2012–2016 Construction Skills Network East of England

LABOUR MARKET INTELLIGENCE

Experian™

construction skills

Contents

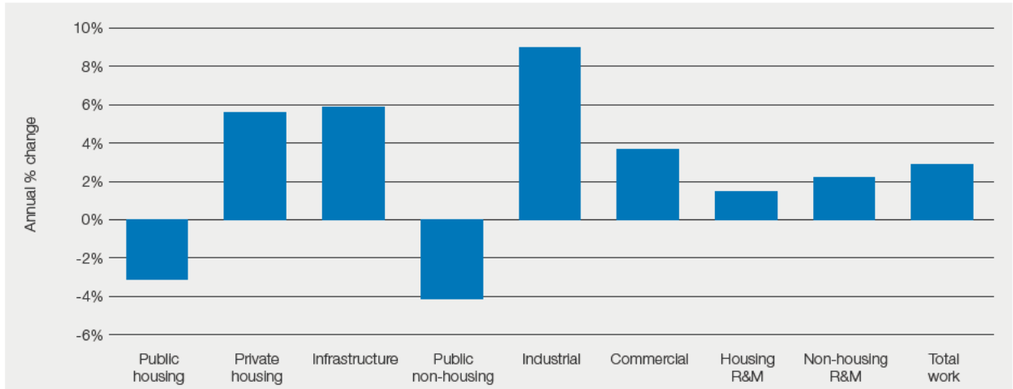
Tables and Charts

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. Summary – East of England

Construction output in the East of England is forecast to rise at an average rate of 2.9% per year between 2012 and 2016, the strongest of all the regions and devolved nations. New work output is expected to see growth of 3.7% per year on average, compared with 1.8% for the repair and maintenance (R&M) sector. Total construction employment in the region is expected to decline to 224,000 in 2012 before rising by 6% to total 237,580 in 2016. However, this is still 8% lower than 2006's peak.

Annual average construction output growth 2012-2016 - East of England



Source: CSN, Experian
ref. CSN Explained, Section 5.3, Note 2

The private housing sector is expected to see growth in each year of the forecast period

Key findings

There are a number of large infrastructure projects in the region currently on site or due to get underway during the forecast period. Construction on the London Gateway port project is ongoing and it is due to open in the final quarter of 2013, along with the distribution and logistics park, which will drive growth in the industrial construction sector. Linked to the ports development is the £600m Gateway Energy Centre, with construction expected to start in 2013. Work on the new nuclear power station at Sizewell in Suffolk is due to start towards the end of the forecast period.

Despite the boost to the region's industrial construction sector from the distribution and logistics park, output is still only expected to be 57% of its 2006 level in 2016, reflecting the marked declines in output in the sector during the recession.

The private housing sector is expected to see growth in each year of the forecast period, as easing credit conditions and improvements in the wider economy should stimulate demand for housing. The outlook for commercial construction in the East of England is also strong. In addition to two PFI health projects in Cambridge, demand for office and retail facilities is expected to strengthen in the next couple of years, encouraging developers to restart work on mothballed developments.

It is not surprising that it is the two public sectors, housing and non-housing, which are expected to fare the worst over the forecast period. However, the East of England was not one of the main beneficiaries of the early waves of the Building Schools for the Future (BSF) programme and thus its public non-housing sector does not have as far to fall as some other English regions. The substantial funding cuts for the public housing sector across England will contribute to an average annual output decline of 3.1% in the sector, although it is expected that there will be some growth in the sector towards the end of the forecast period as housing associations are likely to find it easier to access credit.

Construction employment in the East of England is expected to continue to decline in the short term, returning to growth in 2013 and rising at an average rate of 0.9% per year, slightly above the UK average (0.6%). In absolute terms, wood trades and interior fit-out (2,210), electrical trades and installation (1,900) and surveyors are expected to see the largest increases in employment between 2012 and 2016. However, in percentage terms, the strongest rises are forecast for surveyors (35%) and architects (17%).

The region's ARR of 5,710 is equivalent to 2.5% of base 2012 employment.

Regional comparison 2012-2016

	Annual average % change in output	Growth in total employment	Total ARR
North East	0.5%	4,840	2,170
Yorkshire and Humber	0.0%	-6,370	2,630
East Midlands	1.0%	-1,800	3,460
East of England	2.9%	10,660	5,710
Greater London	2.5%	16,560	1,790
South East	2.2%	28,020	4,520
South West	2.2%	9,560	7,220
Wales	1.3%	11,590	4,280
West Midlands	-1.1%	-7,360	3,730
Northern Ireland	2.1%	3,880	1,170
North West	-0.9%	-6,990	5,080
Scotland	1.3%	13,520	4,480
UK	**1.4%**	**76,110**	**46,240**

Source: CSN, Experian
ref. CSN Explained, Section 5.3, Note 2

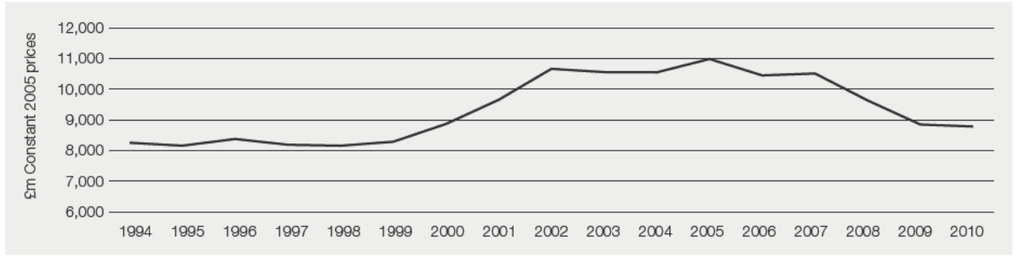
2. The outlook for construction in the East of England

2.1 Construction output in the East of England – overview

In 2010, total construction output in the East of England fell by 1% to £8.8bn, in 2005 prices. This was a third successive year of decline and took output in the region to its lowest level since 1999.

On a sector-by-sector basis, output rose across all the new work sectors in 2010, with the exception of the commercial one where it was unchanged from the previous year. Growth was strongest in the infrastructure sector where output rose by 36%, but the public (31%) and private (25%) housing sectors also saw strong growth. It was the dramatic decline in non-housing repair and maintenance (R&M) work which led to the fall in overall construction output. Non-housing R&M output dropped by 43% in 2010, taking it to its lowest level since 1993.

Construction output 1994-2010 - East of England



Source: ONS
ref. CSN Explained, Section 5.3, Note: 1

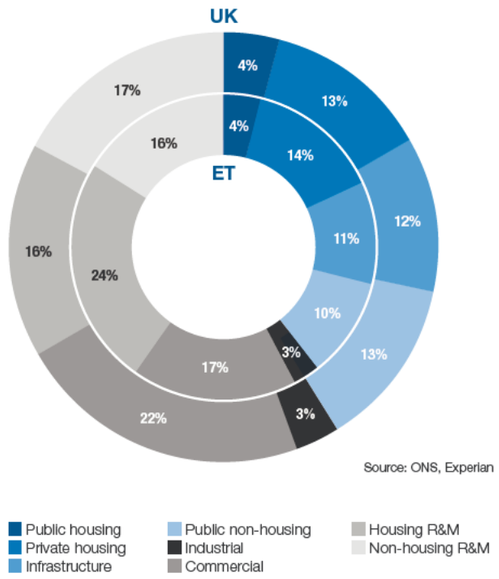
2.2 Industry structure

The diagram, Construction Industry structure 2010 – UK vs. East of England, illustrates the sector breakdown of construction in the East of England compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

There are a number of substantial differences in the structure of the East of England's construction sector compared with the UK as a whole. The main difference is the relatively large size of the housing R&M sector in the region, which accounts for one-quarter of total construction output compared with a national figure of 16%. The marked decline in non-housing R&M output in 2010 means that the sector now accounts for a slightly smaller proportion (16%) of construction output than the national average (17%).

The commercial sector in the East of England takes a smaller share (17%) of total construction output than it does nationally (22%). The public non-housing sector accounts for 10% of construction output in the region, smaller than the 13% in the UK as a whole.

Construction industry structure 2010 - UK vs. East of England



Source: ONS, Experian

Economic structure - East of England (£ billion, 2006 prices)

Selected sectors	Actual	Forecast Annual % change, real terms					
	2010	2011	2012	2013	2014	2015	2016
Public services	23	0.0	0.0	0.6	0.5	0.7	0.9
Financial and business services	25	1.6	2.9	3.6	3.6	3.8	3.7
Transport and communications	7	1.4	2.6	3.4	3.2	3.2	3.0
Manufacturing	12	2.0	3.7	4.3	3.2	2.4	1.6
Distribution, hotels and catering	16	0.9	0.6	1.7	1.9	2.2	2.6
Total Gross Value Added (GVA)	**101**	**0.6**	**1.6**	**2.5**	**2.5**	**2.6**	**2.5**

Source: Experian
ref. CSN Explained, Section 5.3, Note 3

2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2012 – 2016) provides an indication of the construction sectors in which demand is likely to be strongest.

2.4 Economic structure

GVA in the East of England returned to growth in 2010, rising by 2.3% to total £101.2bn, in 2006 prices. In contrast, UK GVA saw weaker growth of just 1.8%. However, the region's share of national GVA remained broadly unchanged at 8.5% in 2010.

In 2010, the financial and business services sector remained the largest in the region, taking a 24.5% of total GVA. The sector has seen a steady increase in its relative importance in the region's economy and overtook public services as the largest sector in 2005. In 2010, financial and business services output in the East of England rose by 7%.

The public services sector saw its share of the East of England's GVA remain unchanged at around 22% in 2010. Output rose by just 1% during the year.

The region's GVA is expected to have risen by 0.6% in 2011, a second successive year of growth. This rate of growth is in line with the UK average.

2.5 Forward looking economic indicators

GVA in the East of England is forecast to increase in each year of the period to 2016, with the region's annual average growth rate of 2.3% stronger than the UK figure of 1.8%. Growth is expected to be strongest in the financial and business services sector with an average increase of 3.5% per year with transport and communication (3.1%) and manufacturing (3%) also forecast to fare well.

Real household disposable incomes in the East of England are expected to have seen a second successive year of decline in 2011, as is the case across the UK as a whole. High inflation, weak wage growth and a number of tax increases have all contributed to the recent squeeze on incomes. Weak growth in disposable incomes is forecast for 2012 as inflation eases and the pace of increase will strengthen over the period to 2016.

In 2010, the average house price in the East of England was around £227,000, according to the Department for Communities and Local Government's (CLG) mix-adjusted measure. This was 9.1% higher than in 2009. Looking forward, house prices are expected to have declined marginally in 2011 before rising over the remaining years of the forecast period.

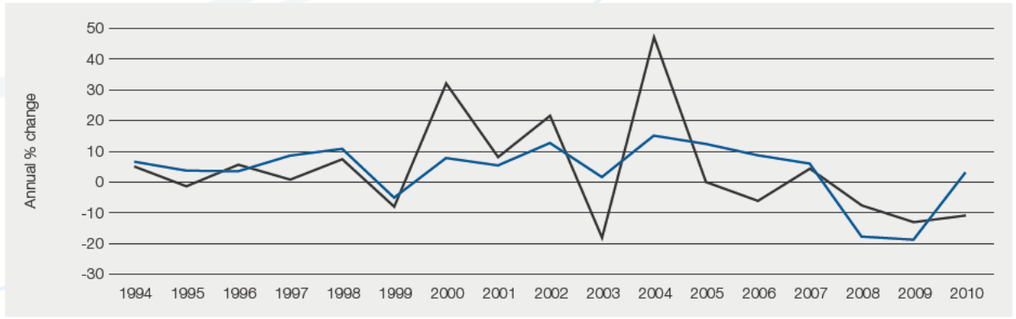
The working age population in the region is likely to increase steadily over the forecast period, rising from 59.3% in 2011 to 61.5% in 2016.

Economic indicators - East of England (£ billion, 2006 prices - unless otherwise stated)

	Actual	Forecast Annual % change, real terms					
	2010	2011	2012	2013	2014	2015	2016
Real household disposable income	79	-1.9	0.9	2.7	2.8	3.5	3.8
Household spending	82	-1.1	0.5	2.1	2.5	2.7	2.8
Working age population (000s and as % of all)	3461	59.3%	59.4%	60.0%	60.6%	61.1%	61.5%
House prices (£)	227078	-0.3	1.0	3.2	3.6	3.5	3.6
LFS unemployment (millions)	0.20	1.8	8.2	-7.0	-7.6	-7.8	-10.9

Source: ONS, DCLG, Experian

New construction orders growth 1994-2010 - East of England vs. GB



Source: ONS
ref. CSN Explained, Section 5.3, Note 4

2.6 New construction orders – overview

New construction orders in the East of England declined for a third consecutive year in 2010, falling by 11% to a 7-year low of £4.3bn, in current prices.

The private housing and commercial sectors were the only two to see new orders rise in 2010, increasing by 76% and 21%, respectively, although this followed substantial declines for both in 2008 and 2009. In contrast, infrastructure new orders dropped by 61% from its record high in the previous year.

Industrial new orders also saw a substantial fall, falling by 28% to £150m. This was a third successive year of double-digit declines and took new orders to just 16% of 2005's record high. Public housing new orders fell for a third successive year, dropping by 12% to £273m (current prices), the lowest annual outturn since 2004.

2.7 New construction orders – current situation

In the six months to June 2011 total construction orders in the East of England totalled just over £2bn in current prices, 14% lower than in the corresponding period of 2010. However new orders were 5% higher compared with the previous half year.

Industrial construction new orders rose by 12%, year-on-year, in the first half of 2011 and were up by 27% compared with the previous half year. However, new orders in the sector are still substantially lower than the levels seen earlier in the decade and thus increases are magnified in percentage terms. The private housing sector was the only other one to see an increase in new orders in the six months to June 2011, rising by 7% from a year earlier.

In contrast, public non-housing new orders dropped by 38% from a year earlier, not particularly surprising considering the substantial government spending cuts that have been announced. Infrastructure new orders declined by 18% on an annual basis in the six months to June 2011, whilst public housing new orders were 5% lower than in the corresponding period of the previous year.

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

	Actual	Annual % change				
	2010	2006	2007	2008	2009	2010
Public housing	273	20.7	5.6	-18.7	-6.1	-12.4
Private housing	1157	-5.0	-3.0	-37.7	-23.8	76.4
Infrastructure	593	-21.5	0.0	183.2	9.8	-61.0
Public non-housing	1017	-14.5	43.8	5.7	7.3	-16.4
Industrial	150	-31.6	4.4	-55.0	-31.5	-27.9
Commercial	1086	8.9	-4.2	-23.1	-41.7	20.6
Total new work	**4,276**	**-6.4**	**4.2**	**-7.9**	**-13.4**	**-11.2**

Source: ONS
ref. CSN Explained, Section 5.3, Note 4

2.8 Construction output – short-term forecasts (2012–2013)

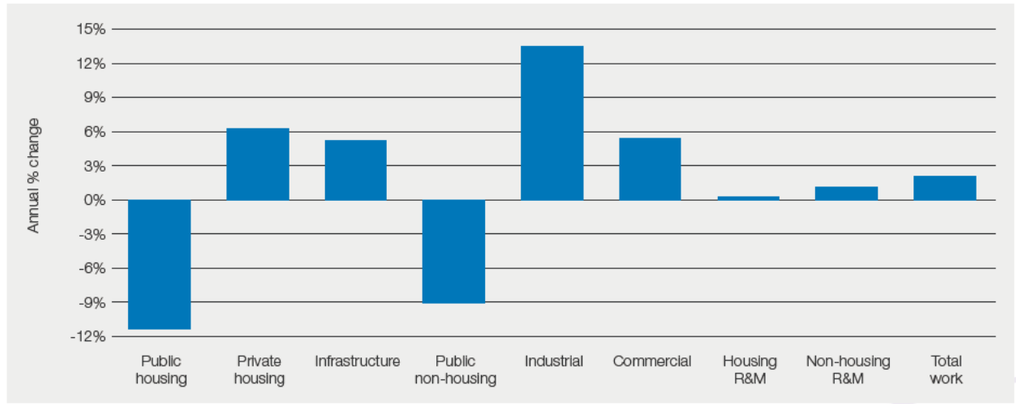
Regional Office for National Statistics (ONS) output statistics are published in current prices and are thus inclusive of any inflationary effect. At the time of writing, ONS construction output statistics were only available for the first two quarters of 2011.

Construction output in the East of England rose by 10% on an annual basis in the first half of 2011 to £5.6bn (current prices). However this was 1% lower half-year-on-half-year. Growth was stronger in R&M where output rose by 16% from the corresponding period of 2010 and by 1% from the previous half year. New work output, on the other hand, grew by a weaker 5% on an annual basis.

The construction sector in the East of England is expected to decline again in 2011 before stagnating in 2012. It is forecast to return to growth in 2013. The outlook for the new work sector is more buoyant than for R&M, with growth rates averaging 3.2% and 0.6% per year, respectively, in 2012 and 2013.

The strongest growth is expected to be in the industrial sector with an average increase of 13.5% over the 2012-2013 period. Work is due to get underway on the logistics and distribution facilities surrounding the London Gateway project during the forecast period and this will stimulate growth in the industrial sector.

Annual average construction output growth 2012-2013 - East of England



Source: Experian
ref. CSN Explained, Section 5.3, Notes 1 and 2

Construction output - East of England (£ million, 2005 prices)

	Actual	Forecast annual % change			Annual average
	2010	2011	2012	2013	2012-13
Public housing	351	-19%	-20%	-2%	-11.4%
Private housing	1,253	2%	8%	4%	6.2%
Infrastructure	975	12%	2%	8%	5.2%
Public non-housing	925	-21%	-12%	-6%	-9.1%
Industrial	239	4%	10%	17%	13.5%
Commercial	1,542	-5%	2%	9%	5.4%
New work	**5,285**	**-3%**	**1%**	**6%**	**3.2%**
Housing R&M	2,142	-8%	-1%	1%	0.1%
Non-housing R&M	1,408	12%	1%	1%	1.1%
Total R&M	**3,550**	**0%**	**0%**	**1%**	**0.6%**
Total work	**8,835**	**-2%**	**0%**	**4%**	**2.1%**

Source: Experian
ref. CSN Explained, Section 5.3, Notes 1 and 2

2.9 Construction output – long-term forecasts (2012–2016)

Over the longer term, construction output in the East of England is expected to rise at an average rate of 2.9%, making it the best performing region in the UK. New work output in the region is forecast to rise at an average rate of 3.7% per year, substantially stronger than the 1.8% expected for the R&M sector.

On a sector basis, the strongest performance is expected from the industrial sector over the 2012-16 period, with average annual growth of 9% per year. This partly reflects the extent to which output in the sector has fallen during the recession and output in 2016 is expected to still be only 57% of its 2006 level. However, the sector will benefit from the development of distribution and logistics facilities around the London Gateway port project.

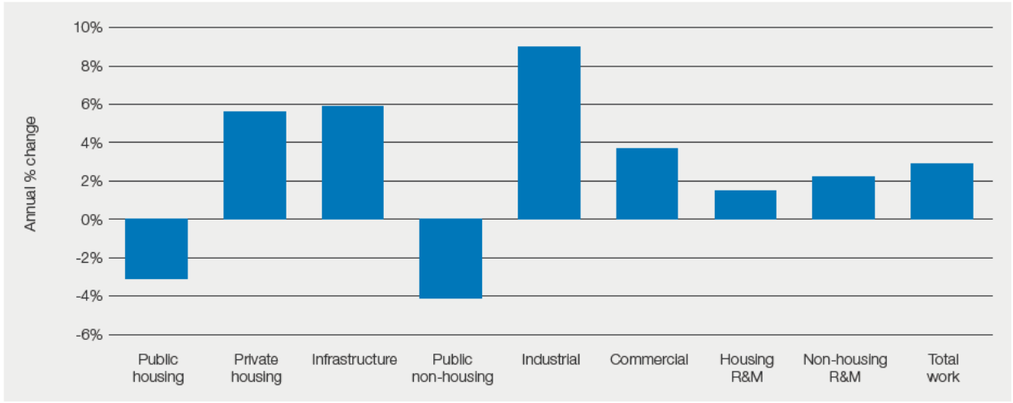
The infrastructure and private housing sectors are also expected to fare well, with average growth rates of 5.9% and 5.6% per year, respectively, over the 2012 to 2016 period. The former will benefit from work on the London Gateway port in Essex, which is due to be opened in the final quarter of 2013. The £600m Gateway Energy Centre will be able to supply all the necessary energy for the port and logistics park, in addition to exporting energy to the national grid, and work is due to start during the forecast period. Preliminary work on the new nuclear power station at Sizewell in Suffolk is due to start in 2015. The private housing sector will benefit from a gradual improvement in credit conditions and strengthening in the wider economy which will stimulate demand.

Commercial construction output in the East of England is projected to rise by 3.7% per year on average, between 2012 and 2016. Work is expected to get underway on PFI hospital projects at Addenbrookes and Papworth in Cambridge during the forecast period, with 3-4 year build times for each. In addition, work should finally start on the much-delayed SnOasis development, a leisure and hotel complex near Ipswich in the next few months, and the winter sports centre is due to open by the end of 2014.

In contrast the two public sectors, public housing and public non-housing, are expected to see output decline on average over the forecast period. The public non-housing sector in the East of England did not benefit as much from the public investment programmes, such as Building Schools for the Future, and thus output has less far to fall than in some other English regions. The public non-housing sector is expected to see output decline at an average rate of 4.1% per year, a substantially weaker rate than the UK of 9.1%.

The region's public housing sector is expected to see output decline at an average rate of 3.1% per year over the 2012-2016 period, reflecting the substantial cuts to the funding budget for social housing in England. The falls in output in the sector are likely to be towards the beginning of the forecast period, with Registered Social Landlords (RSLs) and Housing Associations expected to find it easier to access private funding for the development of social housing units as credit conditions ease and conditions in the wider economy improve over the next couple of years.

Annual average construction output growth 2012-2016 - East of England



Source: CSN, Experian
ref. CSN Explained, Section 5.3, Note 2

Construction output - East of England (£ million, 2005 prices)

	Estimate	Forecast annual % change					Annual average
	2011	2012	2013	2014	2015	2016	2012-16
Public housing	351	-20%	-2%	1%	5%	3%	-3.1%
Private housing	1,253	8%	4%	6%	6%	4%	5.6%
Infrastructure	975	2%	8%	9%	6%	4%	5.9%
Public non-housing	925	-12%	-6%	-7%	2%	3%	-4.1%
Industrial	239	10%	17%	7%	7%	4%	9.0%
Commercial	1,542	2%	9%	4%	2%	2%	3.7%
New work	**5,285**	**1%**	**6%**	**4%**	**4%**	**3%**	**3.7%**
Housing R&M	2,142	-1%	1%	3%	3%	1%	1.5%
Non-housing R&M	1,408	1%	1%	3%	3%	3%	2.2%
R&M	**3,550**	**0%**	**1%**	**3%**	**3%**	**2%**	**1.8%**
Total work	**8,835**	**0%**	**4%**	**4%**	**4%**	**3%**	**2.9%**

Source: CSN, Experian
ref. CSN Explained, Section 5.3, Notes 2

2.10 Beyond 2016

In addition to the new nuclear power station in Sizewell in Suffolk, which is due to start towards the end of 2015, construction is expected to start on an additional nuclear power station in Bradwell in Essex in 2017. There are also a number of offshore wind farms which are currently planned in the region, and while construction is due to start on some of these during the current forecast period it is likely to continue beyond 2016.

In addition to an increase in energy projects, there is also an expectation that retrofitting of energy efficiency measures and microgeneration work will be important drivers of the East of England's construction sector post-2016. Rising energy prices and increased concern regarding carbon reduction targets is likely to drive demand for this retrofitting work.

3. Construction employment forecasts for the East of England

3.1 Total construction employment forecasts by occupation

The table presents actual construction employment (SICs 41-43, 71.1, and 74.9) in the East of England for 2010, the forecast total employment in 26 occupations and in the industry as a whole between 2012 and 2016. A full breakdown of occupational groups is provided in Section 5 of CSN Explained.

Total construction employment in the East of England totalled 226,950 in 2010 and is projected to decline in each year to 2013 before returning to growth. Construction employment in the region is expected to total 237,580 in 2015, 5% higher than 2010's level and 6% above 2012's projected outturn.

In 2010, the largest trade occupation in the East of England was wood trades and interior fit-out, accounting for 11.5% of total construction employment in the region. Employment in the occupation is forecast to rise by 8.7% between 2012 and 2016, but the occupation's share of total construction employment will remain largely unchanged from 2010.

In percentage terms, the largest increases are for surveyors (35%), architects (17%) and plasterers and dry liners (14%). However these are not the largest increases in absolute terms due to the relatively small sizes of the occupations. Surveyors and architects are generally required in the early stages of a construction project and therefore are likely to benefit from the construction sector's return to growth earlier than other occupations.

The occupations expected to see the largest increases in employment in absolute terms are wood trades and interior fit-out (2,210), electrical trades and installation (1,900) and surveyors (1,840). The smallest increases are for plant operatives (120), civil engineers (130) and logistics personnel (260).

Total employment by occupation - East of England

	Actual	Forecast	
	2010	2012	2016
Senior, executive, and business process managers	14,030	15,280	17,380
Construction managers	17,970	17,160	16,440
Non-construction professional, technical, IT, and other office-based staff	31,290	31,600	34,010
Wood trades and interior fit-out	26,030	25,280	27,490
Bricklayers	5,530	6,060	5,270
Building envelope specialists	10,860	11,010	10,650
Painters and decorators	11,650	10,470	9,810
Plasterers and dry liners	4,540	4,640	5,290
Roofers	2,430	2,660	2,400
Floorers	4,660	4,620	4,970
Glaziers	2,810	2,950	2,470
Specialist building operatives nec*	5,260	5,750	4,810
Scaffolders	1,290	1,410	1,140
Plant operatives	3,050	3,340	3,460
Plant mechanics/fitters	3,270	3,560	3,250
Steel erectors/structural	2,340	2,420	2,210
Labourers nec*	9,040	8,670	7,630
Electrical trades and installation	19,300	19,490	21,390
Plumbing and HVAC Trades	14,430	13,020	14,470
Logistics	3,170	2,840	3,100
Civil engineering operatives nec*	4,860	5,310	5,830
Non–construction operatives	2,630	2,370	2,660
Civil engineers	2,280	2,060	2,190
Other construction professionals and technical staff	15,740	14,120	19,050
Architects	2,730	2,670	3,130
Surveyors	5,760	5,240	7,080
Total (SIC 41-43)	**200,440**	**199,910**	**206,130**
Total (SIC 41-43, 71.1, 74.9)	**226,950**	**224,000**	**237,580**

Source: ONS, CSN, Experian
ref. CSN Explained, Section 5.3, Notes 5 and 6
NEC* - Not elsewhere classified

3.2 Annual recruitment requirements (ARR) by occupation

The 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. 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.

The annual recruitment requirement (ARR) for the 26 occupations within the East of England's construction industry between 2012 and 2016 is illustrated in the table. The ARR of 5,710 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, excluding training flows.

In absolute terms, the largest ARR is for wood trades and interior fit-out at 1,170, 20.5% of the total. It is an occupation with a presence across a number of sectors, including private housing, which is expected to fare well over the forecast period.

However, in terms of the proportion of base 2012 employment, the highest ARR is for scaffolders (15.6%) and glaziers (13.2%). The ARR for surveyors is also substantial at 9.6% of base 2012 employment.

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 significant retraining.

Non-construction operatives is a diverse occupational group including all of the activities under the SICs 41-43, 71.1, and 74.9 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.

Finally, for certain occupations there will be no appreciable requirement over the forecast period, partly due to the recession creating a 'pool' of excess labour.

Annual recruitment requirement by occupation - East of England

	2012-2016
Senior, executive, and business process managers	600
Construction managers	550
Non-construction professional, technical, IT, and other office-based staff	-
Wood trades and interior fit-out	1,170
Bricklayers	-
Building envelope specialists	-
Painters and decorators	-
Plasterers and dry liners	190
Roofers	190
Floorers	410
Glaziers	390
Specialist building operatives nec*	-
Scaffolders	220
Plant operatives	-
Plant mechanics/fitters	-
Steel erectors/structural	-
Labourers nec*	400
Electrical trades and installation	-
Plumbing and HVAC trades	80
Logistics	<50
Civil engineering operatives nec*	210
Non–construction operatives	-
Civil engineers	120
Other construction professionals and technical staff	470
Architects	160
Surveyors	510
Total (SIC 41-43)	**4,450**
Total (SIC 41-43, 71.1, 74.9)	**5,710**

Source: CSN, Experian
ref. CSN Explained, Section 5.3, Notes 5 and 6
NEC* - Not elsewhere classified

4. Comparisons across the UK

The North West (-0.9%) along with the West Midlands (-1.1%) are the only regions projected to see a decline in their annual average growth rate over the next five years. For the UK the yearly growth rate is 1.4%. The best performing region is expected to be the East of England with a rate of 2.9%.

Over the forecast period, we seem to be seeing the emergence of a north/south divide, with the greater south east (the South East, Greater London and the East of England) faring best, and the northern English regions faring worst. In between are the devolved nations, who, although they have their overall expenditure limits set by Westminster, through their devolved administrations have more control on what it will be spent than the English regions. Already the devolved administrations in Scotland and Northern Ireland have redirected a proportion of resource funding to the capital expenditure account, which should benefit the construction industry in these areas.

There are a number of reasons for the emergence of this north/south divide. The first is the more constrained outlook for public expenditure going forward. While declines in public housing activity are expected to be fairly similar across the board, with one or two exceptions, the profile for the public non-housing sector is very different. Output in this sector hit a new historic high in 2010 and since 2007 had grown by over 72% in real terms, primarily driven by work under the BSF programme. The East of England was not one of the main beneficiaries of the programme and thus is expected to see a weaker fall in public non-housing work over the forecast period than elsewhere in the UK.

Second, major infrastructure projects are tending to be greater south-east centric at present. Infrastructure activity in the UK is at a historic high, exceeding its previous peak in 1993 during the building of the Channel Tunnel. This level of activity is being driven largely by projects in the south-east corner of England – Crossrail, Thameslink, M25 widening, London Gateway port, to name a few. That is not to say that there are not projects elsewhere, there are, but they are tending to be of a lesser size. In addition to the London Gateway port in the East of England, work is due to start on the first of the new nuclear power stations in the region at Sizewell in 2015.

Third, growth in the commercial sector is likely to be stronger in the greater south east than elsewhere in England. The offices market has already been strengthening in London and along the M4 corridor/Thames Valley, while excess capacity issues remain a problem across many regional centres. The northern English regions also have many currently mothballed retail and leisure developments for which it is difficult to see an economic imperative to restart, at least in the short term.

Although the East of England is expected to see the strongest growth in output across the UK, it is expected to see average annual employment growth of just 0.9%, only slightly stronger than the UK average (0.6%). This is largely due to the relative strength of the new work compared to the more labour-intensive R&M one. Wales is predicted to have the strongest growth in employment, despite only moderate growth in output. That is because most of its growth is focussed in the more labour intensive repair and maintenance sectors. Not surprisingly, employment growth is also stronger than the UK average in the South East, Greater London and the South West.

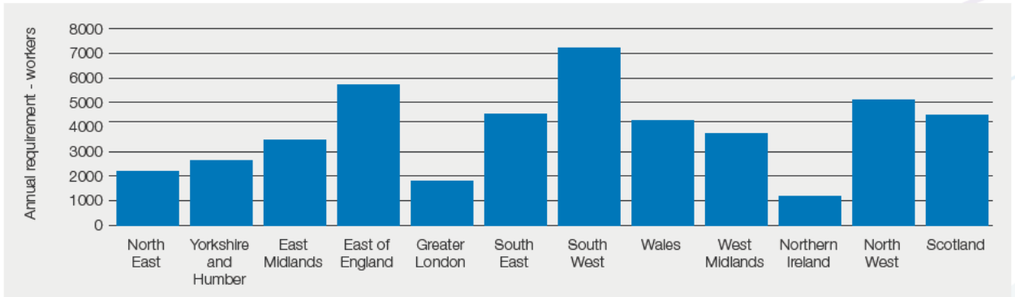
The East of England's ARR as a percentage of 2012 employment, at 2.5% is a little stronger than the UK average of 1.9%.

Over the longer term, construction output in the East of England is expected to rise at an average rate of 2.9%, **making it the best performing region in the UK.**

Annual average output growth by region 2012-2016

Source: CSN, Experian
ref CSN Explained, Section 5.3, Note 2

Annual recruitment requirement (ARR) by region 2012-2016



Source: CSN, Experian

Construction employment in the region is expected to **total 237,580 in 2015, 5% higher** than 2010's level

5. CSN explained

This appendix provides further details and clarification of some of the points covered in the report.

Section 5.1 gives an overview of the underpinning methods that are used by the CSN, working in partnership with Experian, to produce the suite of reports at both a UK, national and regional level.

Section 5.2 provides a glossary to clarify some of the terms that are used in the reports, while section 5.3 has some further notes that relate to the data sources that are used for the various charts and tables. Section 5.3 also outlines what is meant by the term footprint, when talking about the areas of responsibility that lie with a Sector Skills Council.

Section 5.4 explains the sector definitions used within the report and provides examples of what is covered in each.

Section 5.5 gives a detailed breakdown of the 26 occupational groups into the individual standard occupational classification (SOC) codes that are aggregated to provide the employment and recruitment requirement.

Section 5.6 then concludes by giving details about the range of LMI reports, the advantages of being a CSN member and the contact details should people be interested in joining.

5.1 CSN 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 once a year and sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN are a number of forecasting models which generate forecasts of employment requirements within the industry for a range of occupational groups. The models are designed and 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 models 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 models, which are 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 public funding agencies, Further Education, Higher Education and employer 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 models are dynamic and reflect the general UK economic climate at any point in time. To generate the labour demand, the models make use of a set of specific statistics for each major type of work 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:

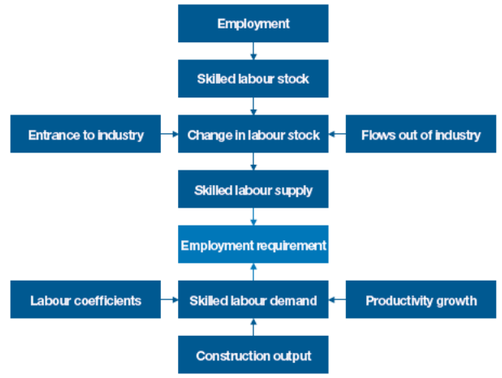
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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.



5.2 Glossary of terms

- **Building envelope specialists** – any trade involved with the external cladding of the building other than bricklaying, e.g. curtain walling.
- **Demand** – demand is calculated using construction output data from the Office for National Statistics (ONS) and the Department of Finance and Personnel Northern Ireland (DFP), along with vacancy data from the National Employers Skills Survey, from the Department for Education and Skills. These data sets are translated into labour requirements by trade by using a series of **coefficients** to produce the labour demand that relates to the forecasted output levels.
- **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.
- **Coefficients** – To generate the labour demand, the model makes use of a set of specific statistics for each major type of work to determine employment, by trade or profession, based upon the previous years' supply. In essence this is the number of workers of each occupation/trade to produce £1m of output across 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**.
- **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.

5.3 Notes and footprints

Notes

1 Except for Northern Ireland, output data for the English regions, Scotland and Wales 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 2005 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

ConstructionSkills is responsible for SIC 45 Construction and part of SIC 74.2 Architectural and Engineering activities and related technical consultancy.

The table summarises the SIC codes (2003) 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 completion
	45.5	Renting of construction or demolition equipment with operator
	74.2*	Architectual and engineering activities and related technical consultancy

* AssetSkills has a peripheral interest in SIC 74.2

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 shares an interest with SummitSkills in SIC 45.31 Installation of wiring and fittings and SIC 45.33 Plumbing. 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.

AssetSkills has a peripheral interest in SIC 74.2.

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.

5.4 Definitions: types and examples of construction work

Public sector housing - local authorities and housing associations, new towns and government departments

Housing schemes, old people's homes and the provision within housing sites of roads and services for gas, water, electricity, sewage and drainage.

Private sector housing

All privately owned buildings for residential use, such as houses, flats and maisonettes, bungalows, cottages and the provision of services to new developments.

Infrastructure - public and private

Water

Reservoirs, purification plants, dams, water works, pumping stations, water mains, hydraulic works etc.

Sewerage

Sewage disposal works, laying of sewers and surface drains.

Electricity

Building and civil engineering work for electrical undertakings such as power stations, dams and other works on hydroelectric schemes, and decommissioning of nuclear power stations, onshore wind farms.

Gas, communications, air transport

Gas works, gas mains and gas storage; post offices, sorting offices, telephone exchanges, switching centres etc.; air terminals, runways, hangars, reception halls, radar installations.

Railways

Permanent way, tunnels, bridges, cuttings, stations, engine sheds etc., signalling and other control systems and electrification of both surface and underground railways.

Harbours

All works and buildings directly connected with harbours, wharves, docks, piers, jetties, canals and waterways, sea walls, embankments and water defences.

Roads

Roads, pavements, bridges, footpaths, lighting, tunnels, flyovers, fencing etc.

Public non-residential construction[1]

Factories and warehouses

Publicly owned factories, warehouses, skill centres.

Oil, steel, coal

Now restricted to remedial works for public sector residual bodies.

Schools, colleges, universities

State schools and colleges (including technical colleges and institutes of agriculture); universities including halls of residence, research establishments etc.

Health

Hospitals including medical schools, clinics, welfare centres, adult training centres.

Offices

Local and central government offices, including town halls, offices for all public bodies except the armed services, police headquarters.

Entertainment

Theatres, restaurants, public swimming baths, caravan sites at holiday resorts, works and buildings at sports grounds, stadiums, racecourses etc. owned by local authorities or other public bodies.

Garages

Buildings for storage, repair and maintenance of road vehicles, transport workshops, bus depots, road goods transport depots and car parks.

Shops

Municipal shopping developments for which the contract has been let by a Local Authority.

Agriculture

Buildings and work on publicly financed horticultural establishments; fen drainage and agricultural drainage; veterinary clinics.

Miscellaneous

All work not clearly covered by any other headings, such as fire stations, police stations, prisons, reformatories, remand homes, civil defence work, UK Atomic Energy Authority work, council depots, museums, libraries.

Private industrial work

Factories, warehouses, wholesale depots, all other works and buildings for the purpose of industrial production or processing, oil refineries, pipelines & terminals, concrete fixed leg oil production platforms (not rigs); private steel work; all new coal mine construction such as sinking shafts, tunnelling, etc.

[1] Where contracts for the construction or improvement of non-residential buildings used for public service provision, such as hospitals, are awarded by private sector holders of contracts awarded under the Private Finance Initiative, the work is classified as 'private commercial'.

Private commercial work[2]

Schools and universities

Schools and colleges in the private sector, financed wholly from private funds.

Health

Private hospitals, nursing homes, clinics.

Offices

Office buildings, banks.

Entertainment

Privately owned theatres, concert halls, cinemas, hotels, public houses, restaurants, cafés, holiday camps, swimming pools, works and buildings at sports grounds, stadiums and other places of sport or recreation, youth hostels.

Garages

Repair garages, petrol filling stations, bus depots, goods transport depots and any other works or buildings for the storage, repair or maintenance of road vehicles, car parks.

Shops

All buildings for retail distribution such as shops, department stores, retail markets, showrooms, etc.

Agriculture

All buildings and work on farms, horticultural establishments.

Miscellaneous

All work not clearly covered by any other heading, e.g. exhibitions, caravan sites, churches, church halls.

New work

New housing

Construction of new houses, flats, bungalows only.

All other types of work

All new construction work and all work that can be referred to as improvement, renovation or refurbishment and which adds to the value of the property.[3]

Repair and maintenance

Housing

Any conversion of, or extension to any existing dwelling and all other work such as improvement, renovation, refurbishment, planned maintenance and any other type of expenditure on repairs or maintenance.

All other sectors

Repair and maintenance work of all types including planned and contractual maintenance.[4]

[2] Where contracts for the construction or improvement of non-residential buildings used for public service provision, such as hospitals, are awarded by private sector holders of contracts awarded under the Private Finance Initiative, the work is classified as 'private commercial'.

[3] Contractors reporting work may not always be aware of the distinction between improvement or renovation work and repair and maintenance work in the non-residential sectors.

[4] Except where stated, mixed development schemes are classified to whichever sector provides the majority (i.e. over 50%) of finance.

5.5 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

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, 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
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
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

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

5.6 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, enquiries relating to the work of the CSN, or to register your interest in joining the CSN as a member, please contact us at:
csn@cskills.org

For more information about the
Construction Skills Network, contact
Lee Bryer
Research and Development
Operations Manager
0344 994 4400
Lee.bryer@cskills.org

http://www.cskills.org/contact-us/offices.aspx

Cskills website
http://www.cskills.org/

CSN webpage
http://www.cskills.org/supportbusiness/businessinformation/csn/index.aspx

Alliance Sector Skills Councils