

Construction Skills Network South West

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 South West economy

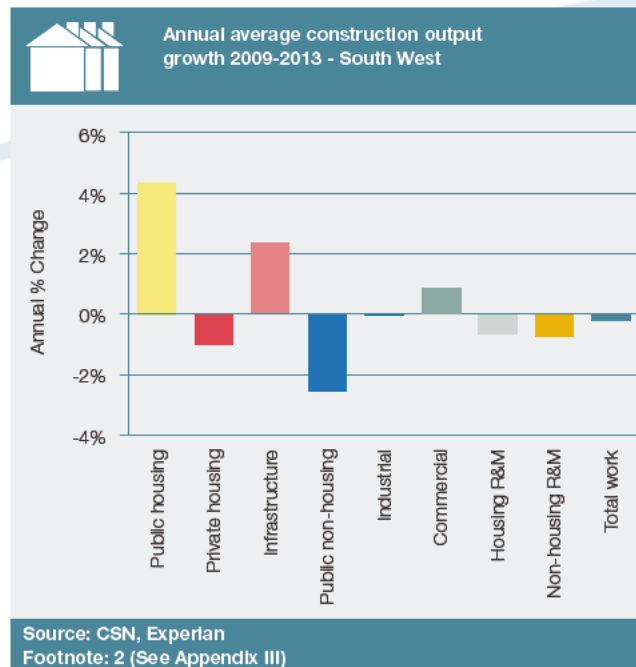
- The economy in the South West was worth £88bn in 2007, equivalent to approximately 8% of the UK total.
- Public services was the largest sector in the region, accounting for approximately 24% of the gross value added. Financial and business services was marginally smaller at 23%, low in comparison to UK standards.
- The South West economy is forecast to experience annual average growth of 1.4% between 2009 and 2013. The financial and business services sector is expected to grow at the fastest rate, with transport and communications, and distribution, hotels and catering also seeing relatively strong growth.


1.2 Construction output in the South West

- In 2000 prices, construction in the South West in 2007 was worth £6.8bn, around 8% of the UK total.
- In contrast to modest growth in the UK, construction output in the region is forecast to decline marginally, by an annual average rate of 0.2% between 2009 and 2013.
- A weakening investment/buy to let market and worsening consumer confidence is likely to be the *raison d'être* for the declines in the early part of the forecast period for the private housing and commercial sectors.
- Growth in the public housing sector is expected to be robust due to the allocation of £826m for capital investment in housing in the 2008–2011 Affordable Housing Programme.

1.3 Construction employment in the South West

- Total construction employment is projected to remain static between 2009 and 2013, after falls between 2007 and 2009.
- In order to meet demand in the 2009–2013 period, after taking into account those entering the industry other than from training and those leaving, 1,450 new workers will be required to join the industry each year.
- The largest average annual requirement (ARR) is expected to be for other construction professionals and technical staff (170) and electrical trades and installation (160).



 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 economy in the South West was worth **£88bn in 2007**, equivalent to approximately 8% of the UK total

2 The outlook for construction in the South West

2.1 Construction output in the South West – overview

In 2007 the construction industry in the South West was worth £6.8bn (2000 prices), and accounted for approximately 8% of the UK total. Construction output grew by 0.9% in the South West in 2007, a lesser increase than across the UK as a whole which saw the industry expand by 2.6%.

Despite weak growth recently, between 2000 and 2007 the industry has expanded by 30% in real terms in the South West, with the same level of contribution by both the new work and repair and maintenance (R&M) sectors.

The housing sectors have been the most buoyant in the region since 2000, with a 64% increase in output in private housing and 59% in public housing. Commercial construction also grew strongly, by 43% between 2000 and 2007, on the back of large retail and mixed use developments such as Broadmead and Temple Quarter in Bristol, and Drakes Circus in Plymouth. House price inflation alongside a buoyant housing market and steady economic growth supported the two thriving sectors. In contrast, infrastructure work contracted by 23% over the same period, the only sector to have experienced a decline.

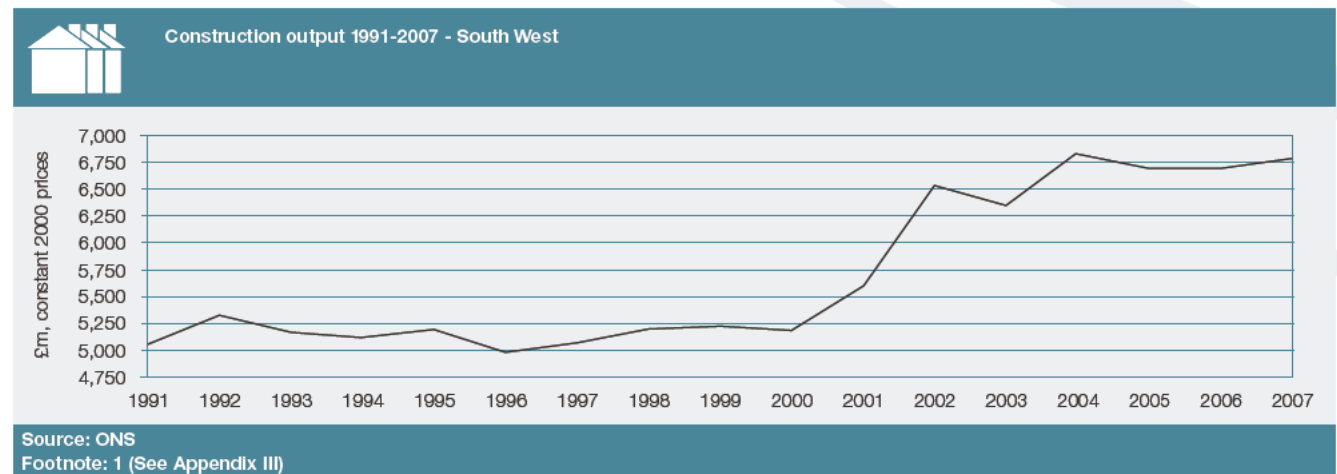
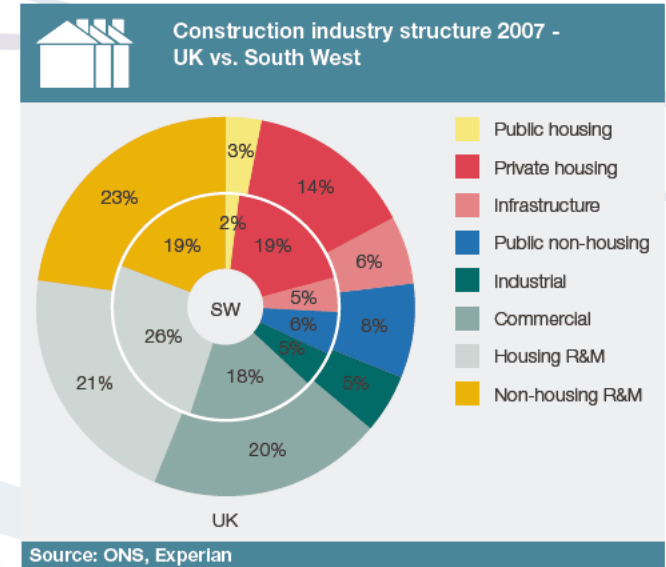
In contrast to modest growth in the UK, construction output in the region is forecast to decline marginally by an annual average rate of 0.2% between 2009 and 2013

2.2 Industry structure

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

While the overall split between new work and R&M in the South West was broadly in line with the UK for 2007, within the R&M sector proportionally more work was undertaken on housing R&M in the South West. This meant proportionally less work on non-housing R&M than in the UK as a whole.

The other major difference is the size of the new private housing sector in the South West, where it accounts for 19% of all output compared with 14% in the UK. This may reflect the South West's status as a location for second homes and retirement homes.



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 South West economy was worth £88bn, in 2003 prices, up 3.5% from 2006 and equivalent to 8% of the UK total.

The largest component of the regional economy was public services, accounting for around 24% of the total gross value added (GVA). Financial and business services generated a further 23% of the total economic activity for the South West, though this share is low compared to UK standards. However the sector has been growing strongly in recent years and its share has risen from 18% in 2000.

While manufacturing remains slightly more important to the South West economy than for the UK as a whole, accounting for 15% of total output in the former compared with 14% in the latter, its share has fallen from 17% in 2000.



Bristol Harbourside Marina

Economic structure - South West (£ billion, 2003 prices)							
Selected sectors	Actual	Forecast					
	2007	2008	Annual % change, real terms				
Public services	21	3.1	0.7	1.3	1.6	1.3	1.0
Financial and business services	20	2.6	0.7	3.4	5.3	5.6	5.5
Transport and communications	6	3.5	0.5	3.0	2.9	2.5	2.4
Manufacturing	13	0.2	2.5	1.3	2.2	1.3	1.0
Distribution, hotels and catering	14	1.7	1.2	1.8	2.9	2.7	2.6
Total Gross Value Added (GVA)	88	1.3	-1.0	1.5	2.3	2.2	2.1

Source: Experian
Footnote: 3 (See Appendix III)

Economic indicators - South West (£ billion, 2003 prices - unless otherwise stated)							
	Actual	Forecast					
	2007	2008	Annual % change, real terms				
Real household disposable income	67	2.2	0.3	0.6	1.7	2.1	2.3
Household spending	67	1.7	0.8	1.7	2.5	2.1	2.2
Debt:income ratio	2.3	1.8	1.2	3.1	3.1	2.0	0.9
House prices (£'000, current prices)	225	4.0	19.7	1.0	3.8	3.8	3.6
LFS unemployment (millions)	0.10	6.9	15.2	13.0	1.7	6.8	6.0

Source: ONS, DCLG, Experian

2.5 Forward looking economic indicators

GVA in the South West is forecast to grow broadly in line with the national trend between 2009 and 2013 at an annual average rate of 1.4%. The strongest growth will be in the financial and business services sector, followed by transport and communications and distribution, hotels and catering.

Household disposable income for the region is also expected to be similar to the UK average, and a similar trend is projected for household spending.

The debt to income ratio in the South West has risen steeply, in line with the UK, since the beginning of the decade. After reaching an expected peak in 2008 at 2.3, the ratio is predicted to see year-on-year declines to reach 2.1 at the end of the forecast period. The region currently has the third highest debt-to-income ratio when compared to other regions and nations.

The Department for Communities and Local Government (DCLG) reported that average house prices for the region reached £224,500 in 2007, 8.5% above the UK average. House prices are expected fall steeply in 2009 based on the DCLG measure, stabilise in 2010 and grow moderately thereafter.

2.6 New construction orders – overview

New work orders in the South West have risen by a significant 71% in 2007 since the start of the decade. The period has seen some years of small declines, though these have been compensated by very robust growth in other years. In 2007, orders suffered a noticeable contraction of 4% from the previous year to £3.9bn, in current prices.

Private housing, the second largest sector in terms of value of new orders in 2007 was responsible for the majority of the decline, with new orders falling by 19% from the previous year. Public housing also saw a decline of 10%.

The public non-housing sector saw impressive growth for 2007, whilst the infrastructure sector also rebounded with a healthy increase in new orders following a large decline in 2006. However the infrastructure sector is a volatile one, and one large order can make a significant difference to new orders, although the output may be spread over a number of years. The commercial and industrial sectors experienced marginal year-on-year growth in 2007.

2.7 New construction orders – current situation

In the first nine months of 2008 new work orders totalled £2.5bn (current prices) in the South West, down 17% from the same period of the previous year.

Private housing orders to end-September trailed those placed for the same period of 2007 by 38%, a significant fall-off since the sector is one of the largest in the region. Industrial orders also suffered a large decline of 34% in the first three quarters of 2008, when compared to a year earlier. The commercial sector, the largest in terms of value of new orders, also saw a drop of 16% for the same period.

Conversely, public housing saw the greatest growth in new orders in the first three quarters of 2008, whilst the public non-housing sector came a close second. The two sectors saw increases of 38% and 36%, respectively.



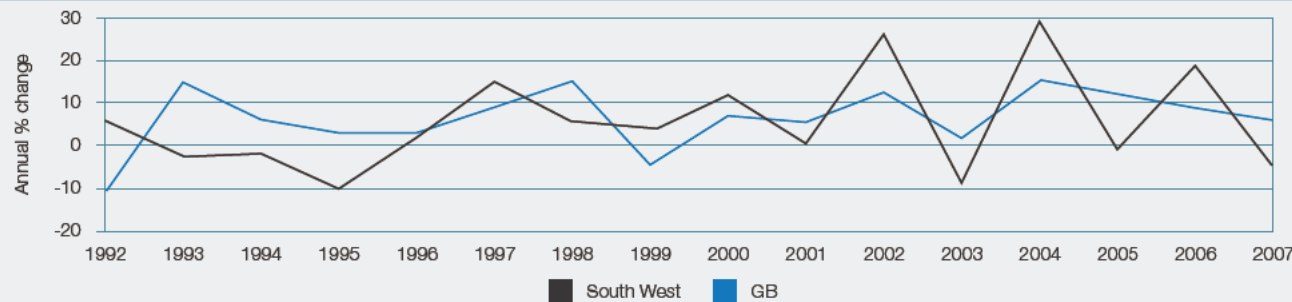
New work construction orders - South West (£ million, current prices)

	Actual		Annual % change			
	2007	2003	2004	2005	2006	2007
Public housing	117	17.3	12.4	26.2	22.4	10.4
Private housing	1,369	9.4	57.6	13.8	15.8	18.9
Infrastructure	291	37.1	32.7	39.0	29.9	12.0
Public non housing	451	20.4	21.0	30.2	22.6	31.9
Industrial	297	49.6	5.3	34.3	23.0	0.9
Commercial	1,417	0.3	49.2	12.3	64.5	0.3
Total new work	3,942	-9.1	29.6	-0.2	18.8	-4.5

Source: ONS
Footnote: 4 (See Appendix III)



New construction orders growth 1992-2007 - South West vs. GB



Source: ONS
Footnote: 4 (See Appendix III)

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

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

In the first three quarters of 2008, construction output rose by 2% when compared to the corresponding part of the previous year, to total £7.5bn in current prices. The new work sector output was stronger over the same period, increasing by 2.3% in comparison to the R&M's 1.6%. Between 2009 and 2010, total construction industry output is forecast to see an average rate of decline of 2.9%, greater than the UK's 1.7%. Although in the short-term both the new work and the R&M sectors are expected to perform poorly, the former is expected to have a steeper decline than the latter.

The public non-housing sector saw the greatest growth in output for the first nine months of 2008, increasing by 33% from the same period of the previous year. However, the outlook for the sector in the short-term is projected to be relatively subdued, with an annual average growth rate of 1.7%. In comparison the public housing sector is expected to perform much better, with an annual average rate of increase of 9.5%. However despite this growth between 2009 and 2010, the small size of the sector means it is unlikely to have a large impact on new work overall. The big boost for the sector is the allocation of £826m for capital investment in housing in the 2008–2011 Affordable Housing Programme.

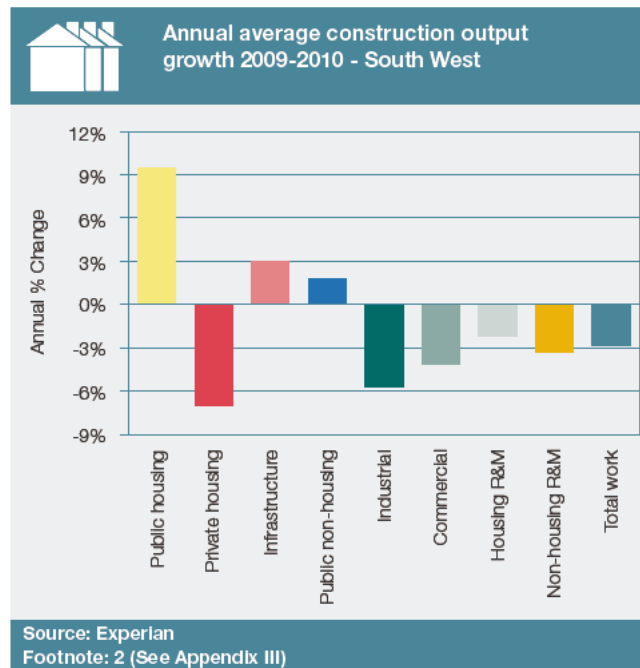
The private housing sector saw the greatest fall in new work to the end of September of 2008, when compared to the same period of 2007. The sector totalled £1.4bn, a decline of 18% for the period, although this was less steep than in some other regions. On an annual average basis, the sector


is predicted to perform the worst in the short-term with a fall of 7.3%. The outlook for private housing in the region is broadly in line with the rest of the UK, as falling house prices and tighter lending conditions impact negatively on the housing market.

The prospects for the industrial and commercial sectors are also less positive with forecast declines of 5.9% and 4.1%, respectively, between 2009 and 2010 on an annual average basis. These expected declines are supported by falling consumer and business confidence with investment decisions in new machinery and buildings remaining depressed.

Despite this, the commercial sector experienced very robust growth of 23% in the first three quarters of 2008 from the corresponding part of the previous year. This was largely due to PFI work underway on the Building Schools for the Future projects and the redevelopment of the Queen Alexandra Hospital.

Infrastructure output totalled £297m in the first nine months of 2008, a 6% fall from the same period of the previous year. However the sector is projected to experience year-on-year growth of 1.9% in 2009, followed by a 4.2% rise in 2010 as road projects come on line in the near future.



 Construction output - South West (£ million, 2000 prices)

	Actual	Forecast annual % change		Annual average	
	2007	2008	2009	2009-2010	
Public housing	124	12%	16%	3%	9.5%
Private housing	1,282	28%	16%	3%	7.3%
Infrastructure	320	4%	2%	4%	3.0%
Public non housing	387	18%	5%	2%	1.7%
Industrial	334	3%	9%	3%	5.9%
Commercial	1,214	15%	3%	5%	4.1%
New work	3,661	-3%	-5%	-1%	-3.1%
Housing R&M	1,845	5%	4%	1%	2.4%
Non housing R&M	1,258	4%	3%	3%	3.3%
Total R&M	3,103	2%	-4%	-2%	-2.7%
Total work	6,764	-1%	-4%	-2%	-2.9%

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

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

The long-term forecast for the industry in the South West is for an annual average rate of decline of 0.2% between 2009 and 2013. New work is projected to see growth of 0.2% per year, whilst R&M is likely to decline by 0.7% per year over the same period. Both housing and non-housing R&M are predicted to see declines to 2011, before recovering toward the end of the forecast period.

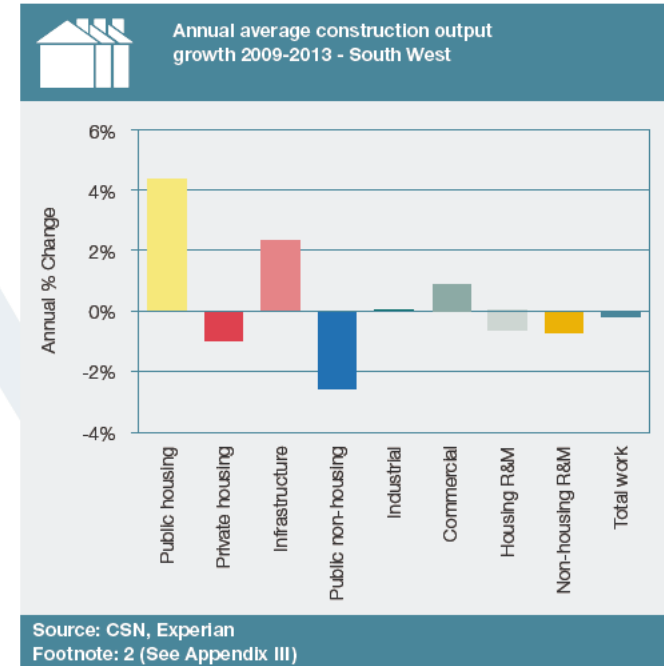
The marginal growth over the forecast period in new work is expected to be supported by the commercial sector. Following declines in 2009 and 2010, commercial output is likely to recover with year-on-year growth to 2013 of 0.8%. The recovery in the sector is predicated on a general improvement in economic conditions in the UK from the second half of 2010 and may be boosted by the region’s position as a popular tourist destination, with leisure sector operators quite possibly looking to invest in improving their facilities in the run-up to the 2012 Olympics.

Public housing growth is expected to slow in the medium term giving an annual average rate of 4.2% between 2009 and 2013. The slowdown is stronger in the South West in this sector in 2012 and 2013 than elsewhere, as the region benefits so strongly from high levels of investment in the earlier part of the forecast period.

Infrastructure output is forecast to follow a similar trend, where after reasonable growth in the short-term, modest year-on-year growth in the later years is likely to slow the annual average rate of growth to 2.3%. It is still the case that there are few major infrastructure projects due to begin in the region over the forecast period.

The private housing sector is projected to return to growth in the medium term after steep declines in the initial years of the forecast period. As in most other regions in the UK the housing market should start to recover as house prices stabilise and credit conditions ease, with affordability ratios having improved in the meantime. Strong underlying demand will drive the sector forward over the medium to long term. Nonetheless, the steep decline in the early part of the forecast period means the sector is expected to see an average rate of decline of 1% between 2009 and 2013.

The outlook for the public non-housing sector in the long-term is not bright as public funding for new capital investment becomes more problematic post-2010.





Construction output - South West
(£ million, 2000 prices)

	Estimate		Forecast annual % change				Annual average
	2008	2009	2010	2011	2012	2013	2009-2013
Public housing	140	16%	3%	2%	0%	0%	4.2%
Private housing	923	16%	3%	3%	4%	4%	1.0%
Infrastructure	331	2%	4%	1%	1%	3%	2.3%
Public non housing	455	5%	2%	9%	8%	1%	2.6%
Industrial	324	9%	3%	4%	6%	3%	0.0%
Commercial	1,395	3%	5%	4%	5%	3%	0.8%
New work	3,567	-5%	-1%	2%	3%	3%	0.2%
Housing R&M	1,945	4%	1%	2%	1%	2%	0.6%
Non housing R&M	3,157	3%	3%	1%	3%	1%	0.7%
R&M	5,102	-4%	-2%	-2%	2%	2%	-0.7%
Total work	6,724	-4%	-2%	0%	2%	2%	-0.2%

Source: CSN, Experian

Footnote: 2 (See Appendix III)



3 Construction employment forecasts for the South West

3.1 Total construction employment forecasts by occupation

The table, Total employment by occupation – South West, presents actual construction employment (SIC 45 and 74.2) in the South West 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.

In 2013 the region's total construction employment is forecast to reach approximately 222,000. Of this, around 196,000 are expected to be in SIC 45 while 26,000 are projected to be in SIC 74.2. Over the whole of the 2009 to 2013 forecast period construction employment is expected to remain static in the South West, although there is likely to be variation in individual years.

In the South West the two biggest occupational groupings were non-construction professional, technical, IT, and other office-based staff and wood trades and interior fit-out. Each of the two occupations took a 10.7% share of total employment in 2007, and their share is expected to remain unchanged in 2013.

Total construction employment is projected to remain static between 2009 and 2013, after falls between 2007 and 2009

The largest percentage increases in employment between 2009 and 2013 are projected to be for plasterers and dry-liners (7.8%), construction managers (7%) and surveyors (6.6%). In absolute terms, however, construction managers (1,170) are expected to see the largest increase.

In the 2008 run, construction professionals have been disaggregated 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 in 2007, 18% of construction professionals in the South-West are classified as civil engineers, 14% as architects and 19% as surveyors.



Total employment by occupation - South West			
	Actual 2007	Forecast	
		2009	2013
Senior, executive, and business process managers	6,550	6,360	6,740
Construction managers	17,560	16,650	17,820
Non construction professional, technical, IT, and other office based staff	24,690	24,080	23,930
Wood trades and interior fit out	24,620	24,190	23,750
Bricklayers	10,270	9,330	9,700
Building envelope specialists	11,810	11,100	11,000
Painters and decorators	14,240	13,830	13,110
Plasterers and dry liners	3,230	2,960	3,190
Roofers	4,600	4,570	4,470
Floorers	3,680	3,460	3,510
Glaziers	4,080	3,950	3,930
Specialist building operatives nec*	6,510	6,190	6,230
Scaffolders	1,790	1,680	1,790
Plant operatives	4,500	4,440	4,080
Plant mechanics/fitters	1,980	1,860	1,840
Steel erectors/structural	1,910	1,810	1,870
Labourers nec*	13,710	13,480	14,110
Electrical trades and installation	11,920	11,060	10,820
Plumbing and HVAC Trades	15,960	15,530	15,160
Logistics	1,900	1,860	1,860
Civil engineering operatives nec*	4,750	4,790	4,470
Non construction operatives	13,500	13,180	12,930
Civil engineers	4,720	4,710	4,490
Other construction professionals and technical staff	12,710	12,330	12,370
Architects	3,710	3,750	3,650
Surveyors	4,960	4,680	4,990
Total (SIC 45)	203,760	196,360	196,310
Total (SIC 45 and 74.2)	229,860	221,830	221,810

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

* nec not elsewhere classified

3.2 Annual recruitment requirements by occupation

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



The ARR for 26 occupations within the South-West's construction industry between 2009 and 2013 is illustrated in the table. The ARR of 1,450 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.

Other construction professionals and technical staff (170) and electrical trades and installation (160) are expected to have the largest ARR for the region. However as a percentage of 2009 employment, steel erectors/structural (5.5%) and plant mechanics/fitters (4.8%) are expected to be most in demand.

Please note that all of the ARR 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 - South West	
	2009-2013
Senior, executive, and business process managers	<50
Construction managers	<50
Non construction professional, technical, IT, and other office based staff	100
Wood trades and interior fit out	80
Bricklayers	50
Building envelope specialists	<50
Painters and decorators	<50
Plasterers and dry liners	<50
Roofers	100
Floorers	<50
Glaziers	<50
Specialist building operatives nec*	50
Scaffolders	<50
Plant operatives	<50
Plant mechanics/fitters	90
Steel erectors/structural	100
Labourers nec*	90
Electrical trades and installation	160
Plumbing and HVAC Trades	<50
Logistics	<50
Civil engineering operatives nec*	<50
Non construction operatives	
Civil engineers	100
Other construction professionals and technical staff	170
Architects	<50
Surveyors	<50
Total (SIC 45)	1,130
Total (SIC 45 and 74.2)	1,450
Source: CSN, Experian	
Footnote: 5 and 6 (See Appendix III)	

* nec not elsewhere classified

4 Comparisons across the UK

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

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

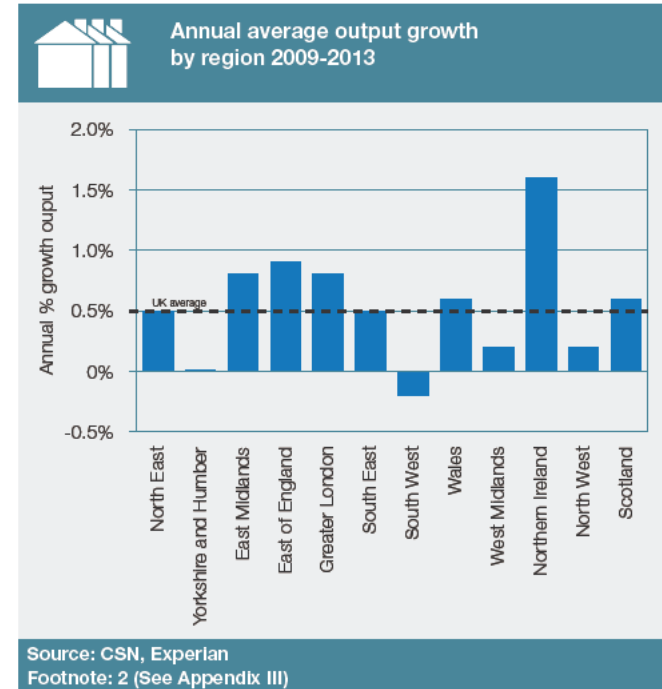
Northern Ireland continues to show the highest forecast growth in output, driven by the investment strategy planned for the next 10 years by the Northern Ireland Executive, although worries about how quickly this can be delivered have led to a lower growth rate than that put forward in previous years.

The East Midlands, East of England and Greater London are also predicted to do better than the UK average, the capital in particular benefits from major infrastructure projects, the BSF programme, and Olympics build.

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

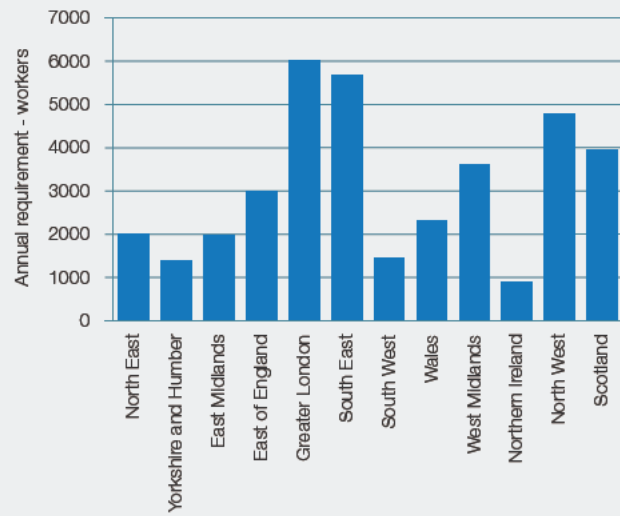
The lowest ARR is for Northern Ireland at 900, despite the fact that the province has the highest output growth rate in the UK. This is because it is a small market, accounting for around 2.7% of UK output and 3.1% of UK employment. The North East has quite a high ARR, at a little over 2,000, compared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

Although the South West does not benefit from major infrastructure growth, good workforce retention contributes to a relatively low annual recruitment requirement over the forecast period





Annual recruitment requirement (ARR) by region 2009-2013



Source: CSN, Experian



Appendix I – Methodology

Background

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

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



Eden Project, Cornwall

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:

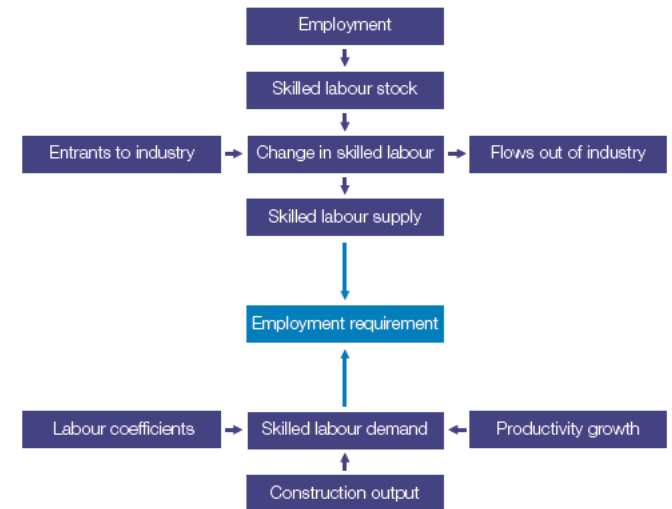
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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

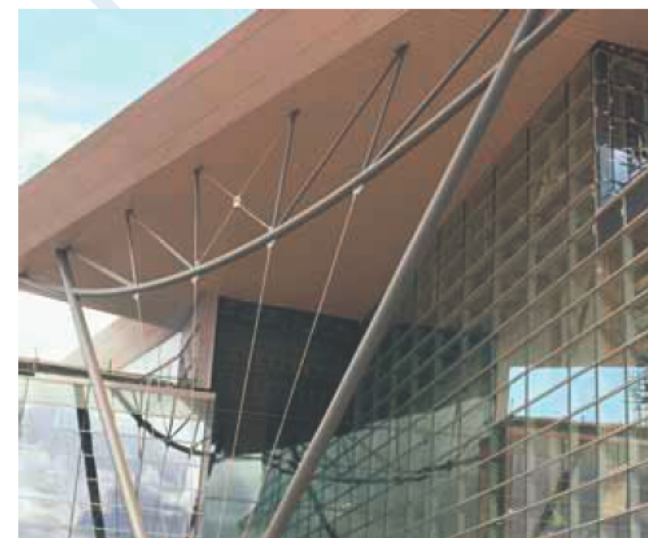
Steel erectors, 5311
Welding trades, 5215
Sheet metal workers, 5213
Metal plate workers, shipwrights and riveters, 5214
Construction trades nec* (5%), 5319
Smiths and forge workers, 5211
Moulders, core makers, die casters, 5212
Metal machining setters and setter-operators, 5221

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



Met Office, Exeter

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

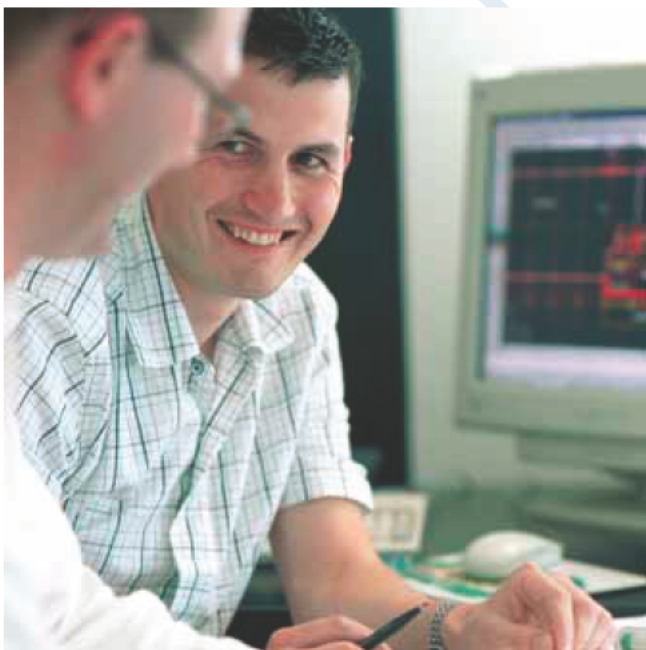
Chartered surveyors (not Quantity surveyors), 2434

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:

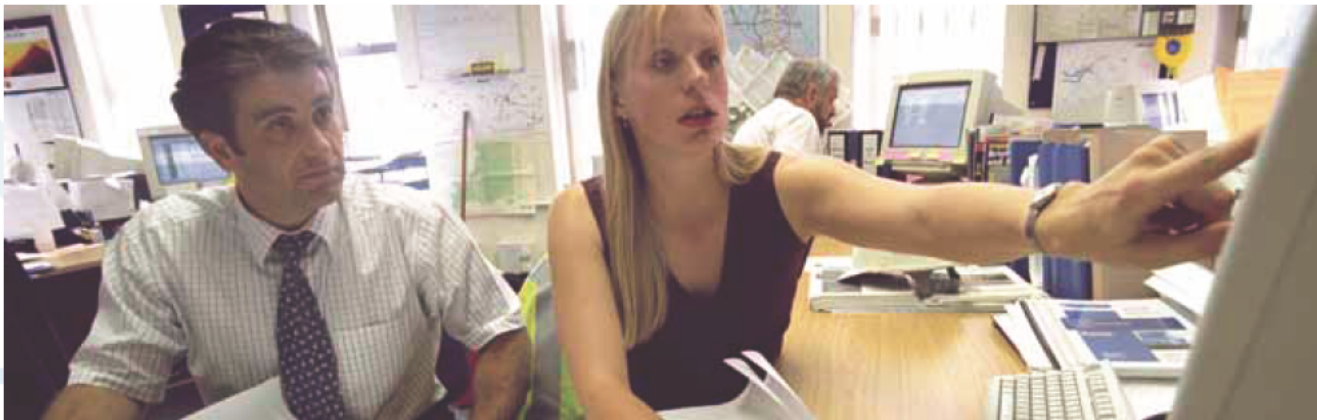
- access observatory related material such as meeting dates, agendas, presentations and notes
- access sub-regional LMI reports
- download additional research material
- comment/feedback to the CSN Team.

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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