

# Construction Skills Network Northern Ireland

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 Northern Ireland's economy

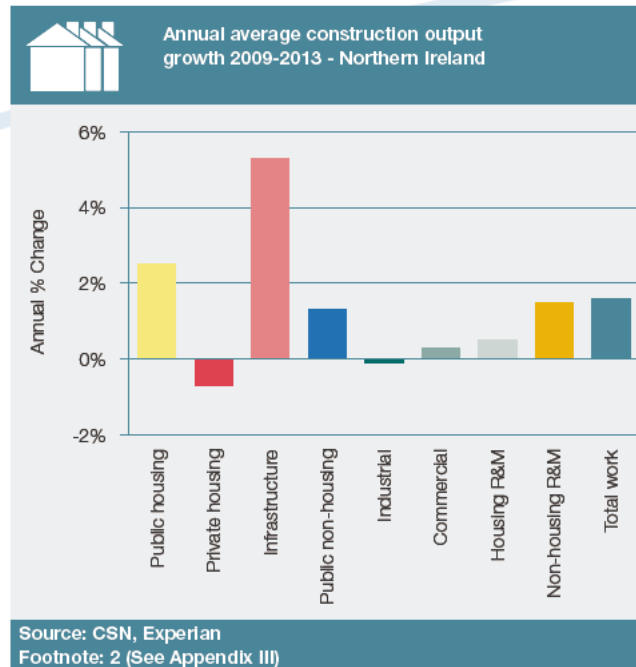
- Northern Ireland's economy was worth £24.7bn in 2007, a rise of 2% on 2006 and equivalent to 2.2% of the UK total.
- Public services remains by far the largest sector in the province's economy, accounting for nearly 30% of total output, although its share has been falling.
- Economic growth in the region is forecast at an annual average rate of 1.6% between 2009 and 2013, with a decline forecast for 2009. Despite its current problems, the financial and business services sector is expected to be the strongest over the medium term, with its share of the Northern Ireland economy rising from 14.4% in 2009 to 17% in 2013.


## 1.2 Construction output in Northern Ireland

- Construction output in Northern Ireland in 2007 totalled £2.2bn in 2000 prices, a 1% increase on 2006 and 2.7% of the UK total, a little higher than its share of Gross Value Added (GVA).
- Output is forecast to grow at an average annual rate of 1.6% between 2009 and 2013, considerably higher than the UK average of 0.5%.
- The much higher growth profile is due to the sizeable amount of public investment due to be made in the province over the next ten years, which could be in excess of £18bn if the full programme is realised, although not all of this will be for construction.

## 1.3 Construction employment in Northern Ireland

- Total construction employment in Northern Ireland is expected to fall heavily in 2008 and 2009 before picking up again in the 2009–2013 period, when it will grow by just over 3,000, or 4.2%.
- To meet this demand, after taking into account those entering and leaving the industry, 900 new workers will be required to join the industry each year.
- The largest annual recruitment requirements (ARR) are expected to be for wood trades and interior fit-out, bricklayers, and plumbing and HVAC trades.



 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
<b>UK</b>	<b>0.5%</b>	<b>74,070</b>	<b>37,030</b>

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

Northern Ireland's economy was worth **£24.7bn in 2007**, a rise of 2% on 2006 and equivalent to 2.2% of the UK total

## 2 The outlook for construction in Northern Ireland

### 2.1 Construction output in Northern Ireland – overview

Construction output in Northern Ireland reached £2.2bn, in 2000 prices, in 2007, a modest 1% increase on the previous year. Within this total, new work rose by just 1% to £1.8bn, but repair and maintenance (R&M) did better with a 4% increase to £423m.

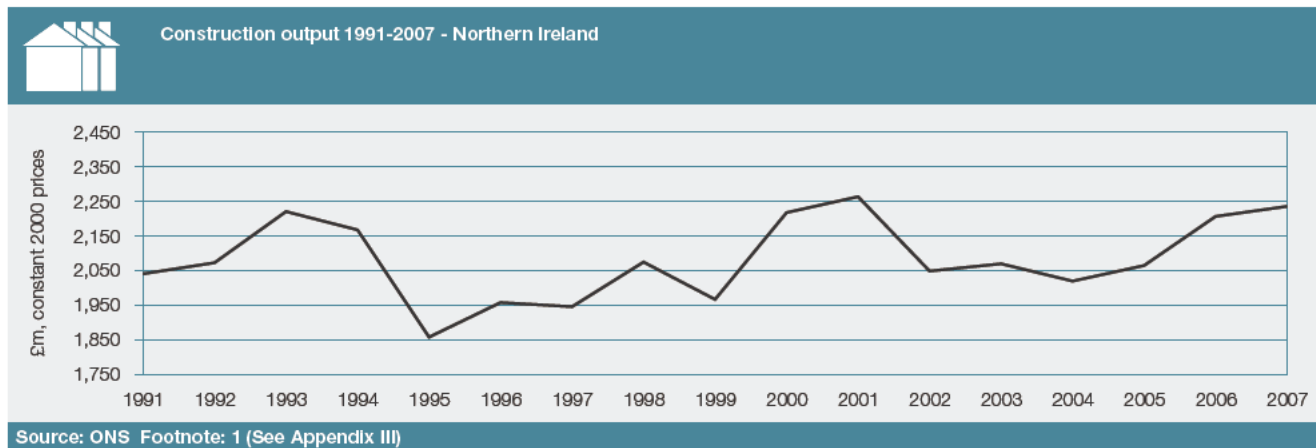
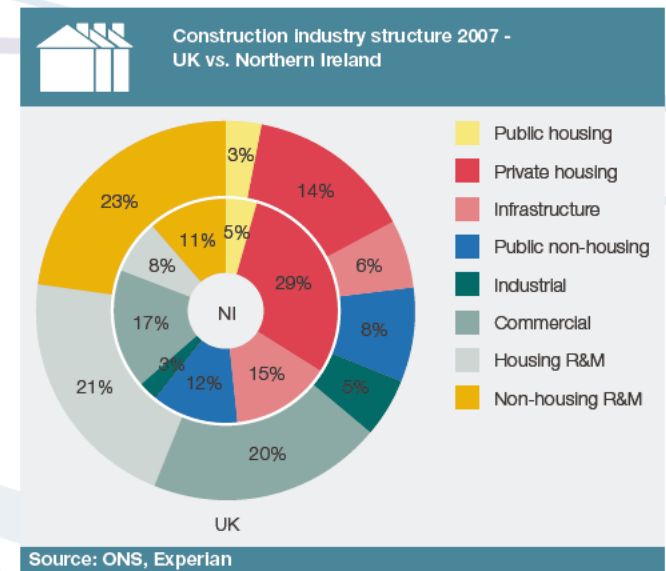
In real terms construction in the province has not grown significantly since 2000 after a sharp fall in 2002 left the industry needing to climb slowly back up to 2001's level. Overall the R&M sector has fared better than new work since 2000, with an average annual growth rate of 2.3% in the former while the latter has seen a slight decline of 0.3% on average per year.

Of the new work sectors, the strongest growth in the decade so far has been seen in infrastructure activity, with public housing the next most buoyant sector. In contrast, public non-housing and industrial work has fallen over the same period.

### 2.2 Industry structure

The diagram illustrates the sector breakdown of construction in Northern Ireland compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

The most obvious point to mention in relation to the Northern Ireland construction industry is the small size of the R&M sector compared to the UK as a whole. As R&M work tends to be much more labour intensive than new work, this should lead to a lower proportion of UK construction employment than UK construction output in Northern Ireland. However, this is not the case according to official data, implying that there are other factors in play in the province.



Output is forecast to grow at an average annual rate of 1.6% between 2009 and 2013, considerably higher than the UK average of 0.5%

### 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 Northern Ireland was valued at £24.7bn in 2007, 2.2% of the UK economy as a whole. This was 2% higher than in the previous year.

The structure of Northern Ireland's economy is significantly different from the UK as a whole. The biggest sector in the province by some distance is public services, which accounted for 29.7% of output in 2007, compared with 22.6% across the UK. However, its share of the Northern Ireland economy has been falling in recent years and the main beneficiary of this has been financial and business services which has increased its share of the province's economy from 8.2% in 2000 to 14% in 2007.



Toome bypass

Selected sectors	Actual		Forecast				
			Annual % change, real terms				
	2007	2008	2009	2010	2011	2012	2013
Public services	7	2.8	0.6	1.4	1.7	1.4	1.2
Financial and business services	3	4.8	-0.9	4.4	7.0	7.4	7.2
Transport and communications	2	4.2	1.3	5.1	4.4	3.6	3.1
Manufacturing	2	1.5	-0.9	-1.8	-0.7	-0.5	-0.2
Distribution, hotels and catering	4	0.5	-1.2	5.3	4.8	3.5	2.8
<b>Total Gross Value Added (GVA)</b>	<b>25</b>	<b>1.7</b>	<b>-0.7</b>	<b>2.0</b>	<b>2.5</b>	<b>2.1</b>	<b>2.0</b>

Source: Experlan  
Footnote: 3 (See Appendix III)

	Actual		Forecast				
			Annual % change, real terms				
	2007	2008	2009	2010	2011	2012	2013
Real household disposable income	20	-0.1	-0.1	1.4	2.0	1.9	1.6
Household spending	20	0.8	-0.9	2.2	3.7	3.4	3.1
Debt:income ratio	0.9	2.0	-1.4	-4.2	-4.2	-2.1	-0.3
House prices (£'000, current prices)	230	-10.1	-13.7	-1.9	3.5	4.6	4.0
LFS unemployment (millions)	0.03	11.2	20.8	6.9	-7.4	-8.6	-4.9

Source: ONS, DCLG, Experlan

### 2.5 Forward looking economic indicators

The Northern Ireland economy is forecast to grow at a slightly higher rate (1.6% per year) than the UK average (1.4% per year) between 2009 and 2013. This disguises a fall in GVA in the province in 2009 and a slow return to trend growth thereafter. Despite its current problems the financial and business services sector is expected to be the main engine of growth, although unlike in other regions and nations, public services is predicted to hold share over the forecast period. Transport and communications should also see reasonable growth over the period, driven in part by investment in road transport laid out in the 2008–2018 Investment Strategy.

Total employment in Northern Ireland is estimated to have declined in 2008 and is likely to fall more sharply by around 1.5% in 2009. The Labour Force Survey (LFS) unemployment rate fell to a low of 3.9% in 2007 but increased up to 4.4% in 2008. It is expected to peak at 5.7% in 2010 before slowly subsiding thereafter.

The worsening economic climate is putting pressure on disposable incomes and with increased employment uncertainties, consumers are likely to rein back on spending, at least in the short term. Consumer spending in Northern Ireland is forecast to fall by nearly 1% in 2009, compared with a decline of 0.6% for the UK as a whole.

Part of the reason for the stronger consumer retrenchment in the province is the more drastic fall in house prices in the province, which tends to colour consumers' perceptions of their 'wealth'. According to the Department for Communities and Local Government (DCLG) average house prices in Northern Ireland grew exponentially in 2007, by 44%, but they have dropped off much faster than in the other regions and nations in the first three quarters of 2008, down by nearly 15%.

### 2.6 Construction output – short-term forecasts (2009–2010)

Construction output data for Northern Ireland is published by the Department of Finance and Personnel and at the time of writing data was available for the first half of 2008.

Total construction output, in estimated constant prices, in Northern Ireland was over 4% down in the first half of 2008 compared to the same period of 2007. Of no great surprise was the fact that the housing sector has borne the brunt of the decline, with both public and private activity less buoyant. New work was down by nearly 6% while R&M activity was up 1.5% in the first six months of that year. For 2008 as a whole the decline in output is expected to be around 8% with a 44% fall in private housing activity the main driver.

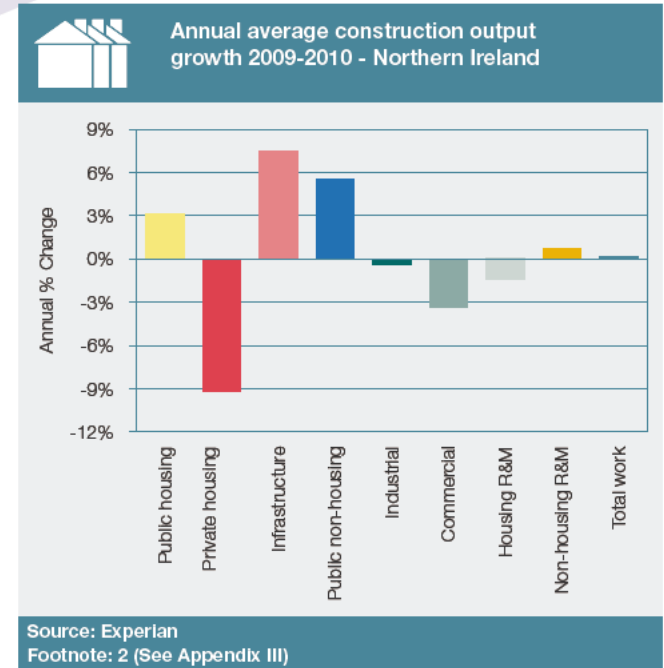
It is interesting to note that output in Great Britain is holding up better in 2008 than in Northern Ireland, but for 2009 we expect the situation to be reversed. The major fall in private house building will have come out of the system, and while a further decline is forecast for 2009 it is unlikely to be of the same magnitude as in the previous year.

The best performing sectors are expected to be the infrastructure and public non-housing ones over the next two years, with average annual growth rates of 7.5% and 5.5% respectively. The three big transport projects currently on site in the province are the M1/Westlink and M2 upgrades, due to be completed in 2009, and the dualling of a section of the A1, which should be finished in 2010.

On the public non-housing side, work has recently started on the new Public Records Office for Northern Ireland and a new campus for Belfast Metropolitan College, both sited in the Titanic Quarter area. Major works are also taking place on over 100 schools across the province during the 2008-2011 period.

As is the case across the UK as a whole, industrial and commercial construction activity is likely to suffer in the short term. Industrial manufacturers remain very negative regarding investment intentions while commercial developers are finding it difficult to attract financing for office, retail and leisure projects in the current economic climate.

As has already been mentioned, R&M accounts for a much smaller share of construction output in the province than in the UK as a whole. Much of housing R&M work is linked to consumer spending growth, thus activity in the sector should fall in the short term as consumers are unlikely to spend on big ticket items such as new bathrooms or kitchens with disposable income under pressure and increasing employment uncertainties.





Construction output - Northern Ireland  
(£ million, 2000 prices)

	Actual	Forecast annual % change			Annual average
	2007	2008	2009	2010	2009-2010
Public housing	102	1%	1%	5%	3.1%
Private housing	658	-44%	-15%	-3%	-9.2%
Infrastructure	325	29%	13%	2%	7.5%
Public non-housing	277	3%	6%	5%	5.5%
Industrial	61	3%	0%	0%	-0.4%
Commercial	389	2%	-5%	-2%	-3.4%
<b>New work</b>	<b>1,812</b>	<b>-9%</b>	<b>0%</b>	<b>1%</b>	<b>0.3%</b>
Housing R&M	170	-2%	-2%	-1%	-1.5%
Non-housing R&M	254	2%	0%	1%	0.7%
<b>Total R&amp;M</b>	<b>423</b>	<b>1%</b>	<b>-1%</b>	<b>0%</b>	<b>-0.2%</b>
<b>Total work</b>	<b>2,235</b>	<b>-8%</b>	<b>0%</b>	<b>1%</b>	<b>0.2%</b>

Source: Experian

Footnote: 1 and 2 (See Appendix III)



**2.7 Construction output – long-term forecasts (2009–2013)**

Over the whole of the forecast period, expectations for the construction industry are rosier, with the average annual rate of growth rising to 1.6% between 2009 and 2013, the highest of any region or nation and well above the UK average of 0.5%. New work is predicted to be a little more buoyant than R&M, with growth of 1.8% a year in the former and 1.1% a year in the latter. It is interesting to note that despite the reasonable rate of growth, the sharp fall in output in 2008 means that the overall size of the construction market in 2013 will be only marginally bigger than it was in 2007 in real terms.

Rises in output are concentrated towards the second half of the forecast period and are to a great extent predicated on the expenditure programme set out in the Investment Strategy for Northern Ireland 2008–2018, combined with a recovery in the housing and commercial markets.

At present, the dormancy of the housing market means that many current and planned developments have been mothballed. However as economic conditions improve, consumer confidence returns and credit conditions ease, prospective purchasers will start to re-enter the market and, as long as the three-year planning permission window has not expired, residential projects can quickly get off the ground again. For example, the assumption is that phase 2 of the Titanic Quarter will start at some point during the forecast period and this features a residential area to the north of Abercorn Basin and another around Hamilton Graving Dock.

There are some significant projects still to roll out in the infrastructure sector, including sizeable road improvement projects on the A5, A6, and A8 and towards the end of the forecast period work may begin on the Greater Belfast Rapid Transport Line.

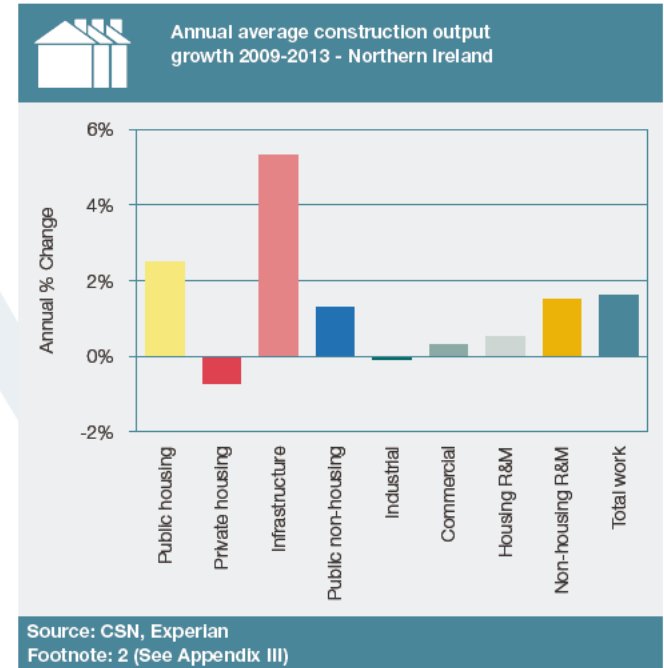
In the water and sewerage sector extensive works are required to bring the province's water and waste water treatment infrastructure up to current European Union standards, and this is expected to be completed by 2014. Thus while the rate of growth in the sector falls off post-2009 it still remains robust over the whole of the forecast period.

The main drivers of public non-housing activity are education and health construction. Three new hospitals are due to be completed across the province by 2013, while there are plans for further school modernisation from 2012. However, with growth quite strong in the earlier part of the forecast period, output is likely to tail-off a little from 2011.

With manufacturing output forecast to decline from 2009, there will be little reason or incentive for investment in new manufacturing facilities. Thus any growth that may take place in the industrial construction sector is likely to be on the distribution and logistics side around new transport hubs.

For commercial construction, the flagship project in the province remains the Titanic Quarter, with projects such as office development in the Queen's Island area of Belfast due to commence in 2009. Also due to start in 2009 is the retail park development for the Ards Peninsula. In the current economic climate, the start dates for these projects may slip, however commercial construction activity in Northern Ireland should start to grow again in 2011 as the economy recovers.

The R&M sector is expected to see moderate growth over the forecast period. The big project in the sector is the refurbishment of around 98,000 units of the social housing stock over a five-year period, with a total estimated cost of £160m.







Construction output - Northern Ireland  
(£ million, 2000 prices)

	Estimate		Forecast annual % change				Annual average
	2008	2009	2010	2011	2012	2013	2009-2013
Public housing	103	1%	5%	2%	1%	3%	2.5%
Private housing	372	-15%	-3%	4%	6%	7%	-0.7%
Infrastructure	420	13%	2%	6%	3%	2%	5.3%
Public non-housing	284	6%	5%	-3%	-2%	1%	1.3%
Industrial	63	0%	0%	0%	1%	0%	-0.1%
Commercial	399	-5%	-2%	2%	3%	3%	0.3%
<b>New work</b>	<b>1,641</b>	<b>0%</b>	<b>1%</b>	<b>2%</b>	<b>3%</b>	<b>3%</b>	<b>1.8%</b>
Housing R&M	166	-2%	-1%	2%	1%	2%	0.5%
Non-housing R&M	260	0%	1%	2%	2%	2%	1.5%
<b>R&amp;M</b>	<b>426</b>	<b>-1%</b>	<b>0%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>1.1%</b>
<b>Total work</b>	<b>2,067</b>	<b>0%</b>	<b>1%</b>	<b>2%</b>	<b>2%</b>	<b>3%</b>	<b>1.6%</b>

Source: CSN, Experian

Footnote: 2 (See Appendix III)



# 3 Construction employment forecasts for Northern Ireland

## 3.1 Total construction employment forecasts by occupation

The table, Total employment by occupation – Northern Ireland, presents actual construction employment (SIC 45 and 74.2) in Northern Ireland for 2007, and the forecast total employment for each of the 26 occupations between 2009 and 2013. A full breakdown of occupations is provided in Appendix IV.

Total construction employment by 2013 in Northern Ireland is forecast to be 73,560, when including SIC 45 and 74.2. This represents a significant drop on the 2007 level but a 3,000 increase on projected employment for 2009. This is due to the fact that construction output in the province is estimated to have declined by 8% in real terms in 2008 bringing with it a consequent sharp fall in employment in that year.

The largest occupational category in Northern Ireland is wood trades and interior fit-out, accounting for 15.3% of total construction employment in the province in 2007. This occupation is forecast to hold its share of total employment to 2013, but its profile will be the same, with a fall in 2008 and 2009 followed by a slow recovery to 2013.

The largest annual recruitment requirements are expected to be for wood trades and interior fit-out, bricklayers, and plumbing and HVAC trades

The largest increases in percentage terms in construction employment between 2009 and 2013 are expected for scaffolders and plasterers and dry liners, both with rises in excess of 10%. In absolute terms, the biggest growth will be for wood trades and interior fit-out (680), labourers nec\* (400), and plumbing and HVAC trades (330).

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; surveyors. The result of this disaggregation shows that 37% of construction professionals in the province are classified as civil engineers, 22% as architects and 14% as surveyors in 2007.



Total employment by occupation - Northern Ireland			
	Actual 2007	Forecast	
		2009	2013
Senior, executive, and business process managers	1,840	1,620	1,600
Construction managers	4,750	3,690	3,870
Non-construction professional, technical, IT, and other office-based staff	7,040	6,210	6,310
Wood trades and interior fit-out	12,520	10,610	11,290
Bricklayers	5,960	5,010	5,300
Building envelope specialists	3,790	2,770	2,900
Painters and decorators	3,810	3,310	3,420
Plasterers and dry liners	3,210	2,740	3,020
Roofers	2,140	1,860	1,970
Floorers	470	400	390
Glaziers	1,110	990	1,030
Specialist building operatives nec*	2,460	2,220	2,350
Scaffolders	300	280	310
Plant operatives	3,070	2,820	2,830
Plant mechanics/fitters	850	720	760
Steel erectors/structural	590	390	380
Labourers nec*	4,720	4,300	4,700
Electrical trades and installation	6,690	5,660	5,780
Plumbing and HVAC Trades	6,720	6,110	6,440
Logistics	730	410	300
Civil engineering operatives nec*	1,390	1,320	1,340
Non-construction operatives	1,290	1,020	1,020
Civil engineers	2,330	2,370	2,470
Other construction professionals and technical staff	1,770	1,700	1,710
Architects	1,380	1,230	1,260
Surveyors	880	770	810
<b>Total (SIC 45)</b>	<b>75,450</b>	<b>64,460</b>	<b>67,310</b>
<b>Total (SIC 45 and 74.2)</b>	<b>81,810</b>	<b>70,530</b>	<b>73,560</b>

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 new entrant training, although robust data on training provision is being developed by ConstructionSkills in partnership with Further Education, Higher Education and Government 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 Northern Ireland construction industry between 2009 and 2013 is illustrated in the table. The ARR of 900 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's are expected to be for wood trades and interior fit-out (150), bricklayers (130), and plumbing and HVAC trades (110). The ARR's tend to be a function of the size of the occupation. Due to the economic downturn, its effects on the construction industry, and the fact that Northern Ireland is a small construction market, many of the occupational ARR's in the province have fallen below 50.

Please note that all of the ARR's 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 - Northern Ireland	
	2009-2013
Senior, executive, and business process managers	<50
Construction managers	<50
Non-construction professional, technical, IT, and other office-based staff	<50
Wood trades and interior fit-out	150
Bricklayers	130
Building envelope specialists	<50
Painters and decorators	<50
Plasterers and dry liners	50
Roofers	<50
Floorers	<50
Glaziers	<50
Specialist building operatives nec*	<50
Scaffolders	<50
Plant operatives	<50
Plant mechanics/fitters	<50
Steel erectors/structural	<50
Labourers nec*	<50
Electrical trades and Installation	60
Plumbing and HVAC Trades	110
Logistics	<50
Civil engineering operatives nec*	<50
Non-construction operatives	
Civil engineers	50
Other construction professionals and technical staff	<50
Architects	<50
Surveyors	<50
<b>Total (SIC 45)</b>	<b>820</b>
<b>Total (SIC 45 and 74.2)</b>	<b>900</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.

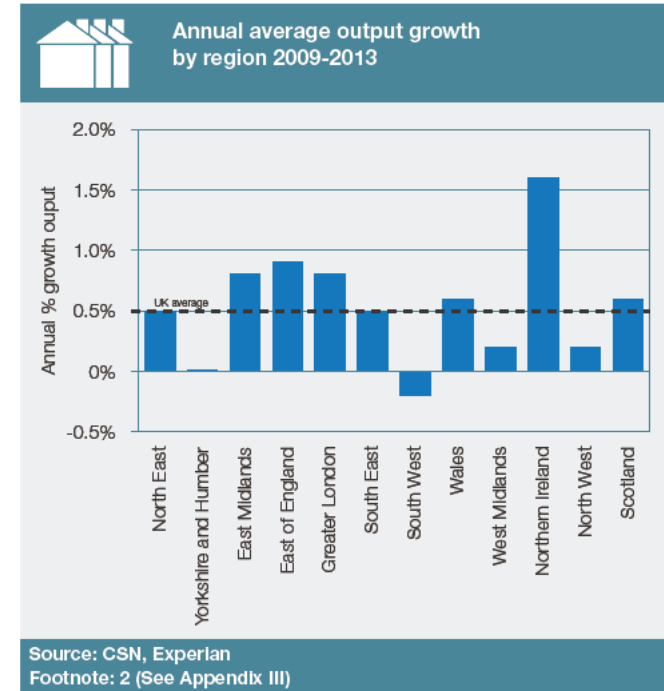
The South West does not benefit from growth in the infrastructure and public non-housing sectors in the way that many other regions and nations do, as there are no major civil engineering projects planned for the region within the forecast period and few local authorities feature in the early phases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

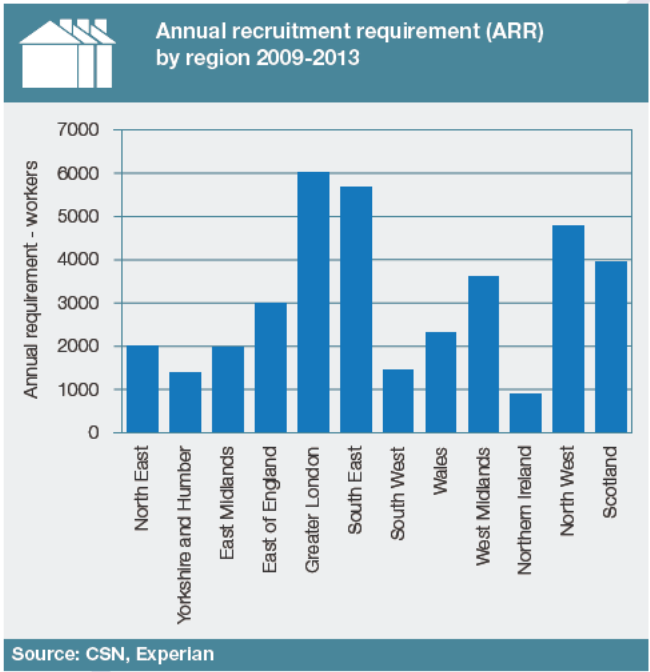
Northern Ireland continues to show the highest forecast growth in output, driven by the investment strategy planned for the next 10 years by the Northern Ireland Executive, although worries about how quickly this can be delivered have led to a lower growth rate than that put forward in previous years.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

Northern Ireland is still benefiting from considerable public investment, though it is not immune from recession as housing and commercial markets have been significantly affected

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.





# 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.



Victoria Square, Belfast

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 new entrant training, although robust data on training provision is being developed by ConstructionSkills in partnership with Further Education, Higher Education and Government 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.

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:

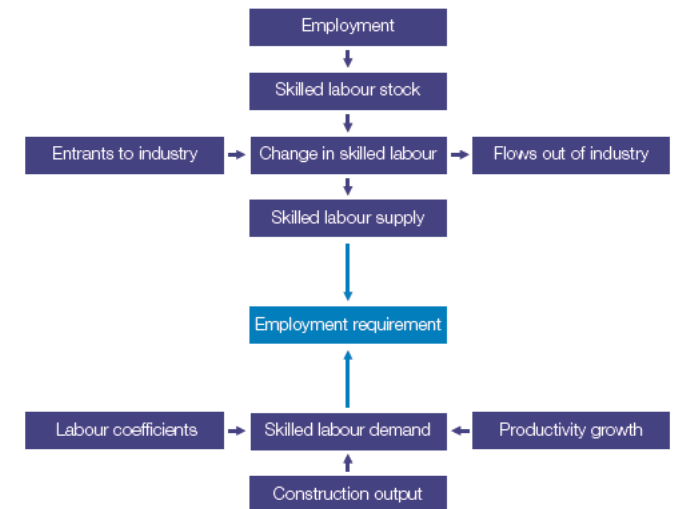
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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  
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



Invest NI building, Belfast

**Plumbing and heating, ventilation, and air conditioning trades**

Plumbers and HVAC trades, 5314

Pipe fitters, 5216

Labourers in building and woodworking trades (6%), 9121

Construction trades nec\* (5%), 5319

**Logistics**

Heavy goods vehicle drivers, 8211

Van drivers, 8212

Packers, bottlers, canners, fillers, 9134

Other goods handling and storage occupations nec\*, 9149

Buyers and purchasing officers (50%), 3541

Transport and distribution clerks, 4134

Security guards and related occupations, 9241

**Civil engineering operatives nec\***

Road construction operatives, 8142

Rail construction and maintenance operatives, 8143

Quarry workers and related operatives, 8123

Construction operatives nec\* (20%), 8149

Labourers in other construction trades nec\*, 9129

**Non-construction operatives**

Metal making and treating process operatives, 8117

Process operatives nec\*, 8119

Metal working machine operatives, 8125

Water and sewerage plant operatives, 8126

Assemblers (vehicle and metal goods), 8132

Routine inspectors and testers, 8133

Assemblers and routine operatives nec\*, 8139

Stevedores, dockers and slingers, 9141

Hand craft occupations nec\*, 5499

Elementary security occupations nec\*, 9249

Cleaners, domestics, 9233

Road sweepers, 9232

Gardeners and groundsmen, 5113

Caretakers, 6232

**Civil engineers**

Civil engineers, 2121

**Other construction professionals and technical staff**

Mechanical engineers, 2122

Electrical engineers, 2123

Chemical engineers, 2125

Design and development engineers, 2126

Production and process engineers, 2127

Planning and quality control engineers, 2128

Engineering professional nec\*, 2129

Electrical/electronic technicians, 3112

Engineering technicians, 3113

Building and civil engineering technicians, 3114

Science and engineering technicians nec\*, 3119

Architectural technologists and town planning technicians, 3121

Draughtspersons, 3122

Quality assurance technicians, 3115

Town planners, 2432

Electronics engineers, 2124

Building inspectors, 3123

Scientific researchers, 2321

**Architects**

Architects, 2431

**Surveyors**

Quantity surveyors, 2433

Chartered surveyors (not Quantity surveyors), 2434

# 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:

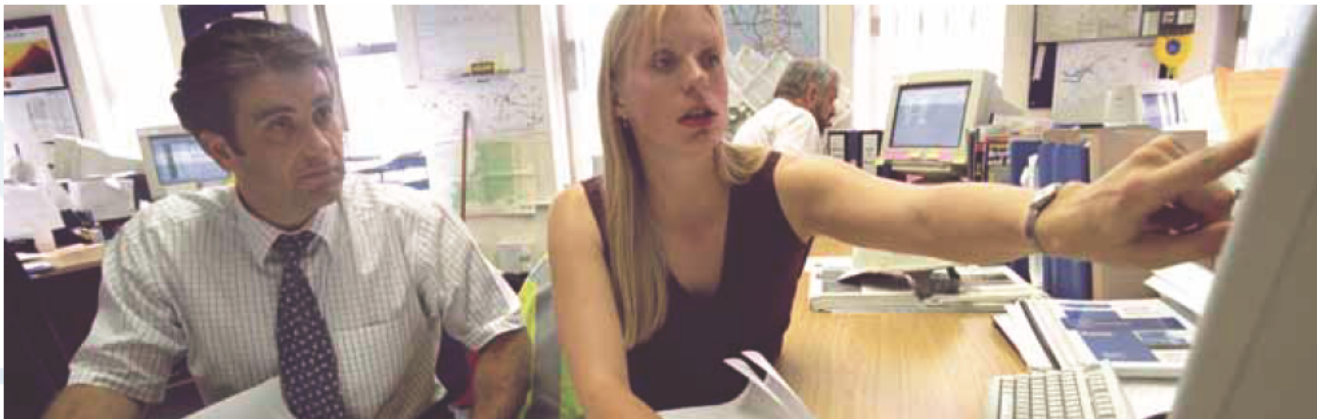
- access observatory related material such as meeting dates, agendas, presentations and notes
- access sub-regional LMI reports
- download additional research material
- comment/feedback to the CSN Team.

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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