

# Construction Skills Network East of England

LABOUR MARKET INTELLIGENCE 2009–2013



# Contents

<b>1</b> Headlines	3
<b>2</b> The outlook for construction in the East of England	4
<b>3</b> Construction employment forecasts for the East of England	10
<b>4</b> Comparisons across the UK	12
Appendix I – Methodology	14
Appendix II – Glossary of terms	16
Appendix III – Footnotes and footprints	17
Appendix IV – Occupational groups	18
Appendix V – CSN website and contact details	22

ConstructionSkills is the Sector Skills Council for construction, tasked by Government to ensure the UK's largest industry has the skilled workforce it requires. Working with Government, training providers and employers, it is responsible for ensuring that the industry has enough qualified new entrants and that the existing workforce is fully skilled and qualified, as well as for improving the performance of the industry and the companies within it.

# 1 Headlines

## 1.1 East of England economy

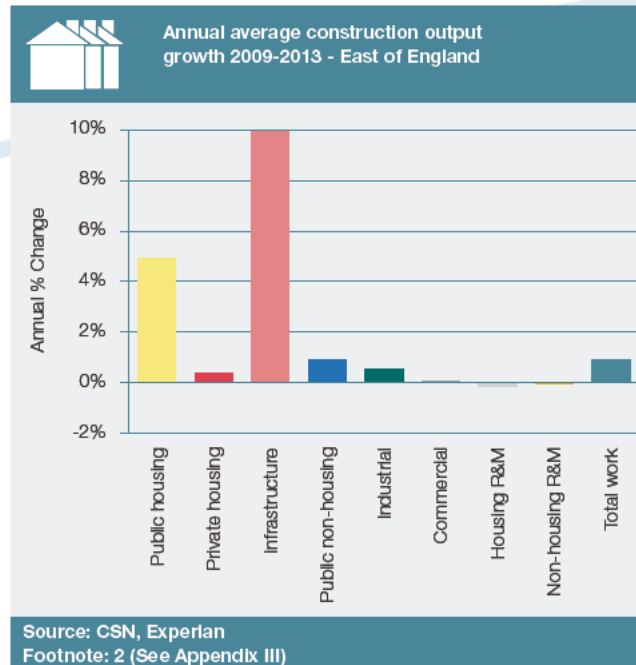
- Up 3.2% from the previous year, the East of England economy was worth £96bn in 2007. This is equivalent to approximately 9% of the UK total.
- The split between sectors, in terms of output, in the East of England is similar to that of the UK as a whole in the terms of the ranking over the main economic sectors. Although financial and business services is less dominant in the region.
- Between 2009 and 2013 financial and business services is expected to be the fastest growing sector, increasing at an annual average rate of 4.2%.


## 1.2 Construction output in the East of England

- Construction output in the East of England was worth £8.4bn in 2007, in 2000 prices. Between 2009 and 2013, this is forecast to grow at an annual average rate of 0.9%.
- Infrastructure is expected to be by far the fastest growing sector between 2009 and 2013 at 9.9% on an annual average basis, whilst the remaining sectors in new work are expected to see relatively modest increases.
- Total construction output growth in the East of England is predicted to be above the UK average over the period.

## 1.3 Construction employment in the East of England

- Total construction employment in 2007 of around 252,300 is forecast to fall in 2009 to 236,800, before rising to 247,300 in 2013.
- In order to meet this demand, after taking account of those entering and leaving the industry, 2,890 new workers will be required each year.
- Construction managers and labourers nec\* have the largest projected annual recruitment requirement (ARR) for the region at 340.



 Regional comparison 2009-2013

Region	Annual average % change in output	Growth in total employment	Total ARR
North East	0.5%	5,620	2,010
Yorkshire and Humber	0.0%	2,860	1,390
East Midlands	0.8%	6,220	1,980
East of England	0.9%	10,570	2,890
Greater London	0.8%	12,110	6,030
South East	0.5%	13,290	5,690
South West	-0.2%	-20	1,450
Wales	0.6%	4,940	2,330
West Midlands	0.2%	3,930	3,620
Northern Ireland	1.6%	3,030	900
North West	0.2%	6,040	4,780
Scotland	0.6%	5,480	3,960
<b>UK</b>	<b>0.5%</b>	<b>74,070</b>	<b>37,030</b>

Source: CSN, Experian  
Footnote: 2 (See Appendix III)

Up 3.2% from the previous year, the East of England economy was worth **£96bn in 2007**, equivalent to approximately 9% of the UK total

# 2 The outlook for construction in the East of England

## 2.1 Construction output in the East of England – overview

In 2007 construction output in the region reached £8.4bn, in 2000 prices, up 3% from the previous year. This was the ninth consecutive year of growth in output for the industry in the East of England.

Repair and maintenance (R&M) work has been the driving force behind total construction output growth in the recent years. This was illustrated by the annual average growth rate of 4.2% for R&M over the five years to 2007, when compared to new work's 1.9%. However, this is in contrast to that of the UK where new construction output has been more dominant in terms of growth, relative to R&M, for the same period.

The largest total growth for the region since the beginning of the decade to 2007 was for public housing, which increased by a substantial 240%. The industrial and commercial sectors also saw significant growth with output increasing by 59% and 49% respectively, over the seven-year period. Other sectors which experienced healthy growth in output between 2000 and 2007 were public non-housing and private housing. The former sector saw an increase of 37% in total over the period, whilst the latter saw 27% total growth.

In contrast the infrastructure was much more subdued in the seven years with growth of just 1.7%. There has been a lack of large infrastructure projects taking place in the East of England in recent years.

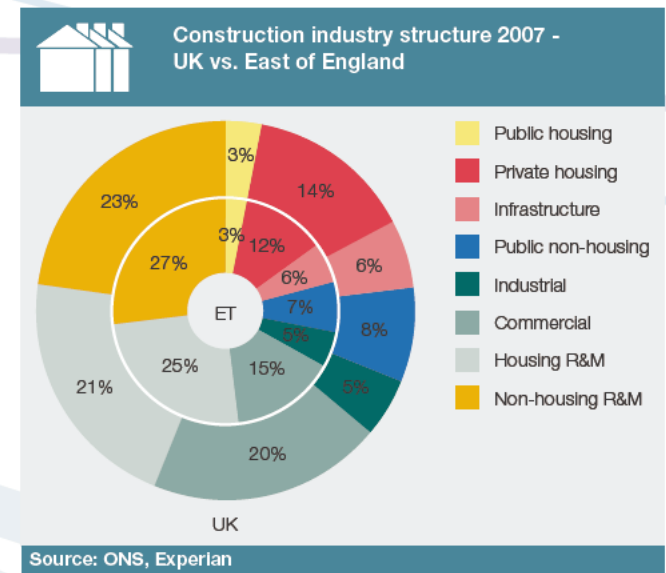
Infrastructure is expected to be by far the fastest growing sector between 2009 and 2013 at 9.9% on an annual average basis

## 2.2 Industry structure

The diagram, Construction industry structure 2007 – UK vs. East of England, illustrates the sector breakdown of construction in the North East compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

The East of England is a region with a noticeable difference in structure compared to the UK as a whole, with the R&M sector proportionally larger in the former at 52% compared with the latter at 43%.

The new work sector that this largely affects in the East of England is commercial construction, which at 15% takes a 5% smaller share than across the UK.





### 2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2009–2013) provides an indication of the construction sectors in which demand is likely to be strongest.

### 2.4 Economic structure

The East of England economy was worth nearly 9% of the UK total in 2007 at £95.8bn, a rise of 3.2% from the previous year.

The largest component of gross value added (GVA) in the East of England was financial and business services, constituting 24% of the total in 2007. The sector share has grown by around 3.5% since the beginning of the decade, although it still remains proportionally over 5% smaller than in the UK as a whole.

Public services is the second largest sector accounting for 21% of the GVA in 2007, lower than the UK overall, where the sector's share stood at 23% for the same year. In contrast the distribution, hotels and catering sector is proportionally 2% bigger in the East of England than the UK.



Mathematical Science Centre, Cambridge

Selected sectors	Economic structure - East of England (£ billion, 2003 prices)						
	Actual	Forecast					
	2007	2008	2009	2010	2011	2012	2013
Public services	20	0.9	-1.6	0.0	0.9	0.9	0.8
Financial and business services	23	4.2	0.5	3.7	5.5	5.8	5.7
Transport and communications	9	4.6	0.9	3.8	3.4	2.7	2.5
Manufacturing	13	-1.6	-3.5	-0.3	0.5	0.0	-0.1
Distribution, hotels and catering	17	2.8	-0.9	2.1	2.9	2.6	2.5
<b>Total Gross Value Added (GVA)</b>	<b>96</b>	<b>1.0</b>	<b>-1.1</b>	<b>1.6</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>

Source: Experlan  
Footnote: 3 (See Appendix III)

	Economic Indicators - East of England (£ billion, 2003 prices - unless otherwise stated)						
	Actual	Forecast					
	2007	2008	2009	2010	2011	2012	2013
Real household disposable income	79	-1.1	-0.9	0.6	1.9	2.4	2.4
Household spending	78	1.7	-1.4	1.7	2.6	2.3	2.2
Debt:income ratio	2.3	3.5	-0.5	-2.7	-3.0	-1.9	-0.7
House prices (£'000, current prices)	231	-1.4	-16.0	1.6	3.2	3.6	3.8
LFS unemployment (millions)	0.14	8.6	31.7	15.1	-3.6	-6.4	-4.8

Source: ONS, DCLG, Experlan

### 2.5 Forward looking economic indicators

In the East of England, the forecast economic growth between 2009 and 2013 is expected to be slightly above that of the UK average. The most buoyant sector is expected to be financial and business services once it comes through its current difficult period.

The rate of growth for real household disposable income is also expected to increase more rapidly than the national average. As well, household spending in the region is expected to be 18% higher in 2013 than its 2009 level.

The region's debt-to-income ratio in 2007 was 34% higher than the UK's ratio. The ratio is expected to remain above the national average over the forecast period, though both the UK and the region are predicted to see an overall decline between 2009 and 2013.

The Department for Communities and Local Government (DCLG) reported that average house prices in the East of England reached £231,000 in 2007. This value is well above that of the national average, but is less than that of Greater London and the South East. House prices rose by 9% in 2007 according to the DCLG measure, but they are expected to decline by around 17% in the region over 2008 and 2009 before beginning to rise again in 2010.

### 2.6 New construction orders – overview

Since the beginning of the decade new orders have generally shown an upward movement in the East of England, with sporadic declines in 2003 and 2006. However 2007 saw a 4% rise in new orders from the previous year, to climb once again over the £4bn mark (current prices).

Performance across the sectors has been varied since the start of the decade. New orders for public housing have increased in total by a 317%. As well as this, increases of 121% and 75% have been recorded for public non-housing and private housing respectively, for the same period. However, infrastructure new orders were down 35% from their level in 2000.

### 2.7 New construction orders – current situation

New orders saw a year-on-year decline of 6% for the first three quarters of 2008.

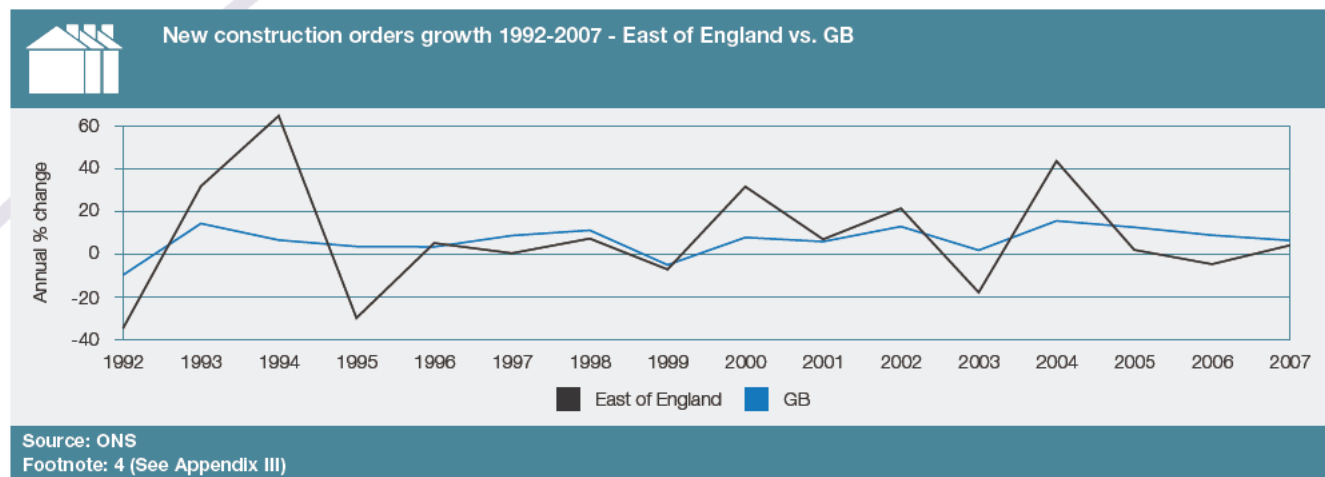
The industrial sector recorded the greatest fall in the first nine months of 2008, of 52% from same period of the previous year. However due to the relatively small size of the sector, the fall-off did not have a substantial influence on total new orders. Private and public housing also suffered declines of 32% and 25% respectively. New orders for the commercial construction sector was also down, but by a relatively modest 4%.

In contrast, the infrastructure sector recorded a considerable year-on-year rise of 223% to the end of September 2008, thereby to an extent balancing the declines in the other sectors. This also made the sector the biggest in terms of value of orders for new construction for the period. Public non-housing also saw a rise, increasing by a more modest 5%.

**New work construction orders - East of England**  
(£ million, current prices)

	Actual		Annual % change			
	2007	2003	2004	2005	2006	2007
Public housing	325	90.8	-2.1	78.2	20.9	6.2
Private housing	1,130	-0.9	31.6	7.7	-4.7	-2.4
Infrastructure	396	-52.1	-3.7	58.1	-19.4	-0.7
Public non-housing	689	11.3	27.1	-25.4	-12.4	43.3
Industrial	382	-18.6	21.4	117.2	-30.4	3.5
Commercial	1,141	-33.6	108.7	-27.4	11.6	-4.8
<b>Total new work</b>	<b>4,063</b>	<b>-18.5</b>	<b>43.6</b>	<b>1.8</b>	<b>-5.0</b>	<b>3.9</b>

Source: ONS  
Footnote: 4 (See Appendix III)



## 2.8 Construction output – short-term forecasts (2009–2010)

Regional Office for National Statistics (ONS) output statistics are published in current prices and are thus inclusive of any inflationary effect. At the time of writing, ONS construction output statistics are only available for the first three quarters of 2008.

Nominal total construction output for the first three quarters of 2008 was worth £9.2bn in the East of England, very marginally on the same period of the previous year. The R&M sector was stronger than the new work one, growing by 7% over the same time period. New work, however, saw a decline of 6% in the first nine months of 2008.

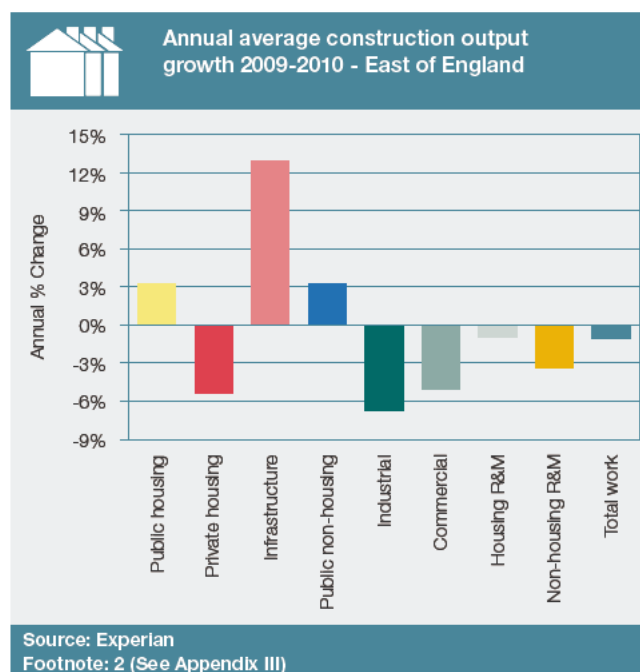
The short-term outlook for the construction industry in the East of England is not buoyant. Output is expected to decline by 4% in 2009, before stabilising in 2010. This gives an annual average rate of decline of 1.6% for total work in the region over the 2009–2010 period. The decline is expected to be stronger in R&M work (2.3%) than in new work (0.8%).

In the new construction sector, infrastructure is expected to be the star performer with an annual average growth rate of 13.1% between 2009 and 2010. This is predicted to be on the back of several schemes but especially the Highway Agency's £625m ECI contract to widen the M1 between junction 10 and 14, the £187m A421 scheme between junction 13 of the M1, and the Bedford Southern Bypass.

In the short-term, both the public housing and public non-housing sectors are projected to see an annual average growth rate of 3.2%. Public housing output is likely to decline in 2009 at a similar rate seen in 2008, as social housing providers encounter difficulties accessing development sites for new build. However, by 2010 the sector is expected to start growing again as better prospects prevail for housing generally. Growth in the public non-housing sector in the short term is predicted to be on the back of work in the education and entertainment subsectors.

Industrial sector is expected to be the weakest of the new work sectors in the short term with an annual average decline of 6.9%. Unsurprisingly, private housing is also set to suffer as the banking crisis prevents prospective buyers from being able to obtain mortgage finance and house prices continue to fall. Commercial construction is also projected to fare badly, declining at an annual average rate of 5.1% between 2009 and 2010 as office, retail and leisure developers cut back on new schemes due to lack of demand.

Non-housing R&M is predicted to be the main driver of falls in total R&M output in 2009 and 2010 in the East of England as the corporate sector cuts costs by delaying or postponing routine and cyclical maintenance programmes.



**Construction output - East of England**  
(£ million, 2000 prices)

	Actual	Forecast annual % change		Annual average	
	2007	2008	2009	2010	2009-2010
Public housing	273	-3%	-3%	10%	3.2%
Private housing	1,017	-21%	-17%	8%	-5.6%
Infrastructure	499	-12%	15%	11%	13.1%
Public non-housing	604	18%	5%	1%	3.2%
Industrial	453	-27%	-17%	4%	-6.9%
Commercial	1,298	-10%	-6%	-4%	-5.1%
<b>New work</b>	<b>4,145</b>	<b>-10%</b>	<b>-5%</b>	<b>3%</b>	<b>-0.8%</b>
Housing R&M	2,112	4%	-2%	-1%	-1.5%
Non-housing R&M	2,170	-5%	-4%	-2%	-3.3%
<b>Total R&amp;M</b>	<b>4,283</b>	<b>0%</b>	<b>-3%</b>	<b>-2%</b>	<b>-2.3%</b>
<b>Total work</b>	<b>8,427</b>	<b>-5%</b>	<b>-4%</b>	<b>0%</b>	<b>-1.6%</b>

Source: Experian  
Footnote: 1 and 2 (See Appendix III)

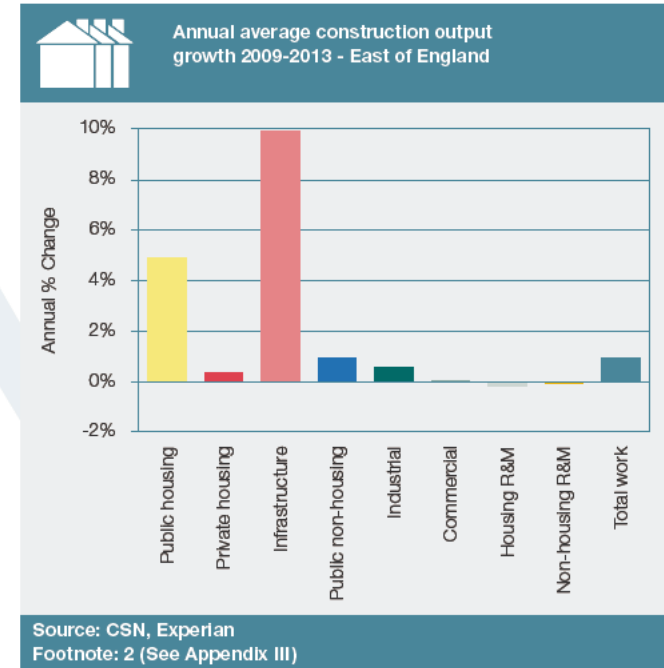
**2.9 Construction output – long-term forecasts (2009–2013)**

Over the medium-term, total construction output in the East of England is forecast to increase at an annual average rate of 0.9%, higher than the UK average (0.5%). New work output is expected to grow at twice the national annual average, by 2% between 2009 and 2013. However the R&M sector is predicted to see an average annual decline of 0.2%, with the housing R&M sector mainly driving this decline over the forecast period.

None of the sectors within new work are expected to see annual average declines over the long-term. Infrastructure is predicted to be the best performing sector, with an increase in output of 9.9% between 2009 and 2013 on an annual average basis. The healthy outlook for the sector is based largely upon major ports projects in the region, such as Shell Haven, Felixstowe and Harwich, but there are also plans for a new 800MW gas-fired power station at Kings Lynn or Peterborough.

The public housing sector is also expected to perform well in the medium-term with annual average growth of 4.9%. Pressures to increase provision of affordable housing remain and thus for most regions the trend of activity in this sector is likely to be upwards.

The remaining new work sectors are forecast to experience only modest average annual growth over the 2009 to 2013 period, while the R&M sectors are predicted to see slight declines. However, there are still some sizeable projects due to come on site in the region over the next few years, including the £350m SnOasis project, due to be the largest artificial ski slope in Europe when completed, which could start in 2009. There are also four large PFI hospital projects that could start in the region over the forecast period, with a total value of around £700m.







Construction output - East of England  
(£ million, 2000 prices)

	Estimate		Forecast annual % change				Annual average
	2008	2009	2010	2011	2012	2013	2009-2013
Public housing	266	-3%	10%	9%	6%	3%	4.9%
Private housing	802	-17%	8%	6%	5%	2%	0.3%
Infrastructure	440	15%	11%	10%	7%	6%	9.9%
Public non-housing	710	5%	1%	-3%	-2%	3%	0.9%
Industrial	330	-17%	4%	9%	7%	2%	0.5%
Commercial	1,171	-6%	-4%	2%	5%	3%	0.0%
<b>New work</b>	<b>3,718</b>	<b>-5%</b>	<b>3%</b>	<b>4%</b>	<b>4%</b>	<b>3%</b>	<b>2.0%</b>
Housing R&M	2,206	-2%	1%	-2%	0%	3%	-0.2%
Non-housing R&M	2,069	-4%	-2%	1%	3%	2%	-0.1%
<b>R&amp;M</b>	<b>4,275</b>	<b>-3%</b>	<b>-2%</b>	<b>0%</b>	<b>2%</b>	<b>3%</b>	<b>-0.2%</b>
<b>Total work</b>	<b>7,993</b>	<b>-4%</b>	<b>0%</b>	<b>2%</b>	<b>3%</b>	<b>3%</b>	<b>0.9%</b>

Source: CSN, Experian  
Footnote: 2 (See Appendix III)





# 3 Construction employment forecasts for the East of England

## 3.1 Total construction employment forecasts by occupation

The table, Total employment by occupation – East of England, presents actual construction employment (SIC 45 and 74.2) in the East of England for 2007, and the forecast total employment for each of the 26 occupations between 2009 and 2013. A full breakdown of occupations is provided in Appendix IV.

Total construction employment by 2013 in the region is forecast to reach approximately 247,000 when including SIC 45 and 74.2. This is a 4.5% rise on the projected total in 2009 but a 2% fall on the 2007 figure. A breakdown of total employment in 2013 suggests that 219,000 workers will be working in SIC 45 while 28,000 will be employed in SIC 74.2.

The largest trade occupation in the East of England remains wood trades and interior fit out, accounting for about 10.2% of total construction employment in the region in 2007, slightly lower than in the UK as a whole. This occupation is expected to see its share of total construction employment fall below 10% in the East of England by 2013.

Total construction employment in 2007 of around 252,300 is forecast to fall in 2009 to 236,800, before rising to **247,300 in 2013**

The largest percentage increases in employment between 2009 and 2013 are expected to be for senior, executive and business process managers (12.7%), scaffolders (11.3%) and logistics (10.8%) occupations. However in absolute terms, non-construction professional, technical, IT, and other office-based staff (2,240) and construction managers (1,990) are projected to have the biggest growth.

Construction professionals have been disaggregated in the 2008 run for the Construction Skills Network into four occupational categories – civil engineers, other construction professionals and technical staff, architects, and surveyors. The result of this disaggregation shows that 16% of construction professionals in the East of England are classified as civil engineers, 7% as architects and 20% as surveyors in 2007.



Total employment by occupation - East of England			
	Actual 2007	Forecast	
		2009	2013
Senior, executive, and business process managers	10,850	9,920	11,180
Construction managers	22,270	20,760	22,750
Non-construction professional, technical, IT, and other office-based staff	28,990	26,330	28,570
Wood trades and interior fit-out	25,610	24,800	24,630
Bricklayers	7,650	6,780	7,130
Building envelope specialists	9,760	9,210	9,610
Painters and decorators	13,410	12,790	12,350
Plasterers and dry liners	5,710	5,520	5,920
Roofers	5,370	5,390	5,310
Floorers	3,680	3,500	3,550
Glaziers	4,120	3,620	3,920
Specialist building operatives nec*	5,480	4,850	5,170
Scaffolders	2,710	2,650	2,950
Plant operatives	5,300	5,080	4,790
Plant mechanics/fitters	2,450	2,240	2,350
Steel erectors/structural	1,870	1,710	1,750
Labourers nec*	11,700	11,060	12,290
Electrical trades and installation	19,730	18,490	19,300
Plumbing and HVAC Trades	15,190	14,150	14,770
Logistics	4,000	3,700	4,100
Civil engineering operatives nec*	4,690	4,350	4,170
Non-construction operatives	13,130	12,710	12,610
Civil engineers	4,590	4,350	4,500
Other construction professionals and technical staff	16,420	15,680	16,100
Architects	1,980	1,870	1,840
Surveyors	5,630	5,260	5,730
<b>Total (SIC 45)</b>	<b>223,670</b>	<b>209,610</b>	<b>219,170</b>
<b>Total (SIC 45 and 74.2)</b>	<b>252,290</b>	<b>236,770</b>	<b>247,340</b>

Source: ONS, CSN, Experian  
Footnote: 5 and 6 (See Appendix III)

\* nec - not elsewhere classified

### 3.2 Annual recruitment requirements by occupation

The annual recruitment requirement (ARR) is a gross requirement that takes into account workforce flows into and out of construction, due to such factors as movements between industries, migration, sickness, and retirement. However, these flows do not include movements into the industry from training, although robust data on training provision is being developed by ConstructionSkills in partnership with the Learning and Skills Council (LSC) and Higher Education representatives. Thus, the ARR provides an indication of the number of new employees that would need to be recruited into construction each year in order to realise forecast output.



The ARR between 2009 and 2013 for the 26 occupations within the East of England's construction industry is illustrated in the table. The ARR of 2,890 is indicative of the average requirements per year for the industry, as based on the output forecasts for the region.

Construction managers (340) and labourers nec\* (330) are expected to have the largest ARR in the region. However as a percentage of 2009 employment, bricklayers are forecast to be the most in demand, followed closely by civil engineering operatives nec\*, and labourers nec\*.

Please note that all of the ARRs presented in this section are employment requirements and not necessarily training requirements. This is because some new entrants to the construction industry, such as skilled migrants or those from other industries where similar skills are already used, will be able to work in the industry without the need for retraining.

Non-construction operatives is a diverse occupational group including all of the activities under the SIC 45 and SIC 74.2 umbrella that cannot be classified elsewhere, such as cleaners, elementary security occupations nec\* and routine inspectors and testers. The skills required in these occupations are highly transferable to other industries and forecasting such movement is hazardous given the lack of robust supportive data. Therefore the ARR for non-construction operatives is not published.

Annual recruitment requirement by occupation - East of England	
	2009-2013
Senior, executive, and business process managers	210
Construction managers	340
Non-construction professional, technical, IT, and other office-based staff	100
Wood trades and interior fit-out	170
Bricklayers	240
Building envelope specialists	60
Painters and decorators	290
Plasterers and dry liners	160
Roofers	50
Floorers	<50
Glaziers	60
Specialist building operatives nec*	<50
Scaffolders	60
Plant operatives	90
Plant mechanics/fitters	<50
Steel erectors/structural	<50
Labourers nec*	330
Electrical trades and Installation	230
Plumbing and HVAC Trades	60
Logistics	<50
Civil engineering operatives nec*	130
Non-construction operatives	
Civil engineers	<50
Other construction professionals and technical staff	130
Architects	<50
Surveyors	<50
<b>Total (SIC 45)</b>	<b>2,740</b>
<b>Total (SIC 45 and 74.2)</b>	<b>2,890</b>
<b>Source: CSN, Experian</b>	
<b>Footnote: 5 and 6 (See Appendix III)</b>	

\* nec - not elsewhere classified

# 4 Comparisons across the UK

Between 2009 and 2013 most regions and nations are forecast to experience a rise in construction output, the exceptions being the South West, and Yorkshire and Humber the former of which is predicted to see a slight decline and the latter no change.

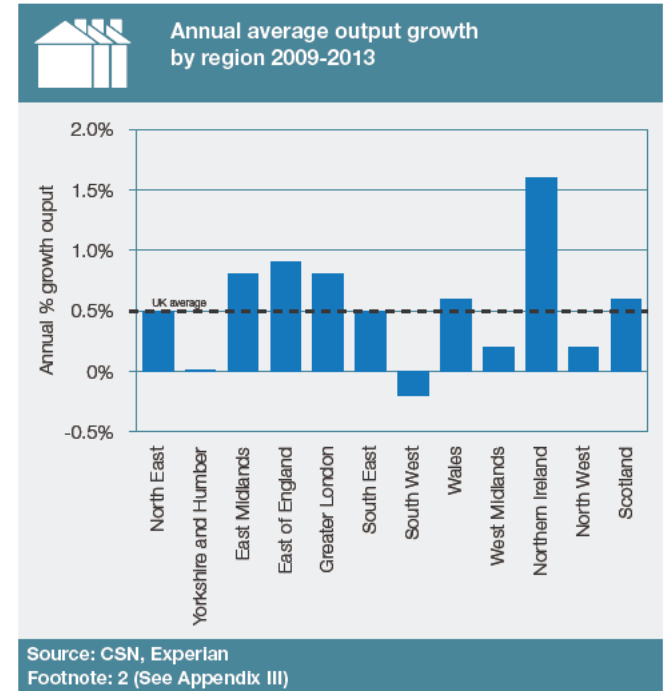
The South West does not benefit from growth in the infrastructure and public non-housing sectors in the way that many other regions and nations do, as there are no major civil engineering projects planned for the region within the forecast period and few local authorities feature in the early phases of the Building Schools for the Future programme (BSF). In Yorkshire and Humber, the low average annual growth rate is a function of a very poor 2009 predicated on the largest fall in new orders of any region or nation in 2008.

Northern Ireland continues to show the highest forecast growth in output, driven by the investment strategy planned for the next 10 years by the Northern Ireland Executive, although worries about how quickly this can be delivered have led to a lower growth rate than that put forward in previous years. The East Midlands, East of England and Greater London are also predicted to do better than the UK average, the capital in particular benefits from major infrastructure projects, the BSF programme, and Olympics build.

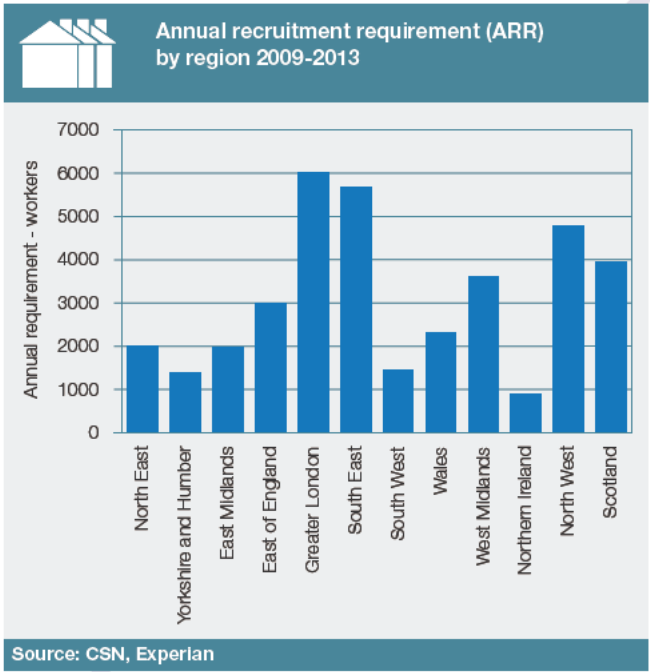
The ARR for 2009–2013 for Greater London is estimated to be the highest of the regions with just over 6,000 new entrants needed each year. This high ARR can in part be attributed to the region accounting for a large proportion of construction output for the UK as a whole. Next comes the South East with an ARR of around 5,700, not surprising given that the size of the construction market in the region is similar to Greater London's, and the North West with an ARR of close to 4,800.

The lowest ARR is for Northern Ireland at 900, despite the fact that the province has the highest output growth rate in the UK. This is because it is a small market, accounting for around 2.7% of UK output and 3.1% of UK employment. The North East has quite a high ARR, at a little over 2,000, compared to its market size. This is because it has a reasonable growth rate in output terms and it suffers from significant outflows of construction workers to other regions.

With an average annual output growth rate of 0.9% over the period, the East of England is the one of the key performers across the UK







# Appendix I – Methodology

## Background

The **Construction Skills Network (CSN)**, launched in 2005, represents a radical change in the way that ConstructionSkills collect and produce information on the future employment and training needs of the industry. CITB-ConstructionSkills, CIC and CITB Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction to produce robust Labour Market Intelligence to provide a foundation on which to plan for future skills needs and to target investment.

The CSN functions at both a national and regional level. It comprises of a National Group, 12 Observatory groups, a forecasting model for each of the regions and countries, and a Technical Reference Group. An Observatory group currently operates in each of the nine English regions and also in Wales, Scotland and Northern Ireland.



Peterborough Cathedral

Observatory groups currently meet bi-annually and consist of key regional stakeholders invited from industry, Government, education and other SSCs, all of whom contribute local industry knowledge and views on training, skills, recruitment, qualifications and policy.

The National Group also includes representatives from industry, Government, education and other SSCs. This Group convenes twice a year and sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN is a forecasting model which generates forecasts of employment requirements within the industry for a range of trades. The model was designed and is managed by Experian under the independent guidance and validation of the Technical Reference Group, comprised of statisticians and modelling experts.

It is envisaged that the model will evolve over time as new research is published and modelling techniques improve. Future changes to the model will only be made after consultation with the Technical Reference Group.





### The model approach

The model approach relies on a combination of primary research and views from the CSN to facilitate it. National data is used as the basis for the assumptions that augment the model, which is then adjusted with the assistance of the Observatories and National Group. Each English region, Wales, Scotland and Northern Ireland has a separate model (although all models are inter-related due to labour movements) and, in addition, there is one national model that acts as a constraint to the individual models and enables best use to be made of the most robust data (which is available at the national level). The models work by forecasting demand and supply of skilled workers separately. The difference between demand and supply forms the employment requirement.

The forecast **total employment** levels are derived from expectations about construction output and productivity. Essentially this is based upon the question 'How many people will be needed to produce forecast output, given the assumptions made about productivity?'.

The **annual recruitment requirement (ARR)** is a gross requirement that takes into account workforce flows into and out of construction, due to such factors as movements between industries, migration, sickness, and retirement. However, these flows do not include movements into the industry from training, although robust data on training provision is being developed by ConstructionSkills in partnership with the Learning and Skills Council (LSC) and Higher Education representatives. Thus, the annual recruitment requirement provides an indication of the number of new employees that would need to be recruited into construction each year in order to realise forecast output.

Demand is based upon the results of discussion groups comprising industry experts, a view of construction output and a set of integrated models relating to wider national and regional economic performance. The model is dynamic and reflects the general UK economic climate at any point in time. To generate the labour demand, the model makes use of a set of specific statistics for each major type of work (labour coefficients) that determine the employment, by trade, needed to produce the predicted levels of construction output. The labour supply for each type of trade or profession is based upon the previous years' supply (the total stock of employment) combined with flows into and out of the labour market.

The key leakages (outflows) that need to be considered are:

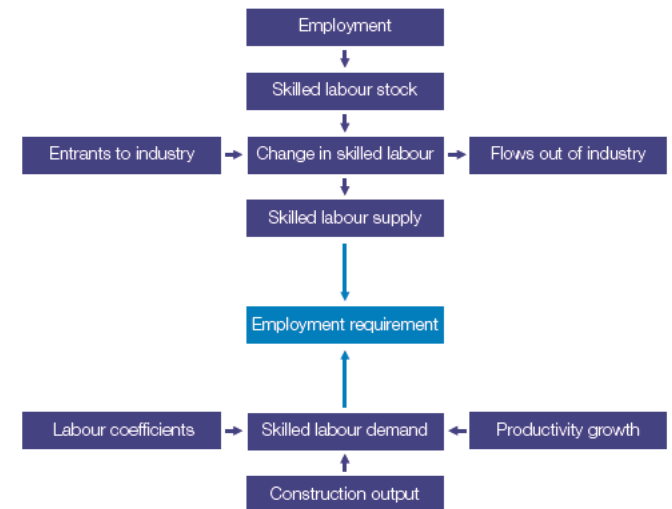
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

The main reason for outflow is likely to be transfer to other industries.

Flows into the labour market include:

- transfers in from other industries
- international/domestic IN migration
- inflow from temporarily sick and home duties.

The most significant inflow is likely to be from other industries. A summary of the model is shown in the flow chart.



Source: Experian

# Appendix II – Glossary of terms

- **Building envelope specialists** – any trade involved with the external cladding of the building other than bricklaying, e.g. curtain walling.
- **Demand** – construction **output**, vacancies, and a set of **labour coefficients** to translate demand for workers to labour requirements by trade. Demand is calculated using Office for National Statistics (ONS) and the Department of Finance and Personnel Northern Ireland (DFP) output data. Vacancy data are usually taken from the National Employers Skills Survey from the Department for Education and Skills.
- **GDP** – Gross Domestic Product – total market value of all final goods and services produced. A measure of national income.  $GDP = GVA$  plus taxes on products minus subsidies on products.
- **GVA** – Gross Value Added – total output minus the value of inputs used in the production process. GVA measures the contribution of the economy as a difference between gross output and intermediate outputs.
- **Labour coefficients** – the labour inputs required for various types of construction activity. The number of workers of each occupation/trade to produce £1m of output in each sub-sector.
- **LFS** – Labour Force Survey – a UK household sample survey which collects information on employment, unemployment, flows between sectors and training, from around 53,000 households each quarter (>100,000 people).
- **LMI** – Labour Market Intelligence – data that are quantitative (numerical) or qualitative (insights and perceptions) on workers, employers, wages, conditions of work, etc.
- **Macroeconomics** – the study of an economy on a national level, including total employment, investment, imports, exports, production and consumption.
- **Nec** – not elsewhere classified, used as a reference in LFS data.
- **ONS** – Office for National Statistics – official statistics on economy, population and society at national UK and local level.
- **Output** – total value of all goods and services produced in an economy.
- **Productivity** – output per employee.
- **SIC codes** – Standard Industrial Classification codes – from the UK Standard Industrial Classification of Economic Activities produced by the **ONS**.
- ConstructionSkills is responsible for SIC 45 Construction and part of SIC 74.2 Architectural and Engineering activities and related technical consultancy.
- ConstructionSkills shares an interest with SummitSkills in SIC 45.31 Installation of wiring and fittings and SIC 45.33 Plumbing. AssetSkills has a peripheral interest in SIC 74.2.
- **SOC codes** – Standard Occupational Classification codes.
- **Supply** – the total stock of employment in a period of time plus the flows into and out of the labour market. Supply is usually calculated from **LFS** data.



# Appendix III – Footnotes and footprints

## Footnotes

- 1 Except for Northern Ireland, output data for the English regions, Wales and Scotland are supplied by the Office for National Statistics (ONS) on a current price basis. Thus national deflators produced by the ONS have been used to deflate to a 2000 constant price basis, i.e. the effects of inflation have been stripped out.
- 2 The annual average growth rate of output is a compound average growth rate, i.e. the rate at which output would grow each year if it increased steadily year-on-year over the forecast period.
- 3 Only selected components of gross value added (GVA) are shown in this table and so do not sum to the total.
- 4 For new construction orders comparison is made with Great Britain rather than the UK, owing to the fact that there are no orders data series for Northern Ireland.
- 5 Employment numbers are rounded to the nearest 10.
- 6 The tables include data relating to plumbers and electricians. As part of SIC 45, plumbers and electricians working in contracting are an integral part of the construction process. However, it is recognised by ConstructionSkills that SummitSkills has responsibility for these occupations across a range of SIC codes, including SIC 45.31 and 45.33.

## Footprints for Built Environment SSCs

The table summarises the SIC codes covered by ConstructionSkills:

	SIC Code	Description
<b>ConstructionSkills</b>	45.1	Site preparation
	45.2	Building of complete construction or parts; civil engineering
	45.3	Building Installations (except 45.31 and 45.33 which are covered by SummitSkills)
	45.4	Building completion
	45.5	Renting of construction or demolition equipment with operator
	74.2†	Architectural and engineering activities and related technical consultancy

The sector footprints for the other SSCs covering the Built Environment:

## SummitSkills

Footprint – Plumbing, Heating, Ventilation, Air Conditioning, Refrigeration and Electrotechnical.

Coverage – Building Services Engineering.

ConstructionSkills recognises the responsibility of Summit Skills across Standard Industrial Classifications (SIC) 45.31 and 45.33, thus data relating to the building services engineering sector is included here primarily for completeness.

## AssetSkills

Footprint – Property Services, Housing, Facilities Management, Cleaning.

Coverage – Property, Housing and Land Managers, Chartered Surveyors, Estimators, Valuers, Home Inspectors, Estate Agents and Auctioneers (property and chattels), Caretakers, Mobile and Machine Operatives, Window Cleaners, Road Sweepers, Cleaners, Domestic, Facilities Managers.

## Energy and Utility Skills

Footprint – Electricity, Gas (including gas installers), Water and Waste Management.

Coverage – Electricity generation and distribution; Gas transmission, distribution and appliance installation and maintenance; Water collection, purification and distribution; Waste water collection and processing; Waste Management.

† AssetSkills has a peripheral interest in SIC 74.2



# Appendix IV – Occupational groups

## Occupational group

Description, SOC reference.

### Senior, executive and business process managers

Directors and chief executives of major organisations, 1112  
 Senior officials in local government, 1113  
 Financial managers and chartered secretaries, 1131  
 Marketing and sales managers, 1132  
 Purchasing managers, 1133  
 Advertising and public relations managers, 1134  
 Personnel, training and Industrial relations managers, 1135  
 Office managers, 1152  
 Civil service executive officers, 4111  
 Property, housing and land managers, 1231  
 Information and communication technology managers, 1136  
 Research and development managers, 1137  
 Customer care managers, 1142  
 Storage and warehouse managers, 1162  
 Security managers, 1174  
 Natural environment and conservation managers, 1212  
 Managers and proprietors in other services nec\*, 1239

### Construction managers

Production, works and maintenance managers, 1121  
 Managers in construction, 1122  
 Quality assurance managers, 1141  
 Transport and distribution managers, 1161  
 Recycling and refuse disposal managers, 1235  
 Managers in mining and energy, 1123  
 Occupational hygienists and safety officers (H&S), 3567  
 Conservation and environmental protection officers, 3551

### Non-construction professional, technical, IT, and other office-based staff (excl. managers)

IT operations technicians, 3131  
 IT user support technicians, 3132  
 Estimators, valuers and assessors, 3531  
 Finance and investment analysts/advisers, 3534  
 Taxation experts, 3535  
 Financial and accounting technicians, 3537  
 Vocational and Industrial trainers and instructors, 3563  
 Business and related associate professionals nec\*, 3539  
 Legal associate professionals, 3520  
 Inspectors of factories, utilities and trading standards, 3565  
 Software professionals, 2132  
 IT strategy and planning professionals, 2131  
 Estate agents, auctioneers, 3544  
 Solicitors and lawyers, judges and coroners, 2411  
 Legal professionals nec\*, 2419  
 Chartered and certified accountants, 2421  
 Management accountants, 2422

Management consultants, actuaries, economists and statisticians, 2423  
 Receptionists, 4216  
 Typists, 4217  
 Sales representatives, 3542  
 Civil Service administrative officers and assistants, 4112  
 Local government clerical officers and assistants, 4113  
 Accounts and wages clerks, book-keepers, other financial clerks, 4122  
 Filing and other records assistants/clerks, 4131  
 Stock control clerks, 4133  
 Database assistants/clerks, 4136  
 Telephonists, 4141  
 Communication operators, 4142  
 General office assistants/clerks, 4150  
 Personal assistants and other secretaries, 4215  
 Sales and retail assistants, 7111  
 Telephone salespersons, 7113  
 Buyers and purchasing officers (50%), 3541  
 Marketing associate professionals, 3543  
 Personnel and Industrial relations officers, 3562  
 Credit controllers, 4121  
 Market research interviewers, 4137  
 Company secretaries (excluding qualified chartered secretaries), 4214  
 Sales related occupations nec\*, 7129  
 Call centre agents/operators, 7211  
 Customer care occupations, 7212  
 Elementary office occupations nec\*, 9219

**Wood trades and interior fit-out**

Carpenters and joiners, 5315

Pattern makers, 5493

Paper and wood machine operatives, 8121

Furniture makers, other craft woodworkers, 5492

Labourers in building and woodworking trades (9%), 9121

Construction trades nec\* (25%), 5319

**Bricklayers**

Bricklayers, masons, 5312

**Building envelope specialists**

Construction trades nec\* (50%), 5319

Labourers in building and woodworking trades (5%), 9121

**Painters and decorators**

Painters and decorators, 5323

Construction trades nec\* (5%), 5319

**Plasterers and dry liners**

Plasterers, 5321

**Roofers**

Roofers, roof tilers and slaters, 5313

**Floorers**

Floorers and wall tilers, 5322

**Glaziers**

Glaziers, window fabricators and fitters, 5316

Construction trades nec\* (5%), 5319





**Specialist building operatives nec\***

Construction operatives nec\* (80%), 8149  
Construction trades nec\* (5%), 5319  
Industrial cleaning process occupations, 9132

**Scaffolders**

Scaffolders, staggers, riggers, 8141

**Plant operatives**

Crane drivers, 8221  
Plant and machine operatives nec\*, 8129  
Transport operatives nec\*, 8219  
Fork-lift truck drivers, 8222  
Mobile machine drivers and operatives nec\*, 8229  
Agricultural machinery drivers, 8223

**Plant mechanics/fitters**

Metal working production and maintenance fitters, 5223  
Precision instrument makers and repairers, 5224  
Motor mechanics, auto engineers, 5231  
Labourers in process and plant operations nec\*, 9139  
Tool makers, tool fitters and markers-out, 5222  
Vehicle body builders and repairers, 5232  
Auto electricians, 5233  
Vehicle spray painters, 5234  
Goldsmiths, silversmiths, precious stone workers, 5495  
Tyre, exhaust and windscreen fitters, 8135

**Steel erectors/structural**

Steel erectors, 5311  
Welding trades, 5215  
Sheet metal workers, 5213  
Metal plate workers, shipwrights and riveters, 5214  
Construction trades nec\* (5%), 5319  
Smiths and forge workers, 5211  
Moulders, core makers, die casters, 5212  
Metal machining setters and setter-operators, 5221

**Labourers nec\***

Labourers in building and woodworking trades (80%), 9121

**Electrical trades and installation**

Electricians, electrical fitters, 5241  
Electrical/electronic engineers nec\*, 5249  
Telecommunications engineers, 5242  
Lines repairers and cable jointers, 5243  
TV, video and audio engineers, 5244  
Computer engineers, installation and maintenance, 5245



South East Essex College

**Plumbing and heating, ventilation, and air conditioning trades**

Plumbers and HVAC trades, 5314

Pipe fitters, 5216

Labourers in building and woodworking trades (6%), 9121

Construction trades nec\* (5%), 5319

**Logistics**

Heavy goods vehicle drivers, 8211

Van drivers, 8212

Packers, bottlers, canners, fillers, 9134

Other goods handling and storage occupations nec\*, 9149

Buyers and purchasing officers (50%), 3541

Transport and distribution clerks, 4134

Security guards and related occupations, 9241

**Civil engineering operatives nec\***

Road construction operatives, 8142

Rail construction and maintenance operatives, 8143

Quarry workers and related operatives, 8123

Construction operatives nec\* (20%), 8149

Labourers in other construction trades nec\*, 9129

**Non-construction operatives**

Metal making and treating process operatives, 8117

Process operatives nec\*, 8119

Metal working machine operatives, 8125

Water and sewerage plant operatives, 8126

Assemblers (vehicle and metal goods), 8132

Routine inspectors and testers, 8133

Assemblers and routine operatives nec\*, 8139

Stevedores, dockers and slingers, 9141

Hand craft occupations nec\*, 5499

Elementary security occupations nec\*, 9249

Cleaners, domestics, 9233

Road sweepers, 9232

Gardeners and groundsmen, 5113

Caretakers, 6232

**Civil engineers**

Civil engineers, 2121

**Other construction professionals and technical staff**

Mechanical engineers, 2122

Electrical engineers, 2123

Chemical engineers, 2125

Design and development engineers, 2126

Production and process engineers, 2127

Planning and quality control engineers, 2128

Engineering professional nec\*, 2129

Electrical/electronic technicians, 3112

Engineering technicians, 3113

Building and civil engineering technicians, 3114

Science and engineering technicians nec\*, 3119

Architectural technologists and town planning technicians, 3121

Draughtspersons, 3122

Quality assurance technicians, 3115

Town planners, 2432

Electronics engineers, 2124

Building inspectors, 3123

Scientific researchers, 2321

**Architects**

Architects, 2431

**Surveyors**

Quantity surveyors, 2433

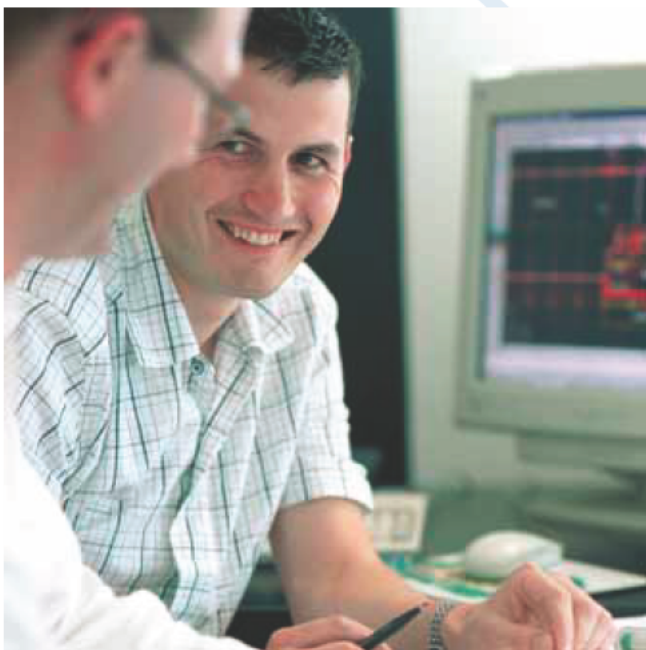
Chartered surveyors (not Quantity surveyors), 2434

## Appendix V – CSN website and contact details

### The CSN website – <http://www.cskills.org/csn>

The CSN website functions as a **public gateway** for people wishing to access the range of **Labour Market Intelligence (LMI)** reports and **research material** regularly produced by the CSN.

The main UK report, along with the twelve LMI reports (one for Northern Ireland, Scotland, Wales and each of the nine English regions) can be downloaded from the site, while research reports such as the '2020Vision' and 'Closer look at Greater London' are also freely available.



Having access to this range of labour market intelligence and trend insight allows industry, government, regional agencies and key stakeholders to:

- pinpoint the associated, specific, skills that will be needed year by year
- identify the sectors which are likely to be the strongest drivers of output growth in each region and devolved nation
- track the macro economy
- understand how economic events impact on regional and devolved nations economic performance
- highlight trends across the industry such as national and regional shifts in demand
- plan ahead and address the skills needs of a traditionally mobile workforce
- understand the levels of qualified and competent new entrants required into the workforce.

The website also contains further information about:

- how the CSN functions
- the CSN Model approach
- how the Model can be used to explore scenarios
- CSN team contact information
- access to related ConstructionSkills research
- details for those interested in becoming members of the network.

The CSN website can be found at:

**<http://www.cskills.org/csn>**



### CSN Members Area

While the public area of the CSN Website is the gateway to the completed LMI and research reports, being a member of the CSN offers further benefits.

As a CSN member you will be linked to one of the Observatory groups, which play a vital role in being able to feed back observations, knowledge and insight on what is really happening on the ground in every UK region and nation. This feedback is used to fine tune the assumptions and data that goes into the forecasting programme such as:

- details of specific projects
- demand within various types of work or sectors
- labour supply
- inflows and outflows across the regions and devolved nations.

CSN Members therefore have:

- early access to forecasts
- the opportunity to influence and inform the data
- the ability to request scenarios that could address “What would happen if...” types of questions using the model.

Through the Members area of the CSN website, members can:

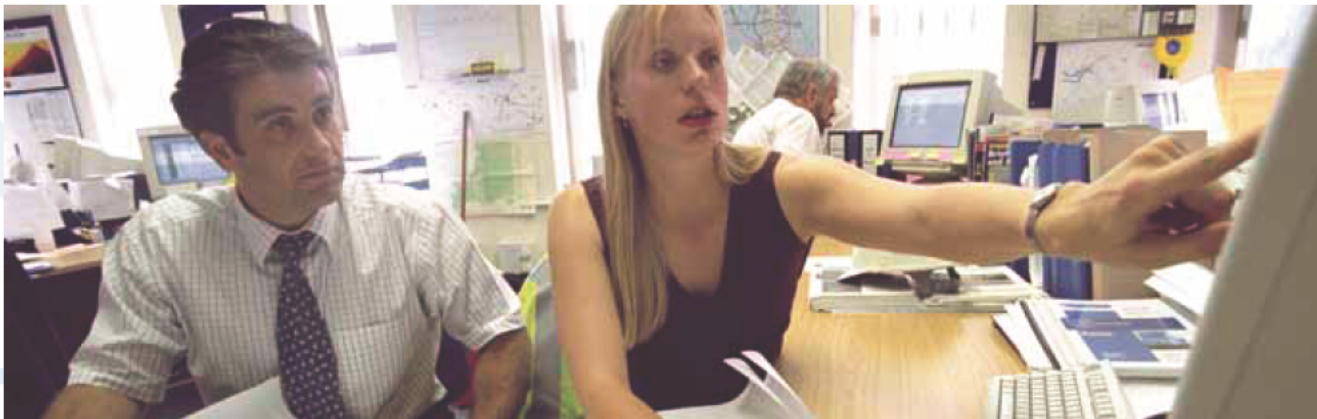
- access observatory related material such as meeting dates, agendas, presentations and notes
- access sub-regional LMI reports
- download additional research material
- comment/feedback to the CSN Team.

As the Observatory groups highlight the real issues faced by the industry in the UK, we can more efficiently and effectively plan our response to skills needs. If you would like to contribute your industry observations, knowledge and insight to this process and become a member of the CSN, we would be delighted to hear from you.

### Contact details

For further information about the CSN website, or to register your interest in joining the CSN as a member, please contact us at: [csn@cskills.org](mailto:csn@cskills.org)

For enquiries relating to the work of the CSN, please contact Sandra Lilley, CSN Manager, at: [sandra.lilley@cskills.org](mailto:sandra.lilley@cskills.org)



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