

# 2012–2016 Construction Skills Network Scotland

LABOUR MARKET INTELLIGENCE



# Contents

1. Summary and key findings	04
2. The outlook for construction in Scotland	06
3. Construction employment forecasts for Scotland	12
4. Comparisons across the UK	14
5. CSN explained	16
5.1 CSN methodology	17
5.2 Glossary of terms	18
5.3 Notes and footprints	19
5.4 Definitions: types and examples of construction work	20
5.5 Occupational groups	22
5.6 CSN website and contact details	25

## Tables and Charts

1. Annual average construction output growth 2012–2016	04
2. Regional comparison 2012–2016	05
3. Construction output 1994–2010	06
4. Construction industry structure 2010	06
5. Economic structure	07
6. Economic indicators	07
7. New construction orders growth 1994–2010	08
8. New work construction orders	08
9. Annual average construction output growth 2012–2013	09
10. Construction output 2012–2013	10
11. Annual average construction output growth 2012–2016	11
12. Construction output 2012–2016	11
13. Total employment by occupation	12
14. Annual recruitment requirement by occupation	13
15. Annual average output growth by nation/region	15
16. Annual recruitment requirement by nation/region	15

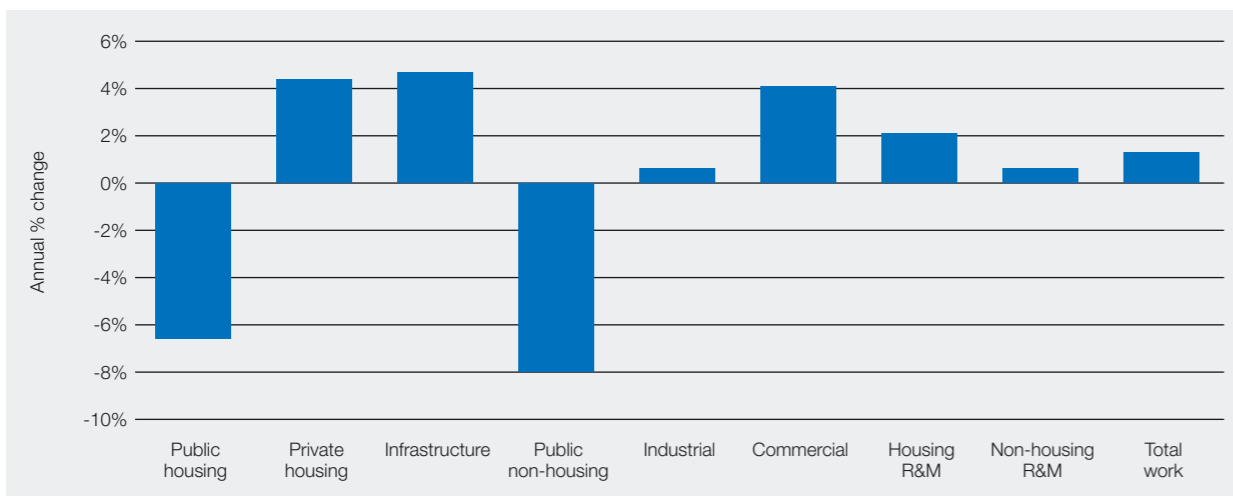
ConstructionSkills is the Sector Skills Council for construction, tasked by Government to ensure the UK's largest industry has the skilled workforce it requires. Working with Government, training providers and employers, it is responsible for ensuring that the industry has enough qualified new entrants and that the existing workforce is fully skilled and qualified, as well as for improving the performance of the industry and the companies within it.

These materials together with all of the intellectual property rights contained within them belong to the Construction Industry Training Board (ConstructionSkills). Copyright 2005 ("ConstructionSkills") and should not be copied, reproduced nor passed to a third party without ConstructionSkills prior written agreement. These materials are created using data and information provided to ConstructionSkills and/or EXPERIAN Limited ("Experian") by third parties of which EXPERIAN or ConstructionSkills are not able to control or verify the accuracy. Accordingly neither EXPERIAN nor ConstructionSkills give any warranty about the accuracy or fitness for any particular purpose of these materials. Furthermore, these materials do not constitute advice and should not be used as the sole basis for any business decision and as such neither EXPERIAN nor ConstructionSkills shall be liable for any decisions taken on the basis of the same. You acknowledge that materials which use empirical data and/or statistical data and/or data modelling and/or forecasting techniques to provide indicative and/or predictive data cannot be taken as a guarantee of any particular result or outcome.

# 1. Summary – Scotland

Scotland's annual average output growth rate over the 2012 to 2016 period, at 1.3% is higher than the 1% predicted in 2010 for the 2011 to 2015 period, and in line with the UK average. There is little difference between the growth rates of the new work (1.4%) and repair and maintenance (R&M) sectors (1.2%). Construction employment is predicted to reach 265,700 by 2016, a 5% rise over the five-year forecast period. The devolved nation's annual recruitment requirement (ARR), at 4,480, represents 1.8% of projected base 2012 employment, close to the UK average of 1.9%.

Annual average construction output growth 2012-2016 - Scotland



Source: CSN, Experian ref. CSN Explained, Section 5.3, Note 2

Forth Replacement Crossing



Scotland's annual average growth rate of 1.3% is in line with the UK average figure

## Key findings

The strong recovery seen in the Scottish construction industry in 2010 has proved to be short-lived, with an estimated decline of 3% in output for 2011 in real terms. The weakening economic conditions in the second half of 2011, due to the well-publicised debt problems among eurozone countries, has meant that activity has been as depressed in the private sectors as in the public ones. In fact, the public construction sectors have held up in 2011 better than expected, given the scale of public expenditure cuts announced over the past 18 months.

The weak prospects for growth in both the UK and Scottish economies for 2012 suggest that overall levels of private investment will continue to struggle to show any significant growth, thus the prospects for the private housing, industrial and commercial sectors remain muted in the short term. Combine this with the likelihood that public expenditure cuts will hit the public housing and public non-housing sectors hard, the prognosis for 2012 is for another year of declining output overall.

Growth is predicted to return to the construction sector in 2013, and over the totality of the five-year period to 2016, output is forecast to grow at an annual average rate of 1.3% in Scotland, in line with the UK average. Three sectors are expected to see annual average growth in excess of 4%; private housing, infrastructure and commercial construction.

Prospects for the private housing sector will improve as credit conditions ease, consumer confidence improves and first-time buyers slowly return to the market. The sector's projected average yearly growth of 4.4% is above that seen in the last growth cycle between 1995 and 2007 of 3.4%, but is less than would have been expected considering by how much activity in the sector has declined in recent years.

The Scottish Government has made concerted efforts to support spending on road, rail and water facilities as much as possible, thus the capital budgets for these sectors combined actually rises from £704m in 2011/12 to £938.8m in 2014/15, an increase of a third in nominal terms. The infrastructure sector will be further boosted by the transfer of £750m from the resource to the capital budget over its Spending Review period.

While commercial construction in Scotland's two main centres, Edinburgh and Glasgow, remains muted, there are a number of large projects with planning consent that should go-ahead once economic conditions improve and financing has been obtained.

Construction employment in Scotland is projected to grow at an annual average rate of 1.1%, almost twice the rate of the UK as a whole (0.6%). Scotland is one of only three regions/devolved nations where employment is expected to be higher in 2016 than its previous peak.

## National / Regional comparison 2012-2016

	Annual average % change in output	Growth in total employment	Total ARR
North East	0.5%	4,840	2,170
Yorkshire and Humber	0.0%	-6,370	2,630
East Midlands	1.0%	-1,800	3,460
East of England	2.9%	10,660	5,710
Greater London	2.5%	16,560	1,790
South East	2.2%	28,020	4,520
South West	2.2%	9,560	7,220
Wales	1.3%	11,590	4,280
West Midlands	-1.1%	-7,360	3,730
Northern Ireland	2.1%	3,880	1,170
North West	-0.9%	-6,990	5,080
Scotland	1.3%	13,520	4,480
<b>UK</b>	<b>1.4%</b>	<b>76,110</b>	<b>46,240</b>

Source: CSN, Experian ref. CSN Explained, Section 5.3, Note 2



## 2. The outlook for construction in Scotland

### 2.1 Construction output in Scotland – overview

The construction industry in Scotland bounced back strongly from its 17% decline in real terms in 2009 and output ended 2010 up 15% at £10.46bn in estimated 2005 prices. Growth was reasonably strong in the new work sector (10%) but very good in the repair and maintenance (R&M) one (27%).

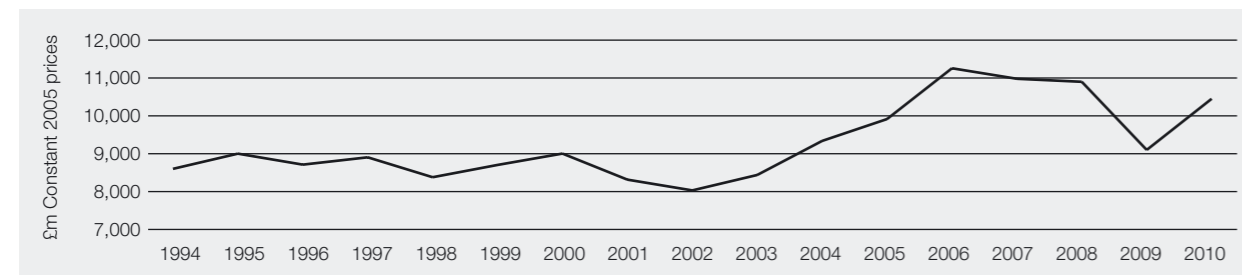
The industrial construction sector saw activity rise by 77% to £504m in 2005 prices, its highest level since 2000.

Output in both the public housing and public non-housing sectors hit new historic highs in 2010, with Scotland following the UK profile of getting as much publicly funded work on site as possible before expenditure cuts kicked in from April 2011. The growth rate for the former sector was 39% and for the latter 43%.

For the remaining new work sectors the profile in 2010 was for either moderate growth (infrastructure +5%) or moderate decline (private housing -7% and commercial -5%).

The main driver of the very strong growth in R&M work was the non-housing sector, which saw output rise by 45% to £2.04bn in 2005 prices, a new historic high. However, there is evidence to suggest that part of this growth may have been due to work obtained by Scottish firms outside the country on long term facilities management agreements, which has been allocated to Scottish output in the official data.

### Construction output 1994-2010 - Scotland



Source: ONS  
ref. CSN Explained, Section 5.3, Note: 1

### 2.2 Industry structure

The diagram, Construction Industry structure 2010 – UK vs. Scotland, illustrates the sector breakdown of construction in Scotland compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

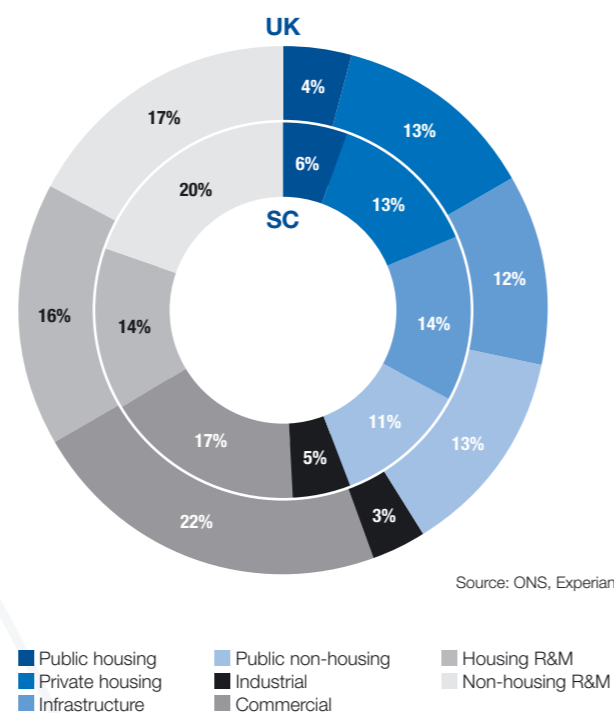
The main differences between the structure of the Scottish construction market and the UK in 2010 were the smaller share that commercial construction took in Scotland, 17% compared with 22% in the UK, and the larger share that non-housing R&M took, 20% in Scotland against 15% in the UK.

The exceptional growth in non-housing R&M in 2010 increased its share of Scottish construction activity to 20%, from 15% in 2009. This has effectively meant that the share of the new work sectors has been squeezed, with commercial construction suffering the most, down to 17% from 21%.

### 2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2012–2016) provides an indication of the construction sectors in which demand is likely to be strongest.

### Construction industry structure 2010 - UK vs. Scotland



Source: ONS, Experian

Public housing  
Private housing  
Infrastructure  
Public non-housing  
Industrial  
Commercial  
Housing R&M  
Non-housing R&M

### Economic structure - Scotland (£ billion, 2006 prices)

Selected sectors	Actual	Forecast					
	2010	Annual % change, real terms					
	2010	2011	2012	2013	2014	2015	2016
Public services	25.2	0.2	-0.5	-0.4	-0.2	0.2	0.4
Financial and business services	23.0	0.3	1.7	2.3	2.7	3.2	3.3
Transport and communications	6.6	0.3	1.3	2.0	2.2	2.5	2.5
Manufacturing	12.9	2.4	2.6	3.0	2.3	1.8	1.2
Distribution, hotels and catering	12.8	0.9	1.5	2.4	2.8	3.0	3.2
<b>Total Gross Value Added (GVA)</b>	<b>96.8</b>	<b>0.8</b>	<b>0.9</b>	<b>1.4</b>	<b>1.7</b>	<b>2.0</b>	<b>2.0</b>

Source: Experian  
ref. CSN Explained, Section 5.3, Note 3

### 2.4 Economic structure

Gross Value Added (GVA) in Scotland totalled £96.8bn in 2006 prices in 2010, no change from 2009. The Scottish economy significantly underperformed the UK as a whole in 2010, where growth was 1.8%. This has meant that Scotland's share of total UK GVA has dropped slightly, from 8.3% in 2009 to 8.1% in 2010.

Of the major sectors in the Scottish economy, only manufacturing, besides construction, showed any real growth in 2010, with GVA rising by 2%. Distribution, hotels and catering, transport and communications, and even financial and business services and public services all saw falls in activity to a greater or lesser extent.

Public services remains the largest sector of the Scottish economy (26%), followed by financial and business services (24%) but both sectors will have lost share slightly in 2010. In contrast, the manufacturing sector, which has seen a long-term downward trend in its importance to the Scottish economy, ticked up slightly in 2010.

### 2.5 Forward looking economic indicators

The Scottish economy should have returned to growth in 2011, although expansion in that year and 2012 is likely to be modest at best. Over the five years to 2016 the Scottish GVA is projected to grow at an annual average rate of 1.6%, a little below the UK average (1.8%).

It is interesting to note when looking at the sectors that there is no return to 'business as usual' over the medium term. While the financial and business services sector is projected to experience the best growth, of 2.6% a year on average, this is much lower than in the decade to 2007 and is only very marginally ahead of distribution, hotels and catering (also 2.6%) and not that much better than the manufacturing sector (2.2%).

In contrast, public services are expected to decline over the forecast period, by an annual average of 0.1%, not surprising given the pressure on public finances.

Real household disposable income (RHDI) is estimated to have fallen in Scotland in 2011 for the second year running, and the decline, at 2.5%, is a little sharper than across the UK as a whole (-2.2%). Given the pressures that households are currently under a further marginal decline is expected in 2012 before RHDI returns to growth in 2013. Not surprisingly, the trend for consumer spending mirrors that for RHDI, although the former should return to marginal growth in 2012 as credit conditions continue to ease and the savings ratio declines.

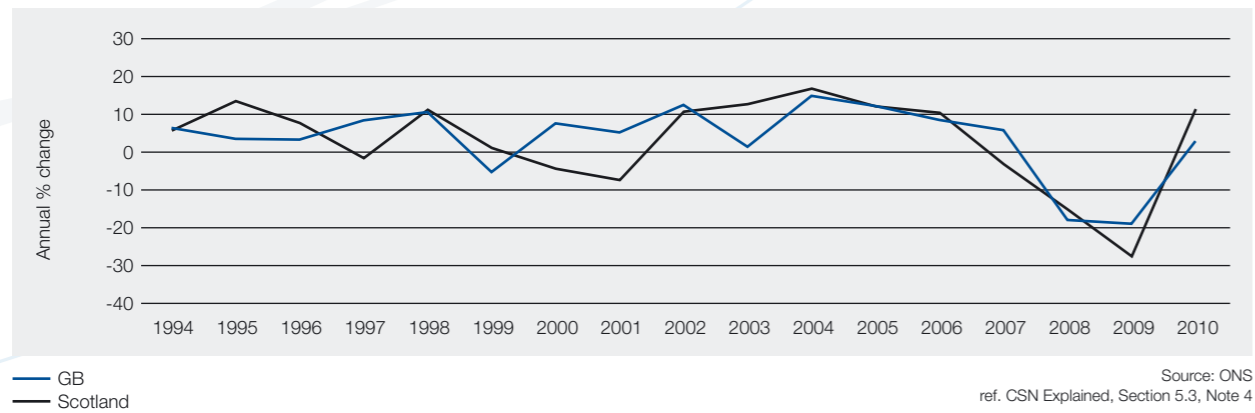
According to Communities and Local Government (CLG), the average mix-adjusted house price in Scotland in 2010 was £166,648, a 5.7% rise on the previous year. However, the recovery seen in house prices across most of the UK in 2010 has evaporated in 2011 on the back of a weakening market. House prices in Scotland are estimated to have declined by a little under 2% in 2011 and although they are expected to return to growth in 2012, increases going forward will be very moderate.

### Economic indicators - Scotland (£ billion, 2006 prices - unless otherwise stated)

	Actual	Forecast					
	2010	Annual % change, real terms					
	2010	2011	2012	2013	2014	2015	2016
Real household disposable income	71.7	-2.5	-0.1	1.3	1.4	2.0	2.3
Household spending	72.1	-1.1	0.3	2.0	2.3	2.4	2.7
Working age population (000s and as % of all)	3,206	61.3%	61.4%	62.1%	62.6%	63.1%	63.5%
House prices (£)	166,648	-1.7	1.0	2.9	3.2	3.1	3.2
LFS unemployment (millions)	0.22	0.21	0.22	0.21	0.19	0.18	0.16

Source: ONS, DCLG, Experian

## New construction orders growth 1994-2010 - Scotland vs. GB



### 2.6 New construction orders – overview

After three years of decline, which took new construction orders in Scotland down to their lowest level for eight years in 2009, they rose by a little under 12% in 2010 to £4.77bn in current prices.

Strong growth was seen in the industrial (47%) and public housing sectors (30%), although the former was recovering from a very low base while new orders in the latter were hitting a new high.

Only the commercial construction sector experienced a fall in new orders in 2010, of 6% to £946m. This was the first time new orders in the sector had fallen below £1bn since 1995.

### 2.7 New construction orders – current situation

New orders in the first six months of 2011 totalled £2.18bn in current prices, 4% down on the previous half-year and 12% below their level in the corresponding period of 2010.

The private housing and commercial sectors were the best performing in orders terms over the period. The former saw the value of new orders reach £463m in the first half of 2011, 12% up on the previous half-year and 29% above their level in the same period of 2010. However new house starts in Scotland were 6.5% down over the same period, suggesting that there is an ongoing change in the house building mix, with a greater emphasis on more expensive family homes.

The weakest sector in the first half of 2011 was the public non-housing one, which saw new orders fall to £447m over the period, 27% down on the previous half-year and 39% below their level in the same period of 2010. Given the more constrained situation for public finances, it is no surprise to see the level of new orders decline.

### New work construction orders - Scotland (£ million, current prices)

	Actual 2010	Annual % change				
		2006	2007	2008	2009	2010
Public housing	506	31.4	19.8	10.9	-9.9	29.7
Private housing	770	-23.6	3.1	-27.0	-40.3	7.9
Infrastructure	878	-7.1	42.2	56.0	-36.6	13.2
Public non-housing	1,339	-11.7	-6.9	-1.7	10.7	15.4
Industrial	333	4.1	-9.7	-16.4	-32.0	46.9
Commercial	946	69.7	-14.3	-37.5	-39.2	-6.4
<b>Total new work</b>	<b>4,772</b>	<b>10.6</b>	<b>-3.0</b>	<b>-15.0</b>	<b>-27.4</b>	<b>11.6</b>

Source: ONS, ref. CSN Explained, Section 5.3, Note 4

### 2.8 Construction output – short-term forecasts (2012–2013)

Regional Office for National Statistics (ONS) output statistics are published in current prices and are thus inclusive of any inflationary effect. At the time of writing, ONS construction output statistics were only available for the first two quarters of 2011.

Construction output in Scotland in the first six months of 2011 totalled £5.49bn in current prices, 6% down on the previous half-year but marginally up on the corresponding period of 2010. The R&M sectors performed better than new work, particularly when compared with the same period of the previous year. Overall the expectation is that output in Scotland declined by about 3% in real terms in 2011.

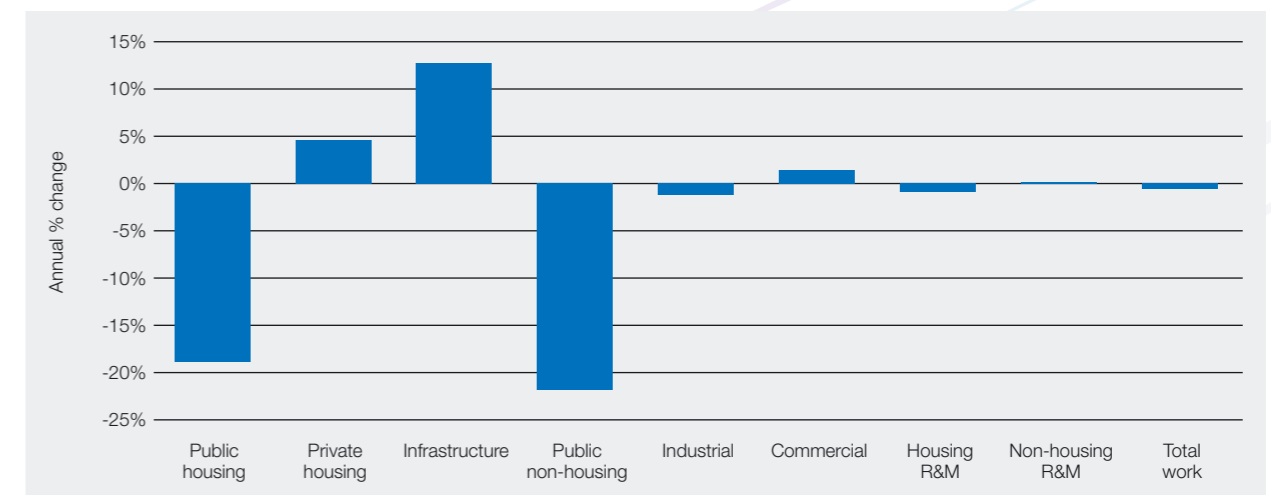
The short-term prospects for construction activity in Scotland are not good, with output over the 2012-13 period projected to decline at an annual average rate of 0.6%. However, this disguises a much more substantial fall in 2012, of around 5%, and a recovery in 2013, put at 4%.

The Scottish Government published its Spending Review and Draft Budget in September 2011. This showed the capital departmental expenditure limit falling from £2.54bn in 2011/12 to £2.12bn in 2013/14 in 2011/12 prices, a decline of a little over 16% in real terms.

However, movement in the different capital budgets is not always in a downward direction. While health and education are planned to see significant declines in capital budgets between 2011/12 and 2013/14, of 22% in the former and a third in the latter, spending on the roads system will rise by 21% over the same period.

Expenditure on housing and regeneration is planned to fall from £238.9m in 2011/12 to £150m in 2013/14, a drop of over 37%, the heaviest across the main construction spending areas over the period. Thus it should come as no surprise that we are predicting a significant drop in public housing

### Annual average construction output growth 2012-2013 - Scotland



Source: Experian ref. CSN Explained, Section 5.3, Notes 1 and 2

output in the short term, with an annual average decline of nearly 19% in over the 2012-13 period. The level of public housing starts have already dropped sharply in the first half of 2011, by 39% compared with the same period of 2010.

Overall, expenditure across the road, rail and water sectors is due to rise between 2011/12 and 2013/14, by almost 25%, with the budget for roads and water rising and that for rail declining. Hence by far the most buoyant sector of the Scottish construction industry in the short term is expected to be infrastructure, with a projected annual average rise in output of 12.7% over the two years to 2013.

In contrast, given the declines in planned expenditure for the health and education sectors, public non-housing output is projected to decline very sharply in the short term, at an annual average rate of almost 22%.

Weak economic growth will constrain expansion in the private housing and commercial sectors in the short term. Tight credit conditions, continuing pressures on household incomes, and increasing job insecurity will dampen demand for new housing, while weak consumer spending growth will impact on retail and leisure construction in particular. According to the latest Crane Surveys for Edinburgh and Glasgow from Drivas Jonas Deloitte, there were eight new starts across the commercial sector in the former in the year to the end of June 2011, three of these hotels. This compared with just one start in the year to June 2010. Glasgow saw only three starts over the year to June 2011, one of which was a re-start, and as five projects completed over the same period, this doesn't represent any increase in activity. There are one or two large office projects in the pipeline, such as 220 Bromielaw in Glasgow, a project encapsulating three new buildings of 380,000 sq. ft. in total, and 1 and 2 Fountainbridge in Edinburgh, which could deliver 110,000 sq. ft. of new office space in the city by 2014. However, in the short term the prospects are for only very modest growth in commercial construction.

## Construction output - Scotland (£ million, 2005 prices)

	Actual	Forecast annual % change			Annual average
	2010	2011	2012	2013	2012-13
Public housing	609	-7%	-30%	-7%	-18.9%
Private housing	1,345	2%	2%	7%	4.6%
Infrastructure	1,489	-9%	12%	13%	12.7%
Public non-housing	1,200	-3%	-32%	-11%	-21.9%
Industrial	504	-10%	-9%	7%	-1.2%
Commercial	1,801	-11%	0%	4%	1.8%
<b>New work</b>	<b>6,948</b>	<b>-6%</b>	<b>-6%</b>	<b>5%</b>	<b>-0.8%</b>
Housing R&M	1,469	-2%	-5%	3%	-0.9%
Non-housing R&M	2,038	6%	-2%	2%	0.1%
<b>Total R&amp;M</b>	<b>3,508</b>	<b>3%</b>	<b>-3%</b>	<b>3%</b>	<b>-0.3%</b>
<b>Total work</b>	<b>10,456</b>	<b>-3%</b>	<b>-5%</b>	<b>4%</b>	<b>-0.6%</b>

Source: Experian  
ref. CSN Explained, Section 5.3, Notes 1 and 2

### 2.9 Construction output – long-term forecasts (2012–2016)

As is the case across the UK, the longer-term prospects are brighter, with annual average construction output growth in Scotland projected to be 1.3% for the five years to 2016, in line with the UK average. The new work sector is expected to fare slightly better than R&M over the forecast period.

Strongest growth is predicted for the infrastructure sector with an annual average rate of increase of 4.7%. Capital budgets for road, rail and water are planned to reach £938.8m in 2014/15, the final year of the current Spending Review, a further 7% up on 2013/14, which in its turn is 25% higher than 2011/12. There is a raft of transport projects to be taken forward over the forecast period, including the Forth Replacement Crossing. Furthermore, the Scottish government is looking to fund significant infrastructure improvements through a new mechanism, the Non-Profit Distributing (NPD) model, which will replace PFI. The NPD model will provide around £250m of revenue support to fund up to £2.5bn of capital expenditure including the Borders Railway project (£230m-£290m), improvements to the M8, M73 and M74 (£320m), the Aberdeen Western Peripheral Route and A90 Balmadie (£350m-£450m). Further funding for more minor works could come through Tax Increment Financing (TIF), another vehicle that the Scottish Government is looking to develop.

One of the main funding streams for the public housing sector will come through the National Housing Trust, launched in September 2010. The first phase aims to provide 1,000 additional affordable homes for rent over the medium term. Developers will build the homes, which will then be purchased by Special Purpose Vehicles (SPVs) for affordable rent for a minimum of five years and up to 10 years before the homes can be sold. Thus public housing output is expected to start recovering from 2014.

Capital expenditure on education is planned to stabilise in 2014/15 but health continues to decline, by a further 37% to £239m between 2013/14 and 2014/15. The main delivery

mechanism for capital expenditure in education is the Scotland's £1.25bn Schools for the Future programme. So far 37 projects have been announced under the programme. On the health side, contracts have been signed and construction begun on the £842 million New South Glasgow Hospitals project, the £43.6 million Royal Victoria Hospital replacement in Edinburgh, the £110 million Emergency Care Centre in Aberdeen, the £27 million Airdrie Resource Centre, and the £27 million Acute Mental Health unit in Dumfries. However, activity in the sector is forecast to decline until 2014 and then pick up moderately thereafter.

It is worth noting that the Scottish government intends to transfer around £750m from its resource expenditure to fund capital projects to 2014/15, an example of how the devolved administrations can set their own priorities within the overall DEL provided by Westminster.

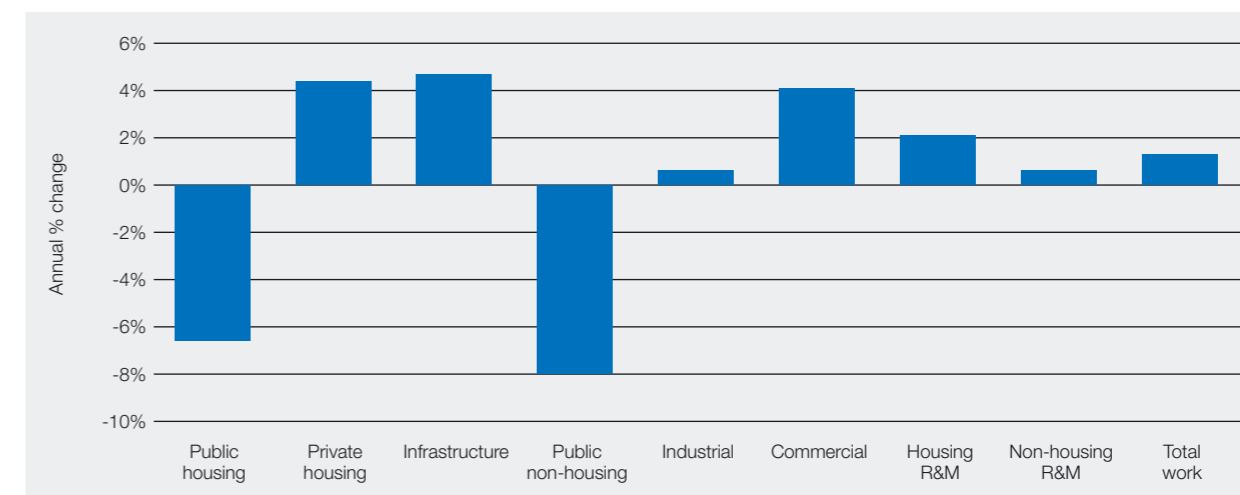
The recovery in the private housing sector will be moderate over the medium term, giving an annual average output growth rate of 4.4%. This is somewhat above the yearly growth rate in Scotland during the 1995-2007 period, of 3.4%, which represents a good benchmark of average growth during the upward part of an economic cycle. However, considering that private housing output is currently running at only half its peak level in 2005, it is surprising that the projected growth rate is not more robust. That this is the case is due to the shallowness of the current economic recovery.

The third sector predicted to see annual average output growth of over 4% during the forecast period is the commercial one. While the two main offices markets in Scotland, Glasgow and Edinburgh are still suffering from weak demand and oversupply, the slack is slowly being taken up, especially as there has been little speculative building in either city over the past three years. In both there are a number of schemes with planning consent that have yet to obtaining financing. The largest of these is The Haymarket, the redevelopment of a former goods yard with 475,00 square feet of offices, retail and leisure facilities. With improving conditions and returning confidence, the scheme could be delivered to market by 2014/15.

In the R&M sectors, housing is expected to perform better than the non-housing with work under the Scottish Housing Quality Standard (SHQS) continuing to 2015. According to the latest report by the Scottish Housing Regulator, 53% of social housing met the SHQS by March 2010, suggesting

that there is still considerable work to be done to meet the April 2015 deadline. The housing R&M sector should also benefit from £200m of funding through the Fuel Poverty and Domestic Energy Efficiency programmes between 2012/13 and 2014/15.

### Annual average construction output growth 2012-2016 - Scotland



Source: CSN, Experian  
ref. CSN Explained, Section 5.3, Note 2

### Construction output - Scotland (£ million, 2005 prices)

	Estimate	Forecast annual % change					Annual average
	2011	2012	2013	2014	2015	2016	2012-16
Public housing	568	-30%	-7%	4%	4%	0%	-6.6%
Private housing	1,373	2%	7%	5%	5%	3%	4.4%
Infrastructure	1,354	12%	13%	-1%	1%	-1%	4.7%
Public non-housing	1,168	-32%	-11%	-7%	7%	8%	-8.0%
Industrial	455	-9%	7%	2%	2%	0%	0.6%
Commercial	1,603	0%	4%	7%	5%	5%	4.1%
<b>New work</b>	<b>6,520</b>	<b>-6%</b>	<b>5%</b>	<b>2%</b>	<b>4%</b>	<b>3%</b>	<b>1.4%</b>
Housing R&M	1,442	-5%	3%	4%	5%	3%	2.1%
Non-housing R&M	2,166	-2%	2%	1%	1%	1%	0.6%
<b>R&amp;M</b>	<b>3,608</b>	<b>-3%</b>	<b>3%</b>	<b>2%</b>	<b>3%</b>	<b>2%</b>	<b>1.2%</b>
<b>Total work</b>	<b>10,127</b>	<b>-5%</b>	<b>4%</b>	<b>2%</b>	<b>3%</b>	<b>2%</b>	<b>1.3%</b>

Source: CSN, Experian  
ref. CSN Explained, Section 5.3, Notes 2

### 2.10 Beyond 2016

The Scottish Government's Spending Review demonstrated the scale of the challenge facing the public sector over the long term, with £39bn of funding likely to be lost between 2009/10 and 2025/26. Hence the government's search for innovative methods with which to fund capital expenditure projects in the future.

One of the most challenging aspect of the Scottish Government's programme is the intended transition to a low carbon economy and it is one that offers plenty of

opportunities to the construction industry. Scotland is looking to produce 100% of its electricity demand equivalent and 11% of heat demand from renewables by 2020, as well as reducing final energy use by 12% by the same date.

These are challenging targets that will require substantial levels of investment in the retrofitting of homes and businesses with energy efficiency measures and renewable technologies, the creation of new major renewable energy systems, and their integration into the national grid.



# 3. Construction employment forecasts for Scotland

## 3.1 Total construction employment forecasts by occupation

The table presents actual construction employment (SICs 41-43, 71.1, and 74.9) in Scotland for 2010, the forecast total employment in 26 occupations and in the industry as a whole between 2012 and 2016. A full breakdown of occupational groups is provided in Section 5 of CSN explained.

Construction employment in Scotland is predicted to reach around 265,700 by 2016, growing by 1.1% per annum on average, significantly above the UK rate of 0.6%. Scotland is one of only three regions/devolved nations, the others being Greater London and the South East, in which employment in 2016 is expected to exceed its previous peak. While employment in Scotland fell in 2009 it ticked up quite strongly again in 2010 and is expected to have done so again in 2011 on the back of the very strong output growth in 2010.

### Total employment by occupation - Scotland

	Actual	Forecast	
	2010	2012	2016
Senior, executive, and business process managers	12,360	11,350	13,520
Construction managers	27,860	31,880	35,670
Non-construction professional, technical, IT, and other office-based staff	30,140	32,890	38,230
Wood trades and interior fit-out	32,200	30,700	38,120
Bricklayers	3,870	3,630	3,150
Building envelope specialists	5,070	5,240	5,300
Painters and decorators	9,780	8,740	9,290
Plasterers and dry liners	3,830	3,590	4,120
Roofers	3,290	3,590	4,120
Floorers	2,780	2,690	2,610
Glaziers	1,510	1,710	1,700
Specialist building operatives nec*	5,450	6,380	5,400
Scaffolders	2,760	3,200	2,560
Plant operatives	7,200	7,410	8,870
Plant mechanics/fitters	4,330	4,350	4,550
Steel erectors/structural	3,270	3,510	4,000
Labourers nec*	6,960	6,210	7,280
Electrical trades and installation	15,750	16,320	13,720
Plumbing and HVAC trades	13,370	15,180	13,530
Logistics	3,630	4,240	4,770
Civil engineering operatives nec*	6,470	5,880	6,810
Non-construction operatives	4,890	4,330	3,490
Civil engineers	3,540	3,760	4,100
Other construction professionals and technical staff	20,740	21,510	19,030
Architects	5,340	4,760	5,640
Surveyors	6,390	6,720	6,110
<b>Total (SIC 41-43)</b>	<b>206,770</b>	<b>213,020</b>	<b>230,810</b>
<b>Total (SIC 41-43, 71.1, 74.9)</b>	<b>242,780</b>	<b>249,770</b>	<b>265,690</b>

Source: ONS, CSN, Experian ref. CSN Explained, Section 5.3, Notes 5 and 6  
NEC\* - Not elsewhere classified

On an absolute level, growth in employment is largely a function of the size of the occupational aggregate, thus the biggest projected rises among construction specific occupations are for construction managers (5,780) and wood trades and interior fit-out (4,980) over the five years to 2016. However in percentage terms the strongest demand is likely to be for plant operatives (29%), steel erectors/structural trades (23%) and roofers (22%).

Wood trades and interior fit-out remains the biggest trade in Scotland, accounting for 13.3% of total construction employment in 2010. This is a bigger share than this occupation takes across the UK as a whole (10.7%) largely due to the greater prevalence of timber frame housing in Scotland.

## 3.2 Annual recruitment requirements (ARR) by occupation

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

The ARR for the 26 occupations within Scotland's construction industry is illustrated in the table. The figure of 4,480 is indicative of the average requirements per year for the industry, as based on the output forecasts for the region. This takes into account 'churn' i.e. the flows into and out of the industry, excluding training flows.

This is a higher ARR than the 3,360 projected in 2010 for the 2011 to 2015 period, largely due to higher employment demand off an annual average growth rate of 1.3% for 2012 to 2016 compared with the 1% predicted for 2011 to 2015. The ARR represents 1.8% of projected base 2012 employment in Scotland, close to the UK average of 1.9%.

### Annual recruitment requirement by occupation - Scotland

	2012-2016
Senior, executive, and business process managers	-
Construction managers	-
Non-construction professional, technical, IT, and other office-based staff	480
Wood trades and interior fit-out	610
Bricklayers	50
Building envelope specialists	-
Painters and decorators	220
Plasterers and dry liners	80
Roofers	<50
Floorers	-
Glaziers	-
Specialist building operatives nec*	-
Scaffolders	-
Plant operatives	1,220
Plant mechanics/fitters	360
Steel erectors/structural	220
Labourers nec*	-
Electrical trades and installation	-
Plumbing and HVAC trades	-
Logistics	580
Civil engineering operatives nec*	160
Non-construction operatives	-
Civil engineers	400
Other construction professionals and technical staff	-
Architects	90
Surveyors	-
<b>Total (SIC 41-43)</b>	<b>3,990</b>
<b>Total (SIC 41-43, 71.1, 74.9)</b>	<b>4,480</b>

Source: CSN, Experian ref. CSN Explained, Section 5.3, Notes 5 and 6  
NEC\* - Not elsewhere classified

In both absolute and relative terms the largest requirement is expected to be for plant operatives, at 1,220 and 16.5% of base 2012 employment in that occupation.

Please note that all of the ARRs presented in this section are employment requirements and not necessarily training requirements. This is because some new entrants to the construction industry, such as skilled migrants or those from other industries where similar skills are already used, will be able to work in the industry without the need for significant retraining.

Non-construction operatives is a diverse occupational group including all of the activities under the SICs 41-43, 71.1, and 74.9 umbrella that cannot be classified elsewhere, such as cleaners, elementary security occupations nec. and routine inspectors and testers. The skills required in these occupations are highly transferable to other industries and forecasting such movement is hazardous given the lack of robust supportive data. Therefore the ARR for non-construction operatives is not published.

Finally, for certain occupations there will be no appreciable requirement over the forecast period, partly due to the recession creating a 'pool' of excess labour.

# 4. Comparisons across the UK

With average construction output growth of 1.3% from 2012-2016, Scotland is very similar to the overall UK figure of 1.4%. The best performing region is expected to be the East of England with a rate of 2.9%, however the North West (-0.9%) along with the West Midlands (-1.1%) are the only regions projected to see a decline.

Over the forecast period, we seem to be seeing the emergence of a north/south divide, with the greater south east (the South East, Greater London and the East of England) faring best, and the northern English regions faring worst. In between are the devolved nations, who, although they have their overall expenditure limits set by Westminster, through their devolved administrations have more control on what it will be spent than the English regions. Already the devolved administrations in Scotland and Northern Ireland have redirected a proportion of resource funding to the capital expenditure account, which should benefit the construction industry in these areas. In the case of Scotland some £750m of resource expenditure is intended to be diverted to fund capital projects up to 2014/15.

There are a number of reasons for the emergence of this north/south divide. The first is the more constrained outlook for public expenditure going forward. While declines in public housing activity are expected to be fairly similar across the board, with one or two exceptions, the profile for the public non-housing sector is very different. Output in this sector hit a new historic high in 2010 and since 2007 had grown by over 72% in real terms, primarily driven by work under the BSF programme. Scotland has its own Schools for the Future programme, worth £1.25bn in total which is currently ongoing, thus although health and education capital expenditure is due to decline north of the border it will not be quite as steep as in the UK as a whole.

Second, major infrastructure projects are tending to be greater South East centric at present. Infrastructure activity in the UK is at a historic high, exceeding its previous peak in 1993 during the building of the Channel Tunnel. This level of activity is being driven largely projects in the South East corner of England – Crossrail, Thameslink, M25 widening, London Gateway port, to name a few. That is not to say that there are not projects elsewhere, there are, but they are tending to be of a lesser size. With projects like the Forth Replacement Crossing, Scotland is one of the few areas outside of the greater south-east to have quite strong projected growth in the sector over the forecast period.

Third, growth in the commercial sector is likely to be stronger in the greater South East than elsewhere in England. The offices market has already been strengthening in London and along the M4 corridor/Thames Valley, while excess capacity issues remain a problem across many regional centres. The northern English regions also have many currently mothballed retail and leisure developments for which it is difficult to see an economic imperative to restart, at least in the short term.

Wales is predicted to have the strongest growth in employment, despite only moderate growth in output. That is because most of its growth is focussed in the more labour intensive repair and maintenance sectors. Not surprisingly, employment growth is also stronger than the UK average in the South East, Greater London and the South West. Employment growth in Scotland is also quite high at an annual average of 1.1%, nearly twice the rate across the UK as a whole (0.6%)

Scotland's ARR as a percentage of 2012 employment, at 1.8% is in line with the UK average of 1.9%. and as the devolved nation's employment growth is higher, this indicates a relatively strong level of net workforce outflow.

Three sectors are expected to see annual average growth of more than **4% per year** – Infrastructure, Private Housing and Commercial

Annual average output growth by nation/region 2012-2016



Source: CSN, Experian ref CSN Explained, Section 5.3, Note 2

Annual recruitment requirement (ARR) by nation/region 2012-2016



Source: CSN, Experian

Forth Replacement Crossing



Employment is predicted to reach nearly **256,700 by 2016**, which will be higher than previous peak employment



## 5. CSN explained

This appendix provides further details and clarification of some of the points covered in the report.

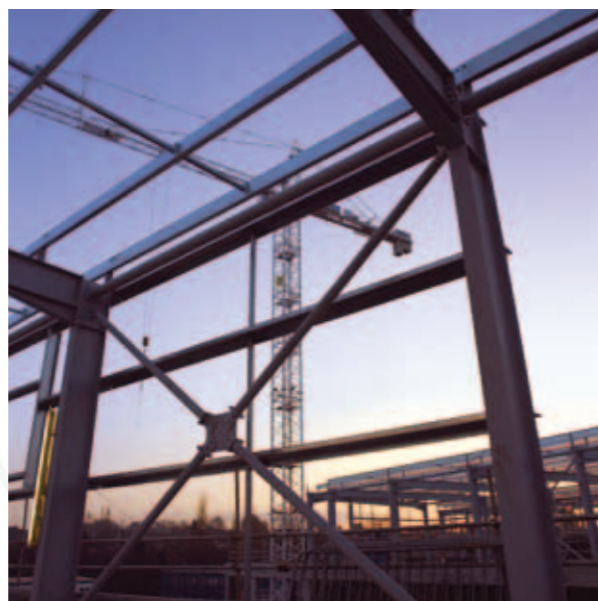
Section 5.1 gives an overview of the underpinning methods that are used by the CSN, working in partnership with Experian, to produce the suite of reports at both a UK, national and regional level.

Section 5.2 provides a glossary to clarify some of the terms that are used in the reports, while section 5.3 has some further notes that relate to the data sources that are used for the various charts and tables. Section 5.3 also outlines what is meant by the term footprint, when talking about the areas of responsibility that lie with a Sector Skills Council.

Section 5.4 explains the sector definitions used within the report and provides examples of what is covered in each.

Section 5.5 gives a detailed breakdown of the 26 occupational groups into the individual standard occupational classification (SOC) codes that are aggregated to provide the employment and recruitment requirement.

Section 5.6 then concludes by giving details about the range of LMI reports, the advantages of being a CSN member and the contact details should people be interested in joining.



## 5.1 CSN methodology

### Background

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

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

Observatory groups currently meet bi-annually and consist of key regional stakeholders invited from industry, Government, education and other SSCs, all of whom contribute local industry knowledge and views on training, skills, recruitment, qualifications and policy. The National Group also includes representatives from industry, Government, education and other SSCs. This Group convenes once a year and sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN are a number of forecasting models which generate forecasts of employment requirements within the industry for a range of occupational groups. The models are designed and managed by Experian under the independent guidance and validation of the Technical Reference Group, comprised of statisticians and modelling experts.

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

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

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

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

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

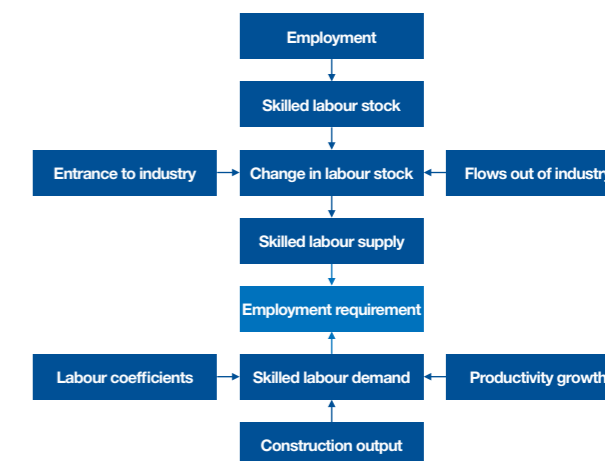
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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

Flows into the labour market include:

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

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





## 5.2 Glossary of terms

- **Building envelope specialists** – any trade involved with the external cladding of the building other than bricklaying, e.g. curtain walling.
- **Demand** – demand is calculated using construction output data from the Office for National Statistics (ONS) and the Department of Finance and Personnel Northern Ireland (DFP), along with vacancy data from the National Employers Skills Survey, from the Department for Education and Skills. These data sets are translated into labour requirements by trade by using a series of **coefficients** to produce the labour demand that relates to the forecasted output levels.
- **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.
- **Coefficients** – To generate the labour demand, the model makes use of a set of specific statistics for each major type of work to determine employment, by trade or profession, based upon the previous years' supply. In essence this is the number of workers of each occupation/trade to produce £1m of output across each sub-sector.
- **LFS** (Labour Force Survey) – a UK household sample survey which collects information on employment, unemployment, flows between sectors and training, from around 53,000 households each quarter (>100,000 people).
- **LMI** (Labour Market Intelligence) – data that are quantitative (numerical) or qualitative (insights and perceptions) on workers, employers, wages, conditions of work, etc.
- **Macroeconomics** – the study of an economy on a national level, including total employment, investment, imports, exports, production and consumption.
- **Nec** – not elsewhere classified, used as a reference in LFS data.
- **ONS** – Office for National Statistics – official statistics on economy, population and society at national UK and local level.
- **Output** – total value of all goods and services produced in an economy.
- **Productivity** – output per employee.
- **SIC codes** – Standard Industrial Classification codes – from the UK Standard Industrial Classification of Economic Activities produced by the **ONS**.
- **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.



## 5.3 Notes and footprints

### Notes

- 1 Except for Northern Ireland, output data for the English regions, Scotland and Wales are supplied by the Office for National Statistics (ONS) on a current price basis. Thus national deflators produced by the ONS have been used to deflate to a 2005 constant price basis, i.e. the effects of inflation have been stripped out.
- 2 The annual average growth rate of output is a compound average growth rate, i.e. the rate at which output would grow each year if it increased steadily year-on-year over the forecast period.
- 3 Only selected components of gross value added (GVA) are shown in this table and so do not sum to the total.
- 4 For new construction orders comparison is made with Great Britain rather than the UK, owing to the fact that there are no orders data series for Northern Ireland.
- 5 Employment numbers are rounded to the nearest 10.
- 6 The tables include data relating to plumbers and electricians. As part of SIC 45, plumbers and electricians working in contracting are an integral part of the construction process. However, it is recognised by ConstructionSkills that SummitSkills has responsibility for these occupations across a range of SIC codes, including SIC 45.31 and 45.33.

### Footprints for Built Environment SSCs

ConstructionSkills is responsible for SIC 45 Construction and part of SIC 74.2 Architectural and Engineering activities and related technical consultancy.

The table summarises the SIC codes (2003) covered by ConstructionSkills:

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

\* 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.

ConstructionSkills shares an interest with SummitSkills in SIC 45.31 Installation of wiring and fittings and SIC 45.33 Plumbing. ConstructionSkills recognises the responsibility of Summit Skills across Standard Industrial Classifications (SIC) 45.31 and 45.33, thus data relating to the building services engineering sector is included here primarily for completeness.

### AssetSkills

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

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

AssetSkills has a peripheral interest in SIC 74.2.

### Energy and Utility Skills

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

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

## 5.4 Definitions: types and examples of construction work

### Public sector housing - local authorities and housing associations, new towns and government departments

Housing schemes, old people's homes and the provision within housing sites of roads and services for gas, water, electricity, sewage and drainage.

### Private sector housing

All privately owned buildings for residential use, such as houses, flats and maisonettes, bungalows, cottages and the provision of services to new developments.

### Infrastructure - public and private

#### Water

Reservoirs, purification plants, dams, water works, pumping stations, water mains, hydraulic works etc.

#### Sewerage

Sewage disposal works, laying of sewers and surface drains.

#### Electricity

Building and civil engineering work for electrical undertakings such as power stations, dams and other works on hydroelectric schemes, and decommissioning of nuclear power stations, onshore wind farms.

#### Gas, communications, air transport

Gas works, gas mains and gas storage; post offices, sorting offices, telephone exchanges, switching centres etc.; air terminals, runways, hangars, reception halls, radar installations.

#### Railways

Permanent way, tunnels, bridges, cuttings, stations, engine sheds etc., signalling and other control systems and electrification of both surface and underground railways.

#### Harbours

All works and buildings directly connected with harbours, wharves, docks, piers, jetties, canals and waterways, sea walls, embankments and water defences.

#### Roads

Roads, pavements, bridges, footpaths, lighting, tunnels, flyovers, fencing etc.

### Public non-residential construction<sup>1</sup>

#### Factories and warehouses

Publicly owned factories, warehouses, skill centres.

#### Oil, steel, coal

Now restricted to remedial works for public sector residual bodies.

#### Schools, colleges, universities

State schools and colleges (including technical colleges and institutes of agriculture); universities including halls of residence, research establishments etc.

#### Health

Hospitals including medical schools, clinics, welfare centres, adult training centres.

#### Offices

Local and central government offices, including town halls, offices for all public bodies except the armed services, police headquarters.

#### Entertainment

Theatres, restaurants, public swimming baths, caravan sites at holiday resorts, works and buildings at sports grounds, stadiums, racecourses etc. owned by local authorities or other public bodies.

#### Garages

Buildings for storage, repair and maintenance of road vehicles, transport workshops, bus depots, road goods transport depots and car parks.

#### Shops

Municipal shopping developments for which the contract has been let by a Local Authority.

#### Agriculture

Buildings and work on publicly financed horticultural establishments; fen drainage and agricultural drainage; veterinary clinics.

#### Miscellaneous

All work not clearly covered by any other headings, such as fire stations, police stations, prisons, reformatories, remand homes, civil defence work, UK Atomic Energy Authority work, council depots, museums, libraries.

### Private industrial work

Factories, warehouses, wholesale depots, all other works and buildings for the purpose of industrial production or processing, oil refineries, pipelines & terminals, concrete fixed leg oil production platforms (not rigs); private steel work; all new coal mine construction such as sinking shafts, tunnelling, etc.

### Private commercial work<sup>2</sup>

#### Schools and universities

Schools and colleges in the private sector, financed wholly from private funds.

#### Health

Private hospitals, nursing homes, clinics.

#### Offices

Office buildings, banks.

#### Entertainment

Privately owned theatres, concert halls, cinemas, hotels, public houses, restaurants, cafés, holiday camps, swimming pools, works and buildings at sports grounds, stadiums and other places of sport or recreation, youth hostels.

#### Garages

Repair garages, petrol filling stations, bus depots, goods transport depots and any other works or buildings for the storage, repair or maintenance of road vehicles, car parks.

#### Shops

All buildings for retail distribution such as shops, department stores, retail markets, showrooms, etc.

#### Agriculture

All buildings and work on farms, horticultural establishments.

#### Miscellaneous

All work not clearly covered by any other heading, e.g. exhibitions, caravan sites, churches, church halls.

### New work

#### New housing

Construction of new houses, flats, bungalows only.

#### All other types of work

All new construction work and all work that can be referred to as improvement, renovation or refurbishment and which adds to the value of the property.<sup>3</sup>

### Repair and maintenance

#### Housing

Any conversion of, or extension to any existing dwelling and all other work such as improvement, renovation, refurbishment, planned maintenance and any other type of expenditure on repairs or maintenance.

#### All other sectors

Repair and maintenance work of all types including planned and contractual maintenance.<sup>4</sup>

<sup>1</sup> Where contracts for the construction or improvement of non-residential buildings used for public service provision, such as hospitals, are awarded by private sector holders of contracts awarded under the Private Finance Initiative, the work is classified as 'private commercial'.

<sup>2</sup> Where contracts for the construction or improvement of non-residential buildings used for public service provision, such as hospitals, are awarded by private sector holders of contracts awarded under the Private Finance Initiative, the work is classified as 'private commercial'.

<sup>3</sup> Contractors reporting work may not always be aware of the distinction between improvement or renovation work and repair and maintenance work in the non-residential sectors.

<sup>4</sup> Except where stated, mixed development schemes are classified to whichever sector provides the majority (i.e. over 50%) of finance.



## 5.5 Occupational groups

### Occupational group

Description, SOC reference.

### Senior, executive and business process managers

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

### Construction managers

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

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

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

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

### Wood trades and interior fit-out

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



### Bricklayers

Bricklayers, masons, 5312

### Building envelope specialists

Construction trades nec\* (50%), 5319  
 Labourers in building and woodworking trades (5%), 9121

### Painters and decorators

Painters and decorators, 5323  
 Construction trades nec\* (5%), 5319

### Plasterers and dry liners

Plasterers, 5321

### Roofers

Roofers, roof tilers and slaters, 5313

### Floorers

Floorers and wall tilers, 5322

### Glaziers

Glaziers, window fabricators and fitters, 5316  
 Construction trades nec\* (5%), 5319

### Specialist building operatives nec\*

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

### Scaffolders

Scaffolders, staggers, riggers, 8141

### Plant operatives

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

### Plant mechanics/fitters

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



### Steel erectors/structural

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

### Labourers nec\*

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

### Electrical trades and installation

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

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

Plumbers and HVAC trades, 5314  
 Pipe fitters, 5216  
 Labourers in building and woodworking trades (6%), 9121  
 Construction trades nec\* (5%), 5319

## 5.6 CSN website and contact details

### Logistics

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

### Civil engineering operatives nec\*

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

### Non-construction operatives

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

### Civil engineers

Civil engineers, 2121

### Other construction professionals and technical staff

Mechanical engineers, 2122  
Electrical engineers, 2123  
Chemical engineers, 2125  
Design and development engineers, 2126  
Production and process engineers, 2127  
Planning and quality control engineers, 2128  
Engineering professional nec\*, 2129  
Electrical/electronic technicians, 3112  
Engineering technicians, 3113  
Building and civil engineering technicians, 3114  
Science and engineering technicians nec\*, 3119  
Architectural technologists and town planning technicians, 3121  
Draughtspersons, 3122  
Quality assurance technicians, 3115  
Town planners, 2432  
Electronics engineers, 2124  
Building inspectors, 3123  
Scientific researchers, 2321

### Architects

Architects, 2431

### Surveyors

Quantity surveyors, 2433  
Chartered surveyors (not Quantity surveyors), 2434

### The CSN website – <http://www.cskills.org/csn>

The CSN website functions as a **public gateway** for people wishing to access the range of **Labour Market Intelligence (LMI)** reports and **research material** regularly produced by the CSN.

The main UK report, along with the twelve LMI reports (one for Northern Ireland, Scotland, Wales and each of the nine English regions) can be downloaded from the site, while research reports such as the '2020Vision' and 'Closer look at Greater London' are also freely available.

Having access to this range of labour market intelligence and trend insight allows industry, government, regional agencies and key stakeholders to:

- pinpoint the associated, specific, skills that will be needed year by year
- identify the sectors which are likely to be the strongest drivers of output growth in each region and devolved nation
- track the macro economy
- understand how economic events impact on regional and devolved nations economic performance
- highlight trends across the industry such as national and regional shifts in demand
- plan ahead and address the skills needs of a traditionally mobile workforce
- understand the levels of qualified and competent new entrants required into the workforce.

The website also contains further information about:

- how the CSN functions
- the CSN Model approach
- how the Model can be used to explore scenarios
- CSN team contact information
- access to related ConstructionSkills research
- details for those interested in becoming members of the network.

The CSN website can be found at:

<http://www.cskills.org/csn>

### CSN members area

While the public area of the CSN Website is the gateway to the completed LMI and research reports, being a member of the CSN offers further benefits.

As a CSN member you will be linked to one of the Observatory groups, which play a vital role in being able to feed back observations, knowledge and insight on what is really happening on the ground in every UK region and nation. This feedback is used to fine tune the assumptions and data that goes into the forecasting programme such as:

- details of specific projects
- demand within various types of work or sectors
- labour supply
- inflows and outflows across the regions and devolved nations.

CSN members therefore have:

- early access to forecasts
- the opportunity to influence and inform the data
- the ability to request scenarios that could address "What would happen if..." types of questions using the model.

Through the Members area of the CSN website, members can:

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

As the Observatory groups highlight the real issues faced by the industry in the UK, we can more efficiently and effectively plan our response to skills needs. If you would like to contribute your industry observations, knowledge and insight to this process and become a member of the CSN, we would be delighted to hear from you.

### Contact details

For further information about the CSN website, enquiries relating to the work of the CSN, or to register your interest in joining the CSN as a member, please contact us at:

[csn@cskills.org](mailto:csn@cskills.org)





For more information about the  
**Construction Skills Network**, contact

**Lee Bryer**

Research and Development

Operations Manager

0344 994 4400

Lee.bryer@cskills.org

**Cskills website**

<http://www.cskills.org/>

<http://www.cskills.org/contact-us/offices.aspx>

**CSN webpage**

<http://www.cskills.org/supportbusiness/businessinformation/csn/index.aspx>

