

Construction Skills Network Greater London

LABOUR MARKET INTELLIGENCE 2009–2013



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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 Greater London economy

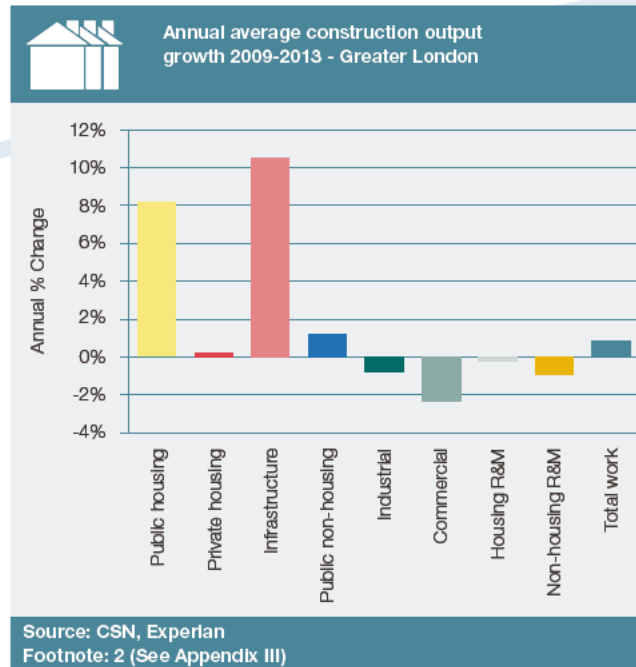
- The Greater London economy was worth a little under £213bn in 2007, equivalent to 19% of the UK total.
- Financial and business services dominate the Greater London economy, accounting for more than half of the gross value added (GVA).
- The regional economy is forecast to grow at an annual average rate of 1.5% between 2009 and 2013. This is faster than most UK regions, with the exception of the South East and Northern Ireland and on par with the West Midlands. Growth is underpinned by robust expansion in financial and business services, despite the sector's current problems.

1.2 Construction output in Greater London

- Worth £13.2bn in 2007, in 2000 prices, construction output in Greater London accounts for approximately 16% of the UK total.
- Construction output is forecast to grow at an annual average rate of 0.8% between 2009 and 2013 for the region.
- Infrastructure and public housing are both expected to grow robustly over the forecast period. Schemes such as Thameslink, the Olympic Games and Crossrail are projected to have a sizeable impact.

1.3 Construction employment in Greater London

- Total construction employment of 341,150 in 2007 in Greater London is forecast to fall to 335,830 in 2009 but then increase to 347,940 in 2013.
- To meet demand in the 2009–2013 period, after taking into account those entering the industry other than from training and those leaving, 6,030 new workers will be required to join the industry each year.
- The largest annual recruitment requirements (ARR) are expected to be for wood trades and interior fit-out and painters and decorators.



 Regional comparison 2009-2013

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

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

The Greater London economy was worth a little under **£213bn in 2007**, equivalent to 19% of the UK total

2 The outlook for construction in Greater London

2.1 Construction output in Greater London – overview

Greater London's construction industry saw a second consecutive year of robust growth in 2007. Output rose by 9% to £13.2bn, in 2000 prices, a significantly steeper increase than the national average of 3%. New construction work in the region increased year-on-year by 15% to £8.1bn in 2007, while repair and maintenance (R&M) saw relatively modest growth of 1% to £5.1bn.

The commercial sector, the largest new work sector by a large margin, experienced growth of 17% in 2007, largely on the back of a booming offices construction market. The public non-housing and infrastructure sectors, the second and third largest in new construction respectively, saw even faster growth in 2007, at around 20% each. However, the greatest rise in 2007 was for the industrial sector which increased by a significant 37%, although as this is by far the smallest sector in Greater London construction, it has little effect on the overall growth rate.

Housing R&M saw a 2% rise in 2007, climbing to £2.2bn. However non-housing R&M for the year experienced a small decline of 1%, following a 4% increase in output in 2006.

Worth

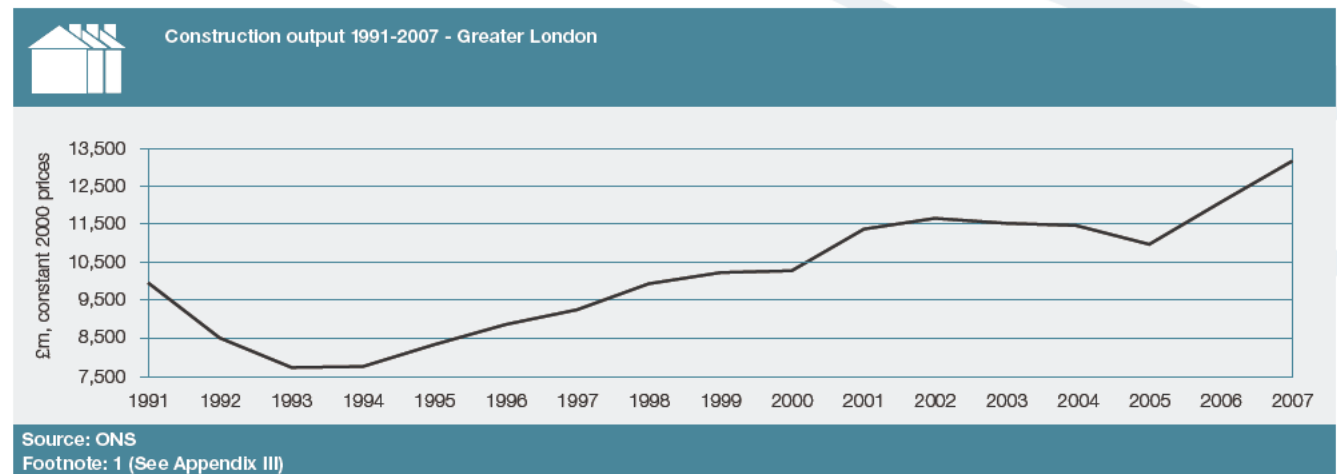
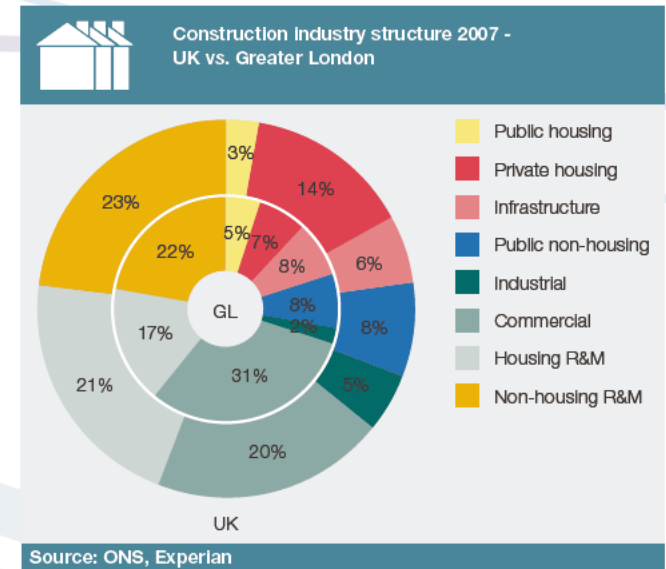
£13.2bn in 2007

at 2000 prices, construction output in Greater London accounts for approximately 16% of the UK total

2.2 Industry structure

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

London's position as a world financial centre makes it unsurprising that the commercial construction sector accounts for a much larger share of construction output in the region than in the UK as a whole, 31% and 20% respectively. This is mainly at the expense of the private housing and housing R&M sectors, which are both significantly smaller in Greater London than in the UK proportionally. The industrial construction sector is also less important in London than across the UK as a whole.



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

In 2007 the Greater London economy was worth close to £213bn, in 2003 prices, 4.3% higher than in 2006 and equivalent to around 19% of the UK total.

Financial and business services dominated the regional economy in 2007, accounting for 52% of the gross value added (GVA). This is much higher than the sector's share for the UK overall, where it constitutes 29%. The importance of the financial and business services sector to the Greater London economy has grown substantially since the beginning of the decade, when it accounted for 43% of total GVA.

Meanwhile public services accounted for 23% of the economy, in-line with the UK overall, whilst distribution, hotels and catering accounted 14% of the GVA in 2007, slightly lower than the UK's 16%. In contrast, manufacturing accounted for only 6% of output in the region, compared to nearly 14% for the UK, hence the small size of the industrial construction market in the capital.



The Evelina Children's Hospital, London SE1

Economic structure - Greater London (£ billion, 2003 prices)							
Selected sectors	Actual	Forecast					
	2007	2008	Annual % change, real terms				
		2009	2010	2011	2012	2013	
Public services	49	0.3	0.2	0.8	1.4	1.4	1.3
Financial and business services	111	2.4	1.9	1.7	4.4	5.2	5.5
Transport and communications	20	3.3	0.0	2.3	2.3	1.9	1.9
Manufacturing	12	1.9	3.3	0.4	1.0	0.6	0.5
Distribution, hotels and catering	30	2.2	0.7	1.9	2.4	2.1	2.0
Total Gross Value Added (GVA)	213	1.2	-1.2	1.2	2.3	2.4	2.6

Source: Experian
Footnote: 3 (See Appendix III)

Economic indicators - Greater London (£ billion, 2003 prices - unless otherwise stated)							
	Actual	Forecast					
	2007	2008	Annual % change, real terms				
		2009	2010	2011	2012	2013	
Real household disposable income	121	1.2	1.9	0.9	2.3	2.9	3.0
Household spending	109	2.6	1.2	1.1	2.3	2.5	2.7
Debt:income ratio	1.8	4.8	3.4	1.0	2.4	1.7	0.6
House prices (£'000, current prices)	329	1.2	11.7	1.2	1.9	3.9	4.7
LFS unemployment (millions)	0.27	5.5	31.2	19.6	1.3	5.0	3.1

Source: ONS, DCLG, Experian

2.5 Forward looking economic indicators

The economy in Greater London is forecast to grow at an annual average rate of 1.5% between 2009 and 2013. The region is expected to be among the best performing in terms of growth over the period.

Despite its current problems, the financial and business services sector is forecast to be the main engine of growth in the region over the medium to long term. It should be noted that business services constitutes the larger part of the sector overall and is not expected to suffer the same level of downturn as financial services in the current recession.

After a fall in 2009, growth is predicted to return to household disposable income and consumer spending, although it will not be until 2011 that the rate of increase returns to anything like the long term trend. The debt-to-income ratio is forecast to peak in 2009 at around 1.9 and then fall slowly to just below 1.8 in 2013, a lesser decline than across the UK as a whole.

The Department for Communities and Local Government (DCLG) reported that average house prices in Greater London reached £329,000 in 2007. This was a significant increase of 17% on 2006. House prices in Greater London are currently higher than in any other UK region and the inherent demand pressures in the capital means that they are not expected to fall as much in London as other regions and nations in the current downturn.

2.6 New construction orders – overview

New orders for the construction industry in Greater London rose for the fourth consecutive year in 2007 to £9.1bn (current prices), an increase of 2.5% from the previous year.

In the recent years the region has benefitted from a booming commercial sector. After an increase of 59% in new orders in 2006, the sector saw a relatively small decline of 4.5% to £4.6bn in 2007. Driving the growth in new commercial orders in the capital in recent years has been demand for new office space.

New orders for the remaining sectors in Greater London showed mixed performances in 2007. Public and private housing saw year-on-year declines of 16% and 4%, respectively, whilst the public non-housing sector saw a rise of 58% in 2007 from a year ago.

2.7 New construction orders – current situation

New construction orders for the first three quarters of 2008 in Greater London totalled £6.5bn, in current prices, a decline of 7% from the same period of the previous year.

As is always the case, performance across the sectors was very different. Public non-housing orders increased by 76% in the first nine months of the year to £1.8bn, largely as a result of the letting of a significant number of contracts under the Building Schools for the Future (BSF) programme. In contrast, orders for new commercial construction were down by 28% as developers pull in their horns in the current economic climate.

Perhaps surprisingly, new orders for private housing work in the capital were down only 7.5% in the first three quarters of 2008 compared with the same period of 2007. The fall on the same measure across the UK as a whole was 37%, again reflecting the strong demand pressures inherent in London, in spite of the current economic downturn.

New work construction orders - Greater London
(£ million, current prices)

	Actual		Annual % change			
	2007	2003	2004	2005	2006	2007
Public housing	664	2.6	76.6	17.6	39.3	15.9
Private housing	1,069	7.8	40.6	15.2	32.6	4.0
Infrastructure	1,152	50.1	46.3	3.2	51.7	25.1
Public non housing	1,388	30.1	9.0	3.5	7.2	58.2
Industrial	179	0.8	1.6	19.2	106.0	41.8
Commercial	4,607	30.9	30.7	14.4	59.4	4.5
Total new work	9,059	-15.7	13.6	5.8	47.1	2.5

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.

Total construction output in Greater London performed well in the first three quarters of 2008 to reach £15bn (current prices), up nearly 9% on the same period of the previous year. The new work sector was a little stronger than R&M for the same period with output up by 9% in the former while R&M sector saw an increase of 8%.

Over the short-term, construction output is predicted to decline by around 3% in 2009 before stabilising in 2010. This gives an average annual decline over the two years of 1.4%. The new work sector is expected to fare better than R&M, with an average annual decline between 2009 and 2010 of 0.8% in the former and 2.4% in the latter.

The stronger performance of new work is due to significant growth in the infrastructure and public non-housing sectors. Major works related to the Thameslink project are due to start at Farringdon and Blackfriars stations in 2009, as is work at Heathrow East and activity relating to the redevelopment and expansion of Victoria Underground station should build up a head of steam. The public non-housing sector will benefit from the release of orders under the BSF scheme in the first half of 2008, which now means that four local authority programmes of work are underway in the capital.

Public housing is expected to also fare well with an annual average growth over the short-term period of 7.7%. This is expected to be as a result of private housing developers

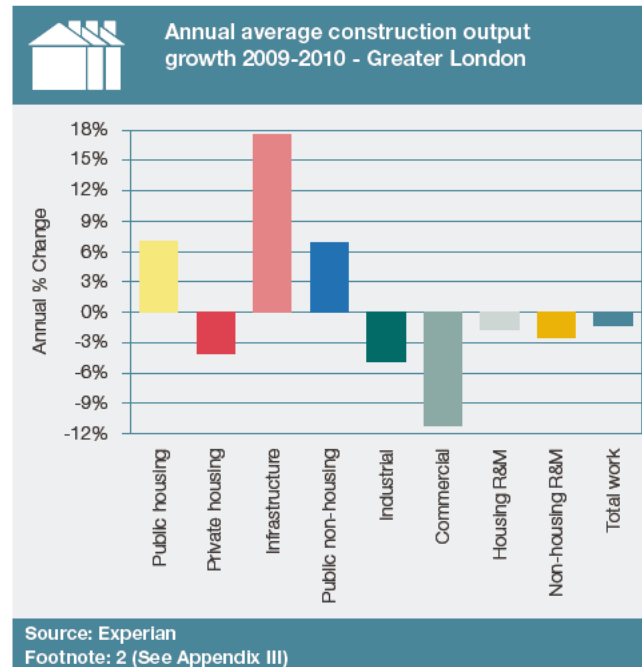
having strong ties with social house building as the Greater London housing market holds up better than that of other regions and nations.

The forecast for private housing and industrial construction, however, is weak over the short term with annual average declines of 4.8% and 5.1%, respectively. While private house building seems to be holding up better in London than elsewhere, it is not immune from the effects scarce lending is having on the housing market.

Commercial construction is also predicted to decline over the 2009 and 2010 period, declining by an average of 11.5% over the two years. Lack of availability of credit, falling

consumer confidence and falling demand for office space in the capital is expected to be driving this. The large presence of financial institutions in the capital, and the turmoil currently taking place within the sector, is expected to drive down demand as companies pull back investment plans in the short term.

The housing and non-housing R&M sectors are also projected to see declines on an annual average basis in 2009 and 2010 of 1.9% and 2.8%, respectively. Private housing R&M is fairly closely tied to consumer spending and pressures on disposable income and employment uncertainty is likely to keep this subdued for some time yet.



Construction output - Greater London (£ million, 2000 prices)

	Actual	Forecast annual % change		Annual average	
	2007	2008	2009	2010	2009-2010
Public housing	653	4%	8%	7%	7.7%
Private housing	905	12%	17%	10%	4.8%
Infrastructure	1,067	19%	15%	21%	17.9%
Public non housing	1,114	51%	15%	0%	7.3%
Industrial	284	40%	12%	2%	5.1%
Commercial	4,089	2%	14%	9%	11.5%
New work	8,112	7%	-3%	1%	-0.8%
Housing R&M	2,201	7%	3%	1%	1.9%
Non housing R&M	2,850	0%	3%	2%	2.8%
Total R&M	5,052	-3%	-3%	-2%	-2.4%
Total work	13,164	3%	-3%	0%	-1.4%

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

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

In the longer-term, total construction output in Greater London is expected to see annual average growth of 0.8% over the forecast period, slightly above that of the UK average of 0.5%. New construction is forecast to grow at a faster rate than R&M, with an average annual increase of 1.7% between 2009 and 2013 in the former but a decline of 0.7% per year in the latter.

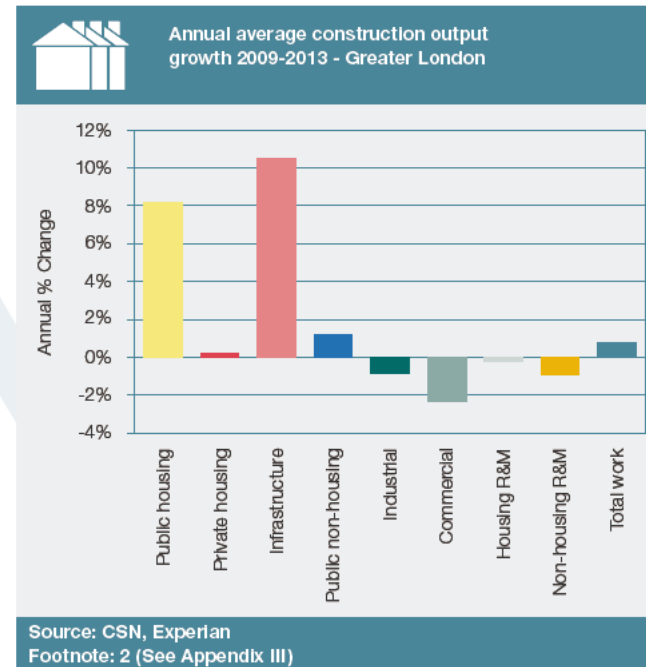
Infrastructure is predicted to be the star performer both over the short and medium term, growing by an average of 10.5% a year between 2009 and 2013. As well as the schemes already mentioned, the biggest transport project since the Channel Tunnel, Crossrail, is due to start on site in earnest in 2010, providing a substantial output stream for the infrastructure sector well beyond the current forecast period.

Demand for affordable housing in the capital will remain very strong over the long term, thus activity in the public housing sector should continue to grow, further boosted by the Mayor of London’s recent announcement of extra funds for the housing sector. Private housing has a much lower average annual growth rate than the public sector between 2009 and 2013, but this disguises fairly robust growth from 2010 onwards as credit conditions ease and prospective house purchasers start to dip their toes into the market again.

The public non-housing sector sees its average annual growth rate slow to 1.2% between the whole of the 2009 to 2013 period as, once all the projects in Waves 1–4 of the BSF programme get on site, there will be little further growth in education construction, particularly as funding for the programme post-Wave 4 is uncertain. Furthermore, construction activity on the Olympic Park should peak in 2010, with a fairly sharp fall-off in output thereafter.

Industrial construction is predicted to see a decline on an average annual basis between 2009 and 2013 of 0.8%. The latest CBI/Experian Regional Trends Survey showed a steep decline in business confidence after an unusually strong performance in the recent past.

The sharp falls in commercial construction output in 2009 and 2010 are unlikely to be compensated for by the recovery predicted from 2011, giving the sector an average annual decline in output of 2.3% over the whole of the forecast period. This sector is very reliant on the health of the offices market in London and it will take time for the next office development cycle to build up a head of steam once economic recovery sets in. The sector will be supported somewhat by PFI health and education projects, such as the 10-year £1bn St Barts scheme, which should continue to generate construction activity for some time to come.





Construction output - Greater London
(£ million, 2000 prices)

	Estimate		Forecast annual % change				Annual average
	2008	2009	2010	2011	2012	2013	2009-2013
Public housing	630	8%	7%	9%	8%	8%	8.2%
Private housing	794	17%	10%	5%	3%	4%	0.2%
Infrastructure	1,271	15%	21%	8%	2%	7%	10.5%
Public non housing	1,680	15%	0%	5%	3%	0%	1.2%
Industrial	171	12%	2%	5%	6%	4%	0.8%
Commercial	4,174	14%	9%	3%	5%	4%	2.3%
New work	8,720	-3%	1%	3%	3%	4%	1.7%
Housing R&M	2,041	3%	1%	0%	1%	1%	0.2%
Non housing R&M	2,856	3%	2%	2%	1%	1%	1.1%
R&M	4,897	-3%	-2%	-1%	1%	1%	-0.7%
Total work	13,617	-3%	0%	2%	2%	3%	0.8%

Source: CSN, Experian

Footnote: 2 (See Appendix III)



3 Construction employment forecasts for Greater London

3.1 Total construction employment forecasts by occupation

The table, Total employment by occupation – Greater London, presents actual construction employment (SIC 45 and 74.2) in Greater London 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.

By 2013 total construction employment in Greater London is forecast to reach around 348,000 when including SIC 45 and 74.2. This is a projected rise of 2% from the total employment level in 2007, and a 3.6% increase on the level predicted for 2009. Of total projected employment in construction in 2013, 295,400 are likely to be in SIC 45 while 52,500 should be in SIC 74.2.

The largest occupational group in 2007 was the non-construction professional, technical, IT, and other office-based staff, which comprised of 12.7% of total construction industry employment in the region. This probably reflects a greater preponderance of major companies' head offices in the Greater London area.

In terms of more construction-specific skills, the largest occupational grouping in the capital is wood trades and interior fit out, accounting for about 10.8% of construction employment in London, roughly in line with the UK average.

The largest annual recruitment requirements are expected to be for painters and decorators, wood trades and interior fit-out

Between 2009 and 2013, the occupations projected to see the largest percentage increase in employment are plasterers and dry liners (9.5%), scaffolders (9.1%) and labourers nec* (8.4%). However in absolute terms, the biggest growth is likely to be for construction managers (2,230).

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 15% of construction professionals in Greater London are classified as civil engineers, 29% as architects and 21% as surveyors in 2007.



Total employment by occupation - Greater London			
	Actual	Forecast	
	2007	2009	2013
Senior, executive, and business process managers	18,310	19,020	20,460
Construction managers	30,270	29,100	31,330
Non construction professional, technical, IT, and other office based staff	43,440	42,270	44,130
Wood trades and interior fit out	36,740	37,050	37,730
Bricklayers	9,240	8,900	8,900
Building envelope specialists	13,850	13,060	13,820
Painters and decorators	20,090	20,640	20,380
Plasterers and dry liners	4,960	4,520	4,950
Roofers	4,580	4,730	4,770
Floorers	4,680	4,630	4,720
Glaziers	3,180	3,230	3,220
Specialist building operatives nec*	7,000	6,560	6,710
Scaffolders	2,350	2,310	2,520
Plant operatives	2,960	2,950	2,880
Plant mechanics/fitters	2,910	2,710	2,830
Steel erectors/structural	2,590	2,580	2,670
Labourers nec*	13,160	12,680	13,750
Electrical trades and installation	23,240	21,990	22,750
Plumbing and HVAC Trades	21,930	20,900	21,670
Logistics	3,780	3,880	3,980
Civil engineering operatives nec*	4,170	4,120	4,080
Non construction operatives	16,620	16,800	17,140
Civil engineers	7,560	8,160	8,580
Other construction professionals and technical staff	18,380	18,070	18,280
Architects	14,600	14,370	14,620
Surveyors	10,560	10,600	11,070
Total (SIC 45)	290,050	284,630	295,390
Total (SIC 45 and 74.2)	341,150	335,830	347,940

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

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 Greater London's construction industry between 2009 and 2013 is illustrated in the table. The ARR of 6,030 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.

The wood trades and interior fit-out (770) profession is expected to have the largest ARR, followed by painters and decorators (630). The largest ARRs tend to be among the largest occupational groupings. However as a percentage of total employment, it is plant mechanics/fitters and plant operators which are most in-demand, representing 11.8% and 9.5% of employment in that year, respectively. This could be a reflection of the strength of the infrastructure sector in London, which is a very capital intensive sector.

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

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

 Annual recruitment requirement by occupation - Greater London	
	2009-2013
Senior, executive, and business process managers	410
Construction managers	170
Non construction professional, technical, IT, and other office based staff	150
Wood trades and interior fit out	770
Bricklayers	470
Building envelope specialists	200
Painters and decorators	630
Plasterers and dry liners	260
Roofers	50
Floorers	<50
Glaziers	130
Specialist building operatives nec*	260
Scaffolders	120
Plant operatives	280
Plant mechanics/fitters	320
Steel erectors/structural	190
Labourers nec*	210
Electrical trades and installation	320
Plumbing and HVAC Trades	130
Logistics	<50
Civil engineering operatives nec*	<50
Non construction operatives	
Civil engineers	370
Other construction professionals and technical staff	210
Architects	170
Surveyors	120
Total (SIC 45)	5,160
Total (SIC 45 and 74.2)	6,030
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.

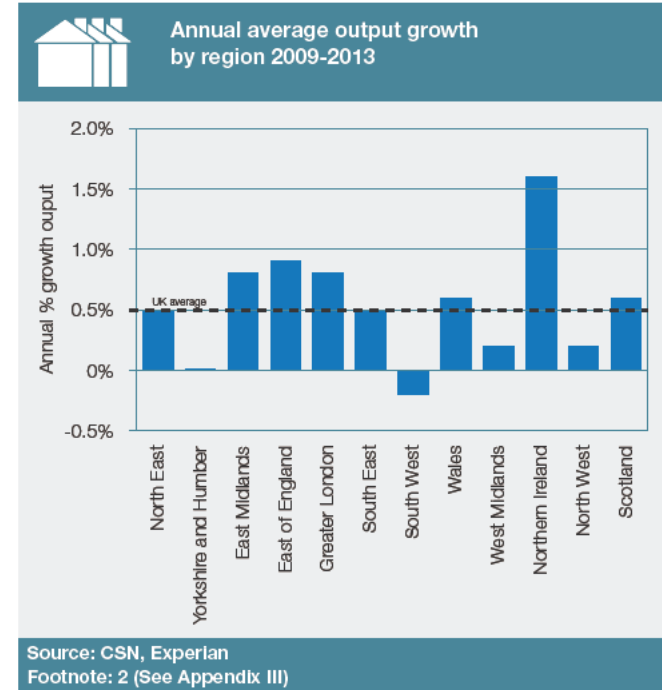
The South West does not benefit from growth in the infrastructure and public non-housing sectors in the way that many other regions and nations do, as there are no major civil engineering projects planned for the region within the forecast period and few local authorities feature in the early phases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

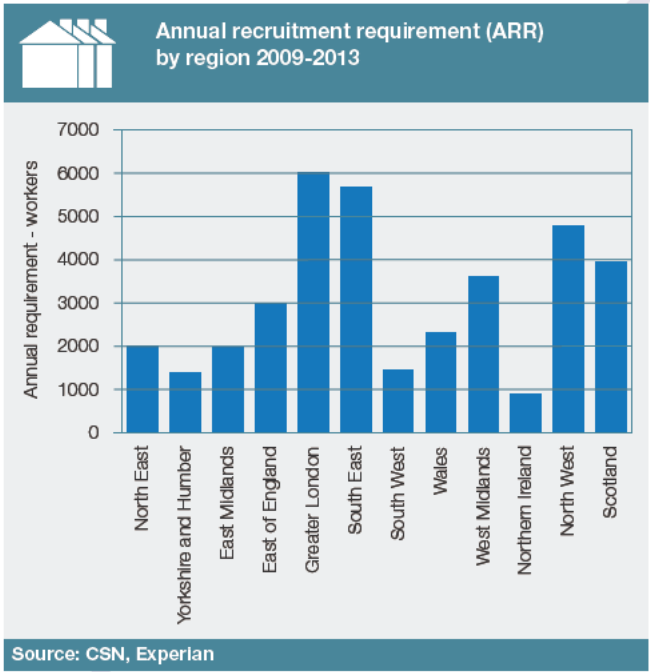
Northern Ireland continues to show the highest forecast growth in output, driven by the investment strategy planned for the next 10 years by the Northern Ireland Executive, although worries about how quickly this can be delivered have led to a lower growth rate than that put forward in previous years. 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.

Greater London will experience a significant fall in commercial activity, mitigated by a strong infrastructure requirement

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





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.



Cardinal Place, Wandsworth, SW1

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.



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:

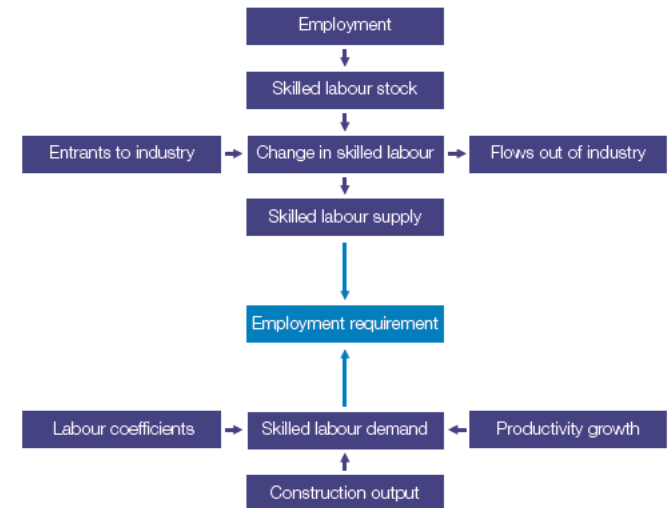
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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 completion
	45.5	Renting of construction or demolition equipment with operator
	74.2†	Architectural and engineering activities and related technical consultancy

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

SummitSkills

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

Coverage – Building Services Engineering.

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

AssetSkills

Footprint – Property Services, Housing, Facilities Management, Cleaning

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

Energy and Utility Skills

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

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

† AssetSkills has a peripheral interest in SIC 74.2

Appendix IV – Occupational groups

Occupational group

Description, SOC reference.

Senior, executive and business process managers

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

Construction managers

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

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

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

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

Wood trades and interior fit-out

Carpenters and joiners, 5315

Pattern makers, 5493

Paper and wood machine operatives, 8121

Furniture makers, other craft woodworkers, 5492

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

Construction trades nec* (25%), 5319

Bricklayers

Bricklayers, masons, 5312

Building envelope specialists

Construction trades nec* (50%), 5319

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

Painters and decorators

Painters and decorators, 5323

Construction trades nec* (5%), 5319

Plasterers and dry liners

Plasterers, 5321

Roofers

Roofers, roof tilers and slaters, 5313

Floorers

Floorers and wall tilers, 5322

Glaziers

Glaziers, window fabricators and fitters, 5316

Construction trades nec* (5%), 5319



Specialist building operatives nec*

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

Scaffolders

Scaffolders, staggers, riggers, 8141

Plant operatives

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

Plant mechanics/fitters

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

Steel erectors/structural

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

Labourers nec*

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

Electrical trades and installation

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



30, St Mary Axe, City of London

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 groundsman, 5113

Caretakers, 6232

Civil engineers

Civil engineers, 2121

Other construction professionals and technical staff

Mechanical engineers, 2122

Electrical engineers, 2123

Chemical engineers, 2125

Design and development engineers, 2126

Production and process engineers, 2127

Planning and quality control engineers, 2128

Engineering professional nec*, 2129

Electrical/electronic technicians, 3112

Engineering technicians, 3113

Building and civil engineering technicians, 3114

Science and engineering technicians nec*, 3119

Architectural technologists and town planning technicians, 3121

Draughtspersons, 3122

Quality assurance technicians, 3115

Town planners, 2432

Electronics engineers, 2124

Building inspectors, 3123

Scientific researchers, 2321

Architects

Architects, 2431

Surveyors

Quantity surveyors, 2433

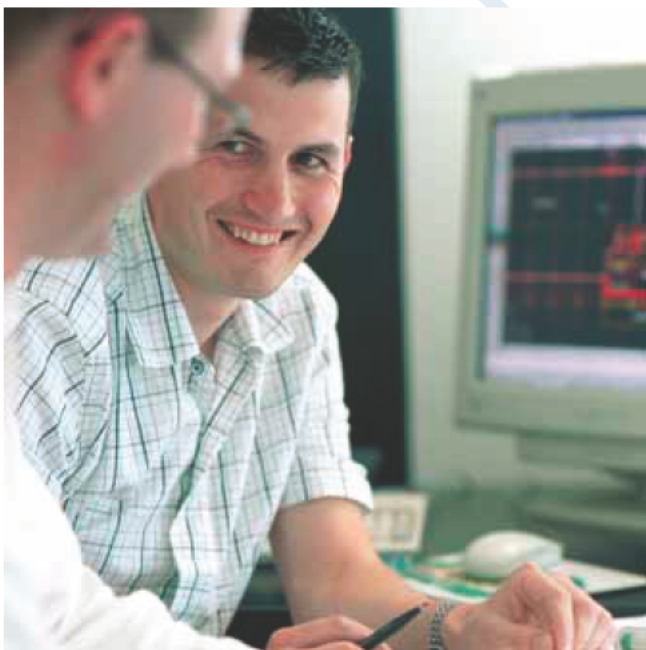
Chartered surveyors (not Quantity surveyors), 2434

Appendix V – CSN website and contact details

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

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

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



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

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

The website also contains further information about:

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

The CSN website can be found at:

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

CSN Members Area

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

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

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

CSN Members therefore have:

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

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

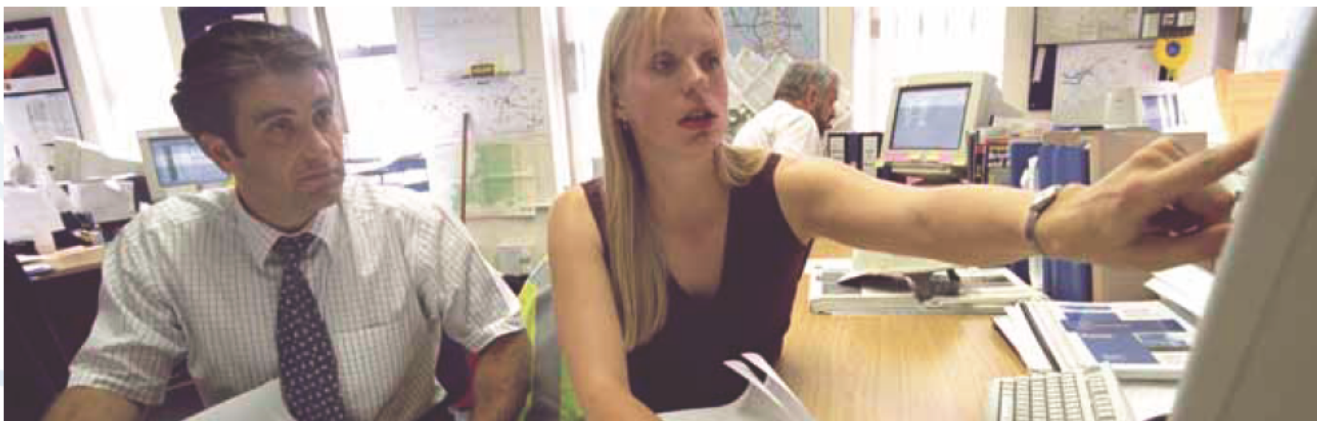
- access observatory related material such as meeting dates, agendas, presentations and notes
- access sub-regional LMI reports
- download additional research material
- comment/feedback to the CSN Team.

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

Contact details

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

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



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