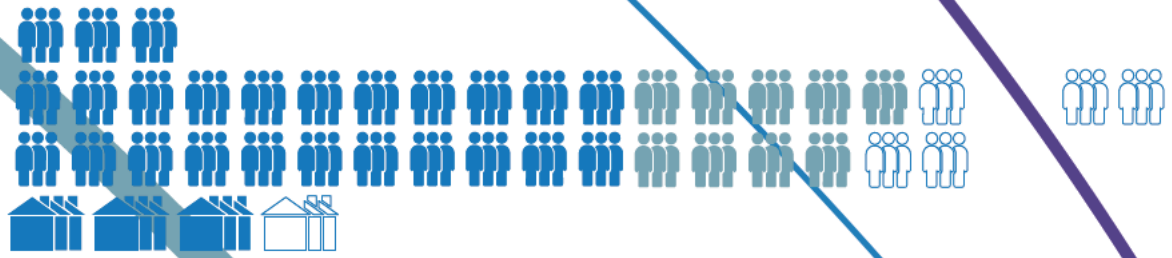


Construction Skills Network
East Midlands

LABOUR MARKET INTELLIGENCE 2009–2013

Experian™

constructionskills

Contents

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 Midlands economy

- Worth £72bn in 2007 (around 6.5% of the total UK economy), the East Midlands economy is forecast to grow at an average annual rate of 1.4% between 2009 and 2013.
- Manufacturing accounts for 20% of the region's gross value added (GVA), higher than the 14% across the UK as a whole.
- Growth in financial and business services is expected to be a key driver of total GVA growth, with average annual growth of 4.3% expected for the sector between 2009 and 2013.

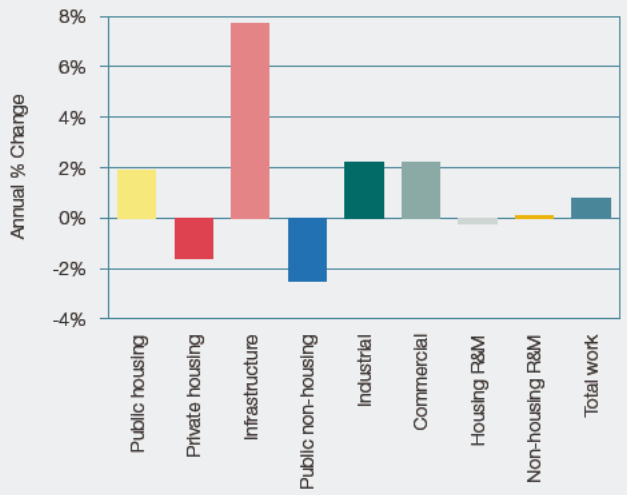
1.2 Construction output in the East Midlands

- Construction output in the East Midlands totalled £5.4bn, in 2000 prices, in 2007. This was around 7% of the UK total.
- Output is forecast to grow at an annual average rate of 0.8% between 2009 and 2013, above the UK average of 0.5%.
- The infrastructure sector is forecast to be by far the strongest growth sector, increasing at an average annual rate of 7.7%.
- The industrial and commercial sectors are both expected to increase at 2.2% per year.

1.3 Construction employment in the East Midlands

- Total construction employment in the region was 168,620 in 2007. It is forecast to fall to 152,170 in 2009 before increasing by over 6,000 to 158,390 in 2013.
- To meet this demand, after taking into account those entering and leaving the industry, 1,980 workers will be required to join the industry each year.
- Construction managers, wood trades and interior fit-out and electrical trades and installation are expected to have the largest annual recruitment requirements (ARR).

Annual average construction output growth 2009-2013 - East Midlands



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

Regional comparison 2009-2013

	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
East 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
UK	**0.5%**	**74,070**	**37,030**

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

Worth

£72bn in 2007

(around 6.5% of the total UK economy), the East Midlands economy is forecast to grow at an average annual rate of 1.4% between 2009 and 2013

2 The outlook for construction in the East Midlands

2.1 Construction output in the East Midlands – overview

In 2007 construction output in the East Midlands was £5.4bn, in 2000 prices, a fall of 7% from the previous year. New work declined by 12% from the previous year to £5bn, but repair and maintenance (R&M) rose by 1%.

The performance of construction in the East Midlands was strong throughout the early years of the decade, with output rising by 37% between 2000 and 2006 in real terms. The rise in total output was driven by growth in both the new work and R&M sectors over this period.

In 2007 the infrastructure sector was the strongest, showing growth of around 18% in real terms, largely driven by roads work, in particular the £340m of M1 widening taking place between Junctions 25 and 28.

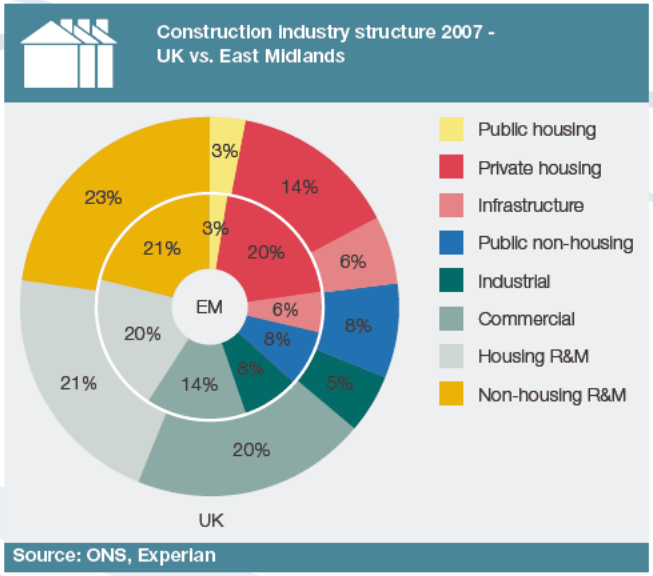
In contrast the public non-housing and private commercial sectors experienced significant declines in activity in 2007, with a slow start to Building Schools for the Future projects in the former sector and poor levels of work in the retail sub-sector in the latter.

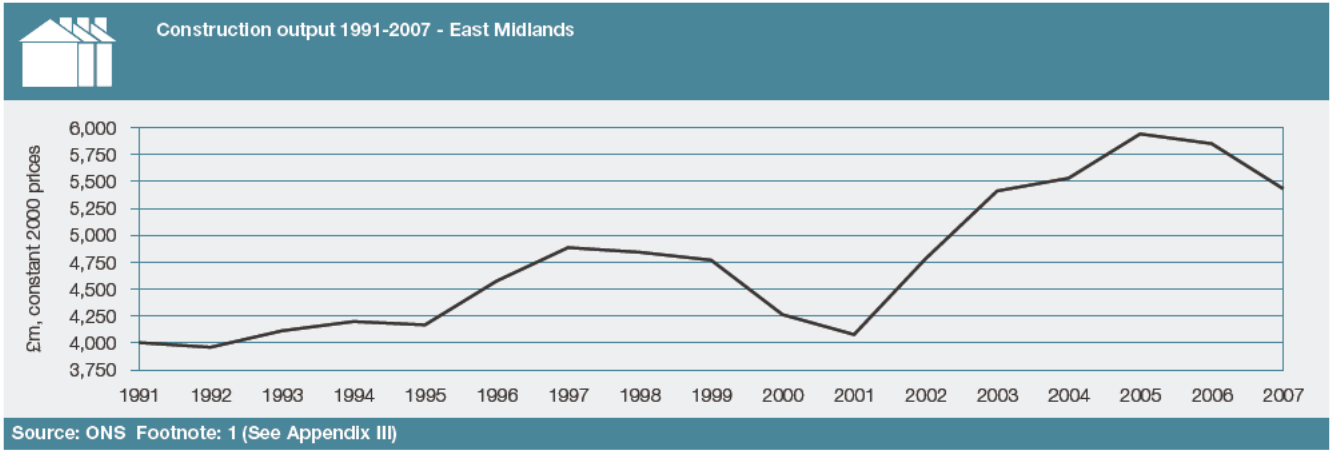
2.2 Industry structure

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

New work output accounts for a larger proportion of output in the East Midlands, 59%, than in the UK as a whole, 56%, with both the housing and non-housing repair and maintenance (R&M) sectors taking a smaller share of output.

Within new work output, the private housing sector takes a 20% share of output, much larger than the 14% of output it accounts for in the UK as a whole. The relative dominance of the private housing sector in the region is at the expense of the commercial sector, which, at 14% of output, is less than the 20% in the UK. The industrial sector contributes 8% of total construction output in the region, compared with just 5% in the UK.





The infrastructure sector is forecast to be by far the strongest growth sector, increasing at an average annual rate

of 7.7%

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

Gross value added (GVA) in the East Midlands was £72bn in 2003 prices in 2007, 2.4% up on the previous year. This represents about 6.5% of the total UK economy.

In 2007, financial and business services and public services were the largest sectors in the East Midlands, each taking a 21% share of output. However, whilst public services' share of output has been steadily declining since the beginning of the decade (from 23% of GVA in 2000), financial and business services has seen its share rise, from just over 15% in 2000.

The East Midlands manufacturing sector remains relatively important, accounting for 20% of total GVA in 2007. This is in contrast to the UK as a whole, where it takes just a 14% share of output.

Leicester City Football Stadium

Economic structure - East Midlands
(£ billion, 2003 prices)

Selected sectors	Actual	Forecast Annual % change, real terms					
	2007	2008	2009	2010	2011	2012	2013
Public services	15	1.1	0.8	1.3	1.7	1.4	1.3
Financial and business services	15	5.5	0.9	3.6	5.5	5.8	5.7
Transport and communications	6	5.0	1.0	3.7	3.3	2.8	2.7
Manufacturing	14	-1.1	-3.1	0.7	1.4	0.8	0.7
Distribution, hotels and catering	12	0.1	0.1	2.0	2.7	2.4	2.3
Total Gross Value Added (GVA)	**72**	**0.7**	**-0.7**	**1.5**	**2.2**	**2.1**	**2.1**

Source: Experian
Footnote: 3 (See Appendix III)

Economic indicators - East Midlands
(£ billion, 2003 prices - unless otherwise stated)

	Actual	Forecast Annual % change, real terms					
	2007	2008	2009	2010	2011	2012	2013
Real household disposable income	54	-0.5	-0.5	0.7	1.8	2.3	2.2
Household spending	52	1.5	-0.3	1.1	2.1	1.9	2.0
Debt:income ratio	1.5	2.4	-2.7	-5.4	-4.9	-2.8	-1.0
House prices (£'000, current prices)	172	-2.5	-15.9	-4.4	0.9	2.6	3.0
LFS unemployment (millions)	0.12	2.8	-5.3	8.5	-1.2	-3.5	-3.4

Source: ONS, DCLG, Experian

2.5 Forward looking economic indicators

Economic growth in the East Midlands is expected to be 1.4% per year between 2009 and 2013, in line with the UK average.

Annual average growth of 4.3% is forecast for the financial and business services sector between 2009 and 2013, making it the highest growth sector in the region. The transport and communications sector is expected to see an increase of 2.7% per year.

Consumer spending in the East Midlands is forecast to increase at an annual average rate of 1.3% between 2009 and 2013, slightly slower than the UK rate of 1.5%. Real household disposable income in the region is expected to rise at a rate of 1.3%, in line with the UK figure.

The household debt-to-income ratio is predicted to peak at 1.5 in 2008, falling to 1.3 by 2013. The debt-to-income ratio in the East Midlands has been lower than in the UK as a whole in recent years and this is expected to continue to be the case over the forecast period.

Average house prices in the East Midlands rose by 6% in 2007 to £172,000, according to the Department for Communities and Local Government (DCLG). They are predicted to fall by around 20% in 2009 and 2010, roughly in line with the decline expected for the UK as a whole.

2.6 New construction orders – overview

Continuing the recent trend, new work construction orders declined 9% in 2007, totalling £3.3bn, in current prices.

A 114% rise in infrastructure orders over the year could not compensate for strong falls in both commercial and public housing new work orders, with declines of 37% and 16%, respectively.

2.7 New construction orders – current situation

Private housing is the largest of the new work sectors, and orders fell by 52% to £469m in the first three quarters of 2008. Third quarter new private housing orders were the weakest since the fourth quarter of 1992.

Industrial new orders also fell sharply in the first nine months of 2008, declining 51% from the same period a year ago. This is unsurprising given the dire outlook for the manufacturing sector.

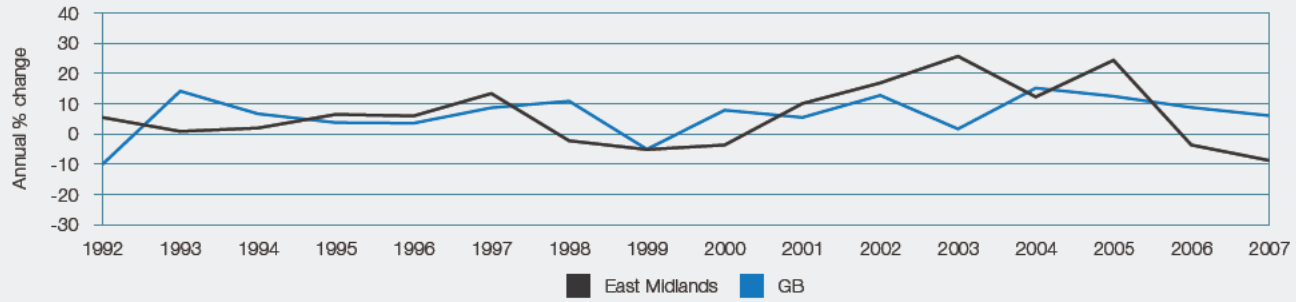
There was some good news from the public housing and public non-housing sector, as new orders increased 19% and 15% respectively compared with the same period of 2007.

New work construction orders - East Midlands
(£ million, current prices)

	Actual	Annual % change			
	2007	2003	2004	2005	2006	2007
Public housing	152	102.3	8.0	9.6	75.7	-16.2
Private housing	1,241	8.2	24.0	5.5	22.4	-8.7
Infrastructure	403	25.3	-12.5	31.5	-43.0	114.2
Public non-housing	443	16.5	38.4	-14.8	-20.2	2.8
Industrial	385	-22.7	67.9	33.1	-24.2	4.5
Commercial	691	91.5	-21.2	88.7	-8.1	-37.5
Total new work	**3,315**	**25.6**	**12.2**	**24.3**	**-3.7**	**-8.8**

Source: ONS
Footnote: 4 (See Appendix III)

New construction orders growth 1992-2007 - East Midlands vs. GB



Source: ONS Footnote: 4 (See Appendix III)

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

Regional Office of 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.

In the first nine months of 2008, total construction output in the East Midlands fell 2% to just less than £6bn, in current prices. New work output declined sharply to £3.4bn, 11% below the same period a year ago. In contrast, repair and maintenance (R&M) output saw a 12% increase to £2.6bn. This downward trend in total output is forecast to continue in 2009 and 2010, with total construction output in the region declining by 1% per year.

The infrastructure sector is expected to expand strongly in the short term, with average annual growth of 11.7% forecast for both 2009 and 2010. The buoyancy of the sector in the East Midlands is due to the widening of the M1, with the next stage due to start in late 2009 or 2010. Planning permission has also been granted for two power stations in the region, one in Drakelow, Derbyshire and the other in West Burton, Nottinghamshire. Work is also expected to start on phase two of the extension of the Nottingham Express Transit system towards the end of the period.

The public housing sector is also forecast to perform favourably, with growth of 7.7% per year forecast for the 2009–2010 period. The region has been allocated £128.5m from the 2008–2011 National Affordable Homes Programme.

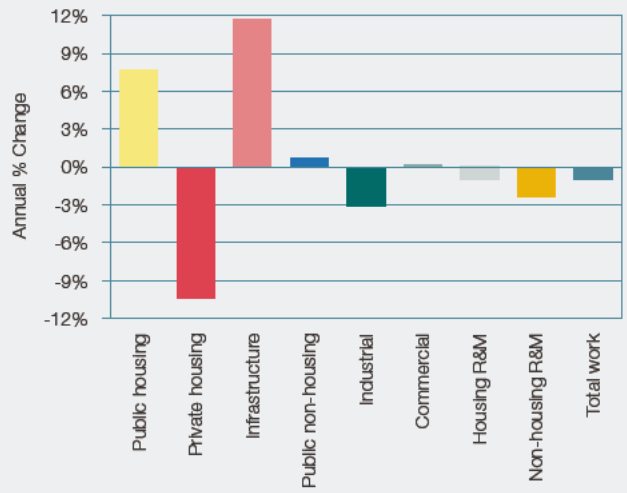
The public non-housing and commercial sectors are both forecast to see weak output growth in the short term, with average annual increases of 0.7% and 0.2%, respectively.

The industrial sector is expected to see an average contraction in output of 3.1% per year in 2009 and 2010, as the rapidly weakening manufacturing sector leaves companies unable or unwilling to invest in new factories and warehouses.

The private housing sector is set to continue its recent weak performance, on the back of tightening credit and increasing employment uncertainties dampening demand for house purchase. An annual average decline of 10.4% is forecast.

The R&M sectors are both predicted to experience declines in output, with non-housing activity seeing a stronger fall. The housing R&M sector is likely to be partially propped up by remaining work under the Decent Homes programme.

Annual average construction output growth 2009-2010 - East Midlands



Source: Experian
Footnote: 2 (See Appendix III)

Construction output - East Midlands (£ million, 2000 prices)

	Actual	Forecast annual % change			Annual average
	2007	2008	2009	2010	2009-2010
Public housing	144	5%	8%	7%	7.7%
Private housing	1,097	-32%	-27%	10%	-10.4%
Infrastructure	324	26%	12%	11%	11.7%
Public non-housing	436	3%	5%	-4%	0.7%
Industrial	434	-22%	-10%	4%	-3.1%
Commercial	785	-7%	-4%	4%	0.2%
New work	**3,220**	**-12%**	**-6%**	**5%**	**-0.6%**
Housing R&M	1,078	2%	-1%	-1%	-1.0%
Non-housing R&M	1,135	2%	-2%	-2%	-2.3%
Total R&M	**2,213**	**2%**	**-1%**	**-2%**	**-1.6%**
Total work	**5,433**	**-7%**	**-4%**	**2%**	**-1.0%**

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

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

The longer term outlook is slightly more favourable for the region, with construction output in the East Midlands expected to increase at an average rate of 0.8% per year between 2009 and 2013, above the UK average of 0.5%. New work output is forecast to rise at 1.4% per year, in contrast to the repair and maintenance (R&M) sector which is predicted to decline at a marginal annual rate of 0.1%. Despite positive growth for total new work output, there is wide variation in the performance across the sectors. Annual average growth rates range from 7.7% to -2.5%.

By far the strongest increase in the region is expected in the infrastructure sector, with annual average growth of 7.7% over the five-year period. A number of projects are expected to come on line in the next few years, including road, rail and power station schemes. These schemes are generally expected to go ahead, despite the weakening economic conditions. Output in the infrastructure sector is expected to be 31% higher in 2013 than in 2008.

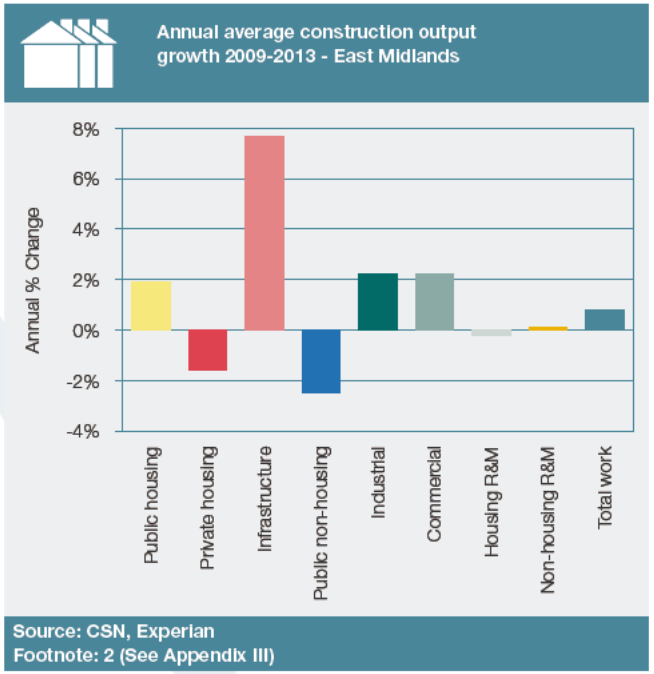
The industrial and commercial sectors are both forecast to see average annual growth of 2.2% between 2009 and 2013, with growth expected towards the end of the five-year period. Private finance initiative (PFI) projects are classified under private commercial activity and therefore some Building Schools for the Future (BSF) programmes will be included in this sector, as well as PFI health projects. A number of industrial projects are in the pipeline, including an industrial development at Nottingham Science and Technology Park.

The public housing sector is expected to experience moderate growth in the 2009–2013 period, with output increasing by an average of 1.9% per year. The East Midlands has been allocated £316m by the Housing Corporation for 2008–2011.

The private housing sector has been hit very badly in recent months and conditions are unlikely to improve in the short term. However, as economic conditions improve and confidence begins to return to the housing market, a recovery in new work output is expected from 2011. Nevertheless, over the forecast period as a whole output is predicted to decline at an average rate of 1.6% per year.

Public non-housing output is expected to fall at an average annual rate of 2.5%, reflecting uncertainty regarding the funding of the BSF programme post-wave 4.

The non-housing R&M sector is forecast to see marginal average annual growth, while the housing R&M sector is expected to decline at a rate of 0.2% per year, reflecting weaker consumer spending, and the winding down of public work under the Decent Homes for All programme post-2010.



Construction output - East Midlands
(£ million, 2000 prices)

	Estimate	Forecast annual % change					Annual average
	2008	2009	2010	2011	2012	2013	2009-2013
Public housing	152	8%	7%	6%	-3%	-8%	1.9%
Private housing	746	-27%	10%	6%	5%	3%	-1.6%
Infrastructure	409	12%	11%	8%	5%	2%	7.7%
Public non-housing	448	5%	-4%	-6%	-6%	-2%	-2.5%
Industrial	337	-10%	4%	8%	6%	4%	2.2%
Commercial	731	-4%	4%	4%	4%	2%	2.2%
New work	**2,824**	**-6%**	**5%**	**4%**	**3%**	**1%**	**1.4%**
Housing R&M	1,095	-1%	-1%	-2%	0%	2%	-0.2%
Non-housing R&M	1,159	-2%	-2%	1%	2%	2%	0.1%
R&M	**2,253**	**-1%**	**-2%**	**0%**	**1%**	**2%**	**-0.1%**
Total work	**5,077**	**-4%**	**2%**	**2%**	**2%**	**2%**	**0.8%**

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

3 Construction employment forecasts for the East Midlands

3.1 Total construction employment forecasts by occupation

The table, Total employment by occupation – East Midlands, presents actual construction employment (SIC 45 and 74.2) in the East Midlands 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 East Midlands is forecast to be 158,390, a decline of 10,230 on 2007. From this, 142,540 are expected to be working in occupations classified as in SIC 45, with the remaining 15,850 estimated to be employed in professional occupations, within SIC 74.2.

Wood trades and interior fit-out (17,740) is expected to overtake non-construction professionals, technical, IT and other office-based staff (17,670) as the largest occupational group in the East Midlands by 2013. Other sizeable occupational groups include construction managers and electrical trades and installation, both of which have employment forecasts of over 15,000 for 2013.

Construction managers and wood trades and interior fit-out are set to see the largest increase in employment between 2009 and 2013, with employment forecast to rise by over 1,000 in each group.

Construction managers, along with wood trades and interior fit-out are expected to have the largest annual average recruitment requirements

Labourers nec* are forecast to see the greatest proportional increase in employment, with total employment expected to rise by 12% between 2009 and 2013. An increase of 11% is predicted for plasterers and dryliners.

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 14% of construction professionals in the East Midlands are classified as civil engineers, 11% as architects and 20% as surveyors in 2007.

Total employment by occupation - East Midlands

	Actual	Forecast	
	2007	2009	2013
Senior, executive, and business process managers	5,870	5,160	5,610
Construction managers	15,650	14,320	15,590
Non-construction professional, technical, IT, and other office-based staff	19,100	17,100	17,670
Wood trades and interior fit-out	18,620	16,680	17,740
Bricklayers	7,610	6,540	7,110
Building envelope specialists	7,060	6,280	6,300
Painters and decorators	7,090	6,280	6,010
Plasterers and dry liners	2,990	2,500	2,770
Roofers	1,920	1,750	1,700
Floorers	2,770	2,550	2,590
Glaziers	2,530	2,260	2,460
Specialist building operatives nec*	3,710	3,130	3,220
Scaffolders	1,170	1,120	1,150
Plant operatives	2,440	2,250	2,290
Plant mechanics/fitters	2,440	2,140	2,230
Steel erectors/structural	2,130	1,940	1,930
Labourers nec*	6,310	5,510	6,170
Electrical trades and installation	15,810	14,910	15,220
Plumbing and HVAC Trades	10,830	9,910	10,080
Logistics	2,650	2,370	2,590
Civil engineering operatives nec*	2,960	2,660	2,560
Non–construction operatives	9,910	9,040	9,550
Civil engineers	2,470	2,230	2,290
Other construction professionals and technical staff	9,340	8,710	8,510
Architects	1,820	1,730	1,680
Surveyors	3,420	3,100	3,370
Total (SIC 45)	**151,570**	**136,400**	**142,540**
Total (SIC 45 and 74.2)	**168,620**	**152,170**	**158,390**

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 for 26 occupations within the East Midlands construction industry between 2009 and 2013 is illustrated in the table, Annual recruitment requirement by occupation – East Midlands. The ARR of 1,980 is indicative of the average requirements per year for the industry, as based on the output forecasts for the region. This takes into account 'churn' – flows into and out of the industry.

Construction managers (320) and wood trades and interior fit-out (270) have the largest ARRs, followed by electrical trades and installation, and painters and decorators.

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 date. Therefore the ARR for non-construction operatives is not published.

Annual recruitment requirement by occupation - East Midlands

	2009-2013
Senior, executive, and business process managers	70
Construction managers	320
Non-construction professional, technical, IT, and other office-based staff	60
Wood trades and interior fit-out	270
Bricklayers	50
Building envelope specialists	<50
Painters and decorators	190
Plasterers and dry liners	<50
Roofers	<50
Floorers	<50
Glaziers	130
Specialist building operatives nec*	<50
Scaffolders	<50
Plant operatives	130
Plant mechanics/fitters	<50
Steel erectors/structural	<50
Labourers nec*	100
Electrical trades and installation	220
Plumbing and HVAC Trades	<50
Logistics	<50
Civil engineering operatives nec*	<50
Non–construction operatives	
Civil engineers	90
Other construction professionals and technical staff	70
Architects	<50
Surveyors	<50
Total (SIC 45)	**1,790**
Total (SIC 45 and 74.2)	**1,980**

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

* 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.

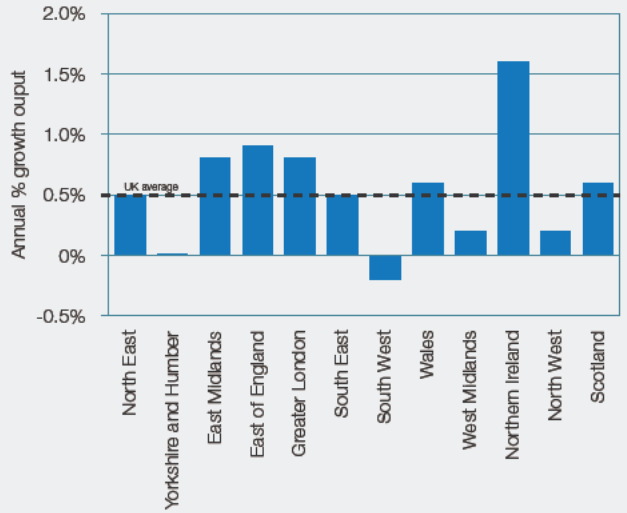
The South West does not benefit from growth in the infrastructure and public non-housing sectors in the way that many other regions and nations do, as there are no major civil engineering projects planned for the region within the forecast period and few local authorities feature in the early phases 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.

Annual average output growth by region 2009-2013

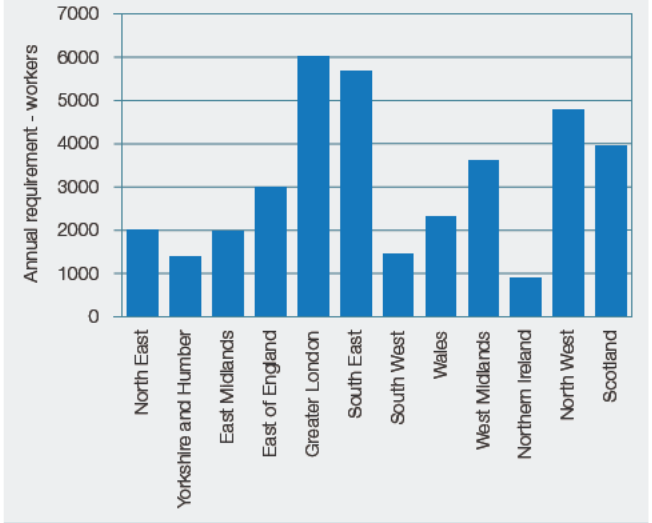


Source: CSN, Experian
Footnote: 2 (See Appendix III)

East Midlands is forecast to outperform the UK average for construction output between 2009 and 2013

* nec - not elsewhere classified

Annual recruitment requirement (ARR) by region 2009-2013



Source: CSN, Experian

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.

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.

National Space Centre, Leicester

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:

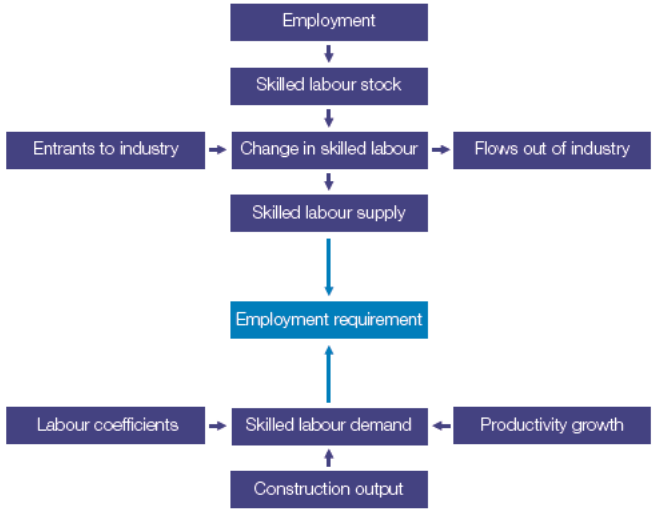
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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
ConstructionSkills	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 completition
	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 Classfications (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, Domestics, 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

Occuptional 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

* nec - not elsewhere classified

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

* nec - not elsewhere classified

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

Scaffolders
Scaffolders, stagers, 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

Lincoln Cathedral

* nec - not elsewhere classified

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

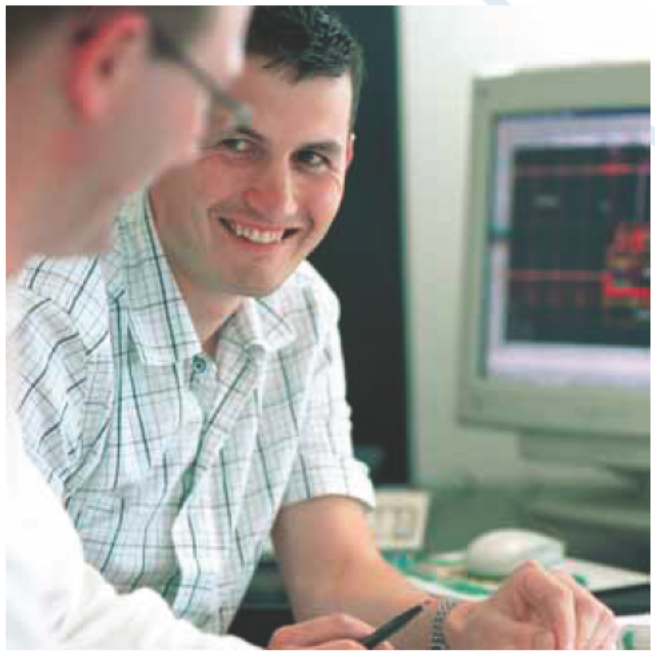
Surveyors
Quantity surveyors, 2433
Chartered surveyors (not Quantity surveyors), 2434

* nec - not elsewhere classified

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:

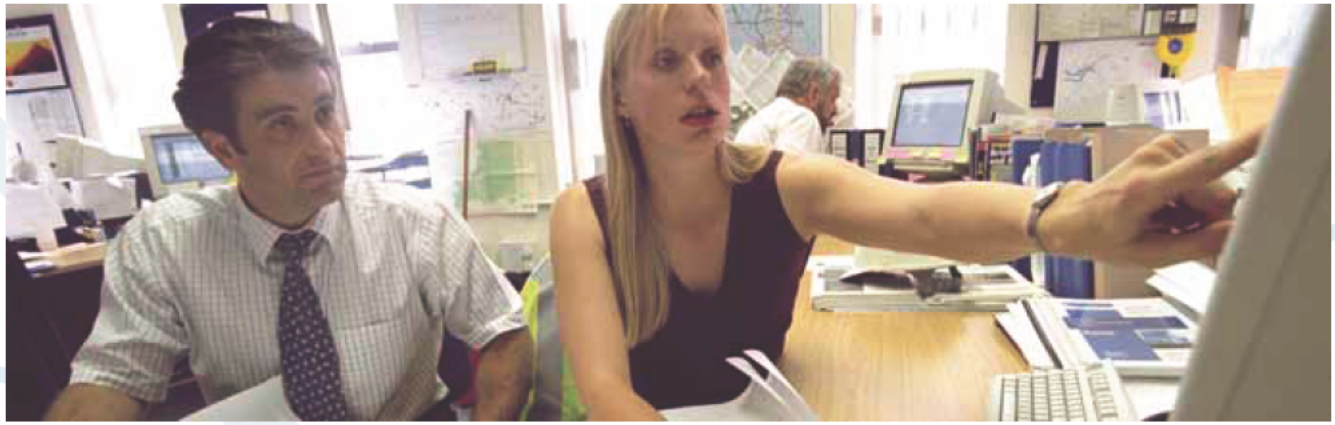
- access observatory related material such as meeting dates, agendas, presentations and notes
- access sub-regional LMI reports
- download additional research material
- comment/feedback to the CSN Team.

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**

For enquiries relating to the work of the CSN, please contact Sandra Lilley, CSN Manager, at: **sandra.lilley@cskills.org**



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For more information about the Construction Skills Network, contact:
Sandra Lilley
CSN Manager
0300 456 7933
sandra.lilley@cskills.org

East Midlands office:
Belton Road Industrial Estate
20 Prince William Rd
Loughborough
LE11 5TB