

# 2007-2011 Construction Skills Network Labour Market Intelligence

North East

**Construction Skills Network**

**experian**<sup>®</sup>

**construction**skills

# Table of contents

1.	Headlines	1
2.	The Outlook for Construction in the North East	3
3.	Construction Employment Forecasts for the North East	9
4.	Regional Comparisons	12
	Appendix I – Methodology	14
	Appendix II – Glossary of Terms	17
	Appendix III – Footnotes & Footprints	19
	Appendix IV – Occupational Groups (SOC codes)	21
	Appendix V – CSN Website & Contact Details	25

# 1. Headlines

**Construction Skills Network**



# 1. Headlines

## 1.1 The North East Economy

- In 2005 the North East economy was worth £35bn (around 3% of the total UK economy). This is forecast to increase by an average of 2.1% each year between 2007 and 2011, compared to 3% for the UK.
- The Manufacturing sector is of greater importance in the North East than it is elsewhere in the UK, accounting for 20% of total output. The Public Sector also makes up a significantly greater proportion of output in the region than nationally.
- The Transport & Communications sector is expected to be the fastest growing sector between 2007 and 2011, closely followed by Financial & Business Services.

## 1.2 Construction Output in the North East

- In 2005 construction output in the North East was worth £2.6bn. This is approximately 3% of the UK total.
- Output is forecast to grow at an annual average rate of 1.3% between 2007 and 2011, the lowest growth rate of any other UK region or nation.
- However, healthy growth is still expected in 2006 and 2007 driven by the commercial and industrial sectors.

## 1.3 Construction Employment in the North East

- Total construction employment in the North East is forecast to stand at 112,440 in 2011, 17% higher than the 2005 level.
- After taking account of those entering and leaving the industry, the North East requires, on average, 3,300 extra workers each year to meet this demand.
- Construction Professionals & Technical Staff has the largest annual requirement of any occupational group in the North East.



Source: Experian

## Regional Comparison 2007-2011

	Annual Average % Change in Output	Growth in Total Employment	Total Average Annual Requirement
North East	1.3%	4,380	3,300
Yorkshire and Humber	1.9%	16,110	6,090
East Midlands	1.9%	13,340	5,210
East of England	3.5%	36,360	10,160
Greater London	4.5%	42,350	12,880
South East	3.2%	41,390	13,560
South West	1.9%	16,350	6,360
Wales	2.5%	9,080	5,090
West Midlands	1.6%	16,070	6,340
Northern Ireland	4.3%	8,790	2,940
North West	1.4%	19,260	8,830
Scotland	1.5%	17,800	6,830
<b>UK</b>	<b>2.6%</b>	<b>241,280</b>	<b>87,590</b>

Source: CSN, Experian

Footnote: 2 (See Appendix III)

## 2. The Outlook for Construction in the North East

**Construction Skills Network**



## 2. The Outlook for Construction in the North East

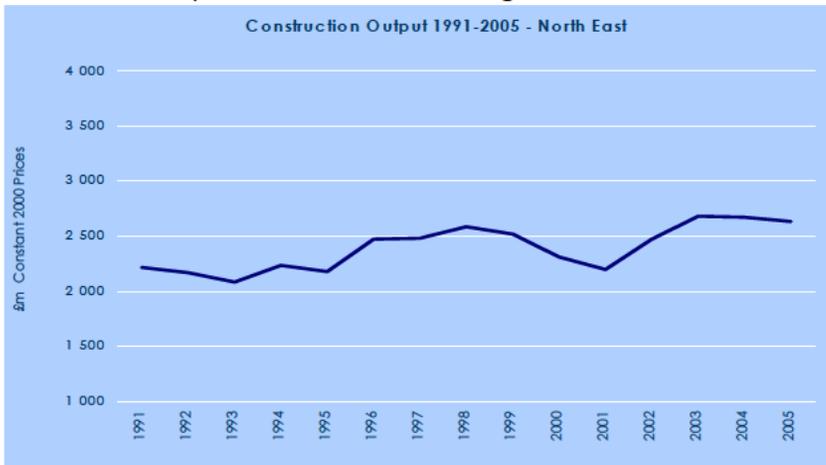
### 2.1 Construction Output in the North East – Overview

After recording strong growth in 2002 and 2003 output fell slightly in 2004 and 2005. As a result, construction output in the North East increased by an annual average rate of 2.8% between 2001 and 2005, rising from £2.2bn in 2001 to £2.6bn, in 2000 prices, in 2005 (see chart below).

R&M work was the main impetus behind this growth, increasing by 4.3% on average each year between 2001 and 2005. Over the same period new work output increased by an annual average rate of 1.8%.

Public housing saw the highest growth of any new work sector, increasing by an average of 19% each year between 2001 and 2005. Despite the size of these increases the effect on total construction is limited because the sector still only accounts for around £0.06bn of output out of a total of £2.6bn (2005).

Private housing and public non-housing output recorded annual average growth of 12.4% and 7.6% respectively between 2001 and 2005 while the commercial sector ended the period at almost exactly the same level as it began.



Source: Experian

Footnote: 1 (See Appendix III)

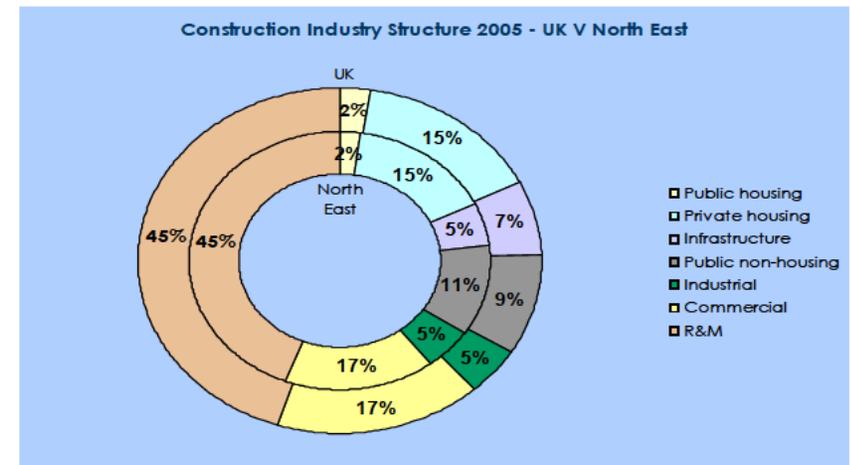
Output in both the infrastructure and industrial sectors was lower in 2005 than in 2001. Infrastructure output fell by the largest amount over the period, down by nearly 20% while the drop in industrial output was much less severe at just 8%. In fact, Infrastructure output in the North East fell by more than any other sector across the UK as a whole over the period.

The trend for R&M work to drive output growth is in line with that for the UK. However, when examining new work across the UK, public non-housing outperformed the other sectors.

### 2.2 Industry Structure

The structure of the construction industry can differ from that of the UK far more in some regions than in others. However, the North East is one region where there is very little deviation (see chart below). Infrastructure work accounts for slightly less of all construction in the North East while public non-housing accounts for a slightly greater proportion of all work.

However, the structure of the industry inevitably changes over time. For example, if public housing output in the region was to match its growth since 2001 over coming years it would soon account for more than 2% of total construction.



Source: DTI, DFP

## 2. The Outlook for Construction in the North East

### 2.3 Economic Overview

The expected performance of a regional or national economy over the forecast period (2007-2011) provides an indication of the construction sectors in which demand is likely to be strongest.

### 2.4 Economic Structure

The North East economy was worth £35bn in 2005, an increase of 2.1% from the previous year. This is the equivalent of around 3% of the UK total (see table below).

As is the case in the rest of the north of England and Scotland, Public Services was the largest component of Gross Value Added (GVA), accounting for 30% of the total in 2005.

Manufacturing took the second largest share and at 20% of the total has much more importance within the region than across the UK. Financial and Business Services make up a much smaller proportion of GVA in the North East than nationally.

**Economic Structure - North East** (£ billion, 2003 prices)

Selected Sectors	Actual 2005	Forecast <i>Annual % Change, Real Terms</i>					
		2006	2007	2008	2009	2010	2011
Public Services	10	1.3	0.8	1.4	1.7	1.7	2.0
Financial & Business Services	6	6.3	5.1	4.5	4.2	3.7	3.3
Transport & Communications	2	-1.3	2.0	3.6	4.2	4.3	4.4
Manufacturing	7	1.9	3.7	1.8	2.1	1.7	1.6
Distribution, Hotels & Catering	5	1.0	0.4	1.7	2.4	2.4	2.2
<b>Total Gross Value Added (GVA)</b>	<b>35</b>	<b>1.7</b>	<b>1.9</b>	<b>1.8</b>	<b>2.3</b>	<b>2.2</b>	<b>2.1</b>

Source: Experian  
Footnote: 3 (See Appendix III)

Over the forecast period (2007-2011) GVA in the North East is forecast to grow by 9%. Much of this growth comes from an 18% expansion of Transport & Communications output. Public Services are expected to see the least growth over the period, increasing by just 6%.

### 2.5 Forward Looking Economic Indicators

Economic growth in the North East is forecast to be slower than the national average. Growth in household spending is expected to outstrip increases in real household disposable income between 2005 and 2011. One consequence of this is an increasing credit burden, but with the regions debt to income ratio currently well below that for the UK this is not a major concern (see table below).

The Department for Communities and Local Government (DCLG) reported that average house prices in the North East reached £132,000 in 2005 compared to £184,000 across the UK. Growth in house prices in the North East is also expected to lag behind that for the UK between 2006 and 2011, with prices set to rise, on average, 3.1% each year.

**Economic Indicators - North East** (£ billion, 2003 prices - unless otherwise stated)

	Actual 2005	Forecast <i>Annual % Change, Real Terms</i>					
		2006	2007	2008	2009	2010	2011
Real Household Disposable Income	28	2.3	2.1	2.1	1.8	1.6	1.6
Household Spending	26	1.8	2.1	2.1	2.6	2.4	2.0
Debt:Income Ratio	1.1	1.1	1.1	1.2	1.2	1.2	1.3
House Prices (£'000, current prices)	132	6.4	3.6	2.2	1.8	2.2	2.4
LFS Unemployment (millions)	0.10	4.8	6.2	-0.4	-1.7	-3.9	-0.7

Source: ONS, DCLG, Experian

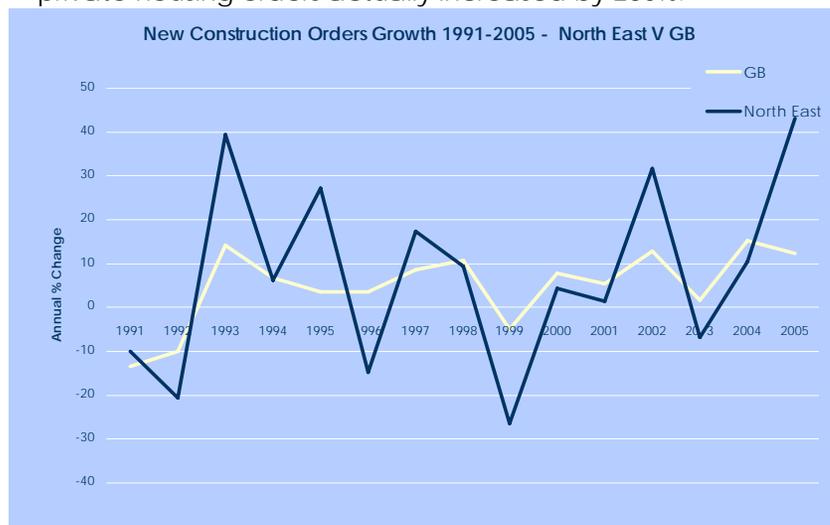
## 2. The Outlook for Construction in the North East

New orders statistics are based on the Department of Trade and Industry's (DTI) monthly survey of construction contractors. The time taken for new orders to feed into output differs from sector to sector and from project to project. As a general rule, industrial orders tend to be converted into output relatively quickly and infrastructure orders relatively slowly, due to project scale and complexity.

### 2.6 New Construction Orders – Overview

As can be seen from the chart and table below, since 2000 the performance of construction orders from year to year in the North East has been mixed across the sectors. However over the period as a whole orders within the region have almost doubled. A large part of this increase occurred in 2005 when orders leapt up by more than 40% to stand at £1.9bn (see chart and table below).

Only infrastructure orders fell between 2000 and 2005, while the public housing, public non-housing and commercial sectors all saw orders more than double over this period and private housing orders actually increased by 230%.



Source: DTI  
Footnote: 4 (See Appendix III)

### 2.7 New Construction Orders – Current Situation

The rapid growth in 2005 could not be maintained into 2006 and total construction orders fell back in the first three quarters, down 18% from their level in the first three quarters of 2005.

In spite of this overall fall, industrial orders in the first three quarters of 2006 increased by more than 50% on the corresponding figure to September 2005 and infrastructure orders were up by 25%. The sectors responsible for dragging down the orders total were public non-housing and commercial, both recording falls in orders of more than 40%.

Public housing orders were 20% lower in the first nine months of 2006 than in the same period of 2005, although this does follow four years of very strong orders growth in the sector. Private housing orders remained virtually unchanged.

At a regional level, sizeable fluctuations in orders statistics can be caused by one or two large contracts being placed.

New Work Construction Orders - North East (£ million, current prices)						
	Actual 2005	Annual % Change				
		2001	2002	2003	2004	2005
Public housing	60	-43.3	29.4	22.7	51.9	46.3
Private housing	459	25.9	58.3	21.7	33.8	1.8
Infrastructure	127	-56.0	100.0	-40.8	-12.8	33.7
Public non-housing	327	36.7	29.8	-8.6	18.9	13.1
Industrial	173	-8.7	-35.7	35.8	-14.5	84.0
Commercial	742	21.6	26.1	-18.3	-5.4	111.4
<b>Total New Work</b>	<b>1889</b>	<b>1.5</b>	<b>31.6</b>	<b>-6.7</b>	<b>10.4</b>	<b>43.0</b>

Source: DTI  
Footnote: 4 (See Appendix III)

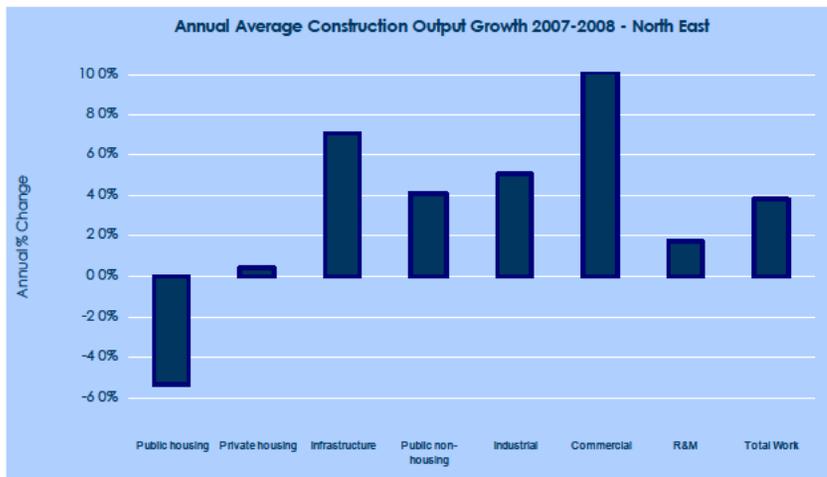
## 2. The Outlook for Construction in the North East

### 2.8 Construction Output – Short-term Forecasts (2006-2008)

Total construction output, in current prices, in the North East was 15% higher in the first half of 2006 than the first half of 2005. This was the greatest increase recorded by any part of the UK. Regional DTI output statistics are published in current prices, and thus are inclusive of any inflationary effect. At the time of writing DTI output statistics for the first half of 2006 are available.

Construction output in the North East is forecast to show robust growth through 2006, 2007 and 2008, at an annual average rate of 3.8% (see chart and table below). Within this total the outlook for new work is brighter than that for R&M, expected to grow almost three times as quickly.

The commercial sector is forecast to witness the strongest growth over this period, with output increasing at an annual average rate of 10.1%. Much of this growth is expected to come in 2006, with output in the first half of the year already recorded at 47% above its level for the first half of 2005. The rate of growth in the sector is then expected to slow in 2007 and 2008.



Source: Experian

Footnote: 2 (See Appendix III)

Industrial output is set to expand even more quickly than commercial output in 2006, jumping nearly 40%, but this rate of growth will slow very rapidly to just 2% in 2008. This leaves the sector with an annual average growth rate of 5.1%.

Despite a forecast fall in output in 2006 infrastructure is the only sector expected to see output growth accelerate throughout the 2006-2008 period, resulting in growth of 7.1% on average for each of the three years in question. Public non-housing is also forecast to record growth over the period, at an annual average rate of 4.1%, while only marginal growth will be seen in the private housing sector as house price rises slow from levels during the previous three years.

Public housing is the only sector in which output is forecast to decline, falling by, on average, 5.4% each year. This has a limited effect on the growth in total construction output though, because of the relatively small size of the sector.

Construction Output - North East (£ million 2000 prices)					
	Actual 2005	Forecast Annual % Change			Annual Average 2007-2008
		2006	2007	2008	
Public housing	59	-1%	-6%	-4%	-5.4%
Private housing	405	-1%	0%	1%	0.4%
Infrastructure	144	-3%	2%	12%	7.1%
Public non-housing	294	-5%	3%	6%	4.1%
Industrial	142	39%	8%	2%	5.1%
Commercial	422	26%	14%	6%	10.1%
<b>New Work</b>	<b>1 468</b>	<b>10%</b>	<b>6%</b>	<b>4%</b>	<b>5%</b>
R&M	1 163	1%	3%	1%	1.7%
<b>Total Work</b>	<b>2 630</b>	<b>6%</b>	<b>5%</b>	<b>3%</b>	<b>3.8%</b>

Source: DTI, Experian

Footnote: 1 & 2 (See Appendix III)

## 2. The Outlook for Construction in the North East

### 2.9 Construction Output – Long-term Forecasts (2007-2011)

Looking beyond 2008 growth is expected to slow considerably, when output is to remain unchanged in both 2009 and 2010 before some growth returns in 2011. This means that over the forecast period (2007-2011) output is expected to rise at an annual average rate of 1.3%.

In contrast to the shorter term forecasts, R&M activity is expected to be the main driver of output growth over the five years to 2011. While R&M output continues on its path of subdued but steady growth after 2008, new work is set to record declines in output in two of the three years to 2011.

The commercial sector is a major influence on this change in performance as average annual growth of more than 10% during 2007 and 2008 becomes a decline in output through 2009 and 2010. Part of this will be attributable to activity on the Victoria Harbour mixed use project in Hartlepool winding down. Over the duration of forecast period (2007-2011) the commercial sector's annual average rate of growth is negative, albeit only marginally at -0.1%.



Source: Experian

Footnote: 2 (See Appendix III)

Similarly both the infrastructure and industrial sectors are forecast to see output growth fall post-2008 with a lack of major projects in the pipeline, except for the scheme to improve the A1 between Dishforth and Barton. However, the annual average growth of 2.5% and 2.2% respectively in these sectors remains well above that expected for total construction between 2007 and 2011.

Private housing is expected to show only the slightest growth over the forecast period, just 0.1% on average each year, but will nonetheless remain at an historically high level. Public housing output will continue to fall after 2008 and is in fact forecast to fall in each and every year between 2007 and 2011 at an average rate of 3.2%. However, this comes after the sector gave one of the strongest performances in the North East's construction industry between 2000 and 2005.

Following a forecast fall in output in 2006 public non-housing is set to record the greatest output growth between 2007 and 2011 at an annual average rate of 4.3%. Increasing levels of education work, as the Building Schools for the Future programmes in Newcastle and Sunderland get underway, will drive this growth with the lion's share of funding for these schemes originating from the public sector.

Construction Output - North East (£ million 2000 prices)							
	Estimate	Forecast Annual % Change					Annual Average 2007-2011
	2006	2007	2008	2009	2010	2011	
Public housing	59	-6%	-4%	-4%	-3%	-1%	-3.2%
Private housing	400	0%	1%	0%	-1%	1%	0.1%
Infrastructure	140	2%	12%	1%	-1%	-1%	2.5%
Public non-housing	279	3%	6%	4%	5%	3%	4.3%
Industrial	198	8%	2%	3%	3%	0%	2.2%
Commercial	531	14%	6%	-6%	-4%	4%	-0.1%
<b>New Work</b>	<b>1 607</b>	<b>6%</b>	<b>4%</b>	<b>-1%</b>	<b>-1%</b>	<b>2%</b>	<b>1.1%</b>
R&M	1 172	3%	1%	2%	2%	1%	1.6%
<b>Total Work</b>	<b>2 779</b>	<b>5%</b>	<b>3%</b>	<b>0%</b>	<b>0%</b>	<b>2%</b>	<b>1.3%</b>

Source: Experian

Footnote: 2 (See Appendix III)

### 3. Construction Employment Forecasts for the North East

### 3. Construction Employment Forecasts for the North East

#### 3.1 Total Construction Employment Forecasts by Occupation

The table, right, presents actual construction employment (SIC 45 and 74.2, see Appendix III) in the North East for 2005 and the forecast total employment in 25 occupations and in the industry as a whole between 2007 to 2011. By the end of this period total construction employment is forecast to stand at around 112,440 which equates to approximately 16,070 more people being employed in the industry than in 2005. 100,280 people will be classified as working in SIC 45 in 2011, with the remaining 12,160 falling in SIC 74.2

The largest occupational group is forecast to be Construction Professionals & Technical Staff in 2011, closely followed by Electrical Trades & Installation and Wood Trades & Interior Fit-out. This order will be unchanged from 2005.

Bricklayers and Building Envelope Specialists are the two groupings forecast to see the greatest proportional increase in employment, rising by 11% between 2007 and 2011 in both cases. On average total employment in each occupation is expected to rise by around 4 per cent over the forecast period (2007-2011).

Occupational groupings have been improved following the 2006-2010 model run to incorporate new research and to reflect feedback from Observatory members and other stakeholders. A full breakdown of the 25 occupations is provided in Appendix IV.

The most significant change is that research into the contents of the Construction Trades nec category has enabled us to publish numbers for Building Envelope Specialists, which includes activities like cladding. Wood Trades has become Wood Trades & Interior Fit-out and Architects & Professionals is now based on a more appropriate group of SOC codes and has been renamed Construction Professionals & Technical Staff.

Total Employment by Occupation - North East			
	Actual 2005	Forecast	
		2007	2011
Senior & Executive Managers	420	480	500
Business Process Managers	1,780	1,950	2,020
Construction Managers	6,320	6,940	7,190
Office-based Staff (excl. Managers)	3,190	3,500	3,570
Other Professionals/Technical Staff & IT	810	900	950
Wood Trades & Interior Fit-out	9,200	10,410	11,000
Bricklayers	3,460	4,160	4,630
Building Envelope Specialists	3,750	4,510	5,010
Painters & Decorators	6,510	7,300	7,900
Plasterers & Dry Liners	1,800	2,000	2,050
Roofers	1,870	2,120	2,240
Floorers	2,550	2,850	2,970
Glaziers	1,100	1,140	1,170
Specialist Building Operatives nec	2,730	3,040	3,190
Scaffolders	1,090	1,250	1,340
Plant Operatives	3,660	3,990	4,170
Plant Mechanics/Fitters	1,910	2,000	2,050
Steel Erectors/Structural	1,970	2,210	2,250
Labourers nec	5,270	6,030	6,130
Electrical Trades & Installation	9,510	10,640	11,080
Plumbing & HVAC Trades	6,550	7,550	7,900
Logistics	990	1,140	1,200
Civil Engineering Operatives nec	3,790	4,370	4,610
Non-construction Operatives	5,650	6,290	5,160
Construction Professionals & Technical Staff	10,490	11,290	12,160
<b>Total (SIC 45)</b>	<b>85,880</b>	<b>96,770</b>	<b>100,280</b>
<b>Total (SIC 45 &amp; 74.2)</b>	<b>96,370</b>	<b>108,060</b>	<b>112,440</b>

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

### 3. Construction Employment Forecasts for the North East

#### 3.2 Construction Average Annual Requirements by Occupation

The table, right, outlines the Average Annual Requirement for 25 occupations within the North East's construction industry between 2007 to 2011. The Average Annual Requirement represents the number of extra workers that are required each year to enable the industry to meet the forecast change in construction output after taking into account those entering and leaving the industry.

It is estimated that 3,300 additional workers will be required in the North East each year between 2007 and 2011, if the forecast demand for construction workers is to be met.

Unsurprisingly it is the largest occupational groups that also have the largest Average Annual Requirements, the biggest of which being Construction Professionals & Technical Staff requiring an average of 480 additional workers each year over the forecast period. Proportionally, Scaffolders, Bricklayers and Building Envelope Specialists also have large requirements. Each of these groups needs more than an extra 5% of the 2007 workforce on average each year to meet forecast demand.

Please note that all of the Average Annual Requirements presented in this section are employment requirements and not necessarily training requirements. Recruiting from other industries with a similar skills base or employing skilled migrant labour could mean the actual training requirement is lower.

Non-construction Operatives is a diverse occupational group including all of the activities under the SIC45 and 74.2 umbrella that cannot be classified elsewhere, such as Cleaners, Elementary Security Occupations nec and Routine Inspectors & 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 Average Annual Requirement for Non-construction Operatives is not published.

Average Annual Requirement by Occupation - North East	
	2007-2011
Senior & Executive Managers	<50
Business Process Managers	70
Construction Managers	180
Office-based Staff (excl. Managers)	120
Other Professionals/Technical Staff & IT	<50
Wood Trades & Interior Fit-out	390
Bricklayers	220
Building Envelope Specialists	240
Painters & Decorators	180
Plasterers & Dry Liners	50
Roofers	90
Floorers	<50
Glaziers	<50
Specialist Building Operatives nec	90
Scaffolders	90
Plant Operatives	100
Plant Mechanics/Fitters	90
Steel Erectors/Structural	50
Labourers nec	70
Electrical Trades & Installation	410
Plumbing & HVAC Trades	160
Logistics	<50
Civil Engineering Operatives nec	100
Construction Professionals & Technical Staff	480
<b>Total (SIC 45)</b>	<b>2,820</b>
<b>Total (SIC 45 &amp; 74.2)</b>	<b>3,300</b>

Source: CSN, Experian

Footnote: 5 & 6 (See Appendix III)

## 4. Regional Comparisons

**Construction Skills Network**



## 4. Regional Comparisons

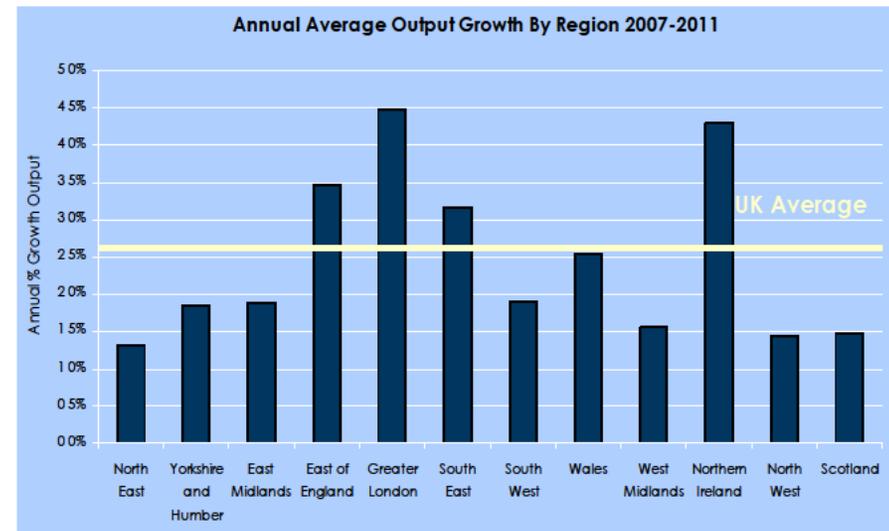
Construction output in Greater London is forecast to see strong year-on-year growth throughout the forecast period as infrastructure recovers and housing and commercial sectors continue to thrive. Prospects are also good for Northern Ireland, the East of England and the South East.

In the early part of this decade the northern half of the UK enjoyed something of a construction boom, with the North West, Yorkshire and Humber and the East Midlands faring especially well. Slower construction output growth is forecast in these regions going forward, although it is important to stress that all English regions, Wales, Northern Ireland and Scotland, are expected to see real output growth between 2007 and 2011.

Over the past few years increased activity in the private housing and public non-housing sectors has driven construction output growth across the UK as a whole. While these sectors are expected to grow further over the forecast period (2007-2011), the outlook is much more subdued. The infrastructure and commercial sectors are expected to take the lead in driving the industry forward over the coming years.

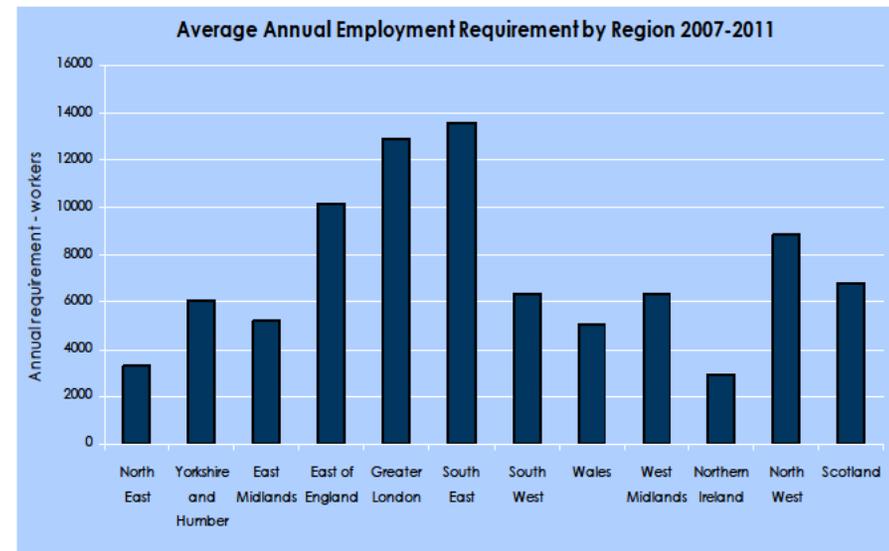
Focusing on employment, the south has the greatest need for skilled construction workers between 2007 and 2011. Inward migration into Greater London is expected to be stronger than in the South East, lowering the average annual additional requirement slightly. Nevertheless the average annual requirement in this region still reaches 12,880. The annual average requirements of the South East and East of England both exceed 10,000.

Given that the construction industry of Northern Ireland is relatively small, it is forecast to have the smallest employment requirement each year. However, it is still estimated that total employment will need to rise by an average of 2,940 in order to meet demand.



Source: Experian

Footnote: 2 (See Appendix III)



Source: CSN, Experian

# Appendix I - Methodology

**Construction Skills Network**



# 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, the Construction Industry Council (CIC) and CITB Northern Ireland work in partnership as the Sector Skills Council (SSC) 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 the national and regional level. It comprises of a National Group, 12 Observatory groups, a forecasting model for each of the regions and countries, and a Technical Reference Group. An Observatory group currently operates in each of the nine English regions and also in Wales, Scotland and Northern Ireland.

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

The National Group also includes representatives from industry, Government, education and other SSCs. This group (which will convene twice in 2007) 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 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 UK 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 **Average Annual Requirement** is a gross requirement that takes into account the dynamic factors influencing all of the flows into and out of construction employment, such as movement to and from other industries, migration, sickness, and retirement. Young trainees are not included in the flows. Therefore, the Average Annual 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.

## Appendix I - Methodology

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.

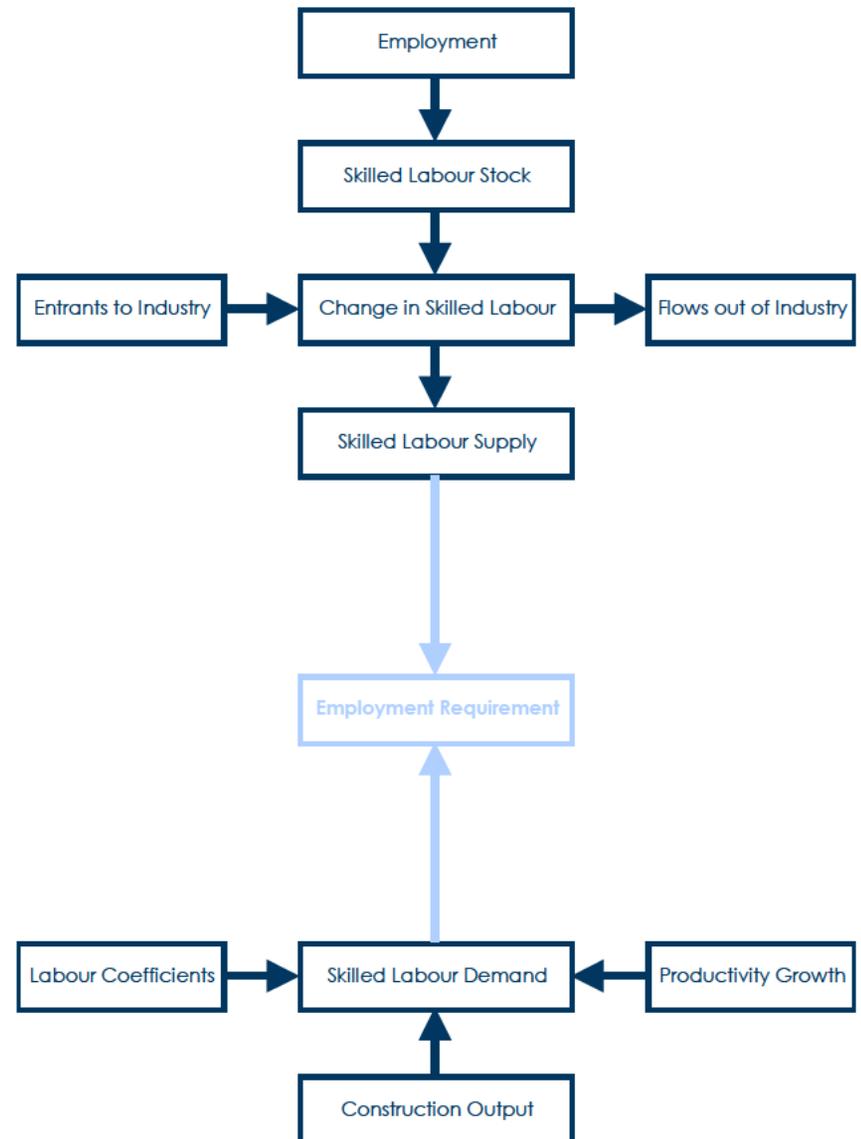
The key leakages (outflows) that need to be considered are:

- 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.

New entrants (e.g. young trainees attached to formal training programmes) are not included in the flows of the labour market but are derived from the forecasted Average Annual Requirement for employment. 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

**Construction Skills Network**



## Appendix II – Glossary of Terms

- **Demand** – construction **output**, vacancies, and a set of **labour coefficients** to translate demand for workers to labour requirements by trade. Demand is calculated using Department of Trade and Industry (DTI) 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 Information – 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.
- **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 & Footprints

**Construction Skills Network**



## Appendix III – Footnotes & Footprints

### Footnotes

1. Except for Northern Ireland, output data for the English regions, Wales and Scotland are supplied by the Department of Trade and Industry (DTI) on a current price basis. Thus national deflators produced by the DTI 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 GB rather than the UK, owing to the fact that there are no orders data series for Northern Ireland.
5. Employment numbers are rounded to the nearest 10.
6. The tables include data relating to Plumbers and Electricians. As part of SIC 45, Plumbers and Electricians working in contracting are an integral part of the construction process. However, it is recognised by ConstructionSkills that SummitSkills has responsibility for these occupations across a range of SIC codes, including SIC 45.31 and 45.33.

### Footprints for Built Environment SSCs

The table summarises the SIC codes covered by ConstructionSkills.

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

\* AssetSkills has a peripheral interest in SIC 74.2

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

#### SummitSkills

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

Coverage – Building Services Engineering.

#### 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 & 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.

# Appendix IV – Occupational Groups (SOC codes)

**Construction Skills Network**



## Appendix IV – Occupational Groups

### Bricklayers & Building Envelope Specialists

Bricklayers, masons 5312  
Construction trades nec (50%) 5319  
Labourers in building & woodworking trades (5%) 9121

### Roofers

Roofers, roof tilers & slaters 5313

### Plumbing & HVAC Trades

Plumbers, heating & ventilating engineers 5314  
Pipe fitters 5216  
Labourers in building & woodworking trades (6%) 9121  
Construction trades nec (5%) 5319

### Electrical Trades & Installation

Electricians, electrical fitters 5241  
Electrical/electronic engineers nec 5249  
Telecommunications engineers 5242  
Lines repairers & cable jointers 5243

### Civil Engineering Operatives nec

Road construction operatives 8142  
Rail construction & maintenance operatives 8143  
Quarry workers & related operatives 8123  
Construction operatives nec (20%) 8149  
Labourers in other construction trades nec 9129

### Plant Operatives

Crane Drivers 8221  
Plant & machine operatives nec 8129  
Transport operatives nec 8219  
Fork-lift truck drivers 8222  
Mobile machine drivers & operatives nec 8229

### Scaffolders

Scaffolders, staggers, riggers 8141

### Wood Trades & Interior Fit-out

Carpenters & joiners 5315  
Pattern makers 5493  
Paper & wood machine operatives 8121  
Furniture makers, other craft woodworkers 5492  
Labourers in building & woodworking trades (9%) 9121  
Construction trades nec (25%) 5319

### Steel Erectors/Structural

Steel erectors 5311  
Welding trades 5215  
Sheet metal workers 5213  
Metal plate workers, shipwrights & riveters 5214  
Construction trades nec (5%) 5319

### Labourers nec

Labourers in building & woodworking trades (80%) 9121

### Logistics

Heavy goods vehicle drivers 8211  
Van drivers 8212  
Packers, bottlers, canners, fillers 9134  
Other goods handling & storage occupations nec 9149  
Buyers & purchasing officers (50%) 3541  
Transport & distribution clerks 4134  
Security guards & related occupations 9241

### Plant Mechanics/Fitters

Metal working production & maintenance fitters 5223  
Precision instrument makers & repairers 5224  
Motor mechanics, auto engineers 5231  
Labourers in process & plant operations nec 9139

### Specialist Building Operatives nec

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

## Appendix IV – Occupational Groups

### Non-construction Operatives

Metal making & treating process operatives 8117  
 Process operatives nec 8119  
 Metal working machine operatives 8125  
 Water & sewerage plant operatives 8126  
 Assemblers (vehicle & metal goods) 8132  
 Routine inspectors & testers 8133  
 Assemblers & routine operatives nec 8139  
 Stevedores, dockers & slingers 9141  
 Hand craft occupations nec 5499  
 Elementary security occupations nec 9249  
 Cleaners, domestics 9233  
 Road sweepers 9232  
 Gardeners & groundsmen 5113  
 Caretakers 6232

### Construction Professionals & Technical Staff

Civil engineers 2121  
 Mechanical engineers 2122  
 Electrical engineers 2123  
 Chemical engineers 2125  
 Design & development engineers 2126  
 Production & process engineers 2127  
 Planning & quality control engineers 2128  
 Engineering professional nec 2129  
 Electrical/electronic technicians 3112  
 Engineering technicians 3113  
 Building & civil engineering technicians 3114  
 Science & engineering technicians nec 3119  
 Architectural technologists & town planning technicians 3121  
 Draughtspersons 3122  
 Quality assurance technicians 3115  
 Architects 2431  
 Town planners 2432  
 Quantity surveyors 2433  
 Chartered surveyors (not Quantity surveyors) 2434

Electronics engineers 2124  
 Building inspectors 3123

Painters & Decorators  
 Painters & decorators 5323  
 Construction trades nec (5%) 5319

### Plasterers & Dry Liners

Plasterers 5321

### Glaziers

Glaziers, window fabricators & fitters 5316  
 Construction trades nec (5%) 5319

### Construction Managers

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

### Other Professionals/Technical Staff & IT

IT operations technicians 3131  
 IT user support technicians 3132  
 Estimators, valuers & assessors 3531  
 Finance & investment analysts/advisers 3534  
 Taxation experts 3535  
 Financial & accounting technicians 3537  
 Vocational & industrial trainers & instructors 3563  
 Business & related associate professionals nec 3539  
 Legal associate professionals 3520  
 Inspectors of factories, utilities & trading standards 3565  
 Software professionals 2132  
 IT strategy & planning professionals 2131

## Appendix IV – Occupational Groups

Estate agents, auctioneers 3544  
 Solicitors & lawyers, judges & coroners 2411  
 Legal professionals nec 2419  
 Chartered & certified accountants 2421  
 Management Accountants 2422  
 Management consultants, actuaries, economists & statisticians 2423

### Senior & Executive Managers

Directors & chief executives of major organisations 1112  
 Senior officials in local government 1113

### Business Process Managers

Financial managers & chartered secretaries 1131  
 Marketing & sales managers 1132  
 Purchasing managers 1133  
 Advertising & public relations managers 1134  
 Personnel, training & industrial relations managers 1135  
 Office managers 1152  
 Civil Service executive officers 4111  
 Property, housing & land managers 1231  
 Information & communication technology managers 1136  
 Research & development managers 1137  
 Customer care managers 1142  
 Storage & warehouse managers 1162  
 Security managers 1174  
 Natural environment & conservation managers 1212  
 Managers & proprietors in other services nec 1239

### Office-based Staff (excl. Managers)

Receptionists 4216  
 Typists 4217  
 Sales representatives 3542  
 Civil Service administrative officers & assistants 4112  
 Local government clerical officers & assistants 4113  
 Accounts & wages clerks, book-keepers, other financial clerks 4122

Filing & 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 & other secretaries 4215  
 Sales & retail assistants 7111  
 Telephone salespersons 7113  
 Buyers & purchasing officers (50%) 3541  
 Marketing associate professionals 3543  
 Personnel & 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

### Floorers

Floorers and wall tilers 5322

## Appendix V – CSN Website

**Construction Skills Network**



## Appendix V – CSN Website & Contact Details

### The CSN Website

The CSN website functions as a gateway into the construction industry.

Co-ordinated by ConstructionSkills, the CSN benefits from the technical expertise of Davis Langdon Management Consulting and Experian. It collates the knowledge and experience of Government; Sector Skills Councils; construction companies; education and training providers; regional agencies; and customers across the UK. In short, it provides a single, clear understanding of the industry's current skills position.

This unique collaboration means the CSN offers, as near as possible, a consensus view of the current and future skills and training needs of the industry.

The Network gives us an authoritative basis on which to plan for recruitment strategies, education and training requirements and funding delivery. The Network forecasts are based on a series of assumptions and trends, to provide a picture of how the industry could look in five years time.

The Network gives construction clients insight into what type of buildings are likely to be constructed, when and where, as well as how to invest training budgets. For contractors and consultants the data can inform the type of building they should design and how best to avoid regional or occupational skills shortages and high labour costs.

Employees and prospective new recruits can use these insights to discover where in the country they are likely to find consistent work, or what trade or profession offers the best career prospects.

The new CSN Website is found here at

<http://www.constructionskills.net>

The Members' area offers access to a wealth of documentation produced by the CSN Observatories. The CSN Members, wider group members and industry stakeholders can use this area to stay up to date with what is happening within the CSN Workshop cycle.

All the tables in this regional document, and the other regional and national documents, can be found on the website.

ConstructionSkills and partners produce a number of reports which have been based on evidence from various datasets. The Data Store, from the Research section, has been set up to give the CSN Members access to this resource so that they may carry out their own research utilising on this primary data.

For more information about us as a Sector Skills Council visit:

<http://www.constructionskills.net>

Workshop Essentials allows Members to stay in touch with CSN developments with their diary of upcoming events. This area also includes all feedback documentation from the current round of workshops, giving members all the relevant information they need in one place.

### Contact Details

For enquiries relating to the work of the CSN please contact Sandra Lilley, CSN Manager, at

[sandra.lilley@citb.co.uk](mailto:sandra.lilley@citb.co.uk)

For further information about the CSN website, or to register your interest in joining the CSN please contact Sally Riley, Researcher, at

[sally.riley@citb.co.uk](mailto:sally.riley@citb.co.uk)