INDUSTRY INSIGHTS

Construction Skills Network
Yorkshire and the Humber 2015-2019

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In association with

CITB is tasked by Government to ensure the UK's construction 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.

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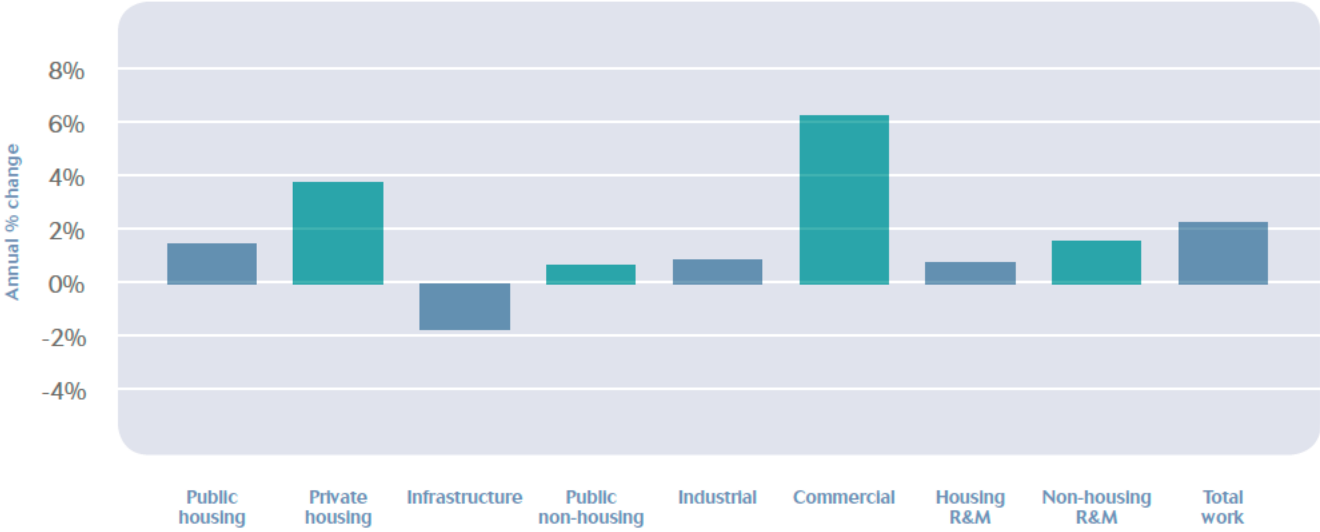
CSN explained

1 Summary – Yorkshire and the Humber

The region is projected to see an annual average increase of 2.3% in construction output over the next five years, lower than the UK rate of 2.9%. In 2019, construction employment is predicted to be around 205,910, the highest level since 2009. The region accounts for 7.2% of the total UK annual recruitment requirement (ARR) and it represents 1.6% of total projected base 2015 employment in Yorkshire and the Humber.

Annual average construction output growth 2015-2019 – Yorkshire and the Humber



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

1.1 Key findings

In 2013, the region's total construction output declined for the third successive year by 4% to £7.85bn. Double digit decreases were posted in the industrial and public housing and non-housing sectors. Growth is estimated to have returned in 2014 with a rise of 7%.

In 2013, the region's total construction output declined for the third successive year by 4% to £7.85bn, however growth is estimated to have returned in 2014 with a rise of 7%.

Over the medium term the best performing sector is predicted to be the commercial one with a yearly increase of 6.3% on average, joint highest with the North West and significantly higher than the UK rate of 4.6%. Expansion over the next two years is predicted to be strong as there are a number of large retail projects that have either started or are about to start. A new £600m retail quarter is to be built in 2016 on the corner of Pinstone Street and Furnival Gate in Sheffield city centre. The new flagship store and retail units will cover 98,500 square metres. Another project is the £135m retail and country parks and new Castleford Tigers stadium which should see work begin in summer 2015 if the green light is given. Post-2016, sustained improvements in the economy should lead to a further rise in activity, albeit at a slower rate.

The private housing market is projected to see an annual average increase of 3.8%. Expansion this year is likely to be at a double digit rate before a more sustainable level of growth kicks in for the remainder of the forecast period. There are a number of factors that will act as a drag on activity in the medium term, namely interest rate increases, tougher lending criteria introduced as a result of the Mortgage Market Review and worsening affordability. However, these adverse effects could be, in part, mitigated by the reduction in Stamp Duty which came into effect at the end of 2014.

A yearly fall of 1.7% on average is forecast for the infrastructure sector. There are a number of sizeable road and energy projects that are due to start over the next two years such as the A160/A180 Port of Immingham improvement scheme. Going forwards, as these projects complete, there are no other sizeable schemes planned to take place leading to falls in output. There have been several new road schemes announced in the 2014 Autumn Statement, however work is scheduled to be carried out within the next two parliaments and it is therefore possible that construction may fall outside our current forecast period.

In 2013, the region accounted for 7.5% of UK construction employment and over the next five years employment is projected to increase by 1.5% per year on average, identical to the UK rate.

The region's annual recruitment requirement (ARR), at 3,220, represents 1.6% of total projected base 2015 employment. At 600, the largest construction trade requirement is for wood trades and interior fit-out on an absolute basis but, as a share of 2015 base employment, the greatest requirement is for plant operatives (11.8%).

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

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

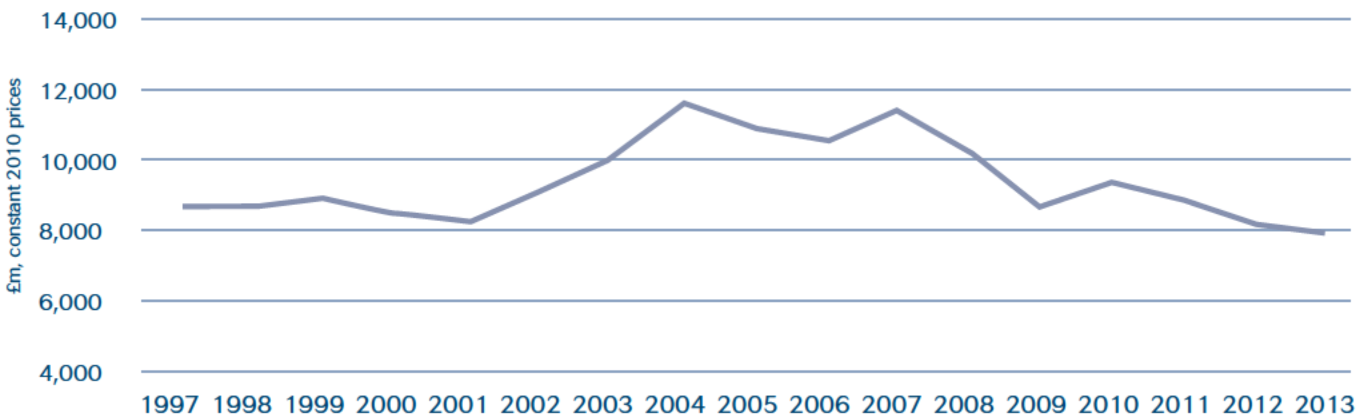
2 The outlook for construction in Yorkshire and the Humber

2.1 Construction output in Yorkshire and the Humber – overview

In 2013, total construction output declined for the third consecutive year by 4% to £7.85bn. The new work sector fell by 5% to £4.85bn whereas R&M saw a smaller decrease of 1% to £3bn.

The public housing sector experienced the greatest drop of 44% to £134m whilst the industrial one also posted a large contraction of 41% to £323m. The public non-housing sector also declined, by 23% as once again there were no sizeable schemes that took place in that year. In contrast, the private housing sector went up by 25% to £1.26bn as it benefited from the introduction of the 'Help to Buy' scheme in April 2013.

Construction output 1997-2013 – Yorkshire and the Humber



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

2.2 Industry structure

The diagram, Construction industry structure 2013 – UK vs. Yorkshire and the Humber, illustrates the sector breakdown of construction in Yorkshire and the Humber, compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

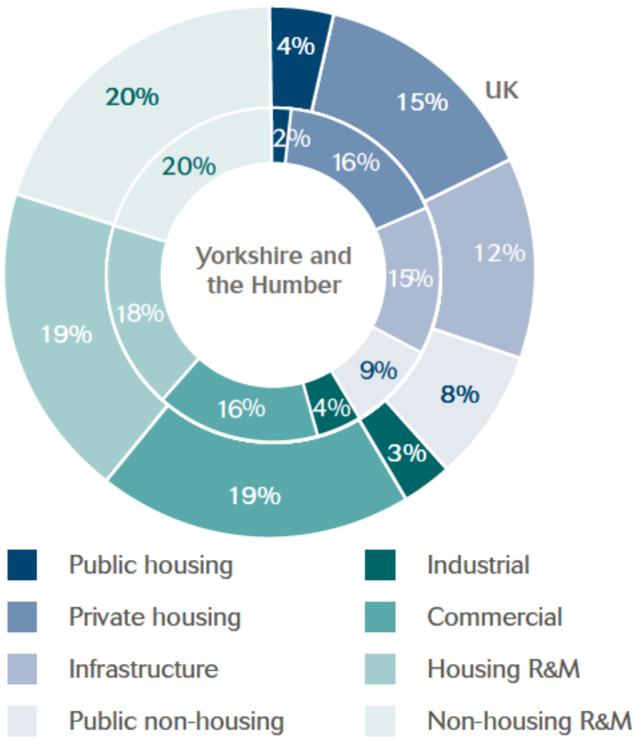
In 2013, the region's new work market accounted for 62% of total construction output, identical to the UK average. However, within the new work sector, Yorkshire and the Humber's structure is a little different compared with UK. The commercial sector was proportionally 3% per cent smaller in the region than the UK as a whole (16% vs 19%) but in the infrastructure sector the situation is reversed (15% vs 12%). For all other the sectors the difference in relative sizes was 2% or less.

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.

In 2013, gross value added (GVA) in Yorkshire and the Humber saw growth of 2% to £93.17bn in 2010 prices. As a share of the UK, the region accounted for 7% of GVA.

Construction industry structure 2013 – UK vs Yorkshire and the Humber



Source: ONS, Experian

2.4 Economic structure

Public services was the largest sector, accounting for 22.4% of the region's GVA in 2013, whilst the professional and other private services one took the next biggest share, at 21.3%. The manufacturing and wholesale and retail sectors were ranked third and fourth respectively while finance and insurance was the fifth largest market. Of the top five sectors, the professional and other private services market recorded the greatest growth of 4% in 2013.

The region has a higher than average exposure to the manufacturing and public services sectors whilst many of the private services sectors are under represented compared to the UK as a whole.

Economic structure – Yorkshire and the Humber (£ billion, 2010 prices)

Selected sectors	Actual	Forecast *Annual % change, real terms*					
	2013	2014	2015	2016	2017	2018	2019
Public services	20.9	0.6	0.2	-0.1	-0.3	0.3	1.2
Professional and other private services	19.9	6.4	3.1	2.8	3.0	2.8	2.6
Manufacturing	13.3	2.1	1.1	1.3	1.8	1.4	1.0
Wholesale and retail	11.4	4.1	3.3	2.6	2.6	2.6	2.4
Finance and storage	5.9	-1.0	2.7	3.5	3.7	3.4	3.2
Total Gross Value Added (GVA)	93.2	2.7	2.3	2.0	2.1	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

In the five years to 2019, the region's GVA is projected to grow at an annual average rate of 2.1%, lower than the UK average of 2.4%.

Of the top five sectors, the finance and insurance one is expected to see the greatest yearly expansion of 3.3% on average, whilst the largest sector, public services, is projected to experience a marginal annual average increase of 0.3%.

Real household disposable income is expected to rise by an annual average of 1.9% over the forecast period, lower than the UK rate of 2.2% whilst the average yearly increase in household spending is also projected to be lower (1.9% vs. 2.4%)

Unemployment in the region is likely to have fallen by 10.2% last year. In 2015, a moderate decline of 6.7% is expected before more modest contractions going forwards.

In 2013, the region's working age population was around 3.29m which accounted for around 8% of the UK total. During the forecast period, Yorkshire and the Humber's working age population, as a share of the total population, is expected to be around 62%.

2.6 New construction orders – overview

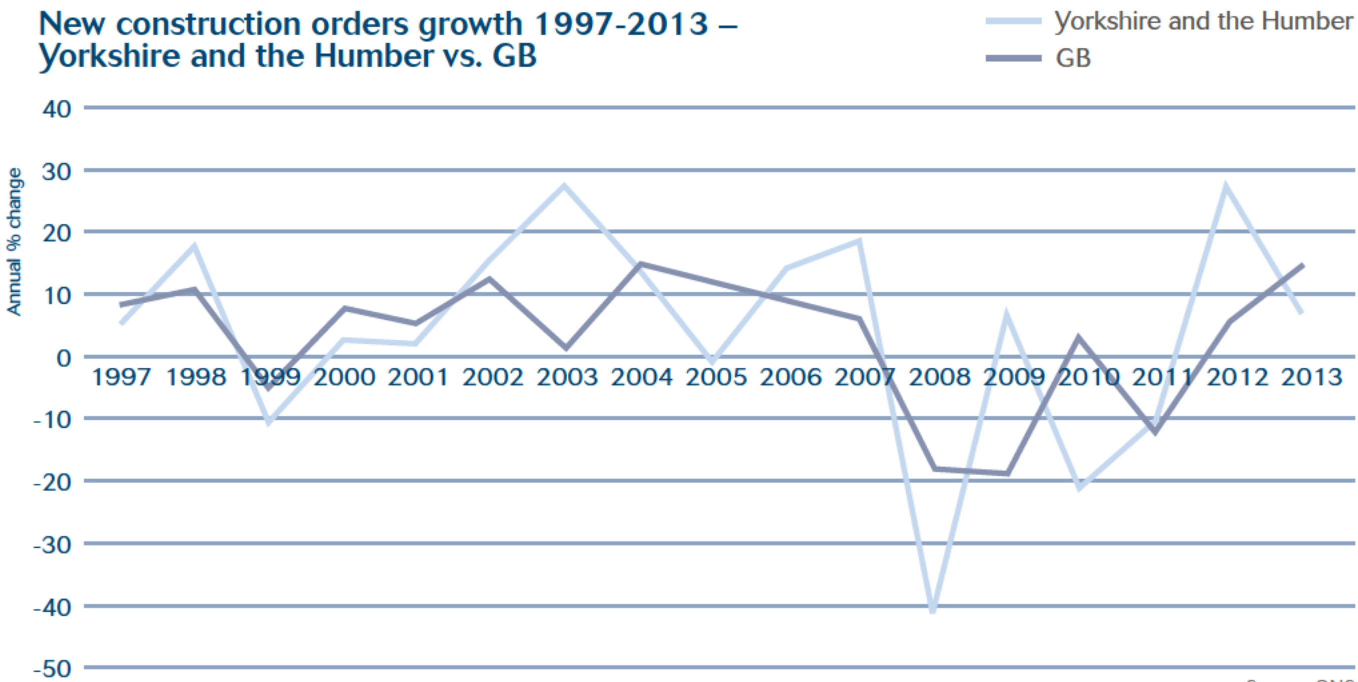
In 2013, total new orders increased by 7% to £4.3bn. The public housing sector saw the largest jump more than doubling to £177m. However, this sector is small and it is therefore subject to big movements. The commercial sector also experienced a substantial rise of 81% to £1.24bn, while a double digit increase of 44% to £1.08bn was also registered for the private housing market. In contrast, new orders in the industrial sector dropped by 48% to £242m whilst the public non-housing (£463m) and infrastructure (£1.09bn) ones declined by 36% and 16% respectively.

Economic indicators – Yorkshire and the Humber (£ billion, 2010 prices – unless otherwise stated)

	Actual	Forecast *Annual % change, real terms*					
	2013	2014	2015	2016	2017	2018	2019
Real household disposable income	73.8	1.2	1.7	1.0	2.0	2.4	2.2
Household spending	73.4	2.7	2.4	1.8	1.8	1.9	1.9
Working age population (000s and as % of all)	3,285	61.8%	62.2%	62.3%	62.2%	62.1%	62.1%
House prices (£)	162,762	6.3	5.6	3.4	2.6	2.8	3.0
LFS unemployment (millions)	0.25	-10.2	-6.7	-4.6	-3.1	-3.7	-2.8

Source: ONS, DCLG, Experian

New construction orders growth 1997-2013 – Yorkshire and the Humber vs. GB



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

2.7 New construction orders – current situation

In the first half of 2014 new orders fell by 2% to £2.36bn compared with the same period of 2014. Despite this, the only sector to experience a decline was the infrastructure one, with new orders dropping by 86% to £109m. Public housing orders soared by 193% to £237m whilst growth of 132% to £197m was seen in the industrial sector. Orders in the private housing (£691m), commercial (£861m) and public non-housing (£261m) sectors also registered rises, of 37%, 19%, and 10% respectively.

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.

In the six months to June 2014, total construction output in Yorkshire and the Humber increased by 19% to £3.07bn compared with the corresponding period in the preceding year. Of the new work sectors, the public housing one saw the greatest jump of 107% to £143m. The commercial sector also registered significant growth of 65% to £1.12bn whilst a rise of 38% to £792m was experienced in the private housing sector. In contrast, the public non-housing (£278m) and infrastructure (£624m) sectors declined by 29% and 10% respectively.

Over the next two years total construction output in the region is projected to grow by an annual average of 9.1%. The new work sector is expected to see a yearly increase of 13.4% on average whilst the R&M one is forecast to experience much smaller growth of 1.3% per year on average.

The best performing sector is likely to be the industrial one with an average yearly rise of 71.2%. The £1.7bn York Potash mine is expected to see work get underway this year. It is thought there will be a need for two deep mine shafts with associated developments and, once in place, the site should extract up to 20 million tonnes of polyhalite per annum.

The infrastructure sector is projected to experience the second highest annual average growth rate of 15%. There are a number of sizable projects due to

New work construction orders – Yorkshire and the Humber (£ million, current prices)

	Actual	*Annual % change*				
	2013	2009	2010	2011	2012	2013
Public housing	177	-13.7	38.6	13.4	-62.3	105.8
Private housing	1,083	-31.7	41.2	5.9	15.7	44.2
Infrastructure	1,092	253.3	-68.2	16.3	242.1	-15.5
Public non-housing	463	64.3	-29.0	-33.4	-11.0	-36.2
Industrial	242	-39.3	-34.3	-27.8	212.2	-47.6
Commercial	1,242	-44.7	12.4	-2.8	-25.2	80.8
Total new work	4,299	7.2	-21.6	-10.8	27.7	7.3

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

Construction output – Yorkshire and the Humber (£ million, 2011 prices)

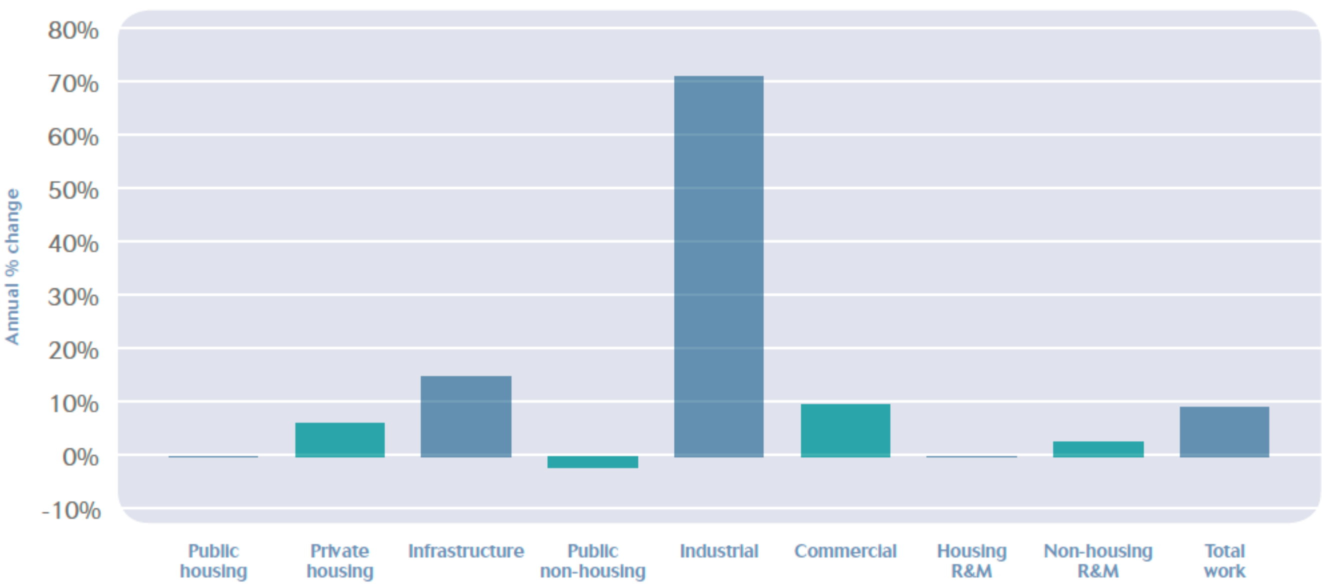
	Actual 2013	Forecast annual % change			Annual average 2015-2016
		2014	2015	2016	
Public housing	134	34%	5%	-5%	-0.1%
Private housing	1,260	20%	11%	2%	6.2%
Infrastructure	1,161	-3%	12%	18%	15.0%
Public non-housing	689	-25%	-7%	3%	-2.0%
Industrial	323	3%	154%	15%	71.2%
Commercial	1,286	25%	9%	11%	9.8%
New work	4,854	8%	18%	9%	13.4%
Housing R&M	1,440	7%	0%	-1%	-0.1%
Non-housing R&M	1,555	3%	3%	2%	2.6%
Total R&M	2,995	4%	2%	1%	1.3%
Total work	7,849	7%	12%	7%	9.1%

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

complete over the short term which should keep the sector buoyant. Assuming a successful completion of statutory processes, work could start by summer 2015 on the A160/A180 Port of Immingham improvement project, worth in the range of £73m to £109m. There are plans to turn the M1 between junctions 32 and 35a into a smart Motorway. As part of the scheme, the hard shoulder will permanently be converted into a traffic lane. The project is estimated to cost between £100m and £142m and work is expected to start in winter 2014/15 with completion in the third quarter of 2015/16. In Doncaster, construction of a new 1,500MW combined cycle gas turbine power station is planned to start in 2015. Carlton Power has bought the £1bn Thorpe Marsh project from previous owners GE and, subject to financing, the plant is likely to become operational in 2018/2019.

An average yearly rise of 9.8% is predicted for the commercial sector. There are a number of schemes that have either started or are about to take place. Last May, main works began on the 300 bed Flaxby Resort Hotel near Knaresborough, Harrogate. The resort will include restaurants, bars and a golf clubhouse. The £100m project is scheduled to complete in August 2015. The Lateral Property Group has submitted a planning application for a £135m retail and country park and a new Castleford Tigers stadium. The development would be adjacent to junction 32 of the M62 and would incorporate around 53,000 square metres of retail space, a 50 acre country park and a 10,000 capacity stadium. If the project is given the go-ahead, work could start on site in summer 2015 with completion in 2017. A new retail quarter is due to be built in 2016 on the corner of Pinstone Street and Furnival Gate in Sheffield city centre. As well as a new flagship store and retail units covering 98,500 square metres, there is also going to be new offices, a leisure centre and around 278 apartments. The £600m development will take three years to complete.

Annual average construction output growth 2015-2016 – Yorkshire and the Humber



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

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

Yorkshire and the Humber's very strong growth rate in the short term is expected to subside over the full five-year forecast period to an annual average rate of 2.3%, lower than the UK rate of 2.9%. New work is projected to continue to out-perform repair and maintenance, with annual average growth of 3% in the former, compared with 1.2% in the latter.

Over the long term, the best performing sector is projected to be the commercial one with yearly increases of 6.3% on average, joint highest with the North West and much higher than the UK rate of 4.6%. Sustained improvement in the economy is likely to lead to more projects been brought forward, albeit growth will be at a slower rate than in the short term. By 2019, commercial output is likely to be around 77% of its 2007 peak.

The region is projected to see an annual average increase of 2.3% in construction output over the next five years, lower than the UK rate of 2.9%.

The private housing market is projected to experience an annual average rise of 3.8%. Growth in 2015 is likely to be at double digit rates before much slower expansion for the remainder of the forecast period. Demographic pressures in the region are relatively weak and tougher lending criteria introduced as a result of the Mortgage Market Review, worsening affordability and interest rate rises, possibly from the second half of 2015, are all expected to impact the market. However, their negative effects are likely to be mitigated by the reduction in Stamp Duty that most buyers will benefit from, which came into effect in early December 2014, continuing activity under the 'Help to Buy' scheme, and the prospect that first-time buyers will be offered 20% discounts on the purchase of new homes.

Annual average decreases of 1.7% are forecast for the infrastructure sector. The sizeable road and energy projects mentioned earlier will lead to strong growth over the short term but prospects over the longer term are more uncertain. In the 2014 Autumn Statement it was announced that six new road schemes will take place in Yorkshire and the Humber under the Road Investment Strategy, including work on junctions 20 to 25 of the M62 and the A61. However, work is planned to be carried out within the next two parliaments and it is therefore possible that construction may fall outside our current forecast period.

2.10 Beyond 2019

Proposals are being drawn up for a HS3 rail link for the north of England. It is hoped the project will improve connectivity for the north and reduce journey times once complete. Under HS3 it is believed that journey times from Manchester to Leeds could be cut from forty six minutes to twenty six minutes, whilst a journey from Leeds to Liverpool could be cut from one hour twenty eight minutes to around an hour. The Government and Transport for the North, a new body which consists of the main northern city regions will produce a transport strategy. This will include details such as route options, a delivery timetable and costs, with an interim report expected in March.

Annual average construction output growth 2015-2019 – Yorkshire and the Humber

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

Construction output – Yorkshire and the Humber (£ million, 2011 prices)

	Estimate 2014	Forecast annual % change					Annual average 2015-2019
		2015	2016	2017	2018	2019	
Public housing	179	5%	-5%	2%	5%	1%	1.5%
Private housing	1,506	11%	2%	1%	3%	3%	3.8%
Infrastructure	1,122	12%	18%	-3%	-19%	-11%	-1.7%
Public non-housing	514	-7%	3%	2%	4%	1%	0.7%
Industrial	334	154%	15%	-2%	-50%	-27%	0.9%
Commercial	1,606	9%	11%	4%	6%	2%	6.3%
New work	5,261	18%	9%	1%	-8%	-2%	3.0%
Housing R&M	1,534	0%	-1%	2%	2%	0%	0.8%
Non-housing R&M	1,594	3%	2%	2%	0%	1%	1.6%
R&M	3,128	2%	1%	2%	1%	1%	1.2%
Total work	8,390	12%	7%	1%	-5%	-1%	2.3%

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

3 Construction employment forecasts for Yorkshire and the Humber

3.1 Total construction employment forecasts by occupation

The table presents actual construction employment (SICs 41-43, 71.1, and 74.9) in Yorkshire and the Humber 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.

In 2013, the region accounted for 7.5% of UK construction employment and by 2019 total employment (205,910) is likely to be approximately 95% of its 2008 peak. Overall construction employment is projected to increase by 1.5% per year on average, identical to the UK rate.

Of all occupations, construction trades supervisors are predicted to see the highest annual average growth rate of around 4.6%, followed by plant operatives (4.2%), surveyors (3.9%), and labourers nec., (3.6%).

The majority of occupations are expected to see employment growth between 2015 and 2019, but not all, with small declines across a number of the traditional trades.

In 2019, the largest construction trade occupation in the region is anticipated to be wood trades and interior fit out, accounting for around a tenth of the total workforce.

Total employment by occupation – Yorkshire and the Humber

	Actual 2013	Estimate 2014	Forecast 2015	Forecast 2019
Senior, executive, and business process managers	12,130	12,700	13,170	14,790
Construction project managers	2,930	3,060	3,210	3,540
Other construction process managers	12,810	13,380	14,060	15,510
Non-construction professional, technical, IT and other office-based staff	25,000	25,430	25,800	27,640
Construction trades supervisors	3,520	3,700	3,940	4,630
Wood trades and interior fit-out	18,120	18,510	18,880	18,280
Bricklayers	5,350	5,410	5,450	5,260
Building envelope specialists	7,030	7,120	7,180	6,960
Painters and decorators	6,270	6,320	6,530	6,460
Plasterers	5,290	5,270	5,550	5,070
Roofers	4,950	4,880	4,760	4,660
Floorers	2,420	2,400	2,400	2,260
Glaziers	2,470	2,500	2,560	2,600
Specialist building operatives nec*	3,270	3,290	3,370	3,430
Scaffolders	2,480	2,660	2,660	3,090
Plant operatives	1,260	1,350	1,440	1,660
Plant mechanics/fitters	3,310	3,330	3,430	3,450
Steel erectors/structural fabrication	2,640	2,620	2,590	2,410
Labourers nec*	7,430	7,830	8,180	9,340
Electrical trades and installation	14,380	14,770	15,300	15,760
Plumbing and HVAC Trades	12,660	12,620	12,490	12,900
Logistics	1,040	1,040	1,050	1,020
Civil engineering operatives nec*	3,920	3,980	4,060	4,110
Non-construction operatives	4,200	4,340	4,490	4,770
Civil engineers	3,450	3,470	3,500	3,550
Other construction professionals and technical staff	11,640	12,280	13,040	14,730
Architects	530	540	550	540
Surveyors	5,840	6,180	6,580	7,490
Total (SIC 41-43)	164,880	168,510	172,550	179,600
Total (SIC 41-43, 71.1, 74.9)	186,340	190,980	196,220	205,910

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.

The total ARR, at 3,220, represents 1.6% of base 2015 employment. The corresponding ARR rate for the UK is similar at 1.7%. In absolute terms, the largest construction trade requirement is for wood trades and interior fit-out (600), equivalent to 19% of the region's total ARR. However, as a proportion of base 2015 employment, plant operatives are likely to be most in demand (11.8%).

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 – Yorkshire and the Humber

	2015 - 2019
Senior, executive, and business process managers	220
Construction project managers	-
Other construction process managers	-
Non-construction professional, technical, IT and other office-based staff	980
Construction trades supervisors	70
Wood trades and interior fit-out	600
Bricklayers	190
Building envelope specialists	-
Painters and decorators	170
Plasterers	-
Roofers	240
Floorers	140
Glaziers	-
Specialist building operatives nec*	60
Scaffolders	80
Plant operatives	170
Plant mechanics/fitters	<50
Steel erectors/structural fabrication	-
Labourers nec*	-
Electrical trades and installation	-
Plumbing and HVAC Trades	-
Logistics	120
Civil engineering operatives nec*	-
Civil engineers	-
Other construction professionals and technical staff	-
Architects	-
Surveyors	140
Total (SIC 41-43)	3,080
Total (SIC 41-43, 71.1, 74.9)	3,220

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 on 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.

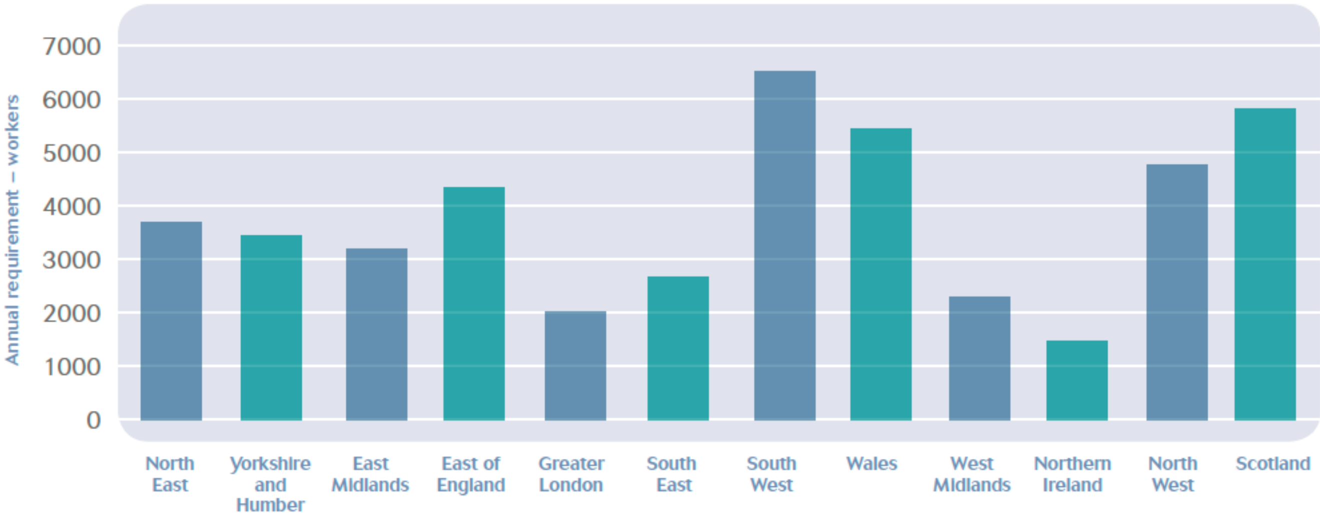
Annual average employment growth rates across the regions and nations tend to cluster within plus or minus half a percent of the UK average of 1.5%. The exceptions are Greater London and Wales (2.4%), and Scotland (0.1%). For Greater London, workforce demand is, in the main, driven by growth in the sectors 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, thus 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:

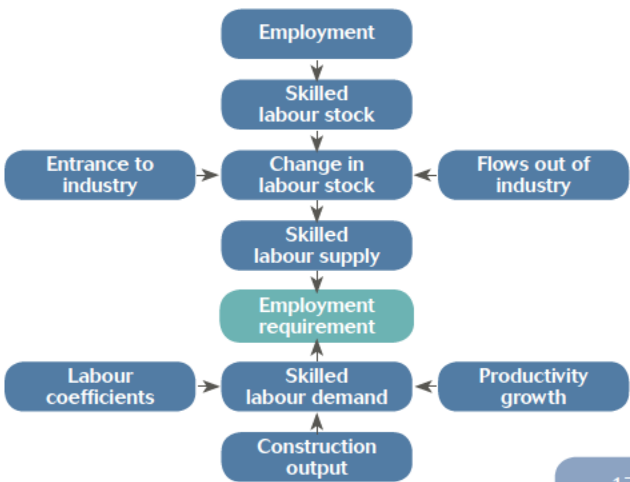
- Transfers to other industries
- International/domestic out migration
- Permanent retirements (including permanent sickness)
- Outflow to temporary sickness and home duties.

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.

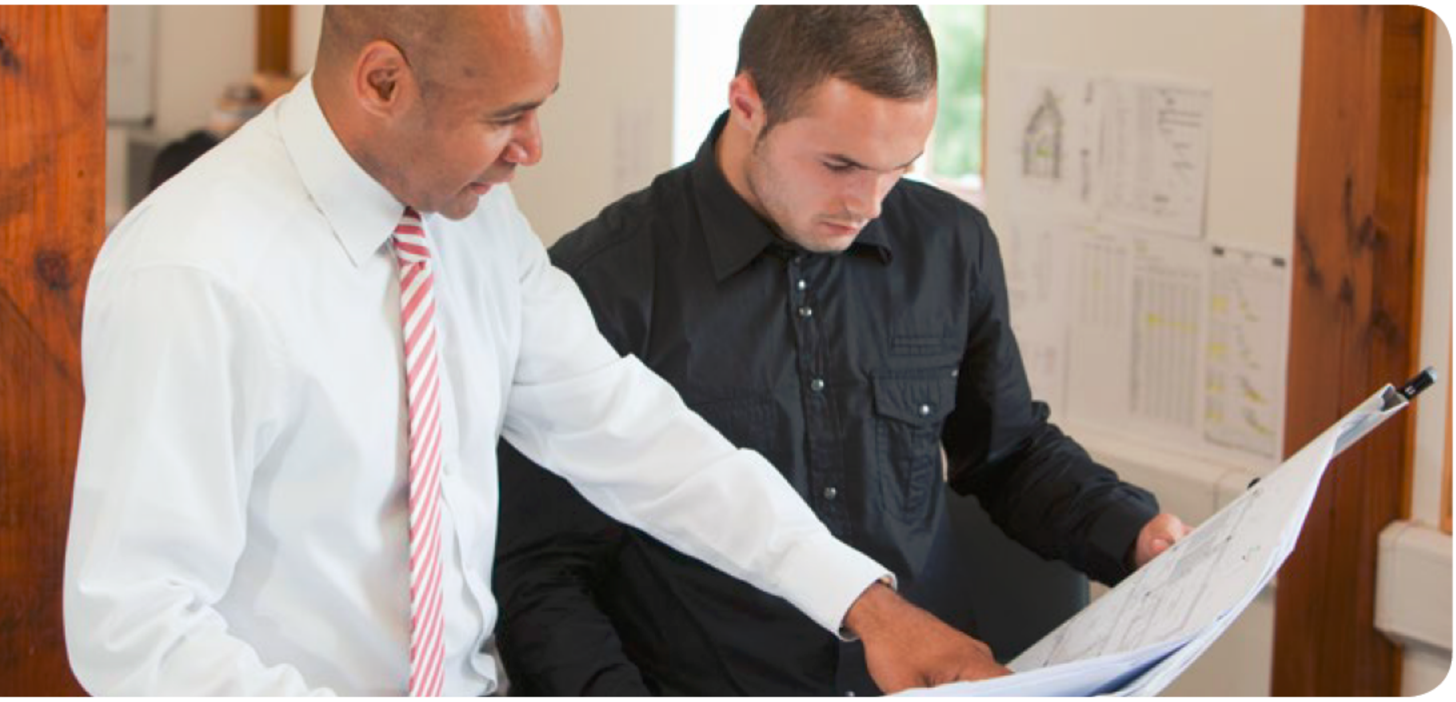
Output – total value of all goods and services produced in an economy.

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, 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 and43.22; 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.

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

*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 construction[1]

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, policeheadquarters.

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 work[1]

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

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

Building envelope specialists

Construction and building trades nec* (50%)	5319

Painters and decorators

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

Plasterers

Plasterers	5321

Roofers

Roofers, roof tilers and slaters	5313

Floorers

Floorers and wall tilers	5322

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, stagers and riggers	8141

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

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 Construction Skills Network, contact:

Ian Hill

Research Analyst

Research and Development

0300 456 7289

ian.hill@citb.co.uk

citb.co.uk