

Laying the foundations London's construction industry February 2006



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London's construction industry

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**Transport
for London**

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DEVELOPMENT
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contents

Executive summary	1
1 Laying the foundations	3
2 Defining construction	5
3 Construction activity in London	11
4 Construction demand in London	23
5 Constraints on construction in London	33
6 Comparing projections of London's construction employment	61
7 Building on the foundations	67
Abbreviations	71
Notes	73
References	75

Foreword



We're reminded of the retail sector whenever we visit a store. We know the leisure sector exists whenever we eat at a restaurant. And the constant flow of tourists through our capital, ensures the tourism sector is never forgotten.

For the construction sector, we look at the cranes. But this is only a partial indicator of what is going on. Much of the construction sector is less visible to many Londoners, but is no less pivotal.

Without the construction sector, we wouldn't have homes to live in, offices to work in or schools in which to learn. Major infrastructure projects vital for our city's progress – such as Heathrow Terminal 5 or the Jubilee Line extension – would be impossible without construction. Our jubilation at winning the 2012 Olympic Games, would not be a reality without this sector. Plus, there's the continual stream of repairs and maintenance required by all our buildings and infrastructure. Crossrail, the Thames Gateway Bridge and many more projects need a sector with a wide range of skills and expertise.

In truth, construction has been and always will be at the very heart of making London tick.

But despite its pivotal role, the construction sector in London is not properly understood. An abundance of data and statistics exist on the sector, but these are often conflicting and inaccurate.

This report is the first step in helping develop a better understanding of this important sector. As we look forward to London's growing population, sustained economic progress and major events such as the Olympics, we know we'll continue to rely on this sector. This report raises the question of whether the construction sector can adequately meet the needs of London's expanding economy?

A handwritten signature in black ink, which appears to read 'Bridget Rosewell'. The script is fluid and cursive.

Bridget Rosewell
Consultant Chief Economist
GLA Economics

Executive summary

This report aims to develop a deeper understanding of a sector that is traditionally hard to measure – construction in London. It begins the task of identifying whether the construction sector can adequately meet the needs of London's expanding economy.

Construction represents around five per cent of London's economy and employs 200,000 people. While output in construction has risen sharply since the early 1990s, the level of employment remained steady implying that labour productivity has increased rapidly. However, as it is difficult to explain why productivity has 'increased', questions over the data's reliability have been raised. Further, the industry's characteristics of small business, contracting, sub-contracting and cash payment makes the sector difficult to assess.

Around three-fifths of construction activity in London is new build, the remainder is repairs and maintenance of existing structures. The composition of the construction industry in London is very different than the rest of Great Britain because London has a much greater share of private commercial construction.

Predicting future demand for construction is complex. The market for construction is influenced by the state of the property market and the relative performance of non-property investments. The annual volume of new housing has declined in London over recent decades and remained at low levels throughout the 1990s and early 2000s. However, if the targets for new housing set out in *The London Plan* are achieved then a substantial increase in the demand for constructing homes is needed.

It is the growth in construction for business uses, namely offices, which accounted for most of the growth in construction in London from the mid 1990s to the early 2000s. One question which arises is whether the demand for business space is now satiated such that the construction industry can turn its attention elsewhere?

If so, the attention of the construction industry in London may be directed towards transport infrastructure where the Mayor of London has identified several large projects. To meet these projects however, a substantial increase is needed in the construction resources employed in transport infrastructure.

Construction has a workforce of unique characteristics compared to other London sectors. Its workforce has few women, a low share of workers from black and minority ethnic groups, and construction workers are more likely to have trade apprenticeships. Almost a quarter of construction jobs



are filled by commuters living outside London. However, some common perceptions of the construction workforce are not supported by statistical evidence. Its workforce is not as old as some other sectors nor is it as dependent on international migrant workers as much as other sectors are.

Workers in construction in London have higher earnings than those in construction across Great Britain as a whole. The trend number of construction vacancies has not increased in recent years. Construction businesses in London have a lower share of unfilled or hard-to-fill vacancies than construction businesses within and outside London.

The construction sector has high levels of self-employment and dependence on small businesses. Only in non-residential building, civil engineering and transport infrastructure does construction activity become characterised by large firms. Overall, the industry is highly fragmented, mostly with British companies, with none holding a dominant impact on the market as a whole.

The lack of large businesses means the industry is unlikely to fully exploit economies of scale. The dependence on small businesses means the industry is characterised by the barriers that face all small businesses.

London depends on buying in its construction materials from elsewhere in Great Britain or the world. There is competition for supplying construction materials and real prices for most construction materials have fallen in the last few years. The extraction of raw materials for construction purposes naturally has environmental implications. Legislation to protect the environment has the potential to restrict the supply of some construction resources.

The future for construction in London causes much disagreement with some forecasters projecting an employment boom while others predict decline.

The statistical evidence is that while construction activity and output in construction has increased throughout the past decade, the number of construction workers within London has remained static. On this basis, unless the amount of construction activity can be shown to significantly increase to an even higher level over the next decade than over the previous decade, then it is unlikely that the number of construction workers in London will grow beyond its current level.

1 Laying the foundations

The issue

London is a growing city. Its economy is expanding and its population is growing. *The London Plan*¹, the Mayor's spatial development strategy, illustrates the scale of London's need in meeting this growth. The Economic Development Strategy² sets the London Development Agency's priorities in working to promote investment in London's infrastructure, people and enterprises.

London needs new homes for people to live in. London needs new commercial buildings such as offices for people to work in, shops for people to buy in and leisure venues for people to play in. London needs new social buildings such as schools in which people can learn and hospitals in which people can be cared for. London needs new infrastructure to bring this together such as the rails, roads, terminals, bridges and tunnels on and through which people can travel and transport their goods – but also the pipes, sewers, cables and pylons which all people use if not always see. Moreover, a city of London's age must do more than just build new things. It needs to continually maintain and repair most of the older homes, buildings and infrastructure that served London's people in previous decades or centuries, so they can continue to meet the needs of London's people for years to come.

The future prosperity of London's economy, the quality of life of its people and the visible appearance of the environment, depend on London's capacity to construct and maintain its buildings and infrastructure. The spotlight falls upon the construction industry. The question is whether the construction industry has the necessary resources to meet the challenges of London's needs.

Aims and objectives of this study

GLA Economics has a clear aim for this study:

- To begin to identify whether the construction industry can adequately meet the demands London's expanding economy will place upon it.

To achieve this, GLA Economics has a series of objectives:

- Define what is meant by London's construction industry
- Review the economic performance of London's construction industry
- Begin to consider the volume of construction demand in London to the year 2016
- Identify the constraints on London's construction industry in terms of employment, business and resources
- Assess the projections for construction in London.



This report begins the process of laying the foundations of GLA Economics' understanding of the construction industry in London. This will help guide decisions within the Greater London Authority (GLA), London Development Agency (LDA) and Transport for London (TfL) but also contribute to wider discussions on the construction industry with public stakeholders such as the Department of Trade and Industry (DTI), Learning and Skills Councils, and Sector Skills Councils, and also within the construction industry itself.

Potential for future study

Construction is a broad topic and there are many more aspects of this sector that could be explored. For example, there is wide interest in concepts such as sustainable construction with the recycling of building materials and modern methods of construction such as development in prefabricated building. There is scope to explore the relationships within the industry between clients, contractors and sub-contractors. There are concerns as to the extent professional services may affect the construction sector, such as whether there are sufficient town planners or housing inspectors.

Such issues are highly relevant. The findings of this report can be built on to help explore these issues.

Promoting discussion

GLA Economics is conscious that there is a wide range of interest in the construction industry. Construction, perhaps more than any other industrial sector, appears to generate research from academia, public sector and the industry itself. Some of this research is good, some poor, but rarely is it joined up with other research nor does it result in complementary findings. Similarly, construction is a sector in which there is no shortage in the volume of statistics some useful, some irrelevant, some misleading and some confusing – but usually there is a scarcity of statistics on what researchers truly need to know.

In short, construction is an industry that is particularly difficult for economic researchers. Problems in understanding construction at a UK level are often magnified in trying to assess the industry at a regional or city level. This paper is therefore, to GLA Economics' knowledge, the first of its kind in bringing together economic statistics on construction in London and from this can the full story on the trends and prospects of London's construction sector begun to be told.

2 Defining construction

When looking at the construction industry it is important to define what is meant in terms of the outputs the industry produces, its industrial classifications and its occupations.

DTI statistics on construction

The Department of Trade and Industry produces a *Construction Statistics Annual*³, which is the most comprehensive source of public data on the sector. It outlines trends across the construction industry in Great Britain throughout the last decade.

It is important to make clear that the Office for National Statistics (ONS) and DTI have different definitions of output for construction. While these DTI statistics feed into official statistics on construction published by the ONS; the final numbers they each report, for example for output or employment, are dissimilar.

The DTI's annual defines construction in terms of 'output', which perhaps more precisely is 'work done'. From this point, this paper will use the term 'work done' for the DTI results to avoid confusion with what the ONS also calls 'output'. The DTI classifies work done in terms of new work in housing and non-housing and in repairs and maintenance (see Table 2.1).



Table 2.1 DTI definitions of construction work done

New housing	
Public	Building of dwellings, whether flats, houses or parts of other buildings lived in by households.
Private	
Other new work non-housing	
Infrastructure	Road, railway, airports and seaports, but also utilities in water, sewerage, electricity and gas, and telephone networks. Consists of both private and public sector.
Public	Traditionally public sector in the construction of new schools and hospitals, but increasingly blurred through Public Private Partnership initiatives.
Private industrial	This includes a range of factories, warehouses, oil installations, refineries and pipelines and steelworks.
Private commercial	Wide range of construction work including shops, offices, garages and buildings used for entertainment and leisure.
Repair and maintenance	
Housing - public	Repair maintenance and refurbishment of existing buildings.
Housing - private	
Other work - public	
Other work - private	

ONS definitions of construction

The ONS measures employment and output for industrial sectors by using standard industrial classifications. These classifications form the basis of the ONS data for employment or turnover in sources such as the Annual Business Inquiry. The classification codes look at the type of activity in which businesses and establishments are engaged. The code for construction, the two-digit code 45, is broken down into three-digit codes and the even more specific four-digit codes. Table 2.2 presents the ONS industrial definitions of the activities that form construction.

The ONS definition does not include some construction-related activities. For example, the code '74.2 Architectural and engineering activities and related technical consultancy' includes architecture, landscaping, surveying and related engineering activities. It can be argued that many of these activities are part of the construction process, in particular higher-level occupations. These are classified within the business services sector and not the construction sector.

The ONS also measures employment using standard occupational classifications. These occupational classifications are particularly relevant in ONS surveys such as the Labour Force Survey and the New Earnings Survey.

The classification codes look at the descriptions of the jobs people do. There are numerous construction occupations. For example, the two-digit code 53, skilled construction and building trades, consists of most of the occupations that are most commonly associated with construction (for example bricklayers, plumbers and plasterers). However, code 11, corporate managers, includes managers for construction, and code 91 for elementary trades includes building site labourers. Table 2.3 gives an indication of the range of construction-related jobs from high-level managerial jobs to entry-level occupations.

Table 2.2 ONS definitions of standard industrial classifications for construction

45	Construction	
45.1	Site preparation	
45.11	Demolition of wrecked building; earth moving	Includes excavation, landfill, drainage, rock blasting etc plus demolition and wrecking of buildings and other structures
45.12	Test drilling and boring	
45.2	Building of complete constructions or parts thereof; civil engineering	
45.21	General construction of buildings and civil engineering works	Commercial buildings, domestic buildings, and civil engineering projects such as bridges, tunnels, communications and pipelines
45.22	Erection of roof covering and frames	Roofing and waterproofing
45.23	Construction of highways, roads, airfields and sport facilities	Includes all roads, railways, runways and infrastructure such as stadiums and arenas
45.24	Construction of water projects	Waterways, harbours, dams
45.25	Other construction work involving special trades	Requiring specialised skills eg well drilling, stone setting
45.3	Building installation	
45.31	Installation of electrical wiring and fittings	Electric installation, telecoms, heating systems, burglar alarms, escalators etc
45.32	Insulation work activities	Thermal, sound and vibration proof installation
45.33	Plumbing	Installation of plumbing and sanitary equipment, gas fittings, heating and ventilation
45.34	Other building installation	Mix including lights and signal systems for roads and rail
45.4	Building completion	
45.41	Plastering	Interior and exterior plaster work
45.42	Joinery installation	Installing doors, windows, kitchens, interior completions
45.43	Floor and wall covering	Tiling, carpeting, decorating etc
45.44	Painting and glazing	Interior and exterior painting and glazing
45.45	Other building completion	Mix of installing private swimming pools, exterior cleaning such as sand-blasting etc
45.5	Renting of construction or demolition equipment with operator	
45.50	Renting of construction or demolition equipment with operator	

source ONS



Table 2.3 ONS definitions of standard occupational classifications (2000) for construction

11 Corporate managers			
1122	Managers in construction		
21 Science and technology professionals			
2121	Civil engineers		
24 Business and public service professionals			
2431	Architects		
31 Science and technology associate professionals			
3114	Building and civil engineering technicians	3121	Architect technologists, planning technicians
3122	Draughtspersons	3123	Building inspectors
52 Skilled metal and electrical trades			
5241	Electricians, electrical fitters		
53 Skilled construction and building trades			
5311	Steel erectors	5316	Glaziers, window fabricators and fitters
5312	Bricklayers, masons	5319	Construction trades nec
5313	Roofers, roof tilers and slaters	5321	Plasterers
5314	Plumbers, heating and ventilating engineers	5322	Floorers and wall tilers
5315	Carpenters and joiners	5323	Painters and decorators
81 Process plant and machine operatives			
8141	Scaffolders, staggers, riggers	8143	Rail construction and maintenance operatives
8142	Road construction operatives	8149	Construction operatives nec
91 Elementary trades, plant and storage related occupations			
9121	Labourers in building and woodworking trades	9129	Labourers in other construction trades nec

note nec = Not elsewhere classified
source ONS



This recognises that construction occupations are not necessarily confined to the construction industry and similarly not all jobs in the construction industry are construction occupations. For example, there are high numbers employed in construction occupations in utilities, in parts of manufacturing, transport and communications, and even business services. Therefore, the true extent of construction employment and output may be much larger than defined by the construction industrial classification. Similarly, many jobs in the construction industry may involve administration or sales and have little connection with doing actual construction work.

Definitions used by GLA Economics

This research by GLA Economics needs to be consistent with data published from official sources. There is a case for playing with industrial codes to include construction-related services in architecture and civil engineering. There is also a case for developing a definition of construction based upon occupations.

However, such redefining of construction would complicate this present study through limiting the use of existing statistics. This paper will therefore concentrate on the ONS standard industrial classifications and work-done definitions used by official sources at the ONS and DTI.



3 Construction activity in London

This section, which analyses construction activity in London, falls into two parts, each drawing from two distinct datasets:

- GLA Economics' output and employment data series, provided by Experian Business Strategies (EBS) and calibrated with official results from the ONS.
- The *Construction Statistics Annual* produced by DTI looking at construction activity by work done.

As the two datasets do not produce identical results, this is a possible source for confusion in measuring the output of construction. The ONS is the official source with Gross Value Added (GVA) and established employment measures and this forms the basis of the workplace construction series from EBS.

Construction output, employment and productivity

Building blocks

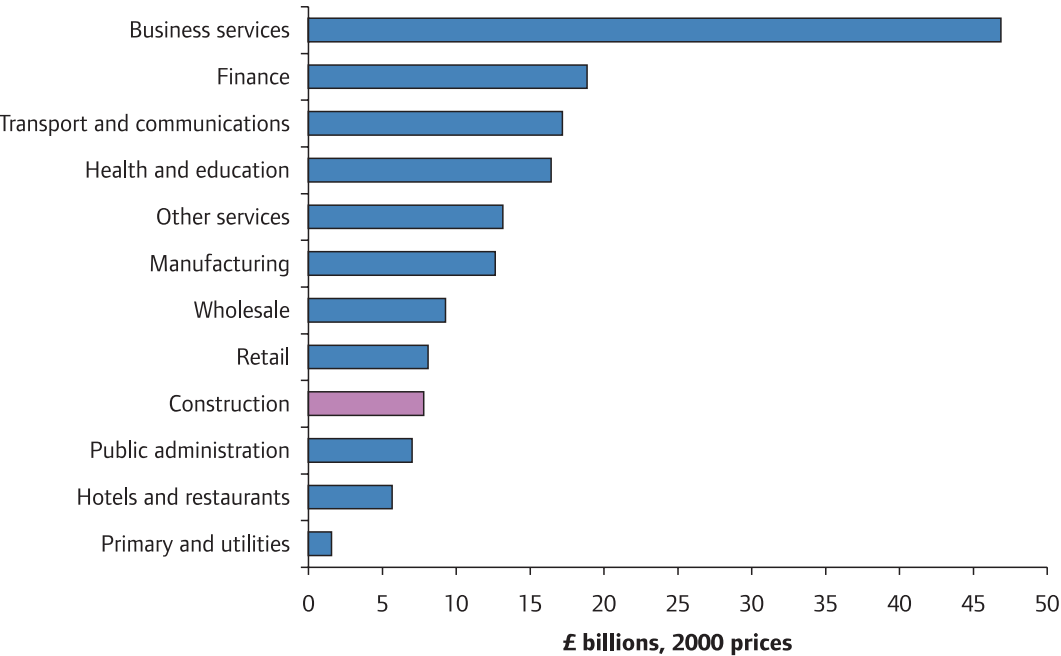
- London's construction industry has an output of £8 billion or five per cent of London's economy, employing 200,000 workers or 4.5 per cent of London's employment.
- London's real output in construction has grown strongly since a sharp downturn in the early 1990s. Construction employment over this time has remained stable as labour productivity increased sharply.
- Construction in London had a sharper downturn than the rest of Great Britain in the early 1990s but recovered more strongly and now has higher productivity than construction nationally.
- It is necessary to be cautious in using this data to draw conclusions about economic issues such as productivity in construction.

Current position

This current position section highlights output and workforce data to indicate the significance of construction in London's economy.



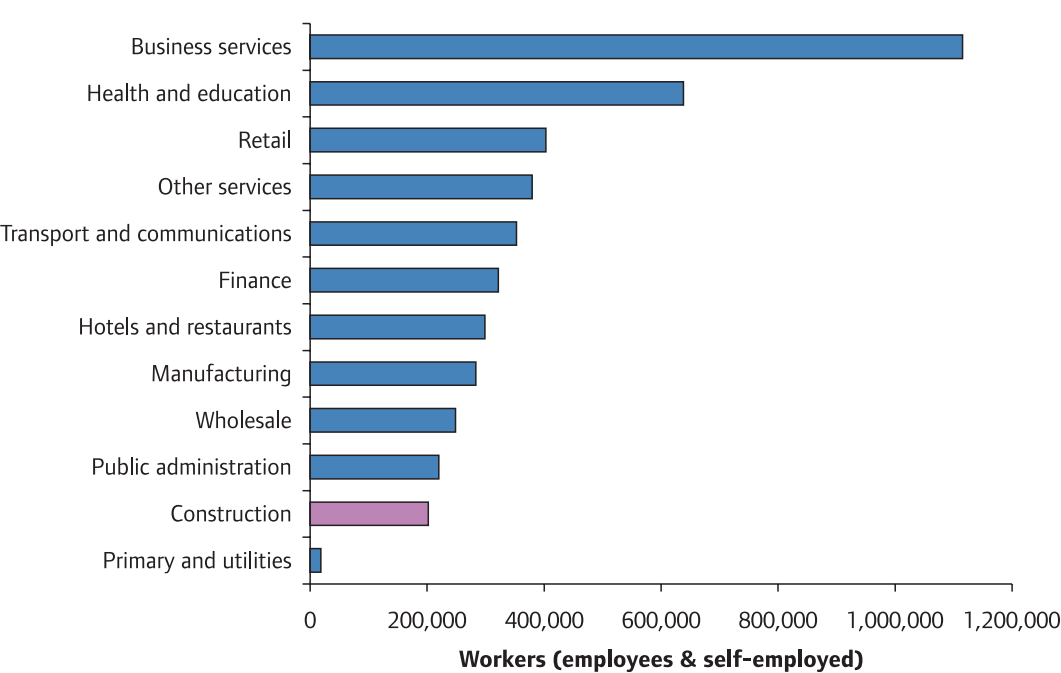
Figure 3.1 Latest position of London’s output



source Experian Business Strategies

In 2002, London’s workplace output in construction was valued at up to £8 billion. That is almost five per cent of London’s total output.

Figure 3.2 Latest position of London’s workforce



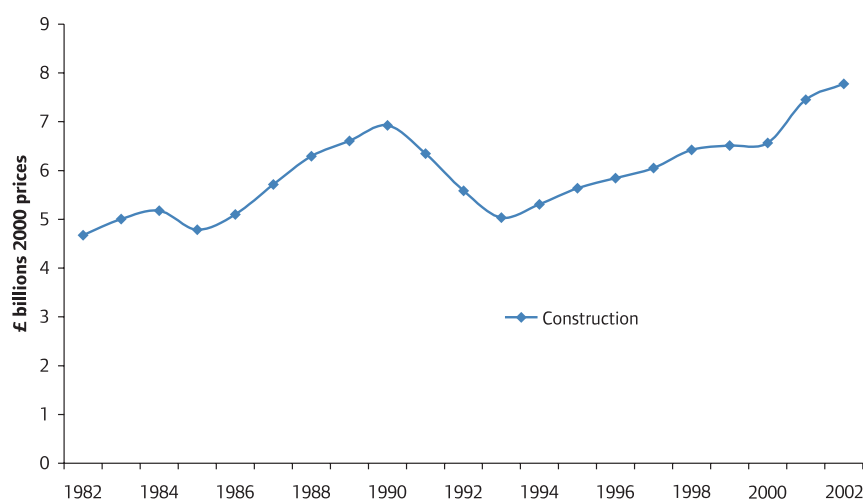
source Experian Business Strategies

In 2002, London's workforce in construction, including employees and self-employed, was over 200,000 workers. That is 4.5 per cent of London's workforce.

Past performance

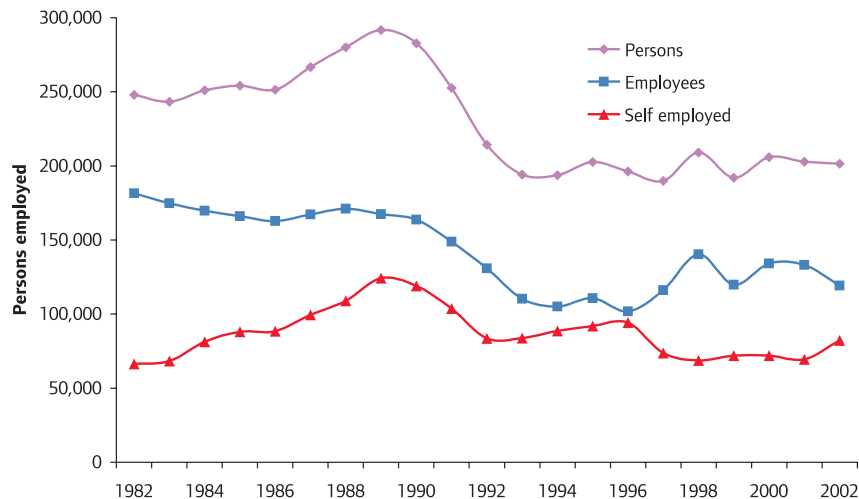
The past performance of construction activity in London considers workplace-based output and workforce data for 1982 - 2001. This illustrates a picture of rising output in London's construction industry but falling employment and a reducing share of London's economy.

Figure 3.3 Past performance of London's construction output



source Experian Business Strategies

In real terms, London's construction output by workplace grew by 66 per cent from 1982 to 2002. The most rapid growth occurred during the late 1980s. Construction output fell sharply in the early 1990s but recovered from 1993. In 2002, London's construction output was higher than its previous peak of 1990.

Figure 3.4 Past performance of London's construction workforce

source Experian Business Strategies

Employment in construction in London (employees and self-employed) grew in the late 1980s, peaking at nearly 300,000 in 1989. Employment fell rapidly to 200,000 by 1993 and has remained around this level. The share of self-employment varies due to legislation defining construction work but is usually 35-45 per cent of all construction jobs.

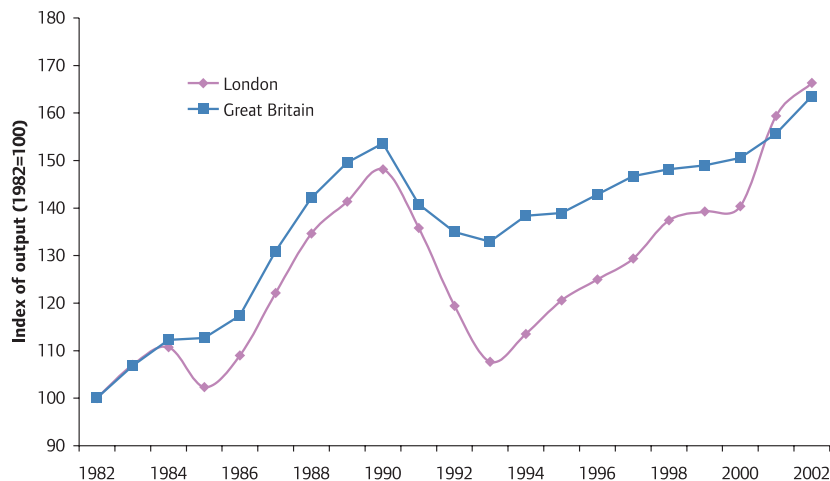
Is London's construction performance different from Great Britain's?

The construction sector in London produces about 16 per cent of total construction output for Britain and employs 11 per cent of Great Britain's construction workforce. Output per worker in London's construction is much higher than that for the rest of the country.

Table 3.1 The construction sector, 2002

	London	Great Britain	London's share
Output (£ billion, 2000 prices)	7.8	47.9	16%
Workforce	202,000	1,806,000	11%

source Experian Business Strategies

Figure 3.5 Construction output in London and Great Britain

source Experian Business Strategies

Construction output in London has been more volatile than across Great Britain as a whole. The downturn in construction in the early 1990s was much sharper than it was for the rest of the country but its growth through the later 1990s was more rapid. In 1993, London had 13 per cent of Great Britain's construction output but this increased to 16 per cent by 2001.

**Figure 3.6 Construction workforce in London and Britain**

source Experian Business Strategies

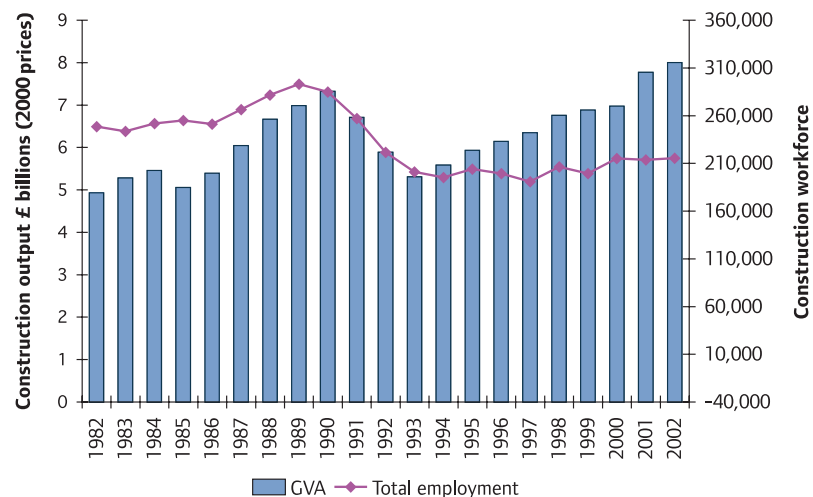
Construction employment fell more sharply in London in the early 1990s than in the rest of Great Britain. Since around 1993, the number of workers in construction has remained relatively stable both in London and

Great Britain. London-based firms typically employ around 11 per cent of construction workers in Great Britain.

Measuring London's labour productivity in construction

Measuring labour productivity in construction is complex. The story the data tells of construction in London is one of rising real output but little change in employment (see Figure 3.7). This implies that over the past decade, London's construction sector has experienced a rapid increase in labour productivity.

Figure 3.7 Index of past performance of London's output



source Experian Business Strategies

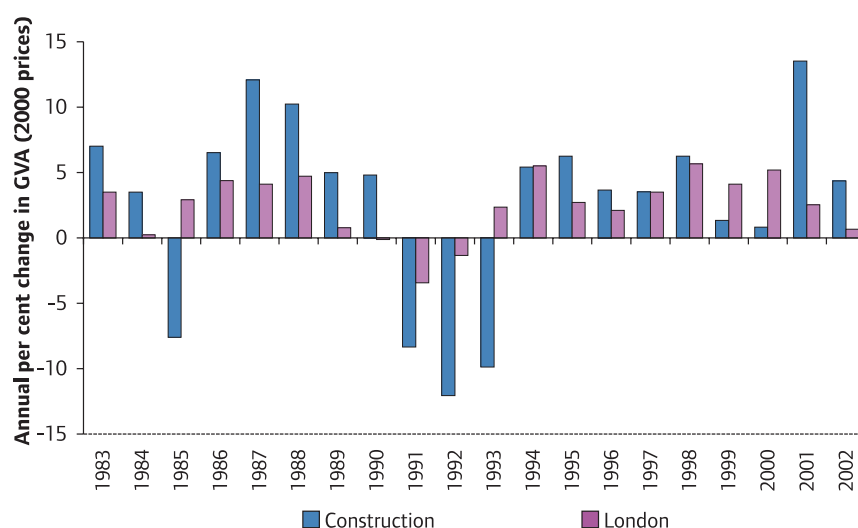
GLA Economics believes basic measures of productivity in construction should be treated with caution. Estimates of output may be derived from figures for employment meaning that assumptions for productivity are built in to the output data.

The 'output per worker' results of construction in London raise questions over the reliability of the statistics. There is a need to question how workforce data is collected and if existing methods such as through the Annual Business Inquiry and Labour Force Survey adequately measure construction. It is feasible that the sector with its high share of self-employment and with its highly mobile and migrant workforce may have more hidden workers. In turn, there is a need to question how the output data for construction is calculated and the assumptions the ONS makes, for example about the scale of unrecorded output and the value of sub-contracted work. It is therefore possible that official data sources may overestimate labour productivity and the rate of growth in productivity.

There may be some truth that London's growth in construction's labour productivity is more rapid than Great Britain's. It is unlikely though that London has bricklayers who really have become much more productive than their counterparts elsewhere in Great Britain. However, the composition of the construction sector in London, with developments for high-value commercial buildings and major infrastructure projects such as Heathrow Airport's Terminal 5 and The Channel Tunnel Rail Link, may have distorting effects on the data.

Construction and the wider economy

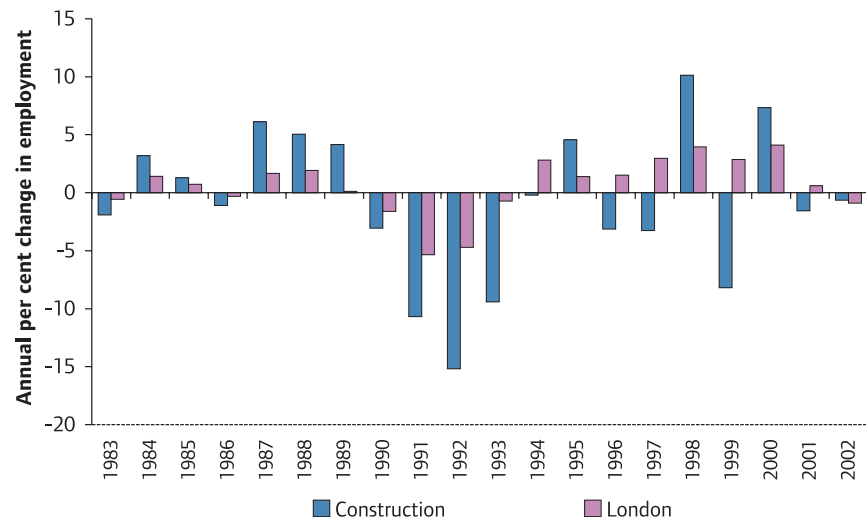
Figure 3.8 London's change in construction output



source Experian Business Strategies

The annual growth rates of output of construction in London fluctuate much more than London's overall output. Construction growth outpaced economic growth in the late 1980s but fell more sharply during the early 1990s. During the latter 1990s construction growth was slower than output growth but in both 2001 and 2002, construction's growth was stronger.

Figure 3.9 London's change in construction employment



source Experian Business Strategies

Similarly, the growth rate of jobs in London's construction industry is more volatile than employment overall. Construction grew faster than total jobs growth in the late 1980s and the downturn in construction jobs after 1989 was much sharper. Through the later 1990s, London generated jobs rapidly and consistently but in several years the number of construction jobs fell.

Construction activity

The DTI's *Construction Statistics Annual* produces estimates of construction activity. This information is largely collected through surveys with most of the major construction contractors.



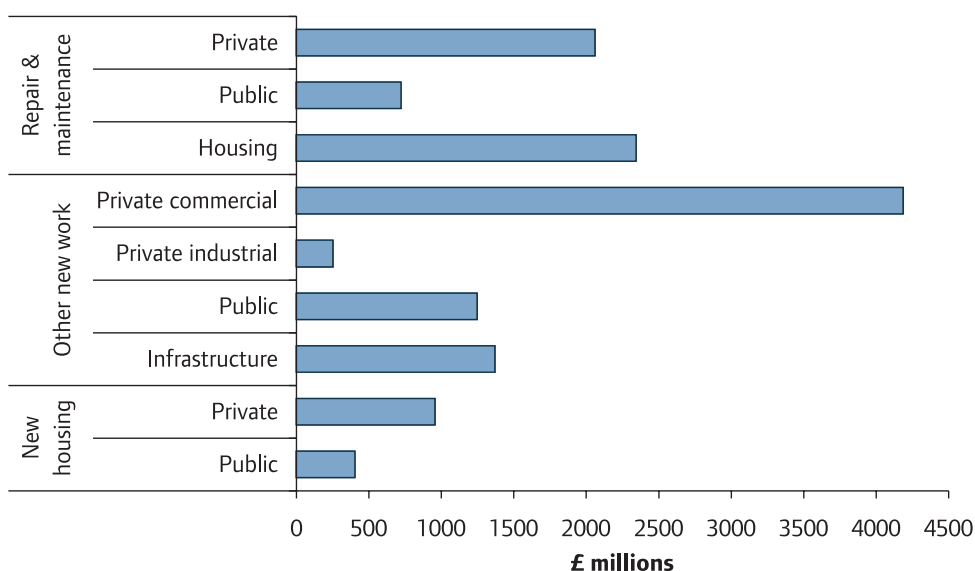
Building blocks

- Sixty per cent of London's construction activity is new work and 40 per cent is repairs and maintenance.
- London's construction activity is much more highly concentrated in private commercial construction and has a much lower share in housing than the rest of Great Britain.
- London has 16 per cent of national activity in construction but 28 per cent of private commercial construction and only nine per cent of new private housing.
- Much of the recent growth in London's construction industry, over 1993 - 2002, is in private commercial construction. New private housing has also grown rapidly.

Current activity

The classifications used by the DTI consist of repairs and maintenance in housing, private business and public sector, new work in the private sector, public sector and infrastructure, and new private and public housing. Construction for private business involves private industrial work including factories and warehousing and private commercial work including offices, shops, garages and entertainment uses.

Figure 3.10 London's construction activity, 2002

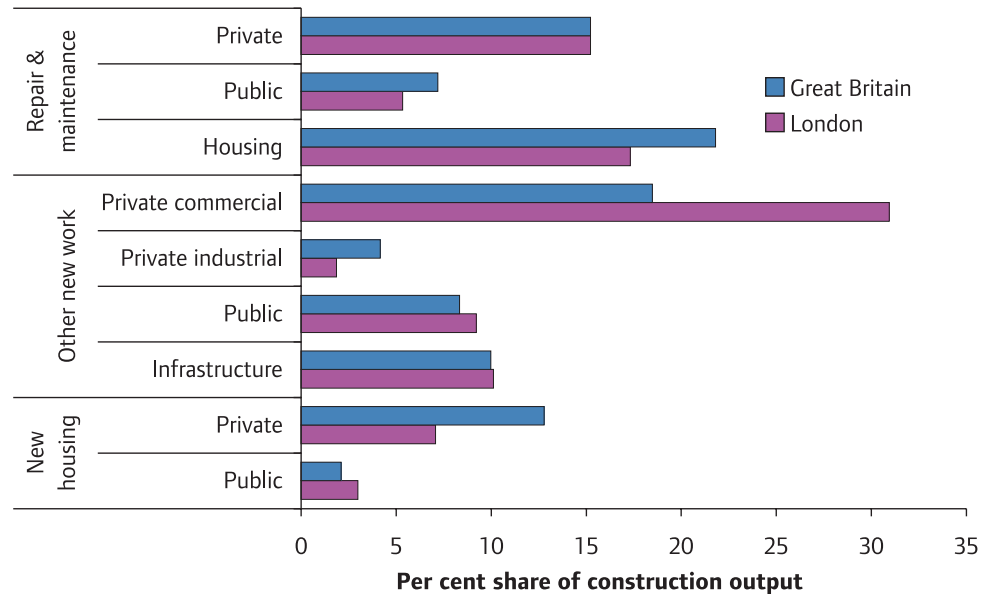


source DTI Construction Statistics Annual

Over 60 per cent of London's construction activity is new building while almost 40 per cent is repairs and maintenance of existing stock. New housing is ten per cent of activity, mostly from private housing. Other new non-housing work is over half of all activity. Infrastructure accounts for ten per cent of the total. New private commercial developments are the largest component and private industrial is the smallest.

Is London's construction activity different from Great Britain's?

Figure 3.11 Composition of London and Great Britain's construction activity, 2002



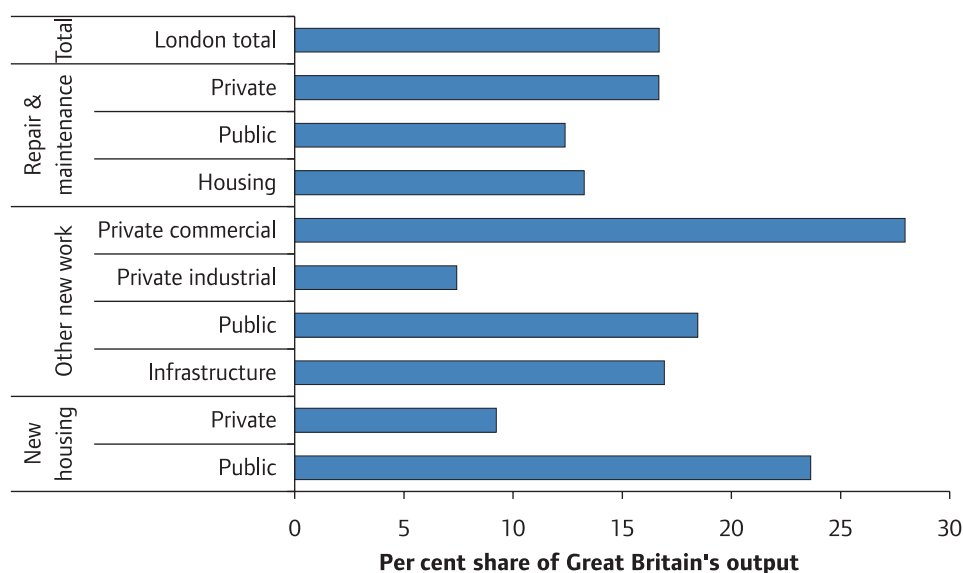
source DTI Construction Statistics Annual

The composition of construction in London differs from that nationally. The share of private commercial development is much higher in London while the share in private housing is much less.

The key differences are:

- Private commercial developments are more than 31 per cent of London's construction activity but 18 per cent nationally.
- Private industrial development is less, two per cent in London but four per cent for Great Britain.
- The share of private housing development is much less in London, seven per cent, than nationally, 13 per cent.
- The share of new-work public housing is larger in London.
- Repairs and maintenance are 37 per cent of construction activity in London but 44 per cent nationally.

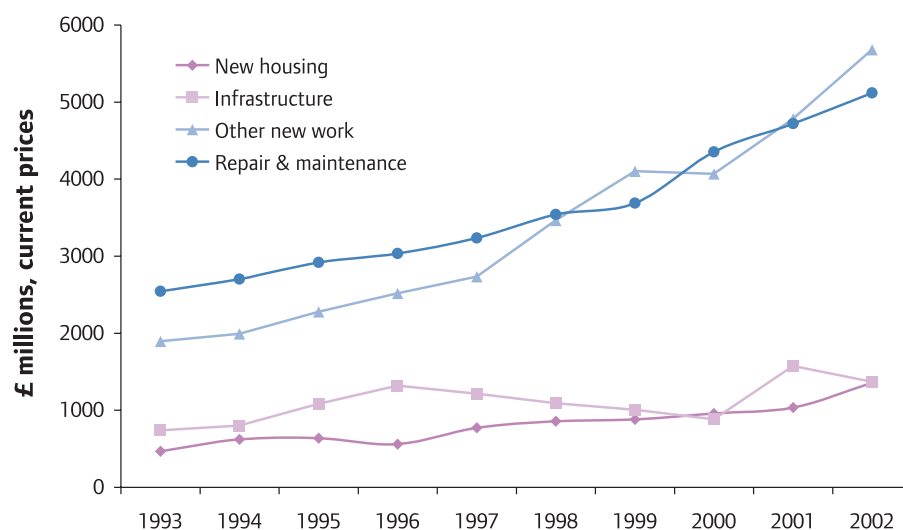
The different composition of construction in London is reflected in its share of national construction output. London has 16 per cent of national construction output, largely in line with its share of the economy. However, London has 28 per cent of the value of private commercial developments but only nine per cent of new private housing.

Figure 3.12 London's share of Great Britain's construction activity, 2002

source DTI Construction Statistics Annual

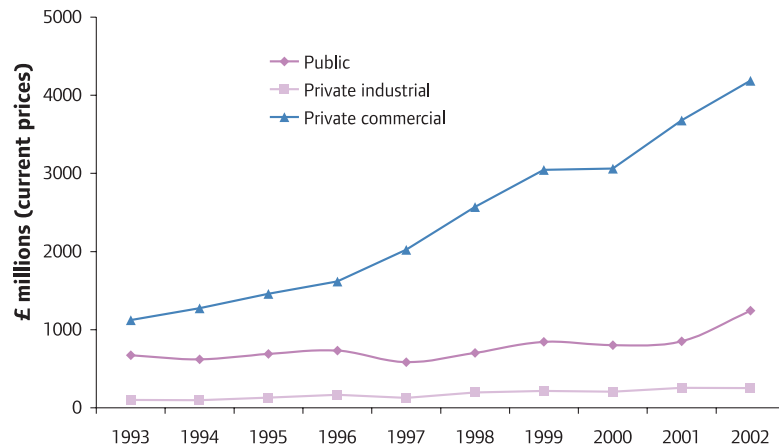
Recent trends in construction activity

Looking at recent trends over 1992 - 2003, the growth in London's construction activity is in non-housing developments.

Figure 3.13 Changes in London's construction output 1993-2002

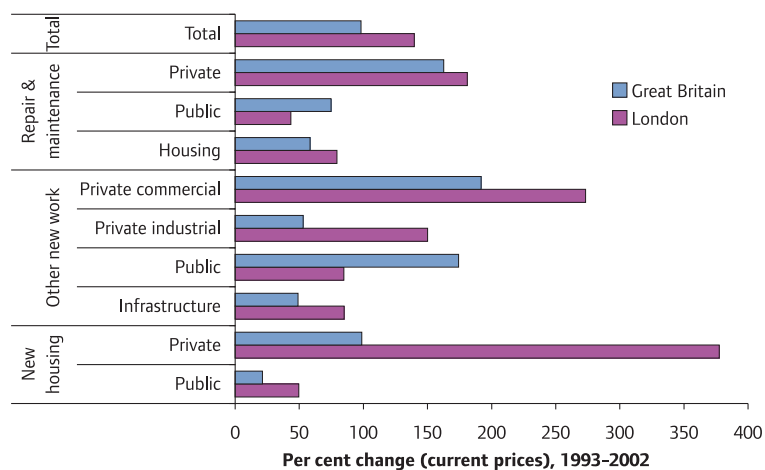
source DTI Construction Statistics Annual

The increasing value of London's construction in recent years has been driven by the growth in non-housing developments (other new work). Spending on repairs and maintenance also increased while that in new housing and in infrastructure has been relatively static.

Figure 3.14 Changes in London's 'other new work' output, 1993 - 2002

source DTI Construction Statistics Annual

In the expanding 'other new work' construction, the growth has been almost entirely concentrated in private commercial work. Over 1993 - 2002, new private commercial work increased from a 20 per cent share of London's construction activity to 31 per cent. The share of new private housing also increased, from four per cent to seven per cent. The shares in repairs and maintenance of housing, in infrastructure and public spending declined.

Figure 3.15 Changes in London and Great Britain's construction

source DTI Construction Statistics Annual

Over the past decade, construction has expanded faster in London than nationally. In particular, London has had a greater growth in spending on construction in private housing but also in private commercial work and infrastructure. London has slower growth in construction in public new work and public repairs.

4 Construction demand in London

This section aims to review the demand for construction in London by looking at four key components:

- demand for new housing with population and household growth
- demand for commercial, industrial and public premises with economic growth
- infrastructure investment in London
- repairs and maintenance.

Building blocks

- The GLA projects that London needs 380,000 new dwellings over 2001 - 2016. This compares with 150,000 new dwellings completed over 1991 - 2001.
- Non-housing building is mostly set by business use. The annual new build for business doubled in volume to over 700,000 square metres for the mid 1990s to 2001. Construction for retail, distribution and public uses also expanded.
- GLA Economics projects employment growth of over 600,000 jobs through 2001 - 2016, adding to the 600,000 jobs gained over 1993 - 2001. This may suggest a sustained but slower growth in construction for employment space.
- There is a lack of public recording of infrastructure construction in London. Investment in transport such as the London Underground and London's railways is planned to increase considerably on current levels.
- Half of activity in repairs and maintenance is in housing. As investment in new housing increases, spending on repairs and maintenance tends to increase too.

Demand for new housing

GLA Economics looked at the market for housing in *Market failure and the London housing market*⁴ (2003) which illustrated the growth of household⁵ numbers in London. The demand for housing is driven fundamentally by demographics with population growth and a changing age profile but also by social change influencing the pattern of household size and formation.

The GLA *Population and Household Forecasts*⁶ show how the population of London stabilised in the 1980s following a long period of decline and has since increased at a growing rate. Today, London's population is over 7.4 million, from 6.8 million in 1984 and around 7 million in 1994. The average size of households is decreasing from 2.4 people in 1991 to under 2.3 people in 2001 as the number of households in London increased from 2.8 million to 3.1 million. This growth is partly due to net inward migration to London since the late 1990s, with net international



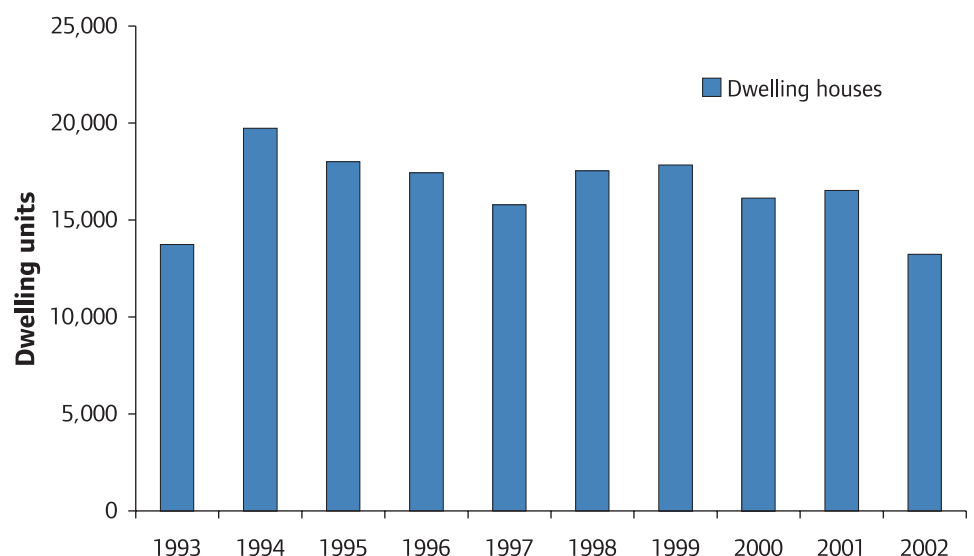


inward migration offsetting outward domestic migration from London to the rest of the UK. London has an age profile concentrated in the 20-39 years age group. This contributes to London's higher birth rate than the rest of the country and its increasing rate of natural population growth.

Projections from the GLA show London's population continuing to grow. London's population will grow to more than eight million by 2016. The number of households is projected to grow to over 3.4 million in 2016. This implies more than 300,000 new households from 2001 - 2016. The changing nature of household characteristics means that much of the growth will be in multi-person households, that is households which are not couples or families, alongside a smaller increase in one-person households. GLA projections therefore assume an increase in demand of over 380,000 additional new dwellings over 2001 - 2016 compared to an estimated increase of over 150,000 dwellings over 1991 - 2001.

The London Development Database is the most authoritative source on the scale of new housing. It collects information on all significant housing developments in London. The number of new housing completions in London recorded over 1993 - 2002 has averaged around 16,600 units a year. The earlier period of 1993 - 1996 saw housing completions of over 17,000 units a year; this average has fallen since 2000. In 2002, there were 13,000 units completed.

Figure 4.1 London's housing completions



source London Development Database

The London Plan (2004) sets out the need for additional housing and the policy⁷ to increase the overall supply of housing in London. Mayoral policy aims to achieve an additional 30,000 homes per year in London with provision up to 2006 based on 23,000 new homes per year. This marks a substantial increase on the current average annual number of housing completions. If these numbers are achievable it requires an increase in construction activity in housing.

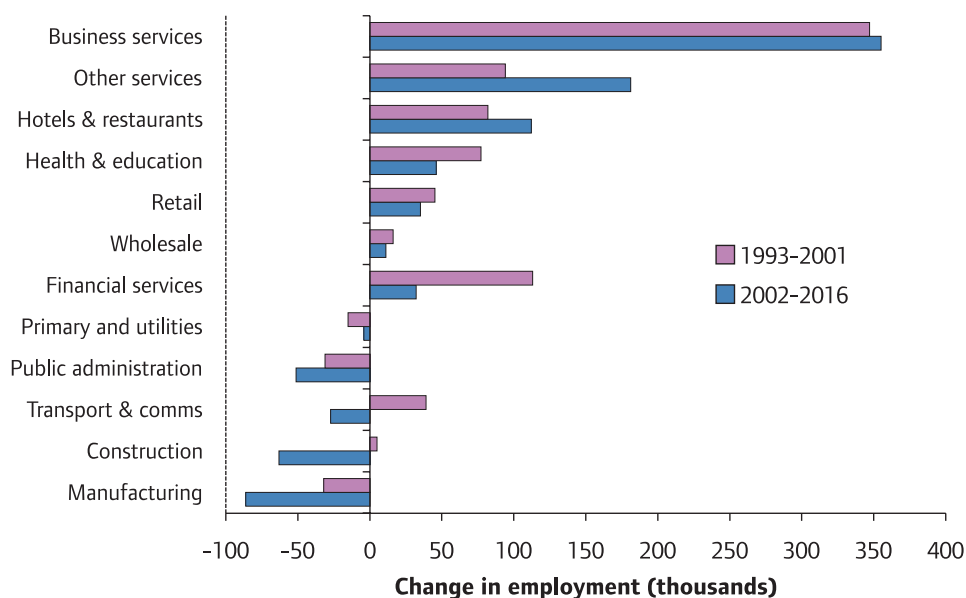
Demand for commercial, industrial and public premises

The demand for the construction of non-housing commercial and public uses will ultimately be derived from the growth in London's economy. Over the past decade, London has experienced high growth employment particularly in business services, finance and other services although a continued decline in London's manufacturing employment. The latest projections for 2002 - 2016 are for 540,000 additional jobs in London.

It does not directly follow that an increase in business services employment would lead directly to a need for the construction of new offices or that only a slow increase in retail employment would mean little construction of shops. However, the growth of employment by sector provides an indication of the changes that are likely to happen in London's economy, which will in turn generate demand for the new buildings.

Figure 4.1 illustrates recent employment change in London over 1993 - 2001 and employment projections for 2002 - 2016. Recent growth is concentrated in business services, financial services and other services. These sectors are expected to continue to grow and generate a need for business-use property. There is also past and projected growth in retail and leisure sectors shaping the demand for shops, restaurants and leisure-use properties. Growth in public services, namely health and education, means a growing need for new public-use properties such as hospitals and schools. In contrast, as employment in London's manufacturing sector declines, so too does demand for new industrial premises.



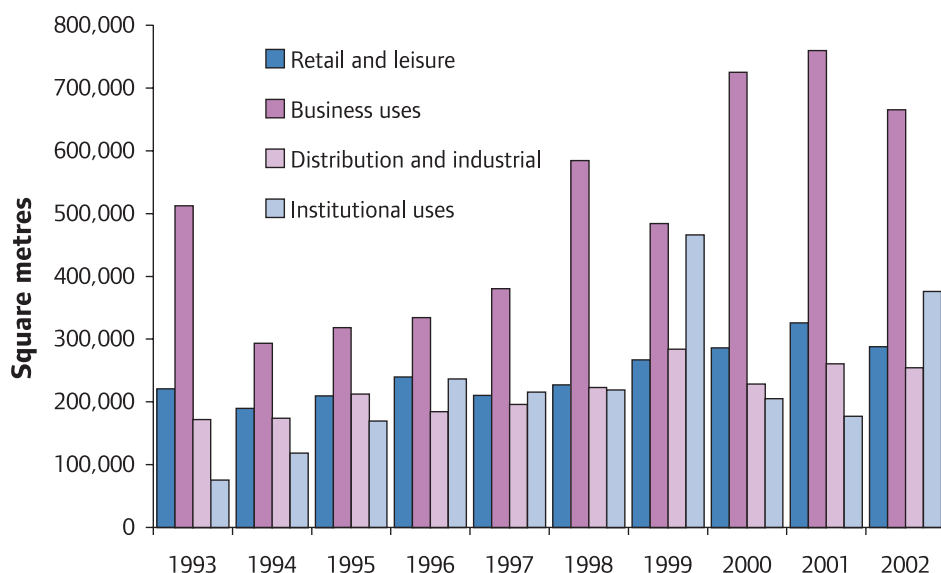
Figure 4.2 GLA Employment recent history and projections

source GLA's Planning for London's Growth and GLA Economics Working Paper 11: Working London (2002-2016)

The London Development Database is the most authoritative record of completions of non-housing developments across London's boroughs. This is recorded in square metres. The categories used here are based on the standard planning classifications:

- Business-use is the B1 class of office and commercial use.
- Retail and leisure includes the classes of A1 shops, A3 restaurants and pubs, and D2 leisure uses.
- Distribution and industrial combines B2 general industries and B8 storage and distribution.
- Institutional uses combines C2 residential institutions and D1 non-residential institutions and so includes public uses such as hospitals and schools.

Figure 4.3 shows a broad overview of non-housing developments in London over the past decade. Non-housing completions in London grew over the past decade from under one million square metres completed in 1993 to over 1.5 million square metres in 2002. Completions can vary each year but there was a clear increase in average completions over 1998 - 2000.

Figure 4.3 Database of London's non-housing completions

source London Development Database

Considering completions by broad categories:

- Business uses are the largest category ranging from 32-55 per cent of all completions. In 2000 and 2001, completion reached well over 700,000 square metres, more than double the level of business-use annual completions between 1994 and 1997.
- Retail and leisure uses are typically around 18-25 per cent of completions. The average has increased from around 200,000 square metres per year in the mid 1990s to almost 300,000 square metres over 2000 - 2002.
- Distribution and industrial uses are approximately 20 per cent of floor-space completions. The annual average has grown steadily from about 180,000 square metres in the mid 1990s to 250,000 square metres in 2002.
- Institutional uses vary greatly in the share of completions, from under ten per cent in the early 1990s to over 30 per cent in the late 1990s. The annual level has grown from under 100,000 square metres to over 150,000 square metres.





GLA Studies

The GLA has commissioned a series of studies as part of the development and implementation of *The London Plan* that consider the provision of new business space in London:

1. *Demand and Supply of Business Space in London*⁸ (2002), and *London Office Policy Review*⁹ (2004).

The first report pointed to the decreasing demand for industrial land, therefore providing a surplus of industrial sites. It also highlighted a need for new office developments to accommodate the growth in services employment. The subsequent office policy review indicates that recent developments and the planning pipeline are concentrated in the main business centres of Westminster, City of London and Canary Wharf. This implies that much future commercial construction is likely to consist of high-density office space.

2. *Industrial and Warehousing Land Demand in London*¹⁰ (2004) looks at distribution and industrial needs.

The study identifies that over half of London's industrial building stock is warehousing. London's factory floorspace is declining while that for warehousing is increasing. London's industrial stock is also relatively old, predating 1971, and vacancy rates have risen to over eight per cent of floorspace.

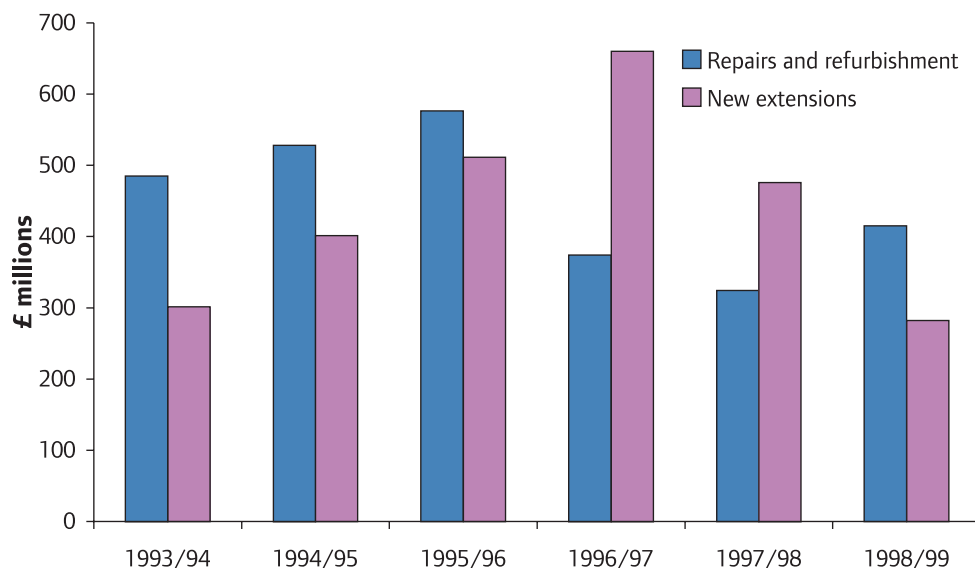
3. *Comparison goods floorspace need in London*¹¹ (2004) reviews retail floorspace.

This study identifies the pipeline of proposed major retail and leisure developments in London with almost 700,000 square metres of additional floorspace up to 2016. This includes major retail developments in Stratford, Elephant and Castle, Brent Cross, and White City.

Infrastructure investment

While there is the London Development Database to provide an indication of the construction of property over recent years, there is no such database providing information on the construction of infrastructure. This lack of monitoring limits the analysis and understanding of construction trends in London.

As a proxy for infrastructure construction, the annual reports of London Transport provide details on the levels of investment in the London Underground through the 1990s. This is illustrated in Figure 4.4 and is measured as the value of investment in current prices rather than by physical outputs such as length of track or tunnel.

Figure 4.4 Infrastructure investment in the London Underground

source London Transport Annual Reports

Over the period 1993 - 1999, around half of the infrastructure investment in London Underground was in repairs and refurbishment. This includes replacements of tracks, strengthening of tunnels and modernising of stations. The other half of investment is new extensions. During the 1990s, this is almost all attributable to the Jubilee Line Extension. Up until 1996/97, the peak year for new investment, this mostly consisted of tunnelling, followed by the mechanical and electrical fit-out. From 2000, the restructuring of London Transport, the creation of Transport for London and the introduction of Public Private Partnerships distorts this measure of investment. This period of restructuring did not introduce any major new infrastructure.

*The Mayor's Transport Strategy*¹² (2001) emphasises that, 'There can be no sustained, long term improvement in transport in the Capital without tackling the legacy of years of under-investment in the Tube'. The new *Transport for London 5 year investment programme*¹³ (2004) sets out a business plan to invest £10 billion in transport up to 2010.

The planned investment in infrastructure on the London Underground network includes:

- extension to the East London Line
- extension to the Docklands Light Railway
- extension to the Metropolitan Line
- increased tunnel, track and signal upgrades
- more station modernisations and refurbishments.



The planned infrastructure investments of Transport for London clearly go beyond the London Underground. In particular there is the likely construction of the Thames Gateway Bridge, continued development of King's Cross St Pancras station, and improvements to the road network.

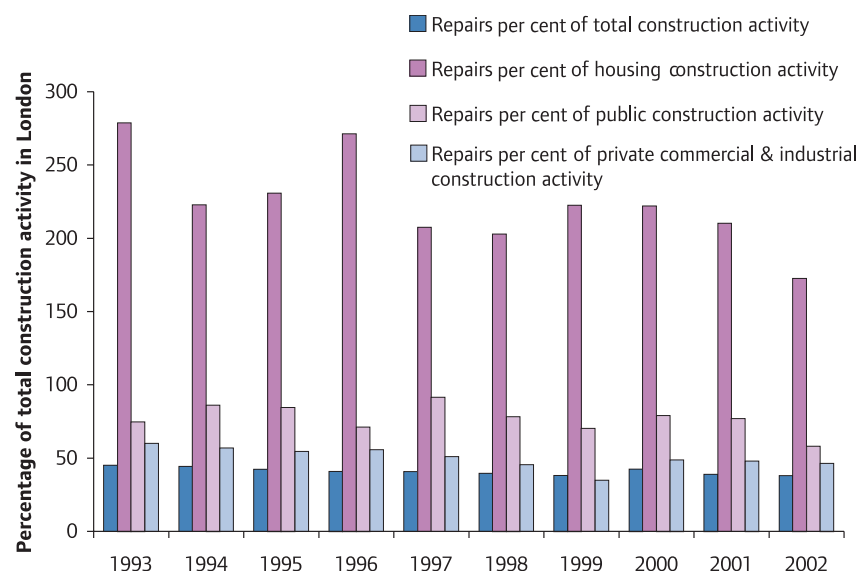
If the railway development Crossrail is approved this would also be a major construction project. The impact of Crossrail on the construction industry has been considered by a report for Cross London Rail Links¹⁴. This calculates that Crossrail would be equivalent to about five per cent of resources assigned to new construction in Britain. The report concludes that with Crossrail, together with other major transport infrastructure projects, the London construction demand would be unprecedented.

Repairs and maintenance

There is little statistical evidence of patterns in repairs and maintenance in London. For example, there is no planning database on which to draw. Repairs and maintenance are initiated by many households and firms, while much of the work is done by self-employed contractors. The only source on which any reasonable assessment of trends in repairs and maintenance can be made is the DTI Construction Statistics.

These record the share of activity in repairs and maintenance as, on average, being around 41 per cent of all construction activity in London. In some years, this has reached 45 per cent, others as little as 38 per cent, but there is little deviation around this regardless of the overall growth in construction activity over the past ten years.

Figure 4.5 Activity on repairs and maintenance and per cent of spending



source DTI Construction Statistics, calculations by GLA Economics

Around half of all activities in repairs and maintenance are in housing. This ratio has also proved stable over the past decade. Taking repairs and maintenance by each type of construction activity:

- In housing, the scale of activity in repairs and maintenance is greater than activity in building new housing. On average, activity in housing repairs and maintenance is recorded as 224 per cent of that of activity in building new housing. This percentage varies but the relationship stands that there is less activity in building new homes than repairing existing ones.
- In private commercial and industrial buildings, repairs and maintenance are recorded as an average of 50 per cent of that of new building activity. Overall, as activity in new private buildings has increased, activity in repairs and maintenance has increased at a slower rate.
- In the public sector, repairs average at around 70 per cent the activity of new building. This is relatively stable, although in recent years an expansion in new public building has meant faster growth than in repairs and maintenance.
- Infrastructure is always recorded as new. For example, the data cannot distinguish contracts to build new roads or maintain existing roads.





5 Constraints on construction in London

This section aims to consider the supply of construction in London and identify some of the main constraints faced by the construction industry in London. This looks at the three main potential constraints:

- constraints on having a sufficient workforce for construction in terms of people and skills
- constraints arising from the business structure of the construction industry
- constraints due to accessing the raw materials needed for construction.

The workforce of the construction industry

The first potential constraint on the construction industry is in having the necessary number of construction workers with sufficient skills.

Building blocks

- London's construction workforce is only ten per cent female and only 13 per cent from black and minority ethnic (BME) groups and so is unlike London's workforce as a whole. Construction has slightly higher shares of older workers and commuters but is less dependent on international migrants.
- Construction has few workers with high-level qualifications and a high share with low or no qualifications. The sector mostly consists of workers with mid-level qualifications and trade apprenticeships.
- Construction occupations earn much less than the London average and earnings have been growing at a slower rate. The average number of vacancies is also declining.
- London's construction employers are no more likely to report skills shortages than London employers as a whole. London's construction employers report more skills shortages than construction employers across the country.

The sector skills council, CITB Construction Skills, leads the work in monitoring the labour market in construction with the goals to reduce skills gaps and shortages in construction, improve the sector's productivity, increase opportunities for construction workers, and improve the supply of education and training for the sector. This section highlights some of the most important issues – particularly considering the constraints in London – for the workforce for construction:

- profile of London's construction workforce
- construction workforce by occupation and qualification
- construction wages
- construction vacancies
- construction skills shortages and skills gaps.

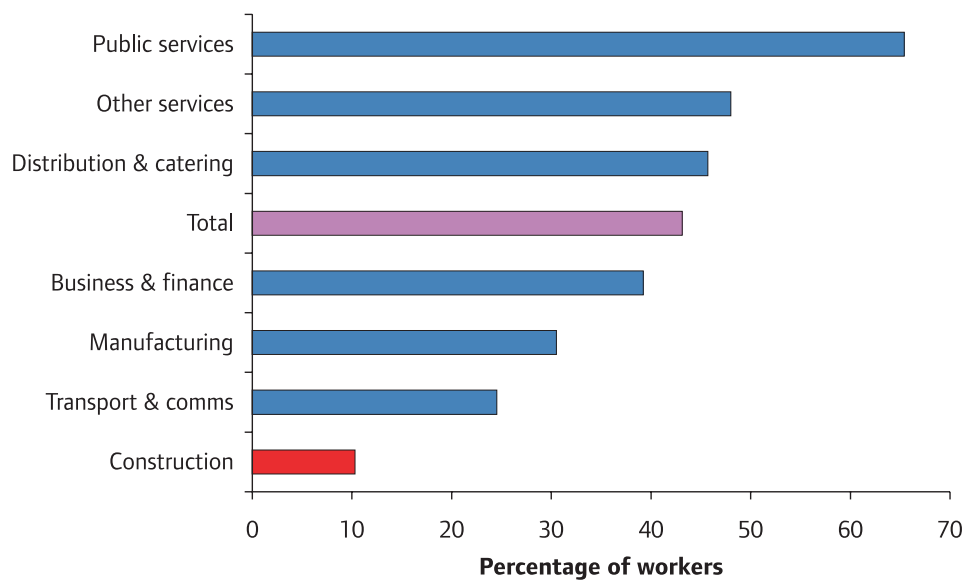


Profile of London's construction workforce

Construction in London employs around 200,000 people, over five per cent of the London workforce. The Labour Force Survey (LFS) provides data on the characteristics of London's workforce and allows comparisons across sectors. The LFS data here is for 'workers' in London and not 'residents' and so includes those who commute into London to work on construction projects.

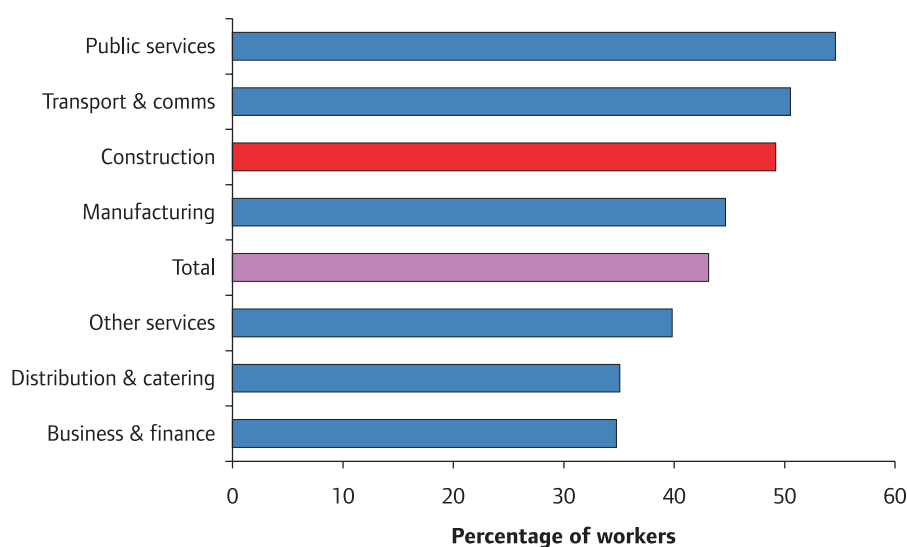
The following analysis compares six key characteristics of the construction sector – the share of women, age, black and ethnic minorities, international migrants, commuters, and disabilities – with other London sectors.

Figure 5.1 Women in the construction sector



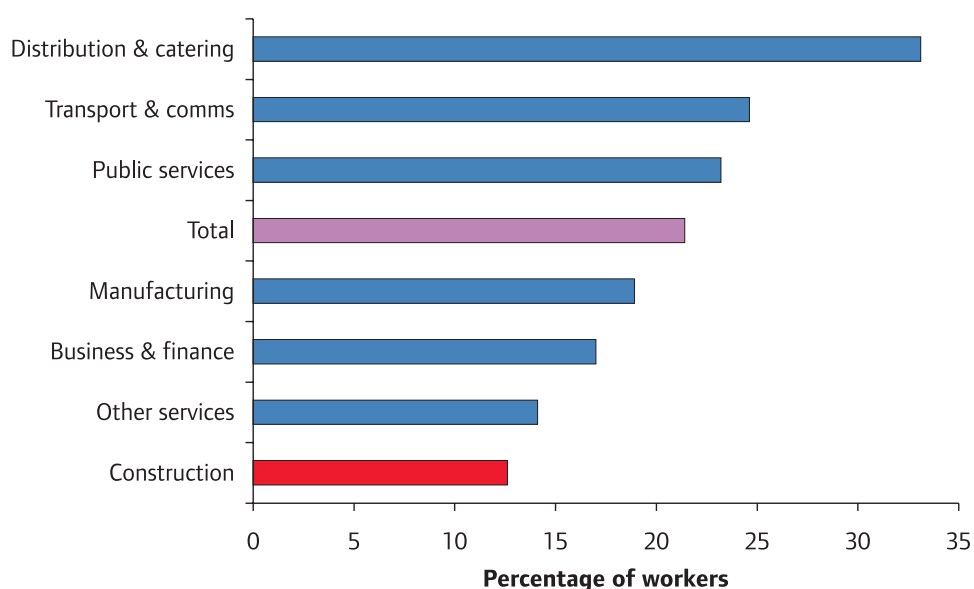
source Labour Force Survey

Men dominate the construction sector. In London, only ten per cent of construction workers are women, the lowest of any sector, showing that women are substantially under-represented.

Figure 5.2 Workers aged over 40 years in the construction sector

source Labour Force Survey

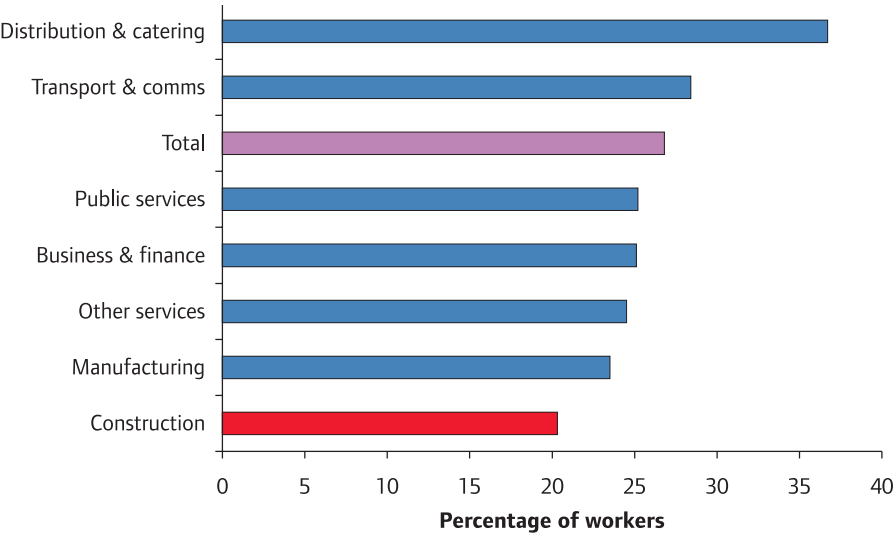
Some 49 per cent of London's working-age construction workers are over 40 years old compared to 43 per cent for all sectors. Some other sectors have an older workforce.

Figure 5.3 Ethnic groups in the construction sector

source Labour Force Survey

Construction is also relatively unrepresentative for BME groups. In London, 13 per cent of construction workers are from minority ethnic groups compared to 21 per cent of London's workers as a whole.

Figure 5.4 International migration in the construction sector



source Labour Force Survey

London is a city that draws heavily on international migration. Up to 27 per cent of London’s workers were born outside the UK. The construction sector also draws on overseas workers with one-in-five being born outside the UK, although this is lower than all other sectors.

London draws in workers who commute from other regions of Great Britain, in particular the South East and East of England. Over 15 per cent of London’s workers are such commuters. Within the construction industry this share is much higher with over 23 per cent of workers commuting from other regions.

The LFS records that ten per cent of London’s workers are defined as having some disability. Construction, with over ten per cent, is therefore in line with the London average.

The preceding figures show only the headline profile of London’s construction workforce. More detailed analysis shows that over 40 per cent of London’s construction workers are white males who are over 40 years old, which is more than double the share for London’s workforce as a whole.

Construction workforce by occupation and qualifications

The LFS also shows the composition of construction’s workforce by occupation. Construction is distinctive in that up to 50 per cent of workers are in skilled trades occupations compared to just eight per cent for London as a whole. In contrast, construction has a lower share of jobs in higher-level occupations. Construction in London has just 26 per cent



of workers in management, professional and associate professional occupations compared to 53 per cent for London's workforce as a whole.

Figure 5.5 Construction workforce by occupation



source Labour Force Survey

It is also notable that the composition of London's construction workforce is little different than that for construction across Great Britain. British construction has 51 per cent of workers in skilled trades and 22 per cent in higher-level occupations.

Many of these skilled trades are common in construction but rare in any other sector. Within skilled trades occupations, over 80 per cent of all building trades and construction trades are found in construction along with over 75 per cent of construction operatives and elementary construction occupations. These occupations also appear in sectors such as transport, utilities and agriculture.



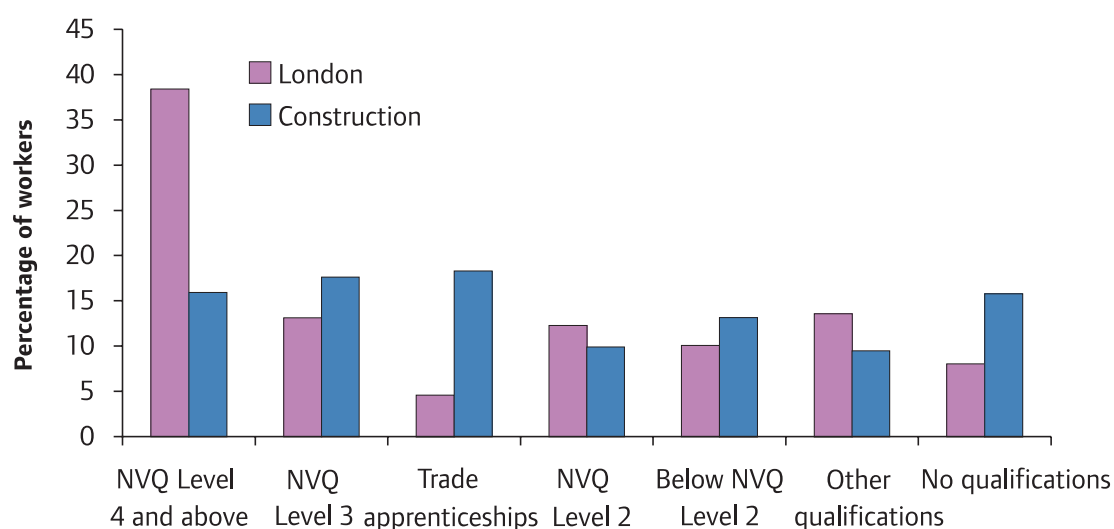
Table 5.1 Occupations concentrated in construction

Occupation group	Occupation	Construction	London total	% working in construction
Skilled trades	Building trades	23,000	27,000	86
Skilled trades	Construction trades	62,000	74,000	83
Operatives	Construction operatives	13,000	17,000	77
Elementary	Elementary construction occupations	13,000	17,000	75
Skilled trades	Electrical trades	18,000	52,500	34
Managers	Production managers	20,000	61,500	32
Operatives	Mobile machine drivers & operatives	2,500	8,000	30
Associate professional	Draughtspersons & building inspectors	2,000	7,000	25
Professional	Architects, town planners, surveyors	7,500	34,000	22
Professional	Engineering professionals	5,500	33,000	17
Associate professional	Science and engineering technicians	3,500	22,500	16
Skilled trades	Metal machining and fitting	3,500	21,500	15

source Labour Force Survey

This structure of occupations is reflected in the proportions of the construction workforce by level of qualifications. The national qualifications framework defines NVQ4+ as qualifications such as degrees or certificates from higher education, NVQ3 includes A-levels and diplomas from further education, while NVQ2 includes GCSE grades A-C and lower level diplomas. Ranked between NVQ levels and 2 and 3 are qualifications from trade apprenticeships.

In London's construction workforce, 16 per cent are qualified to NVQ4+, contrasting with the much higher London average of 38 per cent. Contrastingly, 29 per cent of London's construction workers have NVQ1 or no qualifications which is greater than 18 per cent for the comparable London average.

Figure 5.6 Construction workforce by qualification levels

source Labour Force Survey

Therefore, construction depends more upon workers with middle-level qualifications. In particular, workers in construction hold almost a quarter of all trade apprenticeships in London. Over 18 per cent of London's construction workers have trade apprenticeships compared to less than five per cent for all of London's workforce. These include many qualifications specifically for construction accredited by CITB Construction Skills and by City and Guilds¹⁵.

Table 5.2 Main construction occupations by qualifications in London

	NVQ level 4 and above	NVQ level 3	Trade apprenticeships	NVQ level 2 or below	Other qualifications	No qualifications
Construction trades	6	21	29	19	10	15
Building trades	4	12	16	24	5	38
Production managers	41	16	13	17	7	6
Electrical trades	15	31	21	22	9	2
Construction operatives	7	4	16	18	23	32
Elementary construction	1	8	11	21	17	41

source Labour Force Survey

Production managers in construction are often qualified with over 40 per cent holding NVQ4. However, even in this management group, over a quarter have qualifications of NVQ2 or below or no qualifications. In

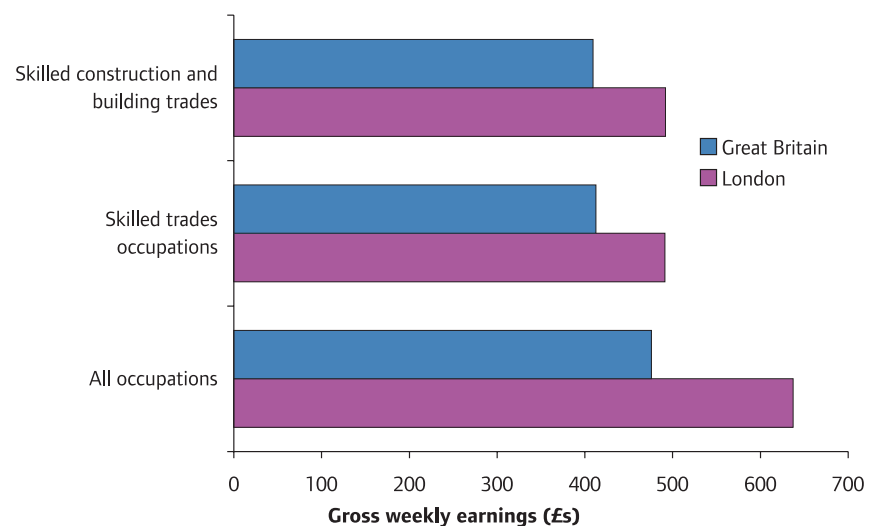
groups such as building trades and elementary construction occupations, around 40 per cent have no qualifications.

Construction wages

The New Earnings Survey is the main source for measuring wages. In 2003, workers in skilled construction and building trades (standard occupation code 53) in London recorded an average gross weekly wage of £492 per week. This is 20 per cent higher than the £409 for skilled construction and building trade workers in Great Britain as a whole.

The average weekly earnings for construction and building trades are roughly identical to the average for skilled trades occupations overall. In London, skilled construction and building occupations earn 23 per cent less than London average earnings. In Great Britain, these occupations earn 15 per cent less than Britain's average earnings. This suggests a relative disincentive for workers in London to enter construction occupations compared to the rest of the UK.

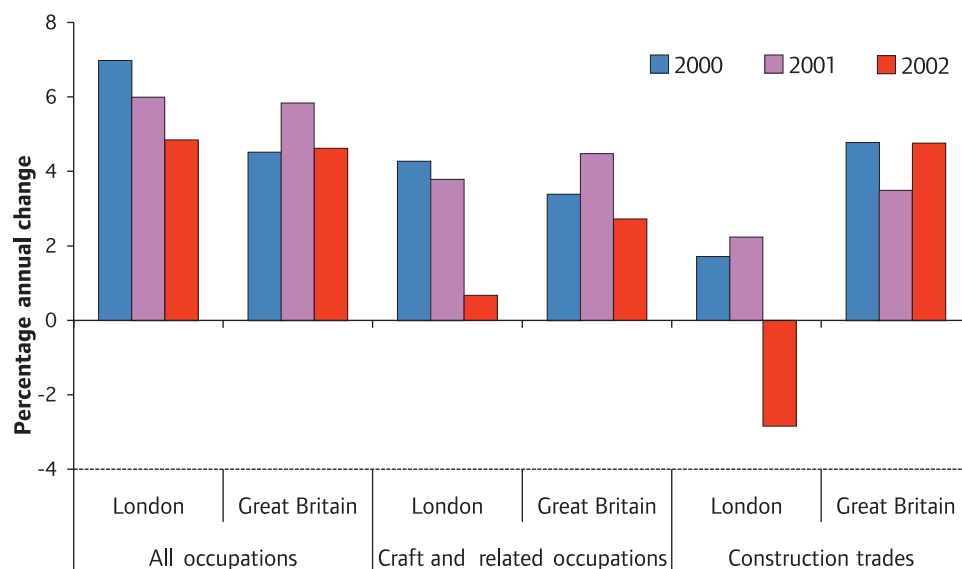
Figure 5.7 Construction gross weekly earnings, 2003



Source New Earnings Survey

Sample sizes mean that it is difficult to disaggregate these construction and building trades by earnings. However, across all construction and building trades, earnings in London are higher than for Great Britain. Earnings are highest for trades such as steel erectors and plumbers but lowest for trades such as glaziers, decorators and bricklayers.

Figure 5.8 Change in average gross weekly earnings, 2000 to 2003



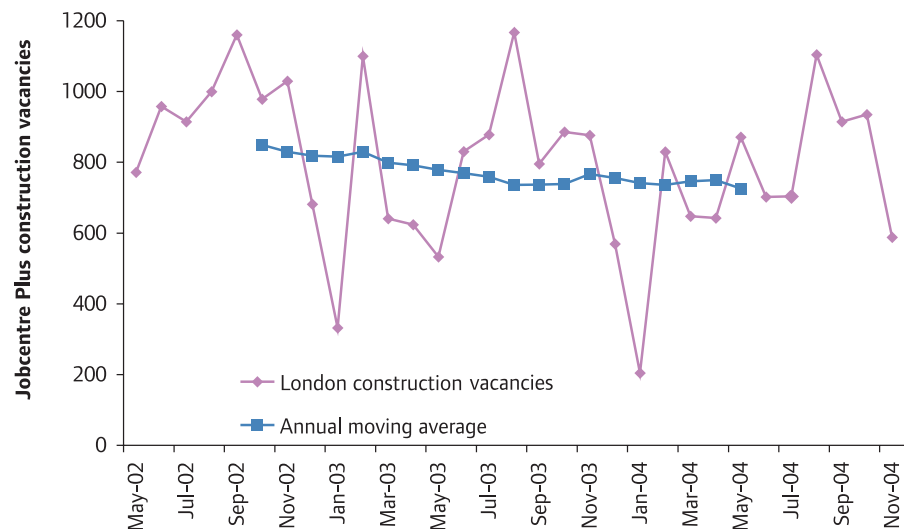
Source New Earnings Survey

The New Earnings Survey can provide details of average annual change in earnings in construction trades for 2000 - 2002. The revision of occupation codes means 2003 cannot be included in the series. Earnings growth for construction occupations in London was slower than for London as a whole. In 2001, earnings growth in London was seven per cent, but under two per cent in London's construction trades. In 2002, the survey actually recorded a fall in earnings for construction trades in London. Therefore, earnings for construction trades in London have also grown at a much slower rate than that for construction trades in Great Britain as a whole. This slow earnings growth implies that wages do not illustrate a constrained labour market for construction in London.

Construction vacancies

Not all job vacancies are notified through Jobcentre Plus, but this provides an indication of trends in the demand for construction workers since May 2002. Construction vacancies are highly seasonal, lowest in January and highest in August when there are up to 1,200 construction vacancies in London. However, the overall average trend in construction vacancies is gradually declining.

Figure 5.9 Vacancies for construction and building trade occupations in London



Source Jobcentre Plus

Construction skills shortages and skills gaps

The National Employers Skills Survey 2003 is the key source for the extent, causes, and implications of recruitment difficulties and skill gaps. It surveyed a representative sample of 72,000 employers in England and allows a detailed level of analysis. In 2003:

- Only 12.4 per cent of London firms had unfilled vacancies. This is the lowest of the regions and below 17 per cent of firms for England as a whole.
- London's employers have the smallest proportion of hard-to-fill vacancies in England. Around 31 per cent of vacancies are considered 'hard to fill'. This is again lower than any other region and far below the English average of 45 per cent.
- Of the remaining hard-to-fill vacancies, 72 per cent are viewed as 'skills shortage vacancies,' which is above the English average of 57 per cent.



The supply of appropriately-skilled labour is more of an issue for London's construction firms than for other sectors in London. Moreover, it is viewed as a greater concern in London's construction than for construction in any other region:

- Only 10.3 per cent of London construction firms reported unfilled vacancies. This is lower than London's average and below 12.7 per cent reported by construction firms across England.
- Fifty-two per cent of these vacancies were considered 'hard to fill' and around 90 per cent of these hard-to-fill vacancies were attributed to skills shortages.
- This equates to 5.4 per cent of London's construction firms being unable to recruit appropriately skilled labour compared to 2.7 per cent for all London employers.



The CITB Construction Skills Employer Needs Survey 2002 adds to this official data. This survey reports that:

- Around 64 per cent of London's construction firms had difficulty recruiting in 2002.
- Firms experienced greatest difficulties recruiting people skilled in wood trades, bricklaying and plastering.
- The main skills shortages among applicants highlighted by construction firms were 'practical and technical skills' to do the job with 66 per cent of employers citing these as the main skills shortages.
- The CITB Construction Skills survey does not identify skills gaps within existing construction employees as being so significant. Only 13 per cent of construction employers in London pointed to skills deficiencies within their workforce compared to 16 per cent of all London employers.
- Almost 60 per cent of construction employers attribute skills gaps to lack of experience with only two per cent pointing to lack of staff training or development.

The CITB Construction Skills survey asked how London's construction firms were affected when unable to recruit because of skills shortages. Almost 75 per cent said this led to increased workloads for those already in employment and 47 per cent claimed this increased operating costs, as wages increased to attract appropriate workers.

The structure of the construction industry

A possible constraint on the ability of the industry to meet new and increasing demand for construction is the structure of the construction industry itself.

Building blocks

- It is estimated that there are more than 90,000 construction businesses in London. Almost 90 per cent of these are self-employed workers. Less than 19,000, fewer than 20 per cent, are registered for VAT (value added tax).
- Small and medium-sized firms are concentrated in repairs and maintenance, especially activities such as plumbing and plastering, but they also play a large role in house building.
- New work is higher value and more likely to be done by large firms. The largest firms are concentrated in major developments and infrastructure.
- The sector's dependence on small businesses means that it is constrained by the challenges that face all small businesses such as access to finance and short-term survival pressures.

The industry consists of high rates of self-employment and large numbers of small firms. This means the industry is flexible. However, small firms lack economies of scale and scope and the industry may lack the large firms to make substantial improvements in productivity and plan for the long term.

It is necessary to explore the structure of the industry from its smallest firms to its largest, to identify their role in employment and construction activity and the extent to which this structure may constrain the industry's competitive ability to meet the demands placed upon it. This section therefore considers:

- the number of construction firms
- the role of small, medium and large firms in the construction industry
- major businesses in the construction industry
- barriers for small businesses in construction.

The number of construction firms

The number of construction firms in Great Britain and in London depends on whether firms that are officially registered for VAT or the many small businesses, mostly self-employed construction workers, are included.

Companies register for VAT when their annual turnover is above the VAT registration threshold for turnover. This threshold is reviewed annually and currently stands at over £55,000 per year. At the end of 2002, there were 181,000 construction companies registered for VAT, that is 10.6 per cent of the total VAT registered business stock in Great Britain. In London, at the end of 2002, there were 18,400 construction companies registered for



VAT. That is 6.6 per cent of all registered companies in London and 10.2 per cent of all construction companies in Great Britain. The number of construction companies registered for VAT increased slightly over 1995 to 2002. In Great Britain the number of construction firms increased by 3.6 per cent from 175,000 in 1995 and in London the increase was 5.2 per cent from 17,500.

The rise in VAT-registered construction businesses in London has been greater than the change nationally. Of course, a key caveat on using the VAT data is that where construction businesses are registered for VAT is not the same as where they are actually working. For example, a major construction business headquartered in London may have much of its activity taking place outside London or similarly a small business based in the Midlands may have most of its work within London. The location of business is not identical to the location of jobs and output.

The effect of the VAT threshold means that many small companies do not appear on the register. The Small Business Service reports that there are currently four million businesses in Great Britain meaning that there are up to 2.3 million businesses, 58 per cent of the total, that are not registered for VAT. This is particularly important in the construction industry in which the share of self-employment is much higher than other sectors. The Small Business Survey says there are 792,000 construction businesses, almost 20 per cent of all businesses. Therefore, over 600,000 construction businesses, 77 per cent of construction firms, are below the VAT threshold.

The number of total construction firms in Great Britain has increased from 728,000 in 1995. In 1995, over 87 per cent of construction businesses had zero employees, that is they were self-employed. By 2002, this had fallen only slightly to 86 per cent of construction firms. The most recent regional estimates from the Small Business Survey for 2001 show that London had 91,000 construction businesses, 13.5 per cent of London's 675,000 businesses.

Almost nine-in-ten (89 per cent) of London's construction firms were made up of self-employment - a slightly higher share than nationally. These figures also suggest that 80 per cent of London's construction firms are not registered for VAT, also a higher share than nationally.

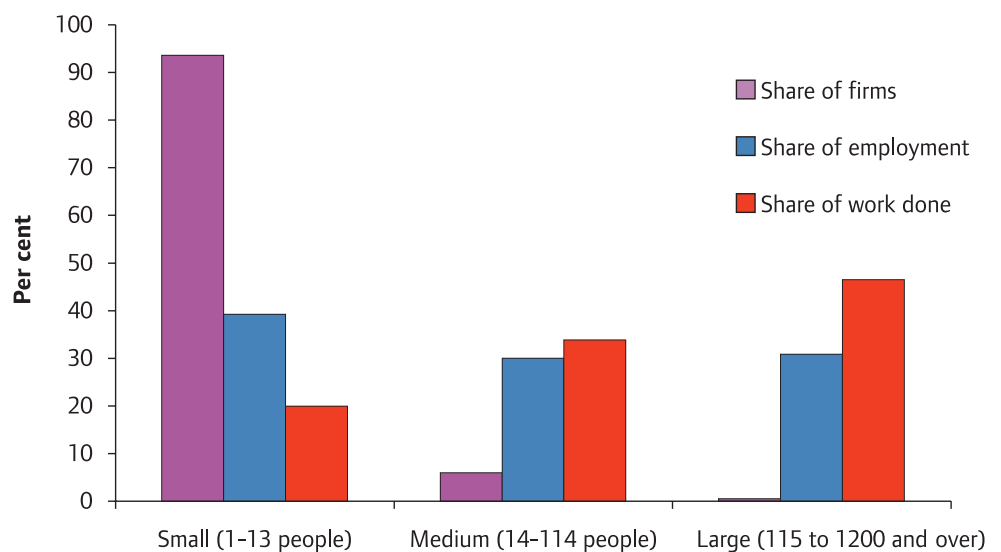
The role of small, medium and large firms in the construction industry

In this analysis, the industry is considered simply in terms of small, medium and large firms. The data and business size bands presented here are sourced from the DTI *Construction Statistics Annual*:

- Small firms are defined as those with one to 13 people.
- Medium-sized firms are defined as those with 14 to 114 people.
- Larger firms have 115 people and above. The largest firms in the construction industry employ over 1,200 people.

Figure 5.10 illustrates the structure of the construction industry in Britain in terms of how small, medium and large firms form the share of firms, employment and construction work done. It can be assumed that there is a similar structure of firm size in London as there is no evidence to suggest that this is not the case.

Figure 5.10 Structure of construction industry



Source DTI Construction Statistics Annual

- Small firms make up almost 94 per cent of all construction firms, employ 39 per cent of all construction workers and provide 20 per cent of the construction work done.
- Medium-sized firms make up almost six per cent of all construction firms, employ 30 per cent of workers in the construction sector and account for 34 per cent of the work done.
- Large firms have nearly half a per cent of the share of construction firms, employ 31 per cent of workers and carry out 46 per cent of the work done.

Almost all construction firms are small and these form the largest share of construction jobs – but the lowest share of construction work done. There are fewer medium-sized firms and these have a generally even share of employment and the value of work done. There are very few large firms but these provide the largest share of work done.

The value of work done per worker is therefore much higher in large firms than in small firms. The value per worker in large firms is measured as up to three times more than small firms (see Table 5.3).

Table 5.3 Small, medium and large firms compared

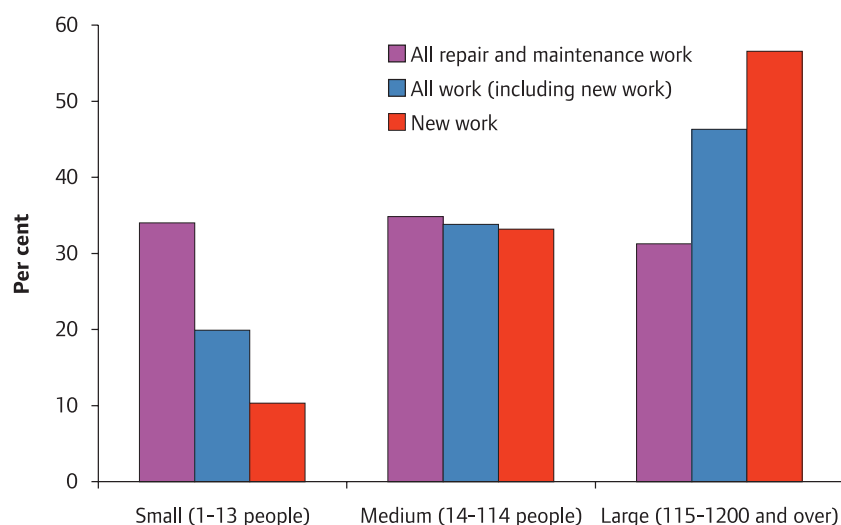
	Value of work done per quarter (2002)(£ million)	Workers (thousands)	Value per worker per quarter (2002) (£ million)
Small	3,550	390	9,100
Medium	6,040	300	20,300
Large	8,300	305	27,200



source DTI Construction Statistics Annual

Repairs and maintenance form about 40 per cent of construction activity and new work consists of 60 per cent. The structure of the construction industry is different between those firms that do most of their work in repairs and maintenance and those in new build.

Figure 5.11 Share of new work and repairs



source DTI Construction Statistics Annual



- Small firms carry out 20 per cent of all work; almost 34 per cent of all repair and maintenance and ten per cent of new work.
- Medium firms do 34 per cent of all work; 35 per cent of repair and maintenance and just 33 per cent of new work.
- Large firms do 45 per cent of all work; with 32 per cent of repair and maintenance work but up to 57 per cent of new work.

Over a third of all repair work is carried out by small firms. Large firms carry out over half of all new work. New work is usually of a much higher value than repairs and maintenance. This is reflected in the types of construction trades and the extent to which the work of these trades is done by workers in small, medium or large firms (see Table 5.4):

- The activities of non-residential building and civil engineering are mostly done by large firms (65 per cent of the work). Medium firms do 25 per cent of the work.
- House building is not quite as dominated by large firms; large firms do up to half of house building work but small firms do up to one quarter.
- Many specialist trades are favourable to smaller firms. This includes trades such as painting (53 per cent), glazing (57 per cent) and plastering (51 per cent) along with trades such as roofing, joinery, floor and wall covering.
- Some activities favour medium-sized firms. This includes the majority of work in demolition (77 per cent) and test drilling and boring (87 per cent).
- Specialist trades in large-scale work such as construction of waterways (88 per cent) and highways (59 per cent) are mostly the preserve of larger firms.

The DTI construction statistics show that the number of registered small construction firms in Great Britain has been decreasing slowly. There are 17 per cent fewer small firms in construction in 2003 than in 1993. In contrast, the number of medium-sized and large construction firms has been increasing, with the number of medium-sized firms up by 81 per cent and large firms by 58 per cent. Therefore, the share of construction employment in small firms declined from 55 per cent in 1993 to 38 per cent in 2003 and the share in large firms increased from 29 per cent to 34 per cent.

Table 5.4 Per cent share of work done by construction trade in small, medium and large firms

	Small firms	Medium firms	Large firms
Non-residential building	10	25	65
House building	25	27	48
Civil engineering	10	25	65
Specialist trades			
Demolition	10	77	13
Test drilling and boring	13	87	0
Roofing	45	46	10
Construction of highways	6	35	59
Construction of waterways	4	7	88
Scaffolding	19	35	46
Installation of electrical wiring and fitting	23	30	48
Insulating activities	24	51	25
Plumbing	41	38	21
Plastering	51	35	14
Joinery installation	45	47	8
Floor and wall covering	48	42	10
Painting	53	32	15
Glazing	57	26	17
Plant hire (with operators)	30	27	43
Other Work	31	33	36



source DTI Construction Statistics Annual

Construction remains a sector disproportionately dependent upon smaller firms. However, there is some evidence of consolidation in parts of the construction industry with the growth in numbers of large and medium-sized firms relative to a decreasing number of smaller firms.

Major businesses in the British construction industry

The construction industry is largely fragmented, with many fairly large companies but none making a dominant impact on the market as a whole. A few companies are part of wider international groups but many are British companies catering for a British market. The OneSource business database estimates that only 13 per cent of the national construction market and ten per cent of employees are concentrated within the ten largest businesses.

The major companies in construction are shown in Table 5.5. The largest by sales is AMEC, which has expanded rapidly in recent years particularly into international engineering and infrastructure markets. Similarly Balfour

Beatty has enjoyed recent expansion and acquisitions into overseas markets. The other major players include George Wimpey the country's largest house builder which has also expanded into the United States of America (USA) and Australia; Taylor Woodrow in property development and engineering; and Barratt Developments which has grown rapidly as one of the most recognisable names in house building.

Barriers for small businesses in construction

This report has shown that while the construction industry has a number of major businesses in civil engineering, commercial developments and large-scale house building, the industry remains one characterised by small businesses and self employment. The data from the Small Business Service shows that construction is the sector with the largest share of businesses with no employees other than the owner, 86 per cent compared to an average of 71 per cent. The wider question that needs to be considered is whether this dependence upon small businesses, especially self-employed and micro-businesses, constrains the development of the construction industry.

Small businesses play an important role in employment and economic activity across all sectors of the economy and this is not to be disputed. However, it is also widely recognised that small businesses face substantial constraints in investing in skills, technology and innovation. Recent research by the Small Business Service¹⁶ highlights issues such as the following:

- Less access to capital - there are barriers to securing loans and finance with lenders requiring security for loans which small businesses often do not have.
- Short-term financial pressures - many small businesses are typically too preoccupied with surviving over the short-term to make significant investments to produce long-term benefits.
- Difficulties in benefiting from investment - small businesses are often unable to make a sufficient return on investments or have resources to commercialise innovative products or services.
- Inability to diversify risk - large firms can risk new investments or projects knowing that should the initiative fail the business will still survive. This is rarely the case for a small business.
- Limited by a lack of skills - small businesses may be reluctant to invest in training and may not receive the full benefits. Businesses with few employees cannot easily release them for training while skilled employees may move to other jobs with more career progression.

Table 5.5 Major companies in UK market for construction services

Company name	Main brands in family	Sales £ billions	Employees	Notes
AMEC plc	Amec	4.42	46,000	Engineering company providing design, project delivery and maintenance. Clients in oil and gas, transport, infrastructure.
Balfour Beatty plc	Balfour Beatty Mansell	3.16	29,000	Construction company serving markets for rail, road and utility, buildings and structures, civil engineering.
George Wimpey plc	Wimpey Laing Homes	2.88	6,000	Primarily in house building business.
Taylor Woodrow plc	Taylor Woodrow Bryant Homes	2.67	7,000	Company in property development, construction and engineering.
Barratt Developments plc	Barratt King's Oak	2.17	4,000	Develops and sells houses and apartments.
Mowlem plc	Mowlem	1.98	26,000	Construction and support services, large building and infrastructure projects to small building and civil engineering works.
Persimmon plc	Persimmon Ideal Homes	1.88	4,000	Primarily involved in house building.
Carillion plc	Carillion	1.86	18,000	Range of business, transport and construction services to commercial and public sector.
Kier Group plc	Kier Bellwinch	1.42	8,000	Businesses in construction, support services, residential and commercial development, and infrastructure project investment.
The Berkeley Group plc	Berkeley Ancestral Homes	1.27	1,000	Activities include acquisition of land, developments of residential, retail and leisure.
O'Rourke Investments plc	John Laing O'Rourke	1.26	9,000	Civil engineering and housing construction.
Wilson Bowden plc	Wilson Bowden David Wilson	1.17	3,000	Residential and commercial property development.
Skanska UK plc	Skanska Trollope	1.15	15,000	Holding company for businesses in construction, civil engineering and specialist engineering.
Morgan Sindall plc	Lovell Bluestone Morgan	1.14	5,000	Operates division for affordable housing, construction, fit-out and infrastructure services.
Bellway plc	Bellway	0.95	2,000	Real estate and residential construction company.

These type of barriers can apply to small businesses generically and not just the construction sector. However, given that the Small Business Service estimates show that construction has 23 per cent of all businesses with fewer than ten employees and 22 per cent of all businesses with fewer than 50 employees – then issues important for small businesses are important for construction.

Construction materials

A further potential constraint on the construction industry is the availability and cost of the materials that go into construction.

Building blocks

- Raw materials are essential to the construction process. Most core materials such as clay, concrete and sand are sourced within Britain. Only timber is mostly imported.
- Major multinational conglomerates dominate the supply of construction materials.
- Environmental legislation may affect supplies. However, prices are not rising and imports may increase if shortages occur.

London itself is not a ready source of construction materials. As a major urban centre London is not naturally endowed with quarries, mines and forests for extracting clays, metals, stones or timbers. Modern London as a world centre for commerce, finance and services is not a location in which manufacturing of bricks, glass, metal products or timber products is economically viable. London depends on buying these construction materials from other regions of Great Britain or importing them from elsewhere in the world.

It is necessary to know what is happening in the market for construction materials, identifying whether construction materials are likely to become scarce and so increase the costs and constraints on London meeting its building needs. This section considers:

- the market for construction materials
- domestic production of construction materials
- international trade in construction materials
- major businesses in construction materials
- legislation issues affecting production of construction materials
- potential constraints on availability of construction materials.

The market for construction materials

The market for construction materials is substantial. At its widest it includes a broad range of manufactured components such as radiators, boilers, windows and doors. The focus here is on the core raw and heavy materials

that are the basis for construction work. Sources such as Keynote and OneSource estimate that this market is worth £28-34 billion while the Construction Products Association believes that 40 per cent of the value of construction work is attributed to the building materials. Table 5.6 provides a list of the main products in Great Britain's market for construction materials.

Table 5.6 Main products in construction materials

Material	Volume million (2002)	Volume change (98-02)	Value of market £m (2002)	Value change (98-02)	Notes
Sand and gravel	93.2m tons	+8.5%			Mostly gravel and concreting sand
Crushed rock	127m, tons	-3%			Coated and uncoated road stone
Cement and concrete	11m tons	-11%	811	8%	Production
Concrete products	90m sq mtr	7%	1,675	9%	Building blocks
Ready mixed concrete	23m mtr cube	-2%	1,275	13%	Production
Clay products	2830m tons	-5%	549	14%	Clay building bricks
Clay tiles			57	14%	Clay roofing tiles
Glass			252	40%	
Slate	96m tons	-8.5%			Slate comprising tiles, powder and granules.
Metal and metal products			1,027	24%	
Timber and timber products			1,720	16.2%	Sawmilling and planing of wood.



Notes m = millions

Source Keynote, Building Materials Market Report 2003

There is insufficient data to complete this table but the main observations are:

- The largest market in volume tonnage is clay products, including bricks, with a value of £550 million.
- The next largest markets by volume are crushed rock with almost 130 million tonnes and slate with up to 100 million tonnes.
- By value, the largest market is for timber and timber products, £1,720 million.
- The next largest markets by value are for concrete products, £1,675 million, and ready-mixed concrete with £1,275 million.
- The fastest growing market over 1998 - 2002 is glass, which increased in value by 40 per cent.
- There are decreases in the volume of markets for cement (-11 per cent) and slate (-9 per cent) over 1998 - 2002.

Domestic production of construction materials

Great Britain is the main source for construction materials used in its boundaries. The heavy tonnage of building materials increases their cost of transportation and so reduces the scope for international trade.

Table 5.7 illustrates domestic production of selected building materials by regions and countries of Britain:

- The production of bricks is greatest in the Midlands. The East Midlands and West Midlands combined produce up to 40 per cent of bricks in Great Britain, reflecting the availability in these regions of red clay and the historical production in clay and ceramics.
- The South East and East of England are the largest producers of concrete building blocks, producing over 33 per cent of production in Great Britain.
- Building sand is concentrated in the south-eastern regions of England with the South East and East of England together producing nearly 40 per cent of Great Britain's concreting sand.

London is not a producer of construction materials. The role of the South East and East of England as major sources of building sand and building blocks may partly reflect the proximity to the markets of London and the wider South East where the growth in construction is greatest.

Table 5.7 UK production of selected construction materials

	Bricks (millions)	Concrete building blocks (000 sq m)	Concreting sand (tonnes, 000s)
North West	290	6,760	1,770
North East	130	2,360	420
Yorkshire	200	12,970	2,030
West Midlands	600	7,540	3,890
East Midlands	490	9,160	4,270
East	380	16,190	5,580
South East	360	14,260	6,250
South West	120	12,150	3,120
Scotland	130	5,070	2,750
Wales	110	4,890	1,140
Britain	2,820	91,340	31,220

source DTI Construction Statistics Annual

International trade in construction materials

The UK is a net importer of building materials. In 2001, the level of imports in building materials was £7.1 billion, partially offset by exports

of £4.7 billion, leaving a trade deficit of £2.4 billion. This is a substantial increase from the deficit of under £1 billion in 1997, largely reflecting the increasing dependence on imports. Over four-fifths of this trade in building materials is in products and components with most of the remainder in semi-manufactured goods.

Table 5.8 Imports and exports of building materials at current prices (£ million), 1997 - 2001

	1997			2001		
	Imports	Exports	Balance	Imports	Exports	Balance
All raw materials	76	53	-23	96	72	-24
Crushed rock, uncoated	10	40	30	15	47	32
Building stone	41	1	-40	40	2	-38
Bituminous shale	8	5	-3	23	15	-8
All semi-manufactures	1,456	564	-892	1,434	477	-957
Sawn wood	688	8	-680	616	16	-600
Laminated wood	214	5	-209	217	12	-205
Steel for fabrication	202	306	104	228	222	-6
Aluminium for fabrication	179	121	-58	185	126	-59
Products and components	4,416	4,489	73	5,598	4,153	-1,445
Structural units (steel)	134	353	219	142	332	190
Copper pipes	127	133	6	103	104	1
Paints and varnishes	215	338	123	254	340	86
Glazed ceramic tiles	221	21	-200	219	14	-205
Linoleum floor	113	177	64	173	207	34
Electrical wires	478	462	-16	728	570	-158
Lamps and fittings	161	173	12	251	141	-110
Air conditioning equipment	318	223	-95	394	206	-188
All building materials	5,947	5,105	-842	7,129	4,701	-2,428

source DTI, 2002, Monthly Statistics of Building Materials and Components. No 334, London

Looking at international trade in specific construction materials:

- Of the entire national market for cement estimated at over £800 million, only around ten per cent can be attributed to imports. In the related markets for ready-mixed concrete and concrete products the share of imports is negligible.
- For clay products, only three per cent of the £550 million market for bricks is from imports, and only seven per cent of the £60 million market for clay tiles.
- In glass, there is a higher level of exports and imports, with imports representing 26 per cent of the £250 million market.
- There is a growing trade deficit in metal and metal products for construction with imports up to ten per cent of the £1 billion market.
- The largest deficit is for timber and timber products. The national market is £1.7 billion, of which 67 per cent is imports.

Major businesses in construction materials

The building materials industry is capital intensive, producing heavy goods and subject to strict environmental regulations. Therefore there are clear competitive benefits for larger firms and this has driven a series of mergers and acquisitions. A few companies now have dominant positions in the British market following an extensive period of consolidation. The market is now largely pan-European – many British companies have been absorbed into larger European producers while similarly many British-based firms such as Hanson and Pilkington have expanded into Europe. There are two main types of companies in the market, those such as Lafarge, which produce a wide range of materials, while others concentrate on specific products such as BPB with plaster products and Pilkington with glass.

The major companies in the building material market in Britain are illustrated in Table 5.9. The largest is Hanson Building Materials, which is in turn part of the much larger worldwide Hanson group, with sales of over £3.6 billion and producing a range of building materials. The other major players are BPB, with its strengths in the production of plasters; Blue Circle as part of the Lafarge group; Tarmac as part of Anglo-American; and RMC, one of the leading providers aggregates.

Table 5.9 Major companies in British market for construction materials

Company name	Parent company	Sales £billions	Employees	Notes
Hanson Building Materials Ltd	Hanson	3.65	26,000	Holding company for subsidiaries in supply of materials and equipment to construction including concrete, brick, stone.
BPB plc (UK)	BPB	2.17	13,000	Manufacture of plasterboard and gypsum plasters, insulation, ceiling tiles and products for interiors of building systems.
Blue Circle Industries plc	LaFarge	1.84	14,000	Cement manufacturing, building materials and heating & bathroom.
Tarmac Ltd	Anglo-American	1.32	8,000	Quarry masters and construction material suppliers.
RMC (UK) Ltd	RMC Group	1.08	7,000	Core products of aggregates, admixtures, building and concrete products, cement products, and mortar.
Hanson Quarry Products Ltd	Hanson	0.75	N/A	Sand, gravel and rock quarries, manufacture of asphalt, Tarmacadam, and concrete.
Aggregate Industries UK Ltd	Aggregate Industries	0.61	4,000	Quarrying and manufacture of granite.
Tarmac Central Ltd	Anglo-American	0.41	1,000	Limestone and granite quarries, concrete manufacture, road surfacing contractors.
Pilkington UK Ltd	Pilkington	0.33	3,000	Glass manufacturers.
Imerys Minerals Ltd	Imerys	0.31	2,000	China clay, calcium carbonate and ball clay.

source OneSource.com

Most of the companies in the building materials industry are actually part of the corporate family of much larger multinational holding companies, most notably Hanson, BPB, Lafarge and Anglo American. As such, the OneSource business database estimates that up to 75 per cent of the market for building materials and over 60 per cent of its employees are concentrated within only ten corporations.

Potential constraints on availability of construction materials

The key concern for London is whether any problems in the supply of construction materials could generate difficulties for construction in London.

Overall, the construction materials industry is strong. It can look to a relatively secure future with a growing demand for building materials. Great Britain itself maintains a domestic supply of heavy raw materials such as clays, sand and gravel. Similarly, domestic production continues to be the major share of supply for bricks, tiles and slates, cement and concrete products.



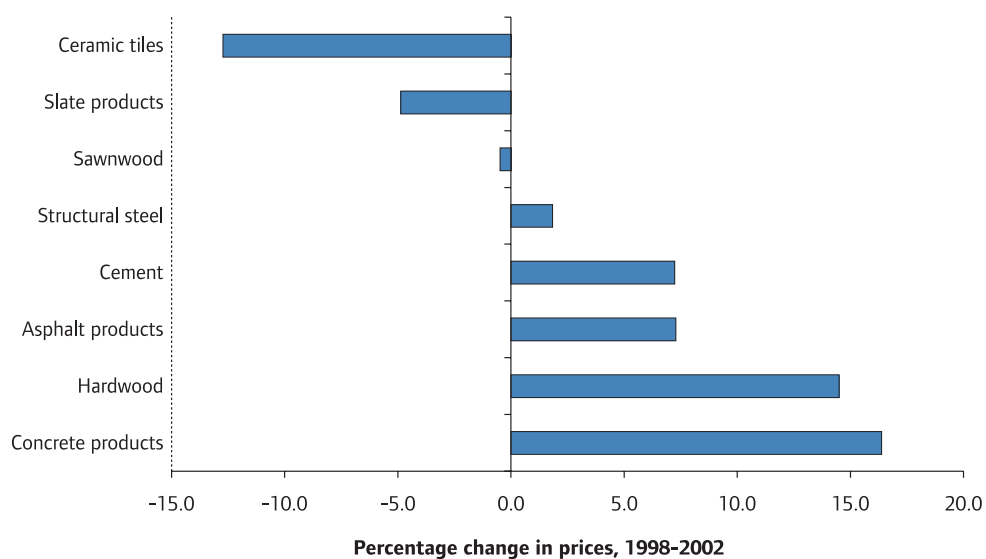
Even though production is largely domestic, the market is global. Major international companies compete, shaping the market, driving cost reduction through economies of scale and technological change and are increasingly large enough to withstand fluctuations in the demand for materials. The global market means that when there has been a shortage of domestic construction resources, the level of imports to Great Britain has increased. This is most notable in timber and timber products, in which Great Britain is dependent on imports, particularly from Sweden, Finland and Latvia.

There are also some possible problems for the building materials industry. Both extraction of raw materials and production of building materials are large consumers of energy. Rising energy prices, for example through the current high prices in the oil markets, cause cost pressures for the supply of building materials.

Future policy and legislation on environmental protection may also affect an industry that is essentially about the extraction and use of environmental resources. For example:

- Planning regulations may impact upon quarrying and so affect the supply of many materials for construction.
- Taxations such as the aggregates tax levy are used to prevent over extraction, waste and environmental damage and to increase incentives for recycling.
- The climate change levy is based on the number of emissions produced by industrial companies and so aims to encourage more efficient fuel consumption.

The construction materials industry faces opportunities through the promising outlook for market demand and the competitive structure of the industry, but also the challenges of uncertain energy prices and environmental concerns. The test of how the supply of construction materials will affect the construction industry is ultimately indicated by the change in prices for construction materials. Figure 5.12 shows recent price changes for a selection of building materials.

Figure 5.12 Percentage change in prices, 1998-2002

source DTI Construction Statistics Annual

The picture is mixed. Over 1998 - 2002, there were significant price increases in some products, for example concrete products and hardwood, but large decreases in others such as ceramic tiles. There is little evidence of any systematic increase in the costs of construction materials overall. If general price inflation were considered then in real terms the price of most construction materials is falling.



6. Comparing projections of London's construction employment

Forecasting the future growth of an economy is always difficult. In a sector as vulnerable to cyclical demand as construction, along with its complex structure of self-employment and small businesses, forecasts are even more problematic.

Building blocks

- Construction is a problematic sector for forecasters. Some forecasters expect the number of construction jobs in London to decline, others to increase. From a construction workforce of 200,000 in London in 2001, the projections for 2012 range between 155,000 and 275,000 jobs.
- The future of construction really depends upon future construction demand and the productivity performance of the construction industry.

Economic projections of employment

Here six projections for employment in London, as available from economic forecasters in December 2004, are compared. These include two series of projections from GLA, three from commercial economic consultancies and one from the government publication, *Working Futures*¹⁷. Each projection series is for total workers and so includes employees and self-employed. Table 6.1 lists the forecasters.



Table 6.1 Sources of the six projections for employment in London

Forecaster	Source	Notes
GLA London Plan	Planning for London's Growth, 2002	Model run by Volterra Consulting in 2002 with projections up to 2016.
GLA Economics, Update to the London Plan	GLA Economics, Working Paper 11 2004	Model run by Volterra Consulting in 2004, adding newly available data to London Plan with projections up to 2016.
Experian Business Strategies	EBS Regional Planning Service, 2004	Provide projections for regions and sectors up to 2014.
Oxford Economic Forecasting (OEF)	OEF UK Regional Prospects, 2004	Provide projections for regions and sectors up to 2015.
Cambridge Econometrics (CE)	CE Regional Economic Prospect, 2004	Provide projections for regions and sectors up to 2014.
Institute of Employment Research (IER), University of Warwick	Working Futures, 2004	IER employment projections for Learning and Skills Council and Sector Skills Development Agency up to 2012.

Total employment projections

In terms of total employment, all the projections forecast growth in London. Taking 2002 as a starting point, each measures London as having around 4.5 million jobs. OEF has a lower estimate of 4.37 million, the

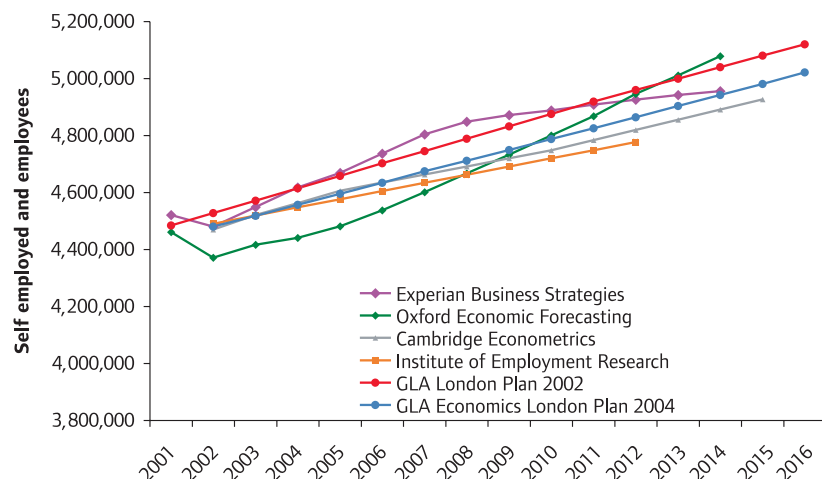
GLA's *London Plan* has a higher base of 4.52 million. The GLA Economics figure for 2002 is 4.48 million.

The projections have different 'final' years. The GLA projections go to 2016, the commercial forecasters to 2014 or 2015, while the IER projects to 2012. To compare all the projections, this section will concentrate on the results for 2012.

For 2012, each projects London to have around 4.9 million jobs. The lowest is IER with 4.78 million; the highest is *The London Plan* on 4.96 million. GLA Economics projects 4.86 million for 2012.

Given varied measures for 2002 and totals for 2012, each forecaster has different rates of growth for the ten-year period. OEF has the lowest figure for 2002 and among the highest for 2012 and so expects employment to increase by 13 per cent. The IER from one of the higher bases in 2002 and lower results for 2012 has a modest increase of 6.4 per cent. Most cluster between total jobs growth of eight per cent and ten per cent, with GLA Economics projecting 8.6 per cent.

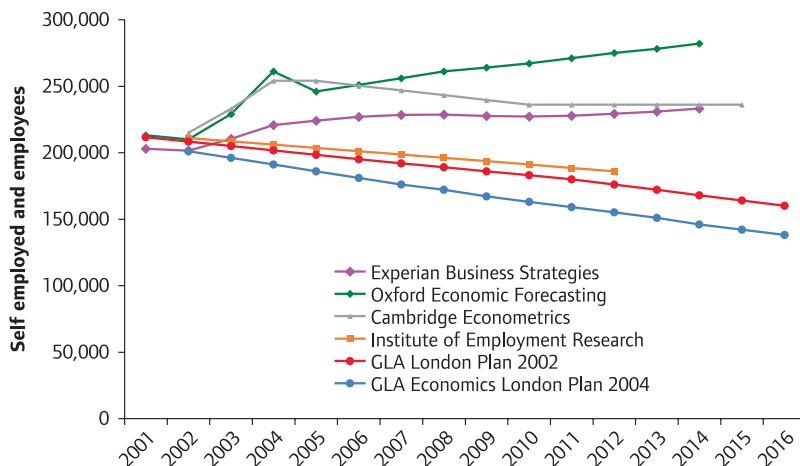
Figure 6.1 Projections of total employment for London



source Based on forecasts listed in Table 6.1

Construction employment projections

The projections of total employment for London are largely consistent across the forecasters. They all move in the same direction and at comparable magnitudes. However, the sector specific projections for construction tell a different story.

Figure 6.2 Projections of construction employment for London

source Based on forecasts listed in Table 6.1

Taking 2002 as a starting point, each projection is largely in agreement as to the number of London's construction jobs. The average is 208,000 jobs. GLA Economics and EBS report a lower figure of 201,000 jobs while CE gives the highest figure of 215,000.

For 2012, the variation is wide. The lowest is GLA Economics, the recent projections giving 155,000 construction jobs in 2012. The highest is OEF projecting 275,000 construction jobs. That is a range of 120,000 jobs. The average for all six projections for 2012 is 210,000 construction jobs, although none of the forecasts match this average. Therefore, the rates of change over 2002 - 2012 also vary considerably in both direction and rates. GLA Economics project a decline of 23 per cent in construction jobs, sharper than a decline of 15.5 per cent projected in the *London Plan*. However, it is not only the GLA anticipating a fall. The IER also projects a fall of 11.8 per cent.

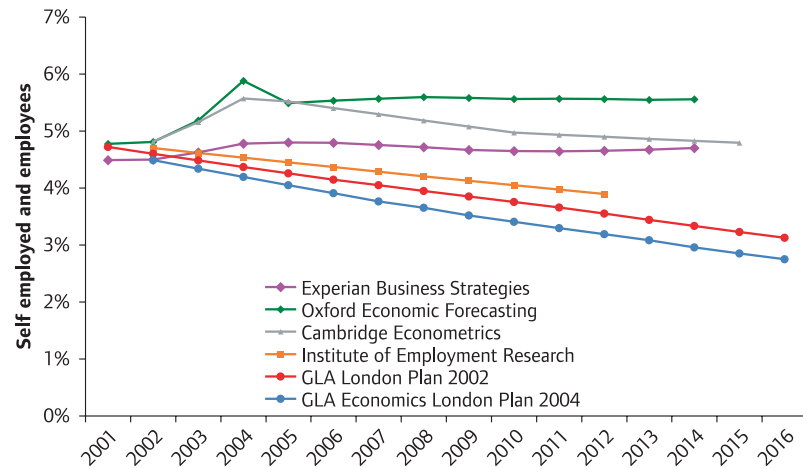
The OEF projection takes the opposite view estimating growth in construction jobs of 31 per cent over 2002 to 2012. EBS also project growth of 13.7 per cent and CE slightly more moderate growth of 9.8 per cent. The average across all six projections is growth of 0.7 per cent suggesting insignificant change in construction employment. No forecaster actually predicted the average.

Projections of construction as share of employment

Each of the series has different measures for total jobs in 2002 through to 2012 and therefore this could distort the results for construction. This issue can be addressed by viewing construction's share of total employment.



Figure 6.3 Projections of construction's share of employment in London



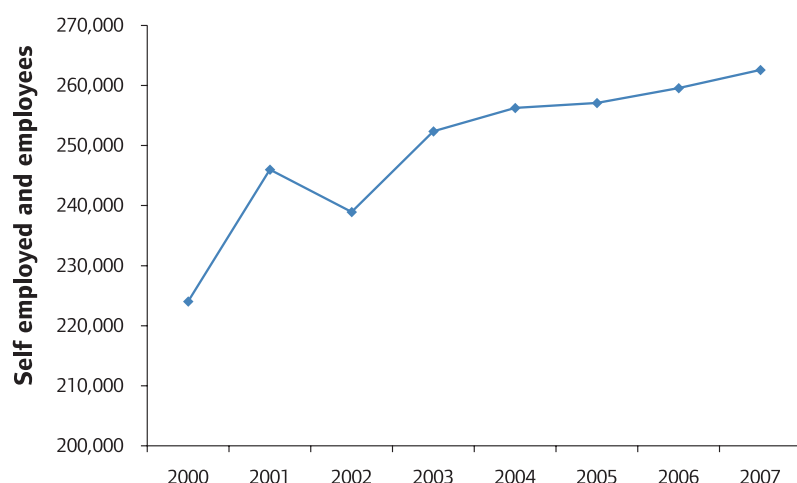
source Based on forecasts listed in Table 6.1

For 2002, each is relatively comparable in that construction is between 4.5 per cent and 4.8 per cent of London's total jobs. GLA and EBS put this at 4.5 per cent with OEF and CE at 4.8 per cent. By 2012, these have diverged. OEF projects an increase in construction's share of jobs from 4.8 per cent to 5.6 per cent (a plus 0.8 per cent share). EBS and CE project only small increases in construction's share of employment. The latest GLA Economics forecast projects a decrease in share from 4.5 per cent to 3.2 per cent (minus 1.3 per cent). IER also projects a significant decline in share from 4.7 per cent to 3.9 per cent.

CITB Construction Skills forecast

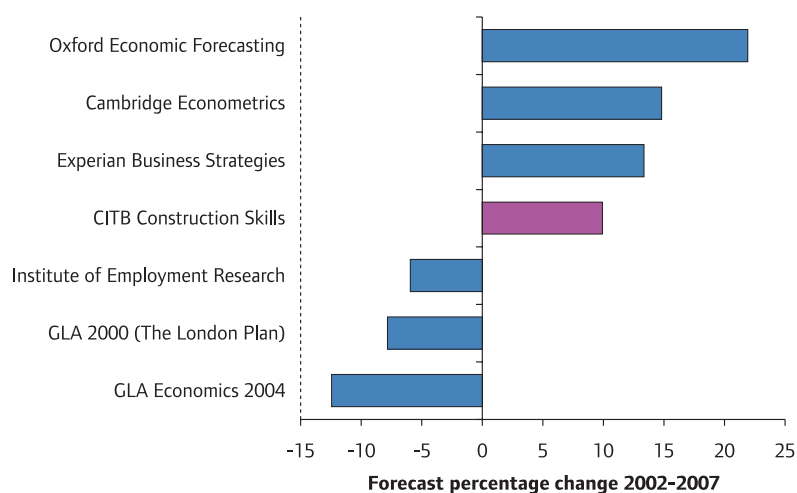
The sector skills council, CITB Construction Skills, use their employment model to forecast London's construction jobs up to 2007. CITB present their forecast in their *Construction Regional Skills Foresight Report 2003*¹⁸. This produces results that forecast an increase in London's construction jobs over the next few years. In 2002, there was 238,000 construction jobs and this is to rise by ten per cent to 263,000 by 2007.



Figure 6.4 CITB forecast of London's construction employment

source CITB Construction Skills

CITB Construction Skills logically produce forecasts only for the construction sector so this forecast cannot be placed in the context of London's employment change overall. However, CITB forecasts for construction jobs in London to 2007 can be benchmarked against those results for 2007 from the main economic forecasters.

Figure 6.5 Comparing CITB forecast with economic projections, 2002 - 2007

source Based on forecasts listed in Table 6.1 and CITB Construction Skills

The CITB forecast of employment growth for construction in London is at odds with results from the GLA used to guide regional economic development and planning policy. The CITB forecasts also run against those of IER which guide skills policy for Learning and Skills Councils and

Sector Skills Councils. However, the CITB results are lower than those growth rates from forecasters at OEF, CE and EBS.

Building on the forecasts...

Construction clearly poses problems for economic forecasters. The expectations for change in London vary widely. This note has simply presented the results of economic projections. It has not sought to explore the methods, details and assumptions of forecasters' models. However, given that each starts from a similar employment base in 2002 and depends upon the same history of construction in London, then it is judgements and assumptions made about the future demand for and supply of construction workers that must lead to such variation.

Work by GLA Economics is seeking to obtain a better understanding of what shapes construction in London. Given contradictory forecasts and the implications using different forecasts has for public policy, then promoting this better understanding is a pressing concern.

There are two key questions that need to be answered:

1. Will the demand for construction over the next decade be more, less, or about the same as over the last decade?
2. Will the 'productivity' of construction workers over the next decade increase, remain the same, or even reduce over the next decade?

7. Building on the foundations

This report has helped develop an understanding of construction in London. Construction is a difficult sector to define and measure. Perhaps more than any other sector, construction has an abundance of spurious and conflicting statistics and analysis.

This report looked at the construction industry from the perspective of London's economy. It therefore begins to identify whether the construction industry can adequately meet the needs of London's expanding economy. It has considered:



1. Current and past in jobs, output and productivity

Construction represents around five per cent of London's economy and employs 200,000 people. While output in construction has risen sharply since the early 1990s, the level of employment remained steady. This implies that labour productivity in London's construction industry has increased rapidly. Measures of construction output growth in London may be highly determined by a few major projects such as Heathrow's Terminal 5 and the Channel Tunnel Rail Link.

However, the rapid rate of recorded productivity increases is difficult to explain. It raises many questions over the reliability of data. For example, the official statistics reflect key assumptions about the size of the 'hidden economy' in construction. The industry's characteristics of small business, contracting, sub-contracting and cash payment, mean that the sector often avoids the statisticians. The difficulties of identifying the 'workplace' for construction, whether it is a construction site or the where the business is, greatly confuse which region the statistics are measuring. Bringing more transparency to the statistics is a topic that needs to further explored.

2. Activity in new-build housing, commercial, public works, infrastructure, repairs and maintenance

Around three-fifths of construction activity in London is new build, the remainder is repairs and maintenance of existing structures. The composition of the construction industry in London is very different than the rest of Great Britain. This is simply because London has a much greater share of private commercial construction. The growth in London's construction in recent years is almost entirely concentrated in private commercial building.

3. Pattern of demand for construction

Predicting future demand for construction is complex. The market for construction is influenced by the state of the property market and the relative performance of non-property investments. However, over the



long-term, the demand for construction is derived from the demand for new housing, the demand for new commercial and public premises, for new investment in infrastructure, and the repair and maintenance of existing buildings.

The annual volume of new housing has declined in London over recent decades and this volume remained at a low level throughout the 1990s and early 2000s. However, if the targets for new housing set out in *The London Plan* are achieved then this represents a substantial increase in the demand for construction of homes.

In construction of non-housing building, from the mid 1990s to the early 2000s there was a rapid increase in the volume of buildings for commercial purposes. The construction of buildings for retail and leisure and for distribution increased, but it is the growth in construction for business uses, namely offices, which accounted for most of the growth in construction in London. Much of this is entirely visible in the changed skylines of the commercial hearts of both the City of London and the Isle of Dogs. Perhaps the question for the future demand for construction is whether this construction for business use will be sustained or whether the demand for business space is now satiated such that the construction industry can turn its attention elsewhere.

If so, the attention of the construction industry in London may be directed towards transport infrastructure. Over the past decade, the Jubilee Line extension was the largest transport investment, followed by other projects such as the extension to the Docklands Light Railway, Channel Tunnel Rail Links and expansion at Heathrow Airport. If the Mayor of London's ambitions for investing in London's transport over the next decade are to be realised - the East London Line extension, further extensions to the DLR, the Thames Gateway Bridge, West London Trams and Crossrail - then this would require a substantial increase in the construction resources employed in transport infrastructure.

4. Potential constraints in construction labour

Construction has a workforce of unique characteristics compared to other sectors in London. Its workforce has few women and a low share of workers from BME groups. Construction workers are much more likely to have trade apprenticeships. Construction also requires many commuters - almost a quarter of construction jobs in London are by workers who live outside London. However, some common perceptions of the construction workforce are not supported by statistical evidence. Its workforce is not the oldest; it has a lower share of workers aged over 40 years than public services or transport. Similarly the industry in London is not dependent on

international migrant workers; sectors such as retailing, transport or public services take a much greater share of workers born outside Great Britain.

Workers in construction trades in London have higher earnings than those in construction trades across Great Britain as a whole. However, construction earnings in London have been rising more slowly than the rest of Great Britain and have not kept up with earnings growth for London workers overall. The trend number of construction vacancies has not increased in recent years. Surveys of employers show that construction businesses in London have a lower share of unfilled or hard-to-fill vacancies than construction businesses outside London. A lower share of London's construction businesses report unfilled vacancies than London businesses overall. Therefore, although there are potential skills shortages in construction, the constraints on the labour market for construction in London are no more difficult, if not less severe, than those facing other sectors in London or the rest of the country.



5. Potential constraints from construction business

The construction industry is unique as a sector in its high levels of self-employment and its relative dependence upon small businesses. In particular, work in repairs and maintenance is concentrated among small businesses and small businesses also play a key part in house building. It is only in non-residential building, civil engineering and transport infrastructure that construction activity becomes characterised by large firms. Overall, the industry is highly fragmented, mostly with British companies catering for a British market and none holding a dominant impact on the market as a whole.

The lack of large businesses means the industry is unlikely to fully exploit economies of scale. The dependence on small businesses means the industry is characterised by the barriers that face all small businesses such as less access to finance and investment, limited ways of diversifying risks and constrained by lack of skills. Indeed, up to a quarter of all small businesses in London and Great Britain are in the construction industry.

6. Potential constraints in construction materials

London depends on buying in its construction materials from elsewhere in Great Britain or the rest of the world. Given that most construction materials are physically heavy, then resources such as clay, sand and cement are almost entirely sourced within Great Britain. It is only in timber that Great Britain sources from elsewhere in Europe. The industry for construction materials is dominated by a small number of international businesses. Although production is domestic, the market for construction



materials is global. Therefore, there is competition and real prices for most construction materials have fallen in the last few years.

As prices are falling, this does not suggest that there is a shortage of materials which will hamper London's construction activity. However, extraction of raw materials for construction purposes naturally has environmental implications. Legislation to protect the environment through planning or taxation has the potential to restrict the supply of some construction resources.

7. The contrasting forecasts for construction

What is the future for construction in London? It appears to depend who you ask. Of all the sector forecasts for employment in London, the construction sector is the least consistent. While some economic forecasters project an employment boom for construction workers in London, others project an absolute decline.

The statistical evidence is that while construction activity and output in construction has increased throughout the past decade, the number of construction workers within London has remained static. On this basis, unless the amount of construction activity can be shown to significantly increase to an even higher level over the next decade than over the previous decade, then it is unlikely that the number of construction workers in London will grow beyond its current level.

Abbreviations

BME	Black and minority ethnic
CE	Cambridge Econometrics
DTI	Department of Trade and Industry
DLR	Docklands Light Railway
EBS	Experian Business Strategies
GLA	Greater London Authority
GVA	Gross Value Added
IER	Institute of Employment Research
LDA	London Development Agency
LFS	The Labour Force Survey
nec	Not elsewhere classified
OEF	Oxford Economic Forecasting
ONS	Office for National Statistics
TfL	Transport for London
UK	United Kingdom
USA	United States of America
VAT	Value added tax



Notes

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www.camecon.com/

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One source: www.onesource.com/

Small Business Service, Building the capability for small business growth.
View: www.sbs.gov.uk/content/analytical/evbase

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إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

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