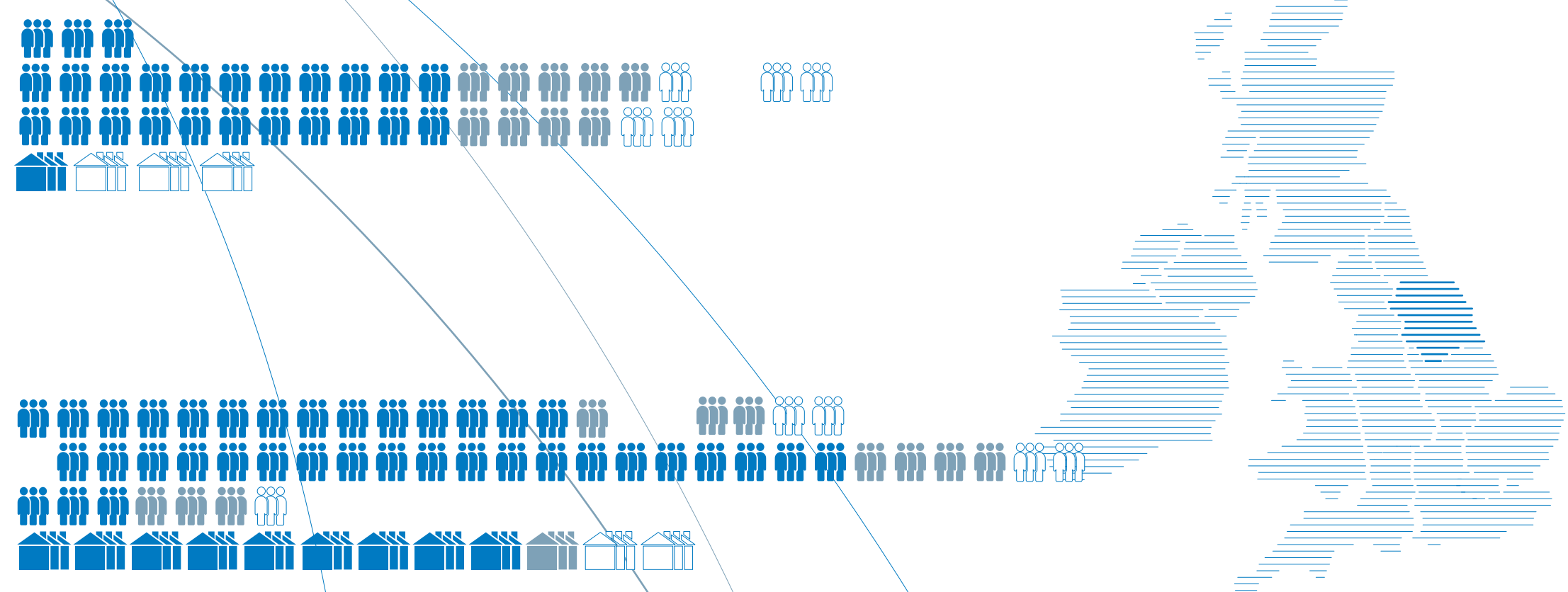
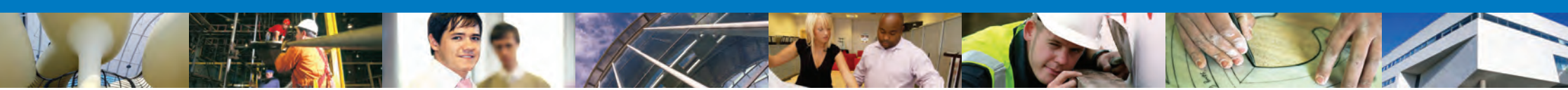


Construction Skills Network Yorkshire and Humber

LABOUR MARKET INTELLIGENCE 2008 - 2012



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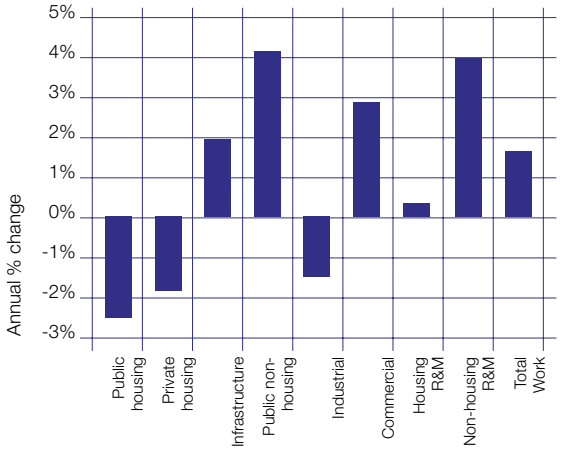
Contents

1 Headlines

Worth £78bn in 2006 (around 7% of the total UK economy), the Yorkshire and Humber economy is forecast to grow at an annual average rate of 2.4% between 2008 and 2012

Annual average construction output growth 2008-2012 - Yorkshire & Humber



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

1.1 Yorkshire and Humber economy

- Financial and business services in Yorkshire and Humber is forecast to expand at 26% between 2008 and 2012, the fastest growing sector in the region.
- Transport and communications is also forecast to enjoy considerable growth, of around 15% between 2008 and 2012.

1.2 Construction output in Yorkshire and Humber

- Worth an estimated £6.6bn in 2007, in 2000 prices, construction in Yorkshire and Humber accounts for around 8% of the UK total.
- Output is forecast to grow at an annual average rate of 1.6% between 2008 and 2012.
- The public non-housing and commercial sectors are likely to be the driving force behind growth benefiting from the Building Schools for the Future programme and other Private Finance Initiative (PFI) education and health projects.

Regional comparisons 2008 - 2012

	Annual average % change in output	Growth in total employment	Total ARR
North East	1.1	9,480	3,070
Yorkshire & Humber	1.6	10,670	6,620
East Midlands	1.2	9,520	4,530
East of England	2.3	31,240	11,010
Greater London	2.9	27,240	14,930
South East	1.7	21,580	13,140
South West	0.5	9,830	5,980
Wales	1.2	13,500	4,750
West Midlands	0.6	8,970	6,190
Northern Ireland	3.5	11,160	2,980
North West	1.4	11,890	8,870
Scotland	1.2	17,050	6,320
UK	**1.7**	**182,130**	**88,390**

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

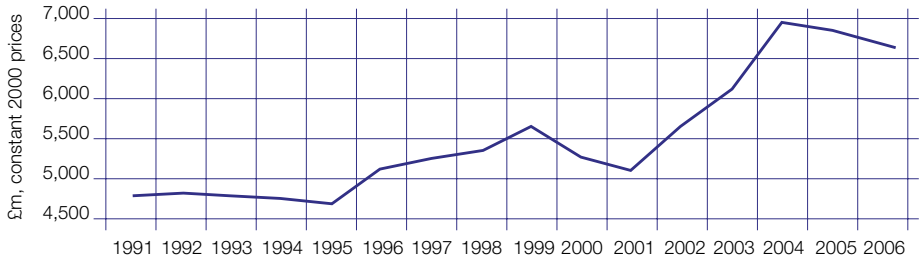
1.3 Construction employment in Yorkshire and Humber

- Total construction employment of 203,260 in 2006 in Yorkshire and Humber is forecast to rise to 231,960 by 2012.
- To meet this demand, after taking account of those entering and leaving the industry, Yorkshire and Humber requires an extra 6,620 workers each year.
- Wood trades and interior fit-out have the largest annual recruitment requirement and it is also the largest occupation group in Yorkshire and Humber construction.

2 The outlook for construction in Yorkshire and Humber

The regional construction industry enjoyed considerable growth during the 2002 to 2004 period, rising 32% in real terms

Construction output 1991-2006 - Yorkshire & Humber



Source: DBERR
Footnote: 1 (See Appendix III)

2.1 Construction output in Yorkshire and Humber – overview

In 2006 construction output in Yorkshire and Humber was valued at £6.6bn, in 2000 prices, higher than the £5.1bn that the industry was valued at during 2001 but lower than the peak level of construction work enjoyed in 2004, at £7bn.

The regional construction industry enjoyed considerable growth during the 2002 to 2004 period, rising 32% in real terms, as illustrated in the graph above. However, since 2004, the region has endured a fall of 5% in real terms. Both new work and repair and maintenance (R&M) contributed to this, recording similar rates of growth over the 2002 to 2004 period, with new work posting growth of 34% and the R&M sector 31%. However, in 2005 and 2006, new work fared better than R&M, only declining by -1% compared with 5% for the latter.

Across the sectors, the highest growth in recent years has been in public housing activity, where output even grew by 45% during 2005 and 2006 while the rest of the industry was in decline.

The largest fall in output in recent years was in commercial output, down by 6% in between 2005 and 2006, contributing considerably to the slight fall in new work (-1%) output overall during the period.

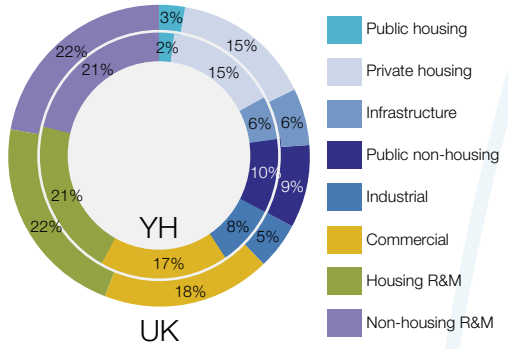
2.2 Industry structure

The diagram right, 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.

There is relatively little difference between each sector's proportion of output in Yorkshire and Humber and within the UK as a whole.

The public non-housing and industrial construction sectors in the Yorkshire and Humber construction industry are marginally bigger when compared to the UK. This is at the expense of private housing and commercial construction, which is slightly less significant than across the UK.

Construction industry structure 2006 - UK vs. Yorkshire & Humber



Source: DBERR, Experian

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

Selected sectors	Actual 2006	Forecast Annual % change, real terms 2007	2008	2009	2010	2011	2012
Public services	19	2.2	1.9	1.1	1.4	2.1	2.4
Financial & business services	17	7.4	4.8	4.9	4.9	4.7	4.5
Transport & communications	6	4.6	2.3	2.8	3.5	3.7	3.8
Manufacturing	14	2.0	1.3	1.5	1.8	1.6	1.5
Distribution, hotels & catering	13	3.4	2.1	3.1	3.5	3.5	3.3
Total Gross Value Added (GVA)	**78**	**2.8**	**1.9**	**2.2**	**2.5**	**2.7**	**2.7**

Source: Experian
Footnote: 3 (See Appendix III)

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

Selected sectors	Actual 2006	Forecast Annual % change, real terms 2007	2008	2009	2010	2011	2012
Real household disposable income	60	1.2	2.8	1.6	2.3	2.4	2.3
Household spending	59	2.2	1.6	2.2	2.9	2.8	2.5
Debt:income ration	1.1	1.2	1.2	1.2	1.2	1.2	1.2
House prices (£'000, current prices)	153	7.9	2.2	0.6	1.8	3.0	3.5
LFS unemployment (millions)	0.15	-4.7	-9.0	-3.0	-1.8	-2.2	-2.8

Source: ONS, DCLG, Experian

2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2008–2012) provides an indication of the construction sectors in which demand is likely to be strongest.

2.4 Economic structure

Gross value added (GVA) in Yorkshire and Humber was valued at £78bn in 2006, 7% of the UK economy as a whole. This was 2.4% higher than in the previous year and the forecast is for an overall increase of 12.6% in GVA over the five-year period to 2012.

The greatest increase in GVA between 2008 and 2012 is estimated to occur in financial and business services, which is expected to grow by 26%. This would be expected to impact positively upon the commercial sector, in particular on demand for office space.

Transport and communications is forecast to be the second highest growth sector within the Yorkshire and Humber economy, with growth of 15% over the forecast period and this would be expected to raise the demand for, and so impact positively on, the infrastructure sector.

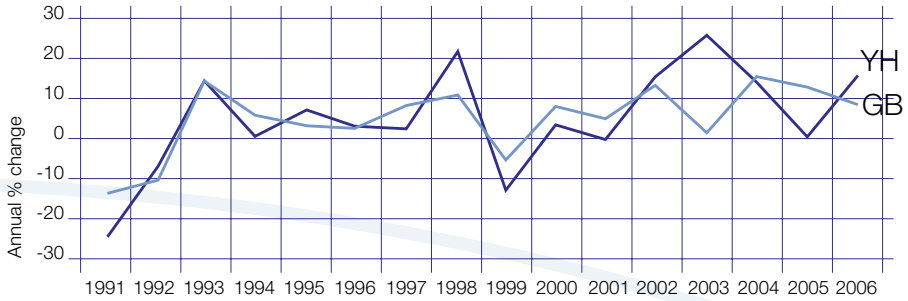
2.5 Forward looking economic indicators

Economic growth during the forecast period is expected to be marginally slower in Yorkshire and Humber (2.4% per year) compared to the UK (2.6% per year). There is a similar trend expected in real household disposable income, which is forecast to rise marginally slower than across the UK. However, household spending in the region is still expected to be 11% greater than its 2008 level by 2012.

The debt to income ratio in the region is currently 1.1, well below the UK ratio of 1.6 and although it is forecast to show growth, it will remain comparatively low at only 1.2. With the trend in household spending this could suggest some weakness in consumer confidence.

The Department for Communities and Local Government (DCLG) reported that average house prices in Yorkshire and Humber reached £153,000 in 2006. However, this is one of the lowest levels in England and prices are only expected to increase by 2% on average between 2008 and 2012, relatively muted compared to the house price forecasts for the UK as a whole.

New construction orders growth 1991-2006 - Yorkshire & Humber vs. GB



Source: DBERR
Footnote: 4 (See Appendix III)

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

2.6 New construction orders – overview

After a long, five year run of double-digit new work Growth in new construction orders has increased since the downturn experienced in 2004 and 2005. In 2006, they reached £4.1bn, in current prices (see chart and table above), and were 94% higher than in 2001.

The effect large individual contracts can have on orders statistics is apparent from the volatility shown in the table below. Furthermore, this is especially the case at the sector and sub-sector levels. The volatility is exacerbated in sectors and sub-sectors which are relatively small. Public housing, accounting for only 2.7% of orders, grew by 128% in 2005. However, in 2006, they fell by 23%.

2.7 New construction orders – current situation

Private housing is the largest of the new work sectors and orders in the sector grew 15% in 2006 to reach £1.2bn, which bodes well for output in the sector in 2007 and 2008. While commercial orders did not fall in 2005, there was only marginal growth but, like private housing, they rose strongly in 2006. Infrastructure orders grew considerably in 2005 and 2006, after two years of falls. However, the infrastructure sector tends to be dominated by a few large orders and is, as a consequence, quite erratic.

In the nine months of 2007, orders totalled £3.8bn in current prices, 22% higher than in the same period of 2006, implying that construction in Yorkshire and Humber should be buoyant in the short term.

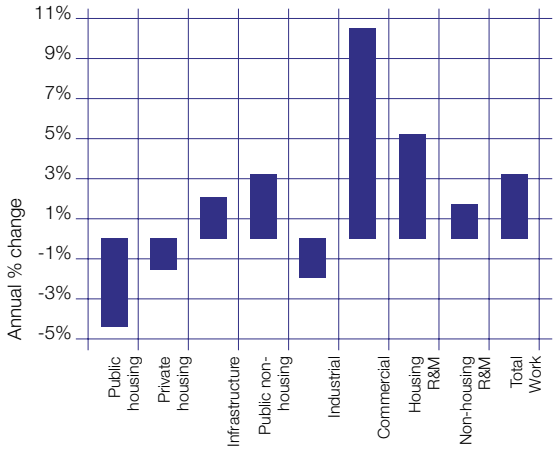
New work construction orders - Yorkshire & Humber (£million, current prices)

	Actual	Annual % change				
Selected sectors	**2006**	**2002**	**2003**	**2004**	**2005**	**2006**
Public housing	107	16.7	-7.1	17.3	127.9	-23.0
Private housing	1176	40.7	46.1	14.8	-0.5	15.2
Infrastructure	607	4.6	-13.9	-36.7	59.2	52.5
Public non-housing	573	12.9	40.6	54.9	-25.1	0.4
Industrial	497	3.6	37.8	32.1	-6.6	25.5
Commercial	1090	11.7	27.4	5.5	0.1	14.5
Selected sectors	**4050**	**15.8**	**26.3**	**13.7**	**0.1**	**16.5**

Source: DBERR
Footnote: 4 (See Appendix III)

New orders were particularly strong in the commercial sector, up by 80% over the first three quarters of the year, and for public house building with an increase of close to 90%. In contrast, the infrastructure and industrial sectors have experienced considerable falls over the same period.

Annual average construction output growth 2008-2009 - Yorkshire & Humber



Source: Experian
Footnote: 2 (See Appendix III)

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

	Actual	Forecast annual % change			Annual average %
	2006	2007	2008	2009	2008-2009
Public housing	100	25.0	-2.0	-7.0	-4.3
Private housing	966	4.0	4.0	-7.0	-1.5
Infrastructure	409	3.0	2.0	2.0	2.1
Public non-housing	667	-4.0	2.0	4.0	3.3
Industrial	551	0.0	-3.0	-1.0	-1.7
Commercial	1,108	19.0	16.0	5.0	10.5
New work	**3,802**	**7.0**	**5.0**	**1.0**	**3.0**
Housing R&M	1,461	-2.0	5.0	6.0	5.4
Non-housing R&M	1,380	-2.0	0.0	3.0	1.7
Total R&M	**2,841**	**-2.0**	**3.0**	**5.0**	**3.6**
Total work	**6,643**	**3.0**	**4.0**	**2.0**	**3.3**

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

2.8 Construction output – short-term forecasts (2007–2009)

Regional DBERR output statistics are published in current prices. At the time of writing, DBERR construction output statistics are only available for the first three quarters of 2007.

Total construction output, in current prices, in Yorkshire and Humber was 14% higher in the first three quarters of 2007 than in the same period during 2006 in current prices, indicating positive and significant growth for the whole of 2007.

Construction output in Yorkshire and Humber is also forecast to grow significantly between 2008 and 2009, at an annual average rate of 3.3% (see chart and table above). The short-term outlook is positive for new work and repair and maintenance (R&M) sectors, with growth averaging 3% and 3.3% respectively.

Commercial output is forecast to grow considerably in the short-term (10.5% average between 2008 and 2009) as the raft of new orders in 2006 feeds through into output. Major contributing factors include the high demand for office space and the number of PFI health and education projects.

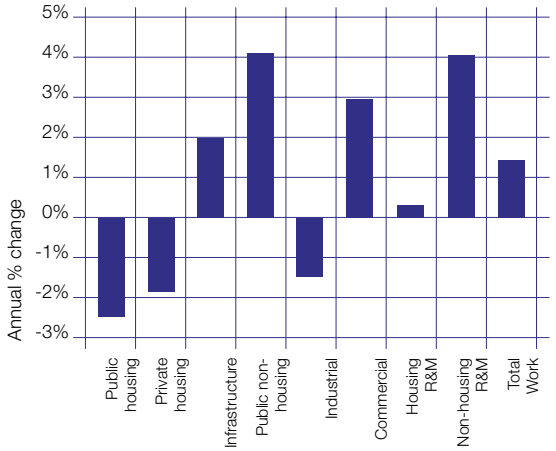
The housing sectors are not expected to fare particularly well in the short term, both exhibiting average annual declines over the forecast period. The weakening housing market nationally, with house prices slipping and the number of transactions slumping, suggests a much more difficult time for house builders over the next year or two than in the recent past.

Public non-housing has the second highest growth rate between 2008 and 2009, at 3.3%, although this is likely to follow negative growth in 2007, with output down by 4% on the previous year.

Industrial output grew marginally in the first three quarters of 2007 but little growth is expected for the year as a whole and falls in output are forecast to occur in 2008 and 2009 as little work comes forward on the factories side and the current warehouse development cycle peaks.

The infrastructure sector is forecast to enjoy positive growth in output between 2008 and 2009, with a number of projects contributing, including the redevelopment of Wakefield station and planned new power stations at Killingholme and Selby.

Annual average construction output growth 2008-2012 - Yorkshire & Humber



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

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

	Estimate	Forecast annual % change					Annual average %
	2007	2008	2009	2010	2011	2012	2008-2012
Public housing	126	-2.0	-7.0	1.0	1.0	-5.0	-2.5
Private housing	1,007	4.0	-7.0	-1.0	-1.0	2.0	-1.8
Infrastructure	421	2.0	2.0	2.0	-1.0	6.0	2.0
Public non-housing	639	2.0	4.0	7.0	5.0	1.0	4.2
Industrial	552	-3.0	-1.0	4.0	1.0	-9.0	-1.4
Commercial	1,320	16.0	5.0	3.0	5.0	-2.0	2.9
New work	**4,065**	**5.0**	**1.0**	**3.0**	**3.0**	**-1.0**	**1.3**
Housing R&M	1426	5.0	6.0	0.0	-6.0	3.0	0.3
Non-housing R&M	1,358	0.0	3.0	4.0	2.0	6.0	4.0
Total R&M	**2,784**	**3.0**	**5.0**	**2.0**	**-2.0**	**4.0**	**2.2**
Total work	**6,849**	**4.0**	**2.0**	**2.0**	**1.0**	**1.0**	**1.6**

2.9 Construction output – long-term forecasts (2008–2012)

Looking at the longer term, total construction output is expected to rise by an annual average rate of 1.6% over the forecast period, around the growth rate for the UK overall. New work growth is expected to be slightly below this, at 1.3% per year over the forecast period. However, this contrasts with the 2.2% per year growth in repair and maintenance (R&M). Despite positive growth as a whole for new work, there is a wide variation in the performance of the sectors between 2008 and 2012. Average annual growth over the forecast period for the sectors varies between 4.2% and -2.5% per year.

The commercial sector is forecast to grow significantly over the forecast period with an annual average growth of 2.9% as the sector benefits from a combination of large redevelopment and regeneration projects, plus Private Finance Initiative (PFI) hospital and education activity, all driving both orders and output.

The commercial sector is forecast to grow significantly over the forecast period with an annual average growth of 2.9%

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

Infrastructure is also forecast to see reasonable growth, at an annual average of 2%, assuming that some of the planned M1/M62 road widening schemes start on site in the latter half of the forecast period.

The sector with the strongest growth in output in Yorkshire and Humber is forecast to be public non-housing, at 4.2% per year. It is expected to benefit considerably from new orders placed in the first three quarters of 2007, which at the time or writing were 60% higher on the same period in 2006. Furthermore, the sector is also expected to benefit from ongoing work generated by the Building Schools for the Future (BSF) programme.

Private housing output is forecast to decline, at 1.8% per year, between 2008 and 2012. The strength of new orders during 2007 implies growth for 2008. However, the uncertainty that surrounds the housing market in the UK as a whole is expected to impact upon all regions, including that of Yorkshire and Humber.

The industrial sector is forecast to decline by an average of 1.4% per year, suffering from uncertainty in the economy and a 27% fall in new orders in the first three quarters of 2007.

In contrast, R&M fares well overall, although growth is expected to be driven largely by work in the non-housing sector as housing R&M falls away as the Decent Homes for All programme comes to an end.

3 Construction employment forecasts for Yorkshire and Humber

Wood trades and interior fit-out is forecast to remain the largest occupational group in Yorkshire and Humber by a considerable margin

3.1 Total construction employment forecasts by occupation

The table, right, displays the construction employment forecasts (SIC 45 and 74.2) in Yorkshire and Humber during 2006. It also presents the forecasts of total employment and across 25 occupation groups in the industry between 2008 and 2012.

The individual occupations that make-up the occupations groups are illustrated in Appendix IV.

Total construction employment in Yorkshire and Humber is expected to reach 231,960 by 2012, an increase of 28,700 over 2006. From this, 212,240 people are expected to be classified as working in SIC 45 in 2012 and the remaining 19,720 are estimated to be employed in professional occupations, within SIC 74.2.

Wood trades and interior fit-out is forecast to remain the largest occupational group in Yorkshire and Humber by a considerable margin, with employment forecast at over 25,960 in 2012.

Wood trades and interior fit-out is not the only relatively large occupational group in the regional construction industry. Other sizeable occupation groups include construction managers, construction professional and technical staff, office-based staff and plumbing and heating, ventilation, and air conditioning trades (HVAC), all of which have employment forecasts of more than 18,000 in 2012.

The greatest proportional increase in employment is expected in painters and decorators, with total employment set to rise by 9% between 2008 and 2012.

Total employment by occupation - Yorkshire & Humber

	Actual	Forecast	
	2006	2008	2012
Senior & executive managers	370	400	420
Business process managers	5,150	5,400	5,680
Construction managers	18,140	19,160	20,200
Office-based staff (excl. managers)	17,600	18,620	19,330
Other professionals/technical staff & IT	2,900	3,170	3,360
Wood trades & interior fit-out	22,240	24,100	25,960
Bricklayers	8,480	10,090	10,790
Building envelope specialists	7,830	9,330	9,960
Painters & decorators	10,840	11,790	12,910
Plasterers & dry liners	2,590	2,760	2,900
Roofers	3,420	3,780	4,020
Floorers	3,190	3,520	3,630
Glaziers	3,470	3,710	3,800
Specialist building operatives nec*	4,140	4,440	4,720
Scaffolders	3,220	3,520	3,790
Plant operatives	2,070	2,350	2,510
Plant mechanics/fitters	1,940	2,080	2,050
Steel erectors/structural	2,120	2,260	2,350
Labourers nec*	11,430	12,400	12,990
Electrical trades & installation	15,310	16,590	17,560
Plumbing & HVAC trades	16,130	17,940	19,110
Logistics	2,270	2,550	2,710
Civil engineering operatives nec*	5,210	5,740	6,110
Non-construction operatives	14,880	17,020	15,380
Construction professionals & technical staff	18,320	18,570	19,720
Total (SIC 45)	**184,940**	**202,720**	**212,240**
Total (SIC 45 & 74.2)	**203,260**	**221,290**	**231,960**

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

*Nec – not elsewhere classified

3.2 Annual recruitment requirements by occupation

The table, right, outlines the annual recruitment requirement (ARR) for the 24 occupation groups within the construction industry in Yorkshire and Humber between 2008 and 2012.

The annual recruitment requirement represents the number of extra workers that are required each year in order for the industry to produce the forecast change in construction output, after taking into account those entering and leaving the industry.

In order for the demand for construction workers to be met within the Yorkshire and Humber region, it is estimated that 6,620 additional workers will be required for each year between 2008 and 2012.

In general, the ARR is a function of the total employment demand within construction and a higher total demand for construction employment would be expected to lead to a higher annual recruitment requirement within construction.

The largest annual recruitment requirement is forecast to be in the wood trades and interior fit-out, where 970 extra workers are forecast to be needed each year. Wood trades and interior fit-out is also the occupation group that has the largest employment demand across the occupation groups.

Wood trades and interior fit-out is not the only group that has a relatively large requirement. Construction professionals and technical staff has a requirement of 810 workers each year between 2008 and 2012. In addition, electrical trades and installation also has a large requirement, with an estimated need within the Yorkshire and Humber construction industry of 770 each year over the forecast period.

*Nec – not elsewhere classified

Annual recruitment requirement by occupation - Yorkshire & Humber

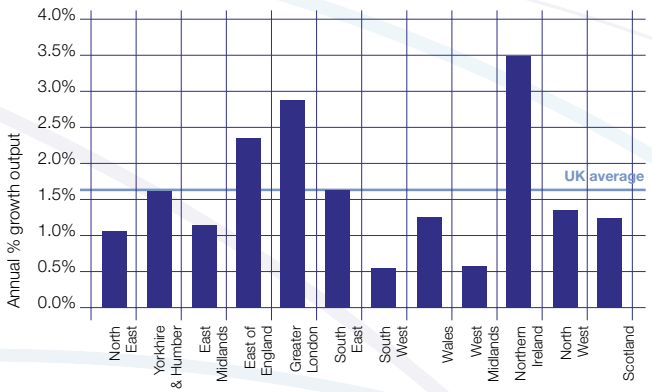
	2008-2012
Senior & executive managers	<50
Business process managers	200
Construction managers	560
Office-based staff (excl. managers)	530
Other professionals/technical staff & IT	100
Wood trades & interior fit-out	970
Bricklayers	320
Building envelope specialists	300
Painters & decorators	350
Plasterers & dry liners	100
Roofers	160
Floorers	<50
Glaziers	70
Specialist building operatives nec*	150
Scaffolders	170
Plant operatives	90
Plant mechanics/fitters	<50
Steel erectors/structural	70
Labourers nec*	220
Electrical trades & installation	770
Plumbing & HVAC trades	440
Logistics	<50
Civil engineering operatives nec*	160
Construction professionals & technical staff	810
Total (SIC 45)	**5,810**
Total (SIC 45 & 74.2)	**6,620**

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

4 Regional comparisons

Between 2008 and 2012 construction output is forecast to rise in all UK countries and regions.

Annual average output growth by region - 2008-2012



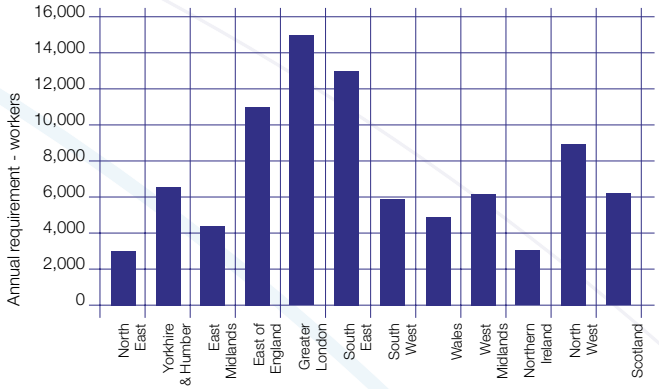
Source: CSN, Experian
Footnote: 2 (See Appendix III)

Inward investment into Northern Ireland following the Multi-Party Agreement will increase construction activity in the province significantly. So much so, its industry is expected to be the strongest in the UK over the forecast period. To 2012 its industry's output is expected to rise by 20%.

Such robust growth is impressive but the province currently only produces a relatively low level of construction output. Given its large size, forecast annual average output growth of 2.9% in Greater London is also very significant. In addition to the 2012 Olympics, the first phase of Thameslink and London Underground's station refurbishment programme are among the larger schemes that will be delivered before this forecast period elapses.

Private house building has been one of the main drivers of construction output growth across the UK as a whole in the past five years. Going forward, housing market conditions are forecast to weaken and growth in new construction in this sector to slow. Over the forecast period

Annual recruitment requirement (ARR) by region - 2008-2012



Source: CSN, Experian

(2008–2012), the infrastructure sector is expected to take the lead in driving the industry forward.

Focusing on employment, the south has the greatest need for skilled construction workers between 2008 and 2012. Nearly 15,000 workers are estimated to be required in Greater London alone each year, and this is after allowing for natural flows into and out of the region. Recruitment requirements in the South East and the East of England are also high.

Northern Ireland's recruitment requirement is low compared to the other regions. Nevertheless it is estimated that around 2,980 workers will need to be recruited each year if demand is to be met.

5 Scenario analysis

An application of the CSN model is scenario testing. 'What if' scenarios can be built and fed into the model to test different events or conditions and to assess the impact on labour requirements.

5.1 About scenarios

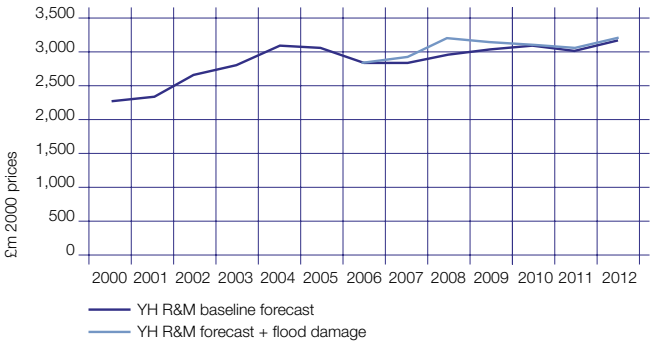
Providing they are large enough, scenarios can be developed for specific projects or programmes of work that may or may not go ahead. Also, they can be used to investigate the effect of different economic eventualities on the industry.
Scenarios tested so far include:

- Crossrail starting in 2010 in Greater London (which currently isn't factored into our central forecast)
- a significant increase in repair and maintenance (R&M) expenditure in Yorkshire and Humber and the South West following the floods in 2007
- a step-change in the rate of house building in the South East as Planning Policy Statement 3 relaxes the planning system sufficiently to enable the region's housing plan to be achieved.

5.2 Increased repair and maintenance work due to flooding

Baseline forecast assumes a small uplift in R&M expenditure due to the recent floods.

Yorkshire & Humber R&M



However, if recent estimations by DEFRA of a cost of £10k per household for flood repair to buildings are correct then total increase in Yorkshire and Humber could be as much as £750m over three years. This would…

- increase R&M growth rates in the earlier part of the forecast period from around 2% to 4% in Yorkshire & Humber…
- …but make little difference to the size of the sector by 2012.

Overall UK forecasts remain largely unchanged. Peak year of effect is likely to be 2008.

	Employment		Annual recruitment requirement
	2008	2012	2008-2012
Senior & executive managers	0	0	0
Business process managers	50	50	30
Construction managers	100	110	70
Office-based staff (excl. managers)	100	110	60
Other professionals/technical staff & IT	140	150	110
Wood trades & interior fit-out	240	250	130
Bricklayers	50	60	50
Building envelope specialists	50	60	50
Painters & decorators	110	120	80
Plasterers & dry liners	40	50	50
Roofers	30	40	40
Floorers	40	50	40
Glaziers	0	0	0
Specialist building operatives nec*	30	30	10
Scaffolders	20	20	20
Plant operatives	30	30	30
Plant mechanics/fitters	20	20	0
Steel erectors/structural	20	20	0
Labourers nec*	140	150	60
Electrical trades & installation	170	180	120
Plumbing & HVAC trades	120	130	100
Logistics	10	10	0
Civil engineering operatives nec*	20	20	0
Non-construction operatives	60	60	
Total (SIC 45)	**1,590**	**1,720**	**1,050**
Construction professionals & technical staff	80	80	30
Total (SIC 45 and 74.2)	**1,670**	**1,800**	**1,080**

Source: CSN, Experian

*Nec – not elsewhere classified

Appendix I – Methodology

At the heart of the CSN is a forecasting model which generates forecasts of employment requirements within the industry for a range of trades.

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 who can contribute local knowledge of the industry and views on training, skills, recruitment, qualifications and policy.

The National Group also includes representatives from industry, Government, education and other SSCs. This Group (which convened twice in 2007) sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN is a forecasting model which generates forecasts of employment requirements within the industry for a range of trades.

The model was designed and is managed by Experian under the independent guidance of the Technical Reference Group, comprised of statisticians and modelling experts.

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

The model approach

The model approach relies on a combination of primary research and views from the CSN to facilitate it. National data is used as the basis for the assumptions that augment the model, which is then adjusted with the assistance of the Observatories and National Group. Each English region, Wales, Scotland and Northern Ireland has a separate model (although all models are inter-related due to labour movements) and, in addition, there is one national 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** is a gross requirement that takes into account the dynamic factors influencing all of the flows into and out of construction employment, such as movement to and from other industries, migration, sickness, and retirement. Young trainees are not included in the flows. Therefore, the 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.

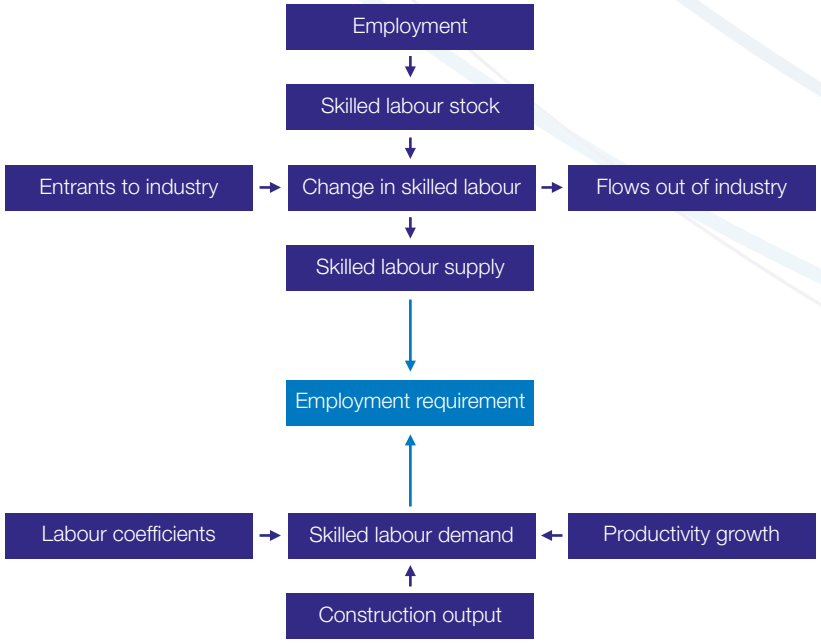
The model was designed and is managed by Experian under the independent guidance of the Technical Reference Group.

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.



Source: Experian

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

Flows into the labour market include:
- transfers in from other industries
- international/domestic IN migration
- inflow from temporarily sick and home duties.

New entrants (e.g. young trainees attached to formal training programmes) are not included in the flows of the labour market but are derived from the forecasted annual recruitment requirement for employment. The most significant inflow is likely to be from other industries. A summary of the model is shown in the flow chart.

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 Department for Business Enterprise and Regulatory Reform (DBERR) 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.

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 Department for Business Enterprise and Regulatory Reform (DBERR) on a current price basis. Thus national deflators produced by the DBERR 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.

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

SummitSkills

Footprint – Plumbing, Heating, Ventilation, Air Conditioning, Refrigeration and Electrotechnical.
Coverage – Building Services Engineering.

AssetSkills

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

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

* AssetSkills has a peripheral interest in SIC 74.2

Appendix IV – Occupational groups

Bricklayers and building envelope specialists
Bricklayers, masons 5312
Construction trades nec* (50%) 5319
Labourers in building and woodworking trades (5%) 9121

Roofers
Roofers, roof tilers and slaters 5313

Plumbing and heating, ventilation, and air conditioning trades
Plumbing and HVAC trades 5314
Pipe fitters 5216
Labourers in building and woodworking trades (6%) 9121
Construction trades nec* (5%) 5319

Electrical trades and installation
Electricians, electrical fitters 5241
Electrical/electronic engineers nec* 5249
Telecommunications engineers 5242
Lines repairers and cable jointers 5243

Civil engineering operatives not elsewhere classified (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

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

Scaffolders
Scaffolders, stagers, riggers 8141

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

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

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

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

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

Specialist building operatives not elsewhere classified (nec*)
Construction operatives nec* (80%) 8149
Construction trades nec* (5%) 5319
Industrial cleaning process occupations 9132

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

*Nec – not elsewhere classified

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

Construction professionals and technical staff

Civil engineers 2121
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
Architects 2431
Town planners 2432
Quantity surveyors 2433
Chartered surveyors (not Quantity surveyors) 2434
Electronics engineers 2124
Building inspectors 3123

Painters and decorators

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

Plasterers and dry Liners

Plasterers 5321

Glaziers

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

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

Other professionals/technical staff and IT

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

*Nec – not elsewhere classified

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

Senior and executive managers

Directors and chief executives of major organisations 1112
Senior officials in local government 1113
Business process managers
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

Business process managers

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

Office-based staff (excl. managers)

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

Floorers

Floorers and wall tilers 5322

*Nec – not elsewhere classified

Appendix V – CSN website and contact details

The CSN website functions as a gateway into the construction industry.

The CSN website
Co-ordinated by ConstructionSkills, the CSN benefits from the technical expertise of Davis Langdon Management Consulting and Experian. It collates the knowledge and experience of Government; Sector Skills Councils; construction companies; education and training providers; regional agencies; and customers across the UK. In short, it provides a single, clear understanding of the industry's current skills position.

This unique collaboration means the CSN offers, as near as possible, a consensus view of the current and future skills and training needs of the industry.

The Network gives us an authoritative basis on which to plan for recruitment strategies, education and training requirements and funding delivery. The Network forecasts are based on a series of assumptions and trends, to provide a picture of how the industry could look in five years time.

The Network gives construction clients insight into what type of buildings are likely to be constructed, when and where, as well as how to invest training budgets. For contractors and consultants the data can inform the type of building they should design and how best to avoid regional or occupational skills shortages and high labour costs.

Employees and prospective new recruits can use these insights to discover where in the country they are likely to find consistent work, or what trade or profession offers the best career prospects.

The new CSN website is found here at
www.cskills.org/csn

The Members' area offers access to a wealth of documentation produced by the CSN Observatories. The CSN Members, wider group members and industry stakeholders can use this area to stay up to date with what is happening within the CSN Workshop cycle.

CITB-ConstructionSkills and partners produce a number of reports which have been based on evidence from various datasets. The Data Store, from the Research section, has been set up to give the CSN Members access to this resource so that they may carry out their own research utilising this primary data.

The diary of upcoming events in Observatory Essentials allows Members to stay in touch with CSN developments. This area also includes all feedback documentation from the current round of workshops, giving members all the relevant information they need in one place.

Contact details

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

For further information about the CSN website, or to register your interest in joining the CSN, please contact Sally Riley, Researcher, at sally.riley@cskills.org

All the tables in this regional document, and the other regional and national documents, can be found on the website www.cskills.org/csn

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