

# Construction Skills Network West Midlands

LABOUR MARKET INTELLIGENCE 2008 - 2012



# Contents

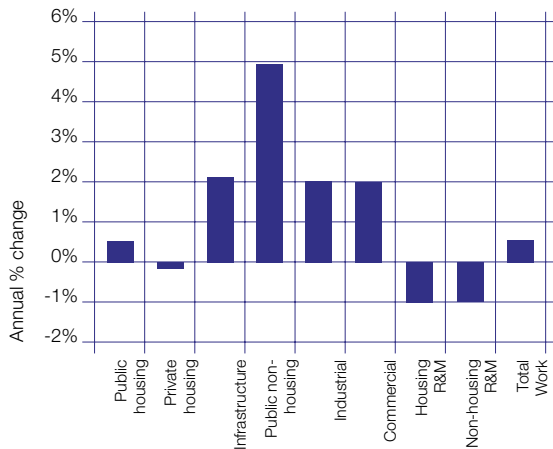


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# 1 Headlines

Worth £84bn in 2006 (around 8% of the total UK economy), the West Midlands economy is forecast to grow at an annual average rate of 2.4% between 2008 and 2012

**Annual average construction output growth 2008-2012 - West Midlands**



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

## 1.1 West Midlands economy

- Financial and business services accounted for the largest share of output in the region for the first time in 2006, but is still proportionally smaller than nationally.
- Forecasts are 20% larger, in output terms, in 2012 than 2008, financial and business services is also set to be the fastest growing sector over the period in the West Midlands.

## 1.2 Construction output in the West Midlands

- Construction output was estimated at £6.8bn in 2006, in 2000 prices, accounting for 8% of the UK total.
- Output is forecast to grow at an annual average rate of 0.6% between 2008 and 2012.
- The public non-housing sector will be the main driver of growth, although, with the exception of private housing, all new work sectors are set to see output increase.

## 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
<b>UK</b>	<b>1.7</b>	<b>182,130</b>	<b>88,390</b>

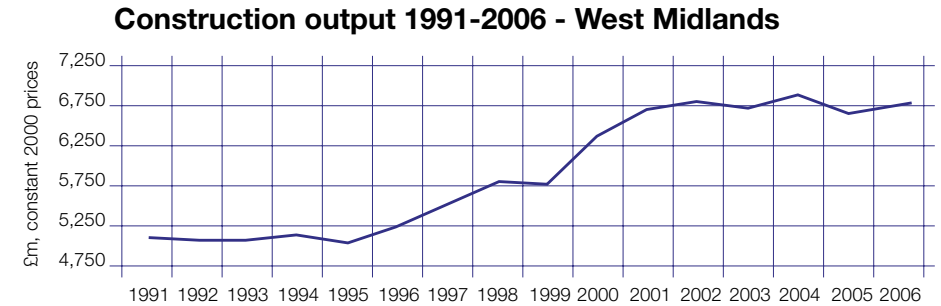
Source: CSN, Experian  
Footnote: 2 (See Appendix III)

## 1.3 Construction employment in the West Midlands

- Total construction employment of 213,480 in 2006 in the West Midlands is forecast to rise by 9% to 232,950 in 2012.
- To meet this demand, after taking account of those entering and leaving the industry, the West Midlands requires an extra 6,190 workers each year.
- Construction professionals and technical staff has the largest annual recruitment requirement, with wood trades and interior fit-out and electrical trades and installation not far behind.

## 2 The outlook for construction in the West Midlands

After a period of very rapid growth between 1999 and 2002, construction output in the West Midlands has been erratic in recent years



Source: DBERR  
Footnote: 1 (See Appendix III)

### 2.1 Construction output in the West Midlands – overview

In 2006 total construction output in the West Midlands grew by 2% to stand at £6.8bn in 2000 prices. New work output made up £3.4bn of this total, with repair and maintenance (R&M) output worth a marginally smaller £3.3bn.

After a period of very rapid growth between 1999 and 2002, construction output in the West Midlands has been erratic in recent years with declines in 2003 and 2005 both following on from increases in preceding years. R&M output saw marginal growth over the 2002–2006 period, but this was cancelled out by a slight decline in new work output.

After three successive years of increasing activity, private housing output fell by 8% in 2006, by far the largest drop in output of any sector. The only other sector to see output fall was infrastructure, where the drop was only 2% but it was the fourth decline in as many years with the result being

that infrastructure output in 2006 was only half of its' 2002 level. In contrast, the industrial and commercial sectors performed very well growing by 8% and 7%, respectively.

Nationally, an increase in government funding has fuelled strong growth in public housing output in recent years and the West Midlands, like most regions, has benefited from this, but in 2006 growth had slowed to 3%.

### 2.2 Industry structure

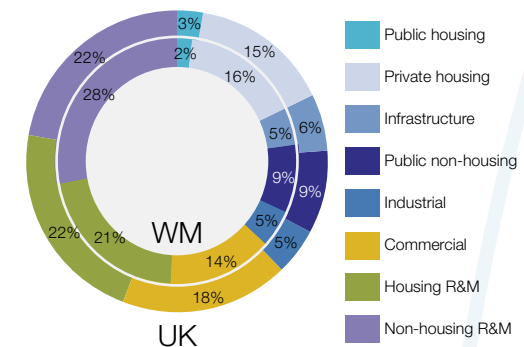
In 2006 the most noticeable difference between construction output in the UK and the West Midlands was the proportionally small share taken by the commercial sector (see chart right).

However, it is important to remember the chart right, presents a snapshot that can change over time. Commercial's smaller share in 2006 can be traced back to consecutive years of decline in the sector earlier in the decade before which its share was roughly in line with the national average.

Similarly infrastructure's share of the West Midlands total has trailed that of the UK as a whole. Again, this was due to the sector's recent weakness.

A larger than average R&M sector does, however, seem to be a particular feature of the region's structure.

### Construction industry structure 2006 - UK vs. West Midlands



Source: DBERR, Experian

## Economic structure - West Midlands (£billion, 2003 prices)

Selected sectors	Actual	Forecast Annual % change, real terms					
	2006	2007	2008	2009	2010	2011	2012
Public services	19	2.1	1.7	1.7	1.7	2.1	2.3
Financial & business services	19	9.5	5.4	5.0	4.9	4.7	4.5
Transport & communications	6	3.3	2.5	2.7	3.1	3.3	3.3
Manufacturing	15	0.1	0.6	1.0	1.4	1.4	1.4
Distribution, hotels & catering	14	3.6	1.6	2.9	3.6	3.6	3.5
<b>Total Gross Value Added (GVA)</b>	<b>84</b>	<b>2.6</b>	<b>1.8</b>	<b>2.3</b>	<b>2.6</b>	<b>2.6</b>	<b>2.7</b>

Source: Experian  
Footnote: 3 (See Appendix III)

## Economic indicators - West Midlands (£billion, 2003 prices - unless otherwise stated)

Selected sectors	Actual	Forecast Annual % change, real terms					
	2006	2007	2008	2009	2010	2011	2012
Real household disposable income	64	-0.3	2.6	1.9	2.5	2.3	2.2
Household spending	61	2.1	1.1	1.4	2.3	2.5	2.4
Debt:income ratio	1.1	1.2	1.2	1.2	1.2	1.2	1.2
House prices (£'000, current prices)	170	5.3	-2.5	-1.3	1.6	1.9	1.7
LFS unemployment (millions)	0.16	10.0	1.6	7.2	4.2	0.5	-1.5

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

In 2006 the West Midlands economy was worth £84bn, in 2003 prices, 3% higher than in 2005 and around 8% of the UK total.

Financial and business services was the largest component of gross value added (GVA) in the West Midlands, accounting for 23% of the total in 2006 (see table above). Public services came in a very close second, making up 22% of the total.

Over the forecast period (2008–2012) GVA in the West Midlands is forecast to grow by 11%. The main driver of this growth will be financial and business services, expected to expand by 20% in real terms between 2008 and 2012. Growth in the transport and communications and distribution, hotels and catering sectors will also be more rapid than total GVA growth for the region. Despite being steady, increases in public services and especially manufacturing output will lag behind somewhat.

### 2.5 Forward looking economic indicators

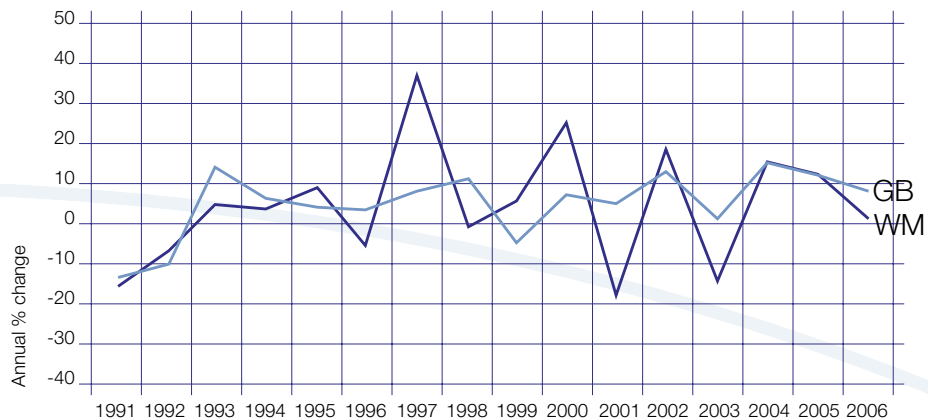
Economic growth in the West Midlands is forecast to be slightly below the national trend at an average rate of 2.4% between 2008 and 2012.

Growth in real household disposable income follows a similar pattern over the forecast period, trailing marginally behind the UK as a whole (see table above).

Household spending growth in the region however is set to be notably weaker than nationally. This is supported by the debt to income ratio in the West Midlands being amongst the lowest in the UK.

In 2006 the Department for Communities and Local Government (DCLG) reported that average house prices in the West Midlands reached £182,000. Prices are likely to go into a period of decline in 2008 before returning to growth around 2010.

### New construction orders growth 1991-2006 - West Midlands 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

The pattern of new orders in the region in recent years has tended to be one of growth followed by decline on an annual basis. However, the three years to 2006 has been a period of increase, albeit that posted for 2006 was marginal. This has lifted the value of new orders £3.5bn, in current prices, in 2006, 33% higher than in 2001.

Although orders did grow in 2006 the size of the increase was much smaller than that recorded in 2004 and 2005. In particular, the private

housing and infrastructure sectors suffered from a downturn in the level of new orders in that year.

In contrast, commercial orders have continued to grow strongly, supported by those in the public housing and industrial sectors.

#### 2.7 New construction orders – current situation

The growth that has been seen in new orders in recent years accelerated dramatically in the first three quarters of 2007. Worth just over £3.6bn, in current prices, they were up by nearly 33% on the first three quarters of 2006.

Two sectors were behind much of this expansion in the first three quarters of 2007. Infrastructure orders more than doubled from the first nine months of 2006 while commercial orders were up by more than 50%. Although growth was not as strong in the public sectors it was still very healthy, with public housing and non-housing orders up by 34% and 22% respectively.

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

Selected sectors	Actual		Annual % change			
	2006	2002	2003	2004	2005	2006
Public housing	177	-18.9	20.9	171.2	-11.3	41.6
Private housing	1141	3.6	31.9	28.0	6.0	-14.7
Infrastructure	309	55.0	-41.8	-21.5	33.8	-11.2
Public non-housing	538	19.5	-21.8	17.0	5.6	-1.1
Industrial	322	-1.1	-23.1	10.2	16.0	16.7
Commercial	1028	27.0	-28.7	1.5	22.6	23.1
<b>Selected sectors</b>	<b>3515</b>	<b>19.2</b>	<b>-14.3</b>	<b>14.9</b>	<b>11.9</b>	<b>1.5</b>

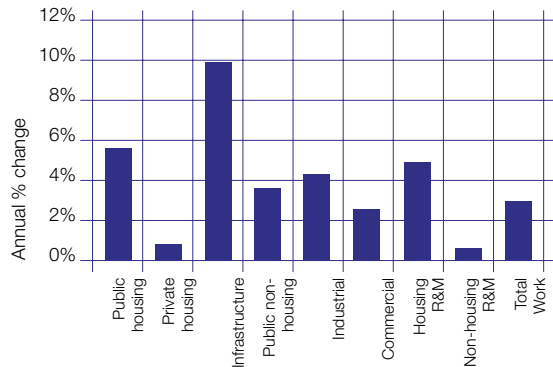
Source: DBERR  
Footnote: 4 (See Appendix III)

However, not all sectors fared so well in the first three quarters of 2007. The level of new industrial orders was unchanged from the same period of 2006 and private housing orders fell by 14%.

## Construction output - West Midlands

(£million, 2000 prices)

### Annual average construction output growth 2008-2009 - West Midlands



Source: Experian  
Footnote: 2 (See Appendix III)

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

With growth of 1% in current prices, total construction output in the West Midlands was marginally higher in the first nine months of 2007 than in same period of 2006. However, regional DBERR output statistics are published in current prices. Thus in real terms it is likely that output could decline in the first three quarters of the year.

Construction output in the West Midlands is forecast to grow steadily over the next two years, at an annual average rate of 3% (see chart and table above). The short-term outlook for new work is stronger than for repair and maintenance (R&M), and the former is also expected to have performed better in 2007.

	Actual	Forecast annual % change		Annual average %	
	2006	2007	2008	2009	
Public housing	153	34.0	5.0	5.0	5.4
Private housing	1,056	-10.0	-1.0	2.0	0.7
Infrastructure	359	7.0	10.0	10.0	10.0
Public non-housing	589	-3.0	2.0	5.0	3.4
Industrial	340	-8.0	7.0	2.0	4.5
Commercial	925	21.0	5.0	0.0	2.5
<b>New work</b>	<b>3,422</b>	<b>4.0</b>	<b>4.0</b>	<b>3.0</b>	<b>3.4</b>
Housing R&M	1,390	2.0	3.0	6.0	4.9
Non-housing R&M	1,955	-10.0	0.0	2.0	0.7
<b>Total R&amp;M</b>	<b>3,345</b>	<b>-5.0</b>	<b>1.0</b>	<b>4.0</b>	<b>2.6</b>
<b>Total work</b>	<b>6,767</b>	<b>-1.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>

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

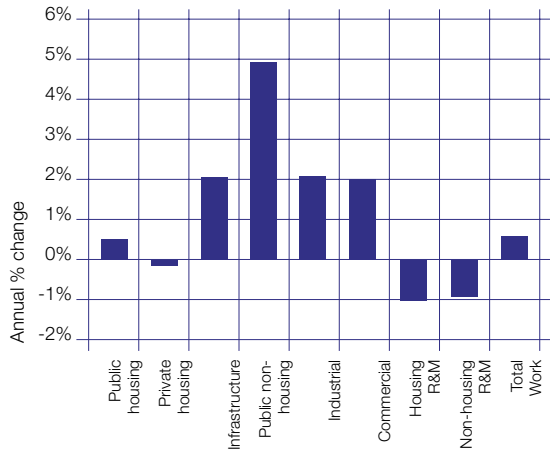
Infrastructure is expected to record growth head and shoulders above that of all other sectors between 2008 and 2009 with 10% increases expected in both of these years, driven in part by the £500m redevelopment of Birmingham New Street station. The sector is also estimated to have grown in 2007, in contrast to its recent performance, recording four years of consecutive falls to 2006.

At the other end of the spectrum private housing output is forecast to increase at an annual average rate of just 0.7% over the 2008–2009 period. Furthermore this muted growth comes on the back of an expected fall in output of 10% in 2007. This means that private housing is responsible for holding back total output growth in the West Midlands, especially considering the fact that the sector accounts for more than 30% of all new work in the region.

Elsewhere, public housing output is set to continue its trend of growth, at an annual average rate of 5.4% over 2008 and 2009. Growth in the industrial sector isn't forecast to be far behind but in this case it comes on the back of an expected drop in output in 2007. Similarly, the public non-housing sector is expected to see a decline in 2007 which will be followed by steady growth, averaging 3.4% over the 2008–2009 period.

Commercial output in the first three quarters of 2007 suggests the sector is in for a bumper year. A 30% increase in current priced output in the first three quarters of the year is likely to yield a real outturn of 21% growth year-on-year. However, this growth is expected to slow dramatically in 2008 before stagnating in 2009.

### Annual average construction output growth 2008-2012 - West Midlands



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

### Construction output - West Midlands (£million, 2000 prices)

	Estimate		Forecast annual % change				Annual average %
	2007	2008	2009	2010	2011	2012	2008-2012
Public housing	205	5.0	5.0	2.0	0.0	-5.0	0.5
Private housing	951	-1.0	2.0	-2.0	-1.0	0.0	-0.2
Infrastructure	385	10.0	10.0	-2.0	-1.0	3.0	2.1
Public non-housing	572	2.0	5.0	6.0	6.0	3.0	4.9
Industrial	314	7.0	2.0	4.0	0.0	3.0	2.1
Commercial	1,120	5.0	0.0	4.0	4.0	0.0	2.0
<b>New work</b>	<b>3,547</b>	<b>4.0</b>	<b>3.0</b>	<b>2.0</b>	<b>2.0</b>	<b>1.0</b>	<b>1.9</b>
Housing R&M	1420	3.0	6.0	2.0	-6.0	-5.0	-1.0
Non-housing R&M	1,755	0.0	2.0	-3.0	-3.0	1.0	-0.9
<b>Total R&amp;M</b>	<b>3,175</b>	<b>1.0</b>	<b>4.0</b>	<b>-1.0</b>	<b>-5.0</b>	<b>-2.0</b>	<b>-1.0</b>
<b>Total work</b>	<b>6,721</b>	<b>3.0</b>	<b>3.0</b>	<b>1.0</b>	<b>-1.0</b>	<b>0.0</b>	<b>0.6</b>

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

Over the long-term, the outlook for construction output in the West Midlands is for only limited growth, averaging just 0.6% annually. New work growth is expected to moderate after 2009, while repair and maintenance (R&M) is facing a period of decline beginning in 2010 (see chart and table above).

Only the public non-housing sector is set to see output growth accelerate post-2009, with an annual average growth rate of 4.9% forecast between 2008 and 2012. This is predicated on the bulk of work relating to Waves 1 to 3 of the Building Schools for the Future programme taking place in the middle of the forecast period.

Private housing is the only new work sector expected to record a fall in output over the longer term forecast period and, at an annual average rate of just 0.2%, it will only be very marginal. The state of the housing market is the main driver of private housing construction and to 2012 housing

Only the public non-housing sector is set to see output growth accelerate post-2009

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

market conditions are expected to be less buoyant than they have been in recent years. House prices are expected to increase over the period but this growth will be subdued and well below the growth forecast nationally.

Public housing is also likely to struggle beyond 2009 with strong output growth in the early part of the forecast period fading before turning to decline in 2012. This leaves the sector expecting annual average growth of just 0.5% between 2008 and 2012.

Infrastructure output is forecast to grow very strongly in both 2008 and 2009 driven in part by several large roads projects and water investment, both planned and due to flooding. However by 2010 much of this work will be past its peak or completed and it is unlikely there will be the same

quantity of work to replace it. This means that over the longer term forecast period average growth of 2.1% is expected each year.

Similar levels of growth are forecast for both the industrial and commercial sectors over the period. Industrial output will increase at an annual average rate of 2.1% between 2008 and 2012, down from 4.5% during the short-term forecast period. Growth in commercial output will also slow after 2009, but not by quite as much with a steady flow of PFI hospital and Building Schools for the Future projects helping to keep activity in the sector on an upward trend even if growth is relatively subdued.



# 3 Construction employment forecasts for the West Midlands

Painters and decorators are forecast to see the greatest proportional increase in employment, with total employment expected to rise by 9%

## 3.1 Total construction employment forecasts by occupation

The table, right, presents actual construction employment (SIC 45 and 74.2) in the West Midlands for 2006 and the forecast total employment in 25 occupations and in the industry as a whole between 2008 and 2012.

By 2012 total employment in construction in the West Midlands is expected to stand at around 232,950, with approximately 19,500 more people being employed in the industry than in 2006. 214,010 people will be classified as working in SIC 45 in 2012, with 18,940 falling under the SIC 74.2 grouping.

The largest occupational groups are forecast to be wood trades and interior fit-out, non-construction operatives, electrical trades and installation and construction managers, each with employment forecast at over 18,000 in the West Midlands in 2012.

Wood trades and interior fit-out is also the occupational group set to see the largest increase

in employment (1,610) between 2008 and 2012, followed by painters and decorators (1,310) and construction professionals and technical staff (1,220).

Painters and decorators are forecast to see the greatest proportional increase in employment, with total employment expected to rise by 9% between 2008 and 2012. Increases of 8% are forecast for plant operatives, other professionals/technical staff and IT, and wood trades and interior fit-out.

Occupational groupings have been improved following the 2006–2010 model run to incorporate new research and to reflect feedback from Observatory members and other stakeholders. A full breakdown of occupations is provided in Appendix IV.

**Total employment by occupation - West Midlands**

	Actual	Forecast	
	2006	2008	2012
Senior & executive managers	750	790	830
Business process managers	6,380	6,420	6,710
Construction managers	17,640	17,990	18,820
Office-based staff (excl. managers)	13,210	13,500	13,910
Other professionals/technical staff & IT	4,030	4,150	4,480
Wood trades & interior fit-out	20,620	21,390	23,000
Bricklayers	8,530	9,710	10,400
Building envelope specialists	7,870	8,970	9,600
Painters & decorators	14,210	14,870	16,180
Plasterers & dry liners	1,740	1,790	1,870
Roofers	5,380	5,680	6,050
Floorers	3,890	3,970	4,220
Glaziers	6,390	6,210	6,320
Specialist building operatives nec*	6,480	6,700	7,070
Scaffolders	1,790	1,900	2,040
Plant operatives	1,670	1,670	1,800
Plant mechanics/fitters	1,050	1,040	1,030
Steel erectors/structural	1,770	1,830	1,890
Labourers nec*	7,810	8,170	8,510
Electrical trades & installation	17,870	18,610	19,580
Plumbing & HVAC trades	15,710	16,820	17,780
Logistics	2,720	2,950	3,110
Civil engineering operatives nec*	6,130	6,520	6,890
Non-construction operatives	22,320	24,610	21,920
Construction professionals & technical staff	17,520	17,720	18,940
<b>Total (SIC 45)</b>	<b>195,960</b>	<b>206,260</b>	<b>214,010</b>
<b>Total (SIC 45 &amp; 74.2)</b>	<b>213,480</b>	<b>223,980</b>	<b>232,950</b>

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 25 occupations within the West Midlands construction industry between 2008 and 2012. The ARR suggests that if the West Midlands' construction industry is to deliver forecast construction output it will need to attract 6,190 recruits each year, after taking into account flows into and out of the industry.

The occupational groups with the largest ARR are construction professionals and technical staff (860), wood trades and interior fit-out (800) and electrical trades and installation (790). These are also the occupations with the largest ARR nationally, and within the West Midlands 40% of the entire construction industry's ARR is accounted for by these three occupations alone.

Please note that all of the ARR 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 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 data. Therefore the ARR for non-construction operatives is not published.

\*Nec – not elsewhere classified

## Annual recruitment requirement by occupation - West Midlands

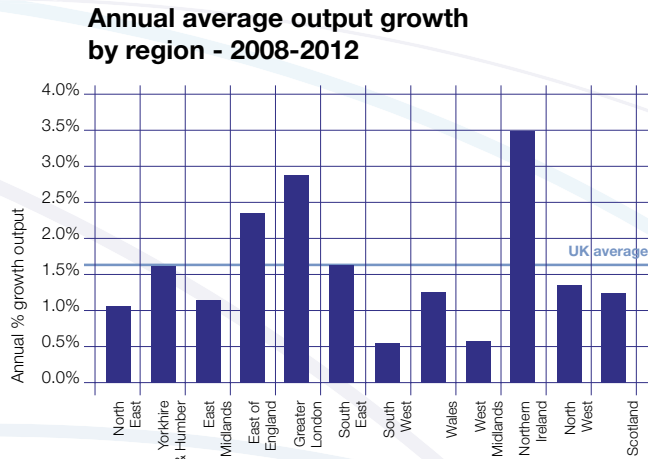
	2008-2012
Senior & executive managers	<50
Business process managers	220
Construction managers	480
Office-based staff (excl. managers)	340
Other professionals/technical staff & IT	100
Wood trades & interior fit-out	800
Bricklayers	320
Building envelope specialists	290
Painters & decorators	400
Plasterers & dry liners	60
Roofers	240
Floorers	60
Glaziers	100
Specialist building operatives nec*	210
Scaffolders	90
Plant operatives	50
Plant mechanics/fitters	<50
Steel erectors/structural	50
Labourers nec*	120
Electrical trades & installation	790
Plumbing & HVAC trades	370
Logistics	<50
Civil engineering operatives nec*	180
Construction professionals & technical staff	860
<b>Total (SIC 45)</b>	<b>5,330</b>
<b>Total (SIC 45 &amp; 74.2)</b>	<b>6,190</b>



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.



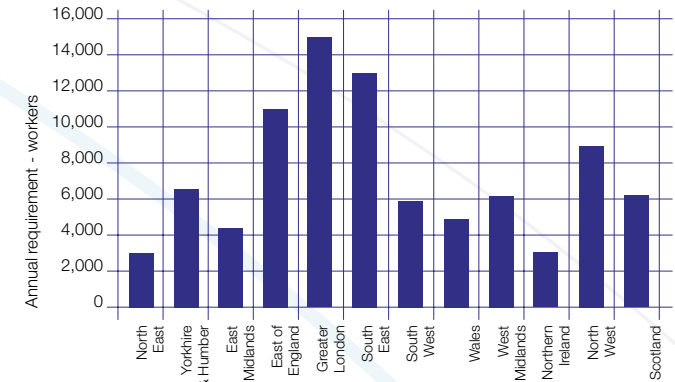
Source: CSN, Experian  
Footnote: 2 (See Appendix III)

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.

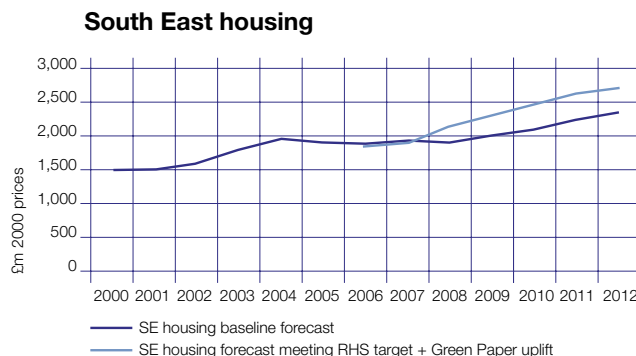
## 5.1 About scenarios

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 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 An example – housing in the South East

The CSN baseline forecast assumes that house building will continue to undershoot the target set



in the South East's Regional Housing Strategy (RHS). If the industry were to reach the RHS target and the uplift implied by the latest Green Paper, then the following is likely to happen:

- the average annual growth rate for housing output in the South East could increase by 1% over the baseline forecast
- meeting the RHS house building targets in 2008 is likely to increase employment levels in the South East by 2,100, rising to nearly 4,000 by 2012.

Suggestions for future scenarios are welcomed. Please see Appendix V for contact information.

	Employment		Annual recruitment requirement
	2008	2012	2008-2012
Senior & executive managers	0	0	0
Business process managers	60	110	10
Construction managers	130	240	20
Office-based staff (excl. managers)	130	240	20
Other professionals/technical staff & IT	130	230	20
Wood trades & interior fit-out	330	590	40
Bricklayers	80	150	10
Building envelope specialists	80	150	10
Painters & decorators	130	230	20
Plasterers & dry liners	40	70	0
Roofers	50	80	10
Floorers	40	80	10
Glaziers	20	40	0
Specialist building operatives nec*	40	70	0
Scaffolders	20	40	0
Plant operatives	50	90	10
Plant mechanics/fitters	30	50	0
Steel erectors/structural	20	40	0
Labourers nec*	150	270	20
Electrical trades & installation	200	360	30
Plumbing & HVAC trades	160	280	20
Logistics	20	40	0
Civil engineering operatives nec*	40	70	0
Non-construction operatives	50	90	
<b>Total (SIC 45)</b>	<b>2,000</b>	<b>3,610</b>	<b>250</b>
Construction professionals & technical staff	120	220	20
<b>Total (SIC 45 and 74.2)</b>	<b>2,120</b>	<b>3,830</b>	<b>270</b>

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.

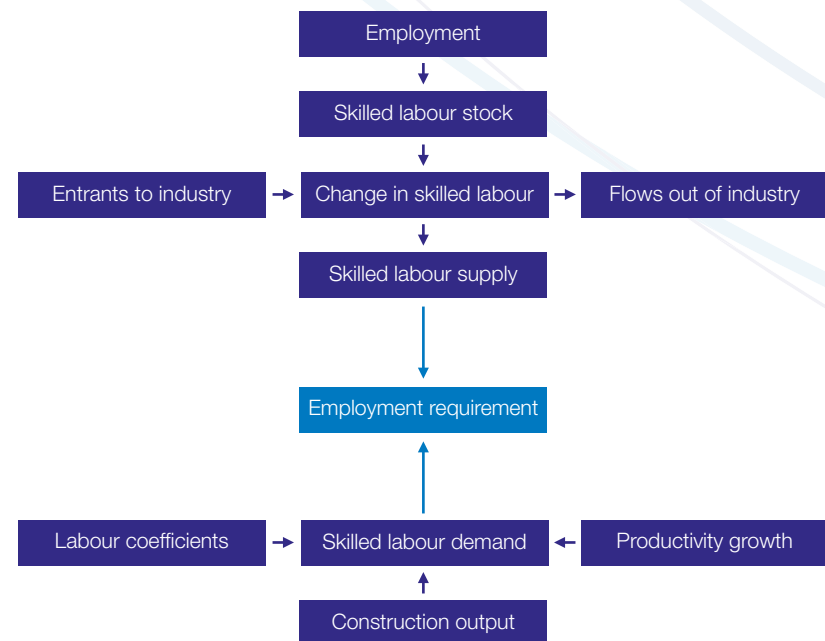
Demand is based upon the results of discussion groups comprising industry experts, a view of construction output and a set of integrated models relating to wider national and regional economic performance.



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, Domestic, 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, staggers, 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

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

# 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](http://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.

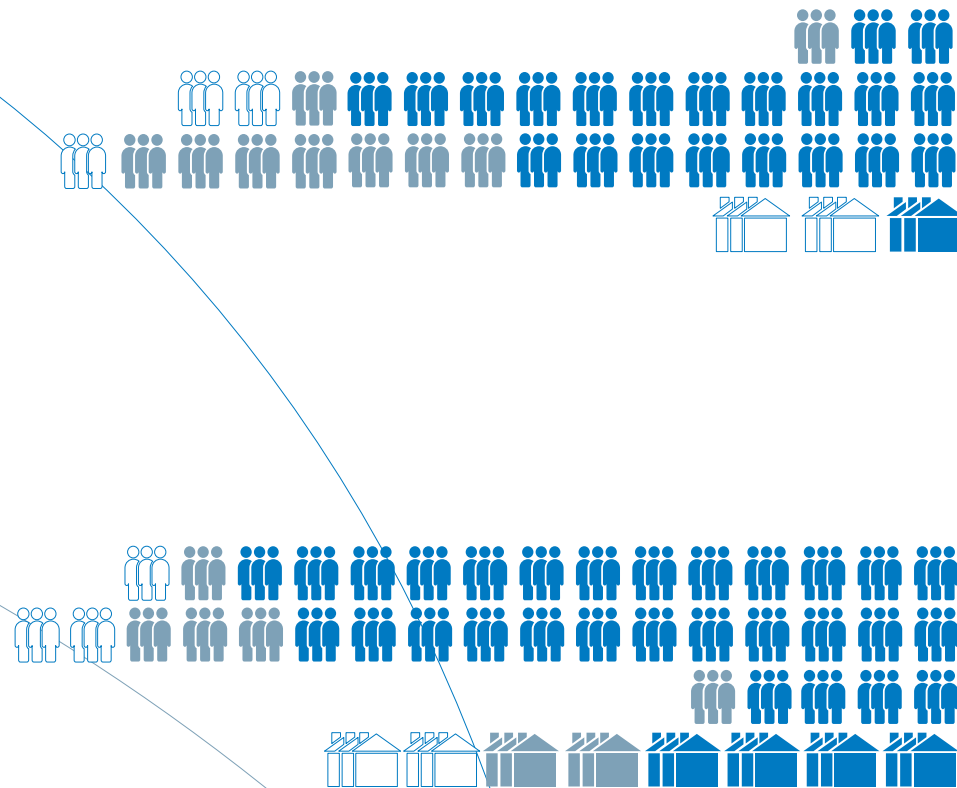
#### **Contact details**

For enquiries relating to the work of the CSN, please contact Sandra Lilley, CSN Manager, at [sandra.lilley@cskills.org](mailto: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](mailto: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](http://www.cskills.org/csn)



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CITB-ConstructionSkills, CIC and CITB Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction.  
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Part of the Skills for Business network of 25 employer-led Sector Skills Councils.