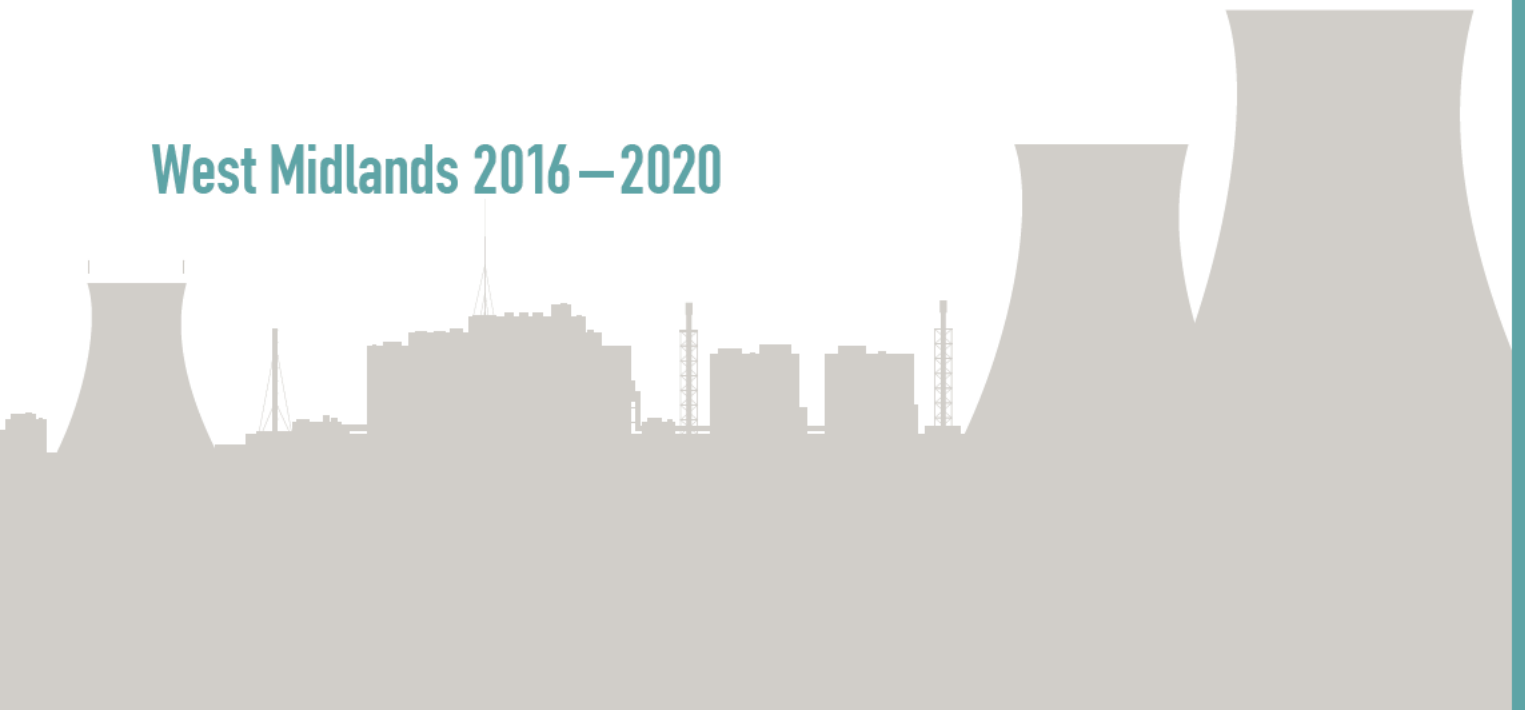


# INDUSTRY INSIGHTS

Construction Skills Network  
Forecasts 2016–2020

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**West Midlands 2016–2020**





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## SECTION 1

# SUMMARY – WEST MIDLANDS

# 1.7%

Construction output in the West Midlands is forecast to grow at an annual average rate of 1.7% between 2016 and 2020, compared to 2.5% at the UK level. Expansion in new work over the same period is expected to outpace that of repair and maintenance (R&M) with respective annual average growth rates of 2.3% and 0.9%. Employment is forecast to increase at an annual average rate of 1%, slightly below the UK average of 1.1%. The region's annual recruitment requirements (ARR) is forecast to be 3,030, representing 1.4% of base 2016 employment, below the UK average of 1.7%.

### Key Findings

Total construction output in the West Midlands is expected to have increased by close to 5% in 2015, a little down on the 7% to 8% it achieved in the previous two years. It should carry on its expansion throughout the forecast period, at an annual average rate of 1.7%.

The commercial and infrastructure sectors are expected to make the largest contribution towards growth with respective annual average gains of 4.1% and 2.6% over the forecast period. The former should carry on receiving support from robust levels of consumer spending driving demand for new retail outlets. One of the largest retail-orientated projects is the £500m redevelopment of Birmingham City Centre. Infrastructure output should be buoyed by £1.8bn worth of investment into the Midlands' roads network between 2015 and 2021.

The public non-housing and private housing sectors are also expected to register decent annual average growth of 1.5% and 1.3% respectively between 2016 and 2020. One of the largest projects for the former's university sub-sector is the £80m development of the University of Warwick's National Automotive Innovation Campus on University Road, Coventry. Private housing is likely to remain buoyant, especially in the first half of the forecast period, supported by weak inflation in the short-term,

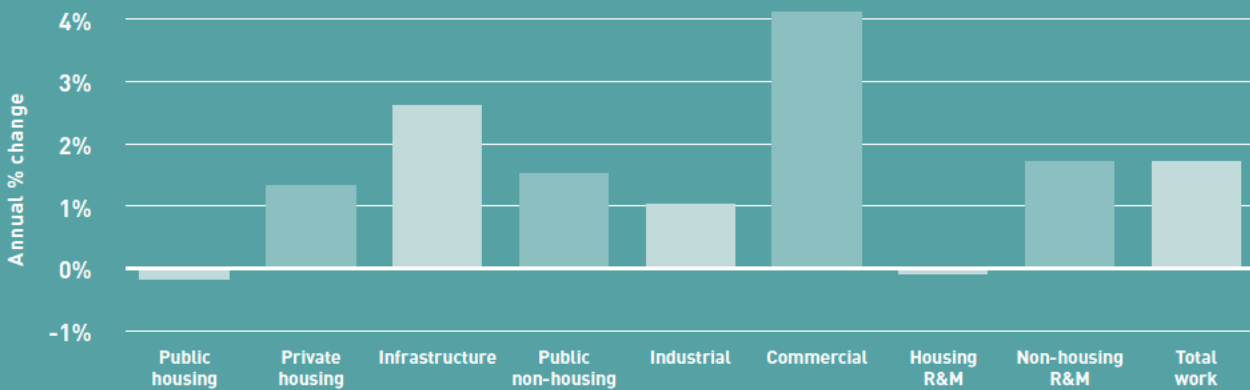
which will decrease the likelihood of any meaningful interest rates rises in the first half of the forecast period.

The industrial sector is expected to post the weakest expansion over the forecast period, at a projected annual average rate of 1%. Despite the modest growth prediction activity is expected to remain well above its post-2008 average level between 2016 and 2020. The factories sub-sector could perform well in the medium-term if global export demand recovers from its currently low level. Public housing is the only sector set to decline on the same measure, at an annual average rate of 0.2%. Nevertheless, activity reached a record high in 2014, and it shouldn't fall too far below this level in 2020.

Employment is forecast to rise at an annual average rate of 1% between 2016 and 2020, slightly below the UK average (1.1%). Of the 28 occupational aggregates the majority (22) are set to expand. Labourers nec ought to achieve the strongest annual average increase (3.7%), followed by bricklayers (3.2%), steel erectors (3.1%) and civil engineers (3%).

The West Midlands' projected ARR is 3,030, representing 1.4% of base 2016 employment, slightly below the UK average of 1.7%. Of the 28 occupational aggregates wood trades and interior fit-out have the highest absolute requirement at 1,040.

## ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2016-2020 – WEST MIDLANDS



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

## REGIONAL COMPARISON 2016-2020

Region	Annual average % change in output	Change in total employment	Total ARR
North East	1.5%	3,260	3,160
Yorkshire and Humber	2.4%	8,360	3,230
East Midlands	1.0%	1,210	3,110
East of England	2.3%	13,950	3,910
Greater London	3.5%	42,670	3,650
South East	0.9%	2,110	1,730
South West	4.4%	25,850	6,480
Wales	7.1%	17,490	5,440
West Midlands	1.7%	10,200	3,030
Northern Ireland	3.0%	4,660	1,760
North West	2.6%	22,430	6,650
Scotland	0.5%	-7,360	4,270
<b>UK</b>	<b>2.5%</b>	<b>144,830</b>	<b>46,420</b>

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

Construction output in the West Midlands is forecast to grow at an annual average rate of 1.7% between 2016 and 2020, compared to 2.5% at the UK level.



## SECTION 2

# THE OUTLOOK FOR CONSTRUCTION IN THE WEST MIDLANDS

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

Construction output in the West Midlands increased for the second successive year in 2014 with a 7.4% rise to £9.6bn in 2012 prices. The new work and repair and maintenance (R&M) sectors both experienced growth, at rates of 2% and 16% respectively.

The increase in new work activity was driven by a 19% rise in private housing activity, which reached its highest level since 2007 at £1.4bn. The public housing and commercial sectors also made solid gains, at respective rates of 8% and 7%.

These increases were partially offset by heavy declines for infrastructure (15%), public non-housing (8%) and industrial (16%) construction output.

### 2.2 Industry structure

The diagram, Construction Industry Structure 2014 – UK vs. West Midlands, illustrates the sector breakdown of construction in the West Midlands, compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

Overall the structure of the West Midlands construction industry is fairly similar to the UK's. The most significant difference between the two is a smaller proportional contribution from the infrastructure sector (6% vs 11%) in the former. Private housing also makes up a smaller share (15% vs 17%) of total activity at the regional level. In contrast non-housing R&M accounts for a larger proportion (24% vs 19%). The R&M sector is therefore somewhat more important in the West Midlands, accounting for 44% of output compared with 38% across the UK as a whole.

### 2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2016–2020) provides an indication of the construction sectors in which demand is likely to be strongest.

### 2.4 Economic structure

In 2014 gross value added (GVA) in the West Midlands totalled £109.8bn, up 2.6% on the previous year.

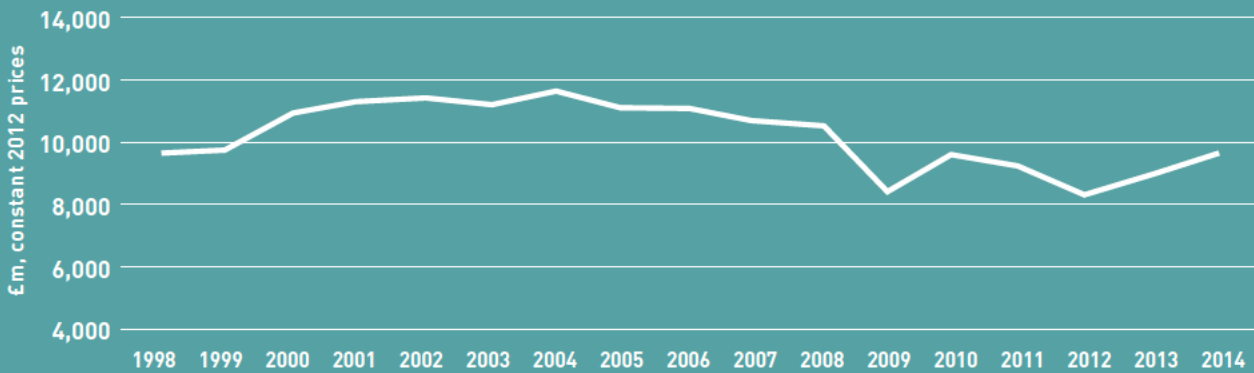
The industrial structure of the West Midlands features strong exposure to professional and other private services. Growth in the sector in the region has outpaced the UK rate since 2000, and its share of regional GVA has increased significantly from 20% to 24% over the period. Only regions in the greater South East have a larger share of GVA in this sector. Public services is the second largest sector in the West Midlands by output, accounting for 20% of the region's GVA, broadly unchanged since 2000. The sector is slightly more important in the West Midlands than at the UK level where it makes up 19% of GVA. Much more important for the region is the manufacturing sector, which in 2014 made up 14% of GVA in the West Midlands compared with 10% at the UK level, although its share of output has come down from almost 20% in 2000.

### 2.5 Forward looking economic indicators

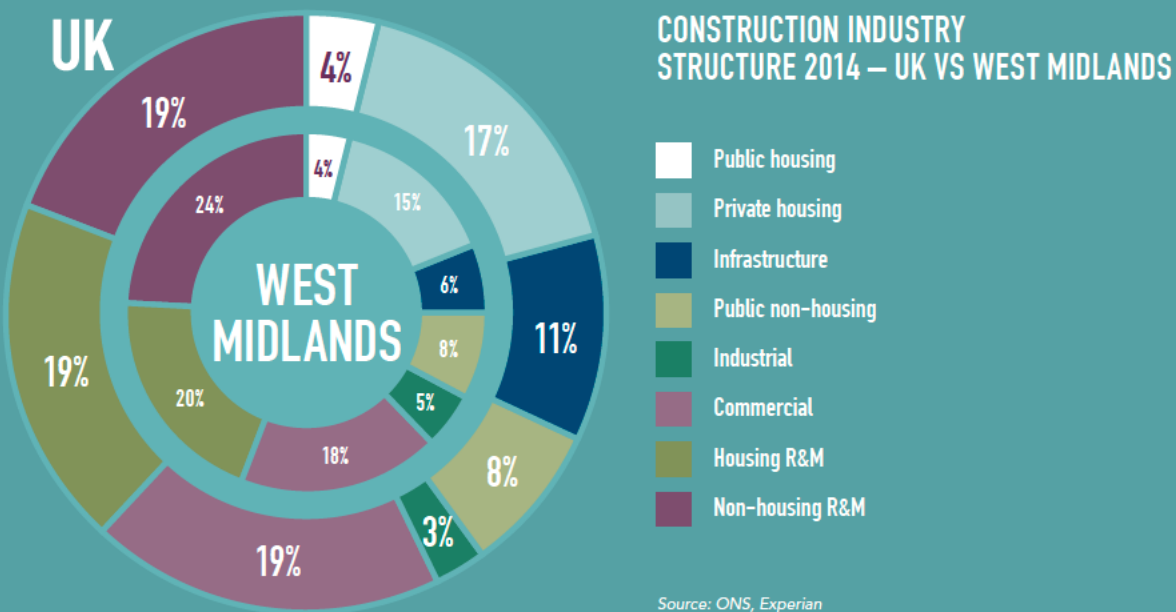
GVA growth in the West Midlands is expected to have moderated to 2.1% in 2015, and post further growth at an annual average rate of 2.1% between 2016 and 2020, below the UK average of 2.4%.

The largest sector, professional and other private services, GVA is estimated to have grown by 3.3% in 2015 and to continue to do so at 2.7% on an annual average basis between 2016 and 2020. In the same period the wholesale and retail sector is set to expand at an annual average rate of 2.3%, and manufacturing by 1.9%. Activity in the second largest sector, public services, is forecast to grow by 0.7% a year on average over the same period.

## CONSTRUCTION OUTPUT 1998-2014 – WEST MIDLANDS



Source: ONS. Ref: CSN Explained, Section 3, Note: 1



Source: ONS, Experian

## ECONOMIC STRUCTURE – WEST MIDLANDS (£ BILLION, 2012 PRICES)

Selected sectors	Actual	Forecast					
		Annual % change, real terms					
	2014	2015	2016	2017	2018	2019	2020
Professional and other private services	25.9	3.3	3.0	2.8	2.9	2.6	2.4
Public services	21.7	0.3	0.0	-0.2	0.5	1.2	2.1
Wholesale and retail	16.0	3.8	2.4	2.2	2.2	2.2	2.3
Manufacturing	15.6	1.0	1.3	2.7	2.8	1.5	1.2
Finance and insurance	5.7	0.2	2.9	3.3	2.9	2.6	2.5
<b>Total Gross Value Added (GVA)</b>	<b>109.8</b>	<b>2.1</b>	<b>2.0</b>	<b>2.1</b>	<b>2.3</b>	<b>2.1</b>	<b>2.1</b>

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



Real household disposable income is predicted to have achieved growth of 3.1% in 2015, a marked uptick from the 0.4% gain in 2014. In the 2016 to 2020 period it should rise at an annual average rate of 1.7%.

House prices in the West Midlands rose by 6.2% to an average of £202,000 in 2014, as reported by the Office for National Statistics' (ONS) mix-adjusted house price series. In the third quarter of 2015 they were up 3.2% on the previous quarter and 4.1% on the corresponding period of 2014. This compares to growth of 3.9% and 4.4% at the national level.

The Labour Force Survey (LFS) measure of unemployment decreased for the second successive year to 7.2% in 2014. It is expected to average out at a rate of 5.9% across the forecast period.

### 2.6 New construction orders – overview

Total construction orders in the West Midlands grew by 18% in 2014 to £4.5bn in 2005 prices. This figure builds on the 9% increase in 2013, which succeeded five years of declines.

Commercial construction orders made the largest gains in 2014, increasing by 83% on an annual basis to £1.6bn. Private housing and infrastructure construction orders also posted solid increases, growing by 34% to £1.2bn and 15% to £450m respectively.

In contrast industrial construction orders fell by 28% to £451m, though this follows an increase of 141% in the previous year. Public housing orders also fell, by 53% to £134m, their lowest total since 2003.



### 2.7 New construction orders – current situation

In the first half of 2015 new construction orders totalled £1.8bn down 20% on a half yearly basis, and 16% below the same period a year earlier.

Only orders in the private housing sector managed to post growth on both halves of 2014. The public housing, infrastructure, public non-housing and industrial sectors all managed increases on a half-year on half-year basis, but each remained below their level for the same half of 2014. Commercial orders experienced the sharpest decline, in the first six months of 2015 they were down heavily on both halves of 2014.

### 2.8 Construction output – short-term forecasts (2016–2017)

Regional ONS output statistics are published in current prices and are therefore inclusive of any inflationary effect. At the time of writing, regional ONS construction output statistics were only available for the first two quarters of 2015.

Construction output in the West Midlands totalled £5.3bn in the first half of 2015, down 2% on the previous half year, but up 8% on the same period of 2014. On a four-quarter moving total basis activity has increased in every quarter over the past two years, though the magnitude of the increases has eased in the last two quarters.

Commercial construction in the West Midlands was very buoyant in the first half of 2015, with output growing by 12% on the previous half year to £1.1bn, and 33% on the corresponding period of 2014. The four-quarter moving total has increased for seven consecutive quarters.

Private housing increased strongly in the first half of 2015, growing by 7% on the previous half year and 21% on the same two quarters of 2014 to reach £873m. The four-quarter moving total has now posted increases for 12 consecutive quarters.

Similar gains were made in the infrastructure sector where activity rose by 11% to £394m in the first half of 2015 when compared to the previous half year, and 19% on the same period of 2014. There has been growth in the four-quarter moving total for three consecutive quarters.

At £204m, public housing output was down 12% on the previous half-year and 3% on the same six months a year earlier. The four-quarter moving total declined in each of the first two quarters of 2015.

The public non-housing and industrial sectors underperformed the majority of the new work sectors in terms of output growth in the first half of 2015. The former saw a fall of 22% in output when compared to the second half of 2014, and a fall of 19% in the first six months of 2014, with output totalling £319m. Activity in the industrial sector totalled £249m, after posting declines of 4% and 9% on the same measures.



## ECONOMIC INDICATORS – WEST MIDLANDS (£ BILLION, CURRENT PRICES – UNLESS OTHERWISE STATED)

Selected sectors	Actual	Forecast					
	2014	Annual % change, real terms					
	2014	2015	2016	2017	2018	2019	2020
Real household disposable income	85.1	3.1	1.5	1.8	1.9	1.3	1.8
Household spending	85.8	2.8	2.0	2.1	1.9	2.0	2.0
Working age population (000s and as % of all)	3,487	61.3%	61.5%	61.4%	61.3%	61.3%	61.7%
House prices (£)	195,000	4.1	3.3	3.3	2.5	2.6	3.2
LFS unemployment (millions)	0.25	-12.6	-5.6	-0.2	-0.7	-0.9	-0.3

Source: ONS, DCLG, Experian

## NEW CONSTRUCTION ORDERS GROWTH 1998-2014 – WEST MIDLANDS VS. GB



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

## NEW WORK CONSTRUCTION ORDERS – WEST MIDLANDS (£ MILLION, CURRENT PRICES)

	Actual	Annual % change				
	2014	2010	2011	2012	2013	2014
Public housing	134	-35.4	26.8	27.1	13.8	-53.5
Private housing	1,218	1.1	19.1	11.1	29.6	34.4
Infrastructure	450	-60.4	107.9	-11.8	-41.9	14.8
Public non-housing	615	25.1	-44.2	-21.1	5.1	-12.0
Industrial	451	-22.5	19.5	28.2	140.9	-27.7
Commercial	1,586	22.1	-21.3	-8.0	-5.3	83.4
<b>Total new work</b>	<b>4,454</b>	<b>-4.1</b>	<b>-9.1</b>	<b>-4.5</b>	<b>-8.8</b>	<b>18.0</b>

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



For 2015 as a whole, total construction output in the West Midlands is expected to have grown by 5%, moderating slightly on the rates posted in 2013 and 2014 respectively.

In the short term (2016–2017) the West Midlands construction industry is expected to expand at an annual average rate of just under 3%, with a similar growth rate in both years.

The infrastructure and industrial sectors are expected to achieve the strongest growth rates in the short-term, at respective rates of 6.6% and 4.1%. The former should be boosted by up to £431m worth of work in the electricity sub-sector taking place between 2015 and 2017 according to the national construction pipeline. Industrial activity in the near-term ought to gain from the start of work in early 2016 on a 120,000 square-foot unit on Daw Mill Lane, Coventry. The £80m project should be completed within a year.

The commercial and private housing sectors are likely to be next in line with projected annual average growth rates of 3.7% and 3.2% respectively. Growth in the former should be supported by the start of work on a mixed-use facility on Weaman Street, Birmingham. The £70m tower will contain retail outlets, offices and a hotel. It ought to be completed in late 2017. Also, all of the key sectors that drive commercial construction activity are expected to expand over the short-term forecast period. The professional and other private services, finance and insurance, accommodation, food services and recreation, and wholesale and retail sectors should all experience annual average growth of between 2.5% and 2.8%. The expected rise in private housing activity is supported by increases in the number of starts. Starts reached 5,650 units in the first six months of 2015. They were up 20% on the previous half-year, and 11% on the same two quarters a year earlier.



Public housing is the only one that is predicted to post a decline in activity on an annual average basis between 2016 and 2017. Orders collapsed recently while activity reached record highs, this divergence suggests that output is set for a significant correction in the near-term.

## 2.9 Construction output – long-term forecasts (2016–2020)

In the five years to 2020 construction output in the West Midlands is expected to grow at an annual average rate of 1.7%, below the UK average of 2.5%.

Over the medium term commercial construction is expected to be the fastest expanding sector in terms of output with an average yearly growth rate of 4.1%. The £500m Birmingham city centre redevelopment is set to be among the largest drivers of activity, especially in the near-term. The offices sub-sector should also provide good support in each year to 2017. The expansion in activity is projected to be weaker in the second half of the forecast period as a projected moderation from the current levels of consumer spending may act to taper demand for new retail outlets.

The infrastructure sector will also be a key contributor to growth in the long-term, with forecast annual average growth of 2.6%. Highways England has released details of £1.8bn worth of investment into the Midlands' roads infrastructure. Schemes include a new smart motorway around the M42/M40 interchange, an upgrade of junction 10 on the M6, a replacement of the roundabouts on the A50 at Uttoxeter, and a new smart motorway between junction 13 and 15 of the M6. These are just a few of the proposed schemes. All of the work is expected to take place between 2015 and 2021.

The public non-housing sector should expand at an annual average rate of 1.5% between 2016 and 2020. However, growth is likely to be weak in the first year of the forecast period and then strengthen thereafter. While the universities sub-sector is expected to perform well the same cannot be said for the schools and health sectors. The former has enough new projects in the pipeline but their cumulative value remains quite low. The latter is lacking on both fronts. From 2017 the prospects should be more buoyant. According to the Government construction pipeline there is an estimated £3.7bn worth of investment for the health and education sub-sectors taking place between 2017 and 2020.

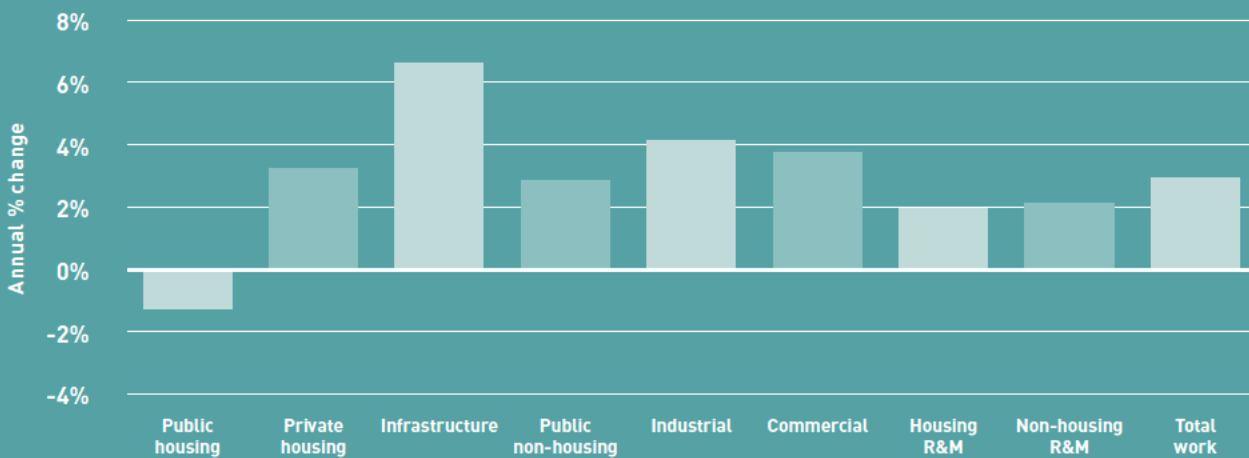
Activity in the private housing sector is expected to expand at an annual average rate of 1.3% in the medium term. The bulk of the growth should come in the earlier part of the forecast period, supported by a combination of Government incentives such as Help to Buy and changes in Stamp Duty. Later on in the forecast period interest rate rises and stricter lending criteria could act to taper growth. Key drivers include the Icknield Port Loop development in Birmingham. The £900m project will include the construction of 600 houses and 140 flats between 2016 and 2021.

## CONSTRUCTION OUTPUT – WEST MIDLANDS (£ MILLION, 2012 PRICES)

	Actual	Forecast annual % change			Annual average
	2014	2015	2016	2017	2016-2017
Public housing	426	-9%	-8%	6%	-1.3%
Private housing	1,428	13%	4%	2%	3.2%
Infrastructure	627	17%	2%	11%	6.6%
Public non-housing	745	-13%	1%	4%	2.8%
Industrial	497	0%	0%	8%	4.1%
Commercial	1,689	10%	6%	1%	3.7%
<b>Total new work</b>	<b>5,412</b>	<b>6%</b>	<b>3%</b>	<b>4%</b>	<b>3.6%</b>
Housing R&M	1,882	4%	2%	2%	1.9%
Non-housing R&M	2,337	2%	2%	2%	2.1%
<b>Total R&amp;M</b>	<b>4,219</b>	<b>3%</b>	<b>2%</b>	<b>2%</b>	<b>2.0%</b>
<b>Total work</b>	<b>9,631</b>	<b>5%</b>	<b>3%</b>	<b>3%</b>	<b>2.9%</b>

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

## ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2016-2017 – WEST MIDLANDS



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

▀▀ The regions annual recruitment requirements (ARR) is forecast to be 3,030, representing 1.4% of base 2016 employment, below the UK average of 1.7%. ▀▀



The industrial sector is projected to see the weakest growth, at an annual average rate of 1% between 2016 and 2020. However, it's worth noting that activity has been quite robust recently, when compared to its average post-2008 level. Any further growth will come on top of an already high base of activity. Growth in the warehouses sub-sector is expected to exceed that of factories in the first half of the forecast period. Beyond that period the latter can expect an increase in demand if economic activity in the eurozone improves, as is currently expected.

The public housing sector is the only one set to fall on the same measure at an annual average rate of 0.2%. Orders have collapsed recently and output is expected to move in a similar direction in the earlier part of the forecast period. However, the sector isn't completely void of positivity. Data from the Homes and Communities Agency stated that 7,436 affordable housing units were started on site between April 2014 and March 2015 across the Midlands. This was above its total for the same period a year earlier at 7,057 units. Also, the allocations for the 2015–2018 Affordable Housing Program are yet to be announced. The region's public housing sector could stand to benefit from this. Despite the projected decline activity in 2020 isn't expected to be too far below its current peak level.

## 2.10 Beyond 2020

The lion's share of construction output in the West Midlands forecast for beyond 2020 can be attributed to the infrastructure sector. The region should benefit from both phases of the High Speed 2 project, with phase 1 from London to Birmingham due to start in 2018/19 and phase 2, from Birmingham to the north probably some time in 2023.

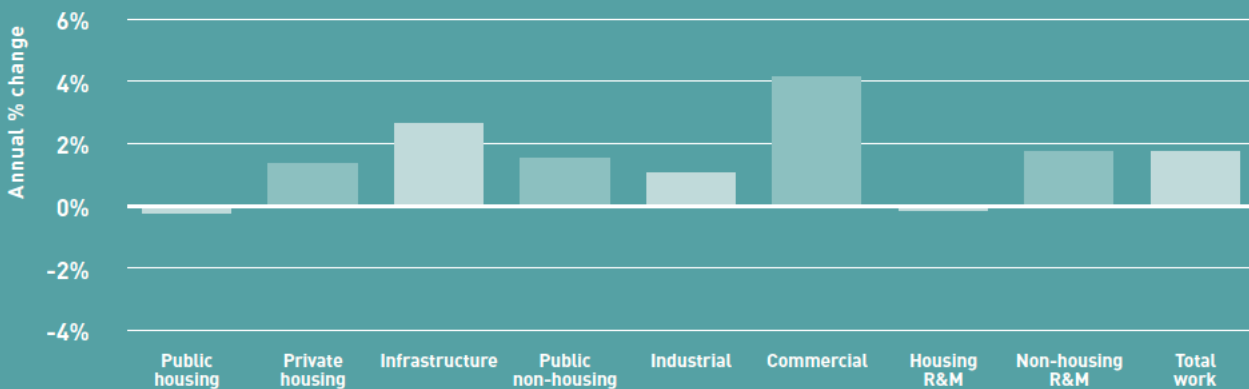
According to the 2015 Autumn Statement and Spending Review the Government has pledged over £100bn for long-term investment for infrastructure projects, further funding for schools and protection of funding for arts, national museums and galleries. While the review only covers the period up to 2020, large projects started towards the end of the period are likely to deliver output streams well into the 2020s. These pledges could have a positive effect on the West Midlands' infrastructure and public non-housing sectors.

## CONSTRUCTION OUTPUT – WEST MIDLANDS (£ MILLION, 2012 PRICES)

	Estimate	Forecast annual % change					Annual average
	2015	2016	2017	2018	2019	2020	2016-2020
Public housing	386	-8%	6%	11%	4%	-12%	-0.2%
Private housing	1,617	4%	2%	-3%	1%	2%	1.3%
Infrastructure	734	2%	11%	10%	-7%	-3%	2.6%
Public non-housing	649	1%	4%	2%	-3%	3%	1.5%
Industrial	499	0%	8%	2%	-2%	-3%	1.0%
Commercial	1,850	6%	1%	6%	6%	1%	4.1%
<b>Total new work</b>	<b>5,735</b>	<b>3%</b>	<b>4%</b>	<b>4%</b>	<b>1%</b>	<b>0%</b>	<b>2.3%</b>
Housing R&M	1,960	2%	2%	-4%	0%	0%	-0.1%
Non-housing R&M	2,390	2%	2%	2%	1%	2%	1.7%
<b>Total R&amp;M</b>	<b>4,350</b>	<b>2%</b>	<b>2%</b>	<b>-1%</b>	<b>1%</b>	<b>1%</b>	<b>0.9%</b>
<b>Total work</b>	<b>10,085</b>	<b>3%</b>	<b>3%</b>	<b>2%</b>	<b>1%</b>	<b>0%</b>	<b>1.7%</b>

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

## ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2016-2020 – WEST MIDLANDS



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



### SECTION 3

# CONSTRUCTION EMPLOYMENT FORECASTS FOR THE WEST MIDLANDS

## 3.1 Total construction employment forecasts by occupation

The table presents actual construction employment (SICs 41-43, 71.1, and 74.9) in the West Midlands for 2014, the estimated total employment across 28 occupational categories in 2015 and forecasts for the industry for 2016 to 2020. A full breakdown of occupational groups is provided in Section 5 of CSN Explained.

Construction employment in the region is set to expand at an annual average rate of 1% between 2016 and 2020, slightly below the UK average of 1.1%. By 2020 total employment is expected to stand at over 215,000 an

increase of around 10,200 on 2015, but still nearly 5% below its 2008 peak. Growth is projected to be strongest in the early part of the forecast period and then level out from 2018.

The majority (22) of the 28 occupational categories are set to expand over the forecast period. Labourers nec are set for the strongest annual average growth (3.7%), followed by bricklayers (3.2%), steel erectors (3.1%) and civil engineers (3%). Overall, demand is expected to be slightly stronger for the traditional trades, rather than for the professional and managerial/supervisory occupations.



## TOTAL EMPLOYMENT BY OCCUPATION – WEST MIDLANDS

	Actual 2014	Estimate 2015	Forecast	
			2016	2020
Senior, executive, and business process managers	16,150	16,730	16,810	15,270
Construction project managers	2,280	2,190	2,290	2,490
Other construction process managers	19,480	19,510	20,470	22,340
Non-construction professional, technical, IT and other office-based staff	29,930	28,830	28,840	25,900
Construction trades supervisors	4,130	4,390	4,560	4,920
Wood trades and interior fit-out	17,440	18,210	19,110	20,390
Bricklayers	4,630	4,810	5,090	5,620
Building envelope specialists	7,590	7,340	7,660	8,100
Painters and decorators	7,180	7,020	7,280	7,410
Plasterers	2,110	2,040	2,070	1,960
Roofers	3,650	3,640	3,840	4,160
Floorers	1,540	1,510	1,580	1,680
Glaziers	2,940	3,080	3,130	2,980
Specialist building operatives nec*	3,780	3,630	3,740	3,750
Scaffolders	2,320	2,470	2,540	2,640
Plant operatives	2,250	2,180	2,200	2,040
Plant mechanics/fitters	6,190	5,940	6,120	6,090
Steel erectors/structural fabrication	3,470	3,510	3,720	4,080
Labourers nec*	10,210	10,850	11,530	13,040
Electrical trades and installation	15,220	15,290	15,700	15,580
Plumbing and HVAC Trades	11,720	12,390	12,770	12,750
Logistics	3,030	2,900	2,900	2,630
Civil engineering operatives nec*	1,780	1,890	2,020	2,140
Non-construction operatives	2,490	2,400	2,400	2,170
Civil engineers	2,430	2,410	2,540	2,790
Other construction professionals and technical staff	13,270	12,770	13,350	14,580
Architects	1,660	1,590	1,660	1,760
Surveyors	5,710	5,500	5,700	6,020
<b>Total (SIC 41-43)</b>	<b>181,510</b>	<b>182,750</b>	<b>188,370</b>	<b>190,130</b>
<b>Total (SIC 41-43, 71.1, 74.9)</b>	<b>204,580</b>	<b>205,020</b>	<b>211,620</b>	<b>215,280</b>

Source: ONS, CSN, Experian. Ref: CSN Explained, Section 3, Notes 5 and 6 \*Not elsewhere classified.



### 3.2 Annual recruitment requirements (ARR) by occupation

The ARR is a gross requirement that takes into account workforce flows into and out of construction, due to factors such as movements between industries, migration, sickness, and retirement. However, these flows do not include movements into the industry from training, due to the inconsistency and coverage of supply data. Therefore, the ARR provides an indication of the number of new employees that would need to be recruited into construction each year in order to realise forecast output.

The West Midlands' projected ARR is 3,030, representing 1.4% of base 2016 employment, below the UK average of 1.7%. Of the 28 occupational aggregates wood trades and interior fit-out have the highest absolute requirement (1,040), although in terms of ratios of base 2016 employment, the requirement is highest for floorers (7.6%), steel erectors/structural fabricators (6.2%), bricklayers (6.3%) and wood trades and interior fit-out (5.4%).

Please note that all of the ARR's presented in this section are employment requirements and not necessarily training requirements. This is because some new entrants to the construction industry, such as skilled migrants or those from other industries where similar skills are already used, will be able to work in the industry without the need for significant retraining.

Non-construction operatives is a diverse occupational group including all of the activities under the SICs 41-43, 71.1, and 74.9 umbrella that cannot be classified elsewhere, such as cleaners, elementary security occupations nec and routine inspectors and testers. The skills required in these occupations are highly transferable to other industries and forecasting such movement is hazardous given the lack of robust supportive data. Therefore, the ARR for non-construction operatives is not published.







## ANNUAL RECRUITMENT REQUIREMENT BY OCCUPATION – WEST MIDLANDS

	2016-2020
Senior, executive, and business process managers	-
Construction project managers	-
Other construction process managers	200
Non-construction professional, technical, IT and other office-based staff	-
Construction trades supervisors	150
Wood trades and interior fit-out	1,040
Bricklayers	320
Building envelope specialists	280
Painters and decorators	-
Plasterers	-
Roofers	-
Floorers	120
Glaziers	-
Specialist building operatives nec*	<50
Scaffolders	-
Plant operatives	-
Plant mechanics/fitters	-
Steel erectors/structural fabrication	230
Labourers nec*	-
Electrical trades and installation	370
Plumbing and HVAC Trades	-
Logistics	-
Civil engineering operatives nec*	-
Civil engineers	-
Other construction professionals and technical staff	150
Architects	-
Surveyors	150
<b>Total (SIC 41-43)</b>	<b>-</b>
<b>Total (SIC 41-43, 71.1, 74.9)</b>	<b>3,030</b>

Source: CSN, Experian. Ref: CSN Explained, Section 3, Notes 5 and 6 \*Not elsewhere classified.



## SECTION 4

# COMPARISONS ACROSS THE UK

# 2.5%

The overall UK forecast of an annual average rise in output of 2.5% over the 2016 to 2020 period is a little higher than the 2.1% seen in the last growth period for construction between 1995 and 2007. However, it disguises some quite different regional/devolved nation performances, from expected expansion of over 7% in Wales to just 0.5% in Scotland.

Wales and the South West are top of the growth rankings and have remained so for some time, but their strong performance is heavily predicated on nuclear new build projects at Hinkley Point and Wylfa. Greater London is also projected to have a strong infrastructure sector, with the work starting on the Northern Line extension and Thames Tideway and High Speed 2 in the pipeline. These projects should more than offset completion of the Crossrail and Thameslink schemes.

While growth in London and the East of England is expected to be robust, the forecast for the South East is relatively poor with a dearth of major projects in the pipeline, the £2bn Paramount Park scheme excepted. Therefore the forecasts are less South East England centric than they sometimes can be.

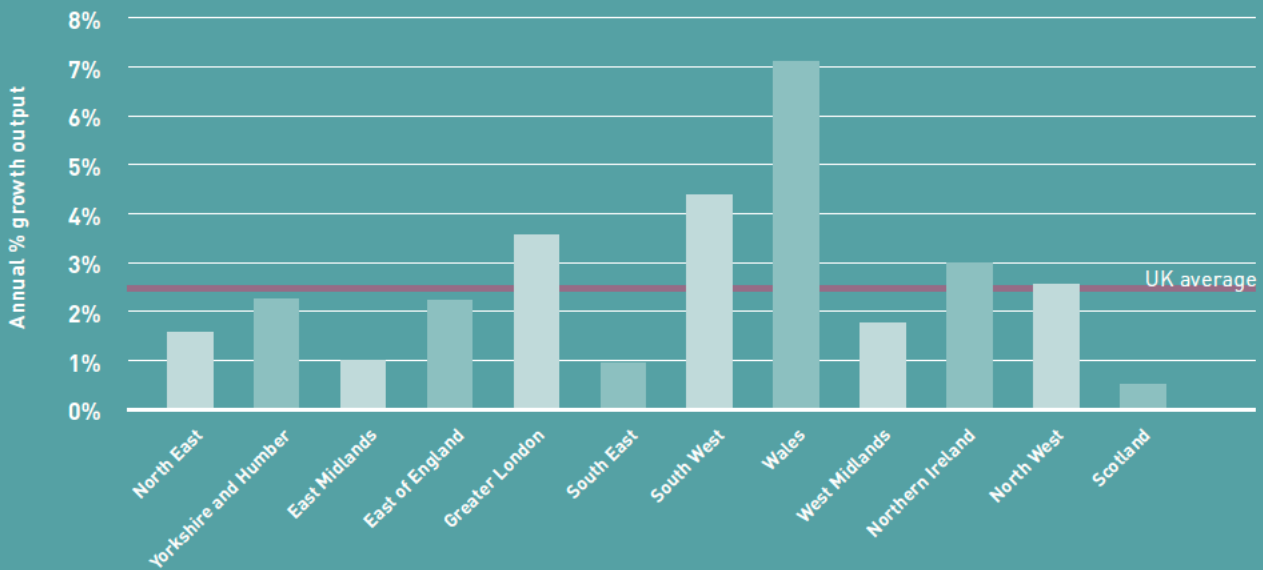
Northern Ireland is likely to be one of the faster growing regions in the five years to 2020, although construction output will be coming back from a very low base and there are concerns that current political uncertainties could delay the start of public projects.

Scotland is seeing an exceptionally high level of investment in infrastructure at present, with output in 2014 around twice its previous 10 year average and due to increase even further in 2015. Thereafter projects, such as the current spate of motorway upgrades, begin to complete and activity in the sector is likely to fall sharply, bringing the overall Scottish construction growth rate down to only about half a per cent a year on average.

Employment growth across the regions and devolved nations tends to mirror that of output, but at a lower level to take account of expected productivity gains and with some minor adjustments depending on whether output growth is in high or low labour intensive sectors. Annual employment growth across the UK as a whole is projected to average 1.1% over the 2016 to 2020 period, with a high of 2.9% in Wales and a low of a 0.7% a year decline in Scotland. Despite the fact that nuclear new build is not particularly labour intensive, Wylfa is a very big project in a small market, therefore it will add nearly 2% to construction employment in Wales in 2020. The impact is smaller in the South West, which has a bigger construction market, but even there it will help to drive good employment growth of over 2% a year on average. In Scotland the converse is true and a sharp fall in infrastructure output, despite its relatively low labour input, is likely to lead to a drop in construction employment north of the border post 2016.

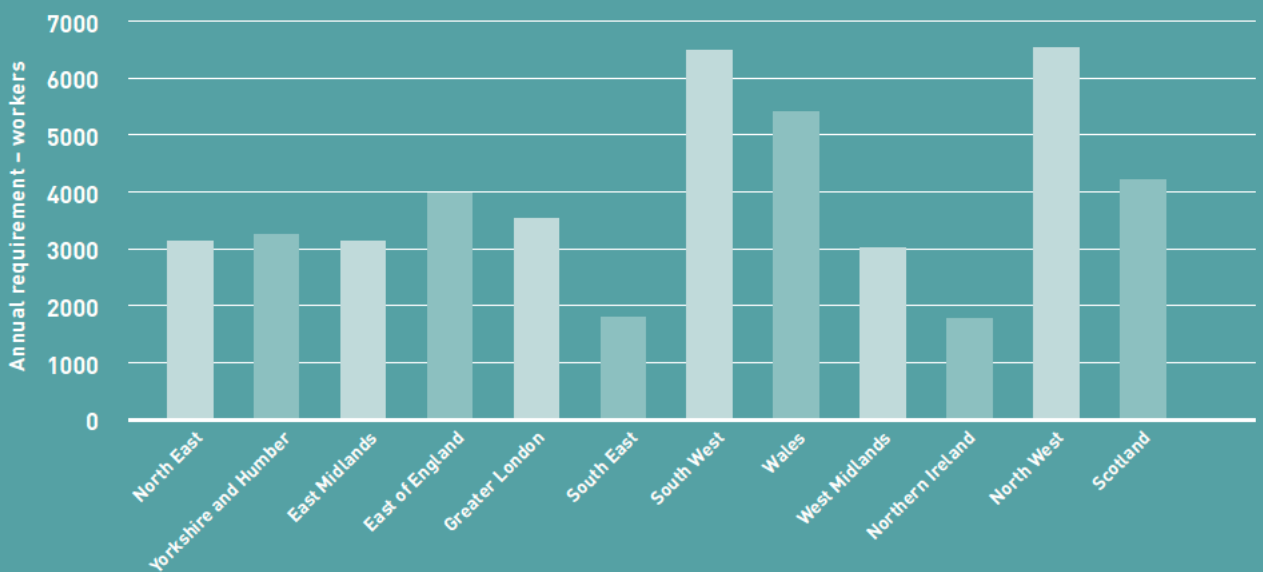
The pattern of ARR can look significantly different from the profile of output and employment, as some regions and devolved nations have historically strong net inflows and some suffer from large net outflows. The most extreme examples of this trend tend to be Greater London and Wales. London has a relatively low ARR despite strong projected employment growth (2% a year) as it acts as a natural magnet for construction workers throughout the UK and beyond, therefore its ARR ratio to base 2016 employment is low at 0.9%. At the other end of the scale Wales tends to suffer strong net outflows, in particular to the North West and South West of England and this, combined with a buoyant output and employment growth forecast, means its ARR ratio to base 2016 employment is a high 4.7%.

## ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH BY REGION 2016-2020



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

## ANNUAL RECRUITMENT REQUIREMENT (ARR) BY REGION 2016-2020



Source: CSN, Experian

Employment is forecast to increase at an annual average rate of 1%, slightly below the UK average of 1.1%.



# CSN EXPLAINED

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

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**Section 1** gives an overview of the underpinning methods that are used by the CSN, working in partnership with Experian, to produce the suite of reports at a UK, national and regional level.

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

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

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

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

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





## SECTION 1

# CSN METHODOLOGY

## Background

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

ConstructionSkills is the Sector Skills Council for Construction and produces robust labour market intelligence that provides a foundation on which to plan for future skills needs and to target investment.

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

Observatory groups currently meet twice a year and consist of key regional stakeholders invited from industry, Government, education and other SSCs and Sector Bodies, all of whom contribute their local industry knowledge and views on training, skills, recruitment, qualifications and policy. The National Group also includes representatives from industry, Government, education and other SSCs and Sector Bodies. This Group convenes twice a year and sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN are several models that generate forecasts of employment requirements within the industry for a range of occupational groups. The models are designed and managed by Experian under the independent guidance and validation of the Technical Reference Group, which is comprised of statisticians and modelling experts.

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

Future changes to the model will only be made after consultation with the Technical Reference Group.

## The model approach

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

The models work by forecasting demand and supply of skilled workers separately. The difference between demand and supply forms the employment requirement. The forecast total employment levels are derived from expectations about construction output and productivity. Essentially, this is based upon the question 'How many people will be needed to produce forecast output, given the assumptions made about productivity?'

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

Estimates of demand are based upon the results of discussion groups comprising industry experts, a view of construction output and integrated models relating to wider national and regional economic performance. The models are dynamic and reflect the general UK economic climate at any point in time. To generate the labour demand, the models use a set of specific statistics for each major type of work to determine the employment, by trade, needed to produce the predicted levels of



construction output. The labour supply for each type of trade or profession is based upon the previous year's supply (the total stock of employment) combined with flows into and out of the labour market.

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

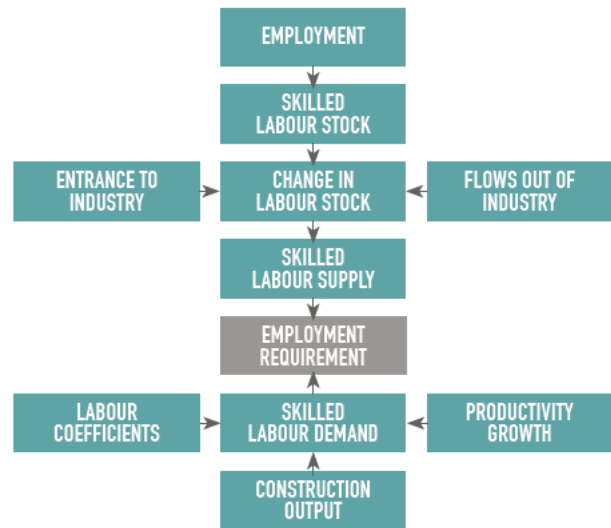
- Transfers to other industries
- International/domestic out migration
- Permanent retirements (including permanent sickness)
- Outflow to temporary sickness and home duties.

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

Flows into the labour market include:

- Transfers from other industries
- International/domestic immigration
- Inflow from temporary sickness and home duties.

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





## SECTION 2

# GLOSSARY OF TERMS

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

**Demand** – this is calculated using construction output data from the Office for National Statistics (ONS) and the Department of Finance and Personnel Northern Ireland (DFP), along with vacancy data from the National Employer Skills Survey, produced by the Department for Education and Skills. These data sets are translated into labour requirements by trade using a series of coefficients to produce figures for labour demand that relate to forecast output levels.

**GDP** (gross domestic product) – total market value of all final goods and services produced. A measure of national income. GDP = GVA plus taxes on products minus subsidies on products.

**GVA** (gross value added) – total output minus the value of inputs used in the production process. GVA measures the contribution of the economy as a difference between gross output and intermediate outputs.

**Coefficients** – to generate the labour demand, the model makes use of a set of specific statistics for each major type of work, to determine employment by trade or profession, based upon the previous year's supply. In essence, this is the number of workers of each occupation or trade needed to produce £1m of output across each sub-sector.

**LFS** (Labour Force Survey) – a UK household sample survey that collects information on employment, unemployment, flows between sectors and training. Information is collected from around 53,000 households each quarter (the sample totals more than 100,000 people).

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

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

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

**ONS** (Office for National Statistics) – organisation producing official statistics on the economy, population and society at both a national and local level.

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

**Productivity** – output per employee.

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

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

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



## SECTION 3

# NOTES AND FOOTPRINTS

### Notes

- 1 Except for Northern Ireland, output data for the English regions, Scotland and Wales is supplied by the Office for National Statistics (ONS) on a current price basis. Thus, national deflators produced by the ONS have been used to deflate prices to a 2005 constant price basis, so that the effects of inflation have been stripped out.
- 2 The annual average growth rate of output is a compound average growth rate, i.e. the rate at which output would grow each year if it increased steadily over the forecast period.
- 3 Only selected components of gross value added (GVA) are shown in this table and so do not sum to the total.
- 4 For new construction orders, comparison is made with Great Britain rather than the UK, owing to the fact that there are no orders data series for Northern Ireland.
- 5 Employment numbers are rounded to the nearest 10.
- 6 The tables include data relating to plumbers and electricians. As part of SIC 43, plumbers and electricians working in contracting are an integral part of the construction process. However, it is recognised by ConstructionSkills that SummitSkills has responsibility for these occupations across a range of SIC codes, including SIC 43.2.
- 7 A reporting minimum of 50 is used for the annual recruitment requirement (ARR). As a result some region and devolved nation ARR forecasts do not sum to the total UK requirement.
- 8 The Employment and ARR tables show separate totals for SIC41–43 and SIC41–43, 71.1 and 74.9. The total for SIC41–43 covers the first 24 occupational groups on the relevant tables and excludes civil engineers, other construction professionals and technical staff, architects and surveyors. The total for SIC41–43, 71.1 and 74.9 includes all occupations.

### Footprints for Built Environment Sector Bodies

ConstructionSkills is responsible for SIC 41 Construction of buildings, SIC 42 Civil engineering, SIC 43 Specialised construction activities and SIC 71.1 Architectural and engineering activities and related technical consultancy.

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

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

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





## The sector footprints for the other Sector Bodies covering the Built Environment:

### SummitSkills

**Footprint** – plumbing, heating, ventilation, air conditioning, refrigeration and electrotechnical.

**Coverage** – Building services engineering.

ConstructionSkills shares an interest with SummitSkills in SIC 43.21 Electrical installation and SIC 43.22 Plumbing, heat and air-conditioning installation. ConstructionSkills recognises the responsibility of SummitSkills across SIC 43.21 and SIC 43.22; thus data relating to the building services engineering sector is included here primarily for completeness.

### The Building Futures Group

**Footprint** – property services, housing, facilities, management, cleaning.

**Coverage** – property, housing and land managers, chartered surveyors, estimators, valuers, home inspectors, estate agents and auctioneers (property and chattels), caretakers, mobile and machine operatives, window cleaners, road sweepers, cleaners, domestics, facilities managers.

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

### Energy and Utility Skills

**Footprint** – electricity, gas (including gas installers), water and waste management.

**Coverage** – electricity generation and distribution, gas transmission, distribution and appliance installation and maintenance, water collection, purification and distribution, waste water collection and processing, waste management.





## SECTION 4

# DEFINITIONS: TYPES AND EXAMPLES OF CONSTRUCTION WORK

### **Public sector housing – local authorities and housing associations, new towns and government departments**

Housing schemes, care homes for the elderly and the provision within housing sites of roads and services for gas, water, electricity, sewage and drainage.

### **Private sector housing**

All privately owned buildings for residential use, such as houses, flats and maisonettes, bungalows, cottages and the provision of services to new developments.

### **Infrastructure – public and private**

#### **Water**

Reservoirs, purification plants, dams, water works, pumping stations, water mains, hydraulic works etc.

#### **Sewerage**

Sewage disposal works, laying of sewers and surface drains.

#### **Electricity**

Building and civil engineering work for electrical undertakings, such as power stations, dams and other works on hydroelectric schemes, onshore wind farms and decommissioning of nuclear power stations.

#### **Gas, communications, air transport**

Gas works, gas mains and gas storage; post offices, sorting offices, telephone exchanges, switching centres etc.; air terminals, runways, hangars, reception halls, radar installations.

#### **Railways**

Permanent way, tunnels, bridges, cuttings, stations, engine sheds etc., signalling and other control systems and electrification of both surface and underground railways.

#### **Harbours**

All works and buildings directly connected with harbours, wharves, docks, piers, jetties, canals and waterways, sea walls, embankments and water defences.

#### **Roads**

Roads, pavements, bridges, footpaths, lighting, tunnels, flyovers, fencing etc.

### **Public non-residential construction<sup>1</sup>**

#### **Factories and warehouses**

Publicly owned factories, warehouses, skill centres.

#### **Oil, steel, coal**

Now restricted to remedial works for public sector residual bodies.

#### **Schools, colleges, universities**

State schools and colleges (including technical colleges and institutes of agriculture); universities including halls of residence, research establishments etc.

#### **Health**

Hospitals including medical schools, clinics, welfare centres, adult training centres.

#### **Offices**

Local and central Government offices, including town halls, offices for all public bodies except the armed services, police headquarters.

#### **Entertainment**

Theatres, restaurants, public swimming baths, caravan sites at holiday resorts, works and buildings at sports grounds, stadiums, racecourses etc. owned by local authorities or other public bodies.

#### **Garages**

Buildings for storage, repair and maintenance of road vehicles, transport workshops, bus depots, road goods transport depots and car parks.

#### **Shops**

Municipal shopping developments for which the contract has been let by a Local Authority.

#### **Agriculture**

Buildings and work on publicly financed horticultural establishments; fen drainage and agricultural drainage, veterinary clinics.

#### **Miscellaneous**

All work not clearly covered by any other headings, such as fire stations, police stations, prisons, reformatories, remand homes, civil defence work, UK Atomic Energy Authority work, council depots, museums, libraries.



### Private industrial work

Factories, warehouses, wholesale depots, all other works and buildings for the purpose of industrial production or processing, oil refineries, pipelines and terminals, concrete fixed leg oil production platforms (not rigs); private steel work; all new coal mine construction such as sinking shafts, tunnelling, etc.

### Private commercial work<sup>1</sup>

#### Schools and universities

Schools and colleges in the private sector, financed wholly from private funds.

#### Health

Private hospitals, nursing homes, clinics.

#### Offices

Office buildings, banks.

#### Entertainment

Privately owned theatres, concert halls, cinemas, hotels, public houses, restaurants, cafés, holiday camps, swimming pools, works and buildings at sports grounds, stadiums and other places of sport or recreation, youth hostels.

#### Garages

Repair garages, petrol filling stations, bus depots, goods transport depots and any other works or buildings for the storage, repair or maintenance of road vehicles, car parks.

#### Shops

All buildings for retail distribution such as shops, department stores, retail markets, showrooms, etc.

#### Agriculture

All buildings and work on farms, horticultural establishments.

#### Miscellaneous

All work not clearly covered by any other heading, e.g. exhibitions, caravan sites, churches, church halls.

### New work

#### New housing

Construction of new houses, flats, bungalows only.

#### All other types of work

All new construction work and all work that can be referred to as improvement, renovation or refurbishment and which adds to the value of the property.<sup>2</sup>

### Repair and maintenance

#### Housing

Any conversion of, or extension to any existing dwelling and all other work such as improvement, renovation, refurbishment, planned maintenance and any other type of expenditure on repairs or maintenance.

#### All other sectors:

Repair and maintenance work of all types, including planned and contractual maintenance.<sup>3</sup>

- 1 Where contracts for the construction or improvement of non-residential buildings used for public service provision, such as hospitals, are awarded by private sector holders of contracts awarded under the Private Finance Initiative, the work is classified as 'private commercial'.
- 2 Contractors reporting work may not always be aware of the distinction between improvement or renovation work and repair and maintenance work in the non-residential sectors.
- 3 Except where stated, mixed development schemes are classified to whichever sector provides the largest share of finance.



## SECTION 5

# OCCUPATIONAL GROUPS

### Occupational group

Description, SOC (2010) reference.

#### Senior, executive, and business process managers

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

#### Construction project managers

Construction project managers and related professionals	2436
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#### Other construction process managers

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

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

IT operations technicians	3131
IT user support technicians	3132
Finance and investment analysts and advisers	3534
Taxation experts	3535
Financial and accounting technicians	3537
Vocational and industrial trainers and instructors,	3563
Business and related associate professionals nec*	3539
Legal associate professionals	3520
Inspectors of standards and regulations	3565
Programmers and software development professionals	2136
Information technology and telecommunications professionals nec*	2139
Estate agents and auctioneers	3544
Solicitors	2413
Legal professionals nec*	2419
Chartered and certified accountants	2421
Business and financial project management professionals	2424
Management consultants and business analysts	2423
Receptionists	4216
Typists and related keyboard occupations	4217
Business sales executives	3542
Bookkeepers, payroll managers and wages clerks	4122
Records clerks and assistants	4131
Stock control clerks and assistants	4133
Telephonists	7213
Communication operators	7214
Personal assistants and other secretaries	4215
Sales and retail assistants	7111
Telephone salespersons	7113
Buyers and procurement officers	3541
Human resources and industrial relations officers	3562
Credit controllers	4121
Company secretaries	4214
Sales related occupations nec*	7129
Call and contact centre occupations	7211



Customer service occupations nec*	7219
Elementary administration occupations nec*	9219
Chemical scientists	2111
Biological scientists and biochemists	2112
Physical scientists	2113
Laboratory technicians	3111
Graphic designers	3421
Environmental health professionals	2463
IT business analysts, architects and systems designers	2135
Conservation professionals	2141
Environment professionals	2142
Actuaries, economists and statisticians	2425
Business and related research professionals	2426
Finance officers	4124
Financial administrative occupations nec*	4129
Human resources administrative occupations	4138
Sales administrators	4151
Other administrative occupations nec*	4159
Office supervisors	4162
Sales supervisors	7130
Customer service managers and supervisors	7220
Office managers	4161
<b>Construction trades supervisors</b>	
Skilled metal, electrical and electronic trades supervisors	5250
Construction and building trades supervisors	5330
<b>Wood trades and interior fit-out</b>	
Carpenters and joiners	5315
Paper and wood machine operatives	8121
Furniture makers and other craft woodworkers	5442
Construction and building trades nec* (25%)	5319
<b>Bricklayers</b>	
Bricklayers and masons	5312
<b>Building envelope specialists</b>	
Construction and building trades nec* (50%)	5319
<b>Painters and decorators</b>	
Painters and decorators	5323
Construction and building trades nec* (5%)	5319
<b>Plasterers</b>	
Plasterers	5321
<b>Roofers</b>	
Roofers, roof tilers and slaters	5313
<b>Floorers</b>	
Floorers and wall tilers	5322

<b>Glaziers</b>	
Glaziers, window fabricators and fitters	5316
Construction and building trades nec* (5%)	5319
<b>Specialist building operatives not elsewhere classified (nec*)</b>	
Construction operatives nec* (100%)	8149
Construction and building trades nec* (5%)	5319
Industrial cleaning process occupations	9132
Other skilled trades nec*	5449
<b>Scaffolders</b>	
Scaffolders, staggers and riggers	8141
<b>Plant operatives</b>	
Crane drivers	8221
Plant and machine operatives nec*	8129
Fork-lift truck drivers	8222
Mobile machine drivers and operatives nec*	8229
<b>Plant mechanics/fitters</b>	
Metalworking production and maintenance fitters	5223
Precision instrument makers and repairers	5224
Vehicle technicians, mechanics and electricians	5231
Elementary process plant occupations nec*	9139
Tool makers, tool fitters and markers-out	5222
Vehicle body builders and repairers	5232
<b>Steel erectors/structural fabrication</b>	
Steel erectors	5311
Welding trades	5215
Metal plate workers and riveters	5214
Construction and building trades nec* (5%)	5319
Smiths and forge workers	5211
Metal machining setters and setter-operators	5221
<b>Labourers nec*</b>	
Elementary construction occupations (100%)	9120
<b>Electrical trades and installation</b>	
Electricians and electrical fitters	5241
Electrical and electronic trades nec*	5249
Telecommunications engineers	5242
<b>Plumbing and heating, ventilation, and air conditioning trades</b>	
Plumbers and heating and ventilating engineers	5314
Pipe fitters	5216
Construction and building trades nec* (5%)	5319
Air-conditioning and refrigeration engineers	5225

\*Not elsewhere classified



### Logistics

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

### Civil engineering operatives not elsewhere classified (nec\*)

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

### Non-construction operatives

Metal making and treating process operatives	8117
Process operatives nec*	8119
Metalworking machine operatives	8125
Water and sewerage plant operatives	8126
Assemblers (vehicles and metal goods)	8132
Routine inspectors and testers	8133
Assemblers and routine operatives nec*	8139
Elementary security occupations nec*	9249
Cleaners and domestics*	9233
Street cleaners	9232
Gardeners and landscape gardeners	5113
Caretakers	6232
Security guards and related occupations	9241
Protective service associate professionals nec*	3319

### Civil engineers

Civil engineers	2121
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### Other construction professionals and technical staff

Mechanical engineers	2122
Electrical engineers	2123
Design and development engineers	2126
Production and process engineers	2127
Quality control and planning engineers	2461
Engineering professionals nec*	2129
Electrical and electronics technicians	3112
Engineering technicians	3113
Building and civil engineering technicians	3114
Science, engineering and production technicians nec*	3119
Architectural and town planning technicians*	3121
Draughtspersons	3122
Quality assurance technicians	3115
Town planning officers	2432
Electronics engineers	2124
Chartered architectural technologists	2435
Estimators, valuers and assessors	3531
Planning, process and production technicians	3116

### Architects

Architects	2431
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### Surveyors

Quantity surveyors	2433
Chartered surveyors	2434

*\*Not elsewhere classified*





## SECTION 6

# CSN WEBSITE AND CONTACT DETAILS

## The CSN website [citb.co.uk/csn](http://citb.co.uk/csn)

The CSN website functions as a public gateway for people wishing to access the range of labour market intelligence (LMI) reports and research material regularly produced by the CSN.

The main UK report, along with the 12 LMI reports (one for Northern Ireland, Scotland, Wales and each of the nine English regions) can be downloaded from the site, while other CITB research reports are also freely available on the CITB website. Having access to this range of labour market intelligence and trend insight allows industry, Government, regional agencies and key stakeholders to:

- Pinpoint the associated specific, skills that will be needed year by year
- Identify the sectors that are likely to be the strongest drivers of output growth in each region and devolved nation
- Track the macro economy
- Understand how economic events impact on regional and devolved nations' economic performance
- Highlight trends across the industry such as national and regional shifts in demand
- Plan ahead and address the skills needs of a traditionally mobile workforce
- Understand the levels of qualified and competent new entrants required to enter the workforce.

The website also contains information about:

- How the CSN functions
- The CSN model approach
- How the model can be used to explore scenarios
- CSN team contact information
- Access to related CITB research
- Details for those interested in becoming members of the network.

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

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

- Details of specific projects
- Demand within various types of work or sectors
- Labour supply
- Inflows and outflows across the regions and devolved nations.

CSN members therefore have:

- Early access to forecasts
- The opportunity to influence and inform the data
- The ability to request scenarios that could address 'What would happen if...' types of questions using the model.

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

- Access observatory related material such as meeting dates, agendas, presentations and notes
- Download additional research material
- Comment/feedback to the CSN team.

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

### Contact details

For further information about the CSN website, enquiries relating to the work of the CSN, or to register your interest in becoming a member of the CSN, please contact us at: [csn@citb.co.uk](mailto:csn@citb.co.uk)

**For more information about the  
Construction Skills Network, contact:  
Adam Evans  
Research Analyst  
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0300 456 7226  
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[citb.co.uk](http://citb.co.uk)



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