from high value uses, particular housing or mixed use proposals.

The East Sub-Region

Floorspace Stock

- 4.51 The East sub-region has a total industrial/warehousing stock of close to 9 million sq m, making it the largest industrial/warehousing sub-region in London. The sub-region's stock is relatively evenly balanced between factories (47%) and warehouses (53%) see Table 4.27. Barking and Dagenham has the largest amount of both factory and warehouse floorspace in the sub-region, accounting for some 19% of the total.

Table 4.27 Total Built Industrial/Warehousing Floorspace in East Sub-Region, 2003

	Factories		Warehouses		All industrial/warehousing	
	% of sub-region	000 sq m	% of sub-region	000 sq m	% of sub-region	000 sq m
City of London	0.0	2	0.5	25	0.3	27
Tower Hamlets	13.1	555	15.6	744	14.4	1,299
Hackney	12.6	532	9.1	433	10.7	965
Newham	12.6	534	15.7	746	14.2	1,280
Redbridge	5.1	214	3.7	177	4.3	391
Barking & Dagenham	22.9	969	15.1	720	18.8	1,689
Havering	7.3	309	9.2	439	8.3	748
Bexley	13.7	579	12.4	593	13.0	1,172
Greenwich	7.4	311	11.4	545	9.5	856
Lewisham	5.3	225	7.2	344	6.3	569
East	100.0	4,230	100.0	4,766	100.0	8,996

Source ODPM

- 4.52 Between 2000 and 2003 the sub-region recorded a very modest increase in industrial/warehousing floorspace (+0.3%) compared with a decline across London of – 1.1%. This resulted from a gain in warehouse sock that offset a decline in factory space. Inner eastern markets saw the biggest loss of industrial/warehousing floorspace overall, with Tower Hamlets and Hackney both losing relatively significant amounts of space. Conversely, industrial/warehousing floorspace in Bexley increased by 55.8%, all due to warehousing.

Table 4.28 Change in Built Industrial/Warehousing Floorspace in East Sub-Region, 2000-2003

	2000 (000 sq m)		2003 (000 sq m)		2000-2003 (% change)	
	Factories	Warehouses	Factories	Warehouses	Factories	Warehouses
City of London	3	23	2	25	-33.1	7.9
Tower Hamlets	724	678	555	744	-23.4	9.7
Hackney	607	457	532	433	-12.3	-5.3
Newham	526	729	534	746	1.4	2.3
Redbridge	223	173	214	177	-3.9	2.6
Barking & Dagenham	1,096	637	969	720	-11.6	13.1
Havering	319	429	309	439	-3.1	2.4
Bexley	579	380	579	593	0.0	55.8
Greenwich	343	476	311	545	-9.5	14.6
Lewisham	249	320	225	344	-9.7	7.6
East	4,669	4,302	4,230	4,766	-9.4	10.8

Source ODPM

Market Balance: Floorspace

- 4.53 In general, there is currently strong demand for good quality industrial and warehousing space in the Eastern sub-region. As with other sub-regions most of this demand is for leasehold space but freehold demand is particularly strong for units up to 2,000 sq m to 3,000 sq m, partly due to low interest rates.
- 4.54 The East has attracted demand from a number of large warehouse operators over recent years with major developments on both sides of the Thames notably at Belvedere (Isis Reach development) and Crayford (Optima Park) and at Dagenham Dock (Thames Gateway).
- 4.55 The A13 is an important industrial and warehouse corridor in the East. In the long-term the Thames Gateway bridge will be important by linking Barking with Thamesmead.
- 4.56 The East sub-region has an overall vacancy rate of 11.6%, compared with the London average of 8.2%. The vacancy rate is particularly high in Bexley and Havering, where around a fifth of the stock is vacant.

Table 4.29 Industrial/Warehousing Property Vacancy in East Sub-Region, December 2003

	Vacant floorspace	Total stock	Vacancy rate
	sq m	sq m	%
City of London	0	27,000	0.0
Tower Hamlets	102,552	1,299,000	7.9
Hackney	50,878	965,000	5.3
Newham	189,717	1,280,000	14.8
Redbridge	13,460	391,000	3.4
Barking & Dagenham	105,883	1,689,000	6.3
Havering	156,359	748,000	20.9
Bexley	262,868	1,172,000	22.4
Greenwich	74,250	856,000	8.7
Lewisham	87,934	569,000	15.5
East	1,043,860	8,996,000	11.6

Source London Boroughs, ODPM

- 4.57 Rents for prime industrial/warehousing space in East London vary from £7.50 per sq ft in Barking & Dagenham and Havering to £8.50 per sq ft in Greenwich and Lewisham. These estimates are supported by recent take-up at new developments such as ProLogis Park Bromley-by-Bow (Tower Hamlets) the Electra scheme in Canning Town (Newham) and at the is Centre in Barking.

Table 4.30 Prime Industrial/Warehousing Rents in East London, March 2004

	£ per sq ft
City of London	-
Tower Hamlets	8.00
Hackney	8.00
Newham	8.00 – 8.25
Redbridge	8.00
Barking & Dagenham	7.50 – 7.75
Havering	7.50 – 7.75
Bexley	7.50
Greenwich	8.50
Lewisham	8.50

Source King Sturge

- 4.58 Industrial/warehousing rental value growth has varied considerably across East London. Newham, Redbridge and Lewisham have experienced relatively strong rental growth, above the average for London and the UK, over the most recent past three and five years for which data are available. Rental growth has been lower in Havering, reflecting weaker demand pressures.

Table 4.31 Industrial/Warehousing Rental Value Growth in East London, % pa

	3 years to 2002	5 years to 2002	10 years to 2002
City of London	-	-	-
Tower Hamlets	-	-	-
Hackney	-	-	-
Newham	5.3	6.8	1.2
Redbridge	6.3	6.9	1.1
Barking & Dagenham	-	-	-
Havering	2.2	3.3	-0.3
Bexley	-	-	-
Greenwich	4.2	6.3	3.9
Lewisham	4.8	6.9	n/a
London	4.5	6.0	2.2
UK	2.9	3.6	1.0

Source IPD

Market Balance: Land

- 4.59 The demand for industrial and warehouse land in East London is currently very strong both from both developers and occupiers. The demand from developers is mainly for sites with B8 warehouse potential.
- 4.60 On average, gross take-up in the East London sub-region equated to around 12 ha per annum between 1992-2001. The level of take-up varied quite considerably between the Boroughs in the East London sub-region. On average, Redbridge, Hackney, Lewisham and the City of London all saw relatively modest take-up, while take-up was high in Barking & Dagenham and Redbridge, see Table 4.32.

Table 4.32 Industrial/Warehousing Land Take-Up in East London, 1992-2001

	10- year annual average take-up (ha)
City of London	0.574
Tower Hamlets	1.315
Hackney	0.352
Newham	1.427
Redbridge	0.310
Barking & Dagenham	2.284
Havering	1.417
Bexley	2.396
Greenwich	1.420
Lewisham	0.552
East	12.048

Source LDMS, King Sturge

- 4.61 With around 618 ha of vacant industrial/warehousing land, the East London sub-region accounts for around 72% of all vacant industrial/warehousing land in London. Newham and Tower Hamlets are the two largest contributors to this supply, with some 203 ha and 169 ha of vacant land respectively. On the contrary, the City of London has no vacant land while Redbridge has a very limited supply of vacant land, with a vacancy rate of just 0.7%.

- 4.62 Although there are no data to prove this, much of the vacant land is likely to be constrained particularly in the short-term. In addition, scattered pockets of industrial/warehousing and warehouse land are vulnerable to high value uses, particularly housing and mixed use proposals.

Table 4.33 Vacant Industrial/Warehousing Land in East Sub-Region, December 2003

	Built on industrial/warehousing land, ha	Vacant industrial/warehousing land, ha	Total industrial/warehousing land, ha	Industrial/warehousing land vacancy rate (%)
City of London	6.0	0.0	6.0	0.0
Tower Hamlets	288.5	168.8	457.3	36.9
Hackney	214.4	21.5	235.9	9.1
Newham	284.4	202.9	487.3	41.6
Redbridge	87.0	0.6	87.6	0.7
Barking & Dagenham	375.3	44.6	419.9	10.6
Havering	166.4	54.6	221.0	24.7
Bexley	260.3	69.0	329.3	21.0
Greenwich	190.2	39.1	229.3	17.1
Lewisham	126.4	16.9	143.3	11.8
East	1998.9	618.1	2,617.0	23.6

Source ODPM, London Boroughs, King Sturge

- 4.63 Matching vacant supply with gross demand shows that the East has some 51 years of supply. Excluding the City, the anomaly is Redbridge, which has just two years supply.

Table 4.34 Industrial/Warehousing Land Take-up and Supply in East London, December 2003

	10-year annual average take-up (ha)	Vacant land at December 2003 (ha)	Years supply at December 2003
City of London	0.574	0.0	0
Tower Hamlets	1.315	168.8	128
Hackney	0.352	21.5	61
Newham	1.427	202.9	142
Redbridge	0.310	0.6	2
Barking & Dagenham	2.284	44.6	20
Havering	1.417	54.6	39
Bexley	2.396	69.0	29
Greenwich	1.420	39.1	28
Lewisham	0.552	16.9	31
East	12.048	618.1	51

Source LDMS, London Boroughs, King Sturge

- 4.64 Prime industrial/warehousing land values in the sub-region range from around £600,000 in Bexley up to £1 million per acre in Tower Hamlets, Hackney, Newham and Redbridge. Recent examples of land purchases in East London include Gazeley's purchase of 4.6 ha (11.3 acres) at the Innogy site Dagenham for £800,000 per acre and Ashtenne's purchase of the last 4.7 ha (11.8 acre) site at Optima Park (Crayford, Bexley) for £6.93 million, which equates to around £587,000 per acre.

Table 4.35 Prime Industrial/Warehousing Land Values in East London, March 2004

	£ per acre
City of London	-
Tower Hamlets	1,000,000
Hackney	1,000,000
Newham	1,000,000
Redbridge	1,000,000
Barking & Dagenham	850,000 – 900,000
Havering	850,000 – 900,000
Bexley	600,000 – 650,000
Greenwich	800,000 – 850,000
Lewisham	700,000 - 750,000

Source King Sturge

Summary

- 4.65 With some 9 million sq m of floorspace the East is London's largest industrial/warehousing sub-region. Barking & Dagenham account for close to a fifth of the region's total stock.
- 4.66 Between 2000 and 2003 the sub-region's stock slightly increased (+0.3%) compared with a decline of -1.1% for London.
- 4.67 The Eastern industrial/warehousing market is particularly attractive to companies servicing the City of London and, to a lesser extent, Docklands. In addition, for companies servicing these markets and using air freight (e.g. express operators), access to the M11 makes east London attractive since this provides a fast route to Stansted Airport. East London also attracts demand from companies with large space requirements because of its relatively high availability of land. This is particularly so in outer east London Boroughs, such as Barking and Dagenham or Bexley, where land is generally more available, although certain inner east London locations (e.g. Bromley by Bow in Newham) have also seen some large-scale new warehouse development over recent years.
- 4.68 The A13 is an important industrial/warehousing corridor in the East. In the long-term the recently approved Thames Gateway bridge, which could open by 2012, will be important to the sub-region by linking Barking with Thamesmead.
- 4.69 Indicators point, in general, to relatively modest pressure of demand on floorspace compared with other sub-regions. In particular:
- § The overall vacancy rate is 11.6% compared with the London average of 8.2%. The vacancy rate is particularly high in Bexley and Havering, where around a fifth of the stock is vacant. However, Redbridge has a vacancy rate of just 3.4%.
 - § Prime industrial/warehousing rents are generally lower than other parts of London, notably in the West, Central and South.
 - § Rental growth has been mixed with relatively good growth in Newham, Redbridge and Lewisham and relatively weak growth in Havering.
- 4.70 Indicators suggest a general over-provision of industrial/warehousing land with an overall vacancy rate (excluding potential land) of around 23.6%. However, Redbridge stands out as an exception having a vacancy rate of just 0.7%.

- 4.71 Outside the Strategic Employment Locations, industrial/warehousing land is generally subject to intense pressure from high value uses, particular housing or mixed use proposals.

The West Sub-Region

Floorspace Stock

- 4.72 The West sub-region has a total built industrial/warehousing stock of 7.856 million sq m, the second largest after East London. Some 65.1% of built industrial/warehousing stock in West London is warehousing. Ealing has the largest stock within the sub-region with 28.5% of the total.

Table 4.36 Total Built Industrial/Warehousing Floorspace in West Sub-Region, 2003

	Factories		Warehouses		All industrial/warehousing	
	% of sub-region	000 sq m	% of sub-region	000 sq m	% of sub-region	000 sq m
Hounslow	16.7	458	19.9	1,015	18.8	1,473
Hammersmith & Fulham	9.2	253	5.5	282	6.8	535
Ealing	25.0	687	30.3	1,550	28.5	2,237
Brent	19.8	543	22.7	1,160	21.7	1,703
Harrow	8.1	222	3.1	158	4.8	380
Hillingdon	21.2	581	18.5	946	19.4	1,527
West	100.0	2,744	100.0	5,111	100.0	7,855

Source ODPM

- 4.73 Between 2000 and 2003 the sub-region recorded a small increase in its industrial/warehousing stock (+1.8%) as a growth in warehousing offset a decline in factory floorspace. This increase in industrial/warehousing floorspace contrasted with a decline across London of -1.1%. All West London Boroughs saw a decline in factory floorspace over this period, with Hillingdon seeing the largest decline in warehouse stock, which depleted by almost one-fifth in just four years. Ealing saw the biggest increase in warehouse space in the sub-region, increasing by some 25.9% between 2000 and 2003.

Table 4.37 Change in Built Industrial/Warehousing Floorspace in West Sub-Region, 2000-2003

	2000 (000 sq m)		2003 (000 sq m)		2000-2003 (% change)	
	Factories	Warehouses	Factories	Warehouses	Factories	Warehouses
Hounslow	474	871	458	1,015	-3.5	16.5
Hammersmith & Fulham	263	286	253	282	-3.9	-1.6
Ealing	798	1,231	687	1,550	-13.8	25.9
Brent	620	1,022	543	1,160	-12.3	13.5
Harrow	230	153	222	158	-3.3	2.8
Hillingdon	597	1,171	581	946	-2.8	-19.2
West	2,982	4,734	2,744	5,111	-8.0	8.0

Source ODPM

Market Balance: Floorspace

- 4.74 Occupier demand at present is relatively strong. Within the sub-region the strongest demand for industrial and warehousing floorspace is currently along the A40 extending from Acton out to Uxbridge. Along this corridor demand is particularly strong around North Acton (Ealing), Park Royal (mainly Brent/Ealing but including a small part of Hammersmith & Fulham), Perivale, Greenford and Northolt (Ealing).
- 4.75 Park Royal is one of London's largest and most important industrial/warehousing areas. According to the Park Royal Partnership it is home to around 2,000 firms, 56% of which employ fewer than 10 people and 90% of which employ fewer than 50. An estimated 40% of businesses in Park Royal are ethnic minority owned, which is a significantly higher share than generally across London, where the share is around 22%¹⁸.
- 4.76 Demand in Acton/Park Royal is generally strong due to a number of factors. First, with limited exceptions, this area is the closest industrial/warehousing area to central London and the West End and is, therefore, attractive to the companies servicing these key markets. Second, this area has a substantial base of companies and, therefore, the churn of companies in Park Royal creates demand.
- 4.77 The area around Heathrow Airport is also a significant industrial and warehouse market in west London, but this market is largely airport-related. Its greater distance from central London and the higher rental levels mean that it does not attract demand from companies looking to service central London to the same extent as locations closer to the West End.
- 4.78 Most demand in West London is being driven by requirements for warehousing and storage rather than manufacturing. However, industrial/warehousing activities such as fresh food production continue to generate demand.
- 4.79 Estimates of vacant industrial/warehousing floorspace support this picture of generally strong demand. These highlight that the West sub-region has an overall vacancy rate of just 6.2%, compared with a London average of 8.2%. The vacancy rate is particularly low in Brent (3.1%), Harrow (4.3%) and Hounslow (4.3%).

Table 4.38 Industrial/Warehousing Property Vacancy in West Sub-Region, December 2003

	Vacant floorspace	Total stock	Vacancy rate
	sq m	sq m	%
Hounslow	63,772	1,473,000	4.3
Hammersmith & Fulham	44,357	535,000	8.3
Ealing	152,657	2,237,000	6.8
Brent	51,951	1,703,000	3.1
Harrow	16,203	380,000	4.3
Hillingdon	156,183	1,527,000	10.2
West	485,123	7,855,000	6.2

Source London Boroughs, ODPM

¹⁸ Park Royal figures are sourced from the Park Royal Partnership's 10 Year Strategy for Park Royal 2002 Onwards. According to The London Annual Business Survey 2003 (London Development Agency/Business Link) some 77% of private sector businesses in London are owned by White ethnic groups, 12% by Asian, 3% by Black ethnic groups and 7% by Mixed ethnic groups.

- 4.80 Industrial/warehousing rents for prime space vary quite considerably in West London. Rents are cheapest in Brent and Harrow where new floorspace achieves around £9.50 per sq ft, compared with Hammersmith & Fulham, where rents in the order of £12.50 per sq ft can be achieved on new good quality industrial/warehousing accommodation. These rents are supported by recent user transactions, including Brixton plc's V3 scheme at Acton (Ealing), where seven speculatively developed units have been let at rents of between £9.75 and £10.25 per sq ft. In Hillingdon, the Easter Group's Zodiac Park at West Drayton attracted occupiers paying rents of £9.25 per sq ft.

Table 4.39 Prime Industrial/Warehousing Rents in West London, March 2004

	£ per sq ft
Hounslow	11.00
Hammersmith & Fulham	12.50
Ealing	10.00
Brent	9.50
Harrow	9.50
Hillingdon	10.50

Source King Sturge

- 4.81 Within West London, Hillingdon recorded the strongest rental growth over the most recent three, five and 10 years for which data are available. Surprisingly, all other industrial/warehousing markets in the West sub-region, for which data are available, saw weaker growth than the London average. This may be because rents in West London have traditionally been higher than many other parts of London and, therefore, may not have grown as much over recent years in percentage terms. However, growth in these Boroughs over the past three, five and 10 years, was still generally above the UK rate.

Table 4.40 Industrial/Warehousing Rental Value Growth in West London, % pa

	3 years to 2002	5 years to 2002	10 years to 2002
Hounslow	4.0	5.8	1.0
Hammersmith & Fulham	-	-	-
Ealing	2.7	4.3	2.6
Brent	4.0	5.5	2.3
Harrow	-	-	-
Hillingdon	5.3	8.0	2.9
London	4.5	6.0	2.2
UK	2.9	3.6	1.0

Source IPD

Market Balance: Land

- 4.82 There is strong demand for industrial/warehousing and warehousing land both from developers and occupiers. This current view is supported by gross take-up data which show that West London has seen the highest level of gross take-up of London's five sub-regions over the 10 years 1992-2001, with an average take-up of around 19.5 ha per annum, see Table 4.41. Take-up in Brent/Ealing is largely related to Park Royal, whilst much of the take-up in Hillingdon and Hounslow is largely driven by Heathrow Airport.

Table 4.41 Industrial Land Take-Up in West London, 1992-2001

	10-year annual average take-up (ha)
Hounslow	3.304
Hammersmith & Fulham	0.432
Ealing	5.984
Brent	6.118
Harrow	0.542
Hillingdon	3.130
West	19.510

Source LDMS, King Sturge

- 4.83 The supply of industrial/warehousing land is generally very tight in the West sub-region. Brent and Ealing (which include Park Royal) have the highest vacancy rates (both 8.1%) these are still below the London average (12.2%). All of West London's other Boroughs have vacancy rates below 5%.

Table 4.42 Vacant Industrial/Warehousing Land in West Sub-Region, December 2003

	Built on industrial land, ha	Vacant industrial land, ha	Total industrial land, ha	Industrial/wareho using land vacancy rate (%)
Hounslow	327.4	16.7	344.1	4.9
Hammersmith & Fulham	118.9	4.4	123.3	3.6
Ealing	497.2	43.6	540.8	8.1
Brent	378.6	33.2	411.8	8.1
Harrow	84.4	1.1	85.5	1.3
Hillingdon	339.3	4.8	344.1	1.4
West	1,745.7	103.7	1,849.4	5.6

Source ODPM, London Boroughs, King Sturge

- 4.84 Matching vacant supply with gross demand shows that the West has just five years supply of industrial land. Every Borough has fewer years of supply than the London average of 19 years.

Table 4.43 Industrial/Warehousing Land Take-Up and Supply in West London, December 2003

	10-year annual average take-up (ha)	Vacant land at December 2003 (ha)	Years supply at December 2003
Hounslow	3.304	16.7	5
Hammersmith & Fulham	0.432	4.4	10
Ealing	5.984	43.6	7
Brent	6.118	33.2	5
Harrow	0.542	1.1	2
Hillingdon	3.130	4.8	1½
West	19.510	103.7	5

Source LDMS, London Boroughs, King Sturge

- 4.85 Land values vary considerably in West London, from around £800,000 per acre in Harrow up to £2 million in Hounslow. At the end of 2002, a record £2.37 million per acre was paid for the South Cargo Centre site (6.3 ha/15.5 acres) near Feltham (Hounslow).

Table 4.44 Prime Industrial/Warehousing Land Values in West London, March 2004

	£ per acre
Hounslow	2,000,000
Hammersmith & Fulham	1,500,000
Ealing	1,000,000 – 1,250,000
Brent	850,000 – 950,000
Harrow	800,000-850,000
Hillingdon	1,500,000 – 1,750,000

Source King Sturge

Summary

- 4.86 With a total stock of 7.9 million sq m, the West is the second largest industrial/warehousing sub-region after the East. The West includes major concentrations of industrial/warehousing property around Park Royal and around Heathrow. Across the sub-region as a whole 65% of industrial/warehousing stock is warehousing.
- 4.87 Between 2000 and 2003 the sub-region's stock recorded a small increase (+1.8%) compared with a decline of -1.1% for London.
- 4.88 The Western sub-region is particularly attractive for companies servicing the West End retail markets and its wider business base. The Airport largely drives occupier demand around Heathrow.
- 4.89 Indicators point to a tight market for industrial/warehousing floorspace. In particular:
- § The overall vacancy rate is just 6.2% and every Borough except Hillingdon has a rate below the London average.
 - § Prime industrial/warehousing rents are relatively high.
- 4.90 Indicators also suggest a tight market for industrial/warehousing land with the overall sub-regional vacancy rate of 5.6% being under half the London average (12.2%). Every Borough has a lower land vacancy rate than the London average.
- 4.91 Outside the Strategic Employment Locations, industrial/warehousing land is generally subject to intense pressure from high value uses, particular housing or mixed use proposals.

The North Sub-Region

Industrial/Warehousing Stock

- 4.92 The North has a total industrial/warehousing stock of 3.519 million sq m, with Enfield accounting for 42.6% of this. Waltham Forest is the only Borough with a greater share of factories than warehousing.

Table 4.45 Total Built Industrial/Warehousing Floorspace in North Sub-Region, 2003

	Factories		Warehouses		All industrial/warehousing	
	% of sub-region	000 sq m	% of sub-region	000 sq m	% of sub-region	000 sq m
Barnet	8.8	133	13.5	270	11.5	403
Enfield	41.4	627	43.6	874	42.7	1,501
Haringey	23.7	359	25.4	508	24.6	867
Waltham Forest	26.1	396	17.6	352	21.3	748
North	100.0	1,515	100.0	2,004	100.0	3,519

Source ODPM

- 4.93 Between 2000 and 2003 the sub-region recorded a loss of industrial/warehousing floorspace of -1.2% in line with the decline across London (-1.1%). In line with trends across London the sub-region saw a significant fall in factory floorspace coupled with a gain in warehousing. Barnet recorded the most significant loss, with a decline of 40.7% in its total industrial/warehousing stock, whilst Enfield saw the largest overall increase (+14.2%).

Table 4.46 Change in Built Industrial/Warehousing Floorspace in North Sub-Region, 2000-2003

	2000 (000 sq m)		2003 (000 sq m)		2000-2003 (% change)	
	Factories	Warehouses	Factories	Warehouses	Factories	Warehouses
Barnet	206	285	133	270	-35.7	-5.0
Enfield	729	682	627	874	-13.9	28.1
Haringey	390	503	359	508	-7.8	1.1
Waltham Forest	461	307	396	352	-14.0	14.4
North	1,786	1,777	1,515	2,004	-15.2	12.8

Source ODPM

Market Balance: Floorspace

- 4.94 Within the North sub-region the strongest demand is currently around Enfield. As with other markets there is currently strong freehold demand up to between 2,000 sq m to 3,000 sq m. Above this size, the majority of demand is more typically for leasehold accommodation.
- 4.95 Demand in the North is being driven by requirements for warehousing rather than for production, although a recent example of the latter included Warburtons' new bakery at Delta Park, Enfield.
- 4.96 The North sub-region has an overall vacancy rate of 8.1%, in line with the London average (8.2%). There is comparatively little variation in Borough vacancy rates within the sub-region, although Enfield has the lowest rate at 6.9%.

Table 4.47 Industrial/Warehousing Property Vacancy in North Sub-Region, December 2003

	Vacant floorspace sq m	Total stock sq m	Vacancy rate %
Barnet	31,678	403,000	7.9
Enfield	103,602	1,501,000	6.9
Haringey	74,932	867,000	8.6
Waltham Forest	76,545	748,000	10.2
North	286,757	3,519,000	8.1

Source London Boroughs, ODPM

- 4.97 Prime industrial/warehousing rents across the sub-region are around £7.50 per sq ft, but with little evidence outside Enfield to show this.

Table 4.48 Prime Industrial/Warehousing Rents in North London, March 2004

	£ per sq ft
Barnet	7.50
Enfield	7.50
Haringey	7.50
Waltham Forest	7.50

Source King Sturge

- 4.98 Industrial/warehousing rental growth within the sub-region has been weaker than the London average over the most recent three, five and ten years for which data are available.

Table 4.49 Rental Value Growth in North London, % pa

	3 years to 2002	5 years to 2002	10 years to 2002
Barnet	1.2	2.2	n/a
Enfield	3.5	5.0	0.9
Haringey	3.6	3.2	0.3
Waltham Forest	-	-	-
London	4.5	6.0	2.2
UK	2.9	3.6	1.0

Source IPD

Market Balance: Land

- 4.99 The demand for industrial and warehouse land in North London is currently strong both from developers and occupiers, especially in Enfield. The demand from developers is mainly for sites with B8 potential, which is the main source of occupier demand.
- 4.100 Table 4.50 indicates that Enfield has dominated the take-up of industrial/warehousing land within the sub-region over the 10 years 1992-2001, accounting for more than three-quarters (78%) of gross take-up in North London over this period. Take-up in all other North London Boroughs has been relatively modest.

Table 4.50 Industrial/Warehousing Land Take-up in North London, 1992-2001

	10-year annual average take-up (ha)
Barnet	0.231
Enfield	3.604
Haringey	0.325
Waltham Forest	0.446
North	4.606

Source LDMS, King Sturge

- 4.101 Within the sub-region, available industrial land supply is very tight in Barnet and Waltham Forest and Haringey but Enfield has a larger supply. In particular, Enfield has the potential to accommodate some large-scale users, notably with sites at Freezey Water (the former ESAB site acquired by Gazeley, which propose to speculatively develop 44,592 sq m) and Aztec 406, a 13 ha site where Lidl has recently acquired 5 ha for a 23,225 sq m distribution centre.
- 4.102 North London has around 62.6 ha of vacant industrial land, equating to a vacancy rate of 7.4%, compared with 12.2% for London. With the exception of Barnet the vacancy rate for land is below the London average in each Borough.

Table 4.51 Vacant Industrial/Warehousing Land in North Sub-Region, December 2003

	Built on industrial/warehousing land, ha	Vacant industrial/warehousing land, ha	Total industrial/warehousing land, ha	Industrial/warehousing land vacancy rate (%)
Barnet	89.5	17.2	106.7	16.1
Enfield	333.5	25.5	359.0	7.1
Haringey	192.8	12.1	204.9	5.9
Waltham Forest	166.2	7.8	174.0	4.5
North	782.0	62.6	844.6	7.4

Source ODPM, London Boroughs, King Sturge

- 4.103 Matching vacant supply with gross demand shows that the North 14 years of supply compared with the London average of 19 years. Enfield has just seven years of supply.

Table 4.52 Industrial/Warehousing Land Take-up and Supply in North London, December 2003

	1-year annual average take-up (ha)	Vacant land at December 2003 (ha)	Years supply at December 2003
Barnet	0.231	17.2	74
Enfield	3.604	25.5	7
Haringey	0.325	12.1	37
Waltham Forest	0.446	7.8	17
North	4.606	62.6	14

Source LDMS, ODPM, King Sturge

- 4.104 Industrial/warehousing land values across North London are between £850,000 and 900,000 per acre. Kennet Properties has recently sold a site to retailer Lidl at Aztec 406 site, Edmonton at a record sub-regional price of over £1,050,000 per net developable acre. This beats the £1 million per acre paid by Gazeley for the ESAB site in November 2002.

Table 4.53 Prime Industrial/Warehousing Land Values in North London, March 2004

	£ per acre
Barnet	850,000 – 900,000
Enfield	850,000 – 900,000
Haringey	850,000 – 900,000
Waltham Forest	850,000 – 900,000

Source King Sturge

Summary

- 4.105 The North has a total built industrial/warehousing stock of 3.5 million sq m of which slightly more than 40% is in Enfield.
- 4.106 Between 2000 and 2003 the sub-region's stock recorded a decline of –1.2%, very much in line with the London average (–1.1%).
- 4.107 The main focus of demand in the North is Enfield, which is able to accommodate a range of size requirements including large-scale requirements. Elsewhere in the sub-region, demand is much more for small to medium-sized units.
- 4.108 In general, indicators point to a finely balanced market for floorspace. In particular, the Sub-region has an overall vacancy rate of 8.1%, which is in line with the London average of 8.2% and broadly at an acceptable frictional level. Within the Sub-region, Enfield has the lowest vacancy rate (6.9%).
- 4.109 The market balance for land appears to be tighter with an overall vacancy rate of 7.4% compared with 12.2% for London. Barnet has the highest land vacancy rate at 16.1%.
- 4.110 Outside the Strategic Employment Locations, industrial/warehousing land is generally subject to intense pressure from high value uses, particular housing or mixed use proposals.

The South Sub-Region

Floorspace Stock

- 4.111 The South London sub-region has a total industrial/warehousing stock of 3.201 million sq m, accounting for just 11.6% of total industrial/warehousing stock in London. Croydon accounts for the largest share with around one-quarter (25.6%) and Merton for 22.7%.

Table 4.54 Total Built Industrial/Warehousing Floorspace in South Sub-Region, 2003

	Factories		Warehouses		All industrial/warehousing	
	% of sub-region	000 sq m	% of sub-region	000 sq m	% of sub-region	000 sq m
Richmond upon Thames	10.2	148	9.2	161	9.7	309
Kingston upon Thames	7.6	111	12.2	212	10.1	323
Merton	24.0	349	21.7	378	22.7	727
Sutton	13.8	201	17.4	303	15.7	504
Croydon	24.3	354	26.8	468	25.7	822
Bromley	20.2	294	12.7	222	16.1	516
South	100.0	1,457	100.0	1,744	100.0	3,201

Source ODPM

- 4.112 Between 2000 and 2003 the sub-region recorded a loss of industrial/warehousing floorspace of -1.7% marginally higher than the decline across London (-1.1%). In line with trends across London, the sub-region saw a significant fall in factory floorspace coupled with an increase in warehouse floorspace. All Boroughs in the sub-region saw a decline in their factory stock over this period, with Sutton (+10.7%) and Bromley (+5.2%) the only Boroughs seeing an overall increase in industrial/warehousing stock.

Table 4.55 Change in Built Industrial/Warehousing Floorspace in South Sub-Region, 2000-2003

	2000 (000 sq m)		2003 (000 sq m)		2000-2003 (% change)	
	Factories	Warehouses	Factories	Warehouses	Factories	Warehouses
Richmond upon Thames	165	149	148	161	-10.3	8.1
Kingston upon Thames	133	254	111	212	-16.5	-16.5
Merton	392	351	349	378	-11.0	7.7
Sutton	206	268	201	303	-2.4	13.1
Croydon	416	414	354	468	-14.9	13.0
Bromley	305	204	294	222	-3.6	8.8
South	1,618	1,640	1,457	1,744	-9.9	6.3

Source ODPM

Market Balance: Floorspace

- 4.113 At present, demand in the South is strong from both developers and occupiers. This is particularly the case in the south west of the sub-region, in Kingston, which benefits from good access to the A3. Croydon and Merton are larger markets, with the former having the potential to accommodate large occupiers, particularly along Purley Way and Beddington Lane.
- 4.114 The South sub-region has an overall vacancy rate of 9.0%, slightly higher than the London average of 8.2%. Vacancy rates are highest in Sutton (15.1%) and in Kingston upon Thames (13.4%), well above both the London average of 8.2% and the South London sub-region average of 9.0%.

Table 4.56 Industrial/Warehousing Property Vacancy in South Sub-Region, December 2003

	Vacant floorspace	Total stock	Vacancy rate
	sq m	sq m	%
Richmond upon Thames	16,485	309,000	5.3
Kingston upon Thames	43,269	323,000	13.4
Merton	58,168	727,000	8.0
Sutton	76,009	504,000	15.1
Croydon	67,909	822,000	8.3
Bromley	25,802	516,000	5.0
South	287,642	3,201,000	9.0

Source London Boroughs, ODPM

- 4.115 Within South London the highest industrial/warehousing rents are in Chessington (Kingston upon Thames) where £10.25 per sq ft can be achieved for prime space, and the lowest in Bromley where prime rents are around £7.50 per sq ft.

Table 4.57 Prime Industrial/Warehousing Rents in South London, March 2004

	£ per sq ft
Richmond upon Thames	8.50
Kingston upon Thames	10.25
Merton	9.50
Sutton	8.50
Croydon	8.50
Bromley	7.50

Source King Sturge

- 4.116 Within the South sub-region, Merton and Sutton have seen the strongest rental growth over the most recent three and five years for which data are available. Kingston upon Thames is the only Borough to have seen weaker growth than the London and UK averages, according to IPD data, which is contrary to market evidence in key locations (e.g. around Cox Lane).

Table 4.58 Industrial/Warehousing Rental Value Growth in South London, % pa

	3 years to 2002	5 years to 2002	10 years to 2002
Richmond upon Thames	-	-	-
Kingston upon Thames	1.2	2.6	0.9
Merton	5.9	6.1	2.0
Sutton	6.2	4.8	0.5
Croydon	3.2	4.6	1.5
Bromley	4.9	3.9	0.3
London	4.5	6.0	2.2
UK	2.9	3.6	1.0

Source IPD

Market Balance: Land

- 4.117 The gross take-up of industrial/warehousing land in South London was relatively modest over the 10-years 1992-2001 at around 6 ha per annum on average. Take-up was highest in Croydon and Sutton, which combined account for more than half (53%) of all land taken-up in the sub-region over the 10 years, 1992-2001.

Table 4.59 Industrial/Warehousing Land Take-Up in South London, 1992-2001

	10-year annual average take-up (ha)
Richmond upon Thames	0.646
Kingston upon Thames	0.862
Merton	0.797
Sutton	1.542
Croydon	1.718
Bromley	0.549
South	6.114

Source LDMS, King Sturge

- 4.118 South London has the lowest supply of vacant industrial/warehousing land of any of London's sub-regions at just 4.1%. All of the sub-regions Boroughs have vacancy rates below the London average, with Kingston upon Thames and Merton experiencing the tightest supply.

Table 4.60 Vacant Industrial/Warehousing Land in South Sub-Region, December 2003

	Built on industrial/warehousing land, ha	Vacant industrial/warehousing land, ha	Total industrial/warehousing land, ha	Industrial/warehousing land vacancy rate (%)
Richmond upon Thames	68.6	3.4	72.0	4.7
Kingston upon Thames	71.9	0.4	72.3	0.6
Merton	161.4	2.6	164.0	1.6
Sutton	112.0	11.4	123.4	9.2
Croydon	182.7	7.9	190.6	4.1
Bromley	114.7	5.0	119.7	4.2
South	711.3	30.7	742.0	4.1

Source ODPM, London Boroughs, King Sturge

- 4.119 Matching vacant supply with gross demand shows that the South has just 5 years supply compared with the London average of 19 years. Every Borough has nine or fewer years of supply.

Table 4.61 Industrial/Warehousing Land Take-up and Supply in South London, December 2003

	10-year annual average take-up (ha)	Vacant land at December 2003 (ha)	Years supply at December 2003
Richmond upon Thames	0.646	3.4	5.0
Kingston upon Thames	0.862	0.4	0.5
Merton	0.797	2.6	3.0
Sutton	1.542	11.4	7.0
Croydon	1.718	7.9	5.0
Bromley	0.549	5.0	9.0
South	6.114	30.7	5.0

Source LDMS, ODPM, King Sturge

- 4.120 The lowest land values in the South sub-region can be found in Sutton, where industrial/warehousing land values range from £650,000-700,000 per acre. Values are highest in Richmond and Kingston where available land is extremely tight. In 2003, Chancery gate and Morley Fund Management paid £6.8 million for a 5.5-acre site at Chessington Industrial Estate (Kingston upon Thames), on which they are now developing their speculative Gateway3 scheme.

Table 4.62 Prime Industrial/Warehousing Land Values in South London, March 2004

	£ per acre
Richmond upon Thames	1,250,000
Kingston upon Thames	1,250,000
Merton	800,000
Sutton	750,000 – 800,000
Croydon	750,000 – 800,000
Bromley	650,000 – 700,000

Source King Sturge

Summary

- 4.121 The South has a total built industrial/warehousing stock of 3.2 million sq m, approaching half of which is in Croydon and Merton.
- 4.122 Between 2000 and 2003 the sub-region's stock recorded a decline of –1.7%, very much in line with the London average (–1.1%).
- 4.123 Croydon (with the neighbouring part of Sutton) is the largest market in the sub-region area and is able to accommodate relatively large-scale requirements, notably along Purley Way and Beddington Lane. Elsewhere demand is mainly driven by small and medium-sized requirements.
- 4.124 Indicators paint a mixed picture of the market for floorspace, but broadly the market appears to be finely balanced between demand and supply. In particular, the overall vacancy rate is 9.0%, slightly above the London average (8.2%), but rates in Richmond and Bromley are only around 5%. The vacancy rate is relatively high in Kingston but this Borough also has the highest prime rents.
- 4.125 Indicators suggest a very tight market for industrial/warehousing land. Across the sub-region as a whole the overall sub-regional vacancy rate is just 4.1%, about a third of the London average (12.2%). Every Borough except Sutton has a vacancy rate below 5% with Merton below 2% and Kingston below 1%.
- 4.126 Outside the Strategic Employment Locations, industrial/warehousing land is generally subject to intense pressure from high value uses, particular housing or mixed use proposals.

5 WAREHOUSING AND LOGISTICS

Introduction

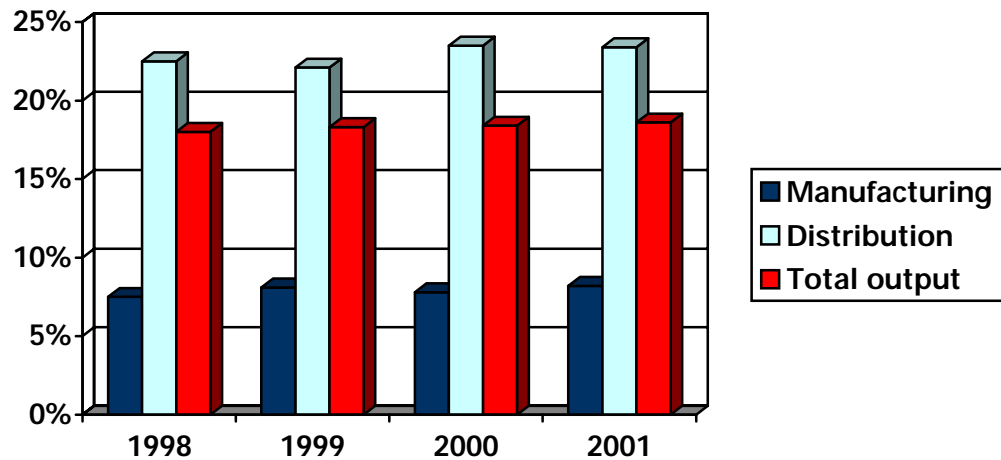
- 5.1 As note in the Introduction, the draft Supplementary Planning Guidance for London indicates that planning policy in future must be more positive about warehousing and logistics. This chapter aims to help strategic and local planners put this principle into practice.
- 5.2 In the sections that follow, we first describe the importance of the industry to London, then describe how logistics and warehousing operate, their needs and problems relating to location and space, and their impact, both actual and potential, on sustainability and employment. This description has two purposes. It provides a general briefing, or reference document, for planners and economic development practitioners dealing with logistics, and it leads to recommendations for specific policies, which will be set out in the next chapter.

The Importance of Logistics to London

- 5.3 Whether measured by the value it adds and the employment it generates, London is the UK's most important regional economy. London is also the centre of a potential market of around 18 million people, by far the largest in the UK.
- 5.4 Just about everything that happens in London is dependent on the movement of materials, parts and finished goods. As the *London Plan* acknowledges, industries such as manufacturing, construction and retail are particularly dependent on efficient logistics and even London's financial and business services depend on the prompt delivery of office supplies and documentation. In addition, these services often use warehousing for archive storage or to house computer servers. Efficient logistics is also critical to the functioning of London's hospitals, medical services and other public services.
- 5.5 In addition, logistics is critical to the effective management of 'reverse' flows, including flows of goods, packaging and waste.
- 5.6 Chapter 3 has already highlighted the employment generated by London's distribution sector – which provides more jobs than the industrial sector – and its high productivity. The importance of logistics in London is also highlighted by the contribution which London makes to the sector's total output (GVA) in the UK (Figure 5.1)¹⁹;

¹⁹ Logistics does not constitute a discrete 'sector' of the economy but rather involves the integration of the wide range of different functions within companies and between them. As discussed earlier, logistics is scattered across different sectors of the Standard Industrial Classification (1992). Therefore, this analysis is based on SIC 51, Wholesale, as the best available SIC two-digit proxy.

Figure 5.1 London GVA as a Share of UK



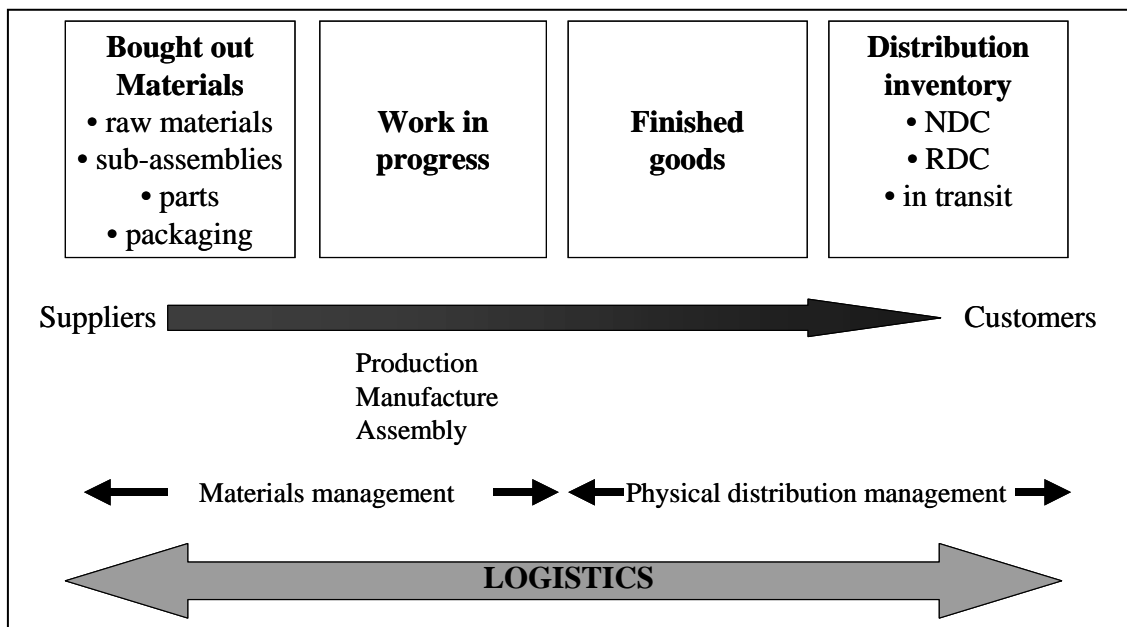
Source ONS

- 5.7 In 2001, distribution in London accounted for 23% of UK distribution GVA whilst the London economy as a whole accounted for around 19% of UK GVA. Manufacturing in London accounted for just 8% of the UK's manufacturing GVA
- 5.8 In addition, an efficient logistics sector provides a foundation for the achievement of wider spatial, economic development and transport objectives for London. For example, without efficient logistics, it seems clear that London could not function as a World City and its potential to accommodate the population and employment growth envisaged in the *London Plan* would be compromised.
- 5.9 Warehousing and logistics also have the potential to contribute to social inclusion by providing a range of employment opportunities at different skills levels and typically within, or close to, areas of relative deprivation. The latter is the case because many of London's Strategic Employment Locations (where much of its warehousing capacity is and will be) are close to areas of economic need.
- 5.10 Logistics has the potential to contribute to the sustainable development of London. It can do this in many ways, including by the recycling of Brownfield land for warehouse development, the wider use of 'sustainable distribution' best practice (such as the use of cleaner vehicles) and by the growth of more sustainable transport modes such as rail and water.
- 5.11 Finally, a simple point which is often overlooked is the contribution of logistics to Londoners' quality of life. The capital's retail and leisure outlets provide a range and choice of goods and services unequalled in the UK. This vibrant consumer economy could not function without efficient distribution.
- 5.12 In summary, warehousing and logistics provide a vital support to the London economy and support a wide range of spatial, economic and transport policy objectives for London.

Functions and Types of Warehousing

- 5.13 Warehousing is an integral part of virtually every type of logistics operation, providing the link between the point of origin and the point of consumption.
- 5.14 In general, as Figure 5.2 shows, warehousing is typically found wherever inventory is located in the supply chain. The most obvious function of warehousing is to provide storage for products during all phases of the logistics process, including 'reverse flows' back up the supply chain. However, warehousing also plays a vital role in the movement of products through the supply chain and in the transmission of information about the status and location of inventory. These movement and information functions have become increasingly important, the first because companies have to meet ever more demanding customer service requirements, the second because companies continue to seek to utilise information better, to improve logistics efficiency and drive down costs. In short, companies are seeking to substitute information for inventory.

Figure 5.2 Inventory in the Supply Chain*



* NDC – National Distribution Centre. RDC – Regional Distribution Centre

- 5.15 As shown in Figure 5.1, there are many different types of warehouses defined in terms of the function they perform in the supply chain. Warehouses perform different functions at different stages in the logistics process, which in broad terms can be divided between material management, which is concerned with the inward supply chain, and physical distribution management, which is concerned with the outward supply chain.
- 5.16 For example, for the inward supply chain warehouses may be required to hold stocks of materials or parts, to consolidate products for onward distribution, or to provide just in time services to a customer. At the work in progress phase, warehouses may hold buffer stock for production. In the outward supply chain phase, warehouses may act as storage locations for finished goods, or as distribution centres for these goods. In this phase, we also find 'stockless' warehouses such as cross-docking facilities, off-site stock rooms, multi-user consolidation centres and e-fulfilment centres.

Table 5.1 Types of Warehouses in Terms of Supply Chain Function

Location in supply chain	Warehouse Type	Comment
Inward supply chain	Materials/parts stock	Stock-holding warehouse.
	Consolidation centre	Single user dedicated warehouse.
	Just in time (JIT) facility	Often located next to, or in close proximity to, customer.
Work in progress	Production buffer	Stock-holding
Outward supply chain	Production – finished good store	Stock-holding warehouse often on factory site.
	Stockholding: distribution centre	Distribution centre. Potentially high bay. Often a National Distribution Centre or Regional Distribution Centre.
	Stockholding: seasonal overflow	Often outsourced to a third party.
	Cross docking warehouse	'Stockless' warehouse, low density development.
	Off-site stock room	Small warehouse for rapid replenishment of selected stores or store.
	Multi-user consolidation centre	Warehouse run by third party logistics contractor to consolidate deliveries from multi-users.
	E-fulfilment centre	Dedicated warehouse for home delivery.

Source King Sturge

- 5.17 In summary, warehouses are located at different stages of the logistics process. There are many different types of warehouses, which can be considered in terms of their function in the supply chain.

Transport and Sustainability

Introduction

- 5.18 The Mayor's Transport Strategy states:
- 'The key to a successful freight and servicing strategy is balancing needs against impacts. Customers want goods and services to be provided at acceptable costs, at convenient times and places, and with the flexibility to meet needs which may vary widely at short notice. Operators want to be able to plan their work with a reasonable degree of certainty, and to make the most efficient use of assets. All those who live and do business in London want the environmental and congestion impacts of road freight to be minimised'²⁰.
- 5.19 Balancing needs against impacts requires a clear understanding of the transport requirements of the different type of logistics operators, the type of impacts these generate

²⁰ The Mayor's Transport Strategy, July 2001. p 255

and the potential to encourage more sustainable modes of distribution, such as rail and water.

Freight Movements

- 5.20 As Table 5.2 shows, in 2002 around 123 million tonnes of road freight, lifted by UK-registered vehicles with gross weight over 3.5 tonnes, had its origin and/or destination in Greater London. Of this total around 41% (i.e. 51 million tonnes) had both its origin and destination in London, 33% was received from other regions and 25% was sent to other regions. Thus, London is a net importer of road freight from the rest of the UK, which is unsurprising given its significance as a consumer market.
- 5.21 In 2000 rail lifted a total of 7.8 million tonnes with an origin and/or destination in Greater London according to estimates published in the *London Rail Freight Study*, of which only around 14% had its origin and destination in London. Some 60% of rail tonnage lifted in London was received from other regions, and 26% was exported to other regions.

Table 5.2 Estimated Freight Flows in London (million tonnes per annum)

	Road 2002 (1)	Rail 2000 (2)
Lifted and delivered in London	51	1.1
Received from other regions	41	4.7
Sent to other regions	31	2.0
Total	123	7.8

Sources 1) Continuing Survey of Road Goods Transport. 2) SRA for rail, sourced from Ove Arup & Partners Ltd London Rail Freight Study Final Report

- 5.22 Table 5.3 shows the regional origin and destination of road and rail freight into and out of London²¹. For road freight, London’s neighbouring regions (the South East and East of England) accounted for by far the largest share of both inflows and outflows.
- 5.23 Rail freight movements to and from London show a slightly different pattern to road movements, reflecting the fact that rail generally becomes more economic over longer distances. The South West, East Midlands and South East are the main regions from which freight is imported, whilst the South East and East are the main regions to which it is exported. Rail flows to and from the South East and Eastern reflect the large movement of containers between the major ports, particularly Southampton and Thamesport in the South East and Tilbury and Felixstowe in East of England.

²¹ These figures of course do not provide a direct measure of demand for warehousing, because much of the tonnage carried by rail – such as commodity tonnage, which is dominated by crushed rocks – is not stored in warehouses.

Table 5.3 Tonnage of Freight to/from London (million tonnes per annum)

Origin or destination	To London		From London	
	Road	Rail	Road	Rail
London	51	1.1	51	1.1
Eastern	15	0.2	10	0.5
South East	13	1.1	12	1.3
South West	2	1.5	2	<0.1
West Midlands	3	<0.1	2	<0.1
East Midlands	3	1.4	2	<0.1
North West	2	<0.1	1	0.1
Yorks & Humbers	1	0.3	1	<0.1
North East	0	<0.1	0	<0.1
Wales	1	0.1	0	<0.1
Scotland	0	<0.1	0	0.1
Total	92	5.8	82	3.1

Sources CSRGT and London Rail Freight Study. Regional totals may not sum to total due to rounding. These figures do not include freight passing through Greater London but having an origin or destination elsewhere.

- 5.24 Excluded from the above road freight statistics is the volume of goods with an origin or destination in London transported to/from the rest of Europe, but this is very small. Also excluded is the movement of light goods vehicles (i.e. up to 3.5 tonnes gross vehicle weight), although the Department for Transport has recently carried out two separate surveys respectively covering company-registered, and privately registered, vans.²²
- 5.25 We are not aware of any comparable statistics that provide origins and destinations of freight transported from and to Greater London by water. However, we do briefly consider water-borne transport in a later section.

Road Transport: Operators' Needs²³

- 5.26 Road is the dominant transport mode because it provides a door-to-door service which is flexible and responsive and is, therefore, well aligned with the increasing demands of customers for just in time deliveries and flexibility. Furthermore, the UK road haulage industry is very competitive, and therefore road is generally the most cost effective transport option for moving most types of non-bulk goods.
- 5.27 Given the increasing importance of customer service, anything that undermines the flexibility and reliability of road as a freight transport mode is a concern to operators. The research undertaken for this study highlighted a number of general and specific concerns, particularly:

²² University of Westminster, *Freight Transport in London: Data acquired during the project*. Draft version, for TfL, February 2004.

²³ Our assessment of operator needs is mainly derived from the Logistics Workshop undertaken for the Study and existing survey, and other evidence, compiled by the Freight Transport Association.

- § Congestion.
- § The central London congestion charge.
- § The London Lorry 'Ban'.
- § Local authority imposed delivery curfews.
- § The provision of loading/unloading space for deliveries.

- 5.28 Congestion has been identified by the Freight Transport Association (FTA) as the overriding issue faced by freight operators²⁴. From a logistics perspective, the problem with congestion is not just the impact it has on average travel speeds but more critically the effect it has on overall journey predictability. In short, congestion undermines just in time logistics operations because operators have to leave a safety margin over and above the average speed to allow for the unpredictability of travel times.
- 5.29 The London congestion charge is generally unpopular with freight operators serving central London. Most believe that they should be exempt from it on the grounds that they have no choice as to how they service their customers. According to a FTA survey of its members undertaken during the week before the first anniversary of the charge, 87% believed that commercial vehicles should be exempt. In the same survey, 85% said that their number of journeys in the congestion charge zone had not reduced, 69% reported that their journeys were no quicker in the zone, and 90% said that they were unable to make any more deliveries²⁵. The last two of these would indicate that operators have not been able to make any improvement in their logistics operations, despite the proven fall in congestion and traffic volumes within the charging zone, - which should free up road space for essential freight, and produces time savings, - whose value according to the GLA's estimates more than covers the cost of the congestion charge²⁶. [
- 5.30 The London Lorry 'Ban' was identified in the Logistics Workshop as a major concern. Although often referred to as a 'ban' this is more correctly a night-time and weekend lorry control scheme, operated by the Association of London Government. In outline, this scheme applies to vehicles of 18 tonnes and over and restricts the roads that these vehicles can travel along between 21.00 hours and 07.00 hours Monday to Friday and between 13.00 hours on Saturday through to 07.00 hours on Monday. Operators can apply for an exemption permit, but generally consider this to be a bureaucratic burden. In addition, operators believe the scheme is not effectively policed and is, therefore, unworkable. As a result, companies complying with the scheme feel they are effectively penalised by it. Finally, operators feel that the potential to use quieter vehicles makes the

²⁴ Freight Transport Association, Transport Solutions for the Ten-Year Plan. Briefing for Delegates to the Freight Summit 2004.

²⁵ Freight Transport Association, Congestion charging. Survey results: London congestion charging – one year on. Summary. February 2004. Survey based on 167 responses.

²⁶ Transport for London's Congestion charging. Impacts monitoring. Second Annual Report April 2004 highlights that congestion in the zone has been reduced by 30% and the volume of traffic within the zone has been reduced by 15% since congestion charging was introduced.

'Ban' unnecessary. Overall, the 'Ban' is estimated to add some £30 million annually to the costs for operators of servicing London²⁷.

- 5.31 In addition to the London-wide night-time and weekend control scheme, most Boroughs operate their own delivery 'curfews', imposing local time or weight restrictions on lorry movements. These local authority curfews, which are enforced by the Metropolitan Police, add a second-tier of restrictions on operators. These delivery curfews may prevent, or limit, night-time and early morning deliveries, which is when retailers and others increasingly want to take delivery. By delivering at night or in the early morning retailers and other operators argue that they would be able to remove trucks from the road during the daytime.
- 5.32 The provision of loading and unloading space for deliveries was highlighted as an important issue during the consultation process for the Mayor's *Transport Strategy* and was identified in that strategy as an issue that the London Sustainable Distribution Partnership (LSDP) and Freight Quality Partnerships (FQPs) should consider further. The lack of loading/unloading facilities is estimated to add around £50 million annually to the costs for operators servicing London, according to the FTA.
- 5.33 The above concerns are all transport issues, highlighting the point that land use policies for logistics need to be integrated closely with transport. In particular, in our view the GLA should consider identifying a limited number of 'Strategic Logistics Parks' within London, that, in addition to meeting the land and property requirements of operators, are able to offer operators a less restricted transport regime potentially in exchange for best practice sustainable distribution practice. The potential benefits would include more efficient operation of the logistics industry, reduced congestion and traffic impacts - since the parks would be in the most strategically accessible places – and sustainability benefits from encouraging best practice.

Road Transport: Traffic Generation Impacts

- 5.34 From an impacts perspective, the main effect of road freight transport derives from traffic generation, and the environmental and congestion effects of this. Although not a major part of this study, traffic generation is often an important planning policy consideration for warehouse and distribution development. However, there appears to be very little robust information on the traffic generated by warehousing in London.
- 5.35 The Trip Rate Computer Information System (TRICS) database is, we believe, the most comprehensive available, but its warehouse sample in London is small and located entirely in Ealing²⁸. We understand that the Trip Rate Assessment Valid for London (TRAVL) database maintained by the GLA is more limited still in terms of its sample size. In addition, we do not believe that The Transport Research Laboratory (TRL) has published research on the traffic-generated by warehouses, although it has done so for out-of-town non-food retail warehouses.

²⁷ Freight Transport Association, *Transport Solutions for the Ten-Year Plan*. Briefing for Delegates to the Freight Summit 2004.

²⁸ See www.trics.co.uk

- 5.36 Despite a lack of statistical evidence, it is clear that the traffic generating potential of warehouses varies with many factors, including the type of warehouse and its function in the supply chain, the type/size of product handled, the hours of operations and the labour intensity of the operation. Against this background, there is a need to undertake more detailed research into the traffic generating characteristics of warehousing in London so that planning policy is better informed in this important area.

Rail Freight

- 5.37 Promoting modal shift to rail is both a national and London, policy objective, as evidenced by the Government's 1998 White Paper, the sustainable distribution 'daughter' document, its Ten Year Plan (June 2000) and the Mayor's Transport Strategy²⁹.
- 5.38 However, *The London Rail Freight Study* concluded that the main growth prospects for rail freight in London are primarily for traditional sectors, where rail already plays a significant role, namely:
- š Quarried aggregates.
 - š Freight through wharves, chiefly aggregates.
 - š Cement and building materials.
 - š Municipal waste.
 - š Cross channel flows of consumer goods, subject to better reliability.
- 5.39 By contrast, whereas the Strategic Rail Authority's (SRA) national projection is that one-third of the Government's target growth for rail freight set out in the Ten-Year Plan will come from 'traditional' markets with two-thirds from intermodal/premium logistics markets, *The London Rail Freight Study* concluded that 'the latter is road-based and requires the help of new rail products if a switch from roads is to be achieved.'³⁰.
- 5.40 The most important new 'product' from a land use perspective is additional rail interchange capacity. There are currently about 20 rail freight terminals in Greater London. Some are in central London, such as those at Paddington and Kings Cross, others are along the mainline approaches to London such as Cricklewood, Stratford, Acton and Wembley, and some are near the M25 on the outskirts such as West Drayton, Northolt, Tolworth and Barking.
- 5.41 The Strategic Rail Authority's (SRA's) *Freight Strategy* of May 2001 identified a need for an additional three to four strategic rail freight interchanges to service London and the wider 'South East' supplemented by a number of smaller facilities.

²⁹DETR. *A New Deal for Transport: Better Transport for Everyone*, July 1998.

DETR, *Sustainable Distribution: A Strategy*, March 1999.

Ten-Year Transport Plan, July 2000.

The Mayor's Transport Strategy, July 2001.

³⁰ Ove Arup & Partners Ltd, *The London Rail Freight Study*, April 2003, p. ii.

- 5.42 Both the *London Plan* and the *Mayor's Transport Strategy* support the provision of additional rail-based intermodal freight facilities. In terms of the land use requirements of these facilities, the SRA has recently published a document setting out its view of the requirements for different types of rail freight interchange and rail-connected facilities. These are set out in Table 5.4 below³¹.

Table 5.4 Attributes of Different Types of Rail Freight Interchanges

Type of RFI	Function	Likely size (indicative only)	Transport requirements (indicative only)	Examples
Strategic	Major interchange with significant intermodal and warehousing, located at nationally strategic sites proximate to major conurbations.	100-400 ha	Requires high quality links to motorway and trunk road network. Rail links high capacity and good loading gauge.	Hams Hall, Daventry – DIRFT, Mossend.
Non strategic sub-regional	Large interchange with significant intermodal and warehousing, located at important sites within regions.	20-250 ha	Requires high quality links to motorway and trunk road network. Rail links need sufficient capacity and good loading gauge.	Pooter Group, Selby. Malcolm Group, Grangemouth.
Intermodal only	Interchange handling only intermodal traffic, often located at key points in urban areas.	10-30 ha	Requires good links to urban road and trunk road network. Rail links require sufficient loading gauge.	Freightliner terminals. O'Connor Group, Widnes.
Rail linked warehouse	Single warehouse unit providing rail services.	10–30 ha	Requires good links to urban road and trunk road network.	Carlisle Warehousing, Tibbett & Britten, Neasden. Whirlpool, Paddock Wood.
Bulk terminal	Bespoke terminal for single bulk product types such as aggregates and minerals often linked to a manufacturing or processing facility. Also includes car, automotive terminals and waste terminals.	5-10 ha	Road and rail links to be appropriate to bulk commodity – often heavy loads. Aggregates and minerals terminals often require urban location to serve construction industries and road maintenance.	Numerous examples of aggregates and construction material facilities, power stations and basic industries.
CAR terminals	Bespoke terminal for handling cars on rail transporter vehicles.	8-10 ha	Often include car storage with PDI and preparation facilities.	Corby.

Source Strategic Rail Authority, *Strategic Rail Freight Interchange Policy*, March 2004

- 5.43 As the table shows, for strategic rail freight interchanges, the SRA considers that sites of upwards of 100 ha are required to accommodate both a terminal facility, large warehouses and opportunities to add value. This criterion alone would suggest that such sites are likely to be outside Greater London.

³¹ SRA *Strategic Rail Freight Interchange Policy*, March 2004

- 5.44 These sites need suitable rail and road access, including the ability to accommodate modern freight trains, which can be up to some 750 metres long. They also need to be capable of 24/7 working and, therefore, ideally should not be close to residential areas.
- 5.45 We understand that the London Sustainable Distribution Partnership rail working party has recently commissioned AEA Technology to examine potential freight terminal sites in and around London. This study will build on the existing *London Rail Freight Study* by identifying and prioritising suitable sites in and around London³². It should help policy development in this important area, moving from supportive but general policies towards specific proposals.

Water-borne Freight

- 5.46 London is served by the Port of London, one of the UK's largest ports handling over 50 million tonnes of cargo annually. In 2002 the Port handled 51.2 million tonnes of foreign and domestic cargo, and was second only to Grimsby & Immingham.³³ This figure excludes intra port cargo such as waste and the transshipment of aggregates, which were estimated at 2.6 million tonnes in 2001³⁴.
- 5.47 The Port comprises more than 70 independent terminal and port facilities, although around a quarter of these are outside the Greater London boundary, including most of the largest facilities such as Tilbury, Purfleet and Thames Europort³⁵. Recent research commissioned by the Port of London Authority (PLA) shows that the Port contributes some £3.4 billion to the economy every year and supports over 35,000 full time jobs, directly or indirectly³⁶.
- 5.48 According to the PLA, planned investment in the Port of London is estimated at £770 million over the next five years and 1.3 billion over 10 years. This includes P&O Ports' proposal, called London Gateway, to develop a major new container and, or facility on the former Shell Haven oil refinery site in Thurrock. Alongside the London Gateway port, P&O and Shell are jointly proposing a commercial and logistics park with an overall potential of 947,101 sq m. Both of these separate proposals have been the subject of a Public Inquiry and await a decision from Government. If approved, they would have significant implications for London's port capacity and for the logistics property market.
- 5.49 The PLA is working closely with the Mayor to protect wharves in Greater London for port use by safeguarding them in land use planning terms. This seeks to ensure that as much as possible of London's bulk cargoes, particularly aggregates and waste, are transported on the Thames, thereby removing hundreds of thousands of lorry movements from London's road³⁷ and in addition safeguards opportunities for other users of water for freight transport. It is also working with a small number of operators, the Mayor and the London Development Agency to reactivate a number of safeguarded wharves, which are

³² Tender Brief, *A Study for the Development of sites in and around London as Rail Freights Terminals*, February 2004.

³³ Department for Transport, *Maritime Statistics 2002*.

³⁴ Ove Arup & Partners, *London Rail Freight Study, Final Report*, April 2003.

³⁵ The Mayor's Transport Strategy says that in mid 2001 55 wharves in the Port of London were within the GLA boundary, of which 40 were operational.

³⁶ PLA, *Port of London Handbook, 2004*

³⁷ The Mayor's Transport Strategy says that in 1999 the aggregates movements alone were estimated to be equivalent to 430,000 lorry movements.

currently non-operational. These measures are in line with existing policy, which supports the development of new cargo facilities along the River Thames and other parts of the 'Blue Ribbon Network' and protects safeguarded wharves for cargo handling uses³⁸. The new wharf safeguarding policy is now with the Secretary of State for consideration.

- 5.50 In 2002, about 2.1 million tonnes of internal (ie non-sea-going) freight was transported on the river Thames. In addition, there are opportunities for freight on other navigable waterways including the River Lea and London's canals. Factors that could encourage more freight on these waterways include development/redevelopment using the waterways (e.g. the potential Olympic Games) and the transfer of waste from roads to the waterways.

Best Practice Road Transport

- 5.51 Aside from modal shift, there is clearly potential to encourage more sustainable distribution by promoting best practice in road transport operations. For example, The Department of Transport's Energy Efficiency Best Practice Programme (EEBPP) is seeking to promote best practice including via Transport Action programmes to encourage investment in vehicles that run on clean fuels and measures to reduce emissions from existing vehicles, such as converting their engines to run on natural gas.
- 5.52 In addition, the Best Practice Programme is promoting relatively pioneering logistics approaches including the shared user consolidation centres, such as that run by Exel for BAA to service deliveries to Heathrow Airport's retailers. This consolidation centre has reduced the number of vehicle movements by 60% whilst achieving on-time delivery to the airport retail outlets of 95%³⁹. We believe this type of logistics operation merits further investment and promotion.

Transport and Sustainability: Summary

- 5.53 The key to a successful freight strategy is balancing the requirements of operators against impacts.
- 5.54 Although operators are mainly concerned about certain road transport issues (since road is the dominant freight mode) land use planning could potentially be developed alongside changes to the road transport regulatory regime. One way this could happen could be by the development of Strategic Logistics Parks providing their operators with a less restrictive transport regime, potentially in return for best practice sustainable distribution.
- 5.55 There is a need to understand certain impacts better, for example the impact warehouses have on traffic generation.
- 5.56 Increasing rail freight terminal capacity in and around London is necessary to encourage a modal shift to rail.

³⁸ Respectively Policy 4C.14 and 4C.15 in *The London Plan*, February 2004.

³⁹ Department of Transport, *Freight Futures*, Issue 2, Autumn 2002, p.5.

- 5.57 There are opportunities to promote sustainable distribution in other ways, e.g. by encouraging relatively innovative logistics approaches, such as shared user consolidation centres where appropriate.

Employment Generation and Labour Issues

- 5.58 Local Authorities have traditionally viewed warehousing as providing relatively few jobs compared with manufacturing. Whilst this is a common perception, little information is available, and that which does exist suggest that in London the gap in employment densities between the two sectors is comparatively modest.
- 5.59 The survey undertaken by Roger Tym & Partners for SERPLAN in 1996⁴⁰ remains the most detailed empirical study, being based on a survey of some 1,000 businesses. As Table 5.5 shows, this survey indicated that across London as a whole the weighted average floorspace per worker ratio was 30.8 sq m for industrial/warehousing uses overall, 27.2 sq m for manufacturing and 36.6 sq m for warehousing.

Table 5.5 Floorspace per Worker Ratios, London and Rest of South East

Sub Region	Industrial/Warehousing	Manufacturing	Warehouse
London	30.8	27.2	36.6
- Inner	31.6	13.8	40.3
-Outer	30.3	33.8	34.5
ROSE	32.4	30.4	43.5
RoSE North	31.1	23.0	56.0
RoSE South	27.1	21.2	42.6
RoSE East	35.3	32.7	37.5
RoSE West	35.2	30.0	47.8

Source Roger Tym & Partners

- 5.60 The study found a negative relationship between size of warehouse and employment generation, with large facilities typically being less employment intensive than smaller facilities. This finding is supported by survey-based research undertaken by King Sturge and The Cranfield School of Management, which focused exclusively on large modern warehouses of 9,290 sq m (100,000 sq ft) and over. This research found that these warehouses typically generated around one job per 94.8 sq m (1,020 sq ft) including drivers.⁴¹ This research provides the most detailed guidance with respect to modern large warehouses, although a relatively small share of the national stock of these facilities is in Greater London⁴².
- 5.61 We are not aware of any major studies that have considered in detail the relative quality of employment generated by different land uses. This is clearly more difficult to assess and is a function of both earnings and non-financial considerations, such as the types of jobs, the opportunities for training, career development and working environment.

⁴⁰ Roger Tym & Partners, *The Use of Business Space*, SERPLAN, 1997

⁴¹ King Sturge, Cranfield School of Management. *Future trends in the Demand for Warehouse Property*, April 2003.

⁴² King Sturge maintains records on new warehouses developed since 1995 in units of 100,000 sq ft and over. At March 2004 this database held records on some 430 warehouses of which 40 are in Greater London.

- § Average earnings in industries associated with logistics (e.g. wholesale and retail trade and transport storage and communications) are lower than they are in manufacturing, both in London and across GB, as shown in Figure 3.7 above.
 - § The King Sturge/Cranfield School of Management showed that large modern warehouses provide a range of employment opportunities. Whilst in total warehouse staff comprised two-third (68%) of all jobs, 11% were classified as administrative and support, 7% as managerial, 13% as drivers and 1% as 'other'. This diversity of employment reflects that fact that warehouses perform a wider range of value adding activities than formerly.
- 5.62 On the labour supply side, there is a national shortage of Large Goods Vehicle (LGV) drivers, which is expected to increase when the Working Time Directive takes effect for 'mobile workers' in the transport sector in 2005. This shortage has been variously estimated at currently between 30,000 and 50,000 nationally. Skills for Logistics, the new skills council in this sector, is seeking to develop and coordinate a number of initiatives to tackle this and other skill gaps. Overall, we believe there is a need for further research to provide a more current assessment of relative floorspace per workers ratio and to assess qualitative issues so that the skills needs of this sector in London can be more clearly identified and addressed.
- 5.63 In summary, average employment densities in warehousing in London are likely about three quarters of those prevailing in manufacturing. But this average conceals large variations within each sector. There is a need for up-to-date research on employment density ratios and on the quality of employment. If planning is to take the right decisions about logistics, it needs to be informed by better information about the number and quality of jobs it provides.

Warehouse Location

General Criteria

- 5.64 Decisions about warehouse location, like other business location decisions, are typically made in two stages. In the first stage the company usually identifies a broad area of search. In the second stage it compares different locations and sites within its search area.
- 5.65 In identifying the broad area the primary considerations include the location of its customers, their demand levels and required service level, the location of suppliers and the company's existing warehouse infrastructure, since in most cases a company will be adding a facility to an existing network rather than completely restructuring its network. These factors tend to define a broad 'optimum' location from a transport perspective.

Table 5.6 Key Warehouse Location Considerations

Consideration	
Customers	Number of locations and spread Customer demand levels Required service level (e.g. order lead time for replenishment)
Suppliers	Location(s) and volume of flows, etc
Existing other facilities	Location(s), etc
Land/property availability	Opportunities for new development or existing new or second-hand space.
Labour supply	Availability of labour. Population density, unemployment, travel to work, competitor employers
Transport infrastructure	Access to major road, sea, rail and air links
Costs	Land/property costs Transport Labour
Other financial considerations	Availability of grants
Site characteristics	Size and configuration of plot Slope Ground strength - important if building high Potential to accommodate expansion Access Security considerations Environmental issues Services
Planning issues	Potential for planning consent in required time frame. Hours of operations restrictions etc

Source King Sturge

- 5.66 To choose a specific site within its broad area of search, the company normally considers a range of micro factors. The relative importance of these factors varies for different operators but, in general the availability of suitable land or property and the availability of labour are fundamental, since without these a warehouse operation can not be established.
- 5.67 Within London, the availability of land is particularly important for large warehouse operators since sites of sufficient size to accommodate large requirements are relatively limited and largely confined to the Eastern sub-region and parts of the North (e.g. Enfield). For example, at a development density of 40 per cent a warehouse of say 25,000 sq m would require a plot of 6 ha⁴³.
- 5.68 Labour availability has become an even more important location consideration over the past few years reflecting historically low rates of unemployment nationally and shortages in the logistics sector.
- 5.69 Land and property costs are an important micro consideration and relatively cheap locations may be attractive, even if not ideal from a transport cost perspective. In line with the availability of land, the cheaper logistics locations within London are predominantly in the Eastern and North sub-regions.

⁴³ A modern large distribution centre is more likely to be developed at a density of between 35% and 40% rather than the 45% density we used in chapter 4 to calculate the total stock of built upon industrial land and to convert development completions into land take-up.

- 5.70 Site characteristics and deliverability are key micro considerations, particularly for operators that require a facility quickly. The potential to secure planning consent, and the relative ease and speed of achieving this, is clearly a factor in this respect.
- 5.71 Given that suitable sites for large warehouses in London are limited and land and labour costs relatively high, London is not generally a very competitive warehouse location for companies that are relatively footloose. As a result, many large warehouse facilities servicing London tend to locate around the edge of Greater London in locations with good access to the M25, or further away still. Warehouses in these locations have relatively good access onto the national motorway network and are generally more favourably located than facilities in London in terms of receiving inbound deliveries from suppliers. The benefits of locating outside of Greater London are particularly strong where these warehouse service customers outside London in addition to inside, which is probably the case for most.

Users with Specific Locational Requirements

- 5.72 As highlighted above, many warehouse operators are relatively footloose in terms of where they locate. This reflects the fact that the location decision typically involves a trade-off between costs and many other considerations, so that whereas a pure transport assessment might identify a preferred location or area, once other considerations are taken into account the potential area of search become more extended. However, there are certain types of operators that have more locationally sensitive requirements. In the main, these operators are either utilising specific transport infrastructure or are servicing specific markets.
- 5.73 Operators utilising specific transport infrastructure include those with warehousing linked to the Port of London, or operators with rail-connected facilities in London, although the number of these is very limited. However, by far the most significant example of these types of locationally sensitive operators is the concentration of airport-related users around Heathrow Airport, which in aggregate form one of London's most significant industrial and warehouse property markets.
- 5.74 Heathrow Airport accounts for 32% of UK terminal passengers and 55% of all air-freight handled. The main types of airport-related operators around Heathrow include the airlines themselves, companies servicing them, and transport/logistics services suppliers including freight forwarders, third party logistics contractors and the door-to-door 'integrators', such as Fed Ex, DHL and UPS. Of these companies, the freight forwarders have a particular preference to be located on the south-side of the Airport, because this provides better access to the cargo terminals.
- 5.75 Passenger and freight volumes at Heathrow will grow not only because of a growth in demand for air transport but also because Heathrow's fifth Terminal, due to open in 2008, will have the capacity to accommodate 30 million passengers per annum when fully operational. Longer-term, further development at Heathrow could also take place including a new runway and additional terminal capacity.⁴⁴ Statistics show that 92% of air freight handled at Heathrow is transported in the belly-haul of passenger aircraft as

⁴⁴ Department of Transport, *The Future of Air Transport*, December 2003

opposed to dedicated freighters⁴⁵. As a result of this growth, the demand for additional warehousing around the airport is likely to increase. However, against this anticipated increase in demand there are very few significant warehouse sites in the vicinity of the airport, which is constrained by Green Belt.

- 5.76 The last planning related study of the distribution sector in London looked briefly at the potential for an air freight park close to Heathrow and concluded that the 'suitability and availability of such sites would require closer examination.'⁴⁶ Given the growth of Heathrow since then and its projected growth, we believe this is an issue that the GLA should consider further. This view is supported by our assessment that Heathrow will continue to be the dominant air freight airport in the UK despite the expansion of capacity at other South East airports, notably Stansted⁴⁷.
- 5.77 From a market perspective, the main example of locationally sensitive operators are the central London retailers, or their suppliers, which in the main have a strong preference for locations in the Western sub-region since these clearly provide relatively good access into the West End. This factor is a key driver of warehouse requirements in locations such as Park Royal and the A40. Other examples include express sector operators, such as DHL, Fed Ex and UPS, which tend to have warehouses in or around central London.

Warehouse Location: Summary

- 5.78 A range of macro and micro considerations drive the warehouse location choice. Many warehouse operators are relatively footloose in terms of where they locate, suggesting some potential for 'locational substitution' of warehouse capacity between various parts of London.
- 5.79 We are not aware of any empirical evidence which highlights the potential for locational substitution of development capacity, but, based on King Sturge's market experience, the following considerations are likely to be relevant:-
- š The potential for locational substitution is likely to be strongest between adjacent or proximate Boroughs. For example, Enfield could potentially provide capacity that might not be available in, say, Haringey, or outer east London Boroughs could provide capacity not available in inner east London Boroughs⁴⁸.
 - š There is very limited potential for locational substitution between Boroughs that are more distant from one another. For example, there is very little potential for the relatively plentiful supply of land in the East sub-region to provide an appropriate substitute for the more constrained supply in the west sub-region. It is more likely that

⁴⁵ CCA 2003 Airport Statistics

⁴⁶ Berkeley Hanover Consulting, *Transport and Distribution In London*. For London Planning Advisory Committee, July 1994.

⁴⁷ The Future of Air Transport supports the provision of two new runways in the South East in the 20-year period to 2030 and identifies a second runway at Stansted as the first new runway to be built in the South East. However, currently Stansted handles just 16% of Heathrow's air freight tonnage. Moreover, Stansted serves a different air freight market than Heathrow with 99% of its tonnage being carried by dedicated cargo aircraft.

⁴⁸ This view is supported by some evidence of inter Borough relocations such as the relocation of the GLS Educational Supplies Limited warehouse from Millmead Road/Ferry Lane in Haringey to a new building at Mollison Avenue, Enfield.

occupiers looking to move but unable to find suitable premises will move out of London altogether, but in many cases just over the boundary].

- § The River Thames acts as a barrier to locational substitution, reducing the scope for locational substitution between Boroughs north and south of the River, e.g. within the Central sub-region or the Eastern sub-region. However, construction of the Thames Gateway Bridge could enhance the potential for locational substitution particularly within the East sub-region, e.g. between eastern location north and south of the River.
- 5.80 The extent to which individual operators are footloose in their choice of location generally depends significantly on whether they are seeking to relocate from an existing facility or whether they are looking to open a new establishment. In the former, their area of search may be more limited because of constraining factors such as the desire to retain their existing staff.
- 5.81 Operators with more locationally sensitive requirements tend to utilise key infrastructure or service key markets. There is merit in investing the potential for a specific airfreight logistics park around Heathrow.

Changing Organisation and Technology

Organisational Changes

- 5.82 Over the past 10 to 15 years, the way in which companies have organised their logistics operations has changed considerably, as they have come under increasing pressure to reduce costs and improve service. In many cases, technological developments have been enablers, if not drivers, of these changes. Organisationally, the key changes have included:
- § The consolidation of inventory.
 - § Greater 'just in time' logistics.
 - § The wider uses of cross docking.
 - § The outsourcing of warehousing and transport services.
 - § The growth of home deliveries in certain markets.
- 5.83 The consolidation of inventory refers to the way in which many operators have consolidated their inventory into a smaller number of relatively large warehouses and closed down their small to medium-sized facilities. Consolidation typically provides operators with a range of benefits including the opportunity to reduce the total amount of inventory they hold. In addition, total property and labour costs are often reduced because of the closure of smaller facilities. These savings in costs generally more than outweigh any increase in transport costs that may occur by having fewer warehouses. Inventory consolidation has been a key driver behind the demand for large warehouses. In the past nine years, 1995-2003 inclusive, close to 9.3 million sq of new warehouses was developed nationally in warehouses of 9,290 sq m (100,000 sq ft) and over, of which some 630,200 sq m was built in Greater London.

- 5.84 The trend towards inventory consolidation looks set to continue and will generate additional demand for large warehousing including within London. However, as the distribution market becomes more mature we would expect the rate of demand to slow. This may be reinforced by other factors including more demanding customer service requirements, rising road transport costs, labour supply problems and the ability to manage inventory better in dispersed locations electronically.
- 5.85 Just-in-time (JIT) logistics refers to an approach in logistics management whereby the flow of materials and goods is 'pulled' by customer demand rather than being 'pushed' out by producers or suppliers. From a warehousing perspective the wider use of JIT has been a key factor increasing the importance of the movement and information roles of warehouses rather than their storage role. From a transport perspective JIT tends to generate the more frequent delivery of smaller consignments. JIT logistics management will become increasingly important as customer service requirements become more demanding and as companies seek to eliminate 'waste' from their logistics activities.
- 5.86 Cross docking is often associated with JIT logistics management and is a way of managing the flow of goods without putting them into storage. In this respect, where cross docking is undertaken in a dedicated facility the warehouse still exists in the supply chain but it is a 'stockless' facility since the inventory does not get stored but goes through rapid unloading, deconsolidation/reconsolidation and reloading before onward dispatch. The growth of cross docking has generated requirements for large warehouses that are relatively land hungry since they have loading docks on two sides. It will remain a key organisational change because companies will increasingly focus on the speed of flow through the supply pipeline.
- 5.87 Outsourcing refers to the way companies contract out their logistics operations, typically their transport operations and/or their warehousing to specialist third party logistics contractors, such as Exel Logistics. Within the UK a relatively high share of total logistics expenditure is outsourced, as opposed to retained in-house. In 1998, contract logistics was estimated to account for 37% of total logistics expenditure in the UK⁴⁹, a share that has probably increased over recent years. This organisational change has made the contract logistics sector an important driver of demand for warehouse/distribution facilities and has reinforced the demand for large warehouses since these specialists have the expertise required to run these types of facilities either on a dedicated or multi-user basis.
- 5.88 The key factors driving the growth of outsourcing include the desire of companies to focus on their core businesses and the cost and service benefits the specialist logistics contractors are able to provide. The third party logistics market is also consolidating so that the large players are taking a bigger share of the market. We expect these trends to continue to drive outsourcing as an organisational change.
- 5.89 The home delivery market in the UK has been recently estimated to account for around 11% of total UK retail sales⁵⁰. The largest segment of this market involves the delivery of small packages supplied by direct selling manufacturers and non-store retailers (such as

⁴⁹ Atwal, Amar ' Re-engineering of supply chains drives radical change in European contract logistics', Cranfield University School of Management, *Supply Chain Practice*, Vol 1, No 4, 1999.

⁵⁰ University of Westminster/Freight Transport Association, *Overview of Home Deliveries in the UK*. A Study for the DTI, October 2001.

Amazon). This is followed by the market for large items, such as furniture and white goods, many of which are purchased in person at retail stores. The smallest segment currently is the home delivery of grocery products, which is a relatively new market with significant growth potential. The small packages and large items segments of the home delivery market typically generate requirements for warehousing from operators, but in the grocery sector various order picking models apply including order picking from stores (e.g. Tesco) order picking from a dedicated warehouse facility (e.g. Waitrose) and a combination of these (e.g. Sainsbury).

- 5.90 The home delivery market has potential for growth giving rise to new warehouse requirements and significant delivery vehicle trip generation. There is also interest in investigating the potential for unattended deliveries to designated collection and delivery points (CDPs) which may require clear definition.

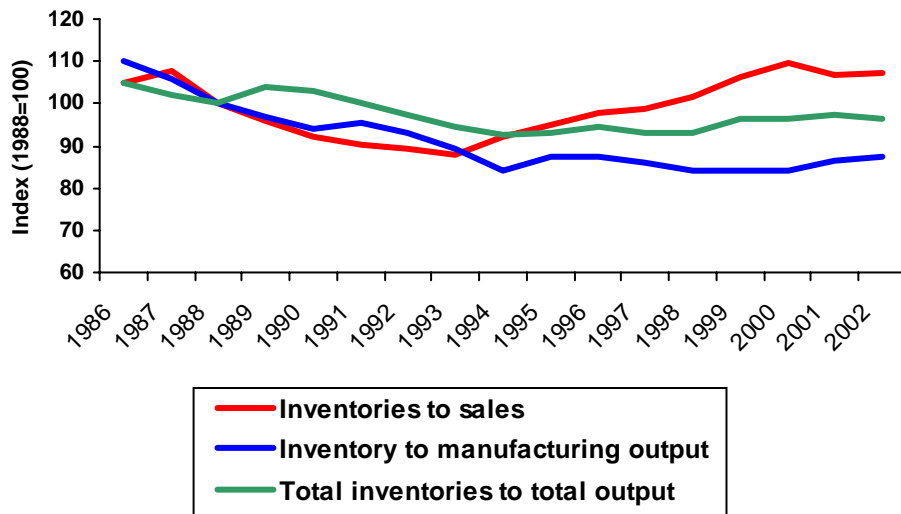
Technology Changes

- 5.91 Many of the organisational changes discussed above have been enabled, if not driven by technology. For example, the use of Electronic Point of Sale (EPOS), which enables retailers to track the sale of each product line continuously through the till, and Electronic Data Interchange (EDI), which provides a means of electronically communicating orders, facilitated the consolidation of inventory and enabled companies to adopt JIT practices. More recently companies have been using internet technology to share data and enhance collaboration across the supply chain, whilst the development of Radio Frequency Identification (RFID) will enable the status of inventory to be precisely tracked. All of these types of technology changes essentially increase the visibility of end customer demand up the supply chain and represent, in theory at least, the opportunity to substitute information for inventory.
- 5.92 Clearly if companies can share information to reduce inventory in the supply chain then this could, in aggregate, reduce the amount of warehousing required for storage. However, statistics on inventory ratios, considered below, show only a marginal fall in inventory ratios overall, which when considered alongside economic growth imply an overall increase in the total amount of inventory in the economy.
- 5.93 The other key technology developments with land use implications involve developments in material handling equipment. For example, automated storage and retrieval systems (AS/RS) have enabled companies to utilise very high bay storage, leading to demand for facilities 20 to 30 metres high. In addition, conveyor-based sortation systems may facilitate the automation of product movement from its warehouse storage location to a store order assembly point, or support a true cross-docking operation. As well as occupiers' building requirements, both these types of automation (i.e. AS/RSs and sortation systems) have implications for labour to floorspace ratios.

Inventory

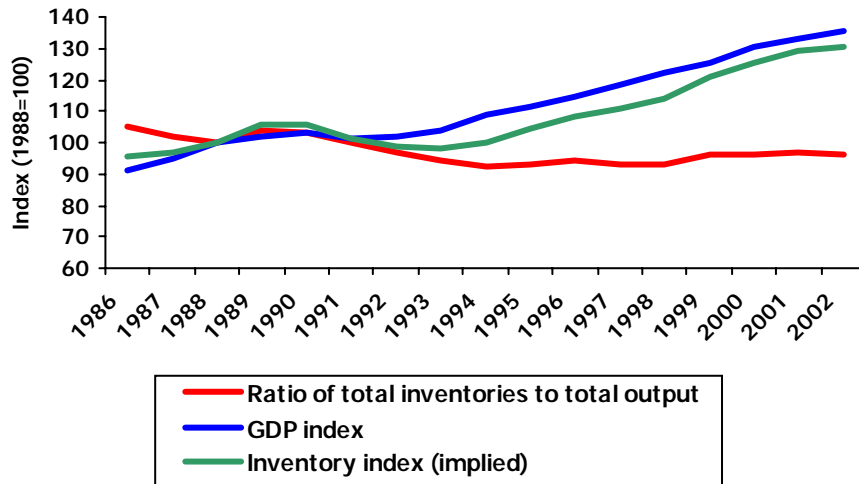
- 5.94 Figure 5.3 below shows ratios of inventories to sales and output across the economy as a whole, and Figure 5.4 shows estimated *levels* of inventory, measured in real (inflation-adjusted) terms.

Figure 5.3 Ratios of Inventories to Sales and Output



5.95 A key aim of inventory consolidation is to save costs and improve efficiency by reducing the inventory (stocks) held. Between 1998-2002⁵¹, these efforts met with some success: the ratio of inventory to real (inflation-adjusted) output (GDP) declined, but only marginally, by -3.8%. (The ratio of inventory to retail sales, meanwhile, rose by 9.4%).

Figure 5.4 Growth in Total Inventories



⁵¹ We chose this period for analysis because it covers a peak-to-peak cycle, as measured by annual UK GDP growth.

- 5.96 In the same period, real output rose by 30.4% and the real level of inventory held in the UK economy rose by an estimated 25.4%. Thus, despite a small increase in efficiency, the fast pace of economic growth in recent years has produced growth in inventory that was nearly as fast. This rising inventory in turn has driven growing demand for warehousing space.

Organisation and Technology: Summary

- 5.97 We expect the key organisational changes that have occurred over the past 10 years or so to continue at least over the next five years. This will mean further consolidation of inventory; greater 'just in time' logistics; a wider use of cross-docking; more outsourcing and the growth of home deliveries in certain markets.
- 5.98 In general, the key technology change will be the increasing use of the internet, which will promote 'e-logistics' but have relatively little impact on land and property issues. More important in this respect will be the greater use of automation in warehouses.
- 5.99 Despite improving efficiency, past experience suggests that economic growth will drive continuing growth in inventory and hence in the demand for warehouse space.

6 DEMAND AND SUPPLY IN THE LONG TERM

Introduction

- 6.1 In this chapter, we forecast the market demand for industrial and warehousing land in the period 2000-2016 and compare it with the supply currently identified by the planning system. We go on to draw policy conclusions, estimating how much land should be retained for industry and warehousing and how much can be transferred to other uses.
- 6.2 Our starting point is that, in line with the objectives of the London Plan, planning for employment land aims for a balance between:
- š *Market demand* – the quantity of land which occupiers wish to occupy *and* developers and landowners wish to supply, brought into equilibrium by the operation of the price system;
 - š *Planned supply* – the land which is provided and safeguarded by the planning system for employment use (we prefer this name to ‘supply’ because it emphasises the important distinction from *market supply*⁵²). Planned supply comprises:
 - o Land currently occupied by industry and warehousing;
 - o Land currently vacant, but identified by the planning system for industry and warehousing use (‘vacant land’);
 - o Land currently in other uses but identified by the planning system for future industry and warehousing use (‘potential land’);
 - o Land covered by vacant industrial/warehousing floorspace.
- 6.3 If planned supply is less than market demand, then demand will be frustrated, so that London will provide fewer jobs and create less wealth than it could otherwise do. If planned supply is too high against market demand, then some of the supply will remain vacant, wastefully reserving land for industry or warehousing which could be beneficially used for other purposes.
- 6.4 The objective of balancing market demand and planned supply is less straightforward than this simple explanation suggests. It will be examined closely in Chapter 7 below, as a preface to our policy recommendations. In this chapter, we focus on estimating future demand, current supply and the future change required to bring the two into balance. The analysis is based on two main indicators:
- š Forecast market demand is derived from the forecast employment of the sectors that currently occupy industrial land, drawn from the employment forecasts incorporated in the London Plan.
 - š Figures on the vacant land and potential land components of planned supply are taken from the recent GLA surveys of London Boroughs.

⁵²Planned supply should not be confused with *market supply* – the land which landowners choose to provide for a given price. Planned supply, unlike market supply, is not an outcome of market forces (in the jargon, it is exogenous), and in practice the two kinds of supply may be very different amounts.

- 6.5 The above figures are supplemented by market data, both quantitative and qualitative, taken from chapters 4 and 5 above.

The Land Requirement for London

The Components of Change

- 6.6 At any one point in time, the planned supply and market demand for industrial/warehousing land will be in balance if supply equals the demand for occupied land, plus margins of vacant land and vacant floorspace to allow for smooth operation of the market.
- 6.7 Rather than levels on any given date, planning policy needs to focus on *change in* supply and demand, covering the London Plan period, 2001-2016. The policy objective is that planned supply should reach and maintain balance against market demand. We aim to calculate the desired change in planned supply required to achieve this objective - which may be called the *land requirement*. A positive requirement would indicate that planned supply should be increased. But, as we shall see, the requirement for London in fact is negative, indicating that planned supply should be reduced and land released for other uses.
- 6.8 The land requirement, or correct land release, is the sum of:
- | | |
|--|-------------|
| Change in demand for occupied land | <i>plus</i> |
| Required change in vacant land to bring to correct level | <i>plus</i> |
| Required change in vacant floorspace to bring to correct level | |
- 6.9 Change in demand for occupied land in turn equals:
- The impact of changing employment in occupier sectors – which we call *structural change*, to stress that it reflects economic factors outside the control of land-use planners *plus* Intensification – whereby given land areas can accommodate more jobs.
- 6.10 Slightly re-arranging these terms produces:
- | | |
|---|---------------|
| Land requirement (desired change in planned supply) | <i>equals</i> |
| Structural change | <i>plus</i> |
| Required change in vacant land | <i>plus</i> |
| Required change in vacant floorspace | <i>plus</i> |
| Intensification | |
- 6.11 These components of change are considered in turn below. At this stage, we focus on a central scenario, representing our best estimate of the future land requirement, for London as a whole. Later sections will develop scenarios for sub-regions and test sensitivity to alternative assumptions.

Structural Change

Employment

- 6.12 The Volterra employment forecasts used in the London Plan (Table 6.1) show a total increase of 636,000 jobs (14.2%) in 2001-16. Manufacturing loses 82,000 jobs (25%) and Wholesale gains 14,000 jobs (5%)

Table 6.1 Volterra Employment Forecasts, 2001-16

London	2001	2016	Change	Change %
Primary and Utilities	20,000	15,000	-5,000	-25.0%
Manufacturing	322,250	240,000	-82,250	-25.5%
Construction	211,583	160,000	-51,583	-24.4%
Wholesale	275,750	290,000	14,250	5.2%
Retail	405,333	415,000	9,667	2.4%
Hotels and restaurants	303,583	445,000	141,417	46.6%
Transport, and communication	358,000	325,000	-33,000	-9.2%
Financial Services	249,667	275,000	25,333	10.1%
Business Services	1,152,667	1,590,000	437,333	37.9%
Public Administration	223,000	175,000	-48,000	-21.5%
Health and Education	610,000	660,000	50,000	8.2%
Other Services	351,750	530,000	178,250	50.7%
Total	4,483,583	5,120,000	636,417	14.2%

Source GLA

- 6.13 To forecast the demand for industrial and commercial space, based on the industrial and warehousing occupier sectors defined in Chapter 2, we need a finer-grained disaggregation than is provided by Volterra, producing forecasts for industries and services smaller than the broad sector shown in the table above.
- 6.14 To forecast employment in each of these 'second-tier' industries, we used a shift-share method, first calculating how its share of the larger 'parent' sector had changed in the past period 1991-2002, then projecting this change in share to the future period 2002-2016.
- 6.15 To illustrate, in 2002 'the manufacture of electrical and optical equipment' accounted for 9% of manufacturing employment in London. This was a decrease of 3 percentage points since 1991, when it accounted for 12%. Projecting forward, we estimate that between 2002 and 2016 the manufacture of electronic and electrical equipment will lose approximately another 3 percentage points, so that in 2016 it will account for just 6% of the manufacturing total.
- 6.16 Using this method produces an apparent anomaly for the 'national post activities' sector, where employment grew and took an increasing share of declining sector between 1991-2001. We do not think that such a rate of growth is likely in the future given consolidation of activity in that sector and have therefore adopted a neutral assumption of no net change in employment for 'national post activities'.
- 6.17 Employment forecasts for the industrial/warehousing sectors defined in Chapter 2 are set out in the table below.

Table 6.2 Forecast Employment in Industrial/Warehousing Sectors, 2001-16

London	2001	2016	Change
Production and preserving of meat	38,100	32,600	- 5,500
Preparation/spinning: cotton-type fibres	19,600	9,500	- 10,100
Sawmilling and planing of wood etc	4,800	3,300	- 1,500
Manufacture of pulp	5,500	2,700	- 2,800
Printing of newspapers	41,100	35,600	- 5,500
Manufacture of industrial gases	19,300	10,500	- 8,800
Manufacture of rubber tyres and tubes	10,900	9,400	- 1,500
Manufacture of flat glass	5,300	3,800	- 1,500
Manufacture of basic iron/steel etc	22,200	8,300	- 13,900
Manufacture of engines and turbines	16,100	6,900	- 9,200
Manufacture of office machinery	31,300	15,800	- 15,500
Manufacture of motor vehicles	20,300	11,200	- 9,100
Manufacture of chairs and seats	15,700	13,400	- 2,300
Recycling of metal waste and scrap	1,100	1,400	300
Selected Construction	52,100	47,200	- 4,900
Wholesale Distribution	213,200	241,500	28,300
Maintenance and repair of motor vehicles	21,800	11,300	- 10,500
Sewage and refuse disposal etc	15,600	29,800	14,200
Freight transport by road	20,500	14,900	- 5,600
Cargo handling	24,400	30,300	5,900
National post activities	63,500	63,500	0
Total	662,400	602,900	- 59,500

- 6.18 In the above forecast, London loses 60,000 industrial and warehouse jobs in the period 2001-16. The earlier London Business Space study based on the assumption that industrial space is occupied by Manufacturing and warehouse space by Wholesale, forecast a loss of 68,000 jobs. The smaller loss in our present forecast results from the more sophisticated definition of occupier sectors. This new definition has added a number of service sectors, which on balance are expected to gain jobs.
- 6.19 We have carried out some sensitivity tests to this forecasting method, varying assumptions such as the past period for the shift-share function and the future period this is projected for. Variations in these assumptions make little difference to the results.

Land Demand

- 6.20 To translate the above employment forecasts into demand for land, we used an employment density ratio to convert jobs to floorspace and then a plot ratio to convert floorspace to land.
- 6.21 Table 5.5 above has set out the best available information on employment densities drawn from survey evidence. Based on this evidence, we use estimates of 30 sq m per worker for industrial floorspace and 40 sq m per worker for warehousing floorspace. As a check,

we have compared our estimates of industrial and warehousing employment at 2001 against the floorspace stock from the ODPM Commercial and Industrial Floorspace Statistics. The implied ratios by sub region are set out below.

Table 6.3 Estimated Employment Densities by Sub-Region Industrial and Warehousing Space, 2001

	Floorspace Sq m	Jobs	Density sq m per Worker
Central	3,859,000	157,700	24
East	8,782,000	165,500	53
West	7,275,000	162,900	45
North	3,419,000	78,700	43
South	3,003,000	97,700	31
London	26,337,000	662,400	40

Source ABI, ODPM Floorspace Statistics, RTP

- 6.22 There is variation by sub-region, with the implied ratios much lower in Central London than in East London. The ratio for London as a whole is slightly above that suggested by the survey data and is probably explained by vacant and under-occupied premises.
- 6.23 Based on the densities at paragraph **Error! Reference source not found.** above, applied uniformly across London, we estimate that in 2001-2016 demand for industrial/warehousing land will fall by 338 hectares, or 22 hectares per year. The table below breaks down this demand by sub-region.

Table 6.4 Land Requirement, 2001-16 Structural Change Component

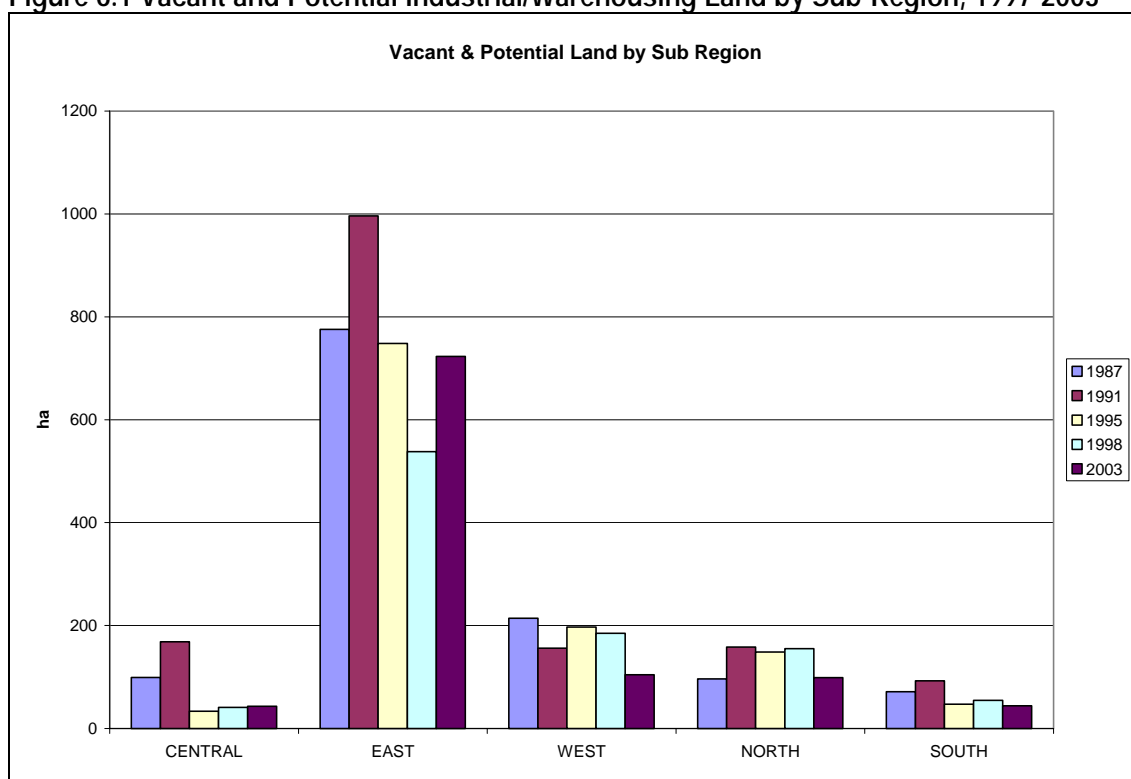
	Ha
Central	5
East	-124
West	-90
North	-61
South	-66
London	-336
London per year.	-22

Vacant and Potential Land

- 6.24 At the beginning of 2004, the GLA carried out a survey of vacant industrial/warehousing land and floorspace across London, updating a series of earlier surveys which were conducted periodically by LPAC, the GLA's predecessor. The survey collected from the Boroughs details of:
- § *Vacant industrial/warehousing land*, defined as land identified by the planning system for industrial/warehousing use, whether through UDP designations, planning permissions or development briefs;
 - § *Potential industrial/warehousing land*, comprising sites which are currently in other uses but are potentially available for industry/warehousing.

- 6.25 According to the survey, the stock of vacant industrial/warehousing land in 2003 was 852 hectares, a decrease of 45 hectares since the previous survey in 1998. When potential industrial/warehousing land is added the stock of vacant and potential land rises to 1,013 hectares.
- 6.26 Figure 6.1 shows vacant and potential land by sub region for each survey year since 1987. The survey information should be treated with caution. Some of the Boroughs provided no returns or partial returns, and the resulting gaps were filled by GLA estimates. As the graph shows, the total stock and its distribution of vacant land have been fairly consistent throughout the period. Whilst the total has fallen from its 1991 peak, there are still 1,000 hectares of vacant and potential industrial/warehousing land identified in the current survey, equivalent to 15% of estimated 2003 stock⁵³.

Figure 6.1 Vacant and Potential Industrial/Warehousing Land by Sub-Region, 1997-2003



Source GLA

- 6.27 The East London sub-region has the majority of the vacant and potential stock in each survey year, ranging from 55% in 1998 to 71% in 2003. In each of the other sub-regions, the stock of vacant and potential industrial/warehousing land is much smaller, and in general below the level of earlier surveys.
- 6.28 As noted earlier, there needs to be a margin of vacant land to allow for smooth operation of the market. There is no rigorous measure of what this margin should be. In our judgment, 15% is too high and that the vacancy rate can be reduced to 10% without

⁵³ We have included potential land in calculating the vacancy rate, because we consider it part of planned supply – the stock of land identified by the planning system for industrial and warehousing use over the plan period. In effect, potential land is future vacant land proposed for industry and warehousing.

adversely impacting on the industrial and warehousing sectors in London. The effect of applying the 10% vacancy rate uniformly for each Borough is shown in Table 6.5 below.

**Table 6.5 Land Requirement, 2001-16
Vacant/Potential Land Component**

	Ha
Central	51
East	-476
West	61
North	-19
South	20
London	364
London per year	24

Vacant Floorspace

- 6.29 As noted in Chapter 4 above, the industrial/warehousing floorspace vacancy rate London-wide is virtually equal to what we consider an efficient frictional rate, 8%. Across London, therefore, change in vacant floorspace does not contribute significantly to the land requirement. But this is not true of individual sub-regions. Thus, in the Central and West sub-regions there would need to be additional industrial floorspace to relieve what are currently tight markets. Conversely, in the East there is a substantial negative requirement to absorb vacant floorspace surplus to requirements.

**Table 6.6 Land Requirement, 2001-16
Vacant Floorspace Component**

	Ha
Central	31
East	-76
West	22
North	-3
South	-11
London	-36
London per year	-2

Intensification

- 6.30 Our central scenario does not include any allowance for intensification. However, in the sensitivity tests (paragraph 6.50 et seq), we will test a higher plot ratio.

The Total Land Requirement

- 6.31 Combining a reduction in the vacant stock with the structural reduction in demand produces a total of 737 hectares of land available for release over the period 2001-16, or an average of just under 50 hectares per annum. This compares with an estimate of 72 ha per annum over the period 1985-2002 from the Land Use Change Statistics (Appendix 1).
- 6.32 Table 6.7 summarises the contribution of different components to this total land release.

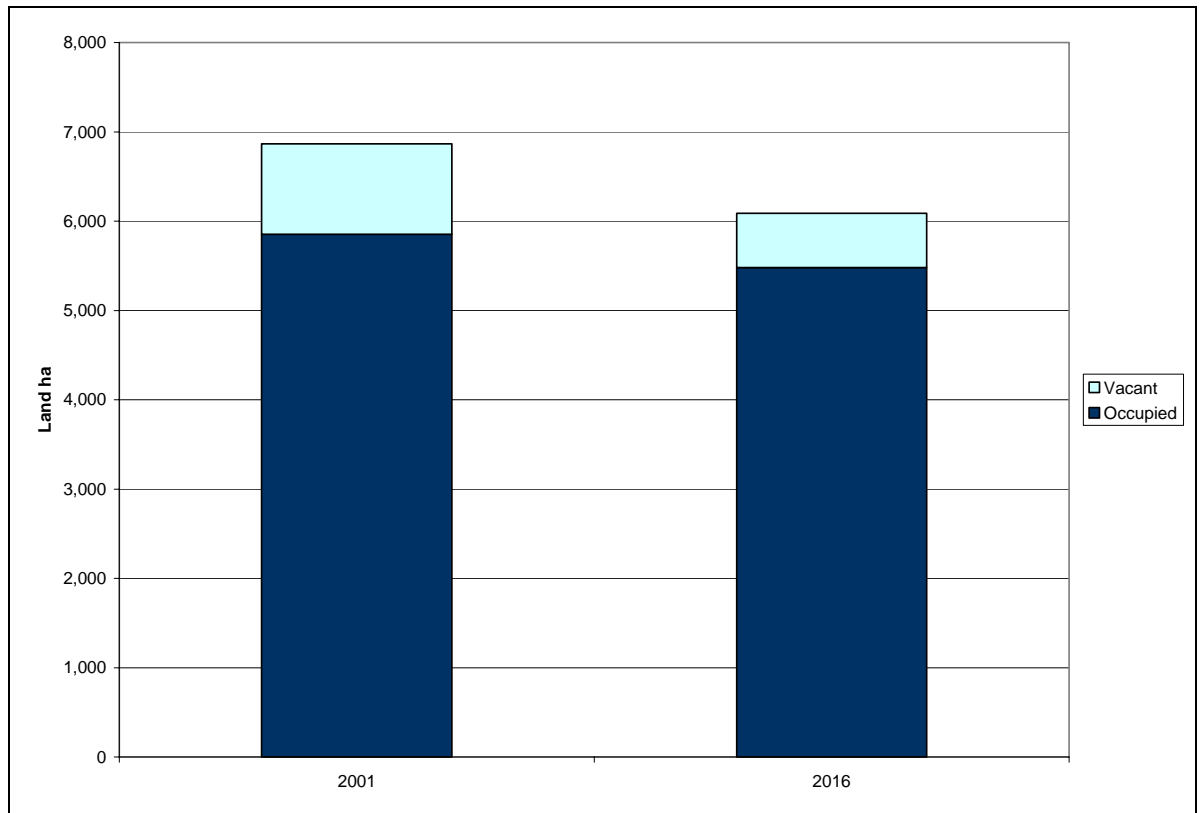
**Table 6.7 Land Requirement, London, 2001-16
Components of Change**

Source of Land	Ha per year average
Structural change	-24.3
Change in vacant and potential land	-22.4
Change in vacant floorspace	-2.5
Total	-49.2

This calculation excludes intensification, as explained earlier.

- 6.33 Half the total suggested land release comes from structural change, which is a reduction in occupied land. The other half comes from excess vacant land and vacant floorspace (and to a small extent from potential land, which is currently in other uses). While the reduction in occupied land can only occur gradually over the Plan period as employment falls, the release of vacant land and property does not have to be phased in any particular way; it could be drawn down much faster, over a shorter period, than indicated by the annual averages shown in the table.
- 6.34 In relation to the reserve of a cautionary note should be raised for the longer term. The current excess stock is not an inexhaustible reservoir that can be tapped forever. If it is managed down to an optimal vacancy rate, this will be a one-off gain.
- 6.35 Also the rate of loss due to structural change is slowing down. Whilst once there was a large stock of redundant industrial/warehousing land being generated in London that the planning system was not keeping up with, in the longer term London will need to look to alternatives such as intensification in order to meet its land use demands.
- 6.36 This perhaps becomes clearer when the land requirement is viewed graphically (Figure 6.2).

Figure 6.2 Planned Supply of Industrial/Warehousing Land, London, 2001 and 2016



Sub-Regional Land Requirements

- 6.37 We have prepared three alternative scenarios to inform the draft Supplementary Planning Guidance, showing how much industrial/warehousing land should be released in each sub-region.
- 6.38 Scenario A in effect has already been shown in Tables 6.4-6.6 above. In this scenario, the geographical distribution of employment change, and hence the demand for land, follows the Volterra forecast, which in turn reflects the sectoral employment structure of each sub-region. Demand is not footloose across sub-regions. Under this scenario:
- š 87% of the land available for release, almost 700 hectares, is in the East sub-region.
 - š At the other extreme, in the Central sub-region the vacant land and vacant floorspace components are positive, because present vacancy rates are below the desired level. Furthermore, the structural component is also positive, though very small, because there is little traditional industry and more industrial/warehouse occupiers are in service sectors, which have more growth potential, fuelled by the service needs of Central London's growing populations of both households and businesses,. No land can be released; indeed there is a positive requirement for 86 additional hectares.
 - š In the West sub-region, the 'vacant' components are similarly positive, reflecting the current tightness of the market. But they are offset by a negative structural component, as manufacturing decline gradually takes its toll over the years. The net

result is virtually no change in planned supply, with just 7 hectares available for release over the 15-year Plan period.

- 6.39 Scenario A, the base scenario, is similar in approach to the '0% development capacity/ 100% employment structure' scenario in SDS Technical Report 21, Demand and Supply of Business Space, which informed the London Plan.

**Table 6.8 Land Requirement by Sub Region, 2001-16
Scenario A – Base Scenario**

	Ha
Central	86
East	-676
West	-7
North	-83
South	-57
London	-737
London per year	-49

- 6.40 Table 6.9 shows a variant of the above (Scenario A1), in which the land vacancy rate is reduced to 10% in those Boroughs where there is an excess, but is left unchanged for those Boroughs whose current rate is below 10%. The Central sub-region's positive requirement shrinks and the land that can be released in the other sub-regions increases.

**Table 6.9 Land Requirement by Sub Region, 2001-16
Scenario A1 – Excess Only Variant**

	Ha
Central	36
East	-685
West	-68
North	-94
South	-85
London	-897
London per year.	-60

- 6.41 In Scenario B, Supply-led Redistribution (Table 6.10), demand is partially mobile between sub-regions, gravitating towards those sub-regions where there is more supply. To model this redistribution mathematically, we have followed the '70/30 capacity/employment structure' method used in the Business Space study (SDS Technical Report 21).

**Table 6.10 Land Requirement by Sub Region, 2001-16
Scenario B - Supply-Led Redistribution**

	Ha
Central	104
East	-608
West	-41
North	-102
South	-90
London	-737
London per year	-49

- 6.42 In Scenario B, land release in the East far exceeds that in the other sub-regions, but it is some 60 hectares less than in Scenario A. This is offset by increased land release in the West, North and South, as some occupiers and developers are pulled towards the East by the greater availability of land.
- 6.43 But Scenario B is unconvincing with respect to the Central sub-region: Central is the only sub-region with a positive land requirement. Given its tight pressure of demand against supply, we would expect some of its growing demand to migrate to the more generously supplied East, especially as much of the East is well located geographically to serve the City and Docklands markets, which as we have seen support much of the industrial/warehousing activity in the Central sub-region. Yet the 70/30 formula does not produce this redistribution from Central to East, because of a mathematical anomaly.
- 6.44 To rectify this problem, we have produced Scenario C, which transfers the whole of Central's land requirement to East (Table 6.11).

**Table 6.11 Land Requirement by Sub Region, 2001-16
Scenario C – Preferred Scenario**

	Ha
Central	0
East	-504
West	-41
North	-102
South	-90
London	-737
London per year	-49

- 6.45 Scenario C is our preferred scenario, because in our view it is both realistic and aligned with wider policy aspirations. The draft SPG should try to encourage some redistribution of industrial and warehousing activity to the East, where there is a large amount of planned supply. In particular, it should be able to accommodate pressures for industrial/warehousing land to serve the Central London market. But the policy must recognise that there are limitations to the extent of spatial redistribution given the distinctive sub-regional markets.

- 6.46 It is important to note that the preferred scenario does not imply the transfer of existing business activity from the Central to East sub-regions. In Scenario C, the stock of industrial and warehousing space in the Central sub-region does not change. What migrates to the East is *future growth* – which over 15 years amounts to a modest 9% of this existing stock.
- 6.47 As previously mentioned, an important input to all the above scenarios is the GLA survey of vacant industrial/warehousing land. The Boroughs which did not respond to the survey, and whose figures had to be estimated by the GLA, include Tower Hamlets. We consider that the estimate for Tower Hamlets is suspiciously high, given that much land in that Borough has been developed in recent years. In Table 6.11, therefore, we show a variation on Scenario -C based on reducing the Tower Hamlets vacant land figure by 100 hectares.

**Table 6.11 Land Requirement by Sub Region, 2001-16
Scenario C1 - Revised Tower Hamlets Variant**

	Ha
Central	0
East	-420
West	-38
North	-100
South	-89
London	-647
London per year.	-43

- 6.48 In this variation, land release in the East sub-region falls by some 80 hectares. The figures for the other sub-regions do not change significantly.
- 6.49 Whether C or C1 should be shown in the SPG as the preferred scenario depends on what is the true vacant land figure for Tower Hamlets. We suggest that renewed efforts be made to ascertain this. More generally, we are concerned that major planning policies on strategic land allocations should be made on seriously deficient information. Monitoring has to improve if such policies are to be implemented successfully and kept up to date in future.

Sensitivity Tests

- 6.50 Tables 6.8-6.11 are all variants on the base scenario. As set out above, this central scenario was based on the following assumptions:
- š Employment density ratio of 30 sq m per worker for industry and 40 sq m per worker for warehousing;
 - š Plot ratio of 45%;
 - š Optimal land vacancy rate of 10%.

- 6.51 We have carried out sensitivity tests varying each of these assumptions. Below, we first explain each of these tests and their rationale, then bring all the results together in Table 6.12.

Plot Density Ratio

- 6.52 Consultations with agents and our own experience suggest that the current average ratio is around 45%. For purposes of the sensitivity analysis we have tested this at 40% and 50%.

Employment Density Ratio

- 6.53 As an alternative to the standard employment densities used in the main scenario, we have tested Borough-specific density ratios, calculated by dividing 2001 industrial/warehousing employment by industrial/warehousing floorspace for each Borough. As noted earlier in discussion of Table 6.3, which shows these ratios by sub-region, the estimated ratios vary considerably across London.

Land Vacancy Rate

- 6.54 The Central Scenario sets the land vacancy rate at 10% - In the sensitivity test we drop this ratio to 5%. There is much uncertainty about what a reasonable land vacancy rate should be, because of lack of data about both total and vacant land stocks. Improved monitoring would fill this important gap in knowledge.

Sensitivity Test Results

- 6.55 The results of the sensitivity tests are in Table 6.12 below. All are based on Scenario A, the base scenario. For each sensitivity test, all other factors have been held constant as in the central scenario in order to isolate the individual impact.
- 6.56 The first column sets out the land requirements forecast in base scenario A. The second and third columns show the impact of varying the plot ratio to 40% and 50% respectively. The fourth column sets the floorspace per worker ratio at the implied Borough average at 2001. The final column reduces the land vacancy rate to 5%. The results are as follows:
- š Changing plot ratios makes little difference.
 - š Setting the floorspace per worker ratio at the current estimated Borough average increases the amount of industrial/warehousing land that can be released to an average of 70 hectares per annum. The effect is particularly notable in the East sub-region, where floorspace per worker is higher (see Table 6.3).
 - š The variable that has the greatest impact is the assumption about the land vacancy rate. If this is reduced to 5% then the amount of industrial/warehousing land that can be released rises from an average of 49 hectares per annum to 71 hectares per annum.

**Table 6.12 Sensitivity Tests
Land Requirement, 2001-2016 under Different Assumptions**

	Central Scenario A	Plot Ratio		Density Ratio	Land Vacancy
		40%	50%	Borough Average	5%
Central	86	102	74	61	40
East	-676	-679	-673	-830	-799
West	-7	3	-16	-70	-90
North	-83	-82	-84	-134	-123
South	-57	-60	-56	-68	-89
London	-737	-715	-754	-1,043	-1,062
London per year	-49	-48	-50	-70	-71

Land Release by Borough

The Classification of Boroughs

- 6.57 The draft Supplementary Planning Guidance on Industrial Capacity divides the London Boroughs into three groups, comprising:
- § 'Restricted transfer' – where the pressure of demand for industrial/warehousing land is high and therefore little if any should be released for other uses;
 - § 'Managed transfer' – where supply is relatively generous and release should be more permissive (though not in the Strategic Employment Locations (SELs), where development of non-business uses should generally be resisted);
 - § 'Limited transfer', which lies between the restricted and managed categories.
- 6.58 As part of the study brief, we have been asked to comment on this classification, which is provided at paragraph 6.11 of the draft SPG and reproduced at Table 6.13 below.

Table 6.13 Classification of Boroughs, Draft SPG

Restrictive	Bromley
	Camden
	Croydon
	Hammersmith and Fulham
	Kensington and Chelsea
	Kingston upon Thames
	Merton
	Richmond upon Thames
	Sutton
	Wandsworth
	Westminster
Limited	Barnet
	Brent
	Ealing
	Enfield
	Hackney
	Haringey
	Harrow
	Hillingdon
	Hounslow
	Islington
	Lambeth
	Lewisham
	Southwark
	Tower Hamlets
	Waltham Forest
	Managed
Bexley	
Greenwich	
Havering	
Newham	
Redbridge	

Source GLA, Industrial Capacity Draft Supplementary Planning Guidance

Indicators of Market Balance

6.59 To assess the relative balance of supply and demand and hence the potential for releasing industrial/warehousing land at a Borough level, we have examined each of Boroughs against a range of indicators. These are:

Short-Term Indicators

- i) An informed agency view, provided by senior King Sturge surveyors, who were asked to comment on the existing classification
- ii) Existing stock of industrial land
- iii) Current floorspace vacancy rates
- iv) Current rental values

Long-Term Indicators

- v) Current land vacancy rates and years supply ratios
- vi) Density ratio of floorspace stock to employment
- vii) Estimated land requirement (land that can be released to other uses over the Plan period), calculated as shown in earlier sections

6.60 No one single indicator provides the answer and some of the indicators themselves are ambiguous. Hence we have adopted an approach based on a basket of indicators. Where the majority of the eight indicators suggest that a Borough may have been inappropriately classified we have noted this below.

6.61 It is difficult to set top-down land requirements for individual Boroughs, because neither business location decisions or travel to work patterns are constrained by administrative boundaries. Much occupier demand is footloose between neighbouring Boroughs, as search areas and labour market areas straddle Borough boundaries. Within the broad sub-regional totals we set out earlier, therefore, decision to retain or release land in one Borough rather than another will depend largely on local supply-side factors such as local infrastructure and the quality of individual sites. Therefore, we would advise that the Sub Regional Development Frameworks are the most appropriate place for distributing the sub-regional planned supply totals across Boroughs.

6.62 However, we appreciate that for local planning purposes some guidance is required on the potential for land release at Borough level. The classification which provides this guidance can be only broadly indicative, there will be variations within and between Boroughs, and some Boroughs will be on cusp of two categories. It will be vital to monitor market conditions in individual Boroughs, so that individual classifications can be changed where circumstances warrant it.

Sub Regional Market Balance

- 6.63 Because occupier demand is footloose between Boroughs and local labour markets straddle Borough boundaries, we expect that the balance of the land market will vary less within each sub-region than between sub-regions. In general, Boroughs within each sub-region are likely to share the same the same classification. We begin, therefore, by considering market conditions against existing designations in each sub-region.

West

- 6.64 The West is showing as a strong market with quite tight demand pressures. Rents are at very high levels and vacancy rates are low. Most of the Boroughs are currently designated in the Limited release category. The demand pressures suggest the area should be considered for the Restrictive category. However, the West is a large industrial/warehousing market with a large stock of land. To the extent that some of the future demand is mobile and can be encouraged to locate to the East, then there will still be scope for limited release of land.
- 6.65 Demand for all land uses in the West is high, due to the strength of the sub-regional economy. If other uses, such as office or residential, displace industrial/warehousing land then the effect may be to displace London industrial/warehousing activity beyond the M25 to the west rather than displacing it to East London.

North

- 6.66 The Boroughs in the North are currently classified as Limited release, and this seems correct. The North has the lowest rents, which is possibly a commentary on the quality of industrial/warehousing land. In terms of the other indicators the North fits comfortably in the middle bracket for Limited release.

Central

- 6.67 The Central Boroughs are currently a mix of Limited and Restrictive status. However, Boroughs classified in different groups in reality seem to exhibit similar characteristics. The distinction, for example, between Camden being Restrictive and Islington being Limited is not immediately obvious. Across the Central area there are high rents and low vacancy rates. In the longer term the Central Area would seem to be moving from Limited to Restrictive. This is probably a function of central area industrial/warehousing sites already being reassigned for other purposes and the total stock of industrial/warehousing land falling.

South

- 6.68 All the Boroughs in the South are currently classified as Restrictive. Certainly the vacancy rate for industrial/warehousing land is low, and the overall stock of industrial/warehousing land is relatively low, especially in Richmond and Kingston. On the other hand, whilst rents are reasonably strong, they are lower than the West or Central, and current floorspace vacancy rates are around average – except in Sutton and Kingston, which have vacancies far above both the London and sub-regional averages. Sutton also stands out for a land vacancy rate and years supply ratio well above the sub-regional average. The agency view is that Croydon and Sutton could both be moved from Restrictive to Limited.

East

- 6.69 The East has a high stock of vacant industrial/warehousing land. Currently most of the East is designated Managed and this appears the right classification. Rents are in the region of £7.50-£8.00, higher only than the North. Redbridge is the one Borough that does not conform to regional type, having a very low stock of industrial/warehousing land, vacant or otherwise.

Proposed Changes

- 6.70 On this Borough based classification there is one obvious anomaly. **Redbridge** is classified as Managed whereas the indicators would suggest it should be in the Restrictive category. It has very limited stock of industrial/warehousing land currently available. Most of its previous industrial/warehousing land has been already been turned over to housing. There is little industrial/warehousing activity remaining. Whilst forming part of the East sub-region, for which the managed categorisation is correct at the sub-regional level, Redbridge does not share the same characteristics as its riparian neighbours.
- 6.71 There are two other Boroughs where a majority of indicators suggest movement to a different classification should be considered.
- § **Croydon**, currently Restrictive, could be re-classified as Limited.
 - § **Sutton**, currently Restrictive, could be re-classified as Limited.
- 6.72 Depending on which indicators are used, there are other Boroughs which appear under pressure for industrial/warehousing land and might be moved from Limited to Restrictive if, in the light of monitoring, the pressure of demand persists in the long term. These are, for very different reasons, **Lambeth, Harrow and Hounslow**. In addition **Greenwich** could be considered for moving from Managed to Limited.

Summary

- 6.73 Our analysis confirms that the current Draft SPG, suggesting release of industrial/warehousing land at an average of 50 hectares per annum across London, is correct. This figure should be monitored and reassessed at regular intervals.
- 6.74 At sub-regional level, our preferred scenario suggests that, of the c740 hectares to be released over the Plan period, approximately 500 should be in the East. The North and South sub-regions should release some 90-100 hectares each and the West 40. In Central, whilst our preferred scenario suggests that there should be no change, there could still be scope for some release through intensification.
- 6.75 We would recommend that the final version of the SPG should place the onus on the Sub Regional Development Frameworks to allocate these totals across Boroughs. Broad guidance on how this should be done is provided by the threefold classification of Boroughs. We have reviewed this classification and suggested some changes, including transfer of Redbridge into the Restricted category and Croydon and Sutton into Limited.

7 CONCLUSIONS

Background

- 7.1 Close analysis demonstrates that the occupiers of industrial/warehousing land are drawn from a wider spread of SIC sectors than the traditionally used manufacturing and wholesale distribution. The additional sectors are all service activities; they include elements of transport and storage, construction, recycling and refuse disposal. Adding these sectors to the list of industrial and warehouse occupier sectors substantially alters our estimates of total demand for space. More important, it alters our forecasts of future change: because the additional sectors have better prospects of employment growth than manufacturing, we now forecast a slower reduction in the demand for industrial/warehousing land than we did in *The Demand and Supply of Business Space*.
- 7.2 Our 1999 study of Industrial Land Demand suggested that the industrial and warehousing activities for which London has a comparative advantage had more than one of the following characteristics:
- § Activities serving London markets, comprising both businesses and households.
 - § Activities near the end of the physical production process, producing final commodities as opposed to capital equipment or intermediate goods.
 - § Activities which produce time-sensitive goods and services.
 - § Activities which are high-productivity and high value-added, but not necessarily high-technology.
 - § Activities at the borderline of industry and services, with a high tertiary content.
- 7.3 Our findings support these conclusions, and suggest that the characteristics listed are becoming more marked as London's industry and logistics increasingly specialise. Increasing tertiarisation and specialisation are evident everywhere, but especially in the Central sub-region. Throughout London, one manifestation of this trend is the continuing shift away from industry and factories towards logistics and warehouses.
- 7.4 London is a comparatively high-cost business location. Not only is land expensive, but other inputs, and especially labour, in general cost more than elsewhere in the UK. This is why industry, which is a relatively low-value sector, is under-represented in London, and why what industry there is tends to be biased towards firstly higher-value activities and secondly towards those that activities that have compelling reasons to be in London – generally because their markets are there. Routine work and primary production have no good reason to incur the high costs of operating in London.
- 7.5 For all these reasons, London is no longer the manufacturing centre it once was. Nor is there a reasonable prospect of London becoming a competitive location for primary manufacturing processes in the foreseeable future. It is likely that manufacturing industry will continue to decline in London, not only in absolute terms, but also relative to the

national norm. The causes of this trend are largely beyond the reach of land-use planning. Even if planners were able to counter it, this may encourage firms to make sub-optimal location decisions, reducing efficiency and competitiveness.

- 7.6 While industrial employment is still contracting in London compared to the national trend, this relative decline may not be as rapid as it once was, because increasing specialisation has weeded out those activities which cannot operate efficiently there, and because the renewed growth in the capital's population and total employment creates additional demand.
- 7.7 London-wide, the pressure on demand for industrial/warehousing floorspace is relatively high compared to other parts of England. The pressure of demand for *land* is also relatively high, except in East London, and is reinforced by the fact that many development and redevelopment sites are affected by major constraints.
- 7.8 Within London, there are marked sub-regional differences in the pressure of demand. Central London is very tight and tightening. In the West and to a lesser extent the South, demand pressure is high, while in the North it is middling. In the East, there is much less pressure on floorspace, though even here industrial/warehousing rents are well above the national average.
- 7.9 Market demand for industrial/warehousing land in London has been falling for many years and continues to fall, and the planning system has been reducing supply accordingly, releasing land for other uses. But the high and rising pressure of demand in large areas of London suggests that, in these areas, there is a risk that the reduction in planned supply may run ahead of the reduction in market demand – so that the shift to other uses drives the contraction of industry and warehousing, rather than responding to it. The next section discusses the implications of this and possible policy responses.

Policy

Land Release

Policy Objectives

- 7.10 Before making specific policy recommendations, we need to establish the objectives that the GLA aims to achieve. This requires a rather technical discussion on the economics of land-use planning.
- 7.11 There has been much argument over the years on whether policy should seek to retain industry in London against the market trend of absolute and relative decline. In this study, we do not revisit this debate, though we note in passing that some of the arguments for retention now look weaker than they once did. Thus, the latest official statistics show that manufacturing now provides just 4.5% of London's jobs, and its earnings are not particularly high compared to those in other sectors.
- 7.12 There is no need in this report to argue from first principles about the merits of industry and warehousing; we take as our starting point the policy stance of the London Plan and draft SPG. These documents, like many land-use plans, say that the GLA and Boroughs

will encourage economic growth and prosperity by fully meeting the *need* and *demand* for employment land.

- 7.13 To translate this principle into practical policy recommendations, we need to look more closely at these terms. In ordinary speech and in some planning documents 'need' and 'demand' may be used interchangeably, but in the present context it will be useful to distinguish between the two:
- § Briefly, 'need' means something the subject (in this case business occupiers and the developers and financiers who provide them with built space) both *wants* and *ought to have*. Demand means something the subject *wants* and *can pay for*.
 - § If 'need' is understood in this narrow sense, the policy objective to meet need does not seem to offer useful guidance on how much employment land to provide, because there is no ready criterion for judging the *ought*. Land, like any resource, in general has an opportunity cost; it is not possible for everyone to have all they want. The concept of need in general does not help decide between competing claims.
 - § In contrast, the policy objective of meeting market demand does provide clear guidance. If this objective is accepted, the key criterion for deciding between competing claims for land is ability and willingness to pay. This is a more helpful criterion, for reasons both of principle and of practical expediency:
 - In principle, ability and willingness to pay is a good criterion because, in our market economy, the price mechanism is considered the best way of allocating resources, except where are specific reasons why policy should override it (which of course there very often are, as we shall see shortly).
 - In practice, ability and willingness to pay is a good criterion because it determines whether planned supply turns into real supply – which alone delivers jobs and wealth:
 - § In the interests of economic development, planners may choose to provide employment land in excess of market demand – which, as noted earlier, is the amount of land that occupiers wish to use *and* developers, financiers and landowners wish to provide, *at mutually acceptable prices and rents*.
 - § There are of course many reasons, in the public interest, why public authorities may wish to provide business space which on commercial criteria is not financially viable. Examples include incubators for business start-ups and specialist accommodation for high-tech activities or other key sectors or clusters.
 - § But, before safeguarding land for business uses in excess of market demand, planners should consider if the public sector is likely to support actual delivery of built space, for example through gap funding, planning obligations or cross-subsidisation within a mixed use scheme. If the answer is no, the land area representing the excess of planned supply over market demand will remain undeveloped.

- § A policy of providing land in excess of expected demand, or take-up, would be simply wasteful: the land would not generate any benefits through industrial/warehousing use, and its planning designation would prevent it generating benefits through other uses.
- 7.14 This discussion suggests that expected take-up, or effective demand for development - which mostly will be generated by the market, but in some cases by the public sector - is the right basis for deciding the planned supply of employment land. Indeed this is the approach embedded in the London Plan, which uses employment forecasts to determine future land requirements. But this approach, like our analysis above, begs the question of competing land uses:
- § Effective demand for industrial and warehousing land cannot be predicted in isolation. In a market economy, it is dependent among other things on the land price, which is largely set outside the industrial and warehousing market, by the demand and supply for all land uses.
 - § To say we aim to meet effective demand, therefore, only makes sense if we specify underlying assumptions about land prices (or - which comes to the same thing - about competition from other land uses).
- 7.15 In a free market without planning, where land use is entirely determined by ability and willingness to pay, in London as a whole there would be much less industry and warehousing, and in some parts of London there would be none at all. This is because other land uses, especially housing, command much higher land values. Demand of course depends on price; therefore, at these much higher land values, the market demand for industrial/warehousing uses - which as noted earlier means the land occupiers and developers want *and can pay for* - would be much lower.
- 7.16 Thus, the planning objective of meeting financially viable effective demand for industrial/warehousing land should be understood in a rather special sense:
- § The aim is to meet demand at 'industrial' land values, protected from the competition of higher-land uses such as housing.
 - § In other words, while the allocation of land between different uses and users *within* the industrial/warehousing category is determined by the price mechanism, its allocation *between* land-use categories is determined by planning policy, outside the market mechanism.
- 7.17 The above is a key principle underlying much land-use planning, but to our knowledge it is not stated explicitly elsewhere. Indeed, neither policy guidance nor the academic literature provide much analysis of the relationship between the market and planning, probably because the subject falls between two disciplines, which largely speak different languages.
- 7.18 To sum up, an expanded version of the London Plan objective for industrial/warehousing land (and indeed for employment land generally) might read as follows.
- § *The Mayor aims to meet the effective demand for industrial/warehousing land, so that planned land supply is not a constraint on the successful operation of industry and*

logistics in London. This means providing as much land as occupier businesses wish to use and the property industry wish to provide:

- *At property values which are financially viable;*
- *At land values which are protected from the influence of higher-value uses, through safeguarding of appropriate sites for industry and warehousing.*

š *The Mayor accepts that industry and warehousing in London may decline for structural reasons, but he does not wish these activities to be crowded out or priced out by higher-value uses. The planning system will allocate and safeguard enough land for industry and warehousing to ensure that this does not happen.*

- 7.19 A statement along these lines should be considered for inclusion in the final version of the SPG on Industrial Capacity. This should reduce confusion and misunderstandings, providing a clear statement of a logic which so far has remained implicit. It could guide Boroughs and Sub-Regional Partnerships in developing their own planning policies and it could help defend both strategic and local policies at inquiries and appeals. It could form the basis of useful monitoring benchmarks and tests. Thus, in determining a site should be released or safeguarded, one standard test will be to assess its financial viability for industrial/warehousing development based on standard industrial land values – which can be estimated with reference to sites which are not subject to competition from housing, like much of the SELs.

Land Release

- 7.20 Updated and enhanced analysis confirms the earlier estimate that some 50 hectares of industrial/warehousing land can be released for other uses annually to 2016, compatible with meeting financially viable demand and not allowing industry and warehousing to be priced out of London by demand for other land uses.
- 7.21 We have also provided sub-regional; benchmarks showing how this London-wide land release should be allocated across sub-regions. Our preferred scenario redistributes demand from sub-regions where supply is tight, especially Central, to the East sub-region, where there is a large supply of industrial and warehousing land. Nevertheless the East sub-region accounts for the bulk of land released – some 500 of the 740 hectares to be released London-wide in 2001-16. The North and South sub-regions release some 90-100 hectares each and the West 40. In Central, whilst our preferred scenario suggests no change, there could still be scope for some release through intensification.
- 7.22 We believe that strategic guidelines for land release should operate at this sub-regional level, leaving to sub-regional frameworks the task of allocating sub-regional totals between Boroughs. Broad guidance on how this should be done is provided by the threefold classification of Boroughs shown in the draft SPG. We have reviewed this classification and suggested some changes, including transfer of Redbridge into the Restricted category and Croydon and Sutton into Limited.
- 7.23 All the benchmarks and guidelines above should be continuously monitored and periodically reviewed throughout the Plan period.

Managing Land Release and Renewal

- 7.24 The London-wide release target of 50 hectares a year is made up of two virtually equal components: a fall in occupied land because of continuing industrial decline and a fall in the existing total of vacant land to bring it in line with the minimum required for proper operation on the market. The latter element is largely a matter of judgment, as no hard data are available to help estimate what a healthy vacancy rate would be. We do know, however, that this 'natural rate' depends on the turnaround time required for vacant or derelict industrial/warehousing sites to be redeveloped for a new generation of space. The longer the turnaround time, the higher the desirable vacancy rate and the less the amount available for release.
- 7.25 If the release and renewal of industrial/warehousing land are to be managed efficiently, the public sector needs to intervene on a large scale to shorten this turnaround time, facilitating redevelopment through land assembly, infrastructure provision and active brokerage and management. This intervention is the proper task of the London Development Agency and the London Boroughs, working in partnership with the private sector and other specialist public bodies. It is needed in areas of high demand, not just run-down blackspots. In these high-demand areas, active intervention should pay for itself in time, though it will often require advance funding of land assembly and infrastructure, to be recouped at later stages through clawback or equity participation.

Churn and Intensification

- 7.26 Our calculations also confirm the earlier estimate that some 50 hectares per year should be available London-wide for gross industrial/warehousing development, or 'churn'. If the capital's building stock is to renew itself, keeping ahead of physical decay and changing occupier requirements, yet again the public sector needs to intervene to facilitate redevelopment.
- 7.27 Industry and warehousing are more difficult to intensify than many other land uses. But there are clearly sites that are heavily underutilised, and could be redeveloped to provide many more jobs, or indeed – as advocated in a recent study for the South London Sub-Regional Partnership – both more jobs and new housing.
- 7.28 Sub-regional and Local Development Frameworks should actively identify areas and estates coming up for redevelopment and renewal, including intensification, and co-ordinate public action to facilitate this. Traditionally, planning has been largely passive, responding to development proposals from others but does not generate proposals itself. But in the present climate, where most development increasingly takes place on Brownfield land, planners need to play a more active role in managing and facilitating change.

Logistics

- 7.29 As noted earlier, the London Plan and draft SPG indicate that the planning system should be positive about warehousing in London, This is at variance with earlier planning policy, which has often discouraged warehousing on the grounds of its low employment densities and traffic generation. Our analysis of the contribution and impacts of warehousing and

logistics supports the new policy stance. To put it into practice, we recommend that the GLA and its partners consider the following policies.

- i) The London Plan is confusing in the way it refers to the logistics sector as 'wholesale distribution' since it is unclear exactly what is meant by this. 'Wholesale distribution' does not capture the entirety of logistics activities in London and, therefore, under-estimates the importance logistics makes to the economy. A better descriptor would be warehousing and logistics, since warehousing is the best general description of the land use and logistics the best description of the activity.
- ii) Whereas current policy seeks to protect a number of Strategic Employment Locations, dividing these between Preferred Industrial Locations (PILs) and Industrial Business Parks (IBPs), our analysis suggests a need for a third type of Strategic Employment Location, which could be called Strategic Logistics Parks (SLPs). This need arises not because warehouses operators are being crowded out from PILs, but because many operators, particularly those occupying large facilities, have specific requirements in terms of the size of plot they require, the operating environment they need and the more definite requirement they have for good access to the trunk road, or motorway, network.
- iii) Strategic Logistics Parks could provide their operators with a less restrictive transport regime, potentially in return for best practice sustainable distribution. Particularly valuable would be a relaxation of the night-time lorry ban, making more efficient use of London's road space. This should only be considered under controlled circumstances and in response to concessions from operators as to the use of dedicated routes and quiet vehicles.
- iv) Policy should promote three to four strategic rail interchange sites, most probably around the periphery of London, coupled with a larger number of smaller rail terminals in London to complement these. Following SRA guidance these strategic rail interchanges sites should be capable of accommodating a 'cluster' of both rail-connected and non-rail connected facilities. If such sites can be identified in London, these strategic rail interchanges could be SLPs. A strategic approach across London, South East and Eastern regional bodies is required to identify and safeguard appropriate strategic rail interchange sites.
- v) Policy should seek to encourage the development of shared user consolidation centres in appropriate locations [Benefits to SMEs sharing facilities, reduce costs etc]. As noted above, the BAA consolidation centre at Heathrow provides a good example of a way in which the total number of deliveries and therefore lorry movements has been reduced, and similar types of facilities are operational around major shopping centres, for example to service Bluewater (Dartford), Meadowhall (Sheffield) and the Broadmead Centre (Bristol).
- vi) Policy should seek to identify a suitable location for a dedicated logistics park to meet the needs of airport-related uses around Heathrow. The potential for such a site arises from the projected growth in air freight volumes and the shortage of existing land around the Airport.

vii) Finally, there is merit in looking further at the potential to intensify warehousing. The two main opportunities to do this are by developing higher warehouses, to incorporate mezzanine floors, or by developing multi-storey warehouses, as exist for example in Tokyo. The latter would be likely to raise health and safety issues, but there may be efficient solutions.

7.30 In relation to all these measures, there is a danger that new development will be blocked as premature while new strategic policies are being worked out. This should not be allowed to happen.

7.31 Finally, modern logistics operates at regional and wider scales, based on larger and larger warehouses serving large geographical areas. To a large extent, London can be served by warehouses located outside its administrative area. Planning for logistics needs a wide regional approach.

Qualitative Criteria

7.32 Our analysis supports the criteria in the draft SPG as to the qualitative features which should be considered in safeguarding or allocating sites for industry or warehousing. Sub-Regional and Local Development Frameworks should develop these criteria, and add site-specific policies, to take account of local and sectoral conditions. In Chapters 4 and 5, we have begun this local and sectoral analysis by providing market profiles of each sub-region and of the logistics sector.

7.33 To the existing SPG criteria, we would suggest the following additions:

- § An industrial/warehousing site might be deemed viable if it can be developed at normal industrial/warehousing land values as set by benchmark data for the sub-region, adjusted for any abnormal costs or other particular characteristics. This would help distinguish activity that is not competitive in London from activity that is driven out by higher value land uses.
- § A corollary is that, if a site needs infrastructure or reclamation which cannot be paid for by industrial and warehousing land values, this might constitute an argument against protecting it for purely industrial/warehousing use.

APPENDIX 1

INDUSTRIAL AND WAREHOUSING LAND 1985-2002

The ODPM's Land Use Change Statistics suggest that industrial/warehousing land has been lost at an average rate of 72 hectares per annum over the period 1985-2002. This is made up of a gain of 69 hectares offset by a gross loss of 141 hectares. According to these statistics there has been a net loss of both industrial/warehousing and storage land, although the net loss of storage space at an average of 13 hectares per annum has been less than the loss of industrial/warehousing space at 59 hectares per annum. This partly supports the employment statistics which show warehousing employment as being more robust than manufacturing. However due to the difficulty in distinguishing activity between the two, we believe the total aggregate figure for industrial and storage land is more reliable.

The table also suggests that there has been some decline in the rate of net loss. The recent figures are too short a period to be confident about a trend as opposed to some cyclical element but do support the thesis that there has been a decline in the rate at which industrial activity has fallen in London due to the changing structural mix of activity.

Table A1 Gains and Losses of Industrial/Warehousing Land, 1987-2002

Hectares									
	Industrial Loss	Industrial Gain	Industrial Net	Storage Loss	Storage Gain	Storage Net	Total Loss	Total Gain	Total Net
1985	130.1	66.6	-63.5	73.2	49.0	-24.2	203.3	115.7	-87.7
1986	123.5	50.5	-73.0	39.6	41.4	1.8	163.1	91.9	-71.2
1987	143.2	67.1	-76.1	58.5	34.2	-24.3	201.6	101.2	-100.4
1988	155.3	68.8	-86.5	65.5	28.9	-36.6	220.8	97.7	-123.1
1989	114.6	67.8	-46.8	44.4	26.0	-18.4	159.0	93.9	-65.2
1990	151.8	69.9	-81.9	46.2	59.4	13.2	198.0	129.3	-68.7
1991	77.1	34.2	-42.9	34.7	29.9	-4.8	111.7	64.1	-47.7
1992	81.0	23.4	-57.7	22.0	10.1	-12.0	103.1	33.4	-69.6
1993	77.1	27.5	-49.6	22.2	10.2	-12.0	99.3	37.7	-61.6
1994	70.1	12.5	-57.6	82.5	16.8	-65.7	152.6	29.3	-123.3
1995	112.3	23.8	-88.5	33.0	17.2	-15.7	145.2	41.1	-104.2
1996	64.6	18.1	-46.5	17.5	13.1	-4.4	82.1	31.2	-50.9
1997	91.8	30.7	-61.2	43.1	13.9	-29.3	135.0	44.5	-90.4
1998	135.4	73.3	-62.1	35.5	10.1	-25.5	171.0	83.4	-87.6
1999	74.4	29.4	-45.0	25.4	28.0	2.6	99.8	57.4	-42.4
2000	90.1	41.0	-49.1	22.1	22.2	0.2	112.2	63.2	-48.9
2001	68.9	27.8	-41.1	11.8	38.0	26.3	80.7	65.9	-14.8
2002	90.4	56.3	-34.1	9.9	11.9	2.0	100.3	68.2	-32.1
Total	1,851.7	788.6	-1,063.1	686.9	460.2	-226.7	2,538.6	1,248.8	1,289.8
Annual Average	102.9	43.8	-59.1	38.2	25.6	-12.6	141.0	69.4	-71.7

Source ODPM Land Use Change Statistics

Source ODPM Land Use Change Statistics

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ngôn ngữ của bạn, hãy gọi điện theo số hoặc
liên lạc với địa chỉ dưới đây.

Greek

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παρόντος εγγράφου στη γλώσσα
σας, παρακαλώ να τηλεφωνήσετε
στον αριθμό ή να επικοινωνήσετε
στην παρακάτω διεύθυνση.

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तो कृपया निम्नलिखित नम्बर पर फोन करें अथवा दिये
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یا دیئے گئے پتے پر رابطہ قائم کریں۔

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