Construction Skills Network
Yorkshire and Humber

LABOUR MARKET INTELLIGENCE 2009–2013

Experian™

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Contents

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

1 Headlines

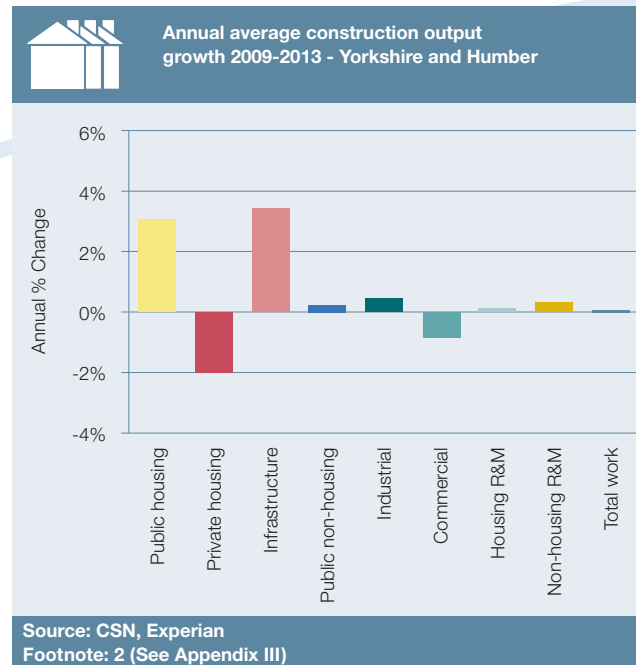## 1.1 Yorkshire and Humber economy

- The Yorkshire and Humber economy was worth £81bn in 2007, equivalent to 7% of the UK total.

- Financial and business services and public services each account for 24% of the region's gross value added (GVA), followed by distribution, hotels and catering.

- Annual average economic growth in the region is forecast at 1.3% between 2009 and 2013, slightly slower than across the UK as a whole.

1.2 Construction output in Yorkshire and Humber

- Construction output totalled £6.8bn, in 2000 prices, in 2007, around 8% of the UK total.

- Between 2009 and 2013 output is forecast to stagnate in the region, in contrast to the national average growth rate of 0.5% per year.

- The most buoyant sectors over the period are expected to be infrastructure and public housing, reflecting increased funding for social housing and a number of transport and energy projects coming on line.

1.3 Construction employment in Yorkshire and Humber

- Construction employment of 216,660 in 2007 is projected to fall to 214,330 in 2009 in Yorkshire and Humber and then to increase to 217,190 in 2013.

- After taking into account those entering and leaving the industry, 1,390 new workers will be required to join the industry each year in order to meet demand.

- The largest annual recruitment requirement (ARR) is expected to be for construction managers, followed by wood trades and interior fit-out and bricklayers.

Annual average construction output growth 2009-2013 - Yorkshire and Humber

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

Regional comparison 2009-2013

	Annual average % change in output	Growth in total employment	Total ARR
North East	0.5%	5,620	2,010
Yorkshire and Humber	0.0%	2,860	1,390
East Midlands	0.8%	6,220	1,980
East of England	0.9%	10,570	2,890
Greater London	0.8%	12,110	6,030
South East	0.5%	13,290	5,690
South West	0.2%	20	1,450
Wales	0.6%	4,940	2,330
West Midlands	0.2%	3,930	3,620
Northern Ireland	1.6%	3,030	900
North West	0.2%	6,040	4,780
Scotland	0.6%	5,480	3,960
UK	**0.5%**	**74,070**	**37,030**

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

The Yorkshire and Humber economy was worth

£81bn in 2007,

equivalent to 7% of the UK total

2 The outlook for construction in Yorkshire and Humber

2.1 Construction output in Yorkshire and Humber – overview

Totalling £6.8bn, in 2000 prices, in 2007, construction output in Yorkshire and Humber was 7% higher than in 2006. New work output was 12% higher at £3.9bn than in the previous year, whilst repair and maintenance (R&M) output rose by 1% to £2.9bn.

There has been a mixed performance from the region's construction industry in recent years. Following three years of strong growth, output declined in 2005 and 2006, before recovering in 2007.

Public housing saw the strongest performance of the sectors, with output rising 50% between 2006 and 2007. A buoyant commercial sector also contributed to the increase in new work in 2007.

The industrial and public non-housing sectors both saw declines in 2007, as output fell by 8% and 2%, respectively.

2.2 Industry structure

The diagram, Construction industry structure 2007 – UK vs. Yorkshire and Humber, illustrates the sector breakdown of construction in Yorkshire and Humber compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

New work output in Yorkshire and Humber accounted for 59% of total construction output in 2007, slightly higher than the UK figure of 56%. Both the housing and non-housing repair and maintenance (R&M) sectors' share of output in the region is slightly less than in the UK as a whole.

The higher proportion of new work in total output is due to the industrial sector accounting for 8% of output in Yorkshire and Humber, compared with 5% in the UK.

Construction industry structure 2007 - UK vs. Yorkshire and Humber

Legend:
- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M
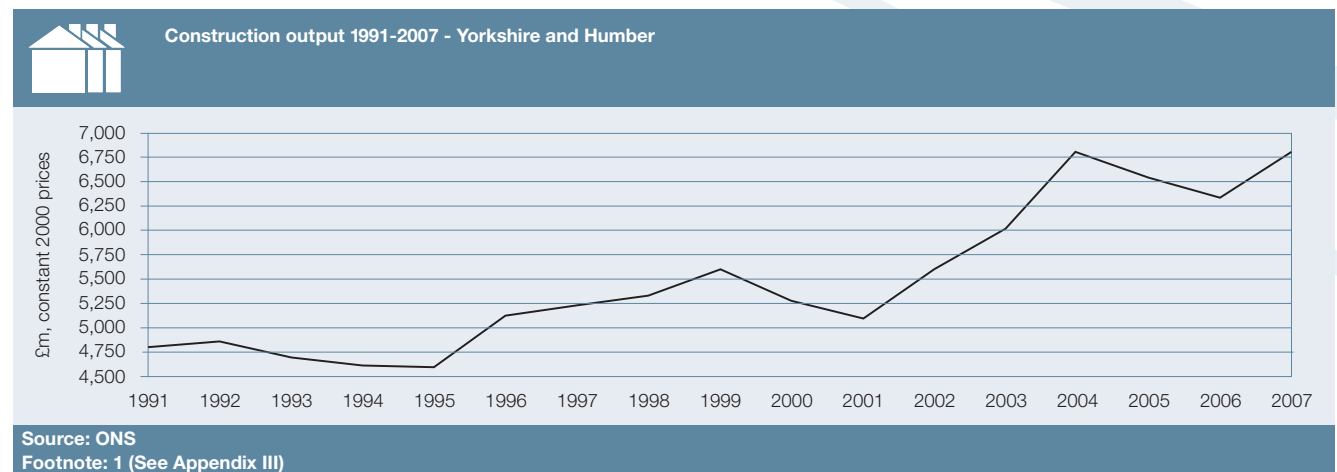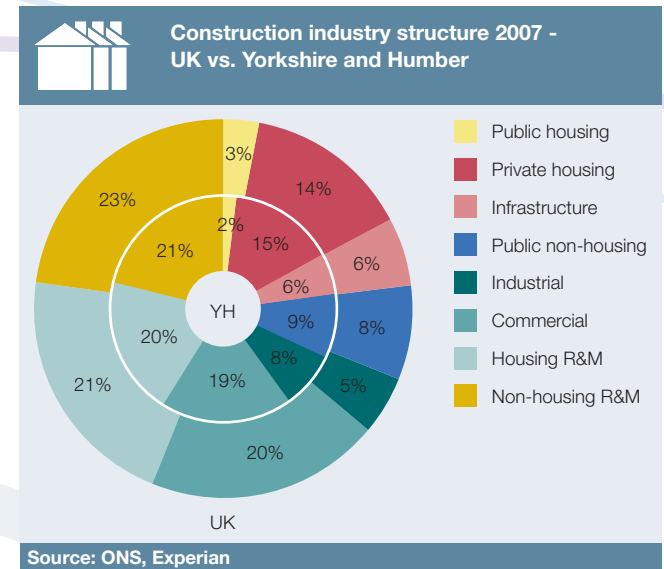
Source: ONS, Experian

The most buoyant sectors over the period are expected to be infrastructure and public housing, reflecting increased funding for social housing and a number of transport and energy projects coming on line

Construction output 1991-2007 - Yorkshire and Humber

Source: ONS
Footnote: 1 (See Appendix III)

2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2009–2013) provides an indication of the construction sectors in which demand is likely to be strongest.

2.4 Economic structure

In 2007, gross value added (GVA) in Yorkshire and Humber was valued at £81bn, 7% of the UK economy as a whole. This was 3.7% higher than in the previous year.

Financial and business services and public services are the two largest sectors in Yorkshire and Humber. The former has seen its share increase from 17% of total output in 2000 to 24% in 2007, whilst public services output has declined from 26% of the region's total GVA in 2000 to 24% in 2007. Manufacturing's importance in the region's economy has been gradually declining since the beginning of the decade, but it still takes a higher share of output than in the UK as a whole, accounting for 18% compared with the 14% figure for the UK.

Winter Garden, Sheffield

Economic structure - Yorkshire and Humber (£ billion, 2003 prices)

Selected sectors	Actual	Forecast Annual % change, real terms					
	2007	2008	2009	2010	2011	2012	2013
Public services	19	2.2	0.7	0.5	1.2	1.1	1.1
Financial and business services	19	2.1	0.1	3.1	5.3	5.6	5.6
Transport and communications	6	3.2	0.0	3.0	2.8	2.5	2.4
Manufacturing	15	0.5	3.3	0.6	0.8	0.3	0.3
Distribution, hotels and catering	13	1.8	0.5	1.7	2.3	2.1	2.0
Total Gross Value Added (GVA)	**81**	**0.3**	**-0.8**	**1.3**	**2.0**	**1.9**	**2.0**

Source: Experian
Footnote: 3 (See Appendix III)

Economic indicators - Yorkshire and Humber (£ billion, 2003 prices - unless otherwise stated)

	Actual	Forecast Annual % change, real terms					
	2007	2008	2009	2010	2011	2012	2013
Real household disposable income	62	0.2	0.7	0.7	1.5	1.6	1.8
Household spending	62	1.7	0.1	1.1	1.6	1.4	1.5
Debt:income ratio	1.2	1.9	3.4	6.2	4.5	2.0	0.9
House prices (£'000, current prices)	164	0.6	12.3	4.8	0.1	1.2	1.4
LFS unemployment (millions)	0.14	0.4	9.9	22.0	6.8	0.2	0.6

Source: ONS, DCLG, Experian

2.5 Forward looking economic indicators

Average annual GVA growth in Yorkshire and Humber is expected to be 1.3% per year between 2009 and 2013, marginally slower than across the UK as a whole.

Financial and business services is forecast to be the strongest sector within the region, increasing by 21% over the five-year period. Transport and communications output is also predicted to increase, rising by 11% between 2009 and 2013. Manufacturing is expected to continue its declining trend.

The average annual rate of growth in real household disposable income in the region is predicted to be 1.1%, slower than in the UK as a whole, with a similar trend expected for consumer spending. The household debt-to-income ratio in Yorkshire and Humber is low compared with the rest of the UK. The ratio of 1.2 in 2008 is forecast to decline to just over 1.0 in 2013, well below the corresponding national figure of 1.6.

The Department for Communities and Local Government (DCLG) reported that average house prices in Yorkshire and Humber reached £164,000 in 2007, 7% higher than in 2006. However house prices are likely to decline by around 18% in the region to 2011 on the DCLG measure before modest growth returns in 2012.

2.6 New construction orders – overview

The positive trend in new construction orders in the region continued in 2007, rising 17% from the previous year to £4.7bn, in current prices, a new record high.

In 2007, public housing and commercial new orders rose 74% and 58% year-on-year, respectively. In contrast, the infrastructure and industrial sectors saw double-digit declines in new orders (26% and 30%, respectively).

2.7 New construction orders – current situation

Figures for the first three quarters of 2008 were overwhelmingly negative, with new orders falling across the board. Total new orders declined by 41% to £2.2bn, in current prices.

Private housing and private commercial are the largest of the new work sectors, and orders in both fell sharply in the nine months to September 2008. The private housing sector saw new orders fall 56% compared with the same period in 2007 and the commercial sector saw a 51% drop. These two sectors have been, generally, the worst hit by the weakening economic situation and credit crunch. Tighter credit conditions are leading to stagnating demand for housing, and companies are unable to borrow to fund office relocations or expansions.

The public non-housing sector saw the smallest decline in orders, 2% year-on-year, reflecting the fact that orders continue to be placed for work under the Building Schools for the Future (BSF) programme in the region.

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

	Actual	Annual % change				
	2007	2003	2004	2005	2006	2007
Public housing	187	7.1	17.3	127.9	23.0	74.5
Private housing	1,335	46.1	14.8	0.5	15.2	13.5
Infrastructure	452	13.9	36.7	59.2	52.5	25.6
Public non housing	680	40.6	54.9	25.1	0.4	18.6
Industrial	346	37.8	32.1	6.6	25.5	30.5
Commercial	1,727	27.4	5.5	0.1	14.5	58.4
Total new work	**4,725**	**26.3**	**13.7**	**0.1**	**16.5**	**16.7**

Source: ONS
Footnote: 4 (See Appendix III)

New construction orders growth 1992-2007 - Yorkshire and Humber vs. GB
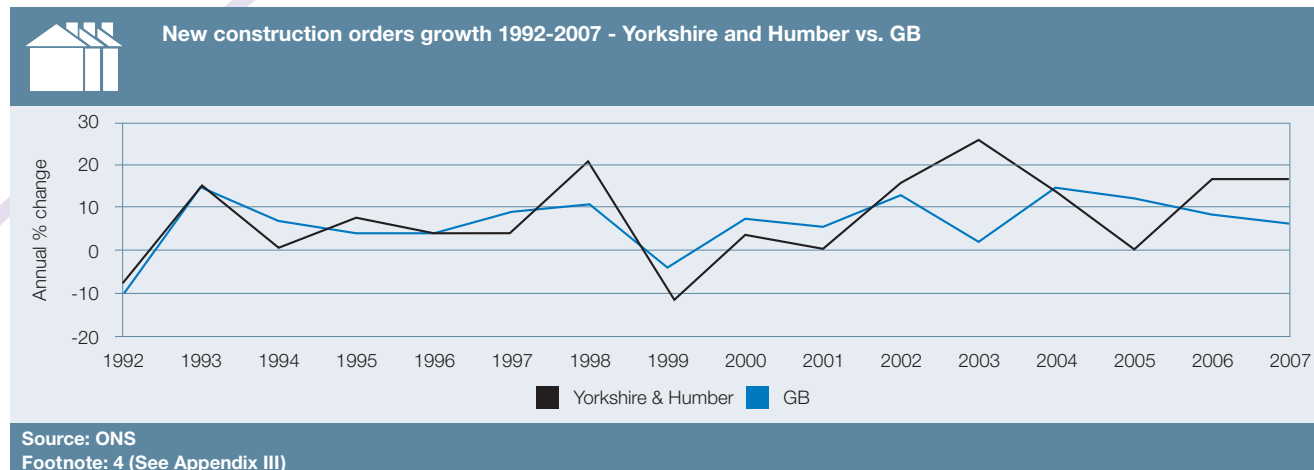
Source: ONS
Footnote: 4 (See Appendix III)

2.8 Construction output – short-term forecasts (2009–2010)

Regional Office of National Statistics (ONS) output statistics are published in current prices and are thus inclusive of any inflationary effect. At the time of writing, ONS construction output statistics are only available for the first three quarters of 2008.

Construction output, in current prices, was £7.7bn in the first nine months of 2008, 2% lower than in the same period of 2007. Within this total, new work declined 10% to £4.3bn, whilst repair and maintenance (R&M) output rose by 11% to £3.3bn. This overall negative trend is expected to continue, with total construction output in the region forecast to decline at an average annual rate of 3.5% between 2009 and 2010. R&M output is predicted to decline at a rate of 1.6% per year, with new work falling at a stronger rate of 5.1% per year.

Public non-housing is expected to be by far the most buoyant sector, with an average growth rate of 7.6% per year. The region is benefiting strongly from the Building Schools for the Future (BSF) programme, with more of the delayed scheme coming on line.
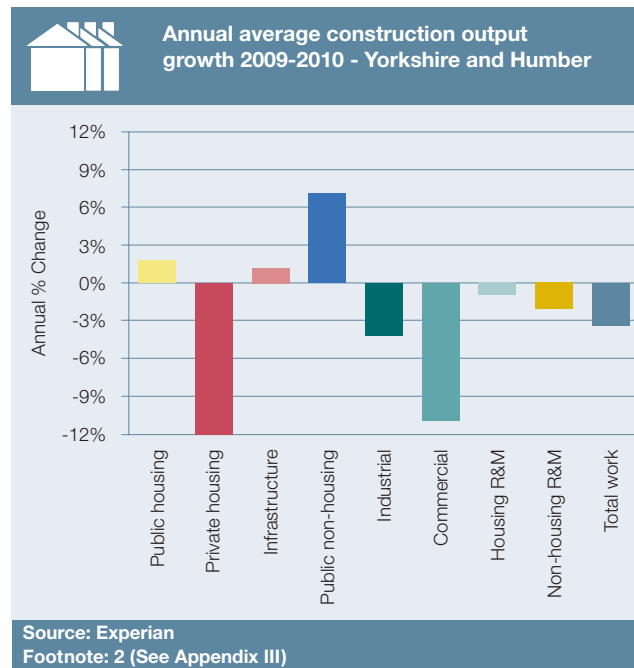
Public housing and infrastructure are the only two other sectors to see growth in the short term, with output increasing at average annual rates of 1.8% and 1.6%, respectively. Yorkshire and Humber has been allocated £315m from the 2008–2011 National Affordable Housing Programme, which will contribute to the short term growth of the public housing sector. In the infrastructure sector, work is ongoing on two power stations in the region and continuing road improvements on the A1.

The commercial and private housing sectors are, unsurprisingly expected to see the strongest contractions in output in the short term. The commercial sector, badly hit by the turmoil in the financial markets, tighter credit conditions and weaker

consumer spending, is forecast to see output decline at an average rate of 11.2% per year in 2009 and 2010. Private housing is expected to see an annual average rate of decline of 12.0%.

An annual average decline of 4.5% is expected for the industrial sector, with a gloomy outlook for manufacturing unlikely to encourage investment in factories and warehouses.

In the short term, the housing R&M sector is forecast to perform not too badly, as work continues on the Decent Homes for All programme. However, output in the sector is still expected to decline at a rate of 1.0% per year.

Annual average construction output growth 2009-2010 - Yorkshire and Humber

Source: Experian
Footnote: 2 (See Appendix III)

Construction output - Yorkshire and Humber (£ million, 2000 prices)

	Actual	Forecast annual % change			Annual average
	2007	2008	2009	2010	2009-2010
Public housing	136	6%	3%	7%	1.8%
Private housing	993	22%	27%	6%	12.0%
Infrastructure	377	1%	1%	2%	1.6%
Public non housing	586	3%	9%	6%	7.6%
Industrial	509	20%	9%	0%	4.5%
Commercial	1,291	11%	18%	4%	11.2%
New work	**3,892**	**-12%**	**-11%**	**2%**	**-5.1%**
Housing R&M	1,389	6%	1%	1%	1.0%
Non housing R&M	1,488	0%	2%	2%	2.3%
Total R&M	**2,877**	**3%**	**-1%**	**-2%**	**-1.6%**
Total work	**6,770**	**-5%**	**-7%**	**0%**	**-3.5%**

Source: Experian
Footnote: 1 and 2 (See Appendix III)

2.9 Construction output – long-term forecasts (2009–2013)

There is expected to be broadly no change in total construction output in Yorkshire and Humber in the five-year period to 2013. A marginal contraction of 0.1% per year in new work output is in contrast to weak annual average growth of 0.2% for repair and maintenance (R&M) work. Across the sectors, growth rates vary from 3.5% per year to -2.0% per year.

The strongest performance is expected in the infrastructure and public housing sectors. Infrastructure output is forecast to increase at a rate of 3.5% per year between 2009 and 2013. Various projects are in the pipeline, including a £60m biomass plant in Sheffield, with work due to start in mid-2009 and the first power produced in 2011. The public housing sector is forecast to see annual average growth of 3.2%, largely due to the government's commitment to increased funding for affordable housing.

Marginal growth of 0.4% per year is expected for the industrial sector. The warehousing boom of recent years is well and truly over, as large retailers are struggling as much as anyone from the economic downturn. This may improve towards the end of the forecast period as conditions begin to pick up. Investment in new factories looks unlikely given the dismal outlook for manufacturing.
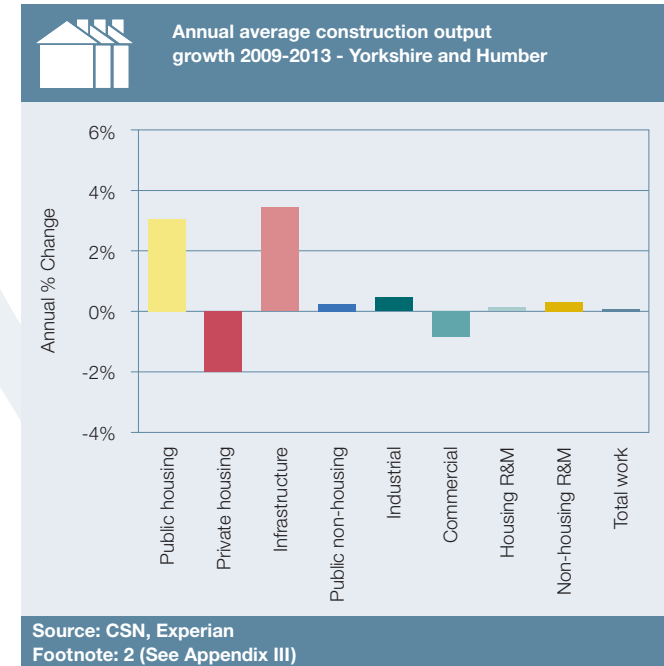
The only other sector to see output growth is public non-housing, albeit at a very weak rate of just 0.2% per year. Total funding for the Building Schools for the Future (BSF) programme in Yorkshire and Humber is expected to be £1.6bn for Waves 1–4 (both public and private money).

However, funding for the programme post–Wave 4 is uncertain, which is reflected in the weak outlook for the sector towards the end of the forecast period.

Commercial output is expected to decline at an annual average rate of 0.9% during the 2009–2013 period. Although the sector will be hit hard in the short term, it will benefit from predicted growth in the financial and business services sector of 21% over the five-year period, with the outlook for output improving towards the end of the forecast period.

The private housing sector is expected to see the worst performance between 2009 and 2013, contracting at an annual average rate of 2.0%. The stagnation in demand for private housing has taken its toll on housebuilders and it will take time for capacity in the sector to increase again. Demand in the sector is unlikely to improve significantly until credit conditions ease and buyers no longer expect prices to fall much further.

Both the housing and non-housing R&M sectors are forecast to experience marginal growth. Slightly stronger annual average growth of 0.3% is expected for the non-housing R&M sector, with the housing R&M sector forecast to see an increase of 0.1% per year, on average. Private housing R&M work will be affected by the weakening economic conditions in the short term, as households defer non-essential spending on home improvements. However, work in this sector may bounce back towards the end of the forecast period as consumers start to feel more confident about their personal circumstances.

Annual average construction output growth 2009-2013 - Yorkshire and Humber

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

Construction output - Yorkshire and Humber (£ million, 2000 prices)

	Estimate	Forecast annual % change					Annual average
	2008	2009	2010	2011	2012	2013	2009-2013
Public housing	129	3%	7%	6%	3%	3%	3.2%
Private housing	773	27%	6%	6%	6%	4%	2.0%
Infrastructure	375	1%	2%	5%	4%	5%	3.5%
Public non housing	603	9%	6%	3%	7%	3%	0.2%
Industrial	405	9%	0%	5%	4%	3%	0.4%
Commercial	1,151	18%	4%	7%	7%	5%	0.9%
New work	**3,436**	**-11%**	**2%**	**4%**	**3%**	**3%**	**-0.1%**
Housing R&M	1,478	1%	1%	2%	1%	3%	0.1%
Non housing R&M	2,969	2%	2%	0%	3%	3%	0.3%
R&M	**4,447**	**-1%**	**-2%**	**-1%**	**2%**	**3%**	**0.2%**
Total work	**6,405**	**-7%**	**0%**	**2%**	**3%**	**3%**	**0.0%**

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

3 Construction employment forecasts for Yorkshire and Humber

3.1 Total construction employment forecasts by occupation

The table, Total employment by occupation – Yorkshire and Humber, presents actual construction employment (SIC 45 and 74.2) in Yorkshire and Humber for 2007, and the forecast total employment for each of the 26 occupations between 2009 and 2013. A full breakdown of occupations is provided in Appendix IV.

Total construction employment was 216,660 in Yorkshire and Humber in 2007. This is forecast to fall to 214,330 in 2009 before increasing to 217,190 in 2013. In 2013, 197,100 employees are expected to be classified as working in SIC 45, with the remaining 20,090 working in occupations classified as SIC 74.2.

The largest occupational group is forecast to remain non-construction professionals, technical, IT and other office-based staff (23,540) in 2013. Other sizeable occupational groups include wood trades and interior fit-out (22,370) and construction managers (21,670).

The largest increase in employment is expected to be for construction managers, rising by 1,170 between 2009 and 2013. Surveyors (690) and senior, executive and business process managers (490) are also predicted to see sizeable increases.

Proportionally, surveyors and logistics are expected to see the largest increase, with total employment set to rise 11% in each occupational group over the five-year period to 2013.

Construction employment of 216,660 in 2007 is projected to fall to 214,330 in 2009 in Yorkshire and Humber and then to increase to 217,190 in 2013

Total employment by occupation - Yorkshire and Humber

	Actual	Forecast	
	2007	2009	2013
Senior, executive, and business process managers	8,200	7,900	8,390
Construction managers	20,440	20,500	21,670
Non construction professional, technical, IT, and other office based staff	24,160	23,230	23,540
Wood trades and interior fit out	22,430	22,480	22,370
Bricklayers	10,100	9,820	9,990
Building envelope specialists	8,140	8,020	8,130
Painters and decorators	10,400	10,200	9,760
Plasterers and dry liners	4,080	4,000	4,280
Roofers	3,510	3,560	3,540
Floorers	3,460	3,400	3,600
Glaziers	3,400	3,490	3,640
Specialist building operatives nec*	3,950	3,530	3,700
Scaffolders	3,320	3,430	3,480
Plant operatives	3,000	2,960	2,880
Plant mechanics/fitters	2,470	2,320	2,440
Steel erectors/structural	2,800	2,740	2,690
Labourers nec*	10,500	10,560	10,860
Electrical trades and installation	17,000	17,200	16,750
Plumbing and HVAC Trades	18,270	18,120	18,360
Logistics	2,720	2,510	2,790
Civil engineering operatives nec*	5,380	5,720	5,360
Non construction operatives	8,740	8,670	8,880
Civil engineers	3,790	3,690	3,510
Other construction professionals and technical staff	9,250	9,180	8,870
Architects	1,730	1,720	1,720
Surveyors	5,420	5,380	5,990
Total (SIC 45)	**196,470**	**194,360**	**197,100**
Total (SIC 45 and 74.2)	**216,660**	**214,330**	**217,190**

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

* nec   not elsewhere classified

3.2 Annual recruitment requirements by occupation

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

The ARR for 26 occupations within Yorkshire and Humber construction industry between 2009 and 2013 is illustrated in the table, Annual recruitment requirement by occupation – Yorkshire and Humber. The ARR of 1,390 is indicative of the average requirements per year for the industry, as based on the output forecasts for the region. This takes into account 'churn' – flows into and out of the industry.

Construction managers are expected to have an ARR of 240, the largest of the occupational groups, followed by wood trades and interior fit-out (140) and bricklayers (130).

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 retraining.

Non-construction operatives is a diverse occupational group including all of the activities under the SIC 45 and SIC 74.2 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 date. Therefore the ARR for non-construction operatives is not published.

Annual recruitment requirement by occupation - Yorkshire and Humber

	2009-2013
Senior, executive, and business process managers	<50
Construction managers	240
Non construction professional, technical, IT, and other office based staff	50
Wood trades and interior fit out	140
Bricklayers	130
Building envelope specialists	<50
Painters and decorators	110
Plasterers and dry liners	<50
Roofers	<50
Floorers	<50
Glaziers	<50
Specialist building operatives nec*	<50
Scaffolders	<50
Plant operatives	<50
Plant mechanics/fitters	<50
Steel erectors/structural	70
Labourers nec*	110
Electrical trades and installation	120
Plumbing and HVAC Trades	50
Logistics	70
Civil engineering operatives nec*	<50
Non construction operatives	
Civil engineers	<50
Other construction professionals and technical staff	<50
Architects	<50
Surveyors	<50
Total (SIC 45)	**1,310**
Total (SIC 45 and 74.2)	**1,390**

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

* nec   not elsewhere classified

4 Comparisons across the UK

Between 2009 and 2013 most regions and nations are forecast to experience a rise in construction output, the exceptions being the South West, and Yorkshire and Humber the former of which is predicted to see a slight decline and the latter no change.
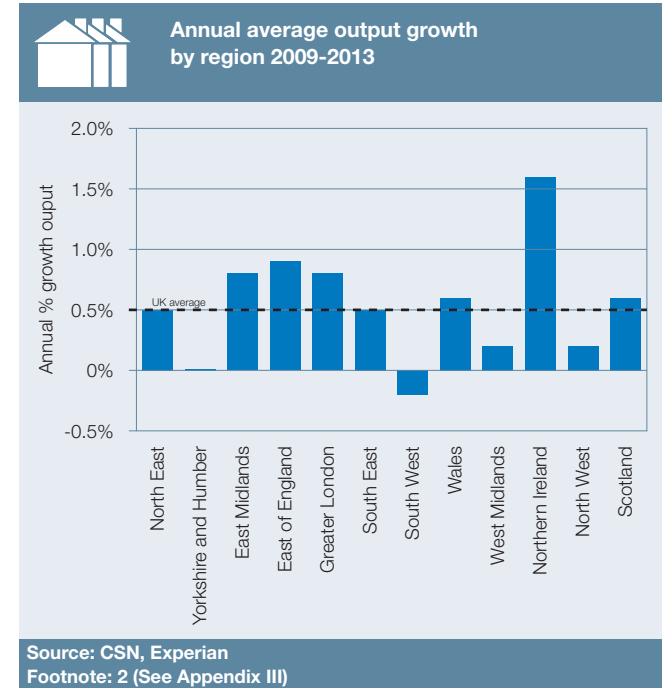
The South West does not benefit from growth in the infrastructure and public non-housing sectors in the way that many other regions and nations do, as there are no major civil engineering projects planned for the region within the forecast period and few local authorities feature in the early phases of the Building Schools for the Future programme (BSF). In Yorkshire and Humber, the low average annual growth rate is a function of a very poor 2009 predicated on the largest fall in new orders of any region or nation in 2008.

Northern Ireland continues to show the highest forecast growth in output, driven by the investment strategy planned for the next 10 years by the Northern Ireland Executive, although worries about how quickly this can be delivered have led to a lower growth rate than that put forward in previous years. The East Midlands, East of England and Greater London are also predicted to do better than the UK average, the capital in particular benefits from major infrastructure projects, the BSF programme, and Olympics build.

The ARR for 2009–2013 for Greater London is estimated to be the highest of the regions with just over 6,000 new entrants needed each year. This high ARR can in part be attributed to the region accounting for a large proportion of construction output for the UK as a whole. Next comes the South East with an ARR of around 5,700, not surprising given that the size of the construction market in the region is similar to Greater London's, and the North West with an ARR of close to 4,800.

The lowest ARR is for Northern Ireland at 900, despite the fact that the province has the highest output growth rate in the UK. This is because it is a small market, accounting for around 2.7% of UK output and 3.1% of UK employment. The North East has quite a high ARR, at a little over 2,000, compared to its market size. This is because it has a reasonable growth rate in output terms and it suffers from significant outflows of construction workers to other regions.

Annual average output growth by region 2009-2013

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

Yorkshire and Humber is expected to experience the largest fall in new orders in 2009, generating weak output and limited growth for the region

* nec   not elsewhere classified

Annual recruitment requirement (ARR) by region 2009-2013

Annual requirement - workers

Region	ARR
North East	2000
Yorkshire and Humber	1400
East Midlands	2000
East of England	3000
Greater London	6000
South East	5700
South West	1450
Wales	2300
West Midlands	3600
Northern Ireland	900
North West	4800
Scotland	4000

Source: CSN, Experian

Appendix I – Methodology

Background

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

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

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

The National Group also includes representatives from industry, Government, education and other SSCs. This Group convenes twice a year and sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN is a forecasting model which generates forecasts of employment requirements within the industry for a range of trades. The model was designed and is managed by Experian under the independent guidance and validation of the Technical Reference Group, comprised of statisticians and modelling experts.

It is envisaged that the model will evolve over time as new research is published and modelling techniques improve. Future changes to the model will only be made after consultation with the Technical Reference Group.

The Deep, Hull

The model approach

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

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

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

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

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

• transfers to other industries

• international/domestic OUT migration

• permanent retirements (including permanently sick)

• outflow to temporarily sick and home duties.

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

Flows into the labour market include:

• transfers in from other industries

• international/domestic IN migration

• inflow from temporarily sick and home duties.

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

Source: Experian

15
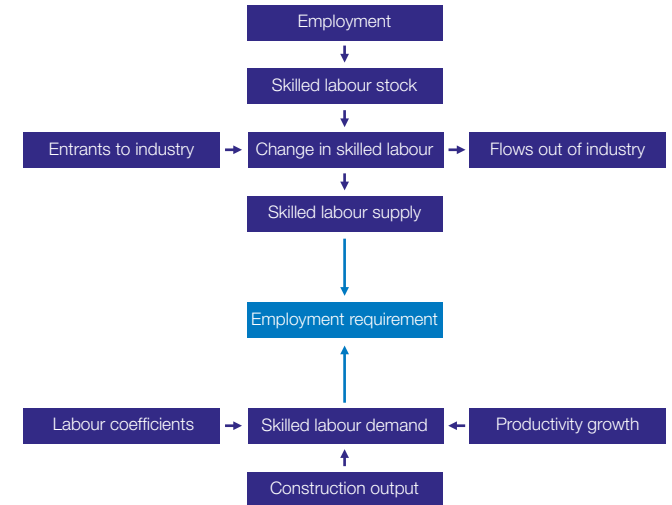
Appendix II – Glossary of terms

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

- **Demand** – construction **output**, vacancies, and a set of **labour coefficients** to translate demand for workers to labour requirements by trade. Demand is calculated using Office for National Statistics (ONS) and the Department of Finance and Personnel Northern Ireland (DFP) output data. Vacancy data are usually taken from the National Employers Skills Survey from the Department for Education and Skills.

- **GDP** – Gross Domestic Product – total market value of all final goods and services produced. A measure of national income. GDP=**GVA** plus taxes on products minus subsidies on products.

- **GVA** – Gross Value Added – total output minus the value of inputs used in the production process. GVA measures the contribution of the economy as a difference between gross output and intermediate outputs.

- **Labour coefficients** – the labour inputs required for various types of construction activity. The number of workers of each occupation/trade to produce £1m of output in each sub-sector.

- **LFS** – Labour Force Survey – a UK household sample survey which collects information on employment, unemployment, flows between sectors and training, from around 53,000 households each quarter (>100,000 people).

- **LMI** – Labour Market Intelligence – data that are quantitative (numerical) or qualitative (insights and perceptions) on workers, employers, wages, conditions of work, etc.

- **Macroeconomics** – the study of an economy on a national level, including total employment, investment, imports, exports, production and consumption.

- **Nec** – not elsewhere classified, used as a reference in LFS data.

- **ONS** – Office for National Statistics – official statistics on economy, population and society at national UK and local level.

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

- **Productivity** – output per employee.

- **SIC codes** – Standard Industrial Classification codes – from the UK Standard Industrial Classification of Economic Activities produced by the **ONS**.

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

- ConstructionSkills shares an interest with SummitSkills in SIC 45.31 Installation of wiring and fittings and SIC 45.33 Plumbing. AssetSkills has a peripheral interest in SIC 74.2.

- **SOC codes** – Standard Occupational Classification codes.

- **Supply** – the total stock of employment in a period of time plus the flows into and out of the labour market. Supply is usually calculated from **LFS** data.

Appendix III – Footnotes and footprints

Footnotes

1 Except for Northern Ireland, output data for the English regions, Wales and Scotland are supplied by the Office for National Statistics (ONS) on a current price basis. Thus national deflators produced by the ONS have been used to deflate to a 2000 constant price basis, i.e. the effects of inflation have been stripped out.

2 The annual average growth rate of output is a compound average growth rate, i.e. the rate at which output would grow each year if it increased steadily year-on-year over the forecast period.

3 Only selected components of gross value added (GVA) are shown in this table and so do not sum to the total.

4 For new construction orders comparison is made with Great Britain rather than the UK, owing to the fact that there are no orders data series for Northern Ireland.

5 Employment numbers are rounded to the nearest 10.

6 The tables include data relating to plumbers and electricians. As part of SIC 45, plumbers and electricians working in contracting are an integral part of the construction process. However, it is recognised by ConstructionSkills that SummitSkills has responsibility for these occupations across a range of SIC codes, including SIC 45.31 and 45.33.

Footprints for Built Environment SSCs

The table summarises the SIC codes covered by ConstructionSkills:

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

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

SummitSkills

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

Coverage – Building Services Engineering.

ConstructionSkills recognises the responsibility of Summit Skills across Standard Industrial Classfications (SIC) 45.31 and 45.33, thus data relating to the building services engineering sector is included here primarily for completeness.

AssetSkills

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

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

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.

† AssetSkills has a peripheral interest in SIC 74.2

Appendix IV – Occupational groups

Occuptional group
Description, SOC reference.

Senior, executive and business process managers
Directors and chief executives of major organisations, 1112

Senior officials in local government, 1113

Financial managers and chartered secretaries, 1131

Marketing and sales managers, 1132

Purchasing managers, 1133

Advertising and public relations managers, 1134

Personnel, training and Industrial relations managers, 1135

Office managers, 1152

Civil service executive officers, 4111

Property, housing and land managers, 1231

Information and communication technology managers, 1136

Research and development managers, 1137

Customer care managers, 1142

Storage and warehouse managers, 1162

Security managers, 1174

Natural environment and conservation managers, 1212

Managers and proprietors in other services nec*, 1239

Construction managers
Production, works and maintenance managers, 1121

Managers in construction, 1122

Quality assurance managers, 1141

Transport and distribution managers, 1161

Recycling and refuse disposal managers, 1235

Managers in mining and energy, 1123

Occupational hygienists and safety officers (H&S), 3567

Conservation and environmental protection officers, 3551

Non-construction professional, technical, IT, and other office–based staff (excl. managers)
IT operations technicians, 3131

IT user support technicians, 3132

Estimators, valuers and assessors, 3531

Finance and investment analysts/advisers, 3534

Taxation experts, 3535

Financial and accounting technicians, 3537

Vocational and Industrial trainers and instructors, 3563

Business and related associate professionals nec*, 3539

Legal associate professionals, 3520

Inspectors of factories, utilities and trading standards, 3565

Software professionals, 2132

IT strategy and planning professionals, 2131

Estate agents, auctioneers, 3544

Solicitors and lawyers, judges and coroners, 2411

Legal professionals nec*, 2419

Chartered and certified accountants, 2421

Management accountants, 2422

Management consultants, actuaries, economists and statisticians, 2423

Receptionists, 4216

Typists, 4217

Sales representatives, 3542

Civil Service administrative officers and assistants, 4112

Local government clerical officers and assistants, 4113

Accounts and wages clerks, book-keepers, other financial clerks, 4122

Filing and other records assistants/clerks, 4131

Stock control clerks, 4133

Database assistants/clerks, 4136

Telephonists, 4141

Communication operators, 4142

General office assistants/clerks, 4150

Personal assistants and other secretaries, 4215

Sales and retail assistants, 7111

Telephone salespersons, 7113

Buyers and purchasing officers (50%), 3541

Marketing associate professionals, 3543

Personnel and Industrial relations officers, 3562

Credit controllers, 4121

Market research interviewers, 4137

Company secretaries (excluding qualified chartered secretaries), 4214

Sales related occupations nec*, 7129

Call centre agents/operators, 7211

Customer care occupations, 7212

Elementary office occupations nec*, 9219

* nec   not elsewhere classified

Wood trades and interior fit-out
Carpenters and joiners, 5315

Pattern makers, 5493

Paper and wood machine operatives, 8121

Furniture makers, other craft woodworkers, 5492

Labourers in building and woodworking trades (9%), 9121

Construction trades nec* (25%), 5319

Bricklayers
Bricklayers, masons, 5312

Building envelope specialists
Construction trades nec* (50%), 5319

Labourers in building and woodworking trades (5%), 9121

Painters and decorators
Painters and decorators, 5323

Construction trades nec* (5%), 5319

Plasterers and dry liners
Plasterers, 5321

Roofers
Roofers, roof tilers and slaters, 5313

Floorers
Floorers and wall tilers, 5322

Glaziers
Glaziers, window fabricators and fitters, 5316

Construction trades nec* (5%), 5319

* nec   not elsewhere classified

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

Scaffolders
Scaffolders, stagers, riggers, 8141

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

Plant mechanics/fitters
Metal working production and maintenance fitters, 5223
Precision instrument makers and repairers, 5224
Motor mechanics, auto engineers, 5231
Labourers in process and plant operations nec*, 9139
Tool makers, tool fitters and markers-out, 5222
Vehicle body builders and repairers, 5232
Auto electricians, 5233
Vehicle spray painters, 5234
Goldsmiths, silversmiths, precious stone workers, 5495
Tyre, exhaust and windscreen fitters, 8135

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

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

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

The Arc Building, Humber

* nec not elsewhere classified

Plumbing and heating, ventilation, and air conditioning trades

Plumbers and HVAC trades, 5314

Pipe fitters, 5216

Labourers in building and woodworking trades (6%), 9121

Construction trades nec* (5%), 5319

Logistics

Heavy goods vehicle drivers, 8211

Van drivers, 8212

Packers, bottlers, canners, fillers, 9134

Other goods handling and storage occupations nec*, 9149

Buyers and purchasing officers (50%), 3541

Transport and distribution clerks, 4134

Security guards and related occupations, 9241

Civil engineering operatives nec*

Road construction operatives, 8142

Rail construction and maintenance operatives, 8143

Quarry workers and related operatives, 8123

Construction operatives nec* (20%), 8149

Labourers in other construction trades nec*, 9129

Non-construction operatives

Metal making and treating process operatives, 8117

Process operatives nec*, 8119

Metal working machine operatives, 8125

Water and sewerage plant operatives, 8126

Assemblers (vehicle and metal goods), 8132

Routine inspectors and testers, 8133

Assemblers and routine operatives nec*, 8139

Stevedores, dockers and slingers, 9141

Hand craft occupations nec*, 5499

Elementary security occupations nec*, 9249

Cleaners, domestics, 9233

Road sweepers, 9232

Gardeners and groundsmen, 5113

Caretakers, 6232

Civil engineers

Civil engineers, 2121

Other construction professionals and technical staff

Mechanical engineers, 2122

Electrical engineers, 2123

Chemical engineers, 2125

Design and development engineers, 2126

Production and process engineers, 2127

Planning and quality control engineers, 2128

Engineering professional nec*, 2129

Electrical/electronic technicians, 3112

Engineering technicians, 3113

Building and civil engineering technicians, 3114

Science and engineering technicians nec*, 3119

Architectural technologists and town planning technicians, 3121

Draughtspersons, 3122

Quality assurance technicians, 3115

Town planners, 2432

Electronics engineers, 2124

Building inspectors, 3123

Scientific researchers, 2321

Architects

Architects, 2431

Surveyors

Quantity surveyors, 2433

Chartered surveyors (not Quantity surveyors), 2434

Appendix V – CSN website and contact details

The CSN website – http://www.cskills.org/csn
The CSN website functions as a **public gateway** for people wishing to access the range of **Labour Market Intelligence (LMI)** reports and **research material** regularly produced by the CSN.

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

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

• pinpoint the associated, specific, skills that will be needed year by year

• identify the sectors which are likely to be the strongest drivers of output growth in each region and devolved nation

• track the macro economy

• understand how economic events impact on regional and devolved nations economic performance

• highlight trends across the industry such as national and regional shifts in demand

• plan ahead and address the skills needs of a traditionally mobile workforce

• understand the levels of qualified and competent new entrants required into the workforce.

The website also contains further information about:

• how the CSN functions

• the CSN Model approach

• how the Model can be used to explore scenarios

• CSN team contact information

• access to related ConstructionSkills research

• details for those interested in becoming members of the network.

The CSN website can be found at:
http://www.cskills.org/csn

CSN Members Area

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

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

• details of specific projects

• demand within various types of work or sectors

• labour supply

• inflows and outflows across the regions and
  devolved nations.

CSN Members therefore have:

• early access to forecasts

• the opportunity to influence and inform the data

• the ability to request scenarios that could address "What would happen if…" types of questions using the model.

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

• access observatory related material such as meeting dates, agendas, presentations and notes

• access sub-regional LMI reports

• download additional research material

• comment/feedback to the CSN Team.

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

Contact details

For further information about the CSN website, or to register your interest in joining the CSN as a member, please contact us at: **csn@cskills.org**

For enquiries relating to the work of the CSN, please contact Sandra Lilley, CSN Manager, at: **sandra.lilley@cskills.org**

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For more information about the
Construction Skills Network,
contact:
Sandra Lilley
CSN Manager
0300 456 7933
sandra.lilley@cskills.org

Yorkshire and Humber office:
Milton House
Queen Street
Morley
Leeds
LS27 9EL

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