

2007-2011 Construction Skills Network Labour Market Intelligence

Scotland

Construction Skills Network

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1. Headlines

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1. Headlines

1.1 The Scottish Economy

- Worth £82bn in 2005 (around 8% of the total UK economy), the Scottish economy is forecast to grow at an annual average rate of 2.4% between 2007 and 2011.
- The Public Sector is of greater importance in Scotland than it is elsewhere in the UK. Financial & Business Services accounts for a smaller share of output than the national average, but it is forecast to expand rapidly.
- The fastest growing sector over the forecast period is expected to be Transport & Communications.

1.2 Construction Output in Scotland

- Worth £6.8bn, in 2000 prices, construction in Scotland accounts for around 8% of the UK total.
- Output is forecast to grow at an annual average rate of 1.5% between 2007 and 2011.
- Infrastructure is likely to be the driving force behind growth between 2007 and 2011 as Transport Scotland delivers the Scottish Executive's £3bn capital investment programme over the next ten years.

1.3 Construction Employment in Scotland

- Total construction employment of 206,340 in 2005 in Scotland is forecast to rise by 18% to 243,230 by 2011.
- To meet this demand, after taking account of those entering and leaving the industry, Scotland requires an extra 6,830 workers each year.
- Wood Trades & Interior Fit-out has the largest annual average requirement in as it is by far the largest occupational grouping in Scotland.



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
UK	2.6%	241,280	87,590

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

2. The Outlook for Construction in Scotland

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2. The Outlook for Construction in Scotland

2.1 Construction Output in Scotland – Overview

Growth in Scotland's construction industry has been reasonably robust over the past few years (see chart below). Between 2001 and 2005 output rose by an annual average rate of 2.2%. New work output increased strongly but a negative annual average change on the repair and maintenance (R&M) side constrained the country's overall performance.

Across the sectors, however, performances varied significantly. Private housing and public non-housing were the strongest sectors, given their output increased by respective annual average rates of 14.4% and 12.6%. In contrast, output in the public housing sector declined by an annual average rate of 7.7%.

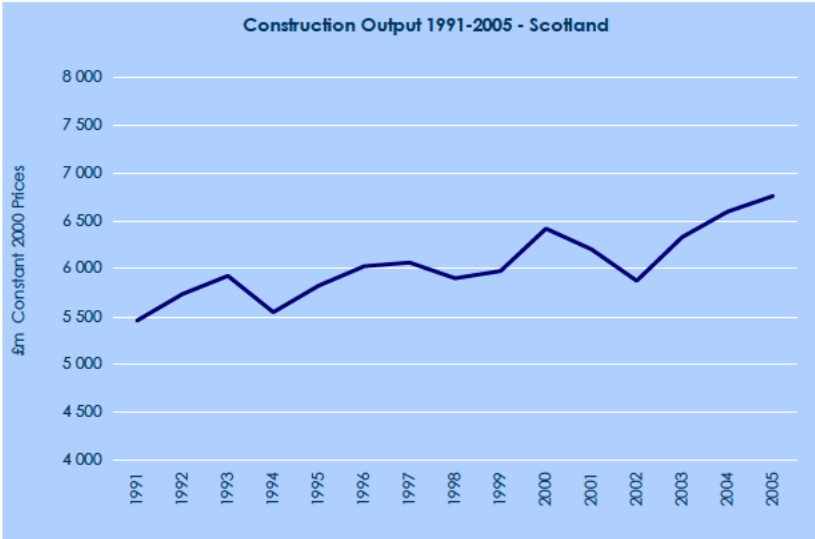
Such a robust expansion in private housing construction was driven by particularly buoyant housing market conditions. Output was estimated to be 71% higher, in real terms, in 2005 than in 2001, while, according to the Scottish Executive, the number of units completed rose from 17,767 in 2001 to 20,033 in 2005.

Output in the remaining sectors, commercial, infrastructure and industrial fell during the 2001 to 2005 period. While the proportional decline was most acute in public housing, Scotland's smallest sector, a negative annual average change of -4.1% in infrastructure had a greater impact overall. Commercial output declined by an annual average rate of 0.3% and industrial by 4.4%.

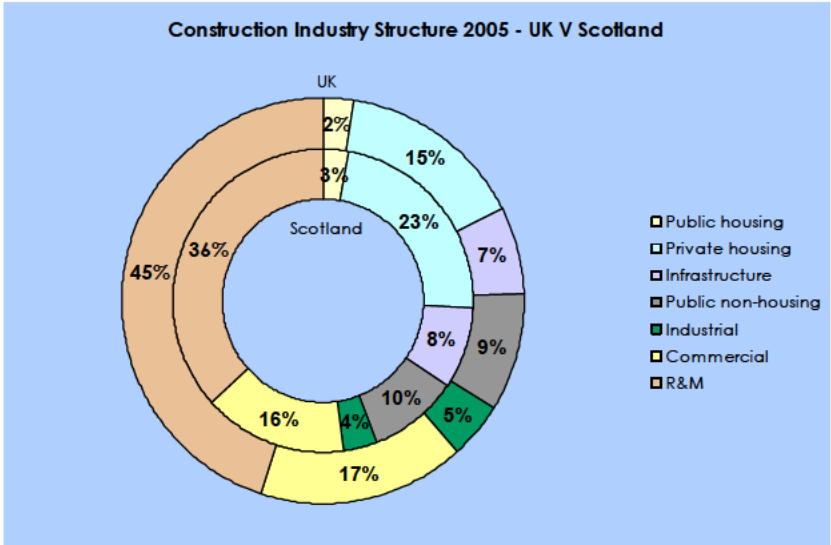
2.2 Industry Structure

There were two main differences between Scotland's construction industry and construction in the UK industry as a whole in 2005. Its private house building sector was proportionally large, while its R&M sector was relatively small.

The chart below, gives just a snapshot but over a longer time frame private housing's share is consistently higher than the national average. However, the gap has widened in recent years as private house building in Scotland has grown rapidly. On average the R&M sector accounts for around 40% of total construction output in the country.



Source: Experian
Footnote: 1 (See Appendix III)



Source: DTI, DFP

2. The Outlook for Construction in Scotland

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

In 2005 Scotland's economy was valued at £82bn, in 2003 prices, 1.8% higher than in 2004 and worth around 8% of the UK total.

Public Services was the largest component of Gross Value Added (GVA) in Scotland, and it accounted for nearly 30% of the total in 2005 (see table below). Financial & Business Services took the second largest share and was valued at 23% of the total.

Over the forecast period (2007-2011), GVA in Scotland is forecast to grow by nearly 10%. The Transport & Communications sector is expected to expand robustly, by around 20%. Strong growth is also likely in the Financial & Business Services sector, while expansion in the Public Services sector should be more moderate.

Economic Structure - Scotland (£ billion, 2003 prices)							
Selected Sectors	Actual 2005	Forecast Annual % Change, Real Terms					
		2006	2007	2008	2009	2010	2011
Public Services	23	0.9	0.7	1.1	1.3	1.2	1.6
Financial & Business Services	19	6.8	5.2	4.4	4.6	4.4	4.1
Transport & Communications	6	2.2	2.8	5.0	5.0	4.6	4.3
Manufacturing	12	0.8	3.7	2.3	2.0	1.6	1.3
Distribution, Hotels & Catering	12	1.6	2.0	2.1	2.5	2.5	2.3
Total Gross Value Added (GVA)	82	2.4	2.6	2.3	2.5	2.4	2.3

Source: Experian
Footnote: 3 (See Appendix III)

2.5 Forward Looking Economic Indicators

Economic growth in Scotland is forecast to be roughly in line with the national average over the short term but is expected to slow towards the end of the forecast period.

Consumers will have a role to play in driving economic growth. They are expected to remain confident throughout the forecast period (2007-2011), and annual increases in real household disposable income are forecast to trail household spending growth through to 2011. Therefore to sustain spending, consumer indebtedness is likely to rise and Scotland's debt to income ratio is forecast to increase from 1.2 in 2005 to 1.4 in 2011.

Despite Scotland's recently strong housing market, the Department for Communities and Local Government (DCLG) reported that average house prices in the region continued to lag the national average in 2005. The price of an average property in Scotland in 2005 was estimated at £124,000, some £60,000 less than in the UK as a whole. Going forward, the gap is expected to narrow. House prices in Scotland are forecast to be around 24% higher in 2011 than in 2006, a little stronger than the expected increase across the UK as a whole.

Economic Indicators - Scotland (£ billion, 2003 prices - unless otherwise stated)							
	Actual 2005	Forecast Annual % Change, Real Terms					
		2006	2007	2008	2009	2010	2011
Real Household Disposable Income	62	3.0	1.8	1.6	1.7	1.8	1.9
Household Spending	60	2.7	2.0	1.8	2.5	2.4	2.7
Debt:Income Ratio	1.2	1.2	1.3	1.3	1.4	1.4	1.4
House Prices (£'000, current prices)	124	9.3	5.5	4.7	4.0	3.8	3.8
LFS Unemployment (millions)	0.1	-1.3	1.6	-2.1	-4.1	-1.2	-2.7

Source: ONS, DCLG, Experian

2. The Outlook for Construction in Scotland

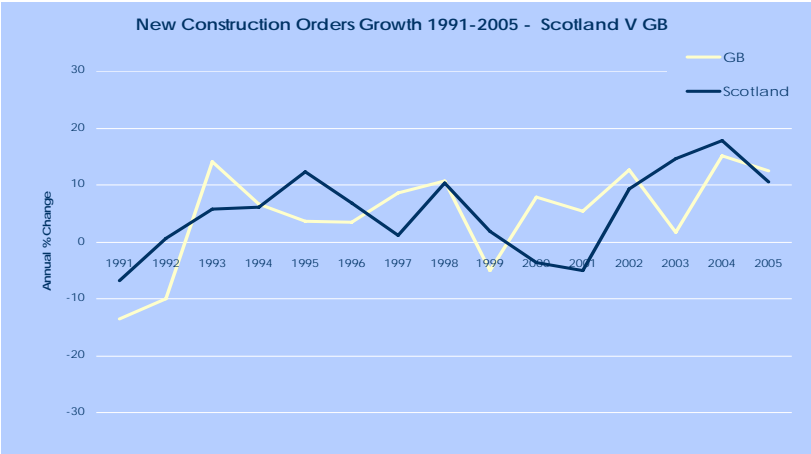
New orders statistics are based on the Department of Trade and Industry's (DTI) monthly survey of construction contractors. The time taken for new orders to feed into output differs from sector to sector and from project to project. As a general rule, industrial orders tend to be converted into output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

2.6 New Construction Orders – Overview

New construction orders have been increasing strongly since 2002. In 2005 they reached £4.4bn, in current prices, and were 55% higher than in 2000 (see chart and table below).

Particularly noticeable is the strength of orders growth in Scotland in 2003, relative to the UK as a whole. Unsurprisingly this was mainly due to the strength of the private housing and public non-housing sectors, however, 17% growth in Scottish infrastructure orders compared to a decline nationally was also a significant factor.

The effect large individual contracts can have on orders statistics is apparent from the volatility shown in the chart below. Resulting output streams tend to be much smoother.



Source: DTI
Footnote: 4 (See Appendix III)

2.7 New Construction Orders – Current Situation

While growth in new work orders slowed from 2004 in 2005, it nevertheless remained robust. In the first three quarters of 2006 orders were 14% higher than they were in the first three quarters of 2005, suggesting growth could accelerate once again in 2006.

Having benefited from a strengthening offices market in Glasgow and a move towards delivering new education facilities via the PFI route, commercial orders were up by 105% in the first three quarters of 2006. Strong increases were also seen in infrastructure, industrial and public housing orders.

In contrast with the early part of the decade, orders in the private housing and public non-housing sectors began to decline. Respectively, they were down by 23% and 13% in the first three quarters of 2006, although exceptionally strong growth in recent years meant they remained at a relatively high level.

New Work Construction Orders - Scotland (£ million, current prices)						
	Actual 2005	Annual % Change				
		2001	2002	2003	2004	2005
Public housing	196	-19.8	3.3	-9.0	15.2	-0.5
Private housing	1683	10.1	19.0	35.5	38.2	3.2
Infrastructure	473	11.2	-14.2	17.1	-4.4	-8.3
Public non-housing	818	22.5	15.5	64.8	-18.0	47.9
Industrial	236	-18.0	-3.7	-19.0	6.7	48.4
Commercial	1022	-25.3	18.6	-19.6	38.5	7.6
Total New Work	4426	-5.1	9.3	14.6	17.8	10.5

Source: DTI
Footnote: 4 (See Appendix III)

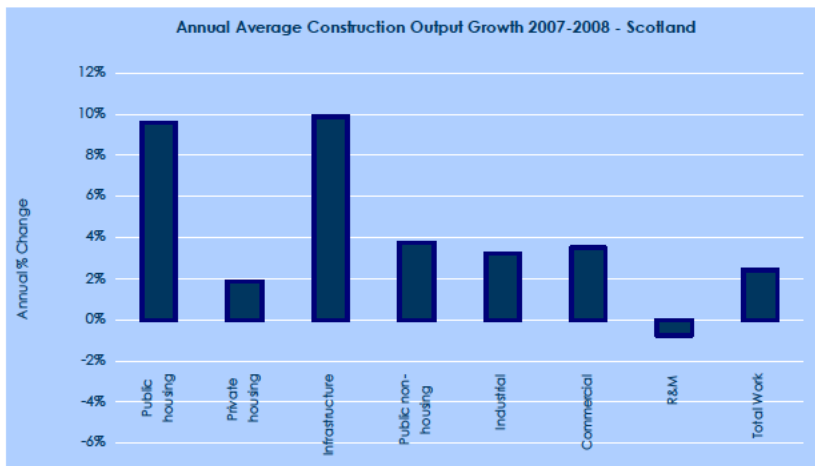
2. The Outlook for Construction in Scotland

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

Total construction output, in current prices, in Scotland was 11% higher in the first half of 2006 than in the first half of 2005. 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.

Scottish construction output is forecast to grow moderately over the next few years, at an annual average rate of 2.4% (see chart and table below). The short-term outlook is positive for new work, with year-on-year growth forecast through to 2008. On the R&M side, however, output is expected to decline in 2007 and remain at this lower level in 2008.

Having declined in 2004 and 2005, the infrastructure sector's recovery is imminent, and over the short-term it is expected to be one of the strongest in Scotland. The first half of 2006 saw current priced output increase by 7% from the first half of 2005. At first its recovery is likely to be tentative but growth should accelerate in 2007 and 2008 as work begins on the M80 and M8 and as Scottish Water steps up its capital investment programme.



Source: Experian

Footnote: 2 (See Appendix III)

There were sizeable increases in public non-housing and commercial sector output in the first six months of 2006, of 33% and 17% respectively, suggesting 2006 is likely to be a good year for both. Scottish Executive spending on educational facilities is driving growth in public non-housing output, while a strengthening Glasgow offices market is helping to fuel the commercial sector expansion.

The rate of expansion in the private housing sector of late cannot be sustained indefinitely and if data for the first half of 2006 is anything to go by, the end is imminent. Current priced output in the first six months of 2006 was 3% down on the first half of 2005. Beyond 2006 however, the relative strength of the Scottish housing market should prevail and output is once again likely to rise. Increased funding for public housing should translate into strong year-on-year growth between 2006 and 2008 in the sector.

Industrial output was exceptionally strong in the first half of 2006, up by 58% on the first half of 2005. Beyond 2006 further growth is expected in the short term, although not at 2006's rate.

Construction Output - Scotland (£ million, 2000 prices)					
	Actual 2005	Forecast Annual % Change			Annual Average 2007-2008
		2006	2007	2008	
Public housing	194	11%	9%	10%	9.6%
Private housing	1 552	-9%	2%	2%	1.9%
Infrastructure	574	1%	9%	11%	9.9%
Public non-housing	671	9%	4%	4%	3.8%
Industrial	240	21%	5%	1%	3.2%
Commercial	1 059	12%	4%	3%	3.5%
New Work	4 289	3%	4%	4%	4%
R&M	2 471	2%	-1%	0%	-0.8%
Total Work	6 760	3%	2%	3%	2.4%

Source: DTI, Experian

Footnote: 1 & 2 (See Appendix III)

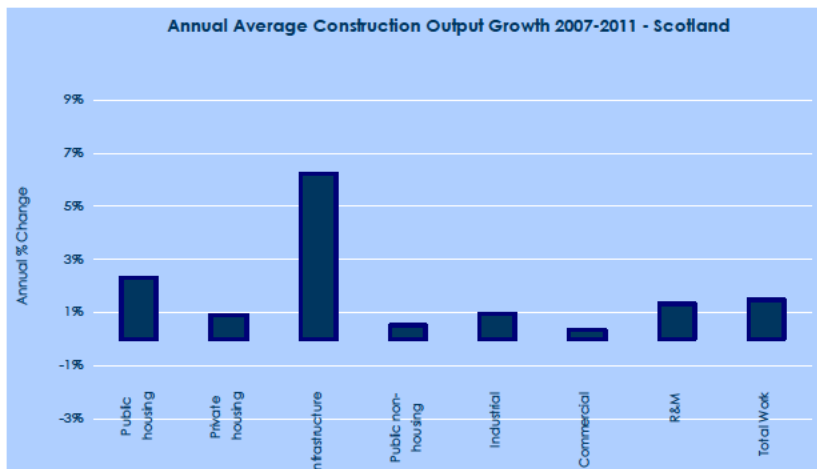
2. The Outlook for Construction in Scotland

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

Over the longer term, output is forecast to rise by an annual average rate of 1.5%. New work growth is expected to moderate post 2008, while prospects for R&M strengthen (see below).

Infrastructure's strength is expected to continue through to 2011. Forecast annual average growth at 6.2%, makes it the star performer of Scotland's construction industry over the coming years. From 2008 attention will turn to improving the country's rail network. Amongst others, a new rail link connecting Glasgow city centre to the airport is scheduled to begin in 2008, and planning permission permitting, an equivalent scheme in Edinburgh should come on stream a year or so later.

Public sector capital investment will also be an impetus for growth in the early part of the forecast period. While PFI/PPP projects are becoming increasingly common in Scotland, the majority of education construction is still delivered through traditional procurement routes. Among the projects recently announced are the £200m New College Glasgow one and the £75m development of the Queen Margaret University College Campus.



Source: Experian

Footnote: 2 (See Appendix III)

Increased Scottish Executive funding to deliver more affordable housing has been a little slow to deliver in output terms. However, the aim is to increase the supply of affordable housing by 21,500 units over the next three years.

Elsewhere in the industry prospects are much more subdued, although this essentially reflects a moderation in the rate of growth after several years of buoyant expansion. Growth in the private housing sector is forecast at an annual average rate of 0.9% between 2007 and 2011, although this comes after output increased by 61% in the first half of this decade.

The industrial and commercial sectors are forecast to increase by annual average rates of 1% and 0.3% respectively. Above average growth in Scottish manufacturing should encourage some investment in new factories. For the commercial sector, construction activity in the offices sub-sector, on the back of robust expansion in Financial & Business Services, should help to ensure output remains at a relatively high level.

The Scottish Housing Quality Standard will be a catalyst for growth in R&M output as the Scottish Executive strives to make all homes in the social rented sector comply by 2015.

Construction Output - Scotland (£ million, 2000 prices)							
	Estimate 2006	Forecast Annual % Change					Annual Average 2007-2011
		2007	2008	2009	2010	2011	
Public housing	216	9%	10%	2%	0%	-2%	2.3%
Private housing	1 410	2%	2%	1%	1%	0%	0.9%
Infrastructure	577	9%	11%	6%	4%	4%	6.2%
Public non-housing	732	4%	4%	1%	-1%	-1%	0.5%
Industrial	289	5%	1%	1%	1%	0%	1.0%
Commercial	1 183	4%	3%	-3%	-1%	3%	0.3%
New Work	4 406	4%	4%	1%	0%	1%	1.5%
R&M	2 528	-1%	0%	2%	2%	1%	1.3%
Total Work	6 934	2%	3%	1%	1%	1%	1.5%

Source: Experian

Footnote: 2 (See Appendix III)

3. Construction Employment Forecasts for Scotland

Construction Skills Network



3. Construction Employment Forecasts for Scotland

3.1 Total Construction Employment Forecasts by Occupation

The table, right, presents actual construction employment (SIC 45 and 74.2, see Appendix III) in Scotland for 2005 and the forecast total employment in 25 occupations and in the industry as a whole between 2007 to 2011. By 2011 total employment in construction in Scotland is expected to stand at around 243,230, with approximately 36,890 more people being employed in the industry than in 2005. Around 218,420 people will be classified as working in SIC 45 in 2011, with 24,810 falling under the SIC 74.2 umbrella.

The largest occupational groups are forecast to be Wood Trades & Interior Fit-out, Construction Professionals & Technical Staff, Non-construction Operatives, Electrical Trades & Installation and Labourers nec, each with employment forecast at over 15,000 in Scotland in 2011.

Painters & Decorators is forecast to see the greatest proportional increase in its employment, with total employment expected to rise by 14% between 2007 and 2011. Increases of more than 10% are also forecast for Other Professionals/Technical Staff & IT, Wood Trades & Interior Fit-out, Roofers, Floorers and Plumbing & HVAC Trades.

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 - Scotland			
	Actual 2005	Forecast	
		2007	2011
Senior & Executive Managers	1,320	1,060	980
Business Process Managers	4,250	4,500	4,920
Construction Managers	11,880	12,590	13,760
Office-based Staff (excl. Managers)	11,700	12,400	13,320
Other Professionals/Technical Staff & IT	1,690	2,110	2,380
Wood Trades & Interior Fit-out	34,500	37,450	41,880
Bricklayers	5,400	6,560	7,130
Building Envelope Specialists	5,850	7,100	7,720
Painters & Decorators	12,660	13,730	15,590
Plasterers & Dry Liners	2,370	2,550	2,760
Roofers	4,010	4,380	4,880
Floorers	2,730	2,910	3,240
Glaziers	2,390	2,520	2,690
Specialist Building Operatives nec	4,720	5,060	5,580
Scaffolders	2,260	2,510	2,760
Plant Operatives	5,880	6,280	6,910
Plant Mechanics/Fitters	1,620	1,660	1,770
Steel Erectors/Structural	3,280	3,510	3,770
Labourers nec	13,800	15,020	16,220
Electrical Trades & Installation	13,930	15,060	16,550
Plumbing & HVAC Trades	11,360	12,610	13,940
Logistics	3,450	3,870	4,250
Civil Engineering Operatives nec	6,290	7,000	7,730
Non-construction Operatives	16,960	19,820	17,690
Construction Professionals & Technical Staff	22,040	23,170	24,810
Total (SIC 45)	184,300	202,260	218,420
Total (SIC 45 & 74.2)	206,340	225,430	243,230

Source: ONS, CSN, Experian

Footnote: 5 & 6 (See Appendix III)

3. Construction Employment Forecasts for Scotland

3.2 Construction Average Annual Requirements by Occupation

The table, right, outlines the Average Annual Requirement for 25 occupations within Scotland'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.

To meet forecast demand for construction workers in Scotland it is estimated that 6,830 additional workers will be required each year over the 2007-2011 period.

Wood Trades & Interior Fit-out is forecast to have the greatest Average Annual Requirement at 1,450. At 810, the requirement for Construction Professionals & Technical Staff is also significant.

Annual employment requirements are also forecast to equal or exceed 400 in Electrical Trades & Installation, Painters & Decorators and Building Envelope Specialists.

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 SIC 45 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 - Scotland	
	2007-2011
Senior & Executive Managers	<50
Business Process Managers	160
Construction Managers	360
Office-based Staff (excl. Managers)	340
Other Professionals/Technical Staff & IT	<50
Wood Trades & Interior Fit-out	1,450
Bricklayers	370
Building Envelope Specialists	400
Painters & Decorators	400
Plasterers & Dry Liners	70
Roofers	210
Floorers	50
Glaziers	50
Specialist Building Operatives nec	180
Scaffolders	170
Plant Operatives	200
Plant Mechanics/Fitters	70
Steel Erectors/Structural	110
Labourers nec	210
Electrical Trades & Installation	670
Plumbing & HVAC Trades	290
Logistics	50
Civil Engineering Operatives nec	230
Construction Professionals & Technical Staff	810
Total (SIC 45)	6,020
Total (SIC 45 & 74.2)	6,830

Source: CSN, Experian

Footnote: 5 & 6 (See Appendix III)

4. Regional Comparisons

Construction Skills Network



4. Regional Comparisons

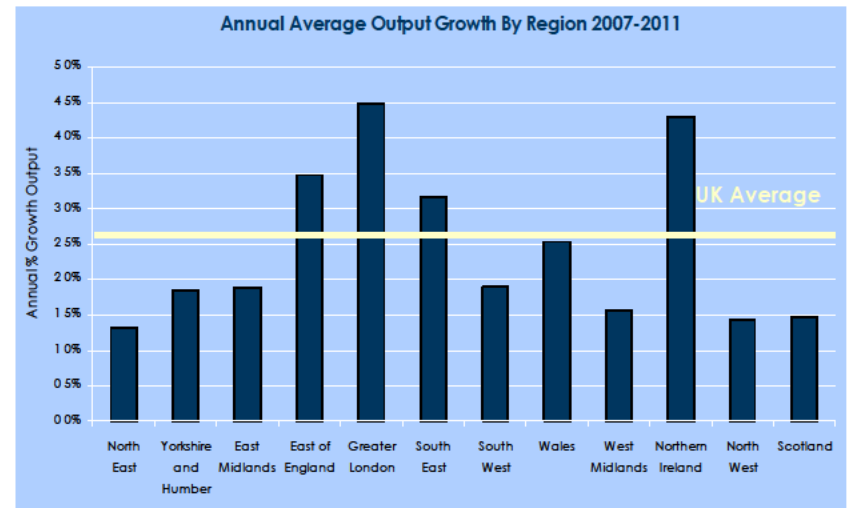
Construction output in Greater London is forecast to see strong year-on-year growth throughout the forecast period as infrastructure recovers and housing and commercial sectors continue to thrive. Prospects are also good for Northern Ireland, the East of England and the South East.

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.

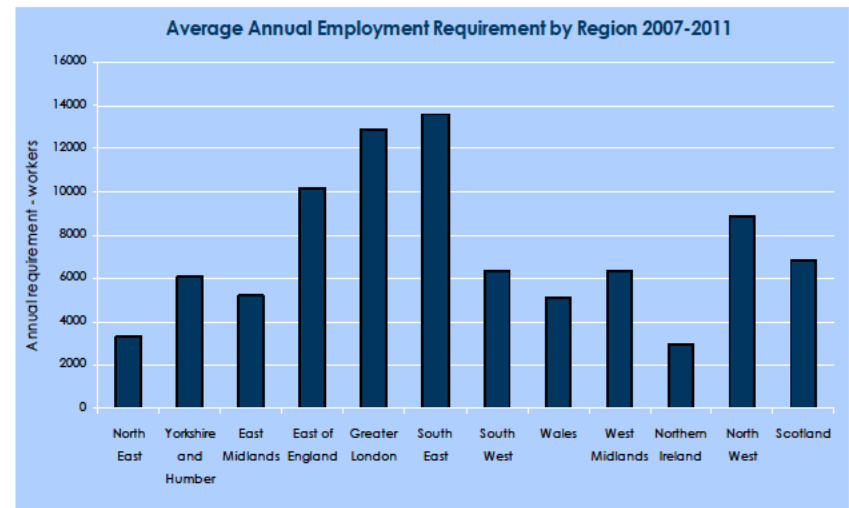
Focusing on employment, the south has the greatest need for skilled construction workers between 2007 and 2011. Inward migration into Greater London is expected to be stronger than in the South East, lowering the average annual requirement slightly. Nevertheless the average annual requirement in this 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 2,950 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.

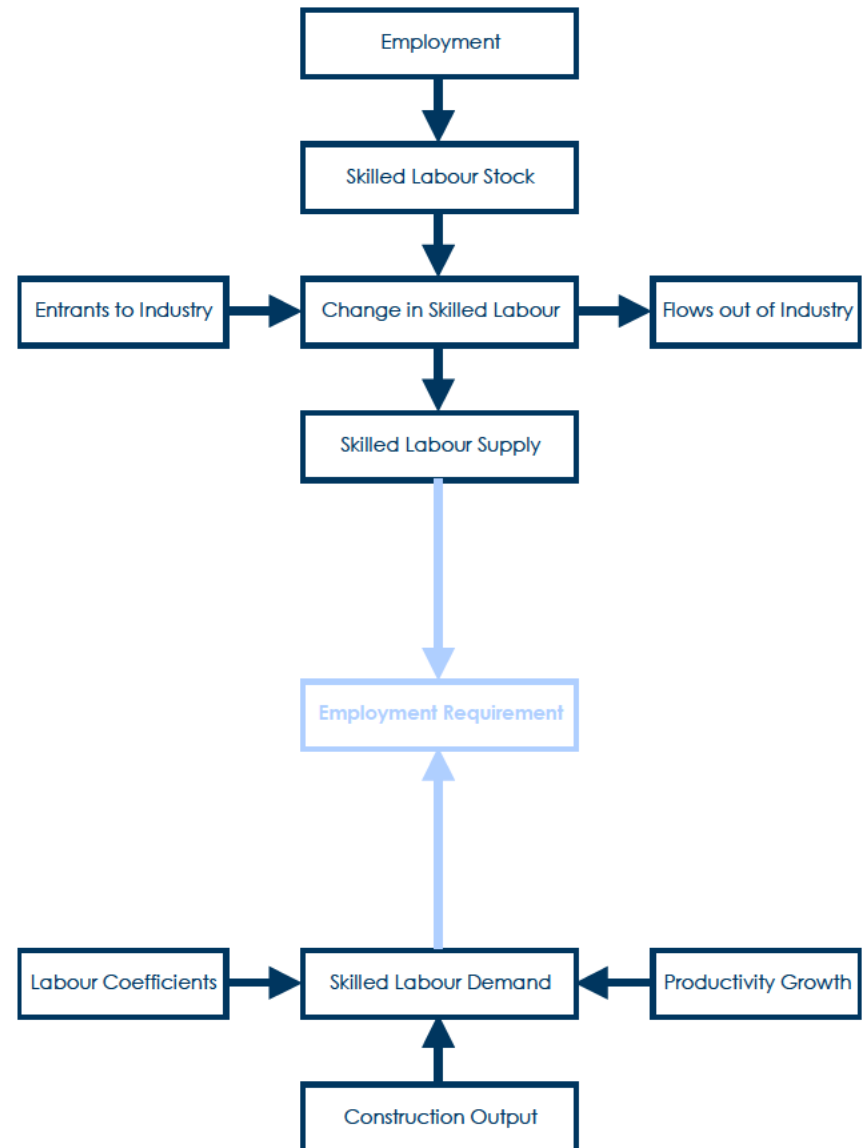
The key leakages (outflows) that need to be considered are:

- 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

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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

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