



# INDUSTRY INSIGHTS

Construction Skills Network  
Forecasts 2016–2020

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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 2005 ("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.



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# FOREWORD

Last year's Construction Skills Network forecast showed a strong return to growth and this year's report shows that it is set to continue right through to 2020.

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This report, still the industry's most comprehensive and up-to-date, predicts growth in every nation and region in the UK. The rate varies across the three nations – Wales leads the way with a 7.1% annual growth forecast whereas England is predicted to experience a 2.5% annual expansion, and Scotland a 0.5% annual increase in output. With an annual UK average increase of 2.5%, driven by the infrastructure and private housing sectors, these figures are encouraging.

With this opportunity comes an inevitable challenge. Over 230,000 new workers are needed in the next five years. With housing output forecast to grow, and ambitious Government targets across the UK to increase the volume of available homes by 2020, CITB is working closely with industry to understand the potential impact that this may have on skills and employment.

This forecast should help employers feel more confident about taking on an apprentice or investing in their existing workforce. But of course they cannot do it alone, which is where CITB comes in.

Recognising the challenge industry faces, CITB is committed to help construction employers deliver the pipeline of work faster, better and more efficiently.

In the past year, we have made CITB more responsive to industry's needs. We have streamlined funding, making it easier for employers to access, and are investing where it is most needed.

We are also mapping the supply of skills coming in to the sector, to better match it against employer needs. Using this knowledge, we are increasingly using partnership and commissioning to deliver training where it is most in demand.

Of course, training cannot work without attracting new talent. That's why, in 2015, I was so pleased to see industry taking the initiative and working through CITB to launch Go Construct, a new web portal showcasing all of the great career opportunities available in our sector.

One of the main groups we need to reach is young people, especially through Apprenticeships. The skills environment is changing, through the Government's Apprenticeships Levy and its reforms of Apprenticeship funding. But both industry and Government agree that apprentices are the lifeblood of a successful industry, and we need to train many more to secure construction's future.

This report shows that our industry is heading in the right direction. Now it is up to us to work together and train our people, to do our part in building a better Britain.

**Adrian Belton**  
CITB Chief Executive



“ This forecast should help employers feel more confident about taking on an apprentice or investing in their existing workforce. ”





# THE BIG PICTURE

It was almost inevitable that UK economic growth would slow down in 2015 after the strong rise in GDP in the previous year and this has proved to be the case, with the estimated outturn for last year an increase of 2.4%. However, this is close to the long-term trend and should take GDP in 2015 to over 7% above the previous peak in 2007.

Growth remains very service-sector driven, with output in the construction, manufacturing and production industries still below the first quarter 2008 peak. There is little sign as yet of any real rebalancing of the economy. Nevertheless there were a lot of positives in 2015. Employment growth continued to be robust, with the unemployment rate falling to 5.1% in November 2015, its lowest level since before the recession. Inflation continuing at near zero for much of the year has meant that real earnings growth has been seen again and this, combined with employment growth, has led to consumer spending remaining strong.

Construction output growth slowed from its very strong rate in 2014 but the industry is still expected to have posted an increase of around 3.5% in real terms last year, taking its level up to around 98% of the 2007 peak. Output expansion is projected to average 2.5% in the five years to 2020 and this compares favourably with the pre-recessionary growth period (1995 to 2007), when it averaged 2.1% a year.

Construction employment is estimated to have grown robustly for the second consecutive year in 2015 and demand is expected to continue to rise during the forecast period, albeit at a moderating rate. Annual employment growth is projected to average 1.1% a year and by 2020 the construction workforce should number around 2.73 million, 5% below its 2008 peak.

The global economy experienced a disappointing slowdown in trade last year, which is constraining overall growth prospects, despite the continuing low oil price. The Organisation for Economic Co-operation and Development (OECD) estimates that global trade grew by only 2% in 2015, a rate associated in the past with recession. They have reduced their forecast for global GDP growth to 2.9% in 2015 and 3.3% in 2016, with the upturn from this year's low rate dependent on the success of stimulatory policies in China, which posted its lowest growth rates for 25 years in January 2016.

The eurozone has had a tumultuous 2015, with the election of Syriza in Greece in the early part of the year leading to a stand-off with the European Union (EU) which could have led to a Greek exit from the eurozone and its possible break up. In the event this scenario was avoided, but only by Greece accepting further stringent

austerity measures in return for more EU bailout funds. Since then the European Central Bank (ECB) has initiated quantitative easing (QE) measures in an attempt to boost growth in the eurozone economies. However, recovery remains gradual.

In the United States, the underlying performance remains solid, featuring a strong labour market, with 271,000 jobs created in October while the unemployment rate dropped to 5%. GDP growth is estimated at 2.5% in 2015 and is forecast to post a similar rate in each of the next three years. This has led the Federal Reserve to raise US interest rates by 25 basis points for the first time in nine years in December.

Growth prospects in much of Asia remain buoyant by Western standards. While concerns have surfaced in recent months surrounding a slowdown in China, the country's GDP growth is still widely forecast to reach 6.5% in 2016 and remain above 6% in the following two years. Even better rates of growth, approaching 8% per annum, are forecast for India over the next three years. Other developing countries in the region (Indonesia, Malaysia, Philippines) are also expected to remain on a robust growth path. But Japan has disappointed after a strong first quarter outturn, with the economy falling into recession in the second and third quarters, and several years of pedestrian growth near 1% are expected.

Despite the somewhat muted performance in 2015 the prospects for the global economy generally remain benign. There were worries that the start of US interest rate rises could cause some emerging market economies to tip over into balance of payments or currency crises. However, most of these economies now have lower external debt levels than they historically have, and more flexible exchange rates, which act as shock absorbers. Furthermore, their foreign exchange reserves tend to be larger than in the past and they are expected to be able to weather this particular storm better than they would have otherwise done.

The impact on the UK economy of sluggish global trade growth and muted eurozone recovery has been to make the ongoing recovery even more dependent on domestic demand. However, steep rises in personal borrowing in recent months are a cause for concern. With government spending constrained by fiscal tightness and fixed investment accounting for a relatively modest



proportion of demand, this places the onus for sustaining growth on consumer spending. Fortunately, prospects for consumer spending and hence GDP growth in 2016 appear promising. Negligible inflation and low interest rates are now expected to persist through most of 2016, supporting real income growth. The scrapping of the change to tax credits announced in the Autumn Statement is also a positive in terms of real income growth, which is expected to manage 2.4% this year, underpinning a 2.8% rise in household expenditure. In the medium-term consumer spending growth will moderate but by then the current drag from net trade is expected to dissipate, leading to average annual GDP growth of 2.4%, around the long-term average.

In 2014 the major growth driver for the construction industry had been housing, both public and private. It was inevitable that expansion in these two sectors in 2015 was going to subside from the very strong level in the previous year and this has proved to be the case. In fact, public housing output is estimated to have contracted last year, while growth in private housing output was back down to single digits. The main driver of the estimated 3.5% increase in output in 2015 has been the infrastructure sector, although some of its very strong growth has been due to a statistical discontinuity. Due to the reclassification of a major firm from the support services sector to the construction one and the counting of its output largely in the infrastructure sector from March 2015, there is a statistical discontinuity in the Office for National Statistics (ONS) data between February and March 2015, which will not fully unwind until March 2016. The effect of this discontinuity has been to boost infrastructure output growth substantially last year, to an estimated 25%. Without this discontinuity, infrastructure output growth would be around 13% in 2015, which would bring the overall increase in construction output down to around 2%.

Output in the construction industry is projected to expand at an annual average rate of 2.5% over the 2016 to 2020 period, a little down on the 2.9% growth for 2015 to 2019 predicted in 2014. This slowdown in expansion is almost inevitable as the industry moves out of its initial recovery period and into one of sustained growth. The annual average increase of 2.5% still compares favourably with the rate seen during the last growth period, 1995 to 2007, of 2.1% a year. Infrastructure is expected to be the star performer, with a number of very big projects, such as High Speed 2 (HS2), due to start within the forecast period, although there are some large schemes, such as Crossrail, due to complete. The commercial construction sector, in which output is still well below peak levels, should experience some sustained growth, with the most buoyant sub-sectors likely to be offices and leisure. The public non-housing sector is predicted to see a bit of a bounce-back after five consecutive years of contraction, with output growth driven by the education and

miscellaneous sub-sectors. Expansion in private housing output is likely to moderate over the forecast period, but the picture for public housing looks more mixed. While it is anticipated that some parts of the market will recede as social housing providers struggle with an environment much less conducive to attracting private finance than previously, recent policy announcements by the government to directly commission 13,000 homes on five sites around southern England may counteract the lack of investment elsewhere.

2015 is likely to have been another very good year for construction employment as defined by Standard Industrial Classifications SICs 41 to 43, 71.1, and 74.9 – that is, those working in the contracting and construction professionals sectors. Over the past two years total construction employment is estimated to have grown by around 104,000 according to Labour Force Survey (LFS) data, equating to a 4% increase in the workforce. All 28 occupational categories defined in the Construction Skills Network have seen growth, but some, such as bricklayers (7%), have experienced particularly fast expansion and it is the speed as much as the scale that is likely to have caused the difficulties recruiting skilled staff that have been reported. According to the Federation of Master Builders (FMB) the difficulty in recruiting bricklayers and carpenters and joiners has become more acute over the past year. Around 60% of respondents reported difficulties recruiting the former and about 55% had problems finding the latter in the third quarter of 2015 compared with the same period in 2014. Findings that are echoed in the National Federation of Builders (NFB) Survey, which reported that overall, 42% of building contractors reported difficulties recruiting on-site trades in Q3, compared to 16% in Q2 and a balance of 31% one year earlier. Again, the supply of bricklayers was the largest concern in Q3, with approaching a third (63%) of contractors reporting difficulties with recruitment of this trade, and two-fifths (41%) of firms reporting that it was increasingly difficult to recruit carpenters.

In contrast, the percentage of respondents to the Civil Engineering Contractors Association's quarterly survey citing shortages of skilled operatives showed a small fall to 43% in the third quarter of last year compared with the previous year (47%), although the numbers remained high. Experian's monthly survey of contractors' activity also showed easing labour constraints, from 12% of respondents citing them as a problem in November 2014 to 9% in November 2015.

However, there is little doubt that the industry is experiencing short-term skills issues. Firms having difficulty finding suitably skilled staff report various negative impacts, including delayed project delivery and wages inflation. This clearly indicates that difficulties finding suitable staff are more than simply an inconvenience.



The situation is unlikely to ease in 2016 on the current forecasts, which predict that an increase of nearly 80,000 in the construction workforce is needed given anticipated demand. Thereafter growth in employment is likely to wane and over the whole of the forecast period construction employment is projected to expand at an annual average rate of 1.1%. This implies a productivity growth rate of 1.4% (output growth of 2.5% minus employment growth of 1.1%), for the UK as a whole. However, this 'implied' productivity growth rate can be as much a factor of where expansion is in terms of sector rather than any real gain, due to the fact that some types of construction activity are much more labour intensive than others. This rate of growth will take construction employment in the UK to around 2.73 million in 2020, 6% higher than the estimated outturn for 2015, with most of the increase in the early part of the forecast period. However, given anticipated productivity gains, total employment will still be around 5% lower than its 2008 peak.

All but two of the 28 occupational categories are expected to experience employment growth over the five years to 2020. The two exceptions are plasterers and glaziers, for which employment is predicted to be flat overall. Demand is projected to be particularly strong for construction trades supervisors (2.4% a year on average), architects (2.2%), surveyors (2.1%), and other construction professional and technical staff (2%). Demand for many of the trades remains quite strong, such as bricklayers (1.4%), but it will ease down from that seen over the 2014 to 2016 period as output growth settles down to more sustainable levels.

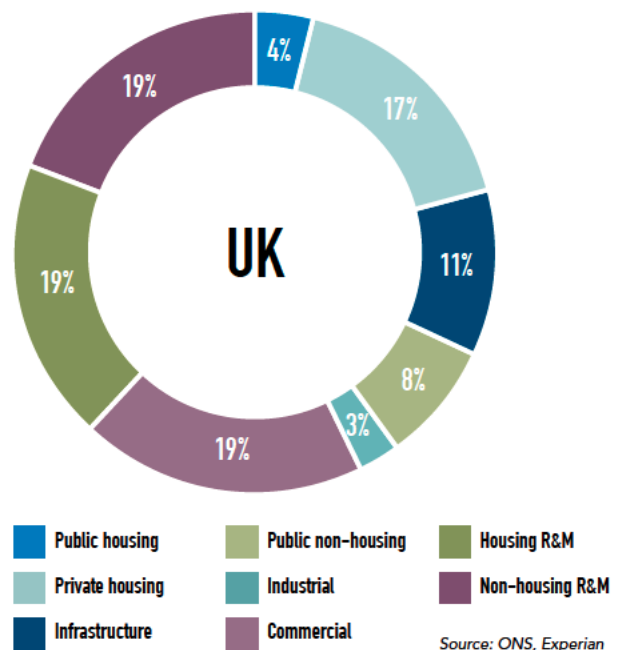
It remains the case that there is little in the LFS numbers to indicate an accelerating pace of structural change in the industry – that is a move from traditional trades to off-site manufacturing and modular construction for example. Therefore, the argument that these changes tend to be long term and incremental still holds true. This is reflected in the forecasts for the 28 occupational categories, which continue to show changes in their respective shares of total construction employment limited to  $\pm 0.3\%$  at most over the 2016 to 2020 period. There is a slight shift towards the managerial and professional occupations and away from the trades, but it is very slight.

Last year saw a substantial move upwards in the annual recruitment requirements (ARR) of around 8,300 from the 2014 to 2018 projection to the 2015 to 2019 one. Growth in the ARR has slowed to less than 2,000, with the 2016 to 2020 requirement around 46,420. However, it should be remembered that the ARR is an annual average requirement and given the pattern of output and employment growth, it is likely to be higher in the earlier part of the forecast period.

The ARR brings together increases in demand for employment based on anticipated levels of workload, with the supply-side 'churn' in the industry, i.e. those moving in and out of the industry for one reason or another – retirement, death, movements between industries, etc. – but not including flows in from training. The ARR represents the levels of recruitment required over and above the normal 'churn' rates in a particular period. For the 2016 to 2020 period, the total projected ARR over the five years is 232,100 (46,420 multiplied by five), of which around 145,000 is demand driven and the remainder is a 'net replacement' (inflows minus outflows) requirement.

In absolute terms, the largest ARR for construction-specific occupational groups are for wood trades and interior fit out (4,320) and labourers nec (3,090). However, in relative terms as a ratio of base 2016 employment, logistics personnel (5.8%), bricklayers (4%) and glaziers (4%) have the largest ARR, and these seem to reflect, at least in part, the areas of biggest shortage currently being reported across the industry.

### CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK





## TOTAL EMPLOYMENT BY OCCUPATION – UK

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	ARR
Senior, executive, and business process managers		174,670 179,230	1,850
Construction project managers		50,070 52,500	330
Other construction process managers		195,600 207,330	630
Non-construction professional, technical, IT and other office-based staff		368,140 379,690	9,400
Construction trades supervisors		49,350 53,440	1,580
Wood trades and interior fit-out		273,300 277,990	4,320
Bricklayers		71,950 74,170	2,870
Building envelope specialists		106,430 108,440	2,510
Painters and decorators		114,050 112,620	2,230
Plasterers		49,250 48,150	1,580
Roofers		45,970 46,470	1,360
Floorers		26,830 26,610	1,070
Glaziers		30,500 29,750	1,190
Specialist building operatives nec*		58,270 57,430	790
Scaffolders		24,220 24,800	350
Plant operatives		43,940 46,150	590
Plant mechanics/fitters		39,980 39,450	1,070
Steel erectors/structural fabrication		26,340 26,850	770
Labourers nec*		123,200 125,600	3,090
Electrical trades and installation		183,240 179,380	2,030
Plumbing and HVAC Trades		161,690 159,530	840
Logistics		21,720 22,950	1,250
Civil engineering operatives nec*		22,960 23,640	250
Non-construction operatives		32,590 34,190	-
Civil engineers		54,800 57,650	1,270
Other construction professionals and technical staff		198,870 211,370	1,730
Architects		44,090 47,220	490
Surveyors		70,740 75,530	980

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



# COMPARING THE SECTORS

## Public and private new housing

After 2014's very strong growth in total new housing output, 2015 was inevitably a more moderate year. In fact, public housing output is likely to have seen a sharp downturn as projects started under the 2011–2015 Affordable Housing Programme (AHP) completed and allocations under the 2015–2018 programme were yet to work through to begin on the ground. This is reflected in a decline in new starts, although completions rose. The prospects for the public housing sector are muted, with an annual average decline of 0.7% forecast for 2016 to 2020. The extension of Right to Buy to housing associations and the annual rent reductions imposed on them by Government over the next five years are inevitably going to impact on balance sheets and potentially make them less attractive to investors. The Office for Budget Responsibility (OBR) has estimated that housing association rents will be 12% lower in real terms in 2020 than they were in 2015. In this environment it is difficult to see how social housing providers will be able to maintain new build programmes at current levels, and it remains to be seen what impact the proposed central government led building programme will have.

Private housing output is estimated to have risen by 6% in 2015, with new starts up by around 11,000 to approximately 140,000. The equity loan part of the Help to Buy scheme has continued to boost demand in the market, but supply, of both existing and new housing, remains constrained. According to HMRC, seasonally adjusted residential transactions in the UK totalled just over 1 million in the year to October and are likely to end 2015 at roughly the same level as in 2014, around 1.22 million. This is still over 25% lower than the peak in 2006. Output in the private housing sector was estimated to have been around 96% of its 2006 peak in 2015 in real terms, despite a much lower level of starts and completions and a much less active housing market. This could reflect the changing mix of properties being built and their locations. Growth is expected to be fairly moderate going forward for a number of reasons. First labour shortages could continue to impact the ability of housebuilders to raise volumes, at least in the short term. Second, recent changes to the tax and Stamp Duty regimes for buy-to-let purchases are likely to take some of the steam out of this area of the market. Third, consolidation in the market since the 'great' recession means there are much fewer small and medium-sized house builders to drive volumes forward. The Chancellor's announcement of a target of 400,000 'affordable' homes to be built by 2020 is welcome news, and would represent a significant increase on the total of around 66,600 completed in 2014/15. However, very recent analysis from the Resolution Foundation suggests that the housing market remains dysfunctional, with some 46% of 2,000 non-home owners contacted believing that they will never be able to afford to buy.

## Infrastructure

The 25% growth in infrastructure output has undoubtedly been boosted by the statistical discontinuity mentioned earlier. Were the effects of this to be removed, then growth in 2015 is likely to have been around the 12% to 13% mark. This still means that infrastructure was the star performer, with a big bounce-back in sewerage and harbours work and ongoing growth in the electricity and roads sub-sectors.

As long as there is no further slippage on nuclear new build, infrastructure is expected to see the most robust growth of any sector over the forecast period, at around 6% a year on average. Activity in the water and sewerage sub-sectors under Asset Management Programme 6 (AMP6), which runs from 2015 to 2020, should peak around 2017/18 if historical precedent is anything to go by, and the sub-sector will be further boosted by the start of work on Thames Tideway in the second half of this year. Main civils work on Hinkley Point is forecast to start early in 2017, with HS2 kicking-off a year later, Wylfa in 2019, and Moorside in 2020. Add in increasing expenditure on the roads network and the prospects for the infrastructure sector over the forecast period are very good.

## Public non-housing

Output in the public non-housing sector is expected to have seen its fifth consecutive annual decline in 2015, taking its level down to just 62% of its 2010 peak. Expenditure on education facilities has been trending upwards, but health and leisure have been heading in the opposite direction.

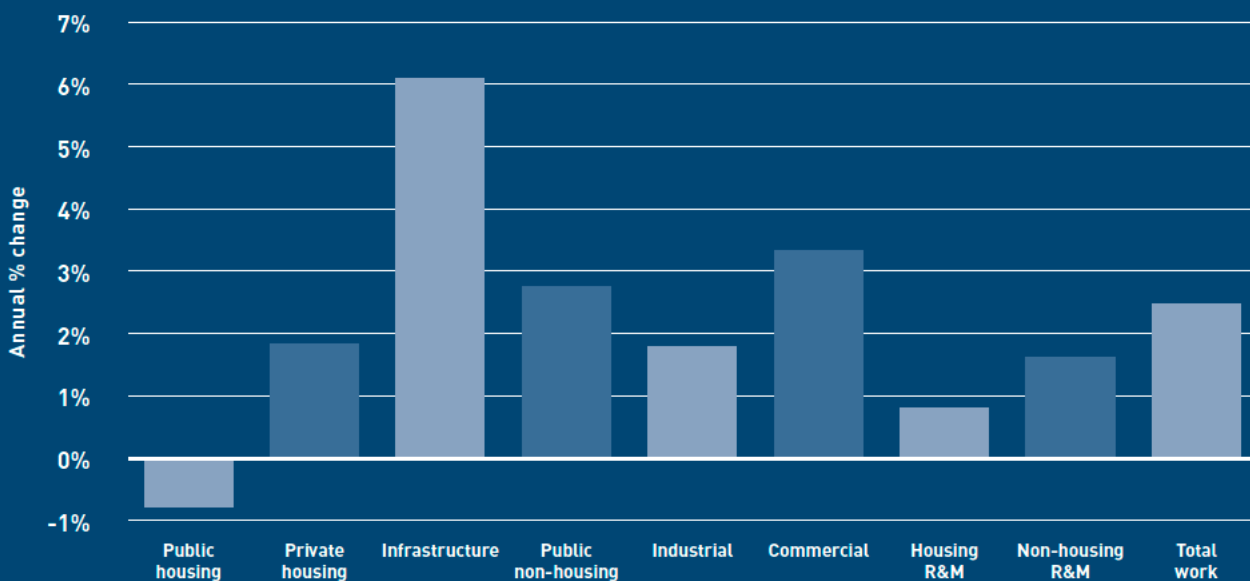
The sector had been expected to return to growth last year, but in the event the buildup of universities and defence work was not enough to counteract declines in other sub-sectors and the return to growth has been postponed to this year. In addition to the sizeable projects in the pipeline at Bath University, UCL, Cambridge, Northampton, the LSE, and UMIST, there are smaller works coming through for the Universities of Sussex and Winchester. Towards the end of the forecast period a pick-up in defence works as part of the £1.6bn Basing Plan should boost the sector.

## CONSTRUCTION OUTPUT – UK (£ MILLION, 2012 PRICES)

	Estimate	Forecast annual % change					Annual average
	2015	2016	2017	2018	2019	2020	2016-2020
Public housing	5,261	-10%	5%	10%	3%	-10%	-0.7%
Private housing	23,669	5%	3%	-3%	2%	2%	1.9%
Infrastructure	18,085	5%	14%	1%	5%	6%	6.1%
Public non-housing	9,486	5%	4%	3%	-2%	4%	2.8%
Industrial	4,238	5%	3%	1%	0%	0%	1.8%
Commercial	24,475	7%	5%	4%	3%	-2%	3.4%
<b>Total new work</b>	<b>85,213</b>	<b>5%</b>	<b>6%</b>	<b>1%</b>	<b>2%</b>	<b>1%</b>	<b>3.2%</b>
Housing R&M	24,746	3%	1%	-2%	1%	1%	0.8%
Non-housing R&M	24,158	2%	1%	1%	2%	2%	1.6%
<b>Total R&amp;M</b>	<b>48,904</b>	<b>2%</b>	<b>1%</b>	<b>-1%</b>	<b>1%</b>	<b>2%</b>	<b>1.2%</b>
<b>Total work</b>	<b>134,117</b>	<b>4%</b>	<b>5%</b>	<b>1%</b>	<b>2%</b>	<b>1%</b>	<b>2.5%</b>

Source: CSN, Experian

## ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2016-2020 –UK



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



## Industrial

After infrastructure the next strongest sector in 2015 is likely to have been industrial construction, largely driven by the warehouses sub-sector, which has seen quite a strong return of speculative building. Manufacturing output is estimated to have remained below its 2007 peak in 2015 and the slowdown in global trade and poor eurozone recovery have not boosted demand for new factory facilities.

Expansion in the industrial construction sector is projected to moderate over the forecast period after its quite strong showing in 2015, and average 1.8% over the five years to 2020. Growth will continue to be driven largely by the warehouse sub-sector, which should benefit from demand for distribution and logistics facilities around upgraded transport routes such as the A1 between Leeming and Barton, due to complete in 2017. Manufacturing output is projected to grow at around 1.9% a year on average to 2020, while transport and storage does better with 2.7%. This suggests that demand for distribution and logistics space will be stronger than that for factories.

## Commercial

The performance of the commercial construction sector has continued to disappoint, although revised figures from the ONS now show decent growth in 2014. However, growth slackened last year as, while office, education, and health output grew that for the retail, leisure and miscellaneous sub-sectors fell, almost cancelling each other out.



Growth in commercial construction output should accelerate again after a poor 2015. The offices market remains buoyant with many of the view that the London market is approaching the peak of its current development cycle. Further tightening of Grade A space availability is leading to a return of speculative building in many of the main regional markets. Prospects for new retail construction remain more mixed with the traditional food retailers, who have often been the main drivers of growth in recent years, still embroiled in a price war with the up-and-coming discounters. In the leisure sub-sector there is a good mix of theme park, resort, hotel and sport stadia in the pipeline, which should drive construction growth over the forecast period.

## Repair and maintenance (R&M)

Across the (R&M) sectors total output is likely to have been largely flat last year after good growth of 6% in 2014. In particular public non-housing R&M fell sharply, presumably the victim of ongoing austerity in the public sector.

There is little reason to forecast any real growth in public housing R&M output over the forecast period. Ongoing financial constraints will limit the amount of funding available for this sort of work, while further inroads on the social housing stock under the Right to Buy programme will shift more properties into the private sector. Growth in private housing R&M work tends to be tied to disposable incomes and consumer spending and our forecasts for the sector are roughly in line with household consumption increases. While the demise of the Green Deal will not directly affect the amount of energy efficiency and renewable generation work being undertaken, it could indirectly do so through a reduction in the number of households undertaking energy assessments. Private housing R&M accounts for roughly two-thirds of total housing R&M and tends to drive the overall figures, therefore the prognosis for total housing R&M is mildly positive, with growth of 0.8% a year on average to 2020.

Output in the public non-housing R&M sector is expected to stabilise this year after a very bad 2015, but the prospects for the sector going forward remain muted for the same reasons impacting the public housing R&M sector. The private sector should fare better. Consumer-facing sub-sectors such as retail and leisure will continue to spend on keeping their premises up to a decent standard to attract footfall and many owners of large property portfolios, such as Sainsbury and Land Securities, have ongoing programmes to reduce energy and water usage, despite recent falls in energy prices.



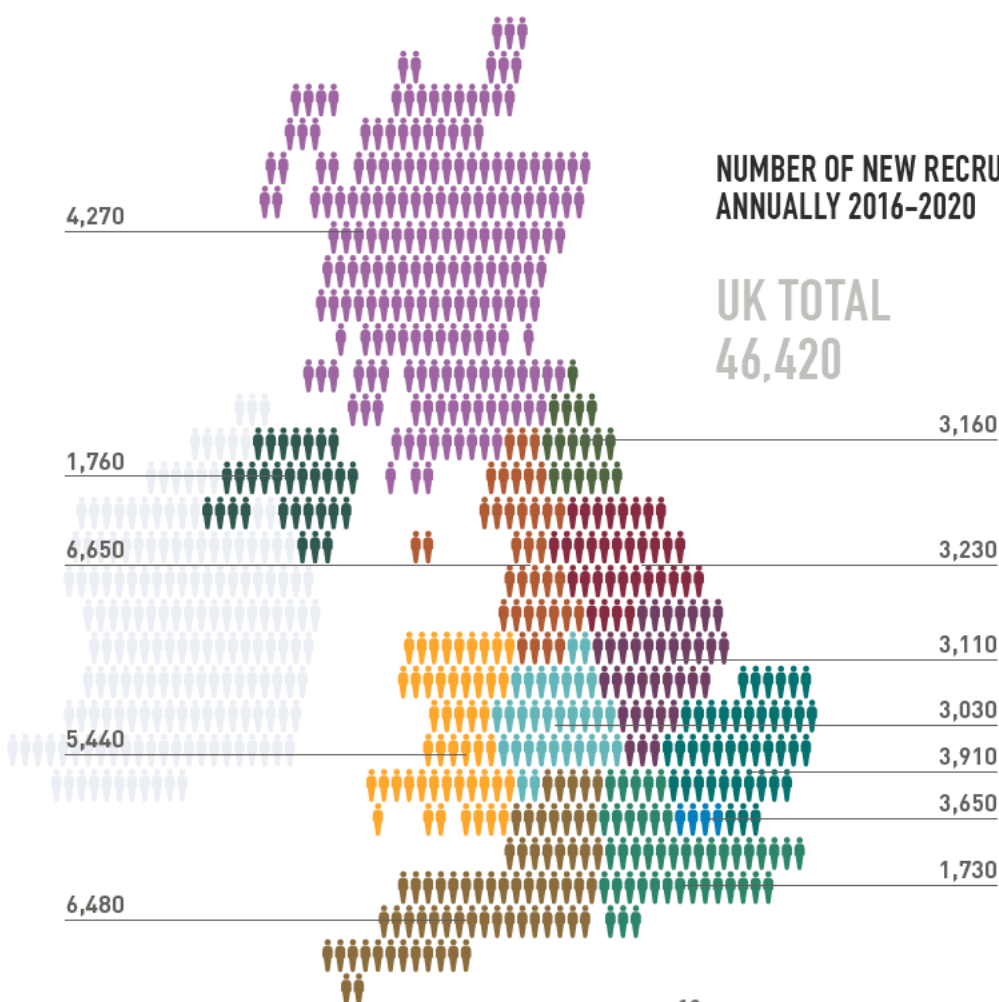
# COMPARING THE UK REGIONS AND NATIONS

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

Wales and the South West are top of the growth rankings and have remained so for some time, but their strong performance is heavily predicated on nuclear new build projects at Hinkley Point and Wylfa. Greater London is also projected to have a strong infrastructure sector, with the work starting on the Northern Line extension, Thames Tideway and HS2 in the pipeline. These projects should more than offset completion of the Crossrail and Thameslink schemes.

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

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



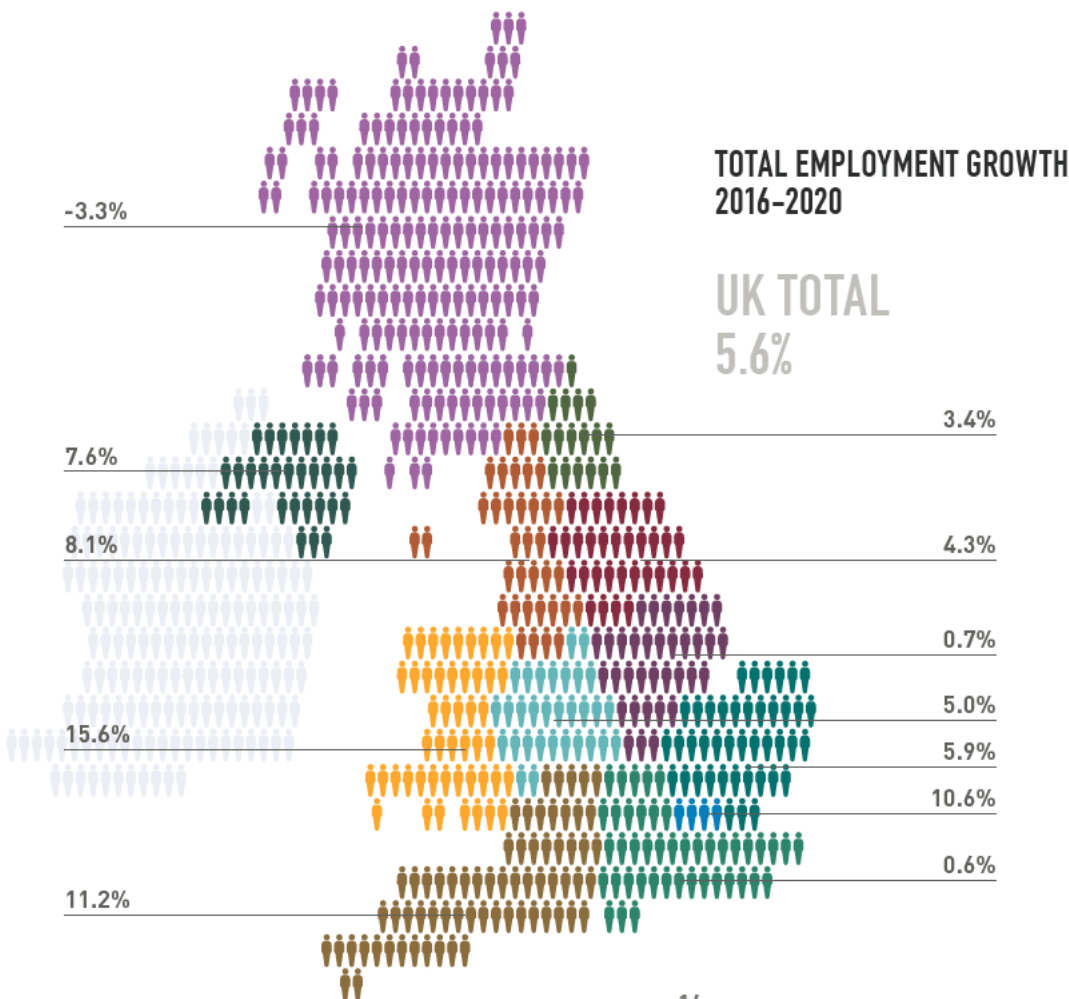


Scotland is seeing an exceptionally high level of investment in infrastructure at present, with output in 2014 around twice its previous 10 year average and due to increase even further in 2015. Thereafter projects, such as the current spate of motorway upgrades, begin to complete and activity in the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

Employment growth across the regions and devolved nations tends to mirror that of output, but at a lower level to take account of expected productivity gains and with some minor adjustments depending on whether output growth is in high or low labour intensive sectors. Annual employment growth across the UK as a whole is projected to average 1.1% over the 2016 to 2020 period, with a high of 2.9% in Wales and a low of a 0.7% a year decline in Scotland. Despite the fact that nuclear new build is not particularly labour intensive, Wylfa is a very big project in a small market, therefore it will add nearly 2% to construction employment in Wales in 2020.

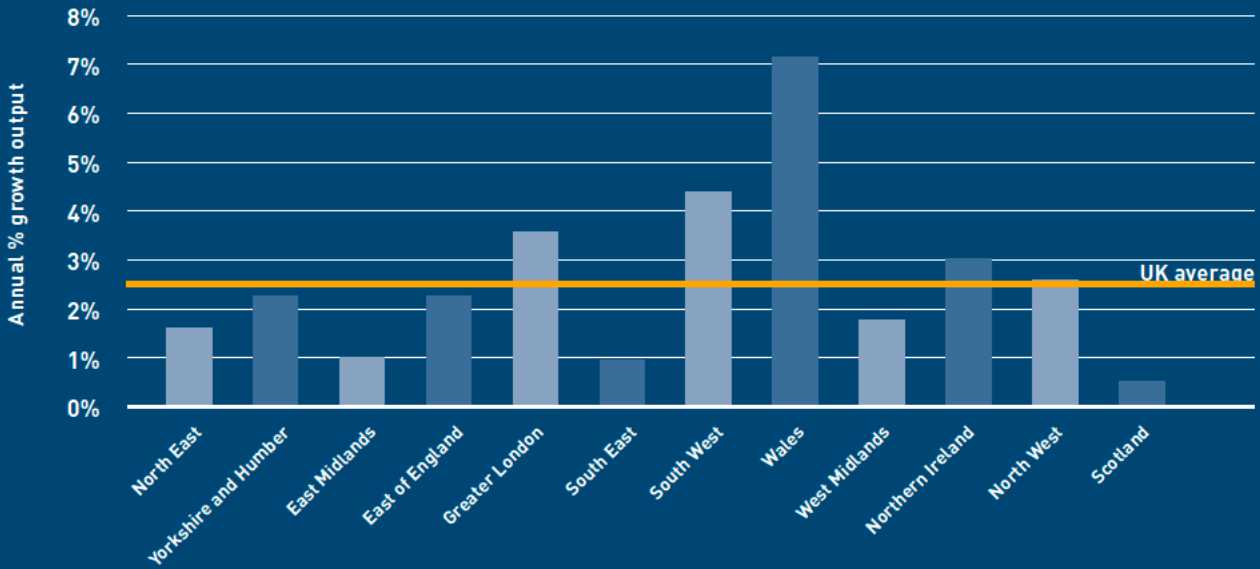
The impact is smaller in the South West, which has a bigger construction market, but even there it will help to drive good employment growth of over 2% a year on average. In Scotland the converse is true and a sharp fall in infrastructure output, despite its relatively low labour input, is likely to lead to a drop in construction employment post 2016.

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





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



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

# 2.5%

## THE OVERALL UK FORECAST OF AN ANNUAL AVERAGE CONSTRUCTION OUTPUT RISE



# SCOTLAND

Construction output in Scotland is projected to expand by 0.5% a year on average in the five years to 2020, the lowest rate of growth of all the UK regions and devolved nations. Growth is expected to be focused in the repair and maintenance (R&M) sector (2.3%) with new work largely flat (-0.1%). Employment is forecast to decline by 0.7% a year on average, but this disguises a peak in 2016 before contraction sets in. Despite falling employment, net outflows from the industry will still mean that Scotland has a significant annual recruitment requirement (ARR), of 4,270, representing 1.9% of projected base 2016 employment.

## Key Findings

The Scottish construction industry will have experienced three good years of growth by the end of 2015, taking estimated output in the devolved nation up to £12.6bn in 2012 prices, a new high. The infrastructure sector has been a primary driver of this growth, with output in 2015 over two and a half times what it was in 2012. This rapid output growth has led to a very sharp rise in demand for construction trades, professionals and managers and this, combined with falling numbers entering training since the 'great' recession, has led to significant skills shortages across the industry in the short term.

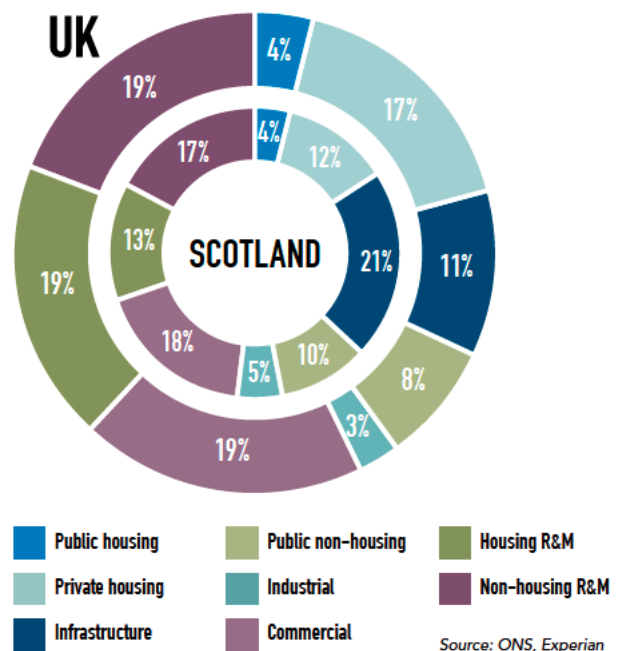
Construction output growth is expected to moderate sharply over the 2016 to 2020 period, to just 0.5% a year on average, as large projects complete in the infrastructure sector and activity falls sharply from its current very high levels. The sector is predicted to see an annual average decline in output of close to 6% in the five years to 2020 as work on the Queensferry Crossing, Aberdeen Western Peripheral Route and motorway upgrades complete and there is less work in the pipeline.

This long term view should not be interpreted as an overall weakness in the Scottish construction industry over the forecast period. Most other sectors are projected to grow and if infrastructure is removed from the figures expansion across the remaining sectors would be around 2.3% a year on average, not far off the UK rate of 2.5%.

The overall rate of output growth is not enough to drive expansion in employment, which is projected to decline by 0.7% a year on average in the five years to 2020. However, the long-term view disguises a peak in 2016 by which time employment will have grown by 6% in the three years since 2013. The falls in infrastructure output from 2016, given that the sector is currently accounting for over a quarter of construction output in Scotland, should release a significant percentage of the workforce to support activity in other, growing, sectors. Construction employment is expected to peak in 2016 at over 230,000 before slipping to around 219,000 in 2020.

Despite falling employment, Scotland will still have a significant ARR, of 4,270, representing 1.9% of base 2016 employment, slightly higher than the UK average of 1.7%. This is because of demographic trends that are accentuating the level of net outflows from the Scottish construction industry over the next five years.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS SCOTLAND







## TOTAL EMPLOYMENT BY OCCUPATION – SCOTLAND

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	
Senior, executive, and business process managers		12,580 11,980	200
Construction project managers		3,790 3,820	-
Other construction process managers		16,310 16,250	-
Non-construction professional, technical, IT and other office-based staff		29,060 27,920	1,520
Construction trades supervisors		4,560 4,360	310
Wood trades and interior fit-out		22,530 20,670	-
Bricklayers		6,000 5,520	-
Building envelope specialists		4,490 4,100	-
Painters and decorators		10,540 9,410	350
Plasterers		2,730 2,380	-
Roofers		4,450 4,100	-
Floorers		2,310 2,130	-
Glaziers		2,700 2,510	-
Specialist building operatives nec*		4,070 3,700	-
Scaffolders		2,360 2,300	-
Plant operatives		4,270 4,250	50
Plant mechanics/fitters		4,380 3,980	100
Steel erectors/structural fabrication		2,040 1,970	50
Labourers nec*		11,960 11,560	540
Electrical trades and installation		16,980 15,310	-
Plumbing and HVAC Trades		11,040 9,530	100
Logistics		2,360 2,320	180
Civil engineering operatives nec*		2,670 2,660	70
Non-construction operatives		3,640 3,650	-
Civil engineers		8,320 8,380	180
Other construction professionals and technical staff		23,010 22,880	620
Architects		4,250 4,190	-
Surveyors		6,910 6,950	-

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



# NORTH EAST

The region's total construction output is forecast to grow by annual average of 1.5% over the next five years. Construction employment is anticipated to increase by an average yearly rate of 0.7% and by 2020 it is likely to be around 98,130, about 88% of its 2008 peak level. At 3.2% of base 2016 employment, the North East has one of the highest annual recruitment requirements (ARR). The region's ARR is also well above the UK rate of 1.7%.

## Key Findings

The region is predicted to see an annual average growth rate of 1.5% in its total construction output between 2016 and 2020, one of the lowest compared with other regions and devolved nations, and lagging the national rate of 2.5%.

The private housing market is likely to be the best performing, with the near-term forecasts more upbeat than the medium-term ones. The sector is supported by housing demand as a result of various government initiatives such as Help to Buy and the Starter Homes Initiative. In addition to this, the Chancellor's target of starting 400,000 'affordable' homes by 2020/2021 could boost these forecasts, which were locked prior to this announcement.

Yearly expansion of 3% on average is forecast for the commercial sector. There are several schemes currently on the ground or about to start over the forecast period such as the £100m regeneration of South Shields town centre. Moderate expansion is predicted during the middle of the forecast period on the back of benign economic conditions.

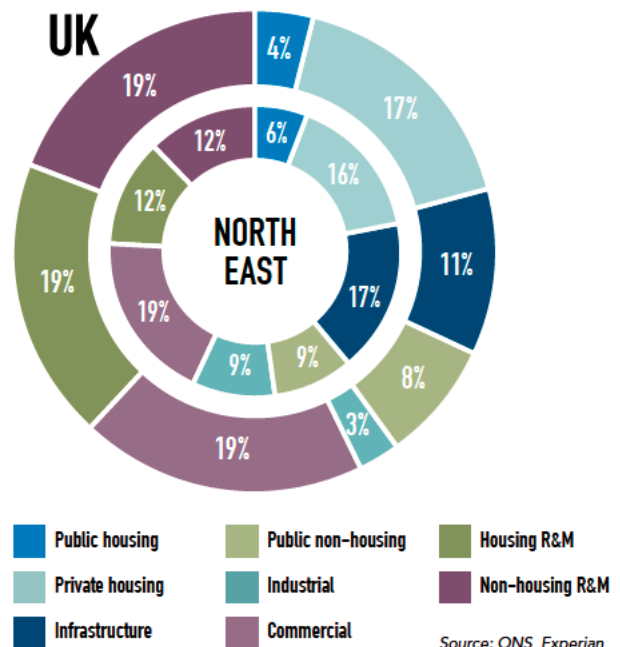
The industrial sector is likely to see average annual increases of 2.5%. The largest scheme that should take place over the next five years is the £100m Swan Hunter shipyard scheme. The project has been delayed from its initial start date of 2014 and work is now anticipated to start in spring 2016.

Between 2015 and 2020 the public housing sector is the only sector projected to see an average decline, of 5.1% per annum. After the North West this is the second biggest annual average fall and higher than the corresponding UK rate of -0.7%. Across most English regions activity is anticipated to suffer over the next few years as the extension of Right to Buy and constraints on rents introduced in last summer's budget will impact registered social landlords' profits. This inevitably creates a funding gap, leading to fewer homes being built than would otherwise be the case.

In 2015 the North East accounted for around 3.7% of UK construction employment. Over the next five years construction employment is likely to rise by 0.7% per year on average in the region, slower than the national rate of 1.1%.

At 3,160 extra employees required per year over the forecast period, the region's ARR is 3.2% of base 2016 employment, much higher than the UK rate of 1.7%. Given that the region normally suffers from strong outflows, around half of occupational categories have an ARR above 2.5% of base 2016 employment.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS NORTH EAST





## TOTAL EMPLOYMENT BY OCCUPATION – NORTH EAST

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	
Senior, executive, and business process managers		4,240 3,750	-
Construction project managers		1,500 1,670	120
Other construction process managers		6,040 6,820	-
Non-construction professional, technical, IT and other office-based staff		9,740 8,800	390
Construction trades supervisors		4,020 4,810	400
Wood trades and interior fit-out		6,900 6,800	500
Bricklayers		3,060 3,080	120
Building envelope specialists		2,480 2,490	<50
Painters and decorators		2,480 2,230	-
Plasterers		2,450 2,250	<50
Roofers		2,400 2,350	130
Floorers		2,720 2,680	160
Glaziers		720 630	-
Specialist building operatives nec*		3,720 3,510	160
Scaffolders		1,320 1,300	<50
Plant operatives		2,940 3,000	<50
Plant mechanics/fitters		2,350 2,230	-
Steel erectors/structural fabrication		1,660 1,690	170
Labourers nec*		6,100 6,090	230
Electrical trades and installation		8,190 7,700	-
Plumbing and HVAC Trades		6,950 6,940	260
Logistics		420 410	-
Civil engineering operatives nec*		1,370 1,490	-
Non-construction operatives		500 520	-
Civil engineers		1,510 1,710	70
Other construction professionals and technical staff		9,820 10,990	330
Architects		400 330	-
Surveyors		1,600 1,860	70

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



# NORTH WEST

The region's total construction output is forecast to grow by an annual average of 2.6% over the next five years. Construction employment is anticipated to increase by an average yearly rate of 1.6% and by 2020 it is likely to be around 299,580, approximately 96% its 2008 peak. At 2.3% of base 2016 employment, the annual recruitment requirement (ARR) ratio indicates that around 6,650 extra employees are required on an annual basis. The region's ARR is also above the UK rate of 1.7%.

## Key Findings

The region is predicted to see an annual average growth rate of 2.6% in total construction output between 2016 and 2020, slightly above the UK rate of 2.5%.

The infrastructure sector is likely to be the best performing with an annual average increase of 5.6%. There are a number of current and new projects in the pipeline over the near-term such as work on the £290m 10km-long dual carriageway linking the A6 to Manchester Airport, which is anticipated to lead to modest expansion. However, growth should ramp up and be at double digits in 2020 as main construction work on nuclear new build at Moorside begins.

With an average rise in output of 4.7% per annum, the commercial sector is projected to see the second highest growth rate. Good expansion is expected due to a number of projects and this, alongside sustained improvements in the economy will keep activity buoyant throughout the next five years. One of the largest developments currently taking place is the £200m X1 Media City in Salford Quays. However, by 2020, at £2.6bn, commercial output is likely to be only around 62% of its 2007 peak.

The public non-housing sector is likely to see average annual increases of 2.8% as there are a number of university schemes, either taking place or about to start. By the end of the forecast period the sector is projected to be around 70% of its 2011 peak.

Between 2015 and 2020 the private housing market is predicted to experience an average yearly increase of 2%. However, growth could be stronger on the back of the Government's announcement made in the 2015 Autumn Statement that up to 400,000 'affordable' homes will be developed across the country by 2020.

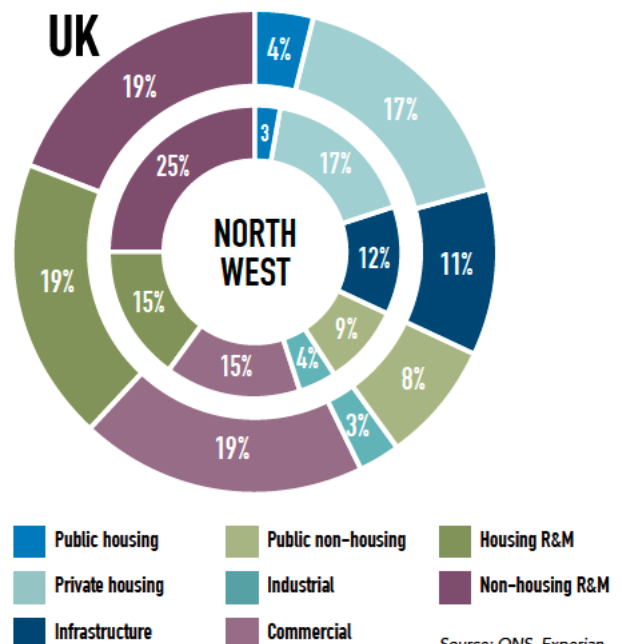
The public housing sector is the only sector that is predicted to experience an annual average fall, of 6.3%. This is the greatest decline compared with other regions and devolved nations and much higher than the national rate of -0.7%. Across most English regions activity is anticipated to suffer over the next few years as the extension of Right to Buy and constraints on rents

introduced in last summer's Budget will impact registered social landlords' balance sheets. This is likely to make them less attractive to investors and therefore they will struggle to build at the same rate as previously.

In 2015 the North West accounted for around 11% of UK construction employment. Over the next five years construction employment is likely to rise by 1.6% per year on average in the region, faster than the national rate of 1.1%.

At 6,650 extra employees required per year over the forecast period, the region's ARR is 2.3% of base 2016 employment, higher than the UK rate of 1.7%. In the North West, civil engineering operatives nec are likely to be most in demand as a proportion of base employment.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS NORTH WEST





## TOTAL EMPLOYMENT BY OCCUPATION – NORTH WEST

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	
Senior, executive, and business process managers		17,440 18,570	-
Construction project managers		5,070 5,240	-
Other construction process managers		20,440 21,250	-
Non-construction professional, technical, IT and other office-based staff		40,270 43,760	430
Construction trades supervisors		4,090 4,330	200
Wood trades and interior fit-out		31,630 34,630	1,030
Bricklayers		7,350 8,250	730
Building envelope specialists		8,750 9,920	510
Painters and decorators		11,630 11,490	610
Plasterers		5,470 5,270	500
Roofers		5,850 6,670	340
Floorers		3,340 3,730	200
Glaziers		3,190 3,290	210
Specialist building operatives nec*		5,180 4,980	-
Scaffolders		3,490 3,390	-
Plant operatives		6,070 6,460	-
Plant mechanics/fitters		5,110 5,180	200
Steel erectors/structural fabrication		2,460 2,780	130
Labourers nec*		13,490 14,140	430
Electrical trades and installation		20,670 20,090	480
Plumbing and HVAC Trades		16,330 15,250	-
Logistics		2,480 2,840	250
Civil engineering operatives nec*		1,460 1,580	150
Non-construction operatives		4,430 4,680	-
Civil engineers		5,030 5,610	200
Other construction professionals and technical staff		23,390 24,790	-
Architects		4,360 4,660	-
Surveyors		6,490 6,750	50

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



# YORKSHIRE AND HUMBER

The region's total construction output is forecast to grow by an annual average of 2.4% over the next five years. Construction employment is anticipated to increase by an average yearly rate of 0.8% and by 2020 it is likely to be around 202,480 approximately 93% its 2008 peak. At 1.6% of base 2016 employment, the annual recruitment requirement (ARR) ratio indicates that around 3,230 extra employees are required on an annual basis. Yorkshire and Humber's ARR is slightly below the UK rate of 1.7%.

## Key Findings

The region is predicted to see an annual average increase of 2.4% in total construction output between 2016 and 2020, slightly below the UK rate of 2.5%.

The infrastructure sector is likely to be the best performing sector with an annual average rise of 7.1% over the next five years. Over the near term sizeable energy projects should keep output growth buoyant with double-digit expansion in 2016 and 2017. A more moderate increase is likely for 2018, but by this point the sector is predicted to reach a new high of £2.3bn. Post-2018 output is anticipated to decline as work on the ground begins to complete with no large schemes in the pipeline.

An average yearly rise of 4.9% is forecast for the commercial sector. One of the biggest projects about to commence is the regeneration of the area bounded by Pinstone Street and Furnival Gate in Sheffield. There are also other smaller projects that are scheduled to start over the next five years and this, alongside sustained improvements in the economy, will keep activity in the sector buoyant over the forecast period.

The public non-housing sector is predicted to experience average yearly growth of 3.3%. Work has returned in the education sub-sector with the University of Huddersfield and University of Lincoln both starting schemes last year. However, the sector still has a long way to go to make up ground recently lost and by 2020 public non-housing output is projected to only be around 36% of its 2010 peak.

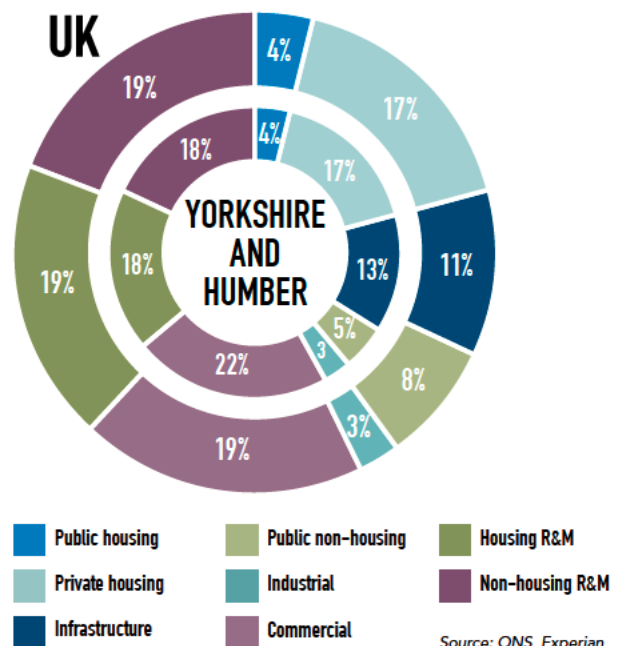
Between 2015 and 2020 the private housing market is expected to experience an average yearly increase of 1.5%. However, growth could be stronger on the back of the Government's announcement made in the 2015 Autumn Statement that up to 400,000 'affordable' homes will be developed across the country by 2020.

Both the industrial and public housing sectors are anticipated to see annual average falls, of 3% and 1.2% respectively. The former is likely to experience moderate expansion in the near term, however as projects complete and with the lack of sizeable new ones in the pipeline, a decline in output is inevitable.

The latter sector is predicted to suffer over the next few years as the extension of Right to Buy and constraints on rents introduced in last summer's Budget will impact registered social landlords' balance sheets. This is likely to make them less attractive to investors and therefore they will struggle to build at the same rate as previously.

In 2015 the region accounted for around 8% of UK construction employment. Over the next five years construction employment is likely to rise by 0.8% per year on average in the region, slower than the national rate of 1.1%. At 3,230 extra employees required per year over the forecast period, the region's ARR is 1.6% of base 2016 employment, slightly lower than the UK rate of 1.7%.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS YORKSHIRE AND HUMBER





## TOTAL EMPLOYMENT BY OCCUPATION – YORKSHIRE AND HUMBER

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	
Senior, executive, and business process managers		13,880 15,310	200
Construction project managers		3,330 3,580	-
Other construction process managers		14,710 16,000	<50
Non-construction professional, technical, IT and other office-based staff		26,050 27,860	1,550
Construction trades supervisors		4,200 4,910	100
Wood trades and interior fit-out		17,750 16,130	240
Bricklayers		5,770 5,170	50
Building envelope specialists		7,120 6,420	<50
Painters and decorators		6,380 5,920	<50
Plasterers		5,640 4,920	-
Roofers		5,310 4,860	220
Floorers		2,410 2,140	110
Glaziers		2,650 2,480	-
Specialist building operatives nec*		3,590 3,370	-
Scaffolders		2,550 2,900	70
Plant operatives		1,530 1,770	170
Plant mechanics/fitters		3,570 3,340	-
Steel erectors/structural fabrication		2,590 2,240	-
Labourers nec*		8,670 9,910	50
Electrical trades and installation		15,940 15,260	70
Plumbing and HVAC Trades		12,890 12,390	50
Logistics		1,130 1,110	120
Civil engineering operatives nec*		3,900 3,900	-
Non-construction operatives		4,180 4,420	-
Civil engineers		3,740 3,760	100
Other construction professionals and technical staff		13,740 15,200	<50
Architects		580 560	-
Surveyors		5,980 6,650	<50

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



# EAST MIDLANDS

The East Midlands' construction output is expected to expand at an annual average rate of 1% over the forecast period, notably below the UK average rate of 2.5%. At a projected annual average rate of 1.5%, growth in new work ought to be significantly stronger than that for repair and maintenance (R&M), given that the latter isn't expected to achieve any gains on the same measure. Employment in the East Midlands is expected to be pretty flat, with an annual average increase of just 0.1%, well below the UK growth rate of 1.1%. The region's annual average recruitment requirement (ARR) of 3,110 represents 1.9% of base 2016 employment, slightly above the UK average of 1.7%.

## Key Findings

Total construction output rose by 8% in 2014 and it is estimated to have grown by a further 4% last year. Expansion should continue through the forecast period at a projected annual average rate of 1%.

The infrastructure and commercial sectors are likely to be the frontrunners in terms of expected output growth. The former ought to be boosted by a number of large projects such as the £1bn conversion of Willington C power station from coal to gas. The latter is set to carry on benefitting from the consumer spending driven economic recovery, given the corresponding increases in demand for new retail outlets. One of the largest examples of this is the £476m retail-led redevelopment of Nottinghamshire town centre, which is expected to commence in 2016, and carry on for much of the forecast period.

The public non-housing sector is set to also post growth, at a forecasted annual average rate of 1.7% between 2016 and 2020. The universities sub-sector is likely to be quite buoyant with work due to commence in early 2016 on Northampton University's redevelopment of its Avon Mills campus. According to the Government Construction Pipeline (August 2015) approximately £119m is to be invested from the devolved budgets for schools throughout the East Midlands between 2017 and 2020, this should help support activity expansion towards the end of the forecast period.

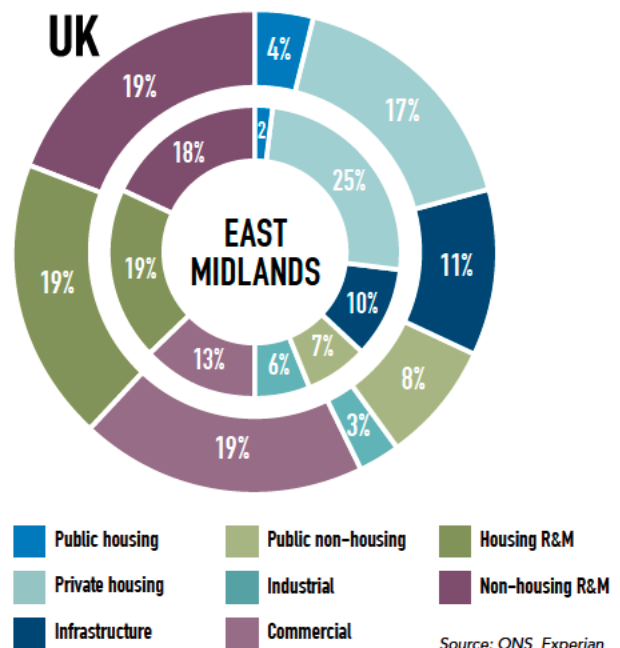
The public and private housing sectors are both expected to make modest gains over the forecast period, with respective annual average increases of 0.1% and 0.9%. The level of activity for the former has been particularly high recently, although near term weakness is anticipated given the significant reduction of new orders and the lack of notable projects in the pipeline. The latter half of the forecast period could provide more buoyancy depending on yet-to-be-announced allocations under the 2015–2018 Affordable Housing Programme (AHP). Private housing output growth should be supported by weak inflation in the short-term, which will decrease the likelihood of any meaningful interest rates rises in the first half of the forecast period.

The industrial sector is the only new work sector set to contract between 2016 and 2020, at an annual average rate of 0.2%. Despite the negative outlook output has performed well recently, and it shouldn't be too far below its current level by the end of the forecast period.

Employment growth is projected to increase at an annual average rate of 0.1% between 2016 and 2020, well below the UK equivalent of 1.1%. Of the 28 occupational aggregates only 12 are expected to expand. Civil engineers (3%), surveyors (2.3%), other construction professionals and technical staff (2.2%) and scaffolders (2.1%) are forecast to achieve the largest increases.

The region's ARR of 3,110 represents 1.9% of base 2016 employment, above the UK average of 1.7%. Labourers have the highest requirement at 560.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS EAST MIDLANDS







## TOTAL EMPLOYMENT BY OCCUPATION – EAST MIDLANDS

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	
Senior, executive, and business process managers		11,670 11,550	<50
Construction project managers		2,350 2,450	-
Other construction process managers		14,810 15,390	-
Non-construction professional, technical, IT and other office-based staff		21,330 21,300	1,790
Construction trades supervisors		1,780 1,860	70
Wood trades and interior fit-out		15,460 14,320	-
Bricklayers		3,970 3,630	-
Building envelope specialists		8,080 7,470	-
Painters and decorators		6,420 6,120	-
Plasterers		4,600 4,470	220
Roofers		1,850 1,790	-
Floorers		1,590 1,470	-
Glaziers		2,840 2,880	150
Specialist building operatives nec*		6,320 6,150	270
Scaffolders		470 510	<50
Plant operatives		3,260 2,900	-
Plant mechanics/fitters		3,720 3,920	-
Steel erectors/structural fabrication		1,670 1,610	-
Labourers nec*		7,230 7,060	560
Electrical trades and installation		13,430 13,080	-
Plumbing and HVAC Trades		9,810 9,490	-
Logistics		1,180 1,000	-
Civil engineering operatives nec*		2,080 1,990	-
Non-construction operatives		2,550 2,150	-
Civil engineers		4,170 4,580	-
Other construction professionals and technical staff		9,720 10,350	-
Architects		610 520	-
Surveyors		4,890 5,210	-

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



# WEST MIDLANDS

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

## Key Findings

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

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

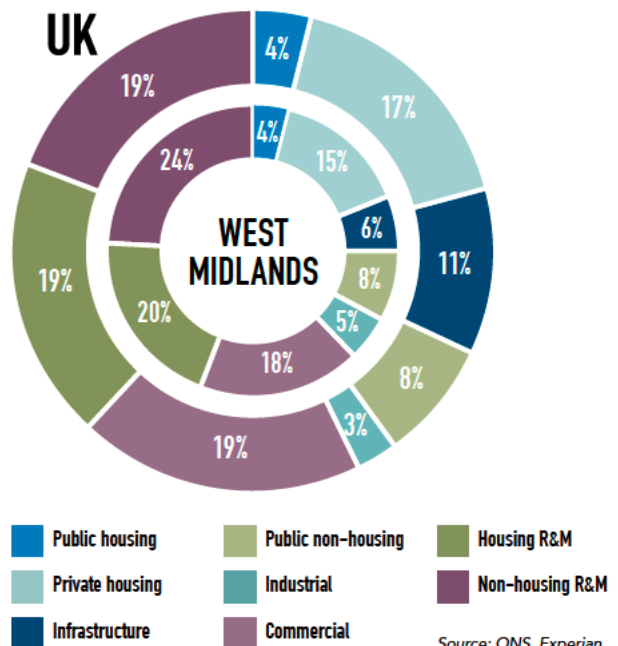
The public non-housing and private housing sectors are also expected to register decent annual average growth of 1.5% and 1.3% respectively between 2016 and 2020. One of the largest projects for the former's university sub-sector is the £80m development of the University of Warwick's National Automotive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

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

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

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

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS WEST MIDLANDS





## TOTAL EMPLOYMENT BY OCCUPATION – WEST MIDLANDS

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	
Senior, executive, and business process managers		16,810 15,270	-
Construction project managers		2,290 2,490	-
Other construction process managers		20,470 22,340	200
Non-construction professional, technical, IT and other office-based staff		28,840 25,900	-
Construction trades supervisors		4,560 4,920	150
Wood trades and interior fit-out		19,110 20,390	1,040
Bricklayers		5,090 5,620	320
Building envelope specialists		7,660 8,100	280
Painters and decorators		7,280 7,410	-
Plasterers		2,070 1,960	-
Roofers		3,840 4,160	-
Floorers		1,580 1,680	120
Glaziers		3,130 2,980	-
Specialist building operatives nec*		3,740 3,750	<50
Scaffolders		2,540 2,640	-
Plant operatives		2,200 2,040	-
Plant mechanics/fitters		6,120 6,090	-
Steel erectors/structural fabrication		3,720 4,080	230
Labourers nec*		11,530 13,040	-
Electrical trades and installation		15,700 15,580	370
Plumbing and HVAC Trades		12,770 12,750	-
Logistics		2,900 2,630	-
Civil engineering operatives nec*		2,020 2,140	-
Non-construction operatives		2,400 2,170	-
Civil engineers		2,540 2,790	-
Other construction professionals and technical staff		13,350 14,580	150
Architects		1,660 1,760	-
Surveyors		5,700 6,020	150

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



# WALES

Wales is projected to see annual average output growth of 7.1% over the 2016 to 2020 period, up from the 5.8% projected last year for 2015 to 2019 as more of the Wylfa project is now included. This is almost triple the UK rate of 2.5%. Wylfa means that expansion is very centred in the new work sector, with an average annual increase in output of 9.5% compared with 2.2% for repair and maintenance. This output growth rate is expected to drive strong employment growth averaging 2.9% a year, again well above the UK average of 1.1%. Wales' annual average recruitment requirement (ARR) is projected at 5,440, which represents 4.7% of base 2016 employment.

## Key Findings

Since its low in 2012, construction output in Wales grew by over 10% in real terms to 2014 and is expected to have expanded further last year. Growth in 2015 is likely to have been driven by a very strong performance in the infrastructure sector and lesser but still robust expansion in private housing and public non-housing work.

Wales is projected to see annual average output growth of 7.1% over the five years to 2020, stronger than any of the English regions and other devolved nations, and while nuclear new build at Wylfa is a major contributor to this expansion, it is by no means the only driver.

Besides new nuclear build there are other fairly substantial projects ongoing or in the pipeline in the energy arena, such as the Wheelabrator energy recovery facility at Deeside and an £800m biomass plant proposed for Anglesey, on which work is likely to commence in 2018. Also to be taken into account is the Swansea Tidal Lagoon project, on which work should start in 2017.

Elsewhere in the infrastructure sector the biggest project in the pipeline is the upgrade of the M4 around Newport, on which work is likely to start in 2018.

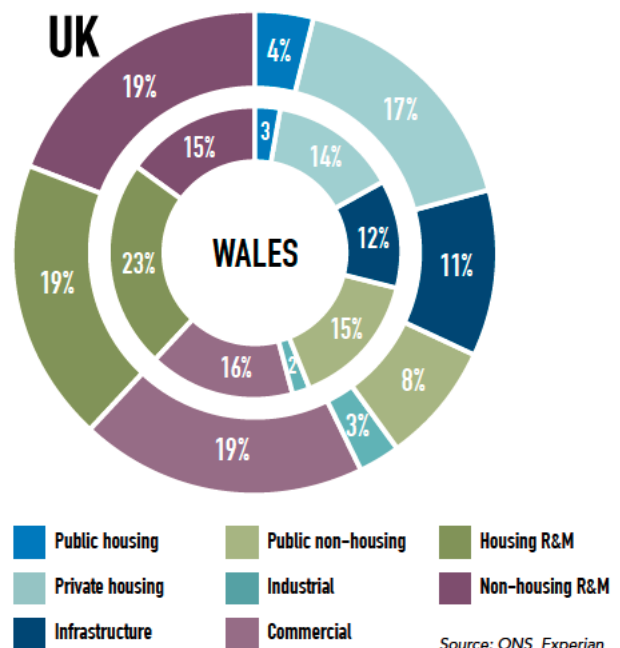
There are a number of sizeable regeneration schemes in the pipeline upon which private house building will play a significant part. However these are long-term projects and therefore their contribution to annual growth could be quite small. The same is true to a lesser extent for the private commercial sector, although the construction timescale of schemes in this sector is likely to be more condensed, producing a stronger growth profile.

Employment growth is projected to average 2.9% a year between 2016 and 2020, well above the UK average and the workforce is expected to reach 129,900 by 2020, 5% up on its 2008 peak. Demand is expected to be strongest

for construction professionals – civil engineers, architects, surveyors and other construction professional – with all of them likely to see annual average employment growth of around 4% a year or higher.

Wales' ARR is projected at 5,440 a year on average, still the third largest on an absolute level and the highest as a ratio of base 2016 employment. Its ratio, at 4.7% is well above the UK average of 1.7%. Wales traditionally suffers from high net outflows of its construction workforce to other areas of the UK, in particular to the South West and North West of England.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS WALES





## TOTAL EMPLOYMENT BY OCCUPATION – WALES

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation			ARR
Senior, executive, and business process managers		4,110 4,330	160
Construction project managers		1,410 1,600	-
Other construction process managers		8,120 9,450	-
Non-construction professional, technical, IT and other office-based staff		11,530 12,440	1,020
Construction trades supervisors		2,250 2,340	160
Wood trades and interior fit-out		14,650 16,000	920
Bricklayers		7,120 7,920	660
Building envelope specialists		4,410 4,850	170
Painters and decorators		5,710 6,480	450
Plasterers		4,760 5,310	160
Roofers		1,460 1,580	120
Floorers		140 160	-
Glaziers		590 610	<50
Specialist building operatives nec*		4,220 4,570	-
Scaffolders		840 900	<50
Plant operatives		1,780 1,980	70
Plant mechanics/fitters		1,490 1,700	150
Steel erectors/structural fabrication		1,250 1,320	<50
Labourers nec*		6,010 6,690	600
Electrical trades and installation		7,110 7,850	270
Plumbing and HVAC Trades		10,480 11,810	<50
Logistics		750 770	<50
Civil engineering operatives nec*		1,420 1,630	<50
Non-construction operatives		1,290 1,230	-
Civil engineers		2,350 2,720	-
Other construction professionals and technical staff		5,660 6,600	200
Architects		1,280 1,480	130
Surveyors		4,750 5,580	100

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



# EAST OF ENGLAND

Construction output in the East of England is projected to grow at an annual average rate of 2.3% between 2016 and 2020, slightly below the UK average of 2.5%. Growth in new work is likely to outpace that of repair and maintenance (R&M) over the same period with respective rates of 3.1% and 1.3%. Total construction employment should increase in line with the UK average rate, at 1.1% per annum. The region's annual recruitment requirement (ARR) of 3,910 represents 1.6% of base 2016 employment, comparable to the UK average of 1.7%.

## Key Findings

Total construction output in the region is estimated to have fallen by 3% in 2014. It is expected it to return to growth over the forecast period at a projected annual average rate of 2.3%.

The infrastructure and commercial sectors should lead the way with respective annual average growth rates of 4.9% and 4.5% between 2016 and 2020. The former should benefit from projects such as a new dual carriageway between the A14 in Ellington and Milton junction on the Cambridge bypass, as well as a new renewable energy park in Fengate, Peterborough. The latter is expected to build on its position as the largest sector with a number of new retail and office developments, although inflationary headwinds may act to constrain growth in the retail sub-sector towards the end of the forecast period as consumer demand becomes less buoyant as a consequence.

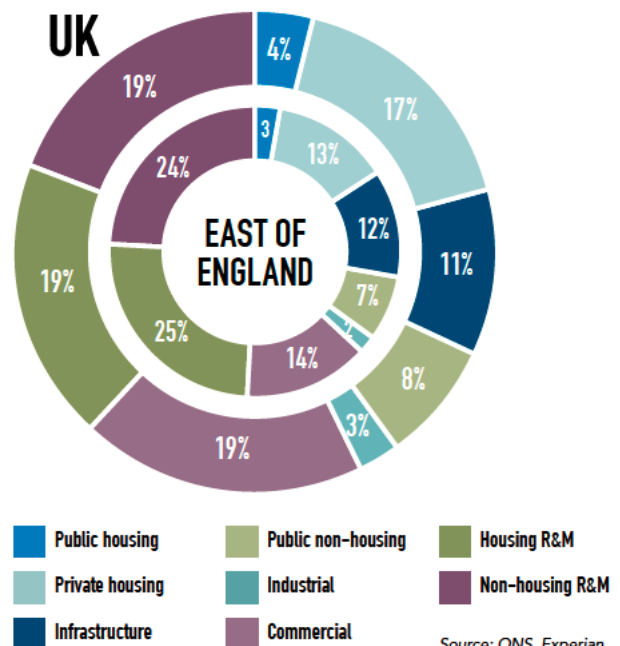
Industrial activity should be next in line with a 3.4% annual average growth projection, buoyed by a swathe of medium-sized projects in the warehouses sub-sector. There is also significant headroom in the forecast towards 2020 if the expected improvement in demand from the eurozone comes to fruition.

Both the private housing and public non-housing sectors ought to post growth over the forecast period at respective annual average rates of 0.7% and 1.6%. Expansion in the latter should be supported by work on the £500m Cambridge University framework. In contrast, public housing is the only sector set to contract over the same period, following on from a period of significant expansion without clear underlying drivers.

Employment growth is expected to average 1.1% over the forecast period, which is in line with the equivalent UK rate. Of the 28 occupational aggregates 23 are predicted to grow with construction trade supervisors (3.3%), construction project managers (2.9%), logistics (2.8%), and other construction process managers set for the strongest growth. In contrast floorers, roofers, glaziers and wood trades and interior fit-out are expected to contract over the same period.

The region's annual recruitment requirement (ARR) of 3,910 represents 1.6% of base 2016 employment, slightly below the UK average of 1.7%. Electrical trades and installation has the highest requirement at 690.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS EAST OF ENGLAND





## TOTAL EMPLOYMENT BY OCCUPATION – EAST OF ENGLAND

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation			ARR
Senior, executive, and business process managers		14,090 14,220	110
Construction project managers		4,780 5,260	100
Other construction process managers		16,660 18,230	-
Non-construction professional, technical, IT and other office-based staff		35,600 36,520	-
Construction trades supervisors		5,190 5,810	-
Wood trades and interior fit-out		25,000 23,970	-
Bricklayers		8,250 8,030	240
Building envelope specialists		9,950 9,660	-
Painters and decorators		10,590 11,090	420
Plasterers		5,750 6,000	-
Roofers		4,110 3,930	130
Floorers		3,850 3,670	-
Glaziers		2,720 2,600	60
Specialist building operatives nec*		4,210 4,410	220
Scaffolders		2,600 2,730	130
Plant operatives		3,350 3,570	-
Plant mechanics/fitters		2,560 2,710	220
Steel erectors/structural fabrication		1,970 1,990	<50
Labourers nec*		11,090 11,550	510
Electrical trades and installation		18,940 19,020	690
Plumbing and HVAC Trades		16,410 16,640	360
Logistics		2,820 3,100	280
Civil engineering operatives nec*		1,090 1,040	-
Non-construction operatives		1,660 1,750	-
Civil engineers		6,970 7,280	200
Other construction professionals and technical staff		15,520 16,520	230
Architects		4,970 5,390	-
Surveyors		4,660 4,970	-

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



# GREATER LONDON

The capital's total construction output is forecast to grow by an annual average of 3.5% over the next five years. Construction employment is anticipated to increase by an average yearly rate of 2%, reaching 444,120 by 2020 just below its 2008 peak level. At 0.9% of base 2016 employment, Greater London has one of the lowest annual recruitment requirements (ARR). The region's ARR is also well below the UK rate of 1.7%.

## Key Findings

The region is predicted to see annual average growth rate of 3.5% in its total construction output between 2016 and 2020, lagging only Wales and the South West, the two regions that will benefit most from nuclear new build projects.

The infrastructure sector is likely to be the best performing, both in the short and long run. There are a number of large projects currently going on within the rail sub-sector such as Crossrail and new schemes that are likely to start under our forecast period such as High Speed 2 (HS2). For HS2 we have assumed that main construction work will start in 2019 with early work based around London. Outside the rail sub-sector, another sizeable project anticipated to start is the Thames Tideway Tunnel.

Yearly expansion of 4.9% on average is forecast for the public non-housing sector. The biggest scheme anticipated over the next five years is University College London's £1bn 'Olympicopolis' development. By 2020 output is projected to be around 69% of its 2010 peak.

The commercial market is likely to see average annual increases of 2.9% over the forecast period. Most of this growth is predicted to be seen in the short term as work on large regeneration schemes takes place.

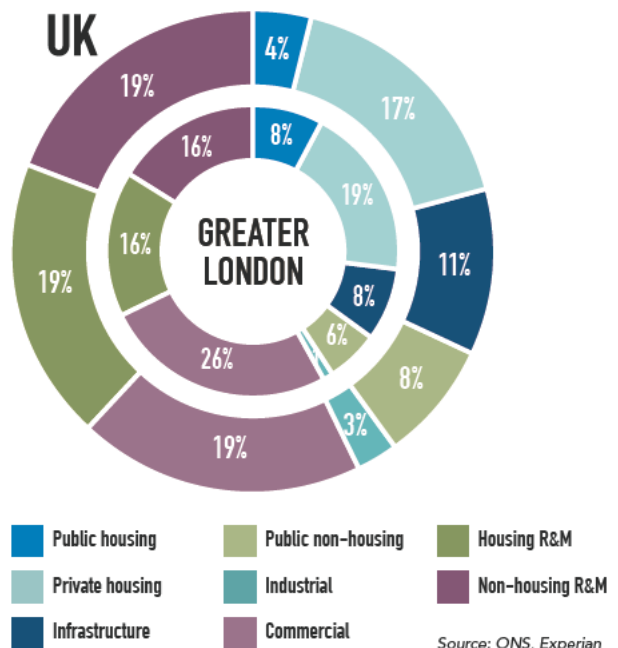
In 2015 construction work began on the £3.5bn regeneration of Silvertown Quays whilst the £1bn redevelopment of Croydon town centre is due to commence this year.

The largest annual average falls of 1.5% have been predicted for the public housing sector. For local councils and housing associations in England, 2015 saw a couple of key government announcements likely to negatively impact balance sheets. Firstly, both are required to decrease their rents by 1% a year from 2016/17 to 2019/20. Secondly, it has been revealed that Right to Buy will be extended to housing associations. Both are likely to make it harder for social housing providers to attract private finance.

In 2014 the capital accounted for around 15.4% of UK construction employment and this is likely to increase to 16.3% by 2020. Over the next five years construction employment is likely to rise by 2% per year on average in Greater London, one of the highest rates compared with other regions and devolved nations.

At 3,650 extra employees required per year over the forecast period, the region's ARR is just 0.9% of base 2016 employment, lower than the UK rate of 1.7%. Given the strong inflows that London naturally benefits from, there are only a handful of occupational categories that have an ARR above 2.5% of base 2016 employment.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS GREATER LONDON







## TOTAL EMPLOYMENT BY OCCUPATION – GREATER LONDON

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation			ARR
Senior, executive, and business process managers		30,070 32,810	350
Construction project managers		13,660 14,300	-
Other construction process managers		32,800 35,010	-
Non-construction professional, technical, IT and other office-based staff		65,110 70,450	-
Construction trades supervisors		7,490 8,270	-
Wood trades and interior fit-out		42,400 45,380	420
Bricklayers		6,900 7,580	-
Building envelope specialists		23,920 25,370	1,210
Painters and decorators		19,010 19,030	<50
Plasterers		3,590 3,550	160
Roofers		3,000 3,260	-
Floorers		2,950 3,120	200
Glaziers		4,780 4,860	480
Specialist building operatives nec*		10,090 10,110	-
Scaffolders		1,380 1,520	-
Plant operatives		5,950 6,640	120
Plant mechanics/fitters		3,020 2,720	-
Steel erectors/structural fabrication		3,040 3,050	-
Labourers nec*		16,080 15,590	-
Electrical trades and installation		21,550 21,390	-
Plumbing and HVAC Trades		19,050 19,680	-
Logistics		2,930 3,480	200
Civil engineering operatives nec*		1,990 2,220	-
Non-construction operatives		7,350 8,720	-
Civil engineers		9,370 10,040	480
Other construction professionals and technical staff		31,490 34,110	-
Architects		14,850 16,420	-
Surveyors		14,290 15,440	-

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



# SOUTH EAST

The region's construction output is expected to expand at an annual average rate of 0.9% between 2016 and 2020, well behind the equivalent UK rate of 2.5%. Growth in new work is projected to lag that of repair and maintenance (R&M) over the same period, at respective rates of 0.6% and 1.4%. Employment growth is also predicted to lag the national average at 0.1% vs 1.1% on the same measures. The annual average recruitment requirement (ARR) of 1,730 represents 0.5% of base 2016 employment, notably below the UK average of 1.7%.

## Key Findings

Total construction output increased by 3% in 2014. It's predicted to achieve further growth over the forecast period, at an annual average rate of 0.9%.

The industrial and public non-housing sectors are set to achieve the strongest expansions in terms of output growth, at respective annual average rates of 3.8% and 3.5%. The former should be buoyed in the short-term by the start of work on the £140m warehouse and distribution facility in Kingsnorth as well as GlaxoSmithKline's new £100m pharmaceutical facility in Worthing. Towards 2020 strengthening global demand could act to boost exports and subsequently benefit the factories sub-sector. This may offset the expected reduction in consumer spending as inflationary and interest rate pressures curb growth. The latter ought to receive strong support from the education sub-sector, from both schools and universities.

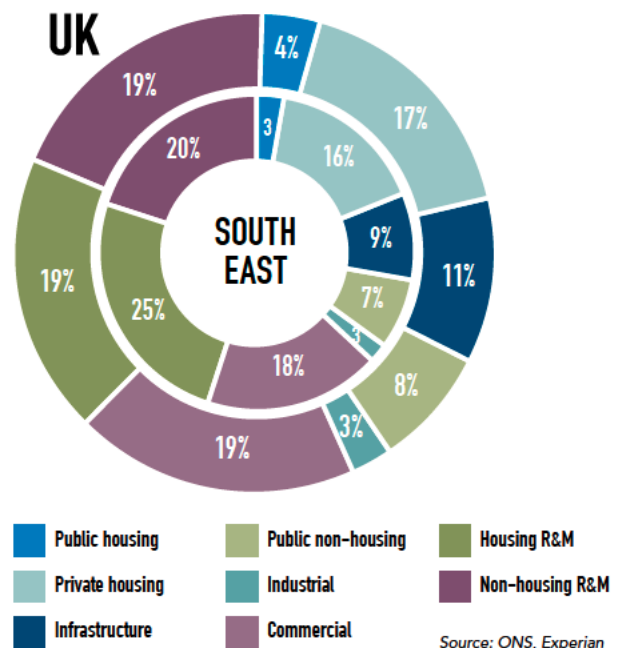
Commercial and private housing activity should also expand, albeit at much slower annual average rates of 0.8% and 0.5% respectively. The former performed well in 2014 but going forwards we expect growth to be on a more uneven footing, especially in the latter half of the forecast period when expected increases in inflation could impact retail sales growth, consequently tapering demand for new retail facilities.

Infrastructure activity is expected to see the largest contraction over the forecast period, at an annual average rate of 2.1%. This is after strong expansion in 2015 as work got underway on a number of projects in the road and energy sub-sectors. Nevertheless, beyond that the pipeline of new work does not provide enough evidence to suggest that this level of output can be sustained in the long-run, hence the negative growth prediction. The public housing sector is also forecast to see an annual average contraction, of 0.2%. Sources such as the government's construction pipeline continue to suggest a lack of investment between 2016 and 2020, although all allocations under the 2015–2018 Affordable Housing Programme (AHP) are yet to be announced.

Employment growth is projected to average 0.1% over the forecast period, well below the equivalent UK rate of 1.1%. Of the 28 occupational aggregates only 16 are forecast to expand between 2016 and 2020; of those logistics (3.2%), plant operatives (2.4%) and scaffolders (1.6%) are set for the most robust increases.

The region's ARR of 1,730 represents 0.5% of base 2016 employment; well below the UK average of 1.7%. Surveyors have the highest requirement at 600.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS SOUTH EAST





## TOTAL EMPLOYMENT BY OCCUPATION – SOUTH EAST

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation			ARR
Senior, executive, and business process managers		31,690 32,720	-
Construction project managers		7,790 7,530	-
Other construction process managers		27,440 26,990	-
Non-construction professional, technical, IT and other office-based staff		59,050 60,680	-
Construction trades supervisors		6,320 6,510	-
Wood trades and interior fit-out		35,910 34,100	-
Bricklayers		7,420 7,230	-
Building envelope specialists		16,290 15,770	-
Painters and decorators		19,860 18,740	-
Plasterers		5,190 4,760	-
Roofers		7,780 7,380	100
Floorers		4,480 4,320	200
Glaziers		3,840 3,340	100
Specialist building operatives nec*		8,000 7,470	-
Scaffolders		2,590 2,680	-
Plant operatives		6,240 6,700	-
Plant mechanics/fitters		4,530 4,490	340
Steel erectors/structural fabrication		3,110 3,190	170
Labourers nec*		19,750 19,490	-
Electrical trades and installation		24,950 23,600	-
Plumbing and HVAC Trades		21,820 20,110	-
Logistics		3,310 3,670	90
Civil engineering operatives nec*		1,920 1,860	-
Non-construction operatives		2,760 3,060	-
Civil engineers		5,580 5,290	<50
Other construction professionals and technical staff		34,810 34,930	-
Architects		6,130 6,330	100
Surveyors		7,020 6,760	600

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



# SOUTH WEST

Construction output in the South West is forecast to grow at an annual average rate of 4.4% between 2016 and 2020, compared to 2.5% at the UK level. Growth will be driven primarily by an increase of 14.2% in infrastructure construction on the same metric. Total employment in the construction sector in the South West is expected to grow at an annual average rate of 2.1%, well above the UK average of 1.1%, rising to an all-time high of 257,560 by 2020. The South West's projected annual recruitment requirements (ARR) for 2016–2020 is 6,480, representing 2.7% of base 2016 employment, well above the UK average of 1.7%.

## Key Findings

Total construction output growth in the South West hovered around the 3% mark in 2013 and 2014. However, output is estimated to have stagnated in 2015 as rises in private housing, infrastructure and housing repair and maintenance (R&M) were cancelled out by falls in the remaining sectors.

Growth is expected to return in 2016 and average 4.4% a year over the forecast period, driven by very strong expansion in infrastructure activity.

The infrastructure sector will benefit primarily from the construction of the Hinckley Point C nuclear power station, on which we expect main construction works to commence in 2017 and to continue until 2024. The proposed construction of Avon power station, a gas fired power facility in Bristol could add a further £1.4bn to construction output in the forecast period if it goes ahead. The Government road-building programme across the region should also contribute £2bn.

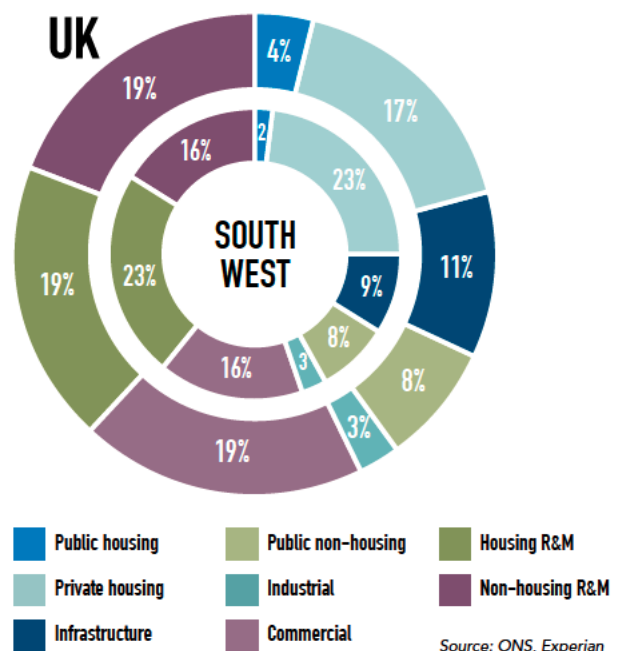
The commercial and private housing sectors are also expected to grow at decent annual average rates of 3.9% and 3.4% respectively in the 2016 to 2020 period. In the former growth will be supported by expansion in most of the areas that drive demand for commercial premises. The latter sector will benefit from a number of large home-building developments across the region including a £2.3bn scheme in Bath.

Public non-housing and public housing are expected to be the slowest growing of the new work sectors with output forecast to increase at an annual average rate of 3.1% and 2% respectively. The key driver of growth in the former will be the redevelopment of a number of military facilities. The latter sector will be constrained by Government rules restricting housing association rents from April 2016.

Employment is forecast to grow at an annual average rate of 2.1% between 2016 and 2020, well above the UK equivalent of 1.1%. Of the 28 occupational aggregates 25 are set to expand. Logistics workers are expected to see the strongest annual average growth (4.3%), followed by architects (3.9%), other construction process managers (3.4%), construction project managers (3.2%), and surveyors (3.2%).

The South West's projected ARR for 2016–2020 is 6,480, which represents 2.7% of base 2016 employment, compared to the UK average of 1.7%. Of the construction-specific occupational categories, those with the largest absolute ARR are bricklayers (480) and plasterers (400).

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS SOUTH WEST





## TOTAL EMPLOYMENT BY OCCUPATION – SOUTH WEST

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation			ARR
Senior, executive, and business process managers		14,100 15,140	790
Construction project managers		3,060 3,370	-
Other construction process managers		12,960 14,390	270
Non-construction professional, technical, IT and other office-based staff		34,770 37,300	2,700
Construction trades supervisors		3,910 4,230	150
Wood trades and interior fit-out		32,880 35,430	-
Bricklayers		8,340 9,090	480
Building envelope specialists		12,190 13,170	290
Painters and decorators		10,790 11,370	220
Plasterers		4,930 5,210	400
Roofers		4,790 5,150	230
Floorers		1,180 1,250	70
Glaziers		2,800 3,010	180
Specialist building operatives nec*		4,330 4,590	120
Scaffolders		3,830 3,660	100
Plant operatives		4,700 5,120	-
Plant mechanics/fitters		2,320 2,250	-
Steel erectors/structural fabrication		2,630 2,750	-
Labourers nec*		7,340 6,710	170
Electrical trades and installation		14,940 15,760	150
Plumbing and HVAC Trades		20,420 21,500	-
Logistics		900 1,040	90
Civil engineering operatives nec*		2,530 2,650	-
Non-construction operatives		1,620 1,620	-
Civil engineers		2,960 3,240	-
Other construction professionals and technical staff		15,260 16,840	-
Architects		3,120 3,530	70
Surveyors		7,410 8,190	-

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



# NORTHERN IRELAND

Northern Ireland is projected to see annual average output growth of 3% over the 2016 to 2020 period, higher than the UK rate of 2.5%. Average growth rates are expected to be higher for new work (3.4%) than repair and maintenance (1.8%), with the latter sector remaining proportionally smaller than the UK average. This output growth rate should generate annual average employment growth of 1.5% over the forecast period, again above the UK average of 1.1%. Northern Ireland's annual average recruitment requirement (ARR), at 1,760, represents 2.8% of base 2016 employment.

## Key Findings

It looks like 2015 is finally the year that the Northern Ireland construction industry starts to see some real growth after a long period of severe contraction. Expansion could be in excess of 7% in real terms with rises in activity across most sectors.

Increasing output is projected to continue throughout the forecast period with growth strongest in the earlier years and subsiding somewhat towards 2020. The annual average output growth rate of 3% is the fourth strongest across the UK and if realised will take output up to £2.7bn in 2012 prices by 2020. This will still be 29% below its peak level in 2007, but represents a considerable improvement on 2014's outturn. Given that in the peak years private housing output in the devolved nation was running at unsustainable levels, 2007's peak of over £3.7bn (2012 prices) is probably an unrealistic target and a level around £3bn may represent a natural high.

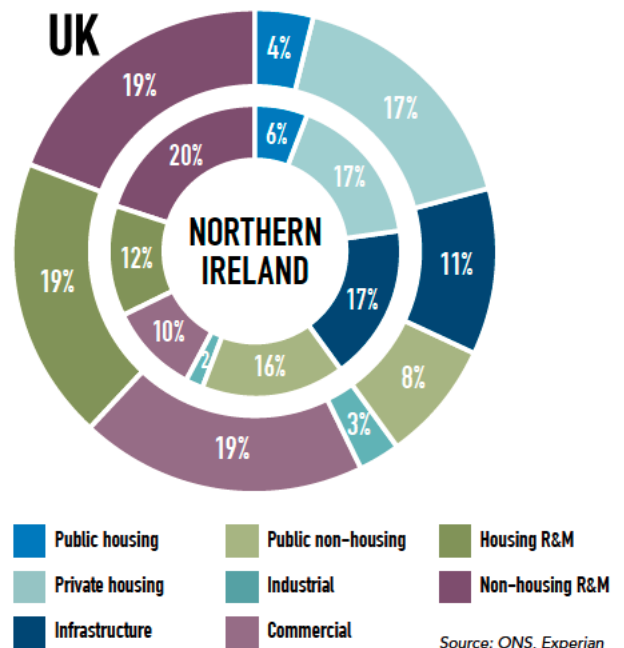
Housing, both public and private should perform well over the forecast period, with annual average growth of over 3%. House price growth remains robust, and big development projects such as the 1,800 home Ballyclare West scheme should provide strong output streams for a number of years. Growth in the infrastructure sector is likely to be driven by a rising level of water and sewerage work under PC15 in the short term and a continuing pipeline of transport projects, while hospitals and education work should benefit the public non-housing sector. The commercial construction sector is seeing an upsurge in hotel building work as Northern Ireland successfully rebrands itself as a tourist destination.

Employment growth is projected to average 1.5% a year over the 2016 to 2020 period, above the UK rate of 1.1%. This implies a productivity gain of 1.5% a year in Northern Ireland, higher than in the 2015 to 2019 period, but probably necessary given the poor performance of the industry in this area in recent years. However, it should be remembered that different construction sectors are more or less labour intensive and therefore changes in 'implied' productivity can be as much to do with relative sector growth rather than any change in 'real' productivity.

Demand is projected to be strongest in some of the managerial/supervisory and professional occupational categories, especially construction project managers (2.9%), construction trades supervisors (3.2%), and architects (3.1%), but some trades show strong growth as well, such as bricklayers (3.7%) and wood trades and interior fit out (3.4%).

Northern Ireland's ARR, at 1,760 for the 2016 to 2020 period shows further growth from last year when the requirement was for 1,490 a year on average between 2015 and 2019. This represents a considerable expansion of the ARR since its low of 660 forecast in 2012 for the 2013 to 2017 period.

## CONSTRUCTION INDUSTRY STRUCTURE 2014 – UK VS NORTHERN IRELAND





## TOTAL EMPLOYMENT BY OCCUPATION – NORTHERN IRELAND

■ 2016 ■ 2020

Annual recruitment requirement (ARR) by occupation		ARR	
Senior, executive, and business process managers		3,730 3,580	-
Construction project managers		1,090 1,200	110
Other construction process managers		4,840 5,240	130
Non-construction professional, technical, IT and other office-based staff		6,800 6,770	-
Construction trades supervisors		990 1,100	<50
Wood trades and interior fit-out		9,090 10,180	170
Bricklayers		2,690 3,050	270
Building envelope specialists		1,090 1,120	<50
Painters and decorators		3,360 3,330	110
Plasterers		2,090 2,080	130
Roofers		1,130 1,250	90
Floorers		260 270	<50
Glaziers		560 550	-
Specialist building operatives nec*		810 810	-
Scaffolders		260 270	-
Plant operatives		1,660 1,710	170
Plant mechanics/fitters		800 850	60
Steel erectors/structural fabrication		210 190	-
Labourers nec*		3,950 3,790	-
Electrical trades and installation		4,850 4,730	-
Plumbing and HVAC Trades		3,740 3,440	50
Logistics		540 600	<50
Civil engineering operatives nec*		520 480	<50
Non-construction operatives		220 230	-
Civil engineers		2,250 2,250	<50
Other construction professionals and technical staff		3,080 3,590	180
Architects		1,870 2,060	190
Surveyors		1,060 1,160	-

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



# 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.







# CSN METHODOLOGY

## Background

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

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

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

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

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

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

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

## The model approach

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

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

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

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



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

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

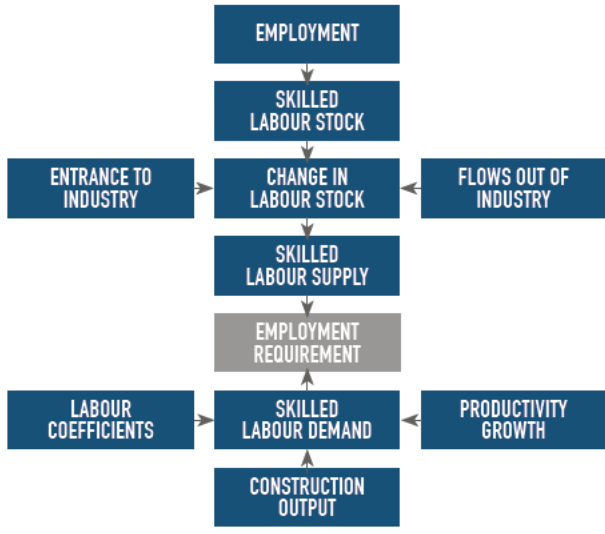
- Transfers to other industries
- International/domestic out migration
- Permanent retirements (including permanent sickness)
- Outflow to temporary sickness and home duties.

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

Flows into the labour market include:

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

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





# GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

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

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

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

**Productivity** – output per employee.

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

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

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



# NOTES AND FOOTPRINTS

## Notes

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

## Footprints for Built Environment Sector Bodies

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

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

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

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



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

### SummitSkills

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

**Coverage** – Building services engineering.

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

### The Building Futures Group

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

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

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

### Energy and Utility Skills

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

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





# DEFINITIONS: TYPES AND EXAMPLES OF CONSTRUCTION WORK

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

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

## **Private sector housing**

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

## **Infrastructure – public and private**

### **Water**

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

### **Sewerage**

Sewage disposal works, laying of sewers and surface drains.

### **Electricity**

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

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

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

### **Railways**

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

### **Harbours**

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

### **Roads**

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

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

### **Factories and warehouses**

Publicly owned factories, warehouses, skill centres.

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

Now restricted to remedial works for public sector residual bodies.

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

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

### **Health**

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

### **Offices**

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

### **Entertainment**

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

### **Garages**

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

### **Shops**

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

### **Agriculture**

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

### **Miscellaneous**

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



## Private industrial work

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

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

### Schools and universities

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

### Health

Private hospitals, nursing homes, clinics.

### Offices

Office buildings, banks.

### Entertainment

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

### Garages

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

### Shops

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

### Agriculture

All buildings and work on farms, horticultural establishments.

### Miscellaneous

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

## New work

### New housing

Construction of new houses, flats, bungalows only.

### All other types of work

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

## Repair and maintenance

### Housing

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

### All other sectors:

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

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



# OCCUPATIONAL GROUPS

## Occupational group

Description, SOC (2010) reference.

### Senior, executive, and business process managers

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

### Construction project managers

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

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

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

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





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

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

\*Not elsewhere classified



### Logistics

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

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

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

### Non-construction operatives

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

### Civil engineers

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

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

### Architects

Architects	2431
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### Surveyors

Quantity surveyors	2433
Chartered surveyors	2434

*\*Not elsewhere classified*





# CSN WEBSITE AND CONTACT DETAILS

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

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

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

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

The website also contains information about:

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

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

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

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

CSN members therefore have:

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

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

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

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

## Contact details

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

**For more information about the  
Construction Skills Network, contact:  
Lee Bryer  
Research Manager  
Research and Development  
0300 456 7681  
research.team@citb.co.uk**

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