



CITB RESEARCH

INDUSTRY INSIGHTS

SOUTH WEST



Construction
Skills Network
Labour Market
Intelligence
2018-2022



About CITB

CITB is the Industrial Training Board (ITB) for the construction industry in Great Britain (Scotland, England and Wales). CITB uses its research and labour market intelligence to understand the sector's skills needs, and works with industry and government to make sure construction has the right skills, now and for the future.

CITB is modernising its funding approach to invest in areas that will deliver the best returns for industry, and enable the sector to attract and train talented people to build a better Britain.

About Experian

Experian's Construction Futures team is a leading construction forecasting team in the UK, specialising in the economic analysis of the construction and related industries in the UK and its regions. As such we have an in-depth understanding of the structure of the construction industry and its drivers of change. The Construction Futures team has collaborated on the Construction Skills Network employment model with the CITB since 2005, manages a monthly survey of contractors' activity as part of the European Commission's harmonised series of business surveys, and a quarterly State-of-Trade survey on behalf of the Federation of Master Builders.

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. These materials, together with all of the intellectual property rights contained within them, belong to the Construction Industry Training Board (CITB). Copyright 2018 ("CITB") and should not be copied, reproduced nor passed to a third party without CITB's prior written agreement. These materials are created using data and information provided to CITB and/or EXPERIAN Limited ("Experian") by third parties of which EXPERIAN or CITB are not able to control or verify the accuracy. Accordingly neither EXPERIAN nor CITB give any warranty about the accuracy or fitness for any particular purpose of these materials. Furthermore, these materials do not constitute advice and should not be used as the sole basis for any business decision and as such neither EXPERIAN nor CITB shall be liable for any decisions taken on the basis of the same. You acknowledge that materials which use empirical data and/or statistical data and/or data modelling and/or forecasting techniques to provide indicative and/or predictive data cannot be taken as a guarantee of any particular result or outcome.

CONTENTS

SUMMARY AND KEY FINDINGS	4
THE OUTLOOK FOR CONSTRUCTION IN THE SOUTH WEST.....	6
CONSTRUCTION EMPLOYMENT FORECASTS FOR THE SOUTH WEST	14
COMPARISONS ACROSS THE UK.....	18
TABLES AND CHARTS	
ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2022.....	5
REGIONAL COMPARISON 2018-2022.....	5
CONSTRUCTION OUTPUT 2000-2016	7
CONSTRUCTION INDUSTRY STRUCTURE 2016	7
ECONOMIC STRUCTURE.....	7
ECONOMIC INDICATORS	9
NEW CONSTRUCTION ORDERS GROWTH 2000-2016	9
NEW WORK CONSTRUCTION ORDERS	9
CONSTRUCTION OUTPUT 2018-2019	11
ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2019	11
CONSTRUCTION OUTPUT 2018-2022.....	13
ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2022.....	13
TOTAL EMPLOYMENT BY OCCUPATION	15
ANNUAL RECRUITMENT REQUIREMENT BY OCCUPATION	17
ANNUAL AVERAGE OUTPUT GROWTH BY REGION	19
ANNUAL RECRUITMENT REQUIREMENT BY REGION.....	19
CSN EXPLAINED.....	20
CSN METHODOLOGY	20
GLOSSARY OF TERMS.....	22
NOTES.....	23
DEFINITIONS: TYPES AND EXAMPLES OF CONSTRUCTION WORK.....	24
OCCUPATIONAL GROUPS	26

SUMMARY – SOUTH WEST

Construction output in the South West is forecast to increase at an annual average rate of 2% in the 2018–2022 period. This compares favourably to projected growth of 1.3% at the UK level, though represents a downgrade compared to last year’s forecast for a 3.1% annual average increase in the five years to 2021. The projected rate of employment growth in the region of 1% a year between 2018 and 2022 is also expected to outpace the national average of 0.5%. The annual recruitment requirement (ARR) is projected to be 4,480, representing 1.9% of base 2018 employment, as opposed to 1.2% for the UK as a whole.

KEY FINDINGS

Growth is expected to focus on the infrastructure sector in the long term, by

9.9%

Employment is forecast to grow by

1.0%

The South West has an ARR of

4,480

Total construction output in the South West rose by 5.5% in 2016 to £11bn in 2015 prices, the highest outturn since before the financial crisis. The annual gains in 2016 were driven by increases of roughly 50% in the public housing and industrial sectors. Public non-housing and private housing output also grew strongly, by 17% and 11% respectively.

In 2017 construction output growth is estimated to have accelerated to 8% taking output to £11.9bn in 2015 prices, driven by a very big increase in the public non-housing sector and a lesser but still double-digit rise in commercial construction activity.

Between 2018 and 2022 total construction output is projected to grow at an annual average rate of 2%. The gains in output in the forecast are skewed towards the short-term, largely due to a rapid rise and eventual plateau in infrastructure output linked to construction of the Hinckley Point C nuclear power plant. However, growth in the latter years of the forecast is also expected to ease in the private housing, public non-housing, and industrial sectors. The completion of large projects, and a lack of confirmed projects in the pipeline underlines the slowdown.

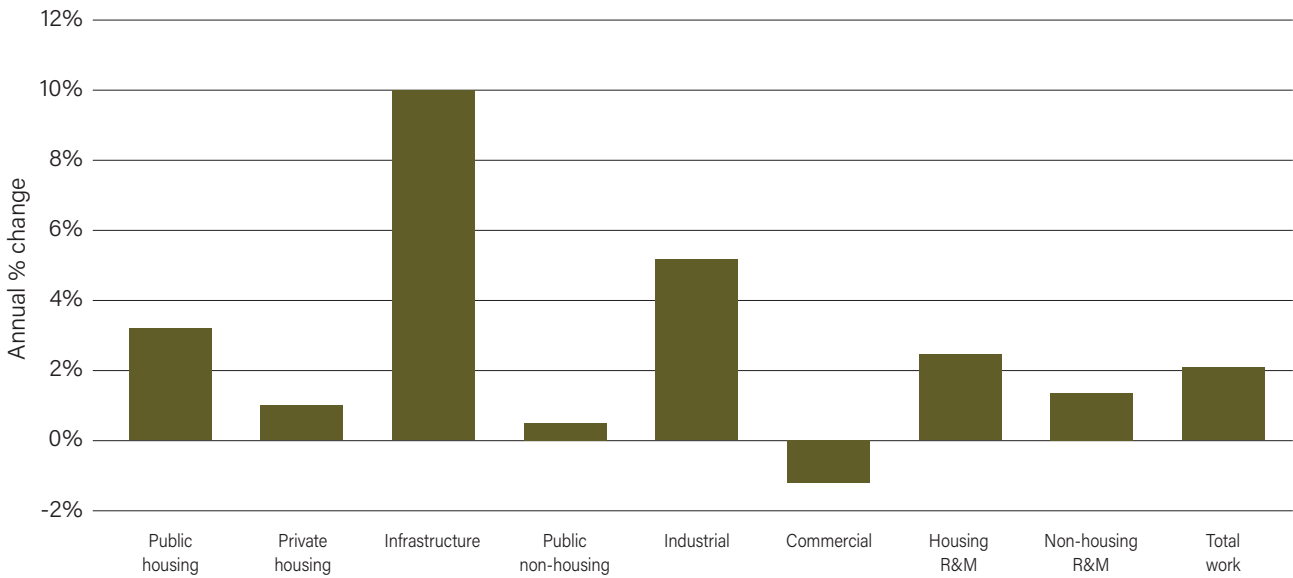
The region also benefits strongly from work related to the Army Basing Plan, to provide accommodation for troops

returning from Germany by 2020. The South West will take a significant share of the £1.8bn of scheduled expenditure.

Total construction employment in the region is forecast to grow at an annual average rate of 1% in the 2018–2022 period. This compares favourably to a projected gain of 0.5% at the national level, and sees employment rise from an estimate of just over 230,000 in 2017, to nearly 242,000 in 2022. Of the 28 occupational aggregates, 22 are expected to register employment growth in this period.

The ARR for the South West is projected to be 4,480 between 2018 and 2022. This represents 1.9% of base 2018 employment, a higher ratio than the UK’s at 1.2%. Only plasterers were flagged as having a high ARR requirement (more than 5% of base 2018 employment) at 5.2%, but a number of other occupations have a medium requirement of between 2.6% and 5% of base 2018 employment, including other construction process managers (2.8%), bricklayers (3.4%), roofers (4.2%), glaziers (4.7%), and surveyors (3.5%).

ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2022 - SOUTH WEST



Source: CSN, Experian.
Ref: CSN Explained.

REGIONAL COMPARISON 2018-2022

	Annual average % change in output	Change in total employment	Total ARR
North East	-0.8%	-7,830	840
Yorkshire and Humber	0.8%	2,100	2,010
East Midlands	0.5%	-2,220	1,720
East of England	1.3%	2,530	4,540
Greater London	1.5%	4,020	2,010
South East	1.1%	16,550	2,250
South West	2.0%	11,520	4,480
Wales	4.6%	12,110	2,450
West Midlands	1.8%	9,660	3,390
Northern Ireland	0.5%	-1,240	310
North West	2.0%	26,720	5,470
Scotland	0.1%	-8,280	2,130
UK	1.3%	65,640	31,600

Source: CSN, Experian.
Ref: CSN Explained.

■ ■ Growth is expected to focus on the infrastructure sector in the short term by 37%. ■ ■

THE OUTLOOK FOR CONSTRUCTION IN THE SOUTH WEST

CONSTRUCTION OUTPUT IN THE SOUTH WEST – OVERVIEW

Total construction output in the South West rose by 5.5% in 2016, following a 2% contraction in 2015. At £11bn in 2015 prices, output is the highest it has been since 2006.

INDUSTRY STRUCTURE

The table, Construction Industry structure 2016 – UK vs. South West, illustrates the sector breakdown of construction in the South West, compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

Infrastructure construction output as a share of total construction output broadly matched the UK average in 2015, but was underrepresented in 2016, as output in the sector fell by 19%. In the commercial sector, the share of total output in the region fell from 25% in 2008, to 14% in 2016. At the UK level the drop in the same period has been milder, from 25% to 19%.

Offsetting the underrepresentation of the infrastructure and commercial sectors in the South West in 2016, was a larger proportion of total construction output accounted for by private housing. The sector contributed 24% of the outturn in the region, as opposed to 20% nationally. Since 2008, the share in the region has been broadly 5% higher a year than in the UK as a whole.

The South West's construction industry is a little more weighted towards the repair and maintenance (R&M) sector and away from new work than the UK. R&M accounted for 40% of output in the region in 2016 compared with 36% across the UK.

ECONOMIC OVERVIEW

The expected performance of a regional or national economy over the forecast period (2018–2022) provides an indication of the construction sectors in which demand is likely to be strongest.

Gross value added (GVA) in the South West grew by 1.9% in 2016 to an all-time high of close to £126bn in 2013 prices. This rise represents a slowdown compared to gains of 3.5% and 2.2% in 2014 and 2015 respectively.

The sectors which enjoyed the largest percentage increases in output in 2016 were wholesale and retail (6.2%), information and communication (6.2%), accommodation, food services and recreation (5%) and construction (2.9%). However, all the aforementioned sectors, other than accommodation, food services and recreation saw a significant slowdown in growth compared with 2015.

ECONOMIC STRUCTURE

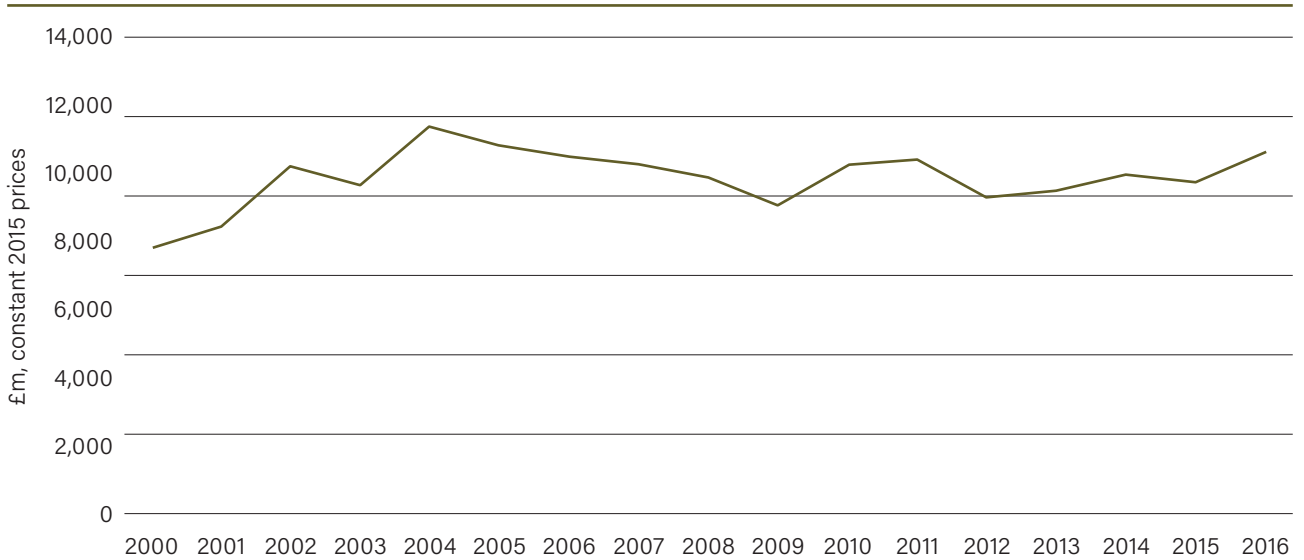
Wholesale and retail's share of total GVA in the region has mirrored the UK average relatively closely over the past 10 years, rising from 10.6% in 2006, to 11.9% in 2016. Accommodation, food services and recreation made up 4.9% of output, as opposed to 4.4% nationally. In both cases, the shares are little changed since 2006. Conversely, information and communication's share has grown from 3.9%, to 4.6%. In the UK as a whole it accounted for 6.5% of output in 2016, up from 5.4% in 2006.

In 2006, professional and other private services made up a larger share of output in the South West than in the UK as a whole, at 26.1%, as opposed to 23.6%. Relatively weak growth in the sector subsequently left the share in the region at 27.3% by 2016, but stronger growth saw the UK's share rise to 27.6%. In the same period, the public services sector has lost roughly 1% of its share of output both in the South West, and nationally. However, in the South West the sector's contribution remained around 2% higher, coming in at 20% in 2016.

Overall, the structure of the South West's economy in sector output terms is very similar to the UK's.

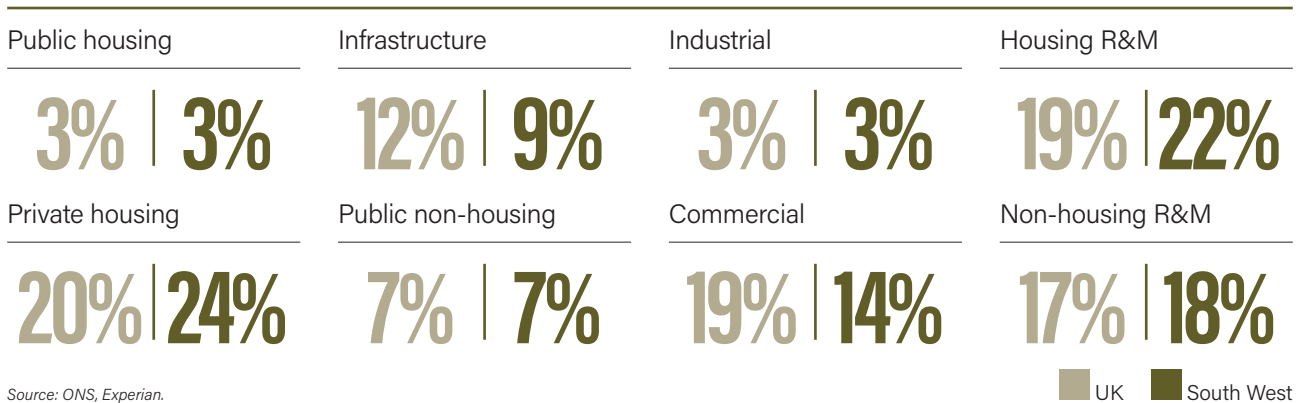


CONSTRUCTION OUTPUT 2000-2016 - SOUTH WEST



Source: ONS.
Ref: CSN Explained.

CONSTRUCTION INDUSTRY STRUCTURE 2016 - UK VS SOUTH WEST



Source: ONS, Experian.

ECONOMIC STRUCTURE - SOUTH WEST (£ BILLION, 2013 PRICES)

	Actual	Forecast (Annual % change, real terms)					
	2016	2017	2018	2019	2020	2021	2022
Professional & Other Private Services	34.4	1.8	1.5	1.9	2.0	2.3	2.7
Public Services	25.1	0.9	1.0	1.5	1.9	2.0	2.4
Wholesale & Retail	15.0	2.0	1.5	1.8	2.0	2.5	3.0
Manufacturing	13.9	1.2	1.1	1.5	1.2	1.3	1.5
Finance & Insurance	7.1	0.6	0.9	1.4	2.3	2.7	3.3
Total Gross Value Added (GVA)	125.7	1.6	1.4	1.7	1.9	2.1	2.6

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

FORWARD LOOKING ECONOMIC INDICATORS

In 2017 GVA growth in the South West is estimated to have moderated for a third consecutive year, to 1.6%. We expect GVA growth to ease further, to 1.4% in 2018, before recovering thereafter.

The projected slowdown in 2018 is underlined by a significant easing in expected growth in the wholesale and retail, and accommodation, food services and recreation sectors. In the former, growth is estimated to have more than halved to 2% in 2017, and is anticipated to decelerate to 1.5% in 2018. In the latter, the gains are forecast to ease from over 4% in 2017 to around 2%.

Sterling's marked depreciation following the European Union referendum vote in June 2016 has driven a rise in import prices over the past year and a half, which has fed through to a rapid increase in consumer prices. With wage growth trailing behind, the result has been a fall in real incomes, and a slowdown in household spending gains. This largely explains the relatively weak outlook for GVA in the wholesale and retail and accommodation, food services and recreation sectors.

From 2019 onwards a slow recovery in these sectors is forecast to drive an improvement in GVA growth, rising to 2.6% by 2022. Over the whole of the 2018–2022 period, GVA is expected to grow at an annual rate of 1.9%, close to the UK rate of 2%. A steady fall back in inflation from above 3% to nearer the Bank of England's 2% target in 2018 should support a return to real income growth, and subsequently provide an uplift in consumer spending, supporting gains in the consumer facing sectors.

As the uncertainty surrounding the UK's exit from the European Union eases, GVA growth in the professional and other private services should also slowly accelerate. The sector registered a mild estimated rise in growth in 2017, but gains are anticipated to slow in 2018, and remain below 2% until 2021.

The short-term slowdown in GVA growth is likely to be matched by a gentle rise in the unemployment rate which is expected to peak at 4% in 2020 and 2021, up from an estimated 3.4% in 2017. However, this remains well down on the peak of 6.4% in 2011, and is around 1% lower than the projection for the UK as a whole.

NEW CONSTRUCTION ORDERS - OVERVIEW

Total construction orders in the South West increased by 38% in 2016 to £5.4bn in current prices. The rise was the largest on record, and the outturn was the highest since 2007.

The increase in orders in 2016 was driven by a very robust increase of over 300% in the public non-housing sector, to a record £1.5bn. This was supported by a rise of 131% in industrial orders, to £505m, a post-financial crisis high.

There was also growth in the commercial (15%) and private housing (5%) sectors. The rise in the latter arrests two years of decline. In the former the outturn was the largest since 2009, at £1.1bn.

The gains were tempered by a 60% fall in public housing new orders and an 11% decline in infrastructure ones to £673m. This was the lowest outturn since 2012.

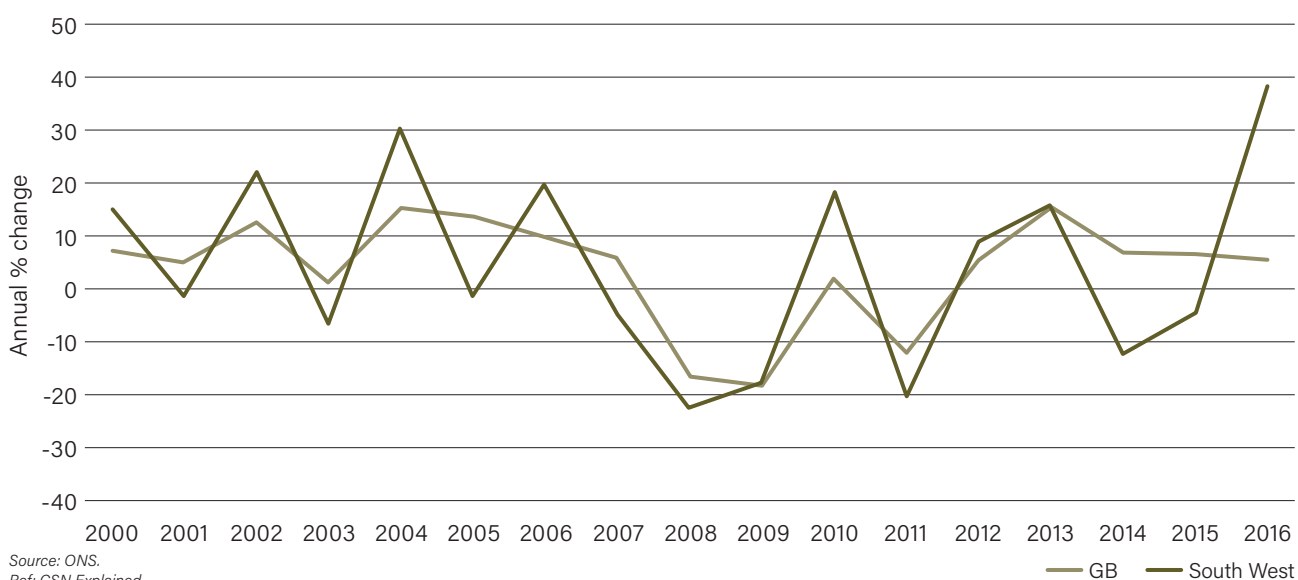


ECONOMIC INDICATORS - SOUTH WEST (£ BILLION, CURRENT PRICES - UNLESS OTHERWISE STATED)

	Actual	Forecast (Annual % change, real terms)					
	2016	2017	2018	2019	2020	2021	2022
Real household disposable income (2013 prices)	104.0	-0.6	1.2	1.2	1.5	1.6	2.0
Household spending (2013 prices)	109.2	1.3	1.0	1.6	2.3	2.3	2.1
Working age population (000s and as % of all)	3,321	60.2%	60.1%	60.1%	60.5%	60.4%	60.1%
House prices (£)	233,417	4.8	2.2	2.4	2.6	2.6	3.7
LFS unemployment (millions)	0.11	-11.3	3.3	9.6	5.2	0.4	-4.5

Source: ONS, DCLG, Experian.

NEW CONSTRUCTION ORDERS GROWTH 2000-2016 - SOUTH WEST VS. GB



NEW WORK CONSTRUCTION ORDERS - SOUTH WEST (£ MILLION, CURRENT PRICES)

	Actual	Annual % change				
	2016	2012	2013	2014	2015	2016
Public housing	59	-15.5	-43.1	-33.9	94.7	-60.1
Private housing	1,520	9.5	19.7	-3.7	-8.1	5.3
Infrastructure	673	37.4	67.8	-17.7	12.8	-11.0
Public non-housing	1,524	50.0	-10.8	-12.2	-45.8	308.6
Industrial	505	22.9	80.2	-40.1	14.7	130.6
Commercial	1,113	-18.0	7.9	-7.0	6.5	15.5
Total new work	5,394	9.2	15.7	-11.5	-4.9	38.2

Source: ONS.
Ref: CSN Explained.

NEW CONSTRUCTION ORDERS – CURRENT SITUATION

The strength of new construction orders continued into 2017, albeit at a slower pace, with a rise of 12% comparing the first three quarters of the year with the same period of 2016. On a four-quarter moving total basis orders rose for the second consecutive quarter in the third quarter of 2017, by 7%.

By far the largest percentage increase in orders was a 405% rise in the public housing sector. The rise comes off a very low base, though at £197m the level was the largest for any first three quarter period of a year since 2011.

The infrastructure and commercial sectors also both made large contributions to orders growth, registering respective gains of 57% and 38%. In addition, orders in the industrial sector grew by 13%.

Offsetting the gains were contractions of 25% and 17% in orders in the private housing and public non-housing sectors.

CONSTRUCTION OUTPUT – SHORT-TERM FORECASTS (2018-2019)

Regional Office for National Statistics (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 three quarters of 2017.

Construction output in the South West rose by 18% in current price terms in the first three quarters of 2017 compared with the same period of the previous year. The continuing is attributable in the main to a gain of 156% in the public non-housing sector, compared to the same period of 2016. At £1.3bn output was by far the largest for this period of any year in the available data series, and builds on a strong 2016 outturn.

Industrial sector output also continued to grow strongly, rising by 38% to £332m. This represents the largest outturn for the first nine months of any year since 2008. Similarly, in the commercial sector output grew by 28%, building on the rise in growth in 2016.

In 2017 as a whole construction output is estimated to have grown by 8% to £11.9bn in 2015 prices. This would be the largest annual increase since 2010 and leave output at an all-time high. Beyond this, in the 2018–2019 period construction output is anticipated to continue to grow at a robust average annual rate, of nearly 6%. This compares favourably to expected growth of 1.5% at the UK level in the same period.

The projected construction output gains in the short-term are driven predominantly by anticipated rises of 26% in 2018 and 50% in 2019 in the infrastructure sector. The forecast is also underlined by healthy anticipated growth in the industrial (8.1%), public non-housing (5.4%), private housing (3.7%) and public housing (1.2%) sectors in the 2018–2019 period. In the commercial sector output is expected to fall at an annual average rate of 3.2%.

The rapid anticipated rise in infrastructure output is underlined by works on the Hinckley Point C nuclear power plant. The first major concrete was poured on site in March 2017, and the

number of workers has risen to around 2,000, up from 1,600 in the spring. Work on a 1,500 bed 'Campus' accommodation for workers is currently underway, with 500 beds on the site and 1,000 in Bridgwater. 4 million cubic metres of earth have also been excavated and two concrete batching plants have been built allowing 2,000 tonnes of concrete a day to be produced on site. At present, the estimated total bill for Hinkley Point C is £20.3bn with a deadline of 2025.

A number of other large projects will contribute towards infrastructure construction growth in the 2018–2019 period. In Avonmouth work has commenced on Viridor's £252m energy recovery facility, which is due to be completed and operational sometime in 2020. Work has also begun on the Javelin Park 'energy from waste project'. The £500m power plant is being funded through a contract between Gloucestershire County Council and a consortium of Spanish-owned Urbaser and civil engineering firm Balfour Beatty. The facility, which will be able to convert 190,000 tonnes a year of waste and have a capacity of 14.5MWe, is due to open in 2019.

Industrial sector construction output should also grow strongly in the short term, buoyed by rapid growth in orders in the last year and a half. According to Savills' Big Sheds Briefing from July 2017, available supply in the South West was at chronic low levels by the end of 2016, and whilst this has been slightly alleviated by two units being added to the market in 2017, available supply remains heavily constrained. Given strong demand for industrial space in the region, the outlook for construction in the sector is positive.

Very strong construction order growth in 2016 should support decent output gains in the public non-housing sector in the short term. Defence-related work should make a large contribution to growth. The sub-sector plays a much more important part in public non-housing construction in the South West than it does across the UK as a whole. This is particularly the case in the context of the Army Basing Plan, to provide accommodation for troops returning from Germany by 2020. Under the plan around 1,900 new family homes and more than 7,800 new rooms for single soldiers will be built, as well as over 800 refurbished rooms for single soldiers and over 450 upgraded homes for families. The South West will take a significant share of the £1.8bn of scheduled expenditure.

The private housing sector is anticipated to grow at close to 4% a year in the 2018–2019 period, making it a middling performer. Comparing the first half of 2017 with the same period of 2016 housing starts rose by 2.5%, which should help to support steady growth in the sector. In Taunton, Forward Swindon, the town council's redevelopment agency is to deliver 4,500 new homes as part of the Wichelstowe residential development.

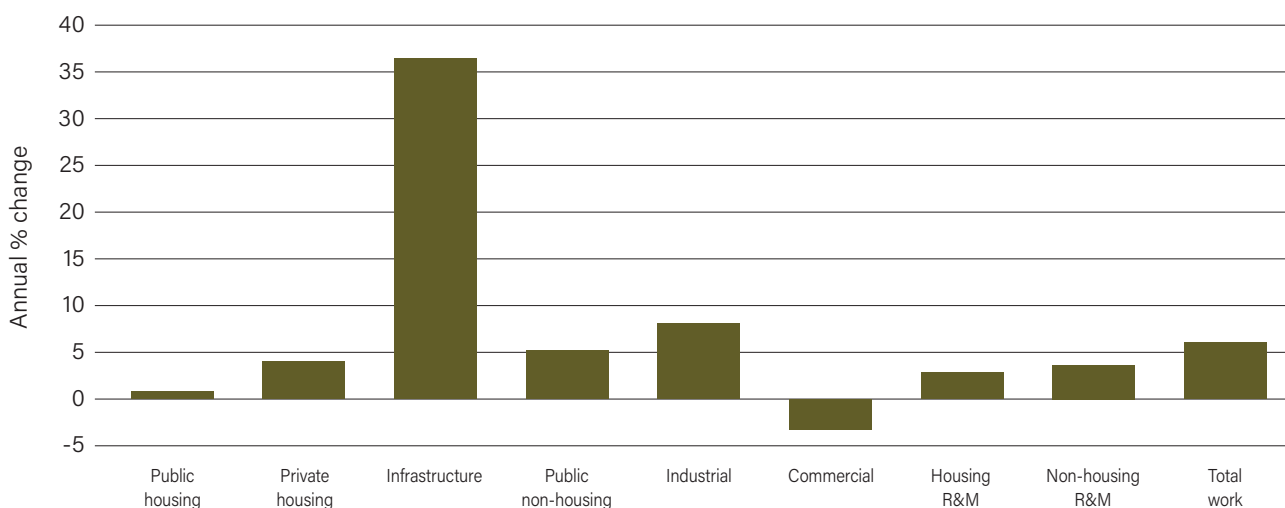
Despite a strong increase in public housing construction orders in the first three quarters of the year, a 6.6% fall in housing starts comparing the first half of 2017 with the same period of 2016 is forecast to underline only modest output growth in the sector in the short-term. Two of the most active housing associations in the region are Coastline Housing Ltd, and Plymouth Community Homes. The former secured over £19.9m of grant funding from the Homes and Communities Agency

CONSTRUCTION OUTPUT - SOUTH WEST (£ MILLION, 2015 PRICES)

	Actual	Forecast (Annual % change)			Annual average
	2016	2017	2018	2019	2018-2019
Public housing	329	1%	-1%	4%	1.2%
Private housing	2,689	-3%	4%	4%	3.7%
Infrastructure	984	1%	26%	50%	37.2%
Public non-housing	769	48%	8%	3%	5.4%
Industrial	349	9%	8%	8%	8.1%
Commercial	1,551	20%	2%	-8%	-3.2%
New work	6,671	10%	7%	8%	7.6%
Housing R&M	2,383	11%	2%	4%	2.8%
Non-housing R&M	1,962	-2%	2%	4%	3.4%
Total R&M	4,345	5%	2%	4%	3.1%
Total work	11,016	8%	5%	7%	5.9%

Source: Experian.
Ref: CSN Explained.

ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2019 - SOUTH WEST



Source: Experian.
Ref: CSN Explained.

■ ■ Employment is forecast to grow by 10%. ■ ■

to develop 499 new homes in Cornwall. Combined with other funding they have committed to building 1,000 new affordable homes in the county by 2021. The latter plans to build 600 new mixed-tenure homes in Plymouth over the 2017–2022 period.

Only the commercial sector is expected to experience a contraction in construction output in the 2018–2019 period, at an annual average rate of 3.2%. The sectors that drive demand for office space, professional and other private services and finance and insurance are projected to see only relatively weak GVA growth in the coming years. This is a symptom partly of the potential for a prolonged period of reduced business investment growth before the terms of the UK's relationship with the EU become clearer. Swindon council's cancellation of the planned £350m redevelopment of the city centre is also a blow to construction output growth in the sector.

The estimated growth in housing R&M output of 11% in 2017 is something of a surprise given the pressure that disposable incomes and therefore consumer spending have been under during the course of last year. The South West's strong performance may be due to its high level of retirees, whose incomes do not rely on average earnings growth, which continues to be relatively weak. It also may be that a quieter housing market, in which housing transactions have stalled at around 1.2 million across the UK for the past four years, is leading to home owners spending more on significant improvements to their properties rather than trading up. However, output in the sector is expected to slow sharply over the next two years as a delayed reaction to the weaker consumer environment.

CONSTRUCTION OUTPUT - LONG-TERM FORECASTS (2018-2022)

A marked slowdown in growth in the latter part of the forecast is projected to pull down the annual average growth rate to 2% in the 2018–2022 period.

Falling infrastructure construction output in 2021 and 2022 is a large contributor to the slowdown. According to the National Infrastructure and Construction Pipeline, once capital expenditure hits £2.08bn in 2018/19 it should stay at that level for the next two years, with a further £8bn to be spent in 2021/22 and beyond. It should be noted that the figures in the pipeline are total project capital expenditure and that the construction element will be lower. Output on the Hinkley Point project is expected to peak around 2020 and with little in the way of other major projects in the pipeline, overall infrastructure output is projected to fall thereafter. However, in the 2018–2022 period as a whole output is still expected to grow at an annual average rate of nearly 10%, by far the fastest of any sector.

Growth in construction output in the private housing sector is also anticipated to slow in the long-term, to an annual average rate of 0.9%. The large Wichelstowe residential development in Swindon is likely to contribute significantly less to output growth beyond 2020 and with few other projects in the pipeline there is little upside growth potential. There are plans to build a total of 18,000 new homes in the Taunton area over the decade to 2028, but it is difficult to assess at this point in time how this is likely to pan out in output terms.

Similarly, in the public non-housing sector construction output growth is projected to slow to an annual average rate of 0.4% in the 2018–2022 period. It is likely that the University of Bristol's plans to build a new £80m library will come to fruition sometime in the long-term forecast period. However, work under the Army Basing Plan is due to complete in 2019 and there is little else in the project pipeline at present.

Output gains in the industrial sector are also anticipated to slow, though remain healthy at 5.1% on an annual average basis in the 2018–2022 period. Strong demand for industrial space is expected to support a decent number of projects in the long-term.

In the commercial sector, a predicted return to growth of 3% annually in 2022 is forecast to underline a slowdown in the annual average declines in construction output, to -1.3%. As Brexit uncertainty slowly dissipates GVA growth in the professional and other private services is forecast to climb to around 3% by 2022, as opposed to 1.5% in 2018. This should underline a modest improvement in construction output growth in the sector. Forward Swindon is planning a major new business district for the centre of town, called Kimmerfields. The 20-acre site will include up to 645,000 square feet of office space, plus leisure facilities and residential units. Detailed plans are now being finalised for the £300m project.

BEYOND 2022

The construction landscape of the South West will be dominated by new nuclear build during most of the 2020s and beyond. Hinkley Point is still scheduled to complete construction in 2025 and become operational in the following year, but given the delays to the project this timetable will be challenging.

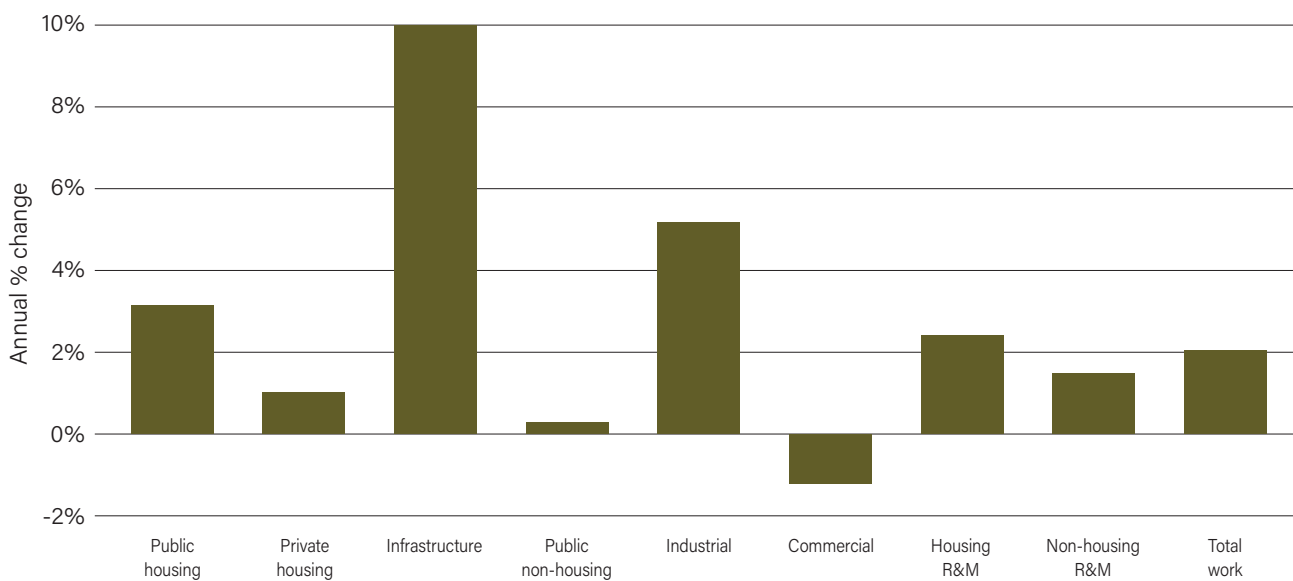
Another major piece of potential work beyond 2022 is the A303 Stonehenge tunnel. According to Highways England the project which is still in the planning stages will cost £1.6bn. The start and end dates are yet to be confirmed, but construction is likely to commence in 2021 and add significantly to output beyond 2022.

CONSTRUCTION OUTPUT - SOUTH WEST (£ MILLION, 2015 PRICES)

	Estimate	Forecast (Annual % change)					Annual average
	2017	2018	2019	2020	2021	2022	2018-22
Public housing	331	-1%	4%	5%	9%	0%	3.1%
Private housing	2,621	4%	4%	2%	-7%	3%	0.9%
Infrastructure	991	26%	50%	5%	-4%	-15%	9.9%
Public non-housing	1,136	8%	3%	-5%	0%	-3%	0.4%
Industrial	379	8%	8%	3%	4%	3%	5.1%
Commercial	1,856	2%	-8%	-3%	0%	3%	-1.3%
New work	7,315	7%	8%	1%	-3%	-2%	2.1%
Housing R&M	2,653	2%	4%	2%	2%	3%	2.4%
Non-housing R&M	1,926	2%	4%	1%	0%	-1%	1.3%
Total R&M	4,579	2%	4%	1%	1%	1%	2.0%
Total work	11,894	5%	7%	1%	-1%	-1%	2.0%

Source: CSN, Experian.
Ref: CSN Explained.

ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2022 - SOUTH WEST



Source: CSN, Experian.
Ref: CSN Explained.

CONSTRUCTION EMPLOYMENT FORECASTS FOR THE SOUTH WEST

TOTAL CONSTRUCTION EMPLOYMENT FORECASTS BY OCCUPATION

The table presents actual construction employment (SICs 41-43, 71.1, and 74.9) in the South West for 2016, the estimated total employment across 28 occupational categories in 2017 and forecasts for the industry for 2018 to 2022. A full breakdown of occupational groups is provided in the CSN Explained section.

Construction employment in the South West reached 228,180 in 2016, its highest level since 2009. Further growth is estimated for last year, of 1% to 230,410.

Employment in the South West is expected to grow at around the same rate annually over the 2018–2022 period. This compares favourably to estimated gains of 0.5% at the national level. In levels terms this equates to a rise from an estimate of employment of 230,410 in 2017 to 241,920 in 2022, the first time it will have exceeded 240,000 since its peak year in 2008.

Out of the 28 occupational categories 22 are expected to see a rise in employment in the five years to 2022. The largest increases are forecast for the plumbing and HVAC trades (3.1% annual average), wood trades and interior fit-out (2.6%), bricklayers (2.5%), glaziers (2.3%) and architects (2%).

Whereas across the UK as a whole the managerial/administrative and professional occupations are projected to fare better than the trades/manual ones, in the South West the profile is somewhat different, with professionals seeing the strongest growth, followed by the trades/manual occupations and managerial/administrative ones bringing up the rear.



TOTAL EMPLOYMENT BY OCCUPATION - SOUTH WEST

Annual recruitment requirement (ARR) by occupation

	Total employment	2018	2022	ARR
Non-manual occupations				
Non-construction professional, technical, IT, and other office-based staff	34,700 35,370			1,110
Senior, executive, and business process managers	17,190 16,160			450
Other construction process managers	13,910 14,060			390
Construction Project Managers	3,090 3,190			60
Construction Trades Supervisors	3,360 3,350			<50
Non-construction operatives	1,530 1,410			-
Manual occupations				
Wood trades and interior fit-out	27,790 30,990			330
Electrical trades and installation	16,840 17,550			260
Plumbing and HVAC Trades	17,190 19,560			250
Bricklayers	6,790 7,600			230
Plasterers	4,420 4,670			230
Roofers	5,500 5,530			230
Painters and decorators	12,650 13,180			190
Building envelope specialists	10,470 11,310			120
Glaziers	2,340 2,600			110
Logistics	930 910			<50
Scaffolders	3,750 3,400			<50
Specialist building operatives nec*	4,160 4,410			<50
Steel erectors/structural fabrication	1,990 2,180			<50
Floorers	1,510 1,540			<50
Labourers nec*	6,990 6,410			-
Plant operatives	3,310 3,430			-
Plant mechanics/fitters	2,640 2,540			-
Civil engineering operatives nec*	2,260 2,260			-
Professional occupations				
Surveyors	7,490 7,750			260
Other construction professionals and technical staff	14,600 14,610			90
Civil engineers	3,190 3,200			<50
Architects	2,600 2,750			<50

Source: ONS, CSN, Experian. Ref: CSN Explained. *Not elsewhere classified.

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 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 ARR for the South West is projected to be 4,480 in the 2018–2022 period. This represents 1.9% of base 2018 employment, a higher ratio than the UK's at 1.2%. Only plasterers were flagged as having a high ARR requirement (more than 5% of base 2018 employment) at 5.2%. Seven occupational categories were deemed to be of medium requirement (between 2.6% and 5% of base 2018 employment) the highest of which were for glaziers (4.7%), roofers (4.2%) surveyors (3.5%) and bricklayers (3.4%). All other occupations were deemed to have a low ARR requirement (up to 2.5% of base 2018 employment).

In absolute terms, the largest construction-specific requirements are for other construction process managers (390 annual average), wood trades and interior fit-out (330), and electrical trades and installation, and surveyors (260 each).

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.



ANNUAL RECRUITMENT REQUIREMENT BY OCCUPATION - SOUTH WEST

2018-2022

	2018-2022
Non-manual occupations	
Non-construction professional, technical, IT, and other office-based staff	1,110
Other construction process managers	390
Senior, executive, and business process managers	450
Construction trades supervisors	<50
Construction project managers	60
Manual occupations	
Wood trades and interior fit-out	330
Labourers nec*	-
Electrical trades and installation	260
Painters and decorators	190
Plumbing and HVAC Trades	250
Bricklayers	230
Plant operatives	-
Logistics	<50
Plasterers	230
Roofers	230
Scaffolders	<50
Specialist building operatives nec*	<50
Building envelope specialists	120
Steel erectors/structural fabrication	<50
Glaziers	110
Plant mechanics/fitters	-
Floorers	<50
Civil engineering operatives nec*	-
Professional occupations	
Other construction professionals and technical staff	90
Civil engineers	<50
Surveyors	260
Architects	<50
Total (SIC 41-43)	4,100
Total (SIC 41-43, 71.1, 74.9)	4,480

Source: CSN, Experian.
Ref: CSN Explained. *Not elsewhere classified.

COMPARISONS ACROSS THE UK

It remains the case that the strongest economic growth will be in the south-east corner of England – Greater London, the South East and the East of England – which are the only three regions projected to see higher GVA growth than the UK rate of 2% a year on average to 2022.

The picture is more mixed across the regions and devolved nations in construction terms, although generally overall economic performance tends to drive stronger construction growth in the south-east corner of England, except where major infrastructure schemes have an impact.

Construction output growth is projected to be strongest in Wales, averaging 4.6% a year over the 2018 to 2022 period. The Welsh construction market is the third smallest in the UK, at an estimated £5.7bn (2015 prices) in 2017, therefore the start of work on the Wylfa nuclear power station will have a major impact on output levels in the devolved nation. However, growth is not entirely reliant on this project, with others, such as the M4 upgrade around Newport and the commitment to build 20,000 new affordable homes by 2020/21 making significant contributions.

Construction output in Scotland is likely to remain largely static over the 2018 to 2022 period as further falls in infrastructure output from its very high peak in 2015 is counteracted by good growth in the housing sectors, with Scotland's target for affordable homes set at 50,000. The new Queensferry Crossing is now complete, as are the major motorway upgrades, with the Aberdeen Western Peripheral Route due to finish by spring 2018. There are other sizeable infrastructure projects ongoing, such as the dualling of the A9 between Perth and Inverness, but work on these will be spread over a long time period, therefore their impact on growth is diluted.

Northern Ireland has experienced something of a boom in commercial construction activity over the past few years, driven in large part by a substantial expansion of hotel provision in Belfast. However, this may be slackening, while the current political impasse in the devolved nation is likely to impact negatively the timing of new infrastructure and other public projects, leading to relatively modest total output growth of 0.5% a year.

It is the case across the English regions that growth in the construction sector will tend to reflect expansion in the wider economy, unless the region benefits from the siting of major infrastructure projects. Both the South West and North West, which lead the English region growth rankings with 2% a year on average, will benefit from new nuclear build, at Hinkley Point in the case of the former and Moorside in the case of the latter. Enabling works at Hinkley Point have been ongoing for some time while some work at Moorside is projected to begin in 2022. London, and the East Midlands and West Midlands will also see good growth in infrastructure activity as work on High Speed 2 builds up over the forecast period. The strong infrastructure growth in the West Midlands should enable it

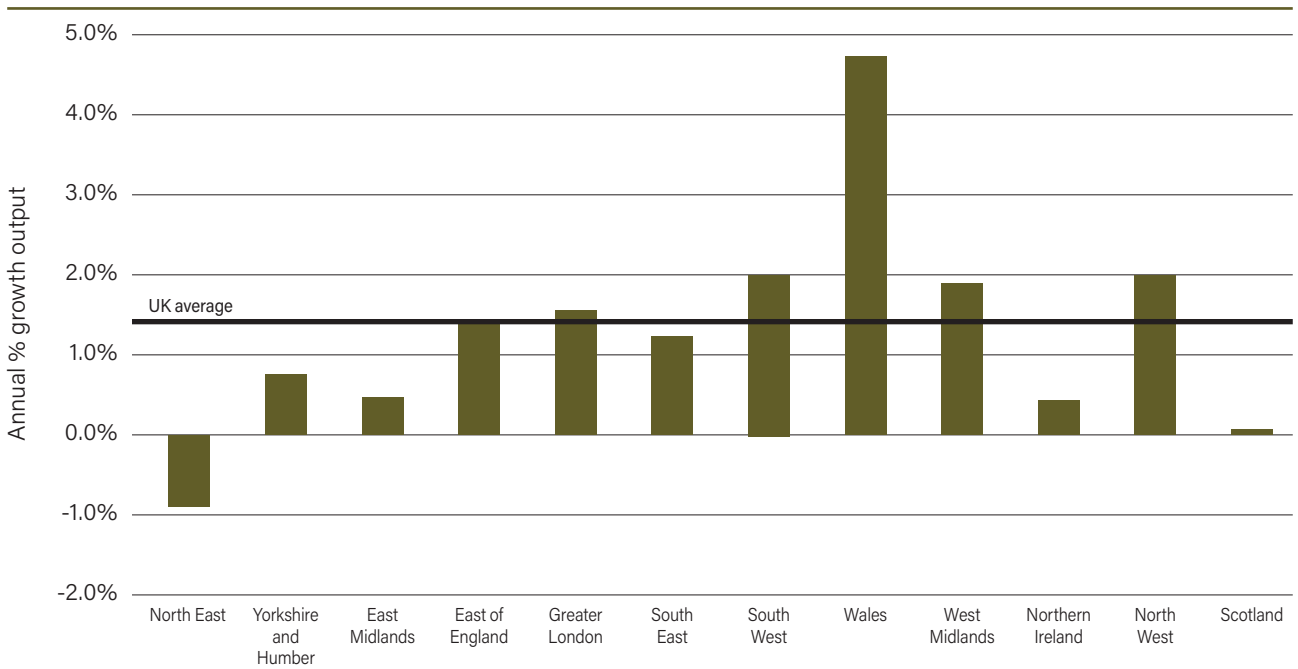
to experience annual average expansion in total construction output of 1.8%, just behind the South West and North West.

London only manages average yearly growth of 1.5%, as while it benefits from strong infrastructure growth and above average expansion in the housing sectors, commercial construction in the capital is the most vulnerable to a more cautious attitude from investors and developers due to Brexit uncertainty.

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 average employment growth is projected to range from a high of 2.1% in Wales to a low of -1.6% in the North East, against a UK rate of 0.5%.

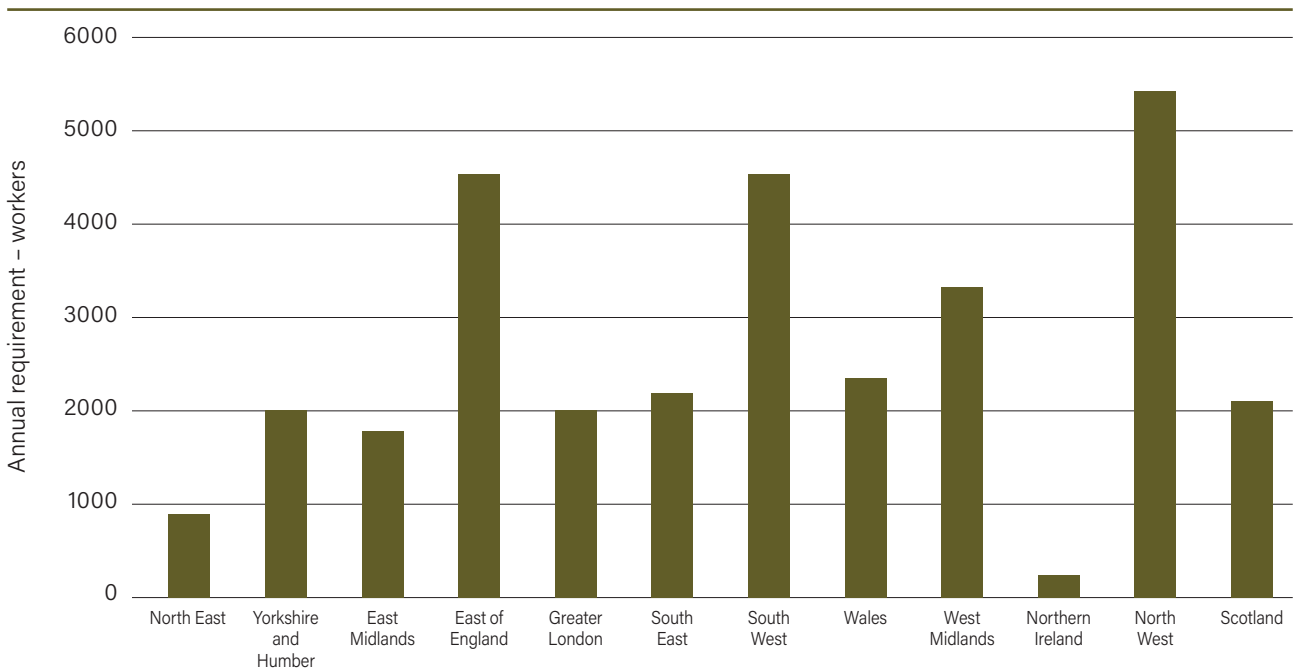
As the annual recruitment requirement (ARR) takes into account known supply-side factors, such as intra-regional labour movements and movements between other industries and construction, the pattern can look significantly different to the profile of output and employment, as some regions and devolved nations have historically strong net inflows and some suffer from large net outflows. For the 2018 to 2022 period, the largest absolute ARR's are for the North West (5,470), the East of England (4,540) and the South West (4,480). However, relative to base employment, Wales has the largest ARR (2.2%), followed by the South West and North West (1.9%). London is the biggest region for construction employment, but has a relatively low ARR at 2,010, just 0.5% of base 2018 employment, as the capital tends to act as a magnet for the workforce from other regions and internationally anyway.

ANNUAL AVERAGE OUTPUT GROWTH BY REGION 2018-2022



Source: CSN, Experian.
Ref: CSN Explained.

ANNUAL RECRUITMENT REQUIREMENT (ARR) BY REGION 2018-2022



Source: CSN, Experian.

■ ■ The South West has an ARR of 4,480. ■ ■

CSN EXPLAINED

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

CSN METHODOLOGY 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.

GLOSSARY provides clarification of some of the terms that are used in the reports.

NOTES has some further information 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.

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

OCCUPATION GROUPS 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.

CSN METHODOLOGY

BACKGROUND

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

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 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:

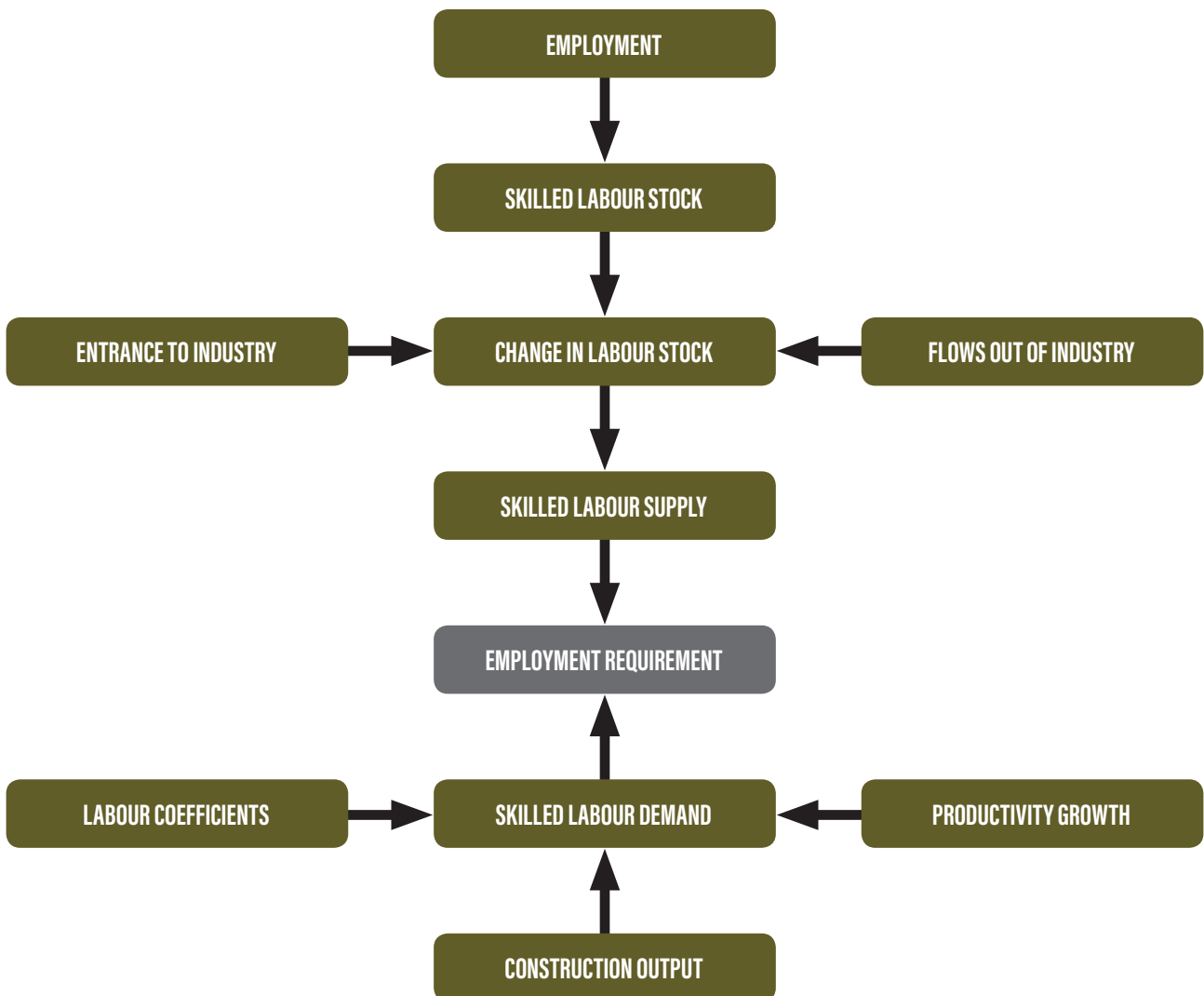
- Transfers to other industries
- International/domestic out migration
- Permanent retirements (Including permanent sickness)
- Outflow to temporary sickness and home duties.

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 flowchart.



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. $GDP = GVA \text{ plus taxes on products minus subsidies on products}$.

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.



NOTES

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. 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.
- 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 THE BUILT ENVIRONMENT SECTOR

CITB and CITB Northern Ireland are 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 CITB and CITB Northern Ireland:

CITB and CITB Northern Ireland	
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 CSN's current baseline forecast assumes that a deal between the UK and EU will be agreed within a four year time horizon, with some form of trade access to the single market. As it is unlikely that the trade terms will be as favourable as the current situation, the forecast includes a small downgrade to the UK's long term export and investment projections, compared to the pre-Brexit vote baseline. No adjustments have been made to underlying population projections in the base case as it is too early to assess any potential slowdown in EU migration.

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 construction¹

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 work¹

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



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.

OCCUPATIONAL GROUPS

Occupational group			
Description, SOC (2010) reference.			
Senior, executive, and business process managers			
Chief executives and senior officials	1115	Management consultants and business analysts	2423
Financial managers and directors	1131	Receptionists	4216
Marketing and sales directors	1132	Typists and related keyboard occupations	4217
Purchasing managers and directors	1133	Business sales executives	3542
Human resource managers and directors	1135	Bookkeepers, payroll managers and wages clerks	4122
Property, housing and estate managers	1251	Records clerks and assistants	4131
Information technology and telecommunications directors	1136	Stock control clerks and assistants	4133
Research and development managers	2150	Telephonists	7213
Managers and directors in storage and warehousing	1162	Communication operators	7214
Managers and proprietors in other services nec*	1259	Personal assistants and other secretaries	4215
Functional managers and directors nec*	1139	Sales and retail assistants	7111
IT specialist managers	2133	Telephone salespersons	7113
IT project and programme managers	2134	Buyers and procurement officers	3541
Financial accounts managers	3538	Human resources and industrial relations officers	3562
Sales accounts and business development managers	3545	Credit controllers	4121
Construction project managers		Company secretaries	4214
Construction project managers and related professionals	2436	Sales related occupations nec*	7129
Other construction process managers		Call and contact centre occupations	7211
Production managers and directors in manufacturing	1121	Customer service occupations nec*	7219
Production managers and directors in construction	1122	Elementary administration occupations nec*	9219
Managers and directors in transport and distribution	1161	Chemical scientists	2111
Waste disposal and environmental services managers	1255	Biological scientists and biochemists	2112
Health and safety officers	3567	Physical scientists	2113
Conservation and environmental associate professionals	3550	Laboratory technicians	3111
Non-construction professional, technical, IT, and other office-based staff (excl. managers)		Graphic designers	3421
IT operations technicians	3131	Environmental health professionals	2463
IT user support technicians	3132	IT business analysts, architects and systems designers	2135
Finance and investment analysts and advisers	3534	Conservation professionals	2141
Taxation experts	3535	Environment professionals	2142
Financial and accounting technicians	3537	Actuaries, economists and statisticians	2425
Vocational and industrial trainers and instructors	3563	Business and related research professionals	2426
Business and related associate professionals nec*	3539	Finance officers	4124
Legal associate professionals	3520	Financial administrative occupations nec*	4129
Inspectors of standards and regulations	3565	Human resources administrative occupations	4138
Programmers and software development professionals	2136	Sales administrators	4151
Information technology and telecommunications professionals nec*	2139	Other administrative occupations nec*	4159
Estate agents and auctioneers	3544	Office supervisors	4162
Solicitors	2413	Sales supervisors	7130
Legal professionals nec*	2419	Customer service managers and supervisors	7220
Chartered and certified accountants	2421	Office managers	4161
Business and financial project management professionals	2424	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		Air-conditioning and refrigeration engineers	5225
Bricklayers and masons	5312	Logistics	
Building envelope specialists		Large goods vehicle drivers	8211
Construction and building trades nec* (50%)	5319	Van drivers	8212
Painters and decorators		Elementary storage occupations	9260
Painters and decorators	5323	Buyers and purchasing officers (50%)	3541
Construction and building trades nec* (5%)	5319	Transport and distribution clerks and assistants	4134
Plasterers		Civil engineering operatives not elsewhere classified (nec*)	
Plasterers	5321	Road construction operatives	8142
Roofers		Rail construction and maintenance operatives	8143
Roofers, roof tilers and slaters	5313	Quarry workers and related operatives	8123
Floorers		Non-construction operatives	
Floorers and wall tilers	5322	Metal making and treating process operatives	8117
Glaziers		Process operatives nec*	8119
Glaziers, window fabricators and fitters	5316	Metalworking machine operatives	8125
Construction and building trades nec* (5%)	5319	Water and sewerage plant operatives	8126
Specialist building operatives not elsewhere classified (nec*)		Assemblers (vehicles and metal goods)	8132
Construction operatives nec* (100%)	8149	Routine inspectors and testers	8133
Construction and building trades nec* (5%)	5319	Assemblers and routine operatives nec*	8139
Industrial cleaning process occupations	9132	Elementary security occupations nec*	9249
Other skilled trades nec*	5449	Cleaners and domestics*	9233
Scaffolders		Street cleaners	9232
Scaffolders, staggers and riggers	8141	Gardeners and landscape gardeners	5113
Plant operatives		Caretakers	6232
Crane drivers	8221	Security guards and related occupations	9241
Plant and machine operatives nec*	8129	Protective service associate professionals nec*	3319
Fork-lift truck drivers	8222	Civil engineers	
Mobile machine drivers and operatives nec*	8229	Civil engineers	2121
Plant mechanics/fitters		Other construction professionals and technical staff	
Metalworking production and maintenance fitters	5223	Mechanical engineers	2122
Precision instrument makers and repairers	5224	Electrical engineers	2123
Vehicle technicians, mechanics and electricians	5231	Design and development engineers	2126
Elementary process plant occupations nec*	9139	Production and process engineers	2127
Tool makers, tool fitters and markers-out	5222	Quality control and planning engineers	2461
Vehicle body builders and repairers	5232	Engineering professionals nec*	2129
Steel erectors/structural fabrication		Electrical and electronics technicians	3112
Steel erectors	5311	Engineering technicians	3113
Welding trades	5215	Building and civil engineering technicians	3114
Metal plate workers and riveters	5214	Science, engineering and production technicians nec*	3119
Construction and building trades nec* (5%)	5319	Architectural and town planning technicians*	3121
Smiths and forge workers	5211	Draughtspersons	3122
Metal machining setters and setter-operators	5221	Quality assurance technicians	3115
Labourers nec*		Town planning officers	2432
Elementary construction occupations (100%)	9120	Electronics engineers	2124
Electrical trades and installation		Chartered architectural technologists	2435
Electricians and electrical fitters	5241	Estimators, valuers and assessors	3531
Electrical and electronic trades nec*	5249	Planning, process and production technicians	3116
Telecommunications engineers	5242	Architects	
Plumbing and heating, ventilation, and air conditioning trades		Architects	2431
Plumbers and heating and ventilating engineers	5314	Surveyors	
Pipe fitters	5216	Quantity surveyors	2433
Construction and building trades nec* (5%)	5319	Chartered surveyors	2434
		*Not elsewhere classified	

CITB RESEARCH

**For more information about the
Construction Skills Network, contact:**

Karen Hazelden

Research Analyst

07730 802395

Karen.hazelden@citb.co.uk

citb.co.uk/csn

