

INDUSTRY INSIGHTS

Construction Skills Network
Scotland 2015-2019



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Contents

1	Summary and key findings.....	4
2	The outlook for construction in Scotland	6
3	Construction employment forecasts for Scotland	12
4	Comparisons across the UK.....	14

Tables and charts

1	Annual average construction output growth 2015-2019	4
2	Regional comparison 2015-2019.....	5
3	Construction output 1997-2013	6
4	Construction industry structure 2013	6
5	Economic structure	7
6	Economic indicators.....	7
7	New construction orders growth 1997-2013.....	8
8	New work construction orders	8
9	Construction output 2015-2016	9
10	Annual average construction output growth 2015-2016	9
11	Annual average construction output growth 2015-2019	10
12	Construction output 2015-2019	11
13	Total employment by occupation.....	12
14	Annual recruitment requirement by occupation	13
15	Annual average output growth by region.....	15
16	Annual recruitment requirement by region	15

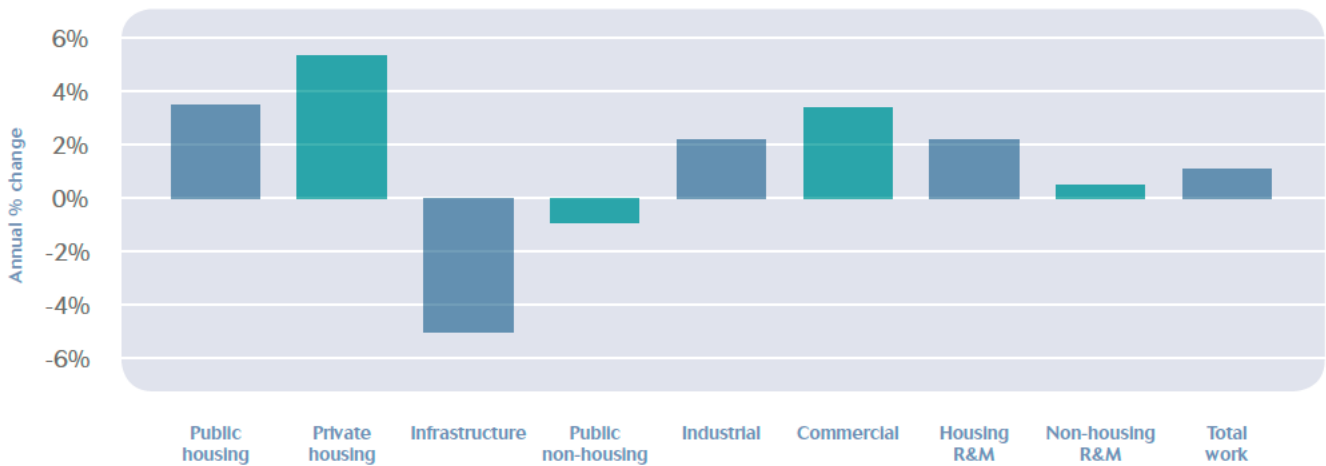
CSN explained

1	CSN methodology.....	17
2	Glossary of terms	18
3	Notes and footprints	19
4	Definitions: types and examples of construction work	20
5	Occupational groups.....	22
6	CSN website and contact details.....	25

1 Summary – Scotland

Scotland is projected to see annual average output growth of 1.1% over the 2015 to 2019 period, considerably lower than the UK rate of 2.9%. Average growth rates for new work and repair and maintenance are expected to be similar, at 1% and 1.2% respectively. This output growth rate is only just strong enough to generate marginal employment growth, of 0.1% on average per year, again well below the UK average of 1.5%. Despite the small employment growth, Scotland’s annual average recruitment requirement (ARR) of 5,700 represents 2.6% of base 2015 employment.

Annual average construction output growth 2015-2019 – Scotland



Source: CSN, Experian
ref. CSN Explained, Section 3, Note 2



Output growth is expected to be strongest in the private housing sector at an average annual rate of 5.4%.

1.1 Key findings

2014 is likely to have been a good year for Scottish construction, with output growing by an estimated 7% in real terms. This is the second consecutive year of expansion, but still leaves output 11% below its 2006 peak. Growth in 2013 and 2014 has been primarily driven by a very strong performance from infrastructure which has taken output in the sector to new historic highs.

Interestingly, the primary reason for the relatively modest annual average output growth rate in the five years to 2019 (1.1%), is a projected decline in infrastructure activity from 2016 onwards. Large projects such as the Queensferry Crossing, Borders Railway and M8/M74/M73 improvements are all due to complete during the forecast period and, while there are new schemes on the blocks, they are unlikely to compensate in full for those leaving the pipeline. However, to put the projected annual average decline of 5% into perspective, even by 2019, infrastructure output will still be higher than in any year between 1990 and 2012 inclusive in real terms.

Scotland is projected to see annual average output growth of 1.1% over the 2015 to 2019 period, considerably lower than the UK rate of 2.9%.

Scotland's ARR of 5,700 represents 2.6% of 2015 employment, significantly higher than the UK figure of 1.7%.

Output growth is expected to be strongest in the private housing sector at an average annual rate of 5.4%, but this comes on the back of eight consecutive years of decline between 2005 and 2013. There are a number of large regeneration projects in the pipeline with a substantial housing element and the sector will also probably benefit from the Scottish Futures Trust's £1.5bn investment in affordable housing over the next decade – a programme that should drive decent growth in the public housing sector as well.

Employment growth is projected to average just 0.1% a year over the 2015 to 2019 period, well below the UK rate of 1.5%. This implies a productivity gain of 1% a year in Scotland. However it should be remembered that different construction sectors are more or less labour intensive and thus changes in 'implied' productivity can be as much to do with relative sector growth rather than any change in 'real' productivity.

Demand is projected to be strongest in the professional occupational categories, ranging from average annual growth of 0.9% to 1.5%, but many of the trades are expected to see static or marginally declining levels of employment.

Scotland's annual recruitment requirement (ARR), at 5,700 for the 2015 to 2019 period, represents 2.6% of base 2015 employment, a significantly higher ratio than the UK average (1.7%) despite poor employment growth. However, Scotland suffers significant net outflows on the supply side that need to be compensated for according to the Labour Force Survey.

Regional comparison 2015-2019

	Annual average % change in output	Growth in total employment	Total ARR
North East	2.3%	7,660	3,510
Yorkshire and Humber	2.3%	14,940	3,220
East Midlands	2.2%	9,340	3,120
East of England	2.5%	13,690	4,260
Greater London	4.2%	50,440	2,050
South East	2.5%	30,130	2,590
South West	3.6%	22,130	6,320
Wales	5.8%	13,890	5,320
West Midlands	2.1%	12,110	2,320
Northern Ireland	2.2%	3,220	1,490
North West	2.5%	17,130	4,790
Scotland	1.1%	1,320	5,700
UK	2.9%	196,000	44,690

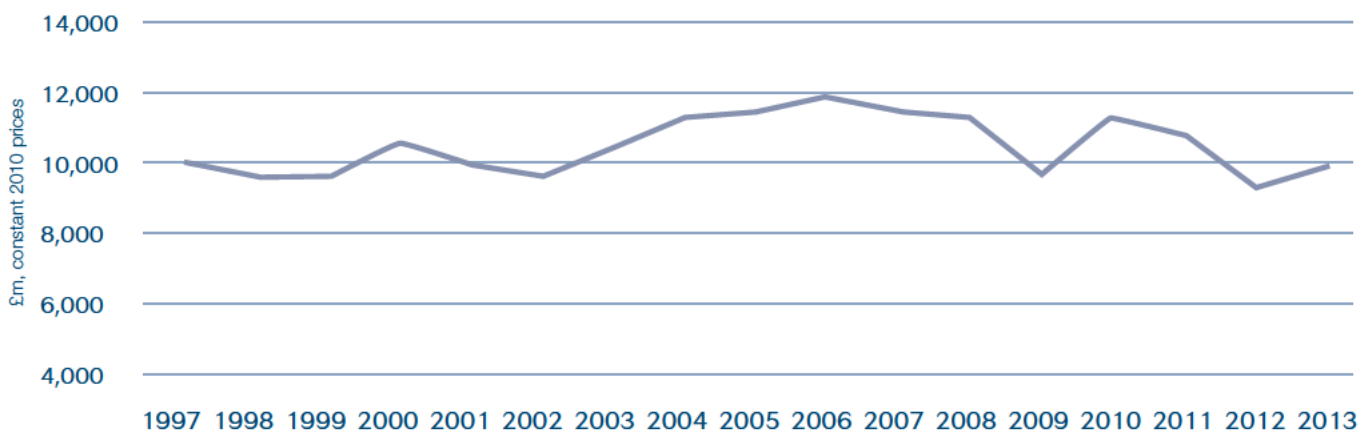
2 The outlook for construction in Scotland

2.1 Construction output in Scotland – overview

Construction output rose by 7% in Scotland in 2013, after two years of decline, to reach £9.86bn in 2010 prices. Expansion has been driven almost entirely by infrastructure output, up by 59%, and commercial construction with a rise of 38%. The strong growth in

the infrastructure sector has been driven primarily by work on transport networks, while in the commercial sector the return of speculative building has been seen in Scotland's main offices markets after a long period of dormancy.

Construction output 1997-2013 – Scotland



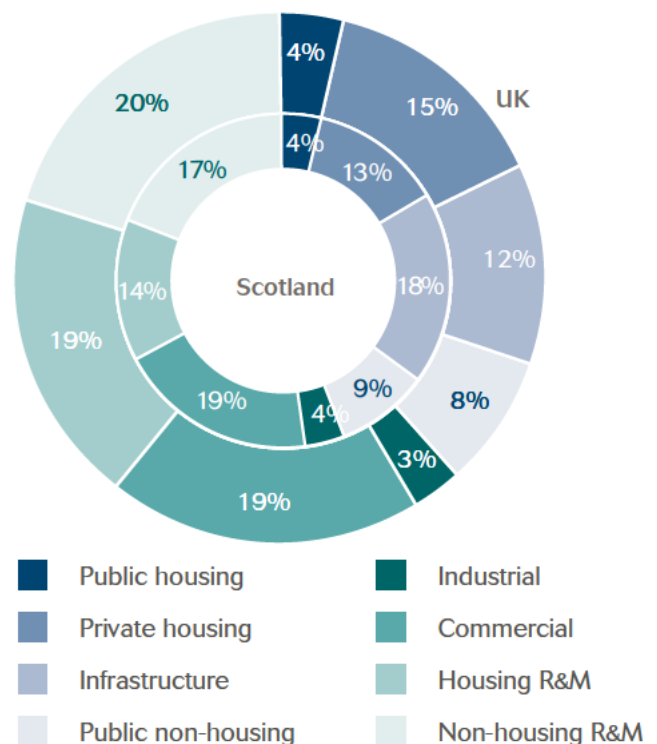
Source: ONS
ref. CSN Explained, Section 3, Note 2

2.2 Industry structure

The diagram, Construction Industry structure 2013 – 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.

Scotland has a proportionally more important new work market, accounting for 67% of total construction output compared with 62% for the UK as a whole. The difference largely lies in the relative size of the infrastructure and housing repair and maintenance (R&M) markets, with the former accounting for 6% larger share of output in Scotland than in the UK and the latter for a 5% smaller share. Other than these two sectors, the structure of the Scottish construction sector is similar to the UK.

Construction industry structure 2013 – UK vs Scotland



Source: ONS, Experian

2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2015 – 2019) provides an indication of the construction sectors in which demand is likely to be strongest.

2.4 Economic structure

Scotland's economy remains somewhat more reliant on the public services (22.1% v 19.1%) and manufacturing (11.5% v 10.3%) sectors compared with the UK as a whole, while some of the faster growing sectors continue to be under-represented – professional and other private services (21.4% versus 24.3%) and information and communication (3.4% versus 6.5%).

Unlike many other parts of the UK, there has been little change in the share public services takes of Scottish

GVA in the decade to 2013, and that of manufacturing has dropped by less than a percentage point. The main change in the structure of the Scottish economy in the past decade has been the growth in importance of the professional and other private services sector, from a share of GVA of less than 17% in 2004 to one of over 22% in 2013. However, rather than this being at the expense of the public services or manufacturing sectors, it has been mining and quarrying, construction and finance and insurance that have seen the largest relative contractions in share.

Economic structure – Scotland (£ billion, 2010 prices)

Selected sectors	Actual	Forecast					
		Annual % change, real terms					
	2013	2014	2015	2016	2017	2018	2019
Public services	23.0	0.2	0.1	-0.2	-0.4	0.2	1.2
Professional and other private services	23.0	4.9	4.3	3.6	3.5	3.2	2.8
Manufacturing	11.6	1.7	1.4	1.4	1.8	1.4	0.9
Wholesale and retail	10.9	7.1	3.1	1.9	2.1	2.1	2.2
Finance and insurance	9.0	3.5	2.5	3.0	2.9	2.8	2.6
Total Gross Value Added (GVA)	104.1	2.9	2.5	2.2	2.2	2.1	2.1

Note: Top 5 sectors, excluding construction
Source: Experian
ref. CSN Explained, Section 3, Note 3

2.5 Forward looking economic indicators

Economic growth in Scotland is expected to lag the UK a little over the 2015-19 period, with GVA expansion of 2.2% compared with 2.4%. Scotland's growth across most of the major economic sectors is projected to be similar to the UK's, but population expansion, jobs growth and household spending is likely to be slightly slower. However the main reason for the somewhat lower GVA growth than the UK, lies in Scotland's greater reliance on relatively slow growing sectors, such as public services and manufacturing.

Manufacturing output is projected to grow at the relatively modest annual average rate of 1.4%, but the transport and storage sector is expected to expand at around twice that pace, suggesting that new capacity requirements are likely to be stronger for logistics and distribution facilities than factories. There is also some variation in the predicted performance of the sectors that drive demand for commercial construction last year, from a high of 3.5% a year in professional and other private services to 2% in accommodation,

food services and recreation.

Household disposable income has struggled to show any real growth as rises in average earnings have generally remained below inflation through most of 2014. While growth in disposable income is expected to strengthen during the forecast period, the recent weakness is likely to impact expansion in household spending, bringing the average annual growth rate down to around 2% over the five years to 2019.

2.6 New construction orders – overview

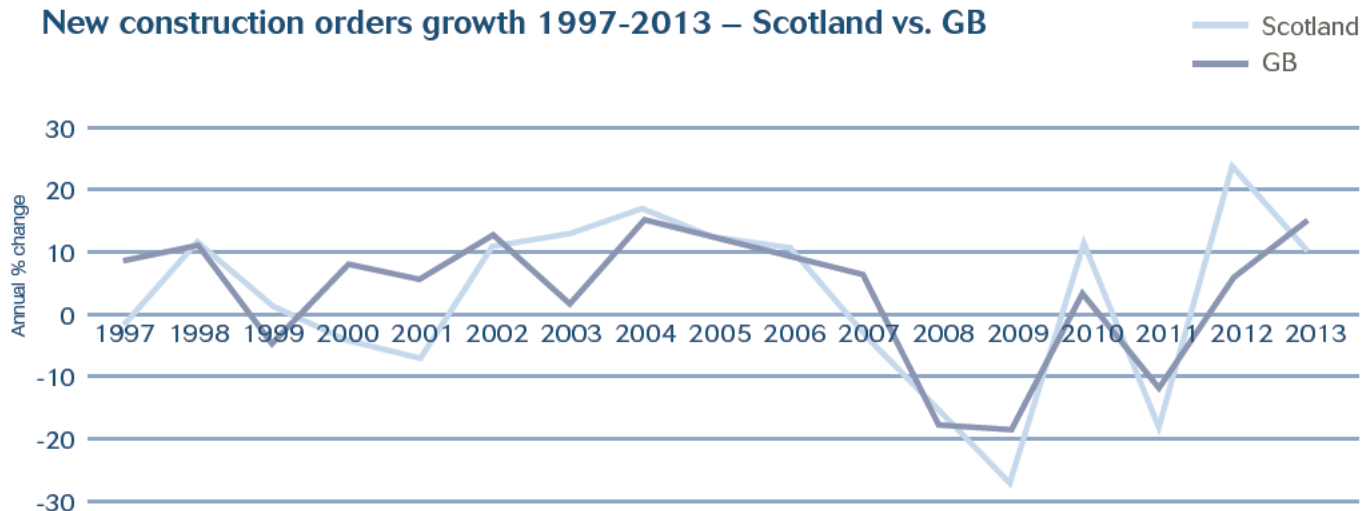
New construction orders in Scotland reached £5.3bn in current prices in 2013, a 10% increase on the previous year and the second consecutive year of growth. However, they remained well down on their 2006 peak of £7.15bn.

By far the strongest growth in 2013 was in the public non-housing sector with new orders expansion of nearly 50%. Relatively modest single-digit increases were seen in most of the remaining new work sectors except for public housing which displayed a decline of over 9%.

Economic indicators – Scotland (£ billion, 2010 prices – unless otherwise stated)

	Actual	Forecast					
		Annual % change, real terms					
	2013	2014	2015	2016	2017	2018	2019
Real household disposable income	82.0	1.2	1.9	1.1	2.0	2.5	2.3
Household spending	80.4	2.6	2.2	1.9	2.0	2.0	2.1
Working age population (000s and as % of all)	3,352	63.3%	63.7%	63.8%	63.8%	63.6%	63.7%
House prices (£)	181,386	4.20	6.90	4.94	3.52	3.40	3.44
LFS unemployment (millions)	0.20	-14.19	-8.16	-4.81	-0.75	-2.06	-1.20

New construction orders growth 1997-2013 – Scotland vs. GB



Source: ONS
ref. CSN Explained, Section 3, Note 4

2.7 New construction orders – current situation

The level of new orders jumped sharply in the second quarter of 2014, by 62% on a quarter-on-quarter basis and, on an annualised basis, they were 23% up on the end of 2013.

The quarter-on-quarter growth in the second quarter of 2014 was driven by improvements across all sectors, with an especially strong performance in the public non-housing one. On an annualised basis, double-digit rises have been seen in all new work sectors except public housing and commercial construction in the second quarter of 2014 compared with the end of 2013.

2.8 Construction output – short-term forecasts (2015–2016)

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, regional ONS construction output statistics were only available for the first two quarters of 2014.

Recent data for Scotland shows construction output in nominal terms up by 5% in the second quarter of this year compared to the end of 2013 on an annualised basis. Growth was largely centred in the infrastructure, public non-housing and industrial sectors, with expansion in the private housing and commercial sectors still modest and with falls in public housing and R&M activity.

Looking at data from the latest State of Trade surveys, Experian's composite indicator of construction activity (activity/order books/tender enquiries) for Scotland turned positive in June for the first time since November 2013 and then posted its strongest result in August (72) since July 2007 (over 50 indicates expansion, under 50 contraction). Since then the index has subsided a bit, to 66 in October, but it still remains very strong. The Federation of Master Builders' weighted balance of workloads/expected workloads/enquires has been somewhat weaker, falling back into negative territory in the third quarter of 2014 (-5) after marginal growth in the second (+2). The Civil Engineering Contractors Association has reported positive workload balances for their members for the five quarters to the third quarter of 2014, and the balance for expected workloads remains strong (+54). However, order books seem to be stabilising (+2) although the expectation is that they will continue to grow over the following 12 months.

Scottish construction output is estimated to have grown by 7% in real terms in 2014, with particularly strong performances in the infrastructure and industrial sectors. However, expansion is expected to slow to 3% in 2015 and stall in 2016, giving an annual average growth rate of 1.4% over the short term.

The Scottish Government is still committed to the production of 30,000 new affordable homes over the life of the current parliament, thus the housing and regeneration budget shows strong growth, from £507m in 2014/15 to £699m in 2015/16.

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

	Actual	Annual % change				
		2009	2010	2011	2012	2013
Public housing	271	-9.9	29.4	-31.7	-13.3	-9.4
Private housing	835	-40.3	7.8	27.7	-16.6	1.8
Infrastructure	1616	-36.6	13.2	-27.1	138.9	5.7
Public non-housing	1081	10.7	15.4	-42.5	-6.1	49.5
Industrial	381	-32.0	47.1	-11.1	26.0	2.1
Commercial	1121	-39.2	-6.5	-10.2	26.3	4.6
Total new work	5,305	-27.4	11.6	-18.6	24.0	10.2

Source: ONS
ref. CSN Explained, Section 3, Note 4

Construction output – Scotland (£ million, 2011 prices)

	Actual 2013	Forecast annual % change			Annual average 2015-2016
		2014	2015	2016	
Public housing	396	3%	8%	6%	6.6%
Private housing	1,231	9%	11%	7%	8.7%
Infrastructure	1,806	16%	6%	-14%	-4.3%
Public non-housing	896	4%	-4%	-4%	-3.8%
Industrial	376	22%	5%	6%	5.3%
Commercial	1,918	3%	4%	6%	4.9%
New work	6,623	9%	5%	-1%	2.1%
Housing R&M	1,376	1%	0%	0%	0.4%
Non-housing R&M	1,863	3%	-1%	0%	-0.3%
Total R&M	3,239	2%	0%	0%	0.0%
Total work	9,862	7%	3%	0%	1.4%

Source: Experian
ref. CSN Explained, Section 3, Notes 1 and 2

However, recent falls in public housing activity suggests that an increasing proportion of these affordable homes are being delivered in the private rather than public sector. Nevertheless we do expect to see growth in this sector over the next couple of years.

In the private housing sector, starts fell marginally in 2013 to just over 10,000. However, the first quarter of 2014 was very strong for starts, with a 41% increase on the same period of 2013 to 3,587, the highest quarterly total since the second quarter of 2008. They subsided a little in the second quarter of the year to 3,026 but on an annualised basis they were still 12% higher than in the final quarter of 2013.

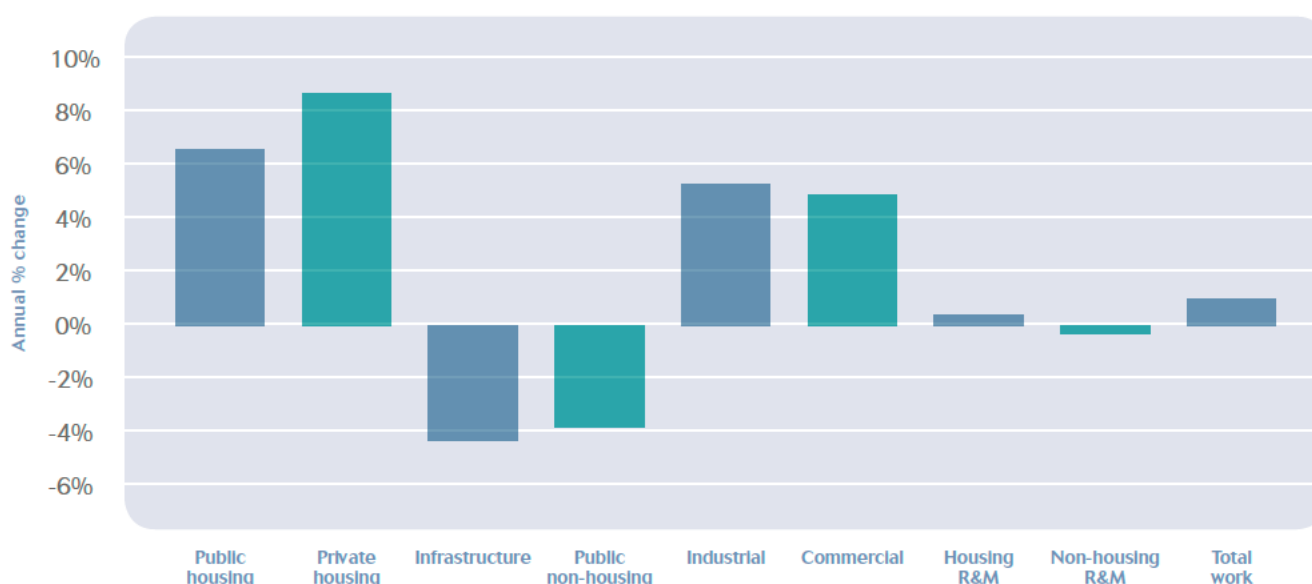
House prices in Scotland jumped by 4.7% quarter-on-quarter in the third quarter of 2014, the second consecutive quarter of strong growth according to the ONS's mix-adjusted data series, and this took the annualised rate up to nearly 7.5%. Data from the Halifax and Nationwide shows a quarter-on-quarter rise of 1.4% in the third quarter of 2014 and an annualised

increase of 6.3% from the former and +1.3% and +5.2% on the same measures from the latter. Thus the trend is definitely upwards.

Eight years of decline in the sector left output in 2013 at just 37% of its 2005 peak in estimated real terms. Growth is believed to have returned to the sector in 2014, in line with the trend across the UK as a whole, and this should carry on into 2015 and 2016.

Infrastructure output surged by nearly 60% in 2013 to a new historic high of £1.8bn in 2010 prices, well above any previous peak since the beginning of the 1990s and growth has continued in 2014, with an estimated outturn 16% higher than in the previous year. This is likely to have taken output to over £2bn in 2010 prices for the first time. Capital expenditure on the roads system in Scotland is budgeted to rise again in 2015/16 compared with 2014/15, but only by a relatively modest 7%, while the expenditure limit for Scottish Water is due to fall by 30%.

Annual average construction output growth 2015-2016 – Scotland



Source: Experian
ref. CSN Explained, Section 3, Note 2

A couple of large projects in the sector are due to complete over the next two years – the Borders Railway project in Summer 2015 and the Queensferry Crossing in late 2016 – and despite the projected start of schemes such as the £1.5bn Seegreen Alpha and Bravo windfarms in the 2015/16 period, we believe overall infrastructure output is likely to decline in 2016. It should be noted that only around 20% of the total value of an offshore windfarm project is classified as construction work.

The estimated increase in public non-housing output in 2014 is likely to have been as a result of the success of alternative funding mechanisms such as Non-Profit Distribution (NPD) as capital expenditure by the Scottish Government on health and education was budgeted to decline. The Scottish Government’s budget for 2015/16 show further falls, with the Departmental Spending Limits (DELs) dropping from £254m to £195m for health and £116m to £110m for education. The only potential bright spot for the public non-housing sector in the short term was an increase in capital expenditure on the fire and police services, and on prisons, although it is unclear how much of this is construction-related.

Nevertheless, there are projects starting on site or in the pipeline, including the new £200m Dumfries & Galloway Royal Infirmary, a new campus for the City of Glasgow college, a new Bio-Quarter for the University of Edinburgh costing £32m, and the Wick Community Campus, a £48.5m project including a new high school, primary and nursery facilities in the area as part of Scotland’s Schools for the Future programme.

Good growth is projected for both the industrial and commercial construction sectors in 2015 and 2016, despite the likely negative impact of weak Eurozone performance on manufacturing exports on the former sector. Expansion in industrial construction is likely to be driven by the warehouse rather than factory sub-sector across the UK over the short term.

In the commercial sector we are seeing the return of speculative building to the main offices markets in Scotland – Glasgow and Edinburgh – after a long period of dormancy. In the retail and leisure sub-sectors, work has recently started on the £230m renovation of

Buchanan shopping centre in Glasgow and an 18-hole golf course in North Ayrshire, worth £60m. The scheme includes a 50-room hotel, golf shop, restaurant, and conference facility. In the pipeline is a new Aberdeen Exhibition and Conference Centre at Buckston as a replacement for the current facilities at Bridge of Don. As well as the conference and exhibition facilities, the plans include a hotel and other commercial units. If it gets the go-ahead, work could start towards the end of next year.

2.9 Construction output – long-term forecasts (2015–2019)

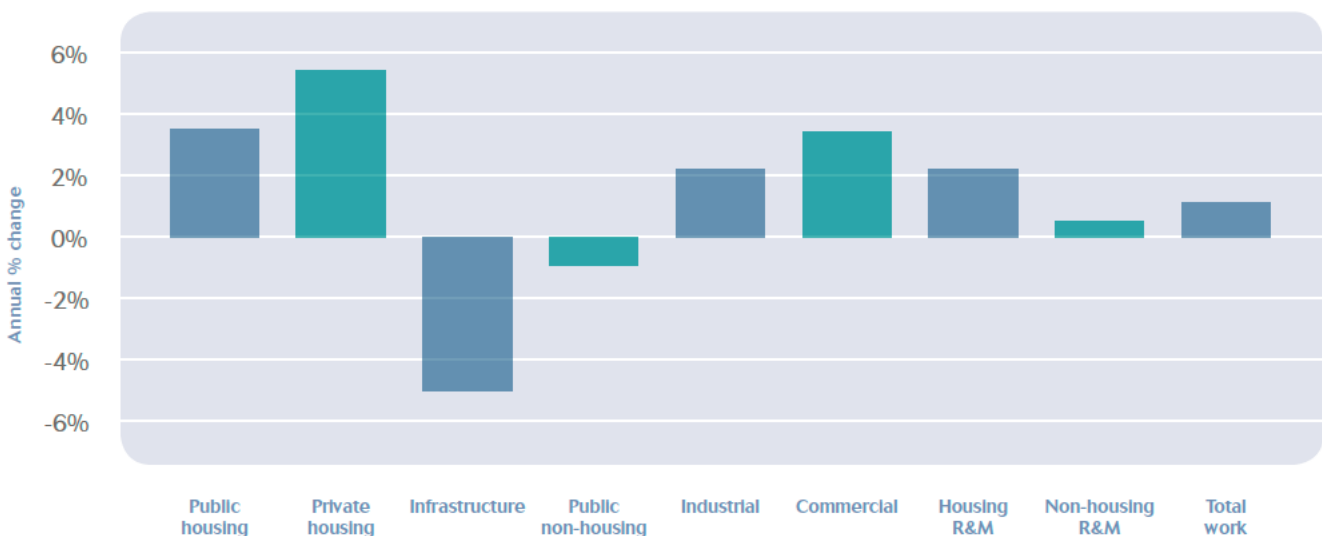
Annual construction output growth in Scotland is predicted to average 1.1% over the forecast period, well below the UK average of 2.9%. Decent growth in the housing, industrial and commercial sectors is negated in part by falls in infrastructure and public non-housing work.

In the long-term, the public housing sector will be dominated by the five £300m framework agreements for the Scottish Futures Trust (SFT), most of which are still in the tender stage and will run until 2024. Once these get going they should generate a strong output stream for the public housing sector for some considerable time.

The general consensus of opinion is that some of the ‘froth’ has been coming off the housing market in recent months but, as most of this had been generated in the south-east corner of England it may not impact the Scottish market significantly. House price growth north of the border has remained moderate at around 5% to 7% according to the main indicators and we expect this trend to continue during the forecast period. Over the whole of the 2015 to 2019 period, private housing output growth is projected to average a bit over 5% a year, around the long-term trend that would be expected for the sector.

There are a couple of large long-term regeneration projects with substantial housing elements on site or in the pipeline. The Chapelton urban village regeneration project near Aberdeen will feature over 4,000 new homes in its initial stages, rising to around 8,000 overall.

Annual average construction output growth 2015-2019 – Scotland



Construction output – Scotland (£ million, 2011 prices)

	Estimate 2014	Forecast annual % change					Annual average 2015-2019
		2015	2016	2017	2018	2019	
Public housing	408	8%	6%	0%	3%	1%	3.4%
Private housing	1,345	11%	7%	3%	5%	2%	5.4%
Infrastructure	2,103	6%	-14%	-3%	-9%	-4%	-5.0%
Public non-housing	932	-4%	-4%	0%	2%	1%	-0.9%
Industrial	461	5%	6%	1%	-2%	2%	2.2%
Commercial	1,968	4%	6%	2%	4%	1%	3.4%
New work	7,217	5%	-1%	0%	0%	0%	1.0%
Housing R&M	1,386	0%	0%	4%	4%	2%	2.2%
Non-housing R&M	1,910	-1%	0%	2%	0%	1%	0.5%
R&M	3,296	0%	0%	3%	1%	2%	1.2%
Total work	10,513	3%	0%	1%	1%	1%	1.1%

Source: CSN, Experian
ref. CSN Explained, Section 3, Note 2

The total value of the project is estimated at £1bn, but this includes all the infrastructure, both transport and social, that will be required to make the village viable. The 'Grandhome' development had its plans approved by Aberdeen City Council back in May. The purpose of the scheme is to create a new community at the Bridge of Don, Aberdeen. The scheme will deliver around 7,000 homes over a 25-year period, of which 25% will be affordable. However, the "Owenstown" development, in Douglas Valley, South Lanarkshire was rejected by local authorities in April 2014.

In the infrastructure sector, the two projects mentioned above that are currently on site but due to complete during the forecast period will be joined by the improvement work to the M8/M74/M73, which should finish in 2017. Also, it should be noted that projects that are scheduled to start and complete during the forecast period are effectively 'forecast neutral', because we capture the upsurge of work at the start and the downturn towards completion, and thus they have no overall effect on the annual average growth rates. A good example of this is likely to be the Aberdeen Western Peripheral Route. Thus, post-2015, we expect overall infrastructure output to subside from its current peak levels as more will be coming out of the system than will be going in.

In the public non-housing sector the schemes mentioned in the short-term forecast section will be joined by a proposal to develop a new hospital and healthcare centre in Orkney to replace the current Balfour hospital. A preferred bidder for the £60m construction project is due to be chosen next October, with work starting in Spring 2016. Our 2015-2019 forecasts assume a stabilisation of capital expenditure for the health and education sectors in 2017, and modest growth thereafter.

The commercial construction sector is projected to be the most buoyant one after the housing sectors, with an annual average growth rate of 3.4%. There was significant variation in the estimated performance of the sectors that drive demand for commercial construction in 2014, from a 2.5% fall in activity for the accommodation, food services and recreation sector, to strong growth of 5.5% in professional and other private services. The former sector is expected to return to growth over the forecast period, with annual average expansion of 2%, while the latter is likely to see growth subside to a still very robust 3.5% a year over the same period. Growth in the finance and insurance sector is expected to average 2.7% a year between 2015 and 2019 and 2.3% in the wholesale and retail sector. These growth rates would suggest that offices is probably going to be the most buoyant of the commercial construction sectors over the forecast period.

2.10 Beyond 2019

Some of the projects already mentioned will generate output streams well past 2019, including the two regeneration projects in the Aberdeen area.

However, the majority of projects in the longer-term pipeline will tend to be of the infrastructure variety, especially transport and energy ones. Work is already underway on three sections of the 80-mile dualling of the A9 between Perth and Inverness, a project that is not scheduled to complete until 2025. Also in the pipeline is another large road-dualling project, the 88 miles of the A96 between Aberdeen and Inverness, which is intended to be open by 2030.

The Scottish Government has also been developing long-term improvement plans for its rail infrastructure, such as the Aberdeen to Inverness line, due to be delivered by 2030. Transport for Scotland is also making the case for the extension of high speed rail into Scotland.

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 2013, the estimated total employment across 28 occupational categories in 2014 and forecasts for the industry for 2015 to 2019. A full breakdown of occupational groups is provided in Section 5 of CSN Explained.

Annual average output growth of 1.1% is only just enough to drive marginal employment growth averaging just 0.1% a year over the forecast period when taking into account anticipated productivity gains.

The pattern is for modest growth to 2017 but then a marginal decline thereafter. In 2019, construction employment is projected to be around 222,000, 12% below its 2008 peak. This is in line with output in 2019 still over 6% below its 2006 peak taking account of productivity gains.

Professional services occupations – civil engineers, surveyors etc. – are expected to see modest annual growth averaging between 0.9% and 1.5% but many of the main trades are likely to see no growth or marginal declines.

Total employment by occupation – Scotland

	Actual 2013	Estimate 2014	Forecast 2015	Forecast 2019
Senior, executive, and business process managers	11,750	11,890	11,960	11,720
Construction project managers	3,360	3,480	3,580	3,790
Other construction process managers	14,730	15,090	15,430	15,980
Non-construction professional, technical, IT and other office-based staff	26,710	27,290	27,620	27,410
Construction trades supervisors	4,530	4,570	4,600	4,550
Wood trades and interior fit-out	21,030	21,270	21,500	20,980
Bricklayers	5,620	5,670	5,730	5,590
Building envelope specialists	4,470	4,500	4,530	4,390
Painters and decorators	9,560	9,720	9,790	9,270
Plasterers	2,520	2,530	2,520	2,340
Roofers	4,410	4,450	4,490	4,380
Floorers	2,310	2,310	2,310	2,240
Glaziers	2,680	2,740	2,780	2,740
Specialist building operatives nec*	3,680	3,730	3,760	3,630
Scaffolders	2,070	2,160	2,220	2,270
Plant operatives	3,770	3,870	3,980	4,140
Plant mechanics/fitters	3,920	4,020	4,070	3,930
Steel erectors/structural fabrication	1,810	1,850	1,890	1,940
Labourers nec*	10,690	10,810	10,920	10,930
Electrical trades and installation	16,980	17,230	17,320	16,580
Plumbing and HVAC Trades	11,310	10,940	10,620	9,610
Logistics	2,110	2,140	2,170	2,210
Civil engineering operatives nec*	2,340	2,420	2,500	2,600
Non-construction operatives	3,560	3,630	3,710	3,880
Civil engineers	8,140	8,420	8,640	9,050
Other construction professionals and technical staff	22,650	23,180	23,670	24,430
Architects	3,800	3,880	3,950	4,050
Surveyors	6,790	6,940	7,100	7,410
Total (SIC 41-43)	175,920	178,310	180,000	177,100
Total (SIC 41-43, 71.1, 74.9)	217,300	220,730	223,360	222,040

Source: ONS, CSN, Experian
ref. CSN Explained, Section 3, Notes 5, 6 and 8

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, due to the inconsistency and coverage of supply data. 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.

Despite the marginal decline in employment demand, Scotland is still projected to have a significant annual average recruitment requirement of 5,700, representing 2.6% of 2015 base employment. This is because of significant net outflows on the supply side that need to be compensated for according to the Labour Force Survey. Most, but not all, of the high ARR are in areas outside of the core construction trades and professional occupations, with the exception of civil engineers (9%), painters and decorators (9%) and construction trades supervisors (8%).

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.

Annual recruitment requirement by occupation – Scotland

	2015 - 2019
Senior, executive, and business process managers	290
Construction project managers	60
Other construction process managers	-
Non-construction professional, technical, IT and other office-based staff	1,720
Construction trades supervisors	370
Wood trades and interior fit-out	110
Bricklayers	-
Building envelope specialists	-
Painters and decorators	840
Plasterers	-
Roofers	-
Floorers	-
Glaziers	-
Specialist building operatives nec*	-
Scaffolders	<50
Plant operatives	120
Plant mechanics/fitters	170
Steel erectors/structural fabrication	80
Labourers nec*	610
Electrical trades and installation	-
Plumbing and HVAC Trades	240
Logistics	200
Civil engineering operatives nec*	110
Civil engineers	760
Other construction professionals and technical staff	-
Architects	-
Surveyors	-
Total (SIC 41-43)	4,940
Total (SIC 41-43, 71.1, 74.9)	5,700

Source: CSN, Experian
ref. CSN Explained, Section 3, Notes 7 and 8
*Not elsewhere classified

4 Comparisons across the UK

Despite ongoing delays to the nuclear new build programme, Wales is still projected to have the strongest output growth rate, despite the start on main construction works at Wylfa unlikely before the beginning of 2019. Nuclear new build still remains in the forecast period for the South West, where main construction works on Hinkley Point C should begin in 2015, helping to boost the region's annual average output growth rate to 3.6%.

Greater London slips in between Wales and the South West, with projected annual average output expansion of 4.2%, benefiting from very strong demand for housing, both public and private, despite recent indications that house prices in the capital are stabilising, and good growth in the commercial construction sector. Together, these three sectors accounted for 44% of London's construction output in 2013, well above the UK average (38%), and so are proportionally providing a stronger driver for overall growth in the capital compared with elsewhere.

While most UK regions and nations are expected to experience quite strong growth in private housing output to 2016, with a slowdown to more sustainable levels thereafter, the prospects for public housing are much more uncertain as the current Affordable Housing Programme (AHP) winds down to April 2015. The overall pot of funding available from central Government for 2015-18 is much the same on an annualised basis as in 2011-15 and there are concerns that many housing associations may find increasing their borrowing levels from private sources more problematical in the future.

Outside of the South West, infrastructure growth is likely to be strongest in the North East and Wales, the former being driven by £400m of roads work in the Highways Agency's Area 14, which covers the region and the latter benefiting from Great Western Line electrification, road upgrades, energy works such as Swansea's tidal lagoon and, of course, nuclear new build at Wylfa in Anglesey.

Strongest growth in commercial construction is expected in Yorkshire and the Humber (annual average growth of 6.3%), the North West (6.3%), Wales (5.9%) and Greater London (5.7%). South Yorkshire in particular seems to be benefiting from the reactivation of retail-led projects mothballed during the 'great recession', while Wales is seeing an upsurge in conference and exhibition venue construction.

Annual average employment growth rates across the regions and nations tend to cluster within plus or minus half a percent of the UK average of 1.5%. The exceptions are Greater London and Wales (2.4%), and Scotland (0.1%). For Greater London workforce demand is, in the main, driven by growth in the sectors mentioned above, but even in the infrastructure one, which is already at a historic high in output terms, further expansion is expected over the next five years. Employment demand in Wales inevitably benefits from the start of main works on Wylfa, despite the fact that infrastructure is less labour intensive than many other sectors. Wylfa is a very large project in a relatively small market. Scotland's relatively poor projected output growth rate (1.1% a year on average) is only just enough to drive marginal employment growth given anticipated productivity gains.

Despite London's strong employment demand, its annual recruitment requirement (ARR) only equates to around 0.5% of projected 2015 employment. This is because the region acts as a natural magnet for the construction workforce within the UK and beyond. In contrast, Wales' strong employment demand is supplemented on the supply side by traditional employment outflows to other regions, especially the North West and South West, and so has a much higher ARR ratio, of 4.8%. Most other regions and nations have an ARR ratio of within a percentage point of the UK average (1.7%).

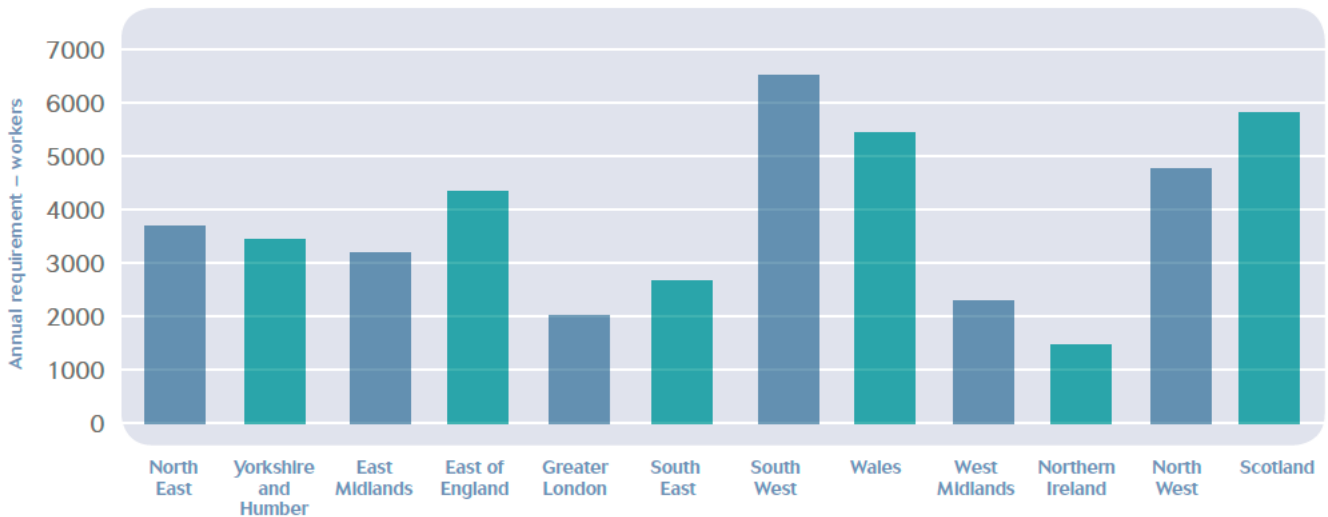


Annual average output growth by region 2015-2019



Source: CSN, Experian
ref. CSN Explained, Section 3, Note 2

Annual recruitment requirement (ARR) by region 2015-2019



Source: CSN, Experian



CSN Explained

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

Section 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 a UK, national and regional level.

Section 2 provides a glossary to clarify some of the terms that are used in the reports.

Section 3 has some further notes relating to the data sources used for the various charts and tables. This section also outlines what is meant by the term 'footprint', when talking about the areas of responsibility that lie with a Sector Skills Council (SSC) or Sector Bodies.

Section 4 explains the sector definitions used within the report and provides examples of what is covered in each.

Section 5 gives a detailed breakdown of the 28 occupational groups into the individual standard occupational classification (SOC) codes that are aggregated to provide the employment and recruitment requirement.

Section 6 concludes this appendix by giving details about the range of LMI reports, the advantages of being a CSN member and details of who to contact if readers are interested in joining.



1. CSN Methodology

Background

The **Construction Skills Network** has been evolving since its conception in 2005, acting as vehicle for ConstructionSkills to collect and produce information on the future employment and training needs of the industry.

CITB, CIC and CITB-ConstructionSkills Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction, to produce robust labour market intelligence which provides 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 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 twice a year and consist of key regional stakeholders invited from industry, Government, education, other SSCs and Sector Bodies, all of whom contribute their local industry knowledge and views on training, skills, recruitment, qualifications and policy. The National Group also includes representatives from industry, Government, education, other SSCs and Sector Bodies. This Group convenes twice a year and sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN are several 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, which is comprised of statisticians and modelling experts.

The models have evolved over time and will continue to do so, to ensure that they account for new research as it is published as well as new and improved modelling techniques. 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 interrelated 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 CITB 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.

Estimates of demand are based upon the results of discussion groups comprising industry experts, a view of construction output and 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 use a set of specific statistics for each major type of work to 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 year's 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:

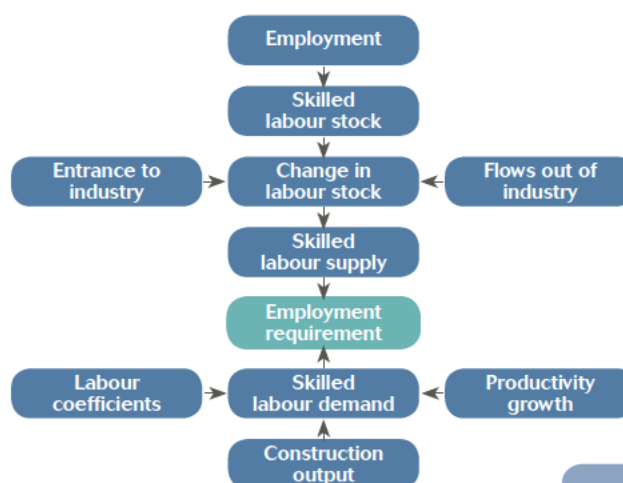
- Transfers to other industries
- International/domestic out migration
- Permanent retirements (including permanent sickness)
- Outflow to temporary sickness and home duties.

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

Flows into the labour market include:

- Transfers from other industries
- International/domestic immigration
- Inflow from temporary sickness 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 below.



2. Glossary of terms

Building envelope specialists – any trade involved with the external cladding of a building other than bricklaying, e.g. curtain walling.

Demand – this 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 Employer Skills Survey, produced by the Department for Education and Skills. These data sets are translated into labour requirements by trade using a series of coefficients to produce figures for labour demand that relate to forecast 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 year's supply. In essence, this is the number of workers of each occupation or trade needed 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. Information is collected from around 53,000 households each quarter (the sample totals more than 100,000 people).

LMI (labour market intelligence) – data that is quantitative (numerical) or qualitative (insights and perceptions) on workers, employers, wages, conditions of work, etc.

Macroeconomics – the study of an economy at 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) – organisation producing official statistics on the economy, population and society at both a national and local level.

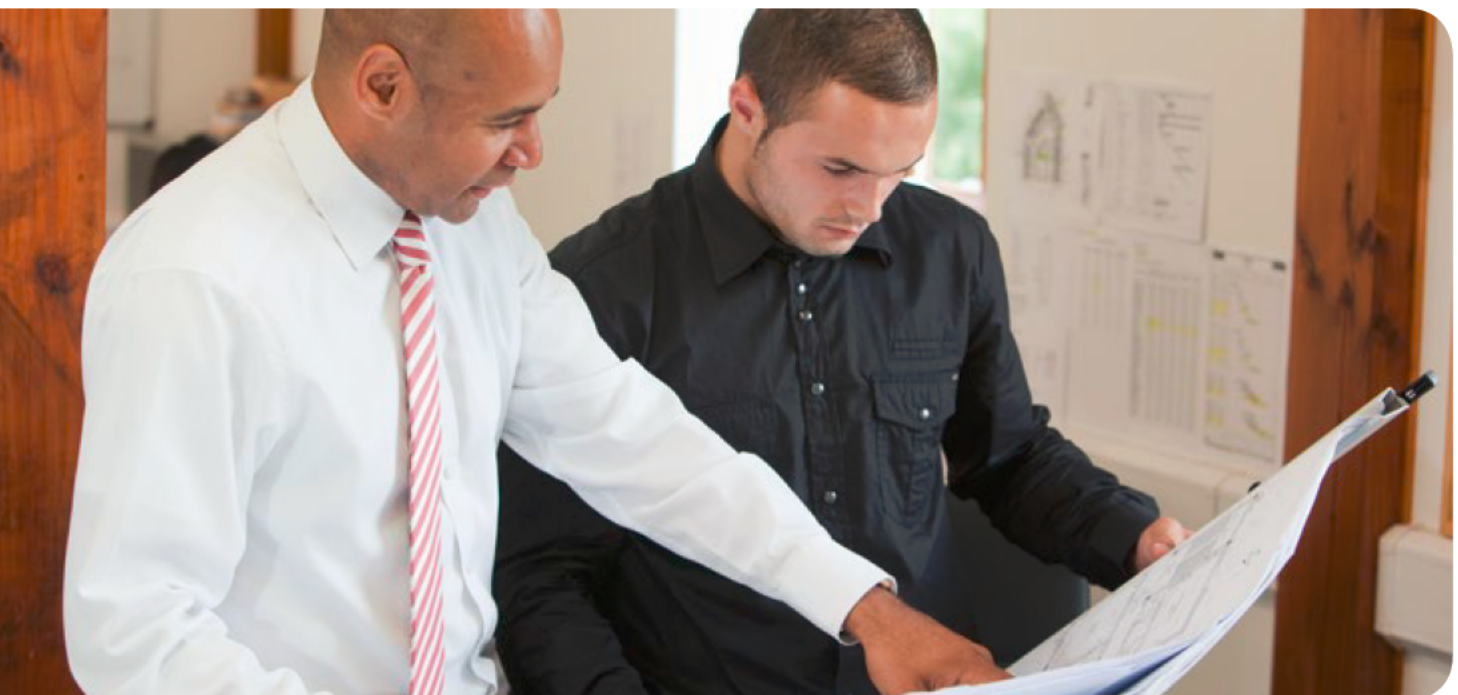
Output – total value of all goods and services produced in an economy.

Productivity – output per employee.

SIC codes (Standard Industrial Classification codes) – from the United Kingdom Standard Industrial Classification of Economic Activities produced by the ONS.

SOC codes (Standard Occupational Classification codes) – from the United Kingdom Standard Occupational Classification produced by the ONS.

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.



3. Notes and Footprints

Notes

- 1 Except for Northern Ireland, output data for the English regions, Scotland and Wales is 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 prices to a 2005 constant price basis, so that 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 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 43, 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 43.2.
- 7 A reporting minimum of 50 is used for the annual recruitment requirement (ARR). As a result some region and devolved nation ARR forecasts do not sum to the total UK requirement.
- 8 The Employment and ARR tables show separate totals for SIC41-43 and SIC41-43, 71.1 and 74.9. The total for SIC41-43 covers the first 24 occupational groups on the relevant tables and excludes civil engineers, other construction professionals and technical staff, architects and surveyors. The total for SIC41-43, 71.1 and 74.9 includes all occupations.

Footprints for Built Environment Sector Bodies

ConstructionSkills is responsible for SIC 41
Construction of buildings, SIC 42 Civil engineering,

ConstructionSkills	
SIC Code	Description
41.1	Development of building projects
41.2	Construction of residential and non-residential buildings
42.1	Construction of roads and railways
42.2	Construction of utility projects
42.9	Construction of other civil engineering projects
43.1	Demolition and site preparation
43.3	Building completion and finishing
43.9	Other specialised construction activities nec
71.1*	Architectural and engineering activities and related technical consultancy

SIC 43 Specialised construction activities and SIC 71.1 Architectural and engineering activities and related technical consultancy.

The table below summarises the SIC codes (2007) covered by ConstructionSkills.

The sector footprints for the other Sector Bodies 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 43.21 Electrical installation and SIC 43.22 Plumbing, heat and air-conditioning installation. ConstructionSkills recognises the responsibility of Summit Skills across Standard Industrial Classifications (SIC) 43.21 and 43.22; thus data relating to the building services engineering sector is included here primarily for completeness.

The Building Futures Group

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, domestics, facilities managers.

The Building Futures Group has a peripheral interest in SIC 71.1 Architectural and engineering activities and related technical consultancy.

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.

*The Building Futures Group has a peripheral interest in SIC 71.1

4. Definitions: types and examples of construction work

Public sector housing – local authorities and housing associations, new towns and Government departments

Housing schemes, care homes for the elderly 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, onshore wind farms and decommissioning of nuclear power stations.

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 construction¹

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 and 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 work¹

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.²

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.³

1 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'.

2 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.

3 Except where stated, mixed development schemes are classified to whichever sector provides the largest share of finance.

5. Occupational Groups

Occupational group

Description, SOC (2010) reference.

Senior, executive, and business process managers

Chief executives and senior officials	1115
Financial managers and directors	1131
Marketing and sales directors	1132
Purchasing managers and directors	1133
Human resource managers and directors	1135
Property, housing and estate managers	1251
Information technology and telecommunications directors	1136
Research and development managers	2150
Managers and directors in storage and warehousing	1162
Managers and proprietors in other services nec*	1259
Functional managers and directors nec*	1139
IT specialist managers	2133
IT project and programme managers	2134
Financial accounts managers	3538
Sales accounts and business development managers	3545

Construction project managers

Construction project managers and related professionals	2436
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Other construction process managers

Production managers and directors in manufacturing	1121
Production managers and directors in construction	1122
Managers and directors in transport and distribution	1161
Waste disposal and environmental services managers	1255
Health and safety officers	3567
Conservation and environmental associate professionals	3550

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

IT operations technicians	3131
IT user support technicians	3132
Finance and investment analysts and 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 standards and regulations	3565
Programmers and software development professionals	2136

Information technology and telecommunications professionals nec*	2139
Estate agents and auctioneers	3544
Solicitors	2413
Legal professionals nec*	2419
Chartered and certified accountants	2421
Business and financial project management professionals	2424
Management consultants and business analysts	2423
Receptionists	4216
Typists and related keyboard occupations	4217
Business sales executives	3542
Book-keepers, payroll managers and wages clerks	4122
Records clerks and assistants	4131
Stock control clerks and assistants	4133
Telephonists	7213
Communication operators	7214
Personal assistants and other secretaries	4215
Sales and retail assistants	7111
Telephone salespersons	7113
Buyers and procurement officers	3541
Human resources and industrial relations officers	3562
Credit controllers	4121
Company secretaries	4214
Sales related occupations nec*	7129
Call and contact centre occupations	7211
Customer service occupations nec*	7219
Elementary administration occupations nec*	9219
Chemical scientists	2111
Biological scientists and biochemists	2112
Physical scientists	2113
Laboratory technicians	3111
Graphic designers	3421
Environmental health professionals	2463
IT business analysts, architects and systems designers	2135
Conservation professionals	2141
Environment professionals	2142
Actuaries, economists and statisticians	2425
Business and related research professionals	2426
Finance officers	4124
Financial administrative occupations nec*	4129
Human resources administrative occupations	4138
Sales administrators	4151
Other administrative occupations nec*	4159
Office supervisors	4162
Sales supervisors	7130
Customer service managers and supervisors	7220
Office managers	4161

Construction trades supervisors

Skilled metal, electrical and electronic trades supervisors	5250
Construction and building trades supervisors	5330

Wood trades and interior fit-out

Carpenters and joiners	5315
Paper and wood machine operatives	8121
Furniture makers and other craft woodworkers	5442
Construction and building trades nec* (25%)	5319

Bricklayers

Bricklayers and masons	5312
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Building envelope specialists

Construction and building trades nec* (50%)	5319
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Painters and decorators

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

Plasterers

Plasterers	5321
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Roofers

Roofers, roof tilers and slaters	5313
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Floorers

Floorers and wall tilers	5322
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Glaziers

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

Specialist building operatives not elsewhere classified (nec*)

Construction operatives nec* (100%),	8149
Construction and building trades nec* (5%)	5319
Industrial cleaning process occupations	9132
Other skilled trades nec*	5449

Scaffolders

Scaffolders, staggers and riggers	8141
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Plant operatives

Crane drivers	8221
Plant and machine operatives nec*	8129
Fork-lift truck drivers	8222
Mobile machine drivers and operatives nec*	8229

Plant mechanics/fitters

Metal working production and maintenance fitters	5223
Precision instrument makers and repairers	5224
Vehicle technicians, mechanics and electricians	5231
Elementary process plant occupations nec*	9139
Tool makers, tool fitters and markers-out	5222
Vehicle body builders and repairers	5232

Steel erectors/structural fabrication

Steel erectors	5311
Welding trades	5215
Metal plate workers and riveters	5214
Construction and building trades nec* (5%)	5319
Smiths and forge workers	5211
Metal machining setters and setter-operators	5221

Labourers nec*

Elementary construction occupations (100%)	9120
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Electrical trades and installation

Electricians and electrical fitters	5241
Electrical and electronic trades nec*	5249
Telecommunications engineers	5242

Plumbing and heating, ventilation, and air conditioning trades

Plumbers and heating and ventilating engineers	5314
Pipe fitters	5216
Construction and building trades nec* (5%)	5319
Air-conditioning and refrigeration engineers	5225

Logistics

Large goods vehicle drivers	8211
Van drivers	8212
Elementary storage occupations	9260
Buyers and purchasing officers (50%)	3541
Transport and distribution clerks and assistants	4134

Civil engineering operatives not elsewhere classified (nec*)

Road construction operatives	8142
Rail construction and maintenance operatives	8143
Quarry workers and related operatives	8123

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 (vehicles and metal goods)	8132
Routine inspectors and testers	8133
Assemblers and routine operatives nec*	8139
Elementary security occupations nec*	9249
Cleaners and domestics*	9233
Street cleaners*	9232
Gardeners and landscape gardeners	5113
Caretakers	6232
Security guards and related occupations	9241
Protective service associate professionals nec*	3319

*Not elsewhere classified

Civil engineers

Civil engineers 2121

Other construction professionals and technical staff

Mechanical engineers 2122

Electrical engineers 2123

Design and development engineers 2126

Production and process engineers 2127

Quality control and planning engineers 2461

Engineering professionals nec* 2129

Electrical and electronics technicians 3112

Engineering technicians 3113

Building and civil engineering technicians 3114

Science, engineering and production technicians nec* 3119

Architectural and town planning technicians 3121

Draughtspersons 3122

Quality assurance technicians 3115

Town planning officers 2432

Electronics engineers 2124

Chartered architectural technologists 2435

Estimators, valuers and assessors 3531

Planning, process and production technicians 3116

Architects

Architects 2431

Surveyors

Quantity surveyors 2433

Chartered surveyors 2434



6. CSN Website and contact details

The CSN website

citb.co.uk/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 other CITB research reports are also freely available on the CITB website. 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 to enter the workforce.

The website also contains 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 CITB research
- Details for those interested in becoming members of the network.

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 that play a vital role in feeding back observations, knowledge and insight into 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
- 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 becoming a member of the CSN, please contact us at: csn@citb.co.uk

**For more information about the
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