

# Construction Skills Network North 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 North West economy

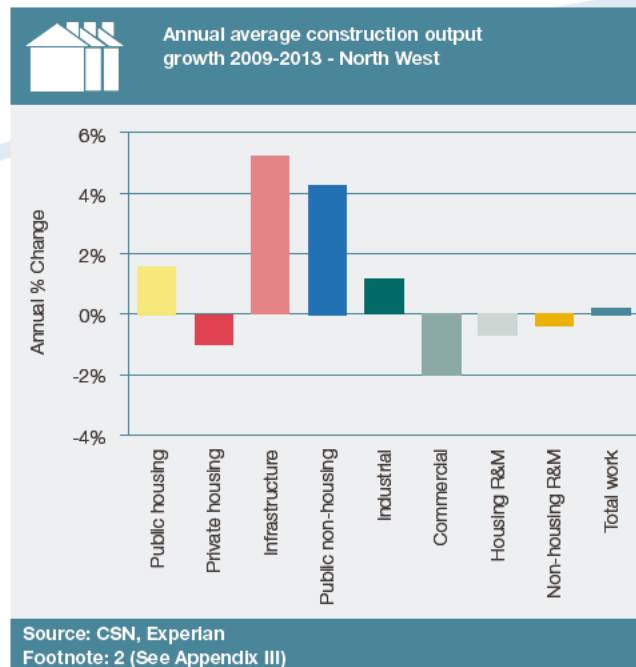
- The North West economy was worth £107bn in 2007, equivalent to 10% of the UK total.
- Financial and business services account for 26% of the region's gross value added (GVA), followed by public services, slightly less than in the UK as a whole.
- Economic growth in the region is forecast at an average annual rate of 1.4% between 2009 and 2013. Growth is expected to be fastest in financial and business services, followed by transport and communications.


## 1.2 Construction output in the North West

- Construction output in the North West totalled £8.8bn in 2007, in 2000 prices, accounting for 9% of the UK total.
- Output is forecast to grow at a weak average annual rate of 0.2% between 2009 and 2013, slower than the national average.
- The infrastructure and public non-housing sectors are expected to see the strongest growth over the period.

## 1.3 Construction employment in the North West

- Total construction employment of 270,950 in 2007 in the North West is expected to fall to 265,350 in 2009, before rising to 271,390 in 2013.
- 4,780 new workers will be required to join the industry each year in order to meet this demand, taking into account those entering and leaving the industry.
- The largest annual recruitment requirements (ARR) are expected to be for painters and decorators and bricklayers.



 Regional comparison 2009-2013

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

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

The North West economy was worth

**£107bn in 2007,**  
equivalent to 10% of the UK total

# 2 The outlook for construction in the North West

## 2.1 Construction output in the North West – overview

Construction output in the North West was estimated at £8.8bn, in 2000 prices, in 2007, 8% higher than in the previous year. New work increased by 10% to £5.4bn, and repair and maintenance (R&M) work rose by 5% to just under £3.5bn.

The region's construction industry has performed well in recent years, with output rising by nearly 30% in real terms between 2000 and 2007. Growth in the new work sector was stronger than R&M, with a 38% increase in the former and a more modest 18% rise in the latter over the same period.

The public housing sector has seen two years of very strong growth in 2006 and 2007, with output rising by 83% in the former and a further 56% in the latter year. The sector undoubtedly benefits from the siting of a significant proportion of Housing Market Renewal projects in the region. Substantial growth in the commercial sector also boosted new work output in 2007. Regional office markets in both Manchester and Liverpool have been strong in recent years.

In contrast, the infrastructure sector was considerably weaker, with output declining by 11% between 2006 and 2007. Output also fell in the public non-housing sector, albeit only marginally.

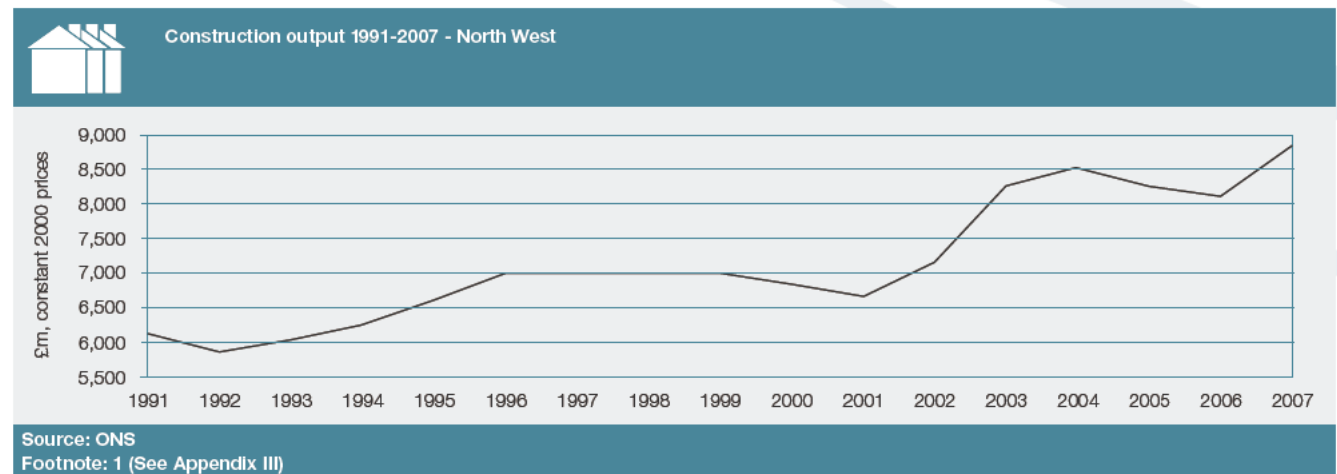
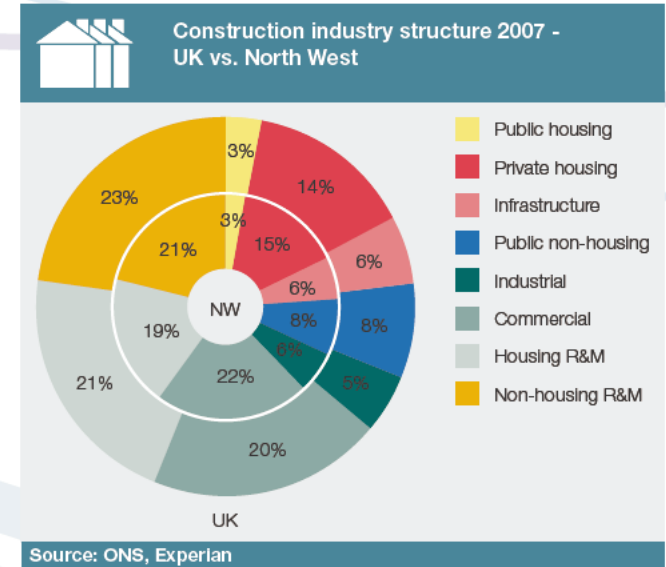
Output is forecast to grow at a weak average annual rate of 0.2% between 2009 and 2013, slower than the national average

## 2.2 Industry structure

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

New work accounts for 60% of construction output in the North West, a larger proportion than in the UK as a whole, 56%. However, it is only in 2006 and 2007 that the new work sector has pushed up to this proportion of total construction output in the North West – in the period 1990–2005 it averaged a 56% share.

The smaller relative size of the repair and maintenance (R&M) sector in the region compared to the UK is countered by a slightly more dominant commercial sector. Commercial construction output makes up 22% of total output in the North West, compared with 20% at the UK level.





### 2.3 Economic overview

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

### 2.4 Economic structure

Gross value added (GVA) in the North West reached £107bn in 2007 in 2003 prices, representing 10% of the UK economy. This was 0.8% higher than in the previous year.

Until 2006, the public services sector was the largest in the North West, accounting for around one quarter of total GVA. Its share has now fallen to 22% of total output, and it has been overtaken by financial and business services. That sector's share of GVA has increased from 19% in 2000 to almost 26% in 2007. However, this is still a smaller proportion than in the UK as a whole, 29% in 2007.

Manufacturing output has been declining as a proportion of total GVA in the region, falling from 21% in 2000 to 18% in 2007. Nevertheless, manufacturing still remains a more important sector in the North West than in the UK as a whole, where its share is only 14%.



Liver Building, Liverpool

Economic structure - North West (£ billion, 2003 prices)							
Selected sectors	Actual 2007	Forecast Annual % change, real terms					
		2008	2009	2010	2011	2012	2013
Public services	23	2.3	1.0	1.4	1.6	1.3	1.0
Financial and business services	28	3.8	0.4	3.3	5.2	5.4	5.2
Transport and communications	10	3.8	1.7	3.9	3.2	2.6	2.3
Manufacturing	20	1.2	3.1	0.5	0.9	0.3	0.1
Distribution, hotels and catering	17	0.7	0.9	1.7	2.3	2.0	1.9
<b>Total Gross Value Added (GVA)</b>	<b>107</b>	<b>0.8</b>	<b>-0.6</b>	<b>1.6</b>	<b>2.1</b>	<b>2.0</b>	<b>1.9</b>

Source: Experian  
Footnote: 3 (See Appendix III)

Economic indicators - North West (£ billion, 2003 prices - unless otherwise stated)							
	Actual 2007	Forecast Annual % change, real terms					
		2008	2009	2010	2011	2012	2013
Real household disposable income	83	0.6	0.2	0.5	1.7	2.2	2.2
Household spending	78	1.0	0.8	0.8	2.6	2.7	2.5
Debt:income ratio	1.4	2.3	1.2	4.9	6.4	5.0	2.8
House prices (£'000, current prices)	162	1.6	11.4	7.4	2.0	1.5	2.8
LFS unemployment (millions)	0.20	10.7	15.4	7.5	5.8	8.7	5.9

Source: ONS, DCLG, Experian

### 2.5 Forward looking economic indicators

Annual average growth in the North West is forecast to be 1.4% between 2009 and 2013, in line with the UK average. Growth in the financial and business services sector is expected to slow sharply in 2009 but pick up again thereafter, and will still be the most buoyant sector over the whole of the forecast period. In contrast, even when it recovers from the current recession, manufacturing output growth is unlikely to be anything more than very modest on a year-by-year basis.

Real household disposable income in the region is expected to increase at an average annual rate of 1.3%, in line with the UK average and a similar trend is expected for consumer spending over the five-year period.

After peaking at 1.4 in 2008, the debt-to-income ratio in the region is expected to decline over the forecast period, reaching 1.1 in 2013, well below the UK average of 1.6.

According to the Department for Communities and Local Government (DCLG), average house prices in the North West reached £162,000 in 2007, an increase of 6% on 2006. House prices in the region are projected to decline into 2011, losing around 25% of their value overall based on the DCLG measure.

### 2.6 New construction orders – overview

New work construction orders rose for a third consecutive year in 2007, increasing 17% to £5.9bn, in current prices.

The level of new infrastructure orders remained volatile in 2007, increasing by 80% from 2006. This followed a rise of 25% in 2005 and a decline of 53% in 2006.

The public housing and commercial sectors also saw sharp growth, with new orders increasing by 47% and 31%, respectively.

### 2.7 New construction orders – current situation

Total new orders declined by 22% in the first three quarters of 2008 compared with the same period in 2007, however there were substantial variations between sectors.

Infrastructure new orders remained buoyant, increasing 79% from the same 2007 period, to £795m in current prices. Public non-housing was the only other sector to see an increase in new orders in the first nine months of the year, rising 34% compared with the same period in 2007.

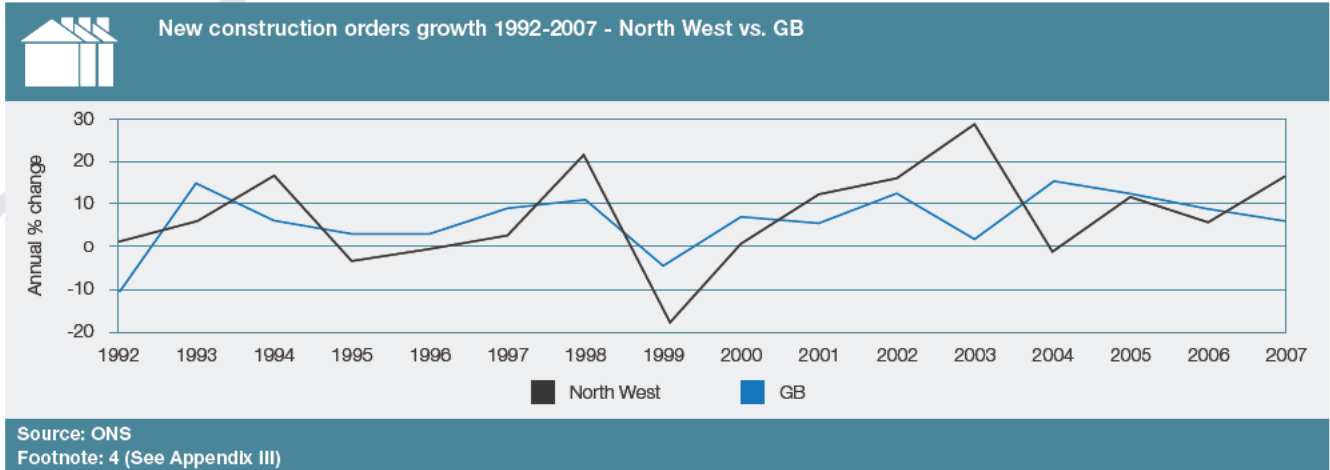
The commercial sector saw the sharpest fall in new orders, declining 52% to £945m, in current prices, in the nine months to September. This is compared to a particularly strong first three quarters of 2007, but the rapidly weakening economic situation has very negatively impacted on the commercial sector in the region.

Public housing saw a 45% reduction in new orders in the first three quarters of the year, with the credit crunch affecting both public housing delivery through section 106 agreements and the ability of registered social landlords to raise finance. Private housing saw a slightly weaker 32% decline in new orders.

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

	Actual		Annual % change			
	2007	2003	2004	2005	2006	2007
Public housing	322	65.4	7.0	25.8	146.1	47.1
Private housing	1,446	26.5	13.9	34.0	4.6	10.5
Infrastructure	553	1.1	32.4	25.2	53.3	79.7
Public non housing	781	59.1	3.4	8.6	17.4	17.4
Industrial	382	52.4	17.4	20.8	3.7	3.7
Commercial	2,450	32.0	13.4	9.8	40.2	31.1
<b>Total new work</b>	<b>5,934</b>	<b>29.0</b>	<b>-0.9</b>	<b>11.4</b>	<b>5.0</b>	<b>17.0</b>

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.

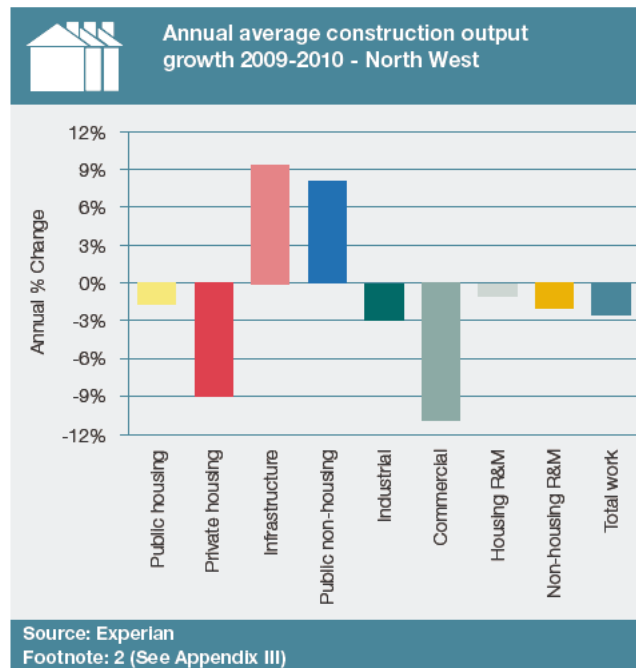
Total construction output, in current prices, in the North West was 4% higher in the first three quarters of 2008 compared with the same period of 2007. New work saw a decline of 3%, but repair and maintenance (R&M) work increased by a substantial 17% in the nine months to September. However, construction activity is expected to slow substantially, declining at an annual average rate of 2.7% in 2009 and 2010. Both new work and R&M is expected to decline, with new work output falling at a stronger annual average rate of 3.5%.

Amidst the generally gloomy outlook for the North West's construction output in the short term, the infrastructure and public non-housing sectors are forecast to see growth. Expected growth of 9.3% for the infrastructure sector is based on a number of road schemes going forward as planned, including the widening of a stretch of the M6. The North West benefits heavily from the Building Schools for the Future (BSF) programme, with over £2.1bn of investment in waves 1–4 of the scheme.

The commercial sector is predicted to perform the worst in the short term, with output declining at an average annual rate of 11.2% in 2009 and 2010. The continued lack of availability of credit and weak consumer confidence will continue to impact heavily on the sector.

Private housing is, unsurprisingly, also expected to be badly hit. A forecasted annual average decline of 9% reflects continued weak demand and falling house prices. Modest declines are forecast for the industrial and public housing sectors.

In the short term, the housing R&M sector is forecast to decline at an average annual rate of 1% between 2009 and 2010 as house owners hold back on anything more than essential repairs in these uncertain times.



**Construction output - North West**  
(£ million, 2000 prices)

	Actual	Forecast annual % change		Annual average	
	2007	2008	2009	2010	2009-2010
Public housing	282	20%	8%	5%	1.7%
Private housing	1,291	28%	20%	4%	9.0%
Infrastructure	504	35%	11%	8%	9.3%
Public non housing	737	1%	10%	6%	8.0%
Industrial	490	12%	6%	0%	3.0%
Commercial	2,059	7%	18%	4%	11.2%
<b>New work</b>	<b>5,362</b>	<b>-8%</b>	<b>-9%</b>	<b>2%</b>	<b>-3.5%</b>
Housing R&M	1,639	8%	1%	1%	1.0%
Non housing R&M	1,840	1%	2%	2%	2.3%
<b>Total R&amp;M</b>	<b>3,478</b>	<b>5%</b>	<b>-1%</b>	<b>-2%</b>	<b>-1.6%</b>
<b>Total work</b>	<b>3,072</b>	<b>-3%</b>	<b>-6%</b>	<b>0%</b>	<b>-2.7%</b>

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 the North West is expected to increase by an annual average rate of 0.2% over the forecast period, below the UK average of 0.5%. New work growth is forecast at an average rate of 0.8% in each year, whilst repair and maintenance (R&M) output is expected to decline at an average annual rate of 0.5%. Growth rates vary widely between sectors, ranging from 5.3% to -2.0%.

The strongest growth is predicted for the infrastructure sector, with an average annual growth rate of 5.3% over the five-year period. A number of projects are expected to get underway, including phase 3 of the Manchester Metrolink.

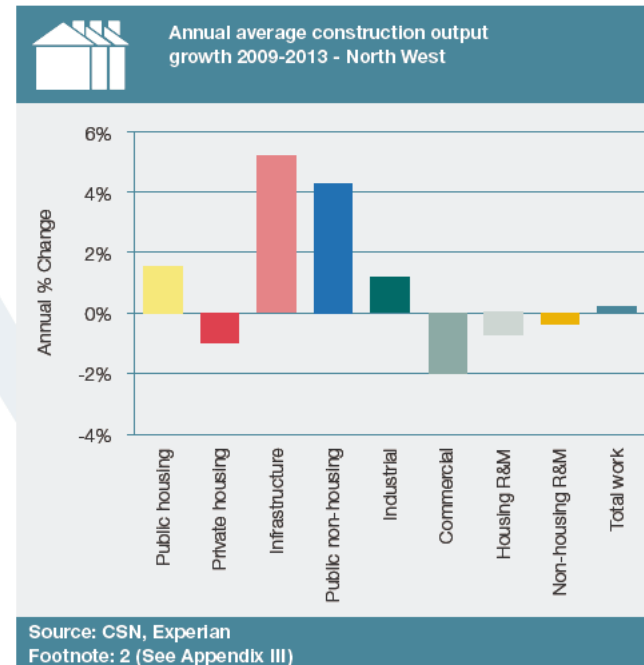
The public non-housing sector is also expected to see strong growth, with output increasing by 4.2% per year. The region will benefit significantly from delayed work on the Building Schools for the Future (BSF) programme, although some of this is funded through Private Finance Initiatives (PFI), and will therefore be classified under private commercial.

Growth is also expected for the public housing and industrial sectors, with average annual growth rates of 1.7% and 1.5%, respectively. The government is increasing its investment in social housing, and the North West has been allocated £290m funding in the 2008–2011 National Affordable Housing Programme.

Unsurprisingly, the outlook for the private housing sector is weak, and output is expected to decline at an annual average rate of 1.0% between 2009 and 2013. Continued uncertainty and tight credit conditions are leading to stagnating demand in the sector and, until things improve, developers are unlikely to start anything new.

The commercial sector is very exposed to the current economic situation, with the office market deteriorating rapidly and weak consumer spending compounding the sector's problems. A decline of 2.0% per year is expected.

Both the housing and non-housing R&M sectors are predicted to see weak annual declines in output over the five-year period. While house owners should start spending on their properties again once economic conditions improve, this will be counteracted by the fall-off of work in the public sector as the Decent Homes for All programme winds down.







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

	Estimate		Forecast annual % change				Annual average
	2008	2009	2010	2011	2012	2013	2009-2013
Public housing	226	8%	5%	4%	6%	2%	1.7%
Private housing	929	20%	4%	4%	6%	5%	1.0%
Infrastructure	679	11%	8%	3%	3%	2%	5.3%
Public non housing	743	10%	6%	2%	2%	1%	4.2%
Industrial	433	6%	0%	4%	5%	5%	1.5%
Commercial	1,918	18%	4%	4%	6%	3%	2.0%
<b>New work</b>	<b>4,928</b>	<b>-9%</b>	<b>2%</b>	<b>3%</b>	<b>5%</b>	<b>3%</b>	<b>0.8%</b>
Housing R&M	1,776	1%	1%	4%	0%	2%	0.7%
Non housing R&M	1,861	2%	2%	1%	2%	2%	0.3%
<b>R&amp;M</b>	<b>3,637</b>	<b>-1%</b>	<b>-2%</b>	<b>-2%</b>	<b>1%</b>	<b>2%</b>	<b>-0.5%</b>
<b>Total work</b>	<b>8,564</b>	<b>-6%</b>	<b>0%</b>	<b>1%</b>	<b>3%</b>	<b>3%</b>	<b>0.2%</b>

Source: CSN, Experian

Footnote: 2 (See Appendix III)





# 3 Construction employment forecasts for the North West

## 3.1 Total construction employment forecasts by occupation

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

Construction employment is expected to reach 271,390 in 2013, a 2.3% increase over the projection for 2009. Of these, 236,590 people are expected to be classified as working in SIC 45 and the remaining 34,800 are estimated to be employed in professional occupations, within SIC 74.2.

Non-construction professional, technical, IT and other office-based staff (30,810) is forecast to remain the largest occupational group in the North West for 2013. Other sizeable occupational groups include wood trades and interior fit-out and construction managers, both of which are forecast to employ more than 24,000 workers in 2013.

Construction managers are expected to see by far the largest increase in employment, with the number of workers rising by 1,410 over the five years to 2013. Labourers nec\* (960) and non-construction professional, technical and IT and other office-based staff (820) are also expected to see large increases in employment over the period.

Total construction employment of 270,950 in 2007 is expected to fall to 265,350 in 2009, before rising to 271,390 in 2013

Logistics and scaffolders are expected to see the largest proportional increase in employment between 2009 and 2013, with employment expected to rise by close to 10% in each occupational group. An increase of nearly 8% in employment is expected for labourers nec\* over the period.

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 17% of construction professionals in the North West are classified as civil engineers, 8% as architects and 20% as surveyors in 2007.



Total employment by occupation - North West			
	Actual 2007	Forecast	
		2009	2013
Senior, executive, and business process managers	7,370	6,820	7,310
Construction managers	23,400	22,790	24,200
Non construction professional, technical, IT, and other office based staff	31,070	29,990	30,810
Wood trades and interior fit out	27,510	27,320	27,710
Bricklayers	8,950	8,570	8,700
Building envelope specialists	8,540	8,080	8,610
Painters and decorators	15,000	14,870	14,460
Plasterers and dry liners	7,090	6,860	7,210
Roofers	4,490	4,610	4,480
Floorers	4,350	4,170	4,200
Glaziers	5,670	5,740	5,980
Specialist building operatives nec*	3,760	3,360	3,520
Scaffolders	2,530	2,490	2,730
Plant operatives	4,190	4,100	4,100
Plant mechanics/fitters	3,790	3,810	3,770
Steel erectors/structural	3,180	2,930	3,120
Labourers nec*	12,720	12,640	13,600
Electrical trades and installation	19,840	19,280	19,620
Plumbing and HVAC Trades	18,400	18,220	18,090
Logistics	3,310	3,400	3,730
Civil engineering operatives nec*	6,110	6,310	6,110
Non construction operatives	14,820	14,450	14,530
Civil engineers	5,890	6,220	6,030
Other construction professionals and technical staff	19,040	18,770	18,900
Architects	2,800	2,700	2,610
Surveyors	7,130	6,850	7,260
<b>Total (SIC 45)</b>	<b>236,090</b>	<b>230,810</b>	<b>236,590</b>
<b>Total (SIC 45 and 74.2)</b>	<b>270,950</b>	<b>265,350</b>	<b>271,390</b>

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 the North West construction industry between 2009 and 2013 is illustrated in the table, Annual recruitment requirement by occupation – North West. The ARR of 4,780 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 largest ARR is expected for painters and decorators, where 590 new workers are forecast to be needed each year. Bricklayers (470), construction managers (450), electrical trades and installations (400) and labourers nec\* also have high ARRs. Professional occupations, classified within SIC 74.2, have a total recruitment requirement of 490 workers each year between 2009 and 2013.

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 - North West	
	2009-2013
Senior, executive, and business process managers	<50
Construction managers	450
Non construction professional, technical, IT, and other office based staff	100
Wood trades and interior fit out	330
Bricklayers	470
Building envelope specialists	160
Painters and decorators	590
Plasterers and dry liners	320
Roofers	<50
Floorers	70
Glaziers	310
Specialist building operatives nec*	60
Scaffolders	80
Plant operatives	130
Plant mechanics/fitters	<50
Steel erectors/structural	90
Labourers nec*	400
Electrical trades and installation	400
Plumbing and HVAC Trades	140
Logistics	<50
Civil engineering operatives nec*	90
Non construction operatives	
Civil engineers	70
Other construction professionals and technical staff	280
Architects	<50
Surveyors	100
<b>Total (SIC 45)</b>	<b>4,290</b>
<b>Total (SIC 45 and 74.2)</b>	<b>4,780</b>
<b>Source: CSN, Experian</b>	
<b>Footnote: 5 and 6 (See Appendix III)</b>	

\* nec not elsewhere classified

# 4 Comparisons across the UK

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

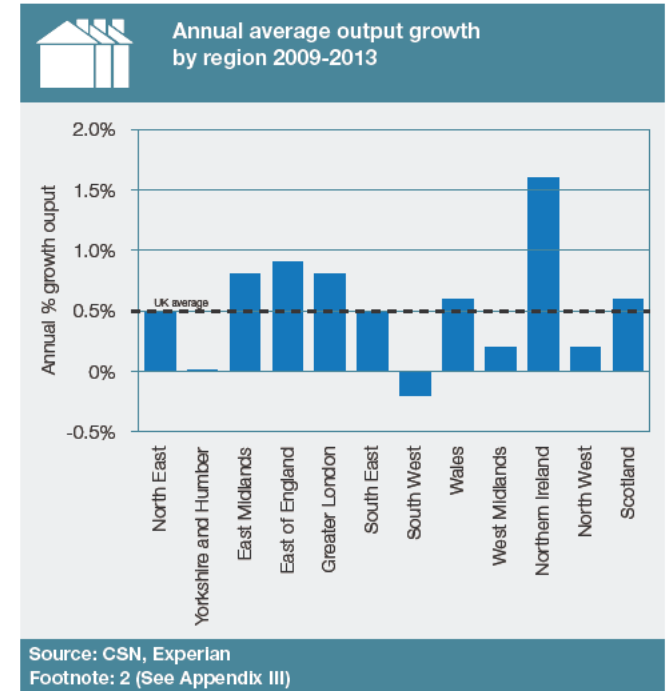
The South West does not benefit from growth in the infrastructure and public non-housing sectors in the way that many other regions and nations do, as there are no major civil engineering projects planned for the region within the forecast period and few local authorities feature in the early phases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

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

Although forecast to show output growth below the UK average, the North West benefits from investment in the BSF programme and a number of infrastructure projects

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

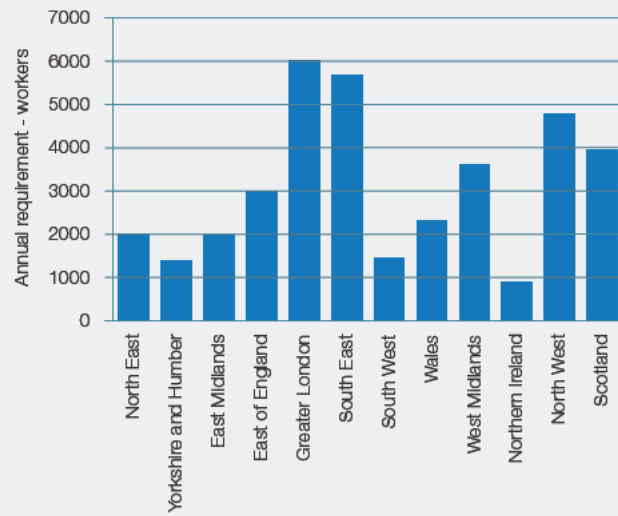
The lowest ARR is for Northern Ireland at 900, despite the fact that the province has the highest output growth rate in the UK. This is because it is a small market, accounting for around 2.7% of UK output and 3.1% of UK employment. The North East has quite a high ARR, at a little over 2,000, compared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







### Annual 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.



Gorton Monastery, Manchester

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

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

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

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





### The model approach

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

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

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

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

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

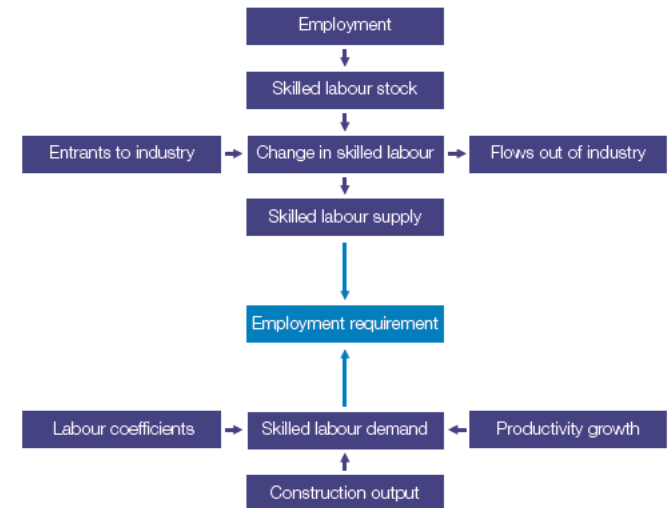
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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

Flows into the labour market include:

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

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



Source: Experian

## Appendix II – Glossary of terms

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



# Appendix III – Footnotes and footprints

## Footnotes

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

## Footprints for Built Environment SSCs

The table summarises the SIC codes covered by ConstructionSkills:

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

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

### SummitSkills

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

Coverage – Building Services Engineering.

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

### AssetSkills

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

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

### Energy and Utility Skills

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

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

† AssetSkills has a peripheral interest in SIC 74.2



# Appendix IV – Occupational groups

## Occupational group

Description, SOC reference.

### Senior, executive and business process managers

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

### Construction managers

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

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

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

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

**Wood trades and interior fit-out**

Carpenters and joiners, 5315

Pattern makers, 5493

Paper and wood machine operatives, 8121

Furniture makers, other craft woodworkers, 5492

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

Construction trades nec\* (25%), 5319

**Bricklayers**

Bricklayers, masons, 5312

**Building envelope specialists**

Construction trades nec\* (50%), 5319

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

**Painters and decorators**

Painters and decorators, 5323

Construction trades nec\* (5%), 5319

**Plasterers and dry liners**

Plasterers, 5321

**Roofers**

Roofers, roof tilers and slaters, 5313

**Floorers**

Floorers and wall tilers, 5322

**Glaziers**

Glaziers, window fabricators and fitters, 5316

Construction trades nec\* (5%), 5319





**Specialist building operatives nec\***

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

**Scaffolders**

Scaffolders, staggers, riggers, 8141

**Plant operatives**

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

**Plant mechanics/fitters**

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

**Steel erectors/structural**

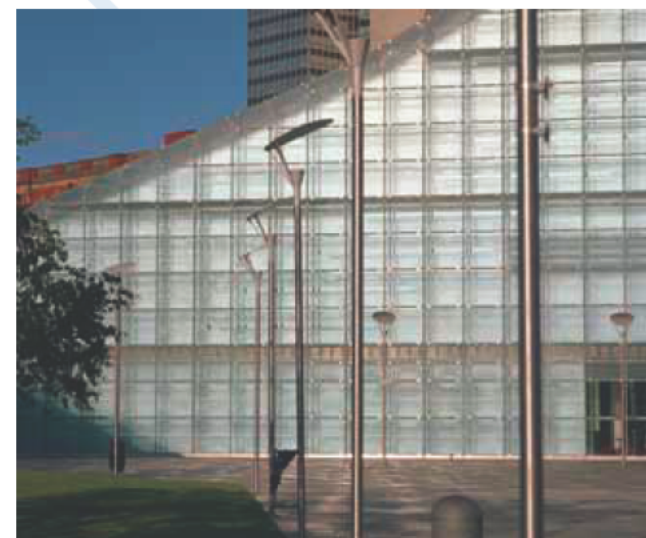
Steel erectors, 5311  
Welding trades, 5215  
Sheet metal workers, 5213  
Metal plate workers, shipwrights and riveters, 5214  
Construction trades nec\* (5%), 5319  
Smiths and forge workers, 5211  
Moulders, core makers, die casters, 5212  
Metal machining setters and setter-operators, 5221

**Labourers nec\***

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

**Electrical trades and installation**

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



Urbis Museum, Manchester

**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

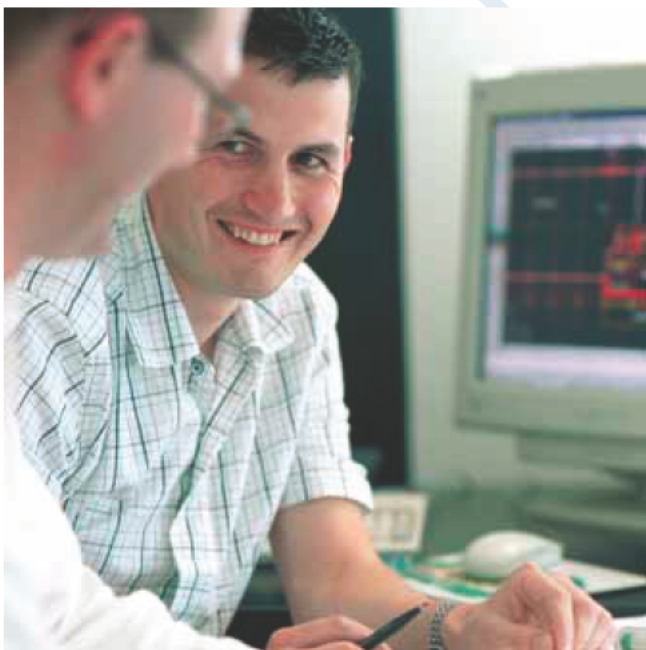
Chartered surveyors (not Quantity surveyors), 2434

## 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:

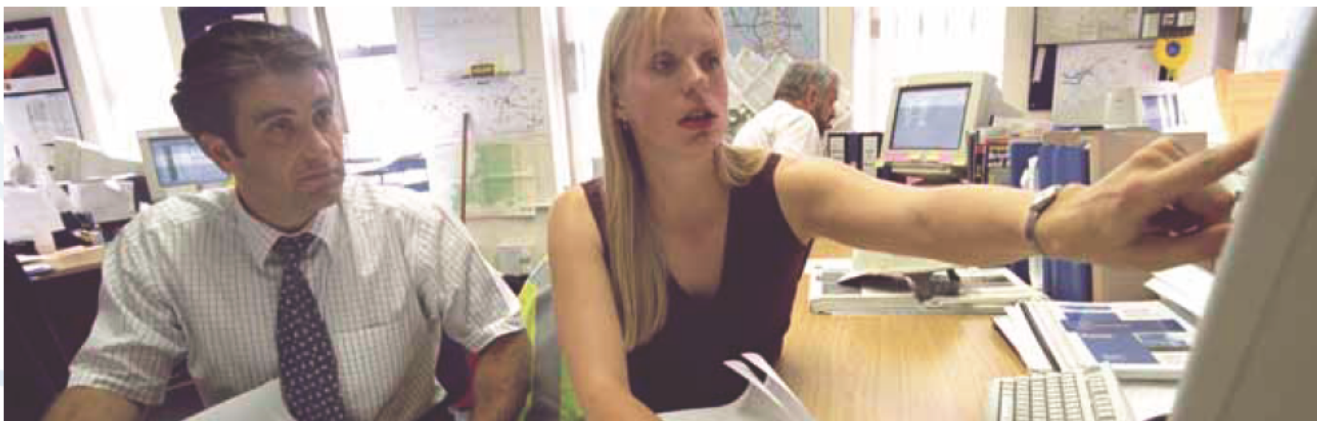
- access observatory related material such as meeting dates, agendas, presentations and notes
- access sub-regional LMI reports
- download additional research material
- comment/feedback to the CSN Team.

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](mailto:csn@cskills.org)

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



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CITB ConstructionSkills, CIC and CITB Northern Ireland are working as ConstructionSkills,  
the Sector Skills Council for Construction. (CITB ConstructionSkills registered charity number 264289)

Part of the Skills for Business network of 25 employer led Sector Skills Councils