INDUSTRY INSIGHTS

Construction Skills Network
West Midlands 2015-2019

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

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1 Summary – West Midlands

The West Midlands' construction output is forecast to grow at an annual average rate of 2.1% over the forecast period (2015-2019), below the corresponding UK rate of 2.9%. Total employment for the region is predicted to expand at an annual average rate of 1.2%; this is also set to lag the UK rate (1.5%). The region's annual average recruitment requirement of (ARR) 2,320 represents 1.1% of base 2015 employment, well below the average UK proportion of 1.7%.

Annual average construction output growth 2015-2019 – West Midlands

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

1.1 Key findings

Construction output in the West Midlands returned to growth in 2013. At £8.63bn it had risen 9% year-on-year after two successive annual declines. We expect it to tick upwards by 2% in 2014 before expanding at an annual average rate of 2.1% over the forecast period.

The private housing and commercial sectors are set for the strongest growth between 2015 and 2019. Both are forecast to see an annual average expansion of 4%. The former sector should see slightly stronger growth in the first half of the forecast period, driven by particularly strong new orders and housing starts figures. Factors such as 'Help to Buy' and low interest rates should also provide short-term buoyancy. Commercial construction should continue to benefit from a handful of large-scale projects like the £500m regeneration of Birmingham City Centre which started in 2014.

The public non-housing sector is also predicted to see solid growth (2.7% annual average) over the forecast period. It should be supported by a good number of university projects on site or in the pipeline, such as those for both Coventry and Warwick Universities. Short-term expansion should also be supported by £157m worth of ProCure 21+ investment between 2014 and 2016.

Activity in the public housing sector on the other hand is likely to remain largely flat between 2015 and 2019, with forecast annual average growth of 0.5%, despite approximately £227m worth of funding allocated
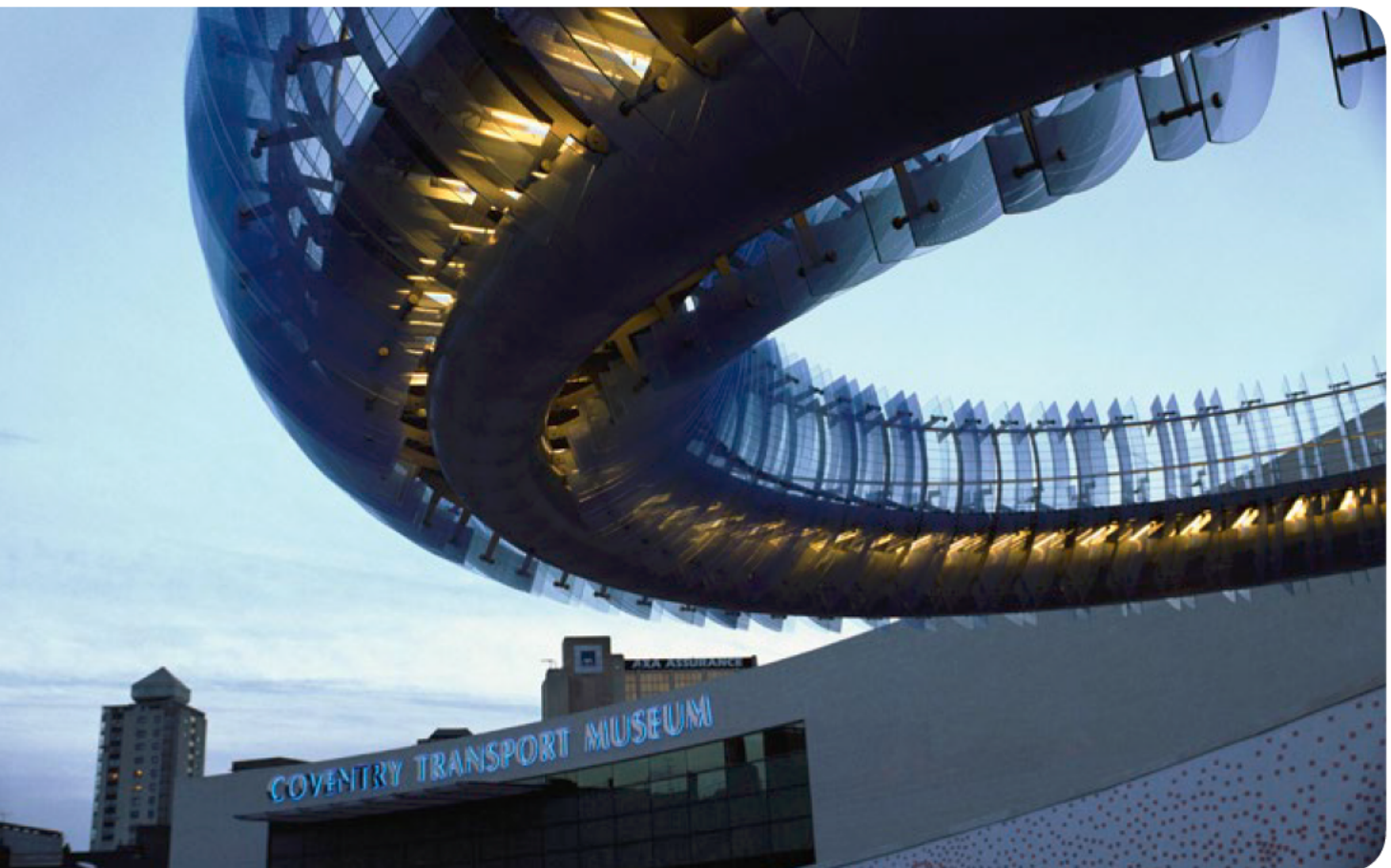
The West Midlands' construction output is forecast to grow at an annual average rate of 2.1% over the forecast period.

between 2015 and 2018 under the Affordable Housing Programme (AHP).

Meanwhile, the infrastructure and industrial sectors are expected to contract at an annual average rate of 1.7% apiece. The former isn't predicted to see any growth until at least 2019 and, by the end of the forecast period, activity in the sector will be approximately 30% below its 2010 peak. Growth in the latter is set to tick downwards as work finishes on the Jaguar-Land Rover factory in Wolverhampton and the pipeline of new work fails to plug that gap.

Construction employment is predicted to expand at an annual average rate of 1.2% over the forecast period, which is below the UK average of 1.5%. Labourers nec., are set for the strongest annual average growth (4%), followed by bricklayers (3.7%), steel erectors (3.6%) and roofers (3.2%). The majority (21) of the 28 occupational aggregates are set to expand over the forecast period.

The region's annual recruitment requirement (ARR) of 2,320 represents 1.1% of base 2015 employment, which is below the UK proportion of 1.7%. The wood trades and interior fit-out occupation should have the highest absolute requirement at 770.

The region has a projected ARR of 2,320 between 2015 and 2019.

Regional comparison 2015-2019

	Annual average % change in output	Growth in total employment	Total ARR
North East	2.3%	7,660	3,510
Yorkshire and Humber	2.3%	14,940	3,220
East Midlands	2.2%	9,340	3,120
East of England	2.5%	13,690	4,260
Greater London	4.2%	50,440	2,050
South East	2.5%	30,130	2,590
South West	3.6%	22,130	6,320
Wales	5.8%	13,890	5,320
West Midlands	2.1%	12,110	2,320
Northern Ireland	2.2%	3,220	1,490
North West	2.5%	17,130	4,790
Scotland	1.1%	1,320	5,700
UK	2.9%	196,000	44,690

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

2 The outlook for construction in the West Midlands

2.1 Construction output in the West Midlands – overview

Construction output in the West Midlands returned to growth in 2013 with a 9% year-on-year increase to £8.63bn in 2010 prices, which was still well below its average level for the decade preceding 2009.

The industrial and private housing sectors saw the strongest growth on an annual basis in that year. The former rose 66% to £491m while the latter increased 26% to £1.2bn. Public housing activity also ticked upwards to reach £404m.

The remaining new work sectors all experienced drops in activity. The infrastructure and commercial ones both edged downwards by 2%, while the public non-housing sector saw a double-digit decline to £802m.

2.2 Industry structure

The diagram, Construction Industry structure 2013 – 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.

The structure of the construction industry in the West Midlands is fairly close to that of the UK, although new work's share of total output is slightly lower in the region than it is across the UK (60% vs 62%).

The largest difference is in the infrastructure sector which only accounts for 8% of regional output, which is below its UK proportion of 12%. In contrast, the industrial sector is twice as important as it is across the UK (6% vs 3%).

Construction output 1997-2013 – West Midlands
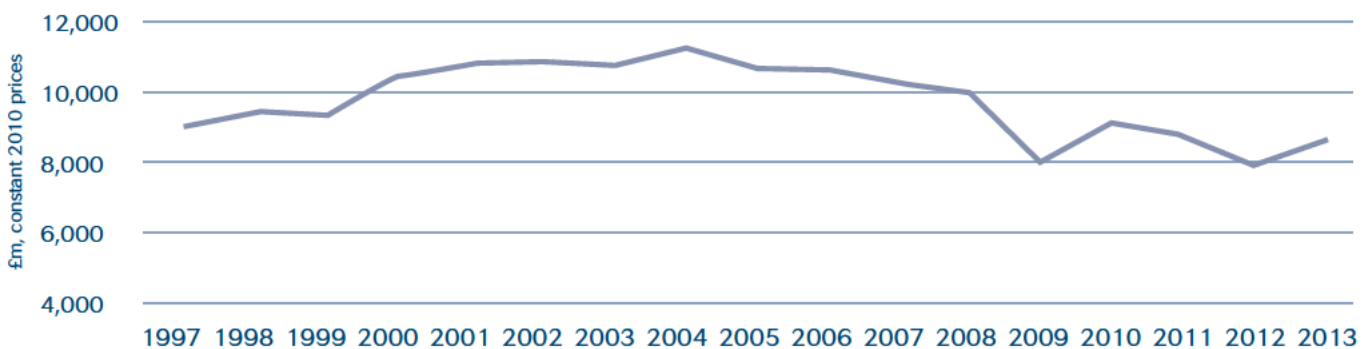
Source: ONS
ref. CSN Explained, Section 3, Note 2

2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2015 – 2019) provides an indication of the construction sectors in which demand is likely to be strongest.

2.4 Economic structure

Gross value added (GVA) in the West Midlands stood at £97.7bn in 2013 in 2010 prices. It had increased by 2% on the previous year to its highest level since 2007.

The region's industrial structure hinges on the professional and other private services and public services sectors. In 2013, the former made up 23% of regional GVA and its importance increased by 4% in the decade leading up to that year. Public services was the second most important sector, accounting for 21% of GVA, although unlike professional and other private services it's proportionately more important at the regional level than it is across the UK. The same can be said for the manufacturing sector which accounted for 14% of regional GVA, significantly higher than the corresponding UK figure of approximately 10%, although its share has declined by almost 3% in the decade to 2013.

Construction industry structure 2013 – UK vs West Midlands

Public housing

Private housing

Infrastructure

Public non-housing

Industrial

Commercial

Housing R&M

Non-housing R&M
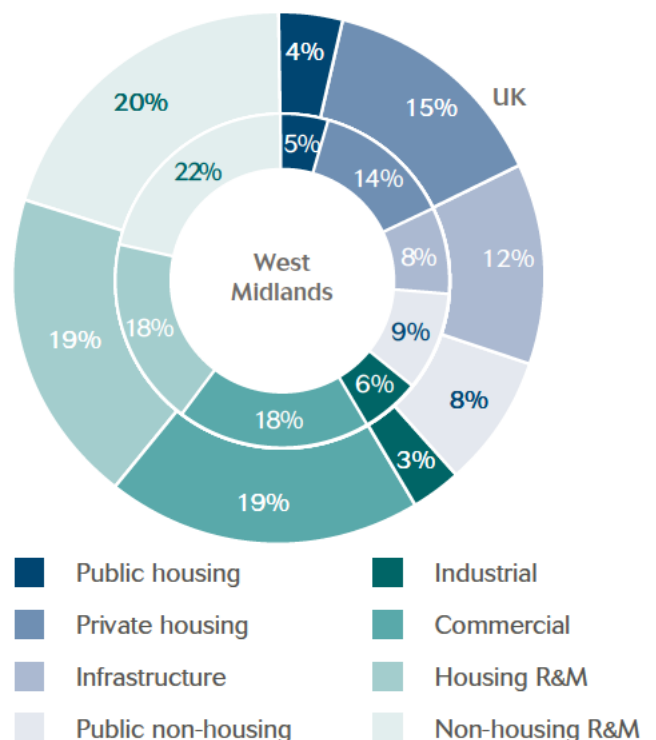
Source: ONS, Experian

2.5 Forward looking economic indicators

The West Midlands' economy is estimated to have grown by 2.7% in 2014, after ticking up at a more moderate pace in the previous year (1.8%). It should carry on its expansion through the forecast period at an annual average rate of 2.2%.

Of the main sectors, the largest one, professional and other private services, is set for the strongest annual average expansion (3.2%). The manufacturing (1.5%) and wholesale and retail (2.6%) sectors are also predicted solid growth. However, the second largest sector, public services, is forecast to remain flat over the same period.

Real household disposable income (RHDI) is estimated to have increased by 1% in 2014 after edging downwards in the previous year. It should continue rising at a slightly stronger rate over the forecast period (1.8% annual average).

According to the ONS' mix-adjusted house price series, the average house price in the West Midlands stood at £184,000 in 2013, up 3.4% year-on-year. It was the fourth successive annual increase in prices, which were at their highest level on the ONS' records which stretch back to 1993. In the third quarter of this year they had risen 2.5% on the previous three months' value, and were also up 7% on the corresponding three months of a year earlier.

The region's unemployment rate is estimated to have dropped sharply in 2014, after reaching a four-year high in the previous year. It should continue to fall further over the forecast period, and by 2019 it should be well below the 7% mark.

Economic structure – West Midlands (£ billion, 2010 prices)

Selected sectors	Actual	Forecast Annual % change, real terms					
	2013	2014	2015	2016	2017	2018	2019
Professional and other private services	22.7	5.5	3.4	3.2	3.3	3.1	2.8
Public services	20.3	0.6	0.2	-0.1	-0.2	0.4	1.2
Manufacturing	13.4	4.7	1.9	1.5	1.9	1.4	1.0
Wholesale and retail	12.8	2.2	3.0	2.5	2.6	2.5	2.4
Finance and insurance	4.1	-4.3	2.3	3.1	3.3	3.3	2.9
Total Gross Value Added (GVA)	97.7	2.7	2.3	2.1	2.2	2.1	2.1

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

2.6 New construction orders – overview

Construction orders returned to growth in 2013, after falling in each of the five preceding years. At £3.77bn they were up 9% year-on-year.

Industrial construction orders saw the sharpest increase on an annual basis. At £624m they were almost one and a half times higher than a year earlier. Much of this surge in orders can be attributed to a small number of particularly large projects in the automotive sector.

The public and private housing sectors both made double-digit gains, to reach £288m and £906m respectively. The public non-housing sector also saw its orders increase on an annual basis, albeit at a more moderate rate.

In contrast, the infrastructure and commercial sectors both saw their orders decline in 2013. However, the former saw a more pronounced contraction, as orders fell at a double-digit rate for the second successive year to £392m. The latter edged downwards for its third consecutive year to £865m. This was its lowest total since 1996.

Economic indicators – West Midlands (£ billion, 2010 prices – unless otherwise stated)

	Actual	Forecast Annual % change, real terms					
	2013	2014	2015	2016	2017	2018	2019
Real household disposable income	78.9	1.0	1.6	0.9	1.9	2.4	2.1
Household spending	77.2	2.8	2.4	1.9	1.8	1.9	2.1
Working age population (000s and as % of all)	3,445	61.02%	61.32%	61.47%	61.38%	61.26%	61.30%
House prices (£)	184,000	5.89	6.32	4.46	3.14	3.25	3.35
LFS unemployment (millions)	0.25	-18.53	-4.27	-1.55	-0.20	-1.14	-0.61

Source: ONS, DCLG, Experian

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New construction orders growth 1997-2013 – West Midlands vs. GB

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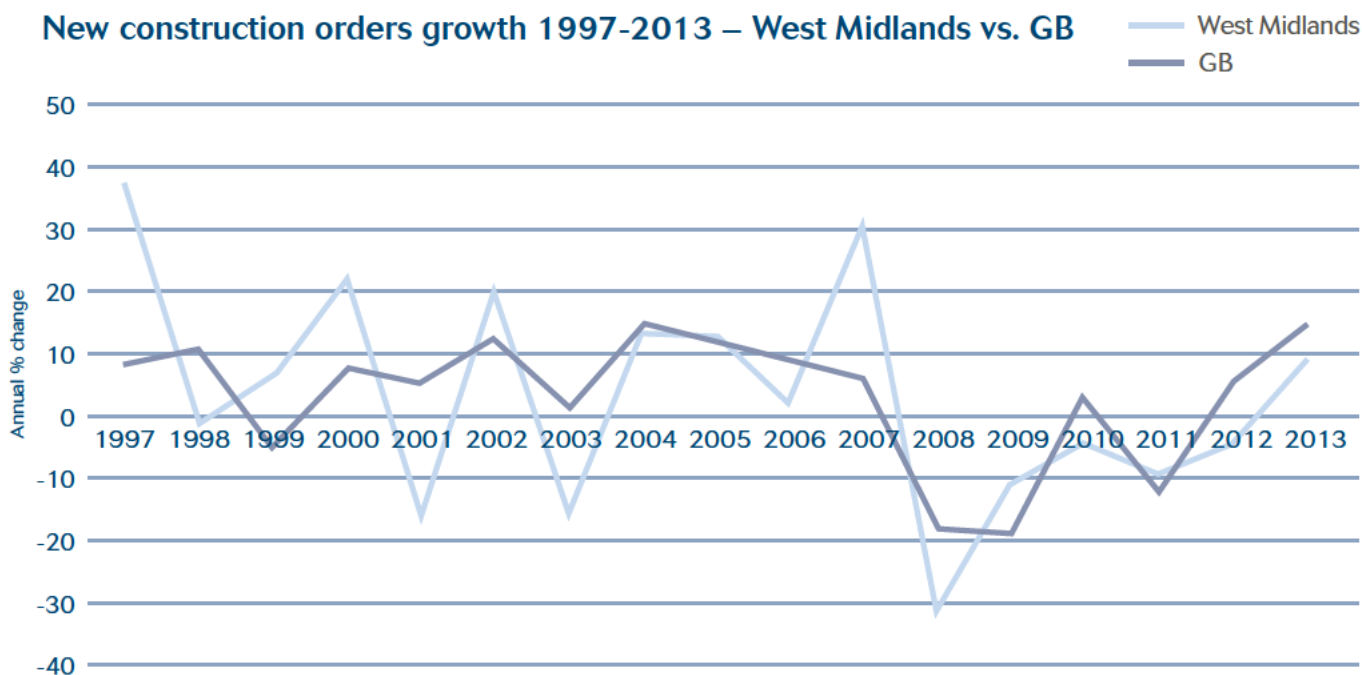
Source: ONS
ref. CSN Explained, Section 3, Note 4

2.7 New construction orders – current situation

In the first half of 2014 orders totalled £2.17bn, up 19% on a half-yearly basis, and also up 11% on the same period of 2013.

The private housing, infrastructure and public non-housing sectors all saw their orders increase on both measures. In the first half of 2014 they totalled £608m, £285m and £375m respectively. The commercial sector saw its orders edge downwards on a half-yearly basis, but they were up 43% on the same six months a year earlier.

The public housing and industrial sectors both endured double-digit declines on an annual basis. The former fell 16% to £98m, while the latter was down 25% to £297m.

2.8 Construction output – short-term forecasts (2015-2016)

Regional Office for National Statistics (ONS) output statistics are published in current prices and are thus inclusive of any inflationary effect. At the time of writing, regional ONS construction output statistics were only available for the first two quarters of 2014.

In the first half of 2014 output totalled £4.72bn. It was down 5% six-months on six-months, but was 9% higher than its corresponding total a year earlier.

Public housing was the only new work sector to make gains on both measures to total £227m. The private housing and commercial ones both increased on an annual basis. The former was up 19% to £656m and latter 6% to £827m.

The infrastructure (£333m), public non-housing (£376m) and industrial sectors (£231m) all saw their output fall on a half-yearly and annual basis.

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

	Actual	Annual % change				
	2013	2009	2010	2011	2012	2013
Public housing	288	-14.1	-35.4	26.8	27.1	13.8
Private housing	906	-27.0	-1.1	19.1	11.1	29.6
Infrastructure	392	66.2	-60.4	107.9	-11.8	-41.9
Public non-housing	699	20.7	25.1	-44.2	-21.1	5.1
Industrial	624	-37.2	-22.5	19.5	28.2	140.9
Commercial	865	-40.6	22.1	-21.3	-8.0	-5.3
Total new work	3,774	-10.7	-4.1	-9.1	-4.5	8.8

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

Construction output – West Midlands (£ million, 2011 prices)

	Actual 2013	Forecast annual % change			Annual average 2015-2016
		2014	2015	2016	
Public housing	404	8%	-3%	-3%	-2.6%
Private housing	1,198	8%	8%	5%	6.3%
Infrastructure	685	-12%	-4%	0%	-1.9%
Public non-housing	802	-4%	5%	5%	5.2%
Industrial	491	-2%	-8%	-1%	-4.6%
Commercial	1,604	-2%	2%	6%	3.9%
New work	5,183	0%	2%	3%	2.8%
Housing R&M	1,581	6%	2%	1%	1.8%
Non-housing R&M	1,865	6%	3%	3%	3.1%
Total R&M	3,446	6%	3%	2%	2.5%
Total work	8,629	2%	2%	3%	2.7%

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

Construction output for the West Midlands is expected to increase by 2% in 2015 before rising by a further 3% in the following year to give an annual average rate of 2.7% over the short term.

The private housing and public non-housing sectors are expected to see the strongest expansion over that period, with respective annual average rates of 6.3% and 5.2%. The former has benefitted strongly from 'Help to Buy' and we expect that buoyancy to carry on in the short-term. Work on a new housing development in Sheet Road, Ludlow will commence in the 2015-16 period. The public non-housing sector will benefit from the start of work on schemes for both Coventry and Warwick universities, which are believed to have boosted new orders in 2013. The commercial sector should also post solid annual average growth (3.9%) as work on Birmingham City Centre's £500m regeneration gets into full swing.

The industrial sector is predicted to contract at an annual average rate of 4.6% in the short-term, as it fails to sustain the volume of activity which was present when work was ongoing on the Jaguar-Land Rover factory in Wolverhampton.

The public housing and infrastructure sectors are both in line for more moderate declines, with respective annual average contractions of 2.6% and 1.9%. This is despite the former being in line to receive £227m worth of funding between 2015 and 2018 under the Affordable Housing Programme. The latter will see its activity gradually edge downwards as the pipeline of new work fails to match the levels seen in 2013 and 2014.

Annual average construction output growth 2015-2016 – West Midlands

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

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

Output in the medium-term is expected to expand at an annual average rate of 2.1%, which is well below the equivalent UK rate of 2.9%. Growth in repair and maintenance (R&M) output is projected to lag new work (1.6% vs 2.4%).

The private housing and commercial sectors are forecast to see the strongest annual average expansion, both at 4%. The former should see the bulk of growth in the earlier part of the forecast period, supported by a combination of Government incentives such as 'Help to Buy' and changes to Stamp Duty. Interest rate rises, still poor affordability and stricter lending criteria as a result of the Mortgage Market Review, should act to taper growth in the latter half of the forecast period. Despite consistent growth, activity in 2019 is set to remain well below its 2004 peak. The commercial sector will benefit from a number of large retail projects taking place through the forecast period. However, by the end of it, activity is expected to remain some 18% below its 2007 peak.

The public non-housing sector should also post good growth over the forecast period (2.7% annual average), driven by a decent number of small to medium sized projects in the education sector. Output growth should also benefit from a reasonable amount of new work in the pipeline funded by the ProCure 21+ scheme.

Public housing activity is set to remain largely flat over the forecast period on an annual average basis, with predicted growth of 0.5%. Output is not expected to rise until 2017 at the earliest. However, activity in the sector is at a record high driven by strong increases in new orders, and hence even the modest growth forecast should help it to reach a new peak by 2019.

> Total employment for the region is predicted to expand at an annual average rate of 1.2%.

In contrast the infrastructure and industrial sectors are both forecast to contract at an annual average rate of 1.7%. The former isn't expected to see any growth until 2019 when output will have fallen 31% below its 2010 peak level. The industrial sector isn't set to expand until 2017, after which activity will most likely contract again. However, by 2019 it shouldn't have fallen too far from its 2013 peak, when work on the Jaguar-Land Rover factory was in full swing

2.10 Beyond 2019

The bulk of work expected to take place beyond 2019 will most likely be in the infrastructure sector. High-Speed Rail 2 (HS2) is one such example with activity from the first and second phases benefiting regional infrastructure output well beyond the forecast period.

As is the case with other central regions, the Government's long-term plans to better connect the South East and North of England will have a positive effect on the region's infrastructure sector.

Annual average construction output growth 2015-2019 – West Midlands

3 Construction employment forecasts for 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 2013, the estimated total employment across 28 occupational categories in 2014 and forecasts for the industry for 2015 to 2019. A full breakdown of occupational groups is provided in Section 5 of CSN Explained.

Construction employment in the region is set to expand at an annual average rate of 1.2% over the forecast period, below the UK average of 1.5%. By 2019, total employment is expected to stand at close to 212,000, still 6% below its 2008 peak.

The majority (21) of the 28 occupational aggregates are set to expand over the forecast period. Labourers nec., are expected to see the strongest annual average growth (4%), followed by bricklayers (3.7%), steel erectors (3.6%) and roofers (3.2%). Overall, demand is expected to be slightly stronger for the main trades than for the professional and managerial/supervisory occupations.

Total employment by occupation – West Midlands

	Actual 2013	Estimate 2014	Forecast 2015	Forecast 2019
Senior, executive, and business process managers	17,230	17,190	17,110	15,810
Construction project managers	2,040	2,110	2,170	2,380
Other construction process managers	17,800	18,610	19,290	21,370
Non-construction professional, technical, IT and other office-based staff	26,860	26,500	26,190	23,780
Construction trades supervisors	4,510	4,620	4,730	5,110
Wood trades and interior fit-out	16,590	17,310	17,960	19,840
Bricklayers	4,300	4,530	4,740	5,420
Building envelope specialists	6,780	7,020	7,240	7,890
Painters and decorators	6,640	6,790	6,940	7,310
Plasterers	1,890	1,910	1,900	1,860
Roofers	3,260	3,440	3,600	4,030
Floorers	1,370	1,440	1,490	1,640
Glaziers	3,050	3,060	3,050	2,970
Specialist building operatives nec*	3,380	3,470	3,540	3,660
Scaffolders	2,540	2,700	2,740	2,850
Plant operatives	2,010	2,040	2,050	1,950
Plant mechanics/fitters	5,660	5,640	5,660	5,770
Steel erectors/structural fabrication	3,110	3,310	3,470	3,950
Labourers nec*	10,610	11,310	11,910	13,780
Electrical trades and installation	14,670	14,930	15,130	15,460
Plumbing and HVAC Trades	12,780	13,200	13,480	13,890
Logistics	2,710	2,670	2,630	2,400
Civil engineering operatives nec*	1,950	2,060	2,180	2,400
Non-construction operatives	2,400	2,380	2,370	2,170
Civil engineers	2,180	2,290	2,380	2,660
Other construction professionals and technical staff	11,860	12,270	12,630	13,890
Architects	1,480	1,530	1,570	1,680
Surveyors	5,110	5,260	5,390	5,760
Total (SIC 41-43)	174,140	178,240	181,570	187,690
Total (SIC 41-43, 71.1, 74.9)	194,770	199,590	203,540	211,680

3.2 Annual recruitment requirements (ARR) by occupation

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

The region has a projected ARR of 2,320 between 2015 and 2019, which represents 1.1% of base 2015 employment, well below the UK average 1.7%. Of the 28 occupational aggregates, wood trades and interior fit-out is expected to have the highest absolute requirement at 770. In terms of ratios of base 2015 employment, the requirement is highest for floorers (5.4%), architects (5.1%), bricklayers (4.9%) and steel erectors/structural fabrication (4.6%).

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

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

Finally, for certain occupations there will be no appreciable requirement over the forecast period, partly due to the recession creating a 'pool' of excess labour.

Annual recruitment requirement by occupation – West Midlands

	2015 - 2019
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	80
	770
Bricklayers	230
Building envelope specialists	220
Painters and decorators	-
Plasterers	-
Roofers	<50
Floorers	80
Glaziers	-
Specialist building operatives nec*	50
Scaffolders	-
Plant operatives	-
Plant mechanics/fitters	-
Steel erectors/structural fabrication	160
Labourers nec*	-
Electrical trades and installation	340
Plumbing and HVAC Trades	-
Logistics	-
Civil engineering operatives nec*	<50
Civil engineers	80
Other construction professionals and technical staff	-
Architects	80
Surveyors	-
Total (SIC 41-43)	2,150
Total (SIC 41-43, 71.1, 74.9)	2,320

Source: CSN, Experian
ref. CSN Explained, Section 3, Notes 7 and 8
*Not elsewhere classified

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4 Comparisons across the UK

Despite ongoing delays to the nuclear new build programme, Wales is still projected to have the strongest output growth, despite the start on main construction works at Wylfa unlikely before the beginning of 2019. Nuclear new build still remains in the forecast period for the South West, where main construction works on Hinkley Point C should begin in 2015, helping to boost the region's annual average output growth rate to 3.6%.

Greater London slips in between Wales and the South West, with projected annual average output expansion of 4.2%, benefiting from very strong demand for housing, both public and private, despite recent indications that house prices in the capital are stabilising, and good growth in the commercial construction sector. Together, these three sectors accounted for 44% of London's construction output in 2013, well above the UK average (38%), and so are proportionally providing a stronger driver for overall growth in the capital compared with elsewhere.

While most UK regions and nations are expected to experience quite strong growth in private housing output to 2016, with a slowdown to more sustainable levels thereafter, the prospects for public housing are much more uncertain as the current Affordable Housing Programme (AHP) winds down to April 2015. The overall pot of funding available from central Government for 2015-18 is much the same on an annualised basis as in 2011-15 and there are concerns that many housing associations may find increasing their borrowing levels from private sources more problematical in the future.

Outside of the South West, infrastructure growth is likely to be strongest in the North East and Wales, the former being driven by £400m of roads work in the Highways Agency's Area 14, which covers the region and the latter benefiting from Great Western Line electrification, road upgrades, energy works such as Swansea's tidal lagoon and, of course, nuclear new build at Wylfa in Anglesey.

Strongest growth in commercial construction is expected in Yorkshire and the Humber (annual average growth of 6.3%), the North West (6.3%), Wales (5.9%) and Greater London (5.7%). South Yorkshire, in particular, seems to be benefiting from the reactivation of retail-led projects mothballed during the 'great recession', while Wales is seeing an upsurge in conference and exhibition venue construction.

Annual average employment growth rates across the regions and nations tend to cluster within plus or minus half a percent of the UK average of 1.5%. The exceptions are Greater London and Wales (2.4%), and Scotland (0.1%). For Greater London, workforce demand is in the main driven by growth in the sectors mentioned above, but even in the infrastructure one, which is already at a historic high in output terms, further expansion is expected over the next five years. Employment demand in Wales inevitably benefits from the start of main works at Wylfa, despite the fact that infrastructure is less labour intensive than many other sectors. Wylfa is a very large project in a relatively small market. Scotland's relatively poor projected output growth rate (1.1% a year on average) is only just enough to drive marginal employment growth given anticipated productivity gains.

Despite London's strong employment demand, its annual recruitment requirement (ARR) only equates to around 0.5% of projected 2015 employment. This is because the region acts as a natural magnet for the construction workforce within the UK and beyond anyway. In contrast, Wales' strong employment demand is supplemented on the supply side by traditional employment outflows to other regions, especially the North West and South West, and so it has a much higher ARR ratio, of 4.8%. Most other regions and nations have an ARR ratio of within a percentage point of the UK average (1.7%).
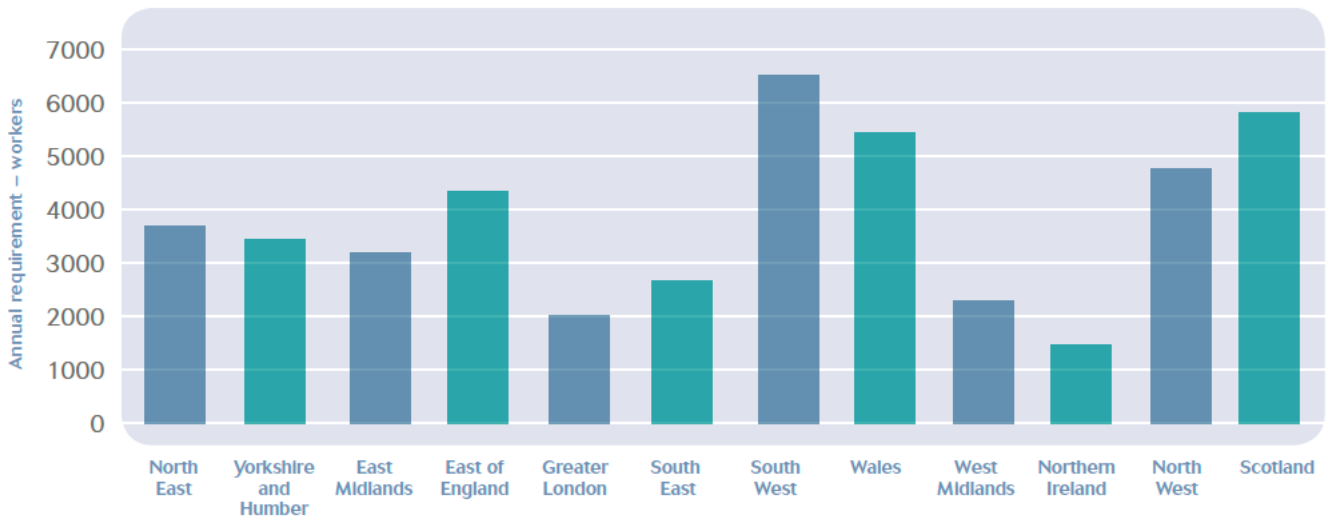
Annual average output growth by region 2015-2019

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

Annual recruitment requirement (ARR) by region 2015-2019

Source: CSN, Experian

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CSN Explained

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

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

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

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

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

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

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

1. CSN Methodology

Background

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

CITB, CIC and CITB-ConstructionSkills Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction, to produce robust labour market intelligence which provides a foundation on which to plan for future skills needs and to target investment.

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

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

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

The models have evolved over time and will continue to do so, to ensure that they account for new research as it is published as well as new and improved modelling techniques. Future changes to the model will only be made after consultation with the Technical Reference Group.

The model approach

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

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

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

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

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

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

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

Flows into the labour market include:

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

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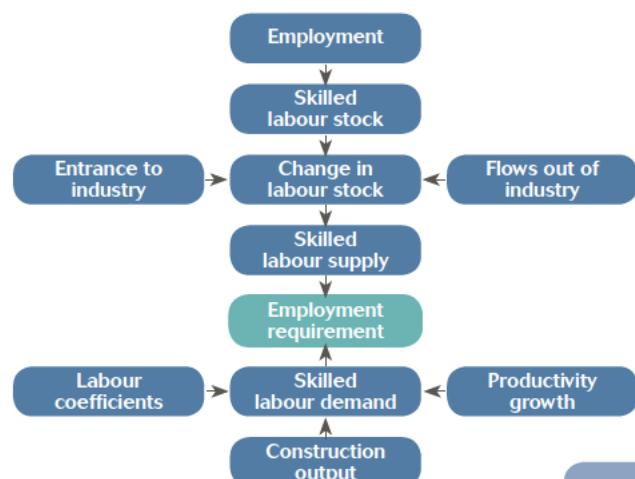
2. Glossary of terms

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

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

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

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

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

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

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

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

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

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

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

Productivity — output per employee.

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

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

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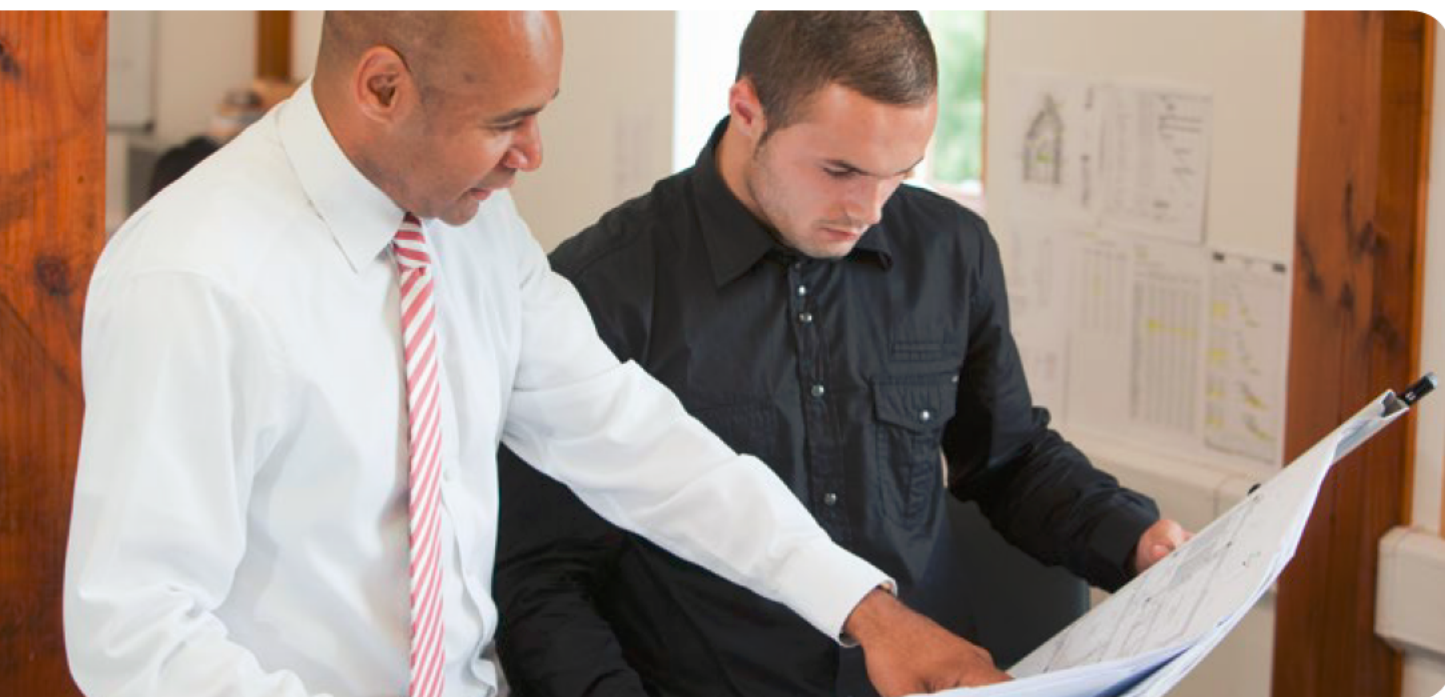
3. Notes and Footprints

Notes

1 Except for Northern Ireland, output data for the English regions, Scotland and Wales is supplied by the Office for National Statistics (ONS) on a current price basis. Thus, national deflators produced by the ONS have been used to deflate prices to a 2005 constant price basis, so that the effects of inflation have been stripped out.

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

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

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

5 Employment numbers are rounded to the nearest 10.

6 The tables include data relating to plumbers and electricians. As part of SIC 43, plumbers and electricians working in contracting are an integral part of the construction process. However, it is recognised by ConstructionSkills that SummitSkills has responsibility for these occupations across a range of SIC codes, including SIC 43.2.

7 A reporting minimum of 50 is used for the annual recruitment requirement (ARR). As a result some region and devolved nation ARR forecasts do not sum to the total UK requirement.

8 The Employment and ARR tables show separate totals for SIC41-43 and SIC41-43, 71.1 and 74.9. The total for SIC41-43 covers the first 24 occupational groups on the relevant tables and excludes civil engineers, other construction professionals and technical staff, architects and surveyors. The total for SIC41-43, 71.1 and 74.9 includes all occupations.

Footprints for Built Environment Sector Bodies

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

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

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

SummitSkills

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

Coverage – Building services engineering.

ConstructionSkills shares an interest with SummitSkills in SIC 43.21 Electrical installation and SIC 43.22 Plumbing, heat and air-conditioning installation. ConstructionSkills recognises the responsibility of Summit Skills across Standard Industrial Classifications (SIC) 43.21 and 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.

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

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

4. Definitions: types and examples of construction work

Public sector housing – local authorities and housing associations, new towns and Government departments

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

Private sector housing

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

Infrastructure – public and private

Water

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

Sewerage

Sewage disposal works, laying of sewers and surface drains.

Electricity

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

Gas, communications, air transport

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

Railways

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

Harbours

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

Roads

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

Public non-residential construction[1]

Factories and warehouses

Publicly owned factories, warehouses, skill centres.

Oil, steel, coal

Now restricted to remedial works for public sector residual bodies.

Schools, colleges, universities

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

Health

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

Offices

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

Entertainment

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

Garages

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

Shops

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

Agriculture

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

Miscellaneous

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

Private industrial work

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

Private commercial work[1]

Schools and universities

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

Health

Private hospitals, nursing homes, clinics.

Offices

Office buildings, banks.

Entertainment

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

Garages

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

Shops

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

Agriculture

All buildings and work on farms, horticultural establishments.

Miscellaneous

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

New work

New housing

Construction of new houses, flats, bungalows only.

All other types of work

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

Repair and maintenance

Housing

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

All other sectors

Repair and maintenance work of all types, including planned and contractual maintenance.[3]

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

5. Occupational Groups

Occupational group
Description, SOC (2010) reference.

Senior, executive, and business process managers

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

Construction project managers

Construction project managers and related professionals	2436

Other construction process managers

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

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

IT operations technicians	3131
IT user support technicians	3132
Finance and investment analysts and advisers	3534
Taxation experts	3535
Financial and accounting technicians	3537
Vocational and industrial trainers and instructors	3563
Business and related associate professionals nec*	3539
Legal associate professionals	3520
Inspectors of standards and regulations	3565
Programmers and software development professionals	2136
Information technology and telecommunications professionals nec*	2139
Estate agents and auctioneers	3544
Solicitors	2413
Legal professionals nec*	2419
Chartered and certified accountants	2421
Business and financial project management professionals	2424
Management consultants and business analysts	2423
Receptionists	4216
Typists and related keyboard occupations	4217
Business sales executives	3542
Book-keepers, payroll managers and wages clerks	4122
Records clerks and assistants	4131
Stock control clerks and assistants	4133
Telephonists	7213
Communication operators	7214
Personal assistants and other secretaries	4215
Sales and retail assistants	7111
Telephone salespersons	7113
Buyers and procurement officers	3541
Human resources and industrial relations officers	3562
Credit controllers	4121
Company secretaries	4214
Sales related occupations nec*	7129
Call and contact centre occupations	7211
Customer service occupations nec*	7219
Elementary administration occupations nec*	9219
Chemical scientists	2111
Biological scientists and biochemists	2112
Physical scientists	2113
Laboratory technicians	3111
Graphic designers	3421
Environmental health professionals	2463
IT business analysts, architects and systems designers	2135
Conservation professionals	2141
Environment professionals	2142
Actuaries, economists and statisticians	2425
Business and related research professionals	2426
Finance officers	4124
Financial administrative occupations nec*	4129
Human resources administrative occupations	4138
Sales administrators	4151
Other administrative occupations nec*	4159
Office supervisors	4162
Sales supervisors	7130
Customer service managers and supervisors	7220
Office managers	4161

Construction trades supervisors

Skilled metal, electrical and electronic trades supervisors	5250
Construction and building trades supervisors	5330

Wood trades and interior fit-out

Carpenters and joiners	5315
Paper and wood machine operatives	8121
Furniture makers and other craft woodworkers	5442
Construction and building trades nec* (25%)	5319

Bricklayers

Bricklayers and masons	5312

Building envelope specialists

Construction and building trades nec* (50%)	5319

Painters and decorators

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

Plasterers

Plasterers	5321

Roofers

Roofers, roof tilers and slaters	5313

Floorers

Floorers and wall tilers	5322

Glaziers

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

Specialist building operatives not elsewhere classified (nec*)

Construction operatives nec* (100%),	8149
Construction and building trades nec* (5%)	5319
Industrial cleaning process occupations	9132
Other skilled trades nec*	5449

Scaffolders

Scaffolders, stagers and riggers	8141

Plant operatives

Crane drivers	8221
Plant and machine operatives nec*	8129
Fork-lift truck drivers	8222
Mobile machine drivers and operatives nec*	8229

Plant mechanics/fitters

Metal working production and maintenance fitters	5223
Precision instrument makers and repairers	5224
Vehicle technicians, mechanics and electricians	5231
Elementary process plant occupations nec*	9139
Tool makers, tool fitters and markers-out	5222
Vehicle body builders and repairers	5232

Steel erectors/structural fabrication

Steel erectors	5311
Welding trades	5215
Metal plate workers and riveters	5214
Construction and building trades nec* (5%)	5319
Smiths and forge workers	5211
Metal machining setters and setter-operators	5221

Labourers nec*

Elementary construction occupations (100%)	9120

Electrical trades and installation

Electricians and electrical fitters	5241
Electrical and electronic trades nec*	5249
Telecommunications engineers	5242

Plumbing and heating, ventilation, and air conditioning trades

Plumbers and heating and ventilating engineers	5314
Pipe fitters	5216
Construction and building trades nec* (5%)	5319
Air-conditioning and refrigeration engineers	5225

Logistics

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

Civil engineering operatives not elsewhere classified (nec*)

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

Non-construction operatives

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

*Not elsewhere classified

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Civil engineers

Civil engineers · 2121

Other construction professionals and technical staff

Mechanical engineers · 2122
Electrical engineers · 2123
Design and development engineers · 2126
Production and process engineers · 2127
Quality control and planning engineers · 2461
Engineering professionals nec* · 2129
Electrical and electronics technicians · 3112
Engineering technicians · 3113
Building and civil engineering technicians · 3114
Science, engineering and production technicians nec* · 3119
Architectural and town planning technicians · 3121
Draughtspersons · 3122
Quality assurance technicians · 3115
Town planning officers · 2432

Electronics engineers · 2124
Chartered architectural technologists · 2435
Estimators, valuers and assessors · 3531
Planning, process and production technicians · 3116

Architects

Architects · 2431

Surveyors

Quantity surveyors · 2433
Chartered surveyors · 2434

6. CSN Website and contact details

The CSN website

citb.co.uk/csn

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

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

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

The website also contains information about:

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

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

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

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

CSN members therefore have:

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

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

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

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

Contact details

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

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