INDUSTRY INSIGHTS

Construction Skills Network
Blueprint for Construction 2015-2019

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In association with Experian

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Contents

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.

Foreword

This is the report that the industry has long waited for, ever since the banking collapse of 2008 sent the economy into recession.

There is no doubt that since then we have had a difficult few years, but this positive report marks the commencement of the big construction comeback. What gives us most confidence, that years of steady growth are upon us, is that this labour and skills forecast – the most reputable and trusted in the industry – predicts growth in each region and nation of the UK.

Average annual growth of 2.9% is good news; however, with it comes the inevitable need for an expanded workforce. New jobs are required not just to deliver on growing order books, but also to deliver a step change in costs and delivery times. These additional jobs – 224,000 according to this report – will be pivotal in driving our industry forward.

Government has an important role to play, particularly in helping the industry to plan ahead. It can do this by using the National Infrastructure Plan to set out clearly when all the key road, rail and nuclear projects will begin, and avoid any unnecessary skills crunches from too many of these projects happening at the same time. In addition, the Government, CITB and the industry all need to work together to improve careers advice, to ensure it is as straightforward as possible for employers to invest in Apprenticeships.

What motivates me is to see how our new, reformed CITB can work with industry to help us all reap the benefits of this predicted growth.

There are four key ways I see CITB doing this:

1. One version of the truth on demand

We will build on the CSN forecast to create a comprehensive picture of the industry's skills needs over the next five years. This vital work will identify where the pinch points are likely to be in the need for workers, so that we can strategically address this demand.

2. A clear sight on the supply side

We will work with the education and training system to put together a clear picture of the skills that it is delivering and how well they match with what industry says it needs. Putting together this information on demand and supply will shine a much brighter light on the size and nature of the skills gap.

3. Reviewing Levy spend

We will undertake a root and branch review of how CITB uses its Levy income. This will ensure that funding support is directed squarely behind those skills which will make a real difference to the industry.

4. Bringing education closer to industry

CITB will forge much stronger partnerships with education and training providers. We will work with them to develop the courses and curriculum that best match companies' skills needs.

I firmly believe that this practical, four-point plan is the right one for CITB to work with our partners to deliver the skills that will help promote a more successful and productive construction industry.

There is much work to be done, but this encouraging forecast outlines the real opportunity for construction as we enter an exciting period of growth. It is critical that Government, industry, education providers and CITB work together to grasp it.

Adrian Belton
CITB Chief Executive

The big picture

Despite a slowdown in growth in the second half of the year, 2014 is estimated to have been a good year for the UK economy as a whole, with GDP growth estimated at 2.6% for the year based on recently revised data from the Office for National Statistics (ONS) for the earlier part of the year.

However, earnings growth remained weak and only started to exceed the inflation rate at the end of 2014. Exports are estimated to have declined on the back of poor eurozone performance, making continued recovery increasingly reliant on consumer spending growth. Also, public finances did not see the recovery expected in 2014, with tax receipts below expectations, which means austerity measures are likely to continue for some time.

The construction industry has been one of the main engines of economic growth during 2014, with estimated expansion in the sector of around 5% in real terms, the best performance since 2010. Growth is projected to moderate to just below 3% a year on average during the 2015 to 2019 period, with all sectors expected to see some rise in activity.

On the back of strong output growth, construction employment is estimated to have risen by around 2.6% in 2014, the first increase since 2008. Employment is forecast to continue to grow throughout the five years to 2019, at an annual average rate of 1.5%, with all 28 of the Construction Skills Network (CSN) occupational categories expected to experience some increase.

On the world stage, the eurozone is in danger of falling into renewed recession. Growth in 2014 is expected to have been just 0.8%, with the final quarter near stagnation. At the same time, the European Central Bank (ECB) is increasingly concerned about the risk of deflation. Inflation dipped to 0.3% in November, far below the 2% target. Record low interest rates have not had the desired effect in boosting activity and the ECB have announced Quantitative Easing of at least €1.1 trillion (£834bn) until September 2016. Growth in 2015 is expected to be, at best, pedestrian at near 1%, with little prospect of strong acceleration in the medium term.

The situation in the eurozone has been further exacerbated by the recent inability of the Greek parliament to elect a president and the triggering of automatic snap elections there, in which the anti-bailout party, Syriza, could emerge as the largest single party in the Greek parliament. This is likely to cause concern in international markets amid fears that the issue of a Greek exit from the eurozone could be resurrected and have a ‘domino’ effect on other eurozone countries with sovereign debt issues.

In the US, data has been mixed in 2014 but on balance shows solid growth, forecast at 2.2% for the year as a whole. The Federal Reserve announced an end to quantitative easing (QE) in October, highlighting confidence in a sustained recovery. Fiscal constraints have eased while monetary policy remains accommodative, despite the ending of QE. GDP growth is forecast at 3% in 2015 and in each of the following two years.

Prospects in Asia are generally buoyant. China and India are likely to post annual expansion rates near 7% and 6% respectively over the next few years and other emerging market economies are making healthy progress. But, in Japan, revived GDP growth has not been sustained as hoped under Prime Minister Abe’s economic strategy. The economy slipped into recession in the second and third quarters of 2014, acting as a drag on overall expansion in the Asia-Pacific region, which is forecast at between 4.5% and 5% per annum in the next few years.

With the global economy expected to see output growth accelerate slightly from 3.3% in 2014 to 3.7% in 2015 and edge up thereafter, world trade volumes are expected to pick up from the rather subdued level of recent years with growth of 4.5% next year and over 5% in 2016 and 2017. This should provide better opportunities for UK sales, but with the weak eurozone taking around half of UK exports, the boost will be limited unless eurozone demand gains much stronger momentum than is currently expected.

Overall the global picture remains benign but, for the UK, growth prospects for 2015 are highly dependent on domestic demand as the bleak outlook for the eurozone means that exports are likely to continue to struggle. Without a boost from net trade, the economy will slow from its recent annualised pace of 2.6% to 2.4% in 2015. Looking further ahead, we expect GDP growth to moderate further in 2016 as fiscal restraint persists, and wage growth remains below historic trends at this stage of the economic cycle. We currently expect GDP growth at 2.2%, but there are both upside and downside risks. Stronger than expected growth in wages would boost overall prospects, but a worse outcome is likely if domestic demand does not offset the still weak backdrop for exporters. With the first rise in interest rates now expected to be deferred until the end of 2015, the impact on exposed households and on consumer demand will not be felt until 2017.

In the construction sector, 2014 has undoubtedly been the year of the housing market, with both public and private housing output showing very strong growth. Out of the estimated £5.7bn (2010 prices) increase in total construction output between 2013 and 2014, the two new build housing sectors accounted for 63% of the rise while making up only 22% of total output. Apart from the industrial and repair and maintenance (R&M) sectors, growth elsewhere was disappointing or non-existent. Infrastructure activity subsided in 2014 despite all the plans to update the UK's transport and energy networks, the public non-housing sector continued to be impacted by public expenditure cuts and growth in the private commercial sector has yet to build up a strong head of steam.

However, the annual average growth rate of 2.9% forecast for the construction industry for the 2015 to 2019 period is expected to be much more evenly spread across the sectors. Increases in housing output will almost inevitably fall back to more sustainable levels in the medium to long term. The infrastructure sector is expected to return to growth as some of the very large projects in the pipeline, such as nuclear new build at Hinkley Point, finally get going in earnest. The impact of expenditure cuts on public non-housing output should have largely played out by 2015 and further austerity measures are likely to be focused on resource rather than capital expenditure. The industrial construction sector is likely to benefit from strong demand for new distribution and logistics facilities, while in the private commercial sector the expanding offices sub-sector is likely to be joined by the retail and leisure ones. The R&M sectors will continue to be driven in part by efforts to reduce energy costs by the installation of energy efficiency measures and/or renewable energy generation technologies, despite the apparent ineffectiveness of the Green Deal.

By the end of 2013 construction employment – not just those working in the contracting industry (Standard Industrial Classifications – SICs – 41 to 43), but also those working for professional practices (SICs 71.1 and 74.9) – had declined by close to 385,000 according to data from the Labour Force Survey. The downward trend was finally reversed in 2014, with employment estimated to have risen by around 64,000 to 2.5 million. Annual average output growth of 2.9% over the 2015 to 2019 period is projected to generate an annual average employment growth rate of 1.5% over the same period. This implies a productivity growth rate of 1.4% (output growth minus employment growth), 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.

On these forecasts, total construction employment is projected to reach 2.74 million in 2019, still a little below its peak level in 2008 (2.86 million). Despite this, there are already worrying indicators that the industry is suffering from labour shortages in specific areas, which strongly suggests that it has permanently lost a substantial proportion of those made unemployed over the past five years, as it did during the early 1990s recession. The Federation of Master Builders' quarterly State of Trade survey showed a rising trend in difficulties recruiting skilled staff during 2014, with 41% of respondents citing problems finding bricklayers and carpenters and joiners in the third quarter of 2014. A similar pattern can be seen in the results from the Civil Engineering Contractors Association's survey, with 47% of respondents dissatisfied with the supply of skilled operatives in the third quarter of 2014. In contrast, Experian's monthly survey of contractors' activity shows a peak of respondents citing labour shortages as a constraint on activity last July at 18%, subsiding to 12% in November 2014. Some of the reported shortage may in part be due to perception. During, and in the aftermath of, the Great Recession it has very much been an employers' market, which among other factors, has kept wage growth low, not just in the construction industry. In 2014, the balance definitely shifted and employers are having to work harder to recruit the staff they want, which probably represents a return to a more normal labour market. However, skills shortages are clearly a pressing issue when experienced and, whatever the perception on the scale of shortage, there is a growing demand for skills.

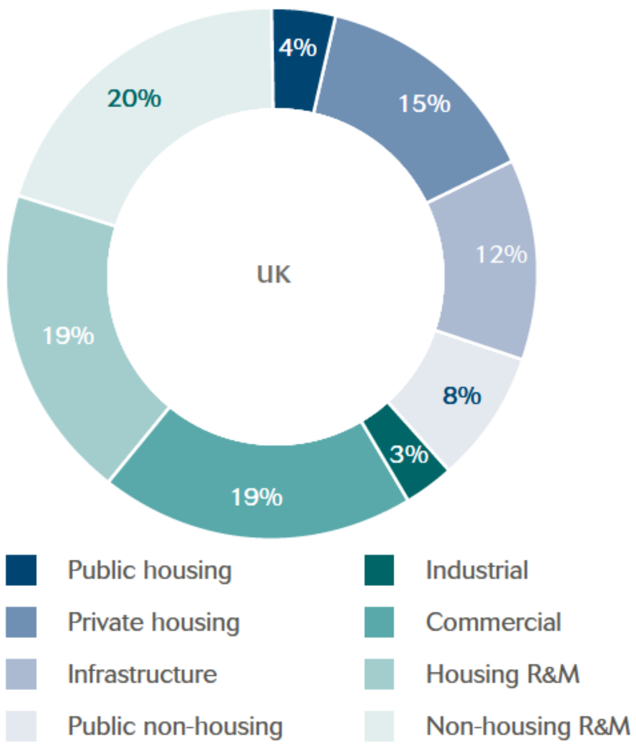
All 28 CSN occupational categories are expected to experience employment growth over the five years to 2019 despite the likelihood that the use of modern methods of construction will continue to grow over the forecast period. It is expected, however, that employment growth will be generally stronger for the professional occupations – civil engineers, surveyors etc. – and managerial/supervisory occupations than the trades. Of the managerial/supervisory occupations, demand is projected to be strongest for construction trades supervisors (2.9% a year on average), for the professional occupations strongest growth is likely for architects and surveyors (both 2.3% a year on average), and for trades, leading the way is plant operatives (2.1%) and bricklayers and building envelope specialists (both 2%). Demand is also expected to be strong for logistics personnel (2.2%).

There is nothing in the 2014 employment numbers, by standard occupational classification (SOC) from the Labour Force Survey, that suggests the pace of structural change in the construction industry has accelerated as any change tends to be long term and incremental. This is reflected in the forecasts for the 28 occupational categories, which show changes in their respective shares of total construction employment limited to ±0.3% at most over the 2015 to 2019 period.

The projected annual recruitment requirement (ARR) continues to rise as the industry recovers from the effects of recession. The ARR for the 2015 to 2019 period is estimated at 44,690, up from the 36,400 projected in 2014 and over 15,000 higher than the 29,050 predicted in 2013. 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, and the like. The ARR therefore represents the levels of recruitment required over and above the normal 'churn' rates in a particular period. For the 2015 to 2019 period, the total projected ARR over the five years is 223,450 (44,690 multiplied by five) which is mainly driven by increasing demand requirements.

In absolute terms, the largest ARRs for construction-specific occupational groups are for wood trades and interior fit out (4,260) and painters and decorators (3,520). However, bricklayers, which accounted for less than 3% of total construction employment in 2014, also have a high absolute ARR at 3,070, supporting the view of labour shortages in this category. This means that bricklayers also have a high ARR relative to base 2015 employment at 4.4%, second only to that of logistics personnel (5.9%).

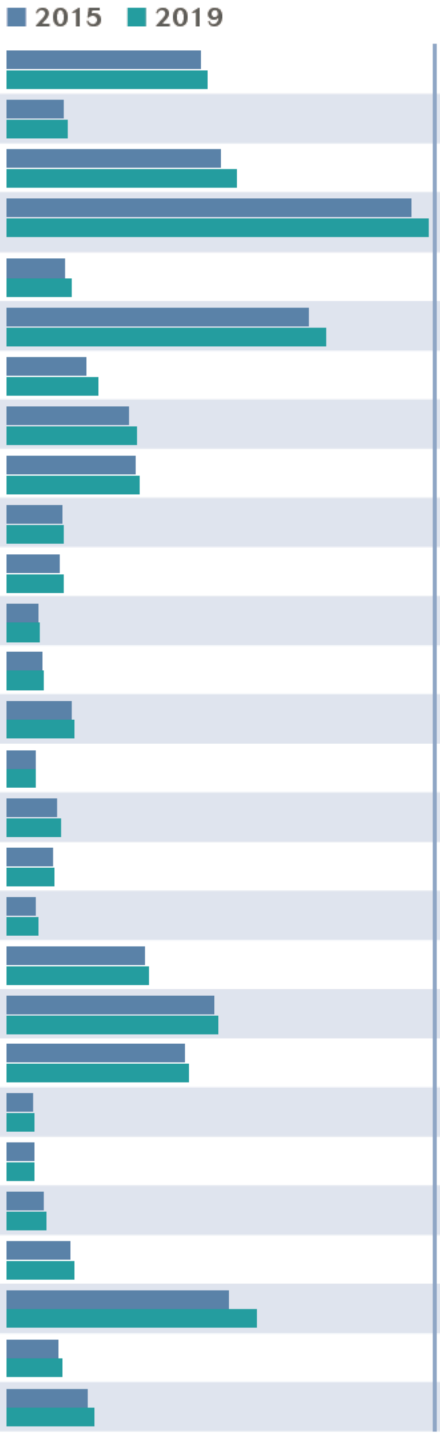
Construction industry structure 2013 UK



Source: ONS, Experian

Total employment by occupation – UK

Annual recruitment requirement (ARR) by occupation – UK



Occupation	2015	2019	ARR
Senior, executive, and business process managers	169,780	175,920	2,120
Construction project managers	49,530	52,570	310
Other construction process managers	187,710	201,650	740
Non-construction professional, technical, IT and other office-based staff	356,160	370,820	7,700
Construction trades supervisors	50,760	56,140	1,460
Wood trades and interior fit-out	265,280	281,100	4,260
Bricklayers	69,160	74,100	3,070
Building envelope specialists	106,680	114,200	2,140
Painters and decorators	112,150	115,880	3,520
Plasterers	48,350	48,920	1,440
Roofers	45,990	48,560	1,350
Floorers	26,780	28,000	900
Glaziers	30,590	31,150	1,020
Specialist building operatives nec*	56,180	57,930	1,010
Scaffolders	23,840	24,700	390
Plant operatives	43,510	46,730	530
Plant mechanics/fitters	39,520	40,690	1,090
Steel erectors/structural fabrication	24,920	26,540	730
Labourers nec*	120,240	124,250	2,810
Electrical trades and installation	181,720	185,370	1,770
Plumbing and HVAC Trades	156,190	160,100	1,220
Logistics	21,760	23,530	1,290
Civil engineering operatives nec*	22,630	23,540	310
Non-construction operatives	31,770	33,660	-
Civil engineers	54,580	58,170	1,270
Other construction professionals and technical staff	195,430	210,740	1,260
Architects	44,680	48,410	540
Surveyors	69,870	75,780	440

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

Comparing the sectors

Public and private new housing

2014 has definitely been the year of the housing sectors with strong growth in output in both the public and private new build sectors. Only industrial construction of the other new work sectors saw significant growth in that year. In the public sector, it seems to be that output surges towards the end of an Affordable Housing Programme (AHP) period as funding allocations made earlier finally work their way through to construction on site, with the current AHP completing in April 2015. Private housing output has undoubtedly been boosted by the 'Help to Buy' scheme and, in particular, the Equity Loan element, which is specifically linked to the new build market. Since its inception in April 2013 to the end of September 2014, nearly 34,000 equity loans have been approved in England, which equates to around 21% of private housing starts over that period and 25% of completions.

Public housing output is projected to expand at an annual average rate of 2.4% over the five years to 2019. Growth is expected to subside from its very strong rate in 2014, with public funding remaining, at best, static to at least 2018. The AHP for the 2015 to 2018 period has funding of £1.7bn for the English regions outside of London and if the Mayor of London's allocation is included, it takes the total to around £3.3bn, the same level as the 2011 to 2015 AHP. Expansion in the sector will be heavily predicated on social housing providers' ability to access yet more private finance and, given that some are already heavily geared in terms of debt, this could be an issue in the future.

Growth in private housing output is expected to average around 4.6% a year to 2019. This is higher than that seen in the last construction growth period between 1995 and 2007 (3.5%), but would be expected as the sector will still be in recovery mode during the early part of the forecast period. In addition, the Equity Loan part of the 'Help to Buy' scheme is due to continue past 2016 and further boosts to the housing market have been recently provided by the reduction in Stamp Duty for most purchasers announced in the Autumn Statement and the new Starter Homes Initiative, which is intended to provide 100,000 first-time buyers under 40 years of age with a 20% discount on the market price of a new home. As of the beginning of 2015, 16 major house builders had signed up to the scheme. However, the effects of these initiatives will at least in part be counteracted by rising interest rates, expected towards the end of 2015 or early 2016, and still poor and worsening affordability across the market as a whole. It is probably the case that there has been a step change in the annual numbers of housing transactions, which are unlikely to approach pre-recession levels in the foreseeable future as, many remain priced out of the housing market.

Infrastructure

Despite the pronouncements in recent years about updating our transport and energy systems in particular, infrastructure output has continued to subside from its 2011 peak in 2014. Water and sewerage output has sunk to historic lows as the Asset Management Programme 5 (AMP5) winds down to its close at the end of March 2015, despite companies' efforts to smooth capital expenditure activity through the release of 10-year frameworks. What has been more surprising has been the poor performance of rail output, given that activity on by far the biggest ongoing project, Crossrail, is peaking at present and is likely to remain high through 2015. However, there have been indications that Network Rail has been struggling to meet its capital expenditure targets.

Growth is expected to return to the sector this year, but this is heavily predicated on the start of main construction works on the first of the nuclear build projects at Hinkley Point. Over the whole of the forecast period expansion is projected to average 2.4% a year. While this does not sound very high given the number and value of projects in the pipeline – HS2, Mersey Crossing, nuclear new build at Hinkley and Wylfa, Aberdeen Western Peripheral Route, to name just a few – it should be remembered that there are a number of large projects currently in construction which are due to complete during the forecast period – Crossrail, Queensferry Crossing, Thameslink, Victoria Station upgrade, for example. Furthermore, projects that will start and complete during the forecast period, such as the Mersey Crossing and Aberdeen Western Peripheral Route, are, in fact, 'forecast neutral' as both the rise in output as work rises to a peak and the fall as they move towards completion, are captured.

Public non-housing

The public non-housing sector is likely to have experienced its fourth consecutive year of decline in 2014, although the fall in output will have been much more moderate than in the previous three years. Austerity measures and the cancellation of the Building Schools for the Future programme have been the primary reasons for the decline with annualised output in the schools and colleges sub-sector in the third quarter of 2014, only 60% of its first quarter 2011 peak. Given that the education sub-sector accounted for 57% of total public non-housing output in 2011, the decline in schools and colleges work has had a dramatic impact on output in the sector as a whole.

However, we are expecting to see the sector return to growth in 2015, and post annual average expansion rate of 2.2% over the 2015 to 2019 period. There are a number of reasons for this view. First, schools and colleges are beginning to benefit from the Education Funding Agency's £5bn pot available for the expansion and development of new and existing sixth-form facilities. Second, there is a particularly buoyant pipeline of new work for universities, with projects for Bath University, University College London (UCL), Cambridge, Northampton, the London School of Economics (LSE) and Newcastle due to commence within the current forecast period. Third, the sector will also benefit from the Defence Infrastructure Organisation's move from privately-funded to publicly-funded procurement for most of its estates work, which means that such output will increasingly appear in the public non-housing sector not the private commercial one.

Construction output 2015-2019 – UK (£ million, 2010 prices)

	Estimate	Forecast *Annual % change*					Annual average
	2014	2015	2016	2017	2018	2019	2015-19
Public housing	5,635	5%	0%	2%	3%	2%	2.4%
Private housing	20,121	10%	5%	3%	3%	2%	4.6%
Infrastructure	13,569	6%	2%	0%	-5%	10%	2.4%
Public non-housing	9,436	2%	4%	1%	3%	1%	2.2%
Industrial	3,775	15%	5%	0%	-10%	0%	1.7%
Commercial	21,724	6%	6%	4%	5%	2%	4.6%
New work	74,259	7%	4%	2%	1%	3%	3.6%
Housing R&M	21,862	3%	1%	3%	2%	1%	2.0%
Non-housing R&M	23,621	2%	3%	2%	0%	1%	1.5%
R&M	45,483	2%	2%	2%	1%	1%	1.7%
Total work	119,742	5%	3%	2%	1%	2%	2.9%

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

Industrial

Growth in industrial construction in 2014 was strongly skewed towards the warehouse sub-sector rather than factories and this is expected to continue for at least the next couple of years. In fact, output in the former is expected to exceed that in the latter in 2015 for the first time since the disaggregated data series became available in 1985. Manufacturing output growth in 2014 is estimated to have been strong at over 3%, but a slowdown in the rate of expansion is expected this year as weak eurozone growth constrains export prospects. Annual average manufacturing output growth in the five years to 2019 is projected to be a relatively modest 1.5%, not enough to drive more than modest expansion in capacity over the period. In contrast, transport and storage is predicted to expand by a more robust 2.6% a year on average, indicating a much stronger demand driver for distribution and logistics facilities. Work at the London Gateway Logistics Park, for example, should continue to provide an output stream well past 2019.

Commercial

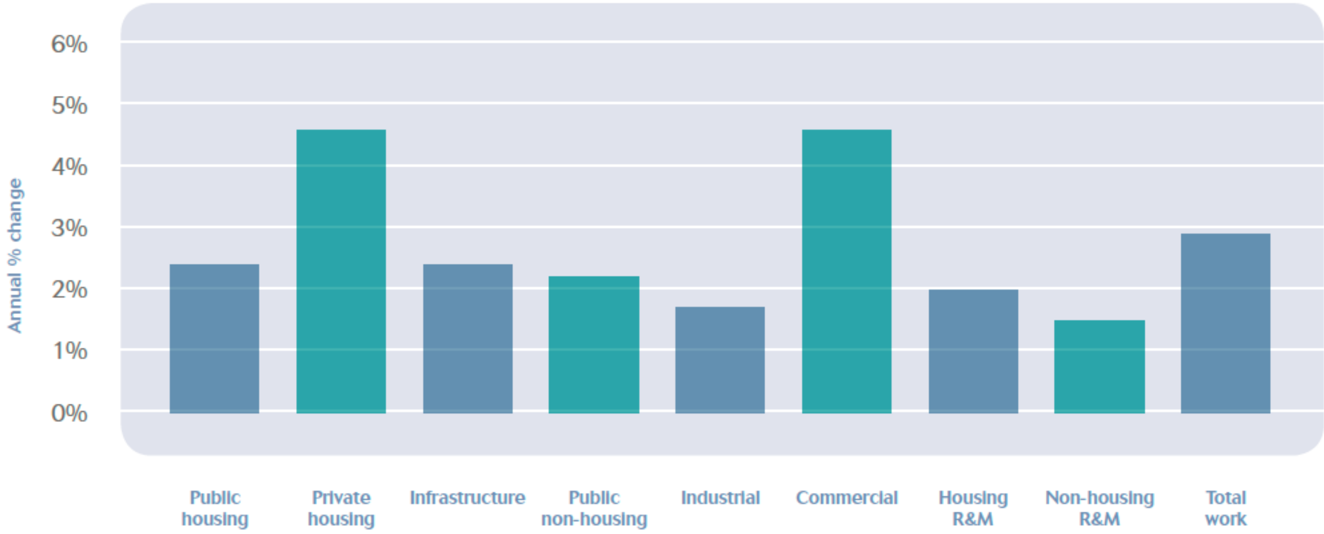
The relatively poor performance in the commercial construction sector in 2014, with only modest growth estimated, has been in large part due to the fall in privately-financed work for the Defence Infrastructure Organisation as that body has moved to publicly financed procurement methods. The commercial sector's loss has been the public non-housing sector's gain. Of the three main sub-sectors, the offices and leisure ones actually saw good growth in construction activity last year, although the retail sub-sector remained weak. Growth is expected to strengthen to an annual average of 4.6% over the five years to 2019, in line with that for private housing. Expansion is likely to be led by the offices and leisure sub-sectors. The former is now seeing a strong London market being joined by recovery in the main regional centres, while the latter should benefit from a spate of football stadia projects and the prospective £2bn theme park in north Kent. Some growth is also expected to return to the retail construction sub-sector, although it will remain under pressure from online retailing and poor profitability among the large supermarket chains.

Repair and maintenance (R&M)

Public housing R&M output sank to its lowest level since 2002 in 2013 and, while it is estimated to have risen a little last year, the prospects for the sector must remain gloomy considering the continuing pressure that local authority finances will be under during the forecast period. While routine, cyclical and essential repairs will continue, local authorities are unlikely to be pushing forwards with major improvement works on their stock, except perhaps in the energy efficiency and renewable installation arena, often in collaboration with other social housing providers. In contrast, as average earnings growth starts to exceed the inflation rate for a sustainable period of time and household finances improve, growth in private housing R&M should continue. Owner-occupiers will start to feel much more confident about spending on big ticket items such as extensions, conversions, new kitchens and bathrooms, as well continuing to invest in energy efficiency and renewable measures, albeit largely outside of the Green Deal financing package. Overall, housing R&M is projected to experience an annual average growth rate of 2% over the five years to 2019.

Growth in non-housing R&M output will remain centred in the private rather than the public sector, largely for the same reasons put forward for the housing R&M sectors. Very modest expansion in the public sector is predicated on improvements to the energy efficiency of public buildings going forward, while growth in the private sector will also be driven by this factor combined with the more traditional need to keep premises in a good state of repair, particularly if they are looking to attract footfall in increasingly tough markets. An annual average growth rate of 1.5% between 2015 and 2019 is forecast for the non-housing R&M sector.

Annual average construction output growth 2015-2019 – UK



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

Comparing the UK regions and nations

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

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

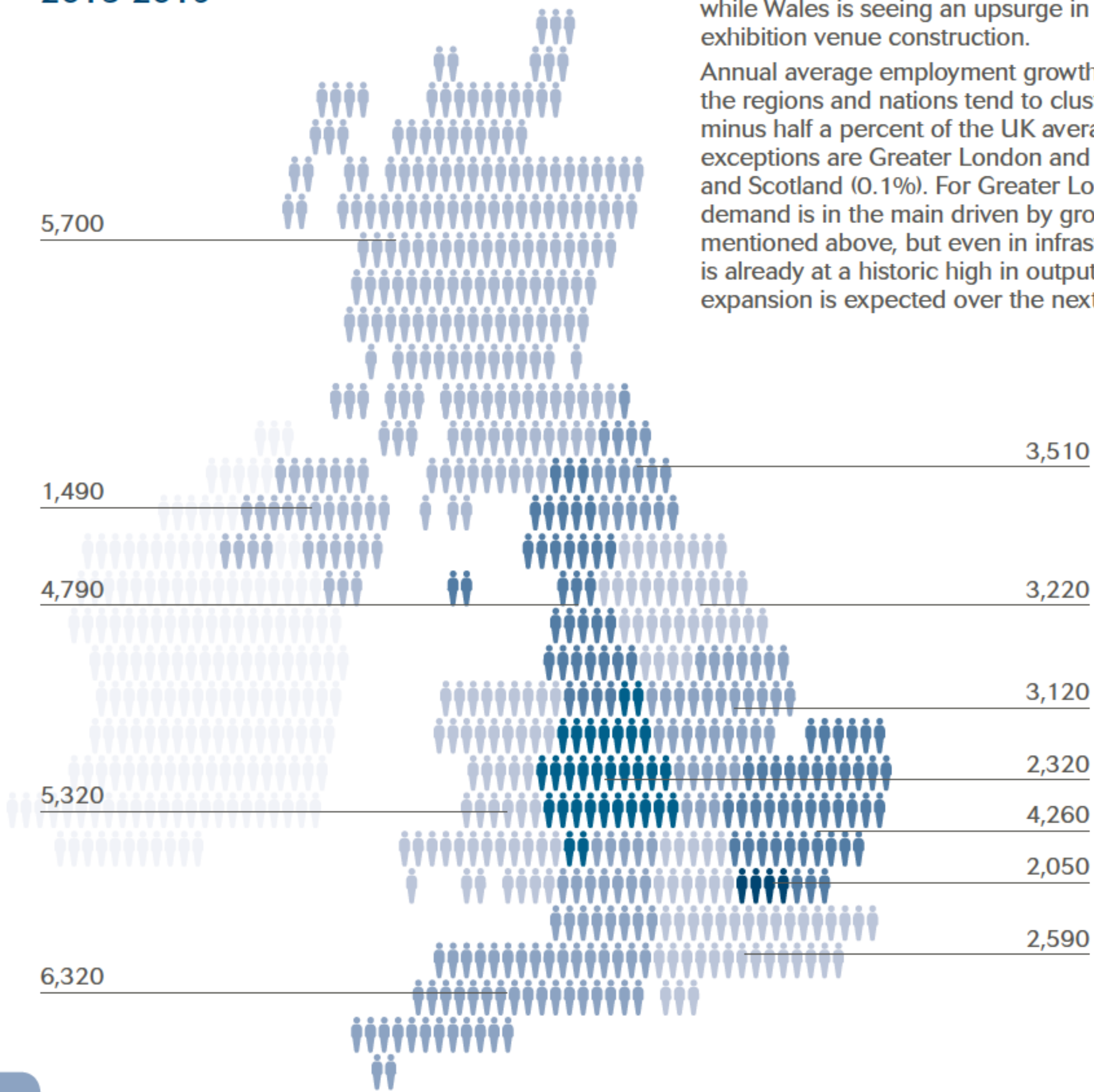
While most UK regions and nations are expected to experience quite strong growth in private housing output to 2016, with a slowdown to more sustainable levels thereafter, the prospects for public housing are much more uncertain as the current Affordable Housing Programme (AHP) winds down to April 2015.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

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

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

Annual average employment growth rates across the regions and nations tend to cluster within plus or minus half a percent of the UK average of 1.5%. The exceptions are Greater London and Wales (2.4%), and Scotland (0.1%). For Greater London, workforce demand is in the main driven by growth in the sectors mentioned above, but even in infrastructure, which is already at a historic high in output terms, further expansion is expected over the next five years.

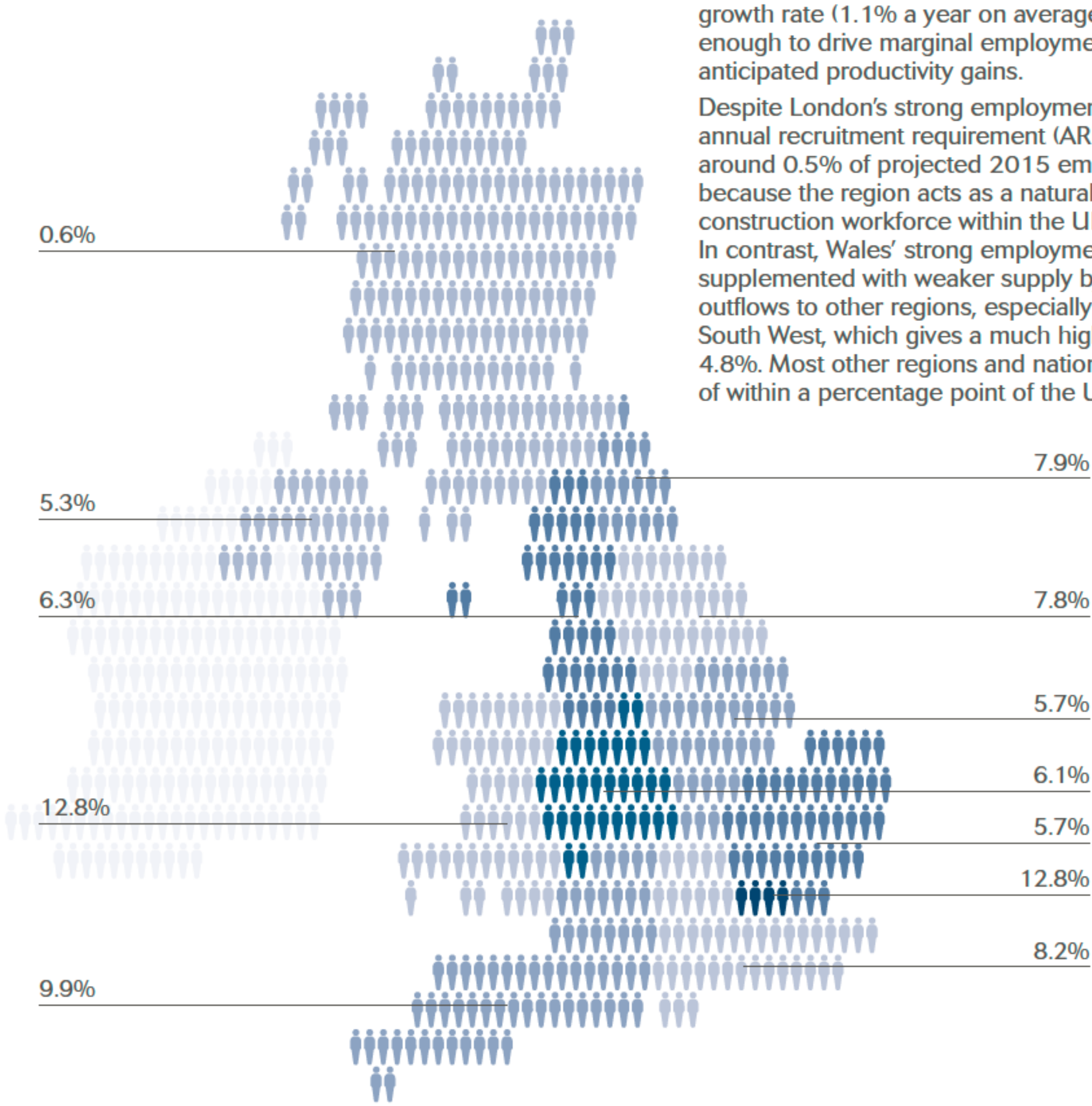
Number of new recruits required annually 2015-2019



Annual average output growth by region 2015-2019

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

Total employment growth 2015-2019



Employment demand in Wales inevitably benefits from the start of main works at Wylfa, despite the fact that infrastructure is less labour intensive than many other sectors as it is a very large project in a relatively small market. Scotland's relatively poor projected output growth rate (1.1% a year on average) is only just enough to drive marginal employment growth given anticipated productivity gains.

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

Scotland

Scotland is projected to see annual average output growth of 1.1% over the 2015 to 2019 period, considerably lower than the UK rate of 2.9%. Average growth rates for new work and repair and maintenance are expected to be similar, at 1% and 1.2% respectively. This output growth rate is only just strong enough to generate marginal employment growth, of 0.1% on average per year, again well below the UK average of 1.5%. Despite the small employment growth, Scotland's annual average recruitment requirement (ARR) of 5,700 represents 2.6% of base 2015 employment.

Key findings

2014 is likely to have been a good year for Scottish construction, with output growing by an estimated 7% in real terms. This is the second consecutive year of expansion, but still leaves output 11% below its 2006 peak. Growth in 2013 and 2014 has been primarily driven by a very strong performance from infrastructure which has taken output in the sector to new historic highs.

Interestingly, the primary reason for the relatively modest annual average output growth rate in the five years to 2019 (1.1%), is a projected decline in infrastructure activity from 2016 onwards. Large projects such as the Queensferry Crossing, Borders Railway and M8/M74/M73 improvements are all due to complete during the forecast period and, while there are new schemes on the blocks, they are unlikely to compensate in full for those leaving the pipeline. However, to put the projected annual average decline of 5% into perspective, even by 2019, infrastructure output will still be higher than in any year between 1990 and 2012 inclusive in real terms.

Output growth is expected to be strongest in the private housing sector at an average annual rate of 5.4%, but this comes on the back of eight consecutive years of decline between 2005 and 2013. There are a number of large regeneration projects in the pipeline with a substantial housing element and the sector will also probably benefit from the Scottish Futures Trust's £1.5bn investment in affordable housing over the next decade – a programme that should drive decent growth in the public housing sector as well.

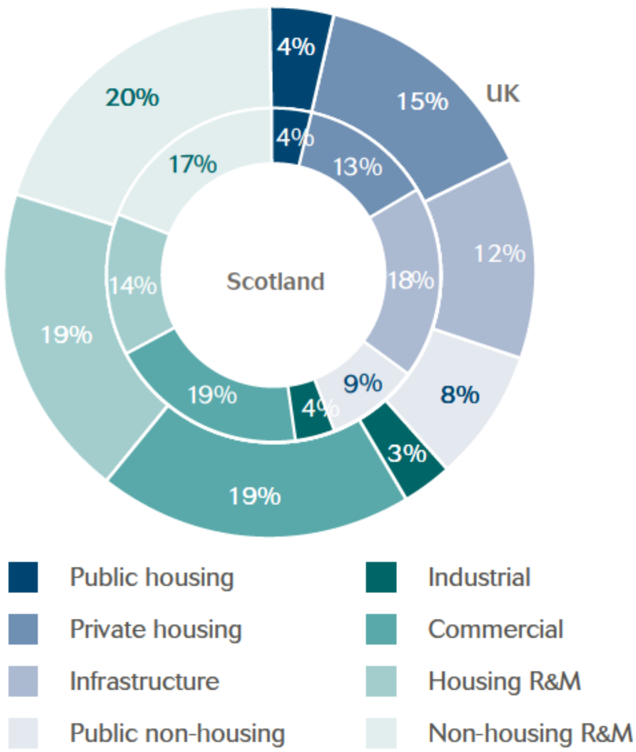
> Scotland is projected to see annual average output growth of 1.1% over the 2015 to 2019 period, considerably lower than the UK rate of 2.9%.

Employment growth is projected to average just 0.1% a year over the 2015 to 2019 period, well below the UK rate of 1.5%. This implies a productivity gain of 1% a year in Scotland. However it should be remembered that different construction sectors are more or less labour intensive and thus 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 the professional occupational categories, ranging from average annual growth of 0.9% to 1.5%, but many of the trades are expected to see static or marginally declining levels of employment.

Scotland's annual recruitment requirement (ARR), at 5,700 for the 2015 to 2019 period, represents 2.6% of base 2015 employment, a significantly higher ratio than the UK average (1.7%) despite poor employment growth. However, Scotland suffers significant net outflows on the supply side that need to be compensated for according to the Labour Force Survey.

Construction industry structure 2013 – UK vs Scotland



Source: ONS, Experian

Total employment by occupation – Scotland

Annual recruitment requirement (ARR) by occupation – Scotland

Occupation	2015	2019	ARR
Senior, executive, and business process managers	11,960	11,720	290
Construction project managers	3,580	3,790	60
Other construction process managers	15,430	15,980	-
Non-construction professional, technical, IT and other office-based staff	27,620	27,410	1,720
Construction trades supervisors	4,600	4,550	370
Wood trades and interior fit-out	21,500	20,980	110
Bricklayers	5,730	5,590	-
Building envelope specialists	4,530	4,390	-
Painters and decorators	9,790	9,270	840
Plasterers	2,520	2,340	-
Roofers	4,490	4,380	-
Floorers	2,310	2,240	-
Glaziers	2,780	2,740	-
Specialist building operatives nec*	3,760	3,630	-
Scaffolders	2,220	2,270	<50
Plant operatives	3,980	4,140	120
Plant mechanics/fitters	4,070	3,930	170
Steel erectors/structural fabrication	1,890	1,940	80
Labourers nec*	10,920	10,930	610
Electrical trades and installation	17,320	16,580	-
Plumbing and HVAC Trades	10,620	9,610	240
Logistics	2,170	2,210	200
Civil engineering operatives nec*	2,500	2,600	110
Non-construction operatives	3,710	3,880	-
Civil engineers	8,640	9,050	760
Other construction professionals and technical staff	23,670	24,430	-
Architects	3,950	4,050	-
Surveyors	7,100	7,410	-

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

North East

The North East's construction industry is forecast to experience an average annual increase in output of 2.3% over the forecast period. Construction employment is likely to grow at an annual average rate of 1.5% and is projected to be around 104,550 in 2019. The region's annual recruitment requirement (ARR) of 3,510, accounts for 7.9% of the UK total and represents 3.5% of projected base 2015 employment in the North East, higher than the UK ratio of 1.7%.

Key findings

After four consecutive years of decline, total construction output in the region remained flat at £3.49bn in 2013. Whilst expansion was registered in the commercial and housing sectors, the infrastructure, public-non housing and industrial ones posted falls in output. Construction is estimated to have returned to growth in 2014 with an increase in output of 4%.

Over the next five years the infrastructure sector is predicted to be the best performing one, with annual average expansion of 5.8%. This is one of the highest growth rates for all regions and nations and it is also much higher than the corresponding ratio for the UK (2.4%).

The commercial sector is likely to see average increases of 3.8% per annum. Over the short term there are a number of sizeable projects due to start such as the £100m makeover of Newgate Street in Newcastle, whilst sustained improvements in the economy should lead to moderate expansion through the middle years of the forecast period.

Yearly expansion of 3.3% on average is forecast for the industrial sector. Strong growth is expected in the short run due to the £100m Swan Hunter Shipyard redevelopment scheme taking place in North Tyneside. A start on site is imminent and work is planned to last two years.

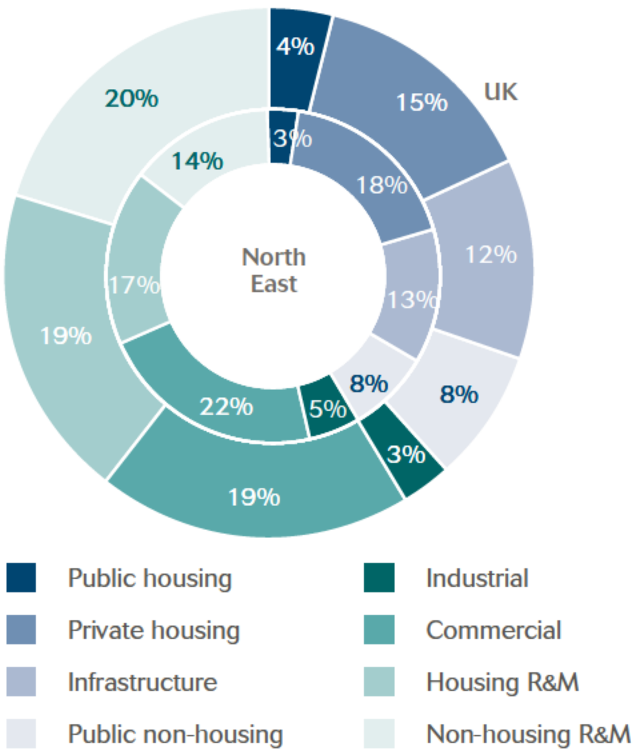
Lacklustre annual average growth of 0.6% is anticipated for the public housing sector. Under the 2015-2018 Affordable Homes Programme (AHP) a total of £1.7bn will be invested across England, excluding London. At present only £886m of that funding has been allocated. The finance available for the 2015-2018 AHP is much the same on an annualised basis as in 2011-15, indicating that if activity is going to increase, then borrowing from other sources will need to continue to rise, which could be challenging given the level of debt already carried by some social housing providers.

In 2013, the region accounted for 3.8% of UK construction employment and by the end of the forecast period total employment is likely to reach 94% of its 2008 peak. Overall the region's construction employment is likely to increase by 1.5% per year on average, identical to the UK rate.

At 3,510 extra employees required per year over the forecast period, the region's annual recruitment requirement (ARR) is 3.5% of base 2015 employment, much higher than the UK rate of 1.7%. As a proportion of base 2015 employment, the steel erectors/structural fabrication occupation is likely to be in the greatest demand (10.8%).

By the end of the forecast period, total construction employment is likely to reach 94% of its 2008 peak.

Construction industry structure 2013 – UK vs North East



Source: ONS, Experian

Total employment by occupation – North East

Annual recruitment requirement (ARR) by occupation – North East

Occupation	2015	2019	ARR
Senior, executive, and business process managers	4,290	3,820	-
Construction project managers	1,670	1,870	100
Other construction process managers	6,500	7,290	-
Non-construction professional, technical, IT and other office-based staff	9,790	8,920	310
Construction trades supervisors	4,420	5,160	410
Wood trades and interior fit-out	7,460	8,110	590
Bricklayers	2,930	3,290	170
Building envelope specialists	2,370	2,640	80
Painters and decorators	2,600	2,550	<50
Plasterers	2,430	2,420	50
Roofers	2,280	2,480	170
Floorers	2,700	2,920	180
Glaziers	680	640	-
Specialist building operatives nec*	4,160	4,370	250
Scaffolders	1,150	1,110	<50
Plant operatives	2,910	2,930	-
Plant mechanics/fitters	2,450	2,560	-
Steel erectors/structural fabrication	1,580	1,790	170
Labourers nec*	5,900	5,870	160
Electrical trades and installation	7,900	8,210	140
Plumbing and HVAC Trades	7,280	8,170	420
Logistics	400	390	-
Civil engineering operatives nec*	1,440	1,520	-
Non-construction operatives	480	500	-
Civil engineers	1,660	1,880	60
Other construction professionals and technical staff	9,920	11,030	220
Architects	390	340	-
Surveyors	1,520	1,770	-

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

North West

The region is likely to see an annual average increase of 2.5% in construction activity over the forecast period, lower than the UK ratio of 2.9%. In 2019, construction employment is predicted to be around 288,630, the highest level since 2009. The region's annual recruitment requirement (ARR) of 4,790 accounts for 10.7% of the UK total and represents 1.7% of total projected base 2015 employment in the North West, identical to the UK's ratio.

Key findings

In 2013 the North West's total construction output rose by 6% to £11.14bn and double digit increases were posted in the industrial, infrastructure and private housing markets. Growth in 2014 is estimated to be much smaller at around 1%.

Over the medium term the best performing sector is expected to be the commercial one with yearly expansion of 6.3% on average. There are a number of current and new projects that are planned to take place over the near future such as the redevelopment of Liverpool Football Club and the £150m Project Jennifer scheme which is also located in Liverpool. Expansion in the sector should continue into the medium term under the impetus of sustained economic improvement. However, by the end of the forecast period, the sector is still likely to be only around 63% of its 2007 peak.

An increase of 4.8% per annum on average is anticipated for the private housing sector, although most of the growth is expected in the earlier part of the forecast period. In terms of projects for the sector, one of the largest ones to be recently announced is a ten-year deal worth £1bn between Manchester City Council and the Abu Dhabi United Group, which will see over 6,000 new homes built. Over 830 privately rented homes are to be built in 2015 in the Ancoats and New Islington areas in the first phase of the scheme.

An annual average increase of 2.7% is predicted for the public housing sector. Under the 2015-2018 Affordable Homes Programme (AHP) a total of £1.7bn will be invested across England, excluding London, however the overall finance available for the 2015-2018 AHP is much the same on an annualised basis as in 2011-15.

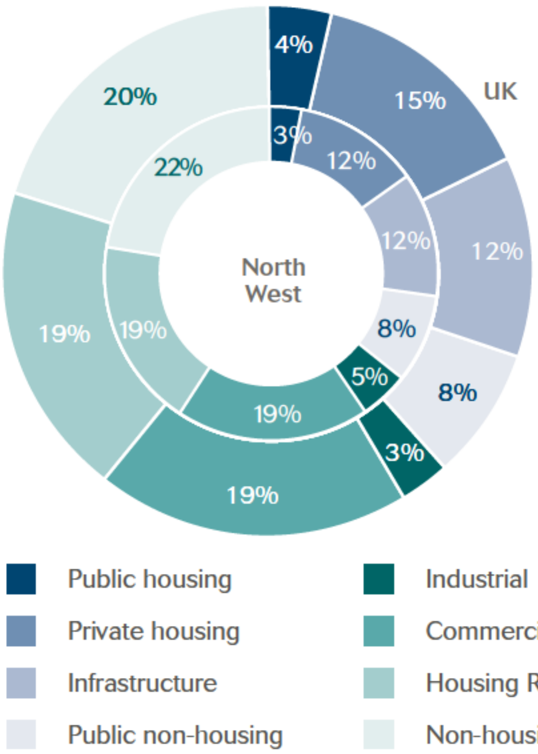
During the first half of last year, total construction output went up by 7% compared with the preceding year.

This suggests that if output is going to rise in the sector many housing associations will need to increase their borrowing levels from private sources, which could be difficult given the level of debt already carried by some social housing providers.

Construction employment in the region is expected to experience average yearly expansion of 1.2% between 2015 and 2019, lower than the UK rate of 1.5%. Building envelope specialists are likely to see the largest growth of 3.5% per annum on average whilst most of the other occupations are also projected to see some growth.

The North West's annual recruitment requirement (ARR), at 4,790, represents 1.7% of total projected base 2015 employment, identical to the UK ratio. At 850, the largest absolute requirement is for bricklayers but, as a share of 2015 base employment, the logistics occupation (12%) will be the most sought after.

Construction industry structure 2013 – UK vs North West



Source: ONS, Experian

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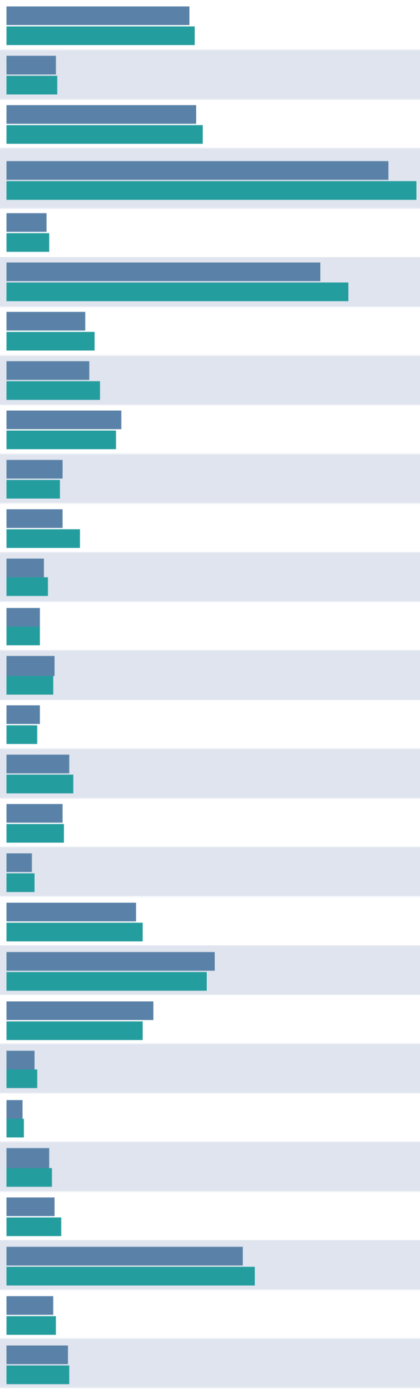
Total employment by occupation – North West

Annual recruitment requirement (ARR) by occupation – North West



Occupation	2015	2019	ARR
Senior, executive, and business process managers	18,100	18,920	-
Construction project managers	4,850	4,990	-
Other construction process managers	18,960	19,430	-
Non-construction professional, technical, IT and other office-based staff	38,170	40,890	130
Construction trades supervisors	3,830	4,050	130
Wood trades and interior fit-out	31,330	34,060	700
Bricklayers	7,760	8,650	850
Building envelope specialists	8,120	9,180	350
Painters and decorators	11,220	10,940	400
Plasterers	5,340	5,140	360
Roofers	6,370	7,180	260
Floorers	3,580	4,000	160
Glaziers	3,040	3,110	160
Specialist building operatives nec*	4,730	4,460	-
Scaffolders	3,090	2,920	-
Plant operatives	6,040	6,460	-
Plant mechanics/fitters	5,460	5,510	160
Steel erectors/structural fabrication	2,290	2,580	100
Labourers nec*	12,830	13,300	260
Electrical trades and installation	20,770	19,880	260
Plumbing and HVAC Trades	14,530	13,300	-
Logistics	2,630	2,970	310
Civil engineering operatives nec*	1,380	1,480	160
Non-construction operatives	4,180	4,320	-
Civil engineers	4,710	5,220	-
Other construction professionals and technical staff	23,540	24,700	-
Architects	4,540	4,830	<50
Surveyors	6,000	6,160	-

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

Yorkshire and the Humber

The region is projected to see an annual average increase of 2.3% in construction output over the next five years, lower than the UK rate of 2.9%. In 2019, construction employment is predicted to be around 205,910, the highest level since 2009. The region accounts for 7.2% of the total UK annual recruitment requirement (ARR) and it represents 1.6% of total projected base 2015 employment in Yorkshire and the Humber.

Key findings

In 2013, the region's total construction output declined for the third successive year by 4% to £7.85bn. Double digit decreases were posted in the industrial and public housing and non-housing sectors. Growth is estimated to have returned in 2014 with a rise of 7%.

Over the medium term the best performing sector is predicted to be the commercial one with a yearly increase of 6.3% on average, joint highest with the North West and significantly higher than the UK rate of 4.6%. Expansion over the next two years is predicted to be strong as there are a number of large retail projects that have either started or are about to start. A new £600m retail quarter is to be built in 2016 on the corner of Pinstone Street and Furnival Gate in Sheffield city centre. The new flagship store and retail units will cover 98,500 square metres. Another project is the £135m retail and country parks and new Castleford Tigers stadium which should see work begin in summer 2015 if the green light is given. Post-2016, sustained improvements in the economy should lead to a further rise in activity, albeit at a slower rate.

The private housing market is projected to see an annual average increase of 3.8%. Expansion this year is likely to be at a double digit rate before a more sustainable level of growth kicks in for the remainder of the forecast period. There are a number of factors that will act as a drag on activity in the medium term, namely interest rate increases, tougher lending criteria introduced as a result of the Mortgage Market Review and worsening affordability. However, these adverse effects could be, in part, mitigated by the reduction in Stamp Duty which came into effect at the end of 2014.

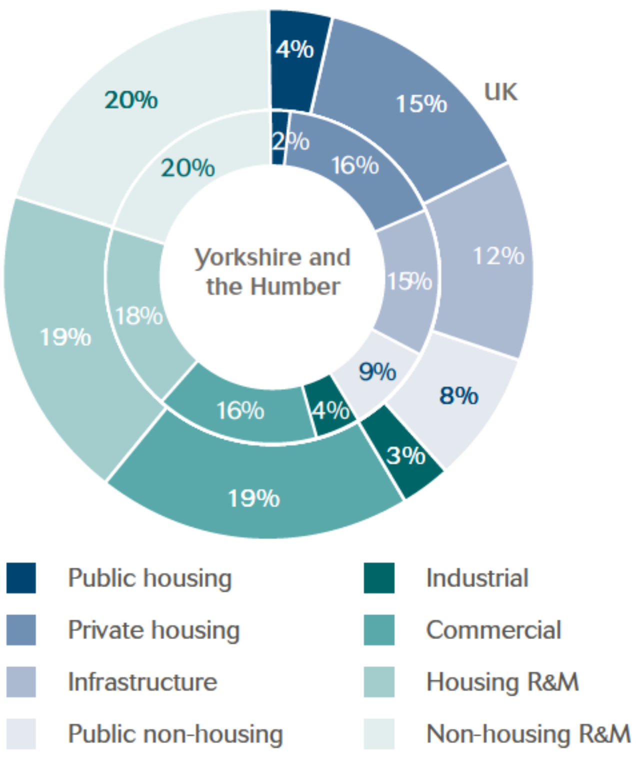
In 2013, the region's total construction output declined for the third successive year by 4% to £7.85bn, however growth is estimated to have returned in 2014 with a rise of 7%.

A yearly fall of 1.7% on average is forecast for the infrastructure sector. There are a number of sizeable road and energy projects that are due to start over the next two years such as the A160/A180 Port of Immingham improvement scheme. Going forwards, as these projects complete, there are no other sizeable schemes planned to take place leading to falls in output. There have been several new road schemes announced in the 2014 Autumn Statement, however work is scheduled to be carried out within the next two parliaments and it is therefore possible that construction may fall outside our current forecast period.

In 2013, the region accounted for 7.5% of UK construction employment and over the next five years employment is projected to increase by 1.5% per year on average, identical to the UK rate.

The region's annual recruitment requirement (ARR), at 3,220, represents 1.6% of total projected base 2015 employment. At 600, the largest construction trade requirement is for wood trades and interior fit-out on an absolute basis but, as a share of 2015 base employment, the greatest requirement is for plant operatives (11.8%).

Construction industry structure 2013 – UK vs Yorkshire and the Humber



Source: ONS, Experian

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Total employment by occupation – Yorkshire and the Humber

Annual recruitment requirement (ARR) by occupation – Yorkshire and the Humber

Occupation	2015	2019	ARR
Senior, executive, and business process managers	13,170	14,790	220
Construction project managers	3,210	3,540	-
Other construction process managers	14,060	15,510	-
Non-construction professional, technical, IT and other office-based staff	25,800	27,640	980
Construction trades supervisors	3,940	4,630	70
Wood trades and interior fit-out	18,880	18,280	600
Bricklayers	5,450	5,260	190
Building envelope specialists	7,180	6,960	-
Painters and decorators	6,530	6,460	170
Plasterers	5,550	5,070	-
Roofers	4,760	4,660	240
Floorers	2,400	2,260	140
Glaziers	2,560	2,600	-
Specialist building operatives nec*	3,370	3,430	60
Scaffolders	2,660	3,090	80
Plant operatives	1,440	1,660	170
Plant mechanics/fitters	3,430	3,450	<50
Steel erectors/structural fabrication	2,590	2,410	-
Labourers nec*	8,180	9,340	-
Electrical trades and installation	15,300	15,760	-
Plumbing and HVAC Trades	12,490	12,900	-
Logistics	1,050	1,020	120
Civil engineering operatives nec*	4,060	4,110	-
Non-construction operatives	4,490	4,770	-
Civil engineers	3,500	3,550	-
Other construction professionals and technical staff	13,040	14,730	-
Architects	550	540	-
Surveyors	6,580	7,490	140

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

East Midlands

Construction output in the East Midlands is forecast to see annual average growth of 2.2% in the five years to 2019, below the equivalent UK rate of 2.9%. Employment growth is expected to average 1.1% over the forecast period, slightly below the UK average of 1.5%. The region's annual recruitment requirement (ARR) of 3,120 represents 1.9% of base 2015 employment, which is slightly higher than the UK average of 1.7%.

Key findings

Construction output in the East Midlands fell by 4% in 2013 to £6.35bn in 2010 prices, although it should have returned to growth in 2014. We expect it to expand at an annual rate of 2.2% over the forecast period (2015-2019).

Private housing is set for the strongest growth over the forecast period, at an average annual rate of 6.1%. The bulk of the expansion is expected to take place in the earlier part of the forecast period, before it moderates towards the latter end. By 2019 output in the sector should be fairly close to its 2006 peak.

The public non-housing and industrial sectors are also set to expand at a robust pace, with respective annual average growth rates of 2.5% and 2.6% in the five years to 2019. The former is expected to return to growth in 2015 after three successive annual declines. There are large projects in the pipeline, such as Northampton University's £1bn waterside campus which should start and finish within the forecast period, but, in spite of this, output for the sector in 2019 is expected to remain well below its 2011 peak.

Infrastructure output is forecast to grow at an annual average rate of 2.4% in the five years to 2019. However expansion in activity for the sector isn't expected to occur until the second half of the forecast period. The return to growth will coincide with the start of construction work on the £1bn conversion of Willington C power station from coal to gas.

Public housing output growth is expected to flatten out over the forecast period, with predicted annual average growth of 0.3%. It is set to remain depressed until 2017 when it should tick upwards at a single digit rate in each remaining year to 2019. The pipeline of new work is slim and this is reflected in our forecasts. By the end of the forecast period output will be 20% below its 2010 peak on this prognosis.

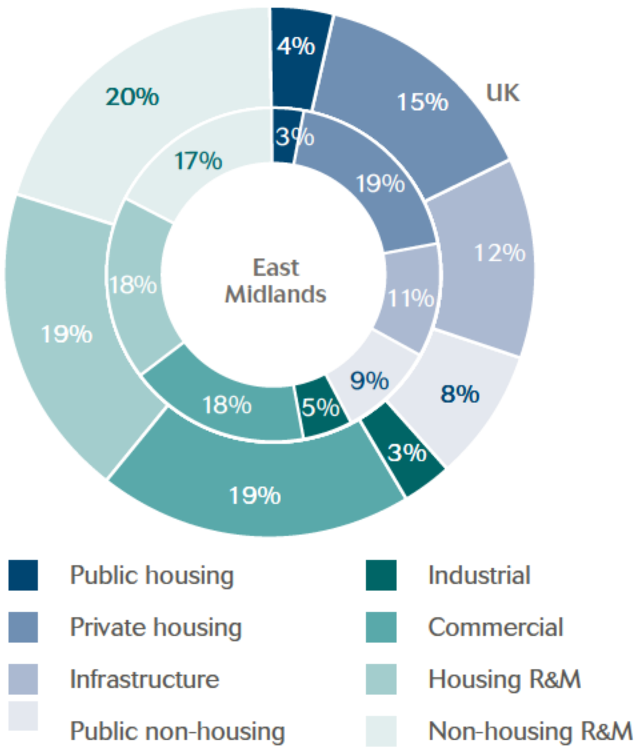
The commercial sector is the only one set to contract (0.6%) on an annual average basis over the forecast period. The weakness in recent new orders figures and a dearth of sizeable projects indicate significant falls in output in 2014 and 2015.

Employment growth is expected to average 1.1% over the forecast period, below the UK average of 1.5%. Civil engineers should see the strongest annual average employment growth (4.2%). Surveyors (3.6%), other construction professionals (3.3%), and construction trade supervisors (2.9%) are set to follow. The majority of occupational aggregates are forecast to see growth (19 out of 28) in the five years to 2019. However, the proportion which are not set to expand is somewhat higher than a number of other regions and devolved nations.

The East Midland's annual recruitment requirement (ARR) of 3,120 represents 1.9% of base 2015 employment, which is slightly higher than the UK average of 1.7%. Labourers nec. are set to have the highest absolute requirement at 470.

The East Midland's annual recruitment requirement (ARR) of 3,120 represents 1.9% of base 2015 employment, which is slightly higher than the UK average of 1.7%.

Construction industry structure 2013 – UK vs East Midlands



Source: ONS, Experian

Total employment by occupation – East Midlands

Annual recruitment requirement (ARR) by occupation – East Midlands

Occupation	2015	2019	ARR
Senior, executive, and business process managers	11,240	11,650	180
Construction project managers	2,510	2,740	-
Other construction process managers	14,110	15,390	-
Non-construction professional, technical, IT and other office-based staff	22,520	23,730	1,640
Construction trades supervisors	1,690	1,880	60
Wood trades and interior fit-out	15,070	14,690	-
Bricklayers	3,720	3,590	-
Building envelope specialists	8,350	8,070	-
Painters and decorators	6,090	6,090	70
Plasterers	5,180	5,330	250
Roofers	1,790	1,810	-
Floorers	1,640	1,580	-
Glaziers	3,020	3,220	140
Specialist building operatives nec*	6,460	6,530	250
Scaffolders	450	510	<50
Plant operatives	3,440	3,260	-
Plant mechanics/fitters	3,880	4,290	-
Steel erectors/structural fabrication	1,600	1,600	-
Labourers nec*	6,980	7,180	470
Electrical trades and installation	13,870	14,040	-
Plumbing and HVAC Trades	9,070	9,220	-
Logistics	1,090	980	-
Civil engineering operatives nec*	2,140	2,130	-
Non-construction operatives	2,560	2,280	-
Civil engineers	3,930	4,570	50
Other construction professionals and technical staff	9,190	10,360	-
Architects	570	520	-
Surveyors	5,350	6,080	-

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

West Midlands

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

Key findings

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

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

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

Activity in the public housing sector on the other hand is likely to remain largely flat between 2015 and 2019, with forecast annual average growth of 0.5%, despite approximately £227m worth of funding allocated between 2015 and 2018 under the Affordable Housing Programme (AHP).

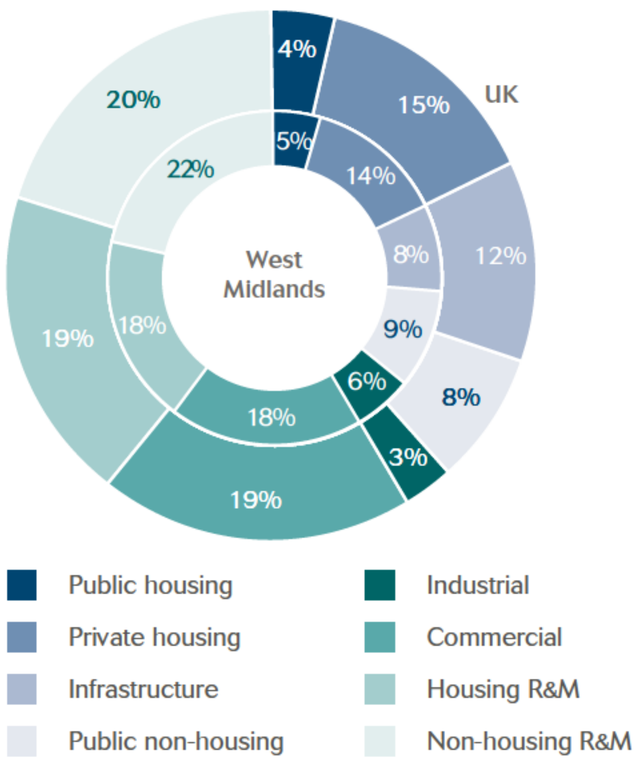
The West Midlands' construction output is forecast to grow at an annual average rate of 2.1% over the forecast period.

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

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

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

Construction industry structure 2013 – UK vs West Midlands



Source: ONS, Experian

Total employment by occupation – West Midlands

Annual recruitment requirement (ARR) by occupation – West Midlands

Occupation	2015	2019	ARR
Senior, executive, and business process managers	17,110	15,810	-
Construction project managers	2,170	2,380	-
Other construction process managers	19,290	21,370	200
Non-construction professional, technical, IT and other office-based staff	26,190	23,780	-
Construction trades supervisors	4,730	5,110	80
Wood trades and interior fit-out	17,960	19,840	770
Bricklayers	4,740	5,420	230
Building envelope specialists	7,240	7,890	220
Painters and decorators	6,940	7,310	-
Plasterers	1,900	1,860	-
Roofers	3,600	4,030	<50
Floorers	1,490	1,640	80
Glaziers	3,050	2,970	-
Specialist building operatives nec*	3,540	3,660	50
Scaffolders	2,740	2,850	-
Plant operatives	2,050	1,950	-
Plant mechanics/fitters	5,660	5,770	-
Steel erectors/structural fabrication	3,470	3,950	160
Labourers nec*	11,910	13,780	-
Electrical trades and installation	15,130	15,460	340
Plumbing and HVAC Trades	13,480	13,890	-
Logistics	2,630	2,400	-
Civil engineering operatives nec*	2,180	2,400	<50
Non-construction operatives	2,370	2,170	-
Civil engineers	2,380	2,660	80
Other construction professionals and technical staff	12,630	13,890	-
Architects	1,570	1,680	80
Surveyors	5,390	5,760	-

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 5.8% over the 2015 to 2019 period, double the UK rate of 2.9%. Expansion is very centred in the new work sector, with an average annual increase in output of 7.8% compared with 2% for repair and maintenance. This output growth rate is expected to drive strong employment growth averaging 2.4% a year, again well above the UK average of 1.5%. Wales' annual average recruitment requirement (ARR) is projected at 5,320, which represents 4.8% of base 2015 employment.

Key findings

2014 should see the consolidation of the recovery in Welsh construction which began in 2013 after five years of largely stagnation and decline. Growth in 2014 will have primarily been driven by good performances in the repair and maintenance sectors and infrastructure.

Wales' projected annual average output growth rate of 5.8% is the strongest of any of the UK regions and devolved nations and it is not just based on the start of nuclear new build at Wylfa in Anglesey, but on a much wider expansion of activity across the infrastructure sector.

Besides new nuclear build there are substantial projects ongoing or in the pipeline in the transport arena – rail electrification and roads improvements – and in energy – tidal lagoons, gas fired and combined cycle power plants. All this leads to very strong growth in infrastructure output across most of the forecast period, giving an average annual rate in excess of 16%.

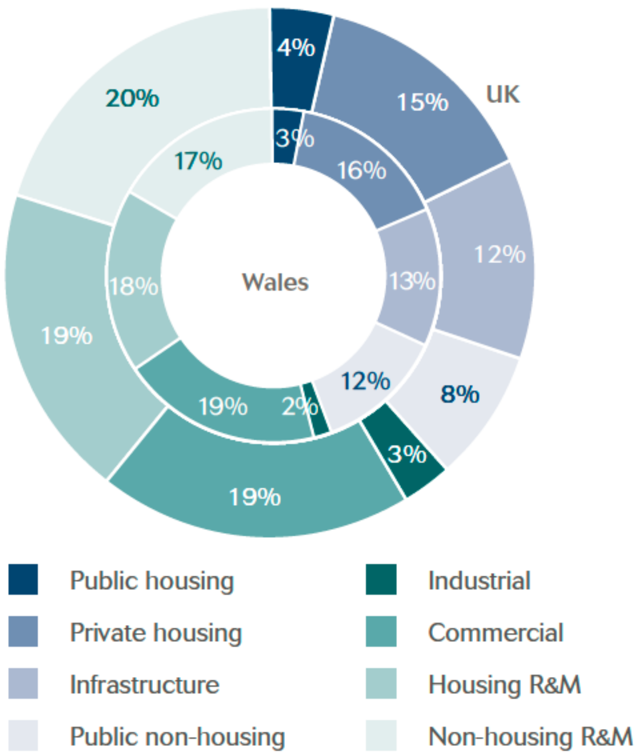
There are a number of sizeable projects up and coming in the commercial construction sector, the biggest of which will be Ebbw Vale's new motor racing circuit, and thus robust growth of around 6% a year on average is forecast. Private housing activity will be stronger in the early part of the forecast period boosted by continued low interest rates, 'Help to Buy' and changes to Stamp Duty, but still poor affordability and rising rates will dampen expansion thereafter.

Construction employment in Wales is projected to increase on average by 2.4% a year across the forecast period, nearly a percentage point above the UK average (1.5%).

Employment growth is projected to average 2.4% a year between 2015 and 2019, well above the UK average and the workforce is expected to reach 122,300 by 2019, less than 1% below its 2008 peak. Growth is expected to be strongest in the professional occupational categories – civil engineers, surveyors etc. – averaging between 3.5% and 5% a year. However, most of the main trades are also expected to see decent expansion, ranging from around 2% to 3.5% a year on average.

Wales' annual recruitment requirement (ARR) is projected at 5,320 a year on average, the third largest on an absolute level and the highest as a ratio of base 2015 employment. Its ratio, at 4.8%, 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 2013 – UK vs Wales



Source: ONS, Experian

Total employment by occupation – Wales

Annual recruitment requirement (ARR) by occupation – Wales

Occupation	2015	2019	ARR
Senior, executive, and business process managers	3,730	3,830	110
Construction project managers	1,410	1,610	-
Other construction process managers	7,530	8,640	-
Non-construction professional, technical, IT and other office-based staff	11,590	12,210	870
Construction trades supervisors	2,210	2,160	100
Wood trades and interior fit-out	13,680	14,780	770
Bricklayers	6,620	7,270	550
Building envelope specialists	4,530	4,920	130
Painters and decorators	5,800	6,450	390
Plasterers	4,390	4,870	120
Roofers	1,340	1,440	110
Floorers	130	150	-
Glaziers	540	550	-
Specialist building operatives nec*	4,170	4,400	-
Scaffolders	790	840	<50
Plant operatives	1,620	1,710	<50
Plant mechanics/fitters	1,350	1,520	120
Steel erectors/structural fabrication	1,160	1,200	-
Labourers nec*	5,570	6,140	670
Electrical trades and installation	6,670	7,200	180
Plumbing and HVAC Trades	9,830	10,770	-
Logistics	720	810	50
Civil engineering operatives nec*	1,310	1,480	<50
Non-construction operatives	1,270	1,180	-
Civil engineers	2,170	2,470	160
Other construction professionals and technical staff	6,010	6,910	650
Architects	1,380	1,580	110
Surveyors	4,420	5,220	160

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 set to expand at an annual average rate of 2.5% between 2015 and 2019. This is slower than the equivalent UK rate of 2.9%. Growth in new work output is set to underperform when compared to the repair and maintenance (R&M) sector over the same period (2.2% vs 2.9%). Employment growth in the East of England is also expected to lag the UK average, at an average annual rate of 1.1% compared with 1.5%. The region's annual recruitment requirement (ARR) of 4,260 represents 1.7% of base 2015 employment, in line with the UK average.

Key findings

Construction output in the East of England increased by 9% in 2013 and we expect a more moderate rise in 2014. Activity is projected to continue to increase, at an average annual rate of 2.5% in the five years to 2019.

The industrial and commercial sectors are expected to be the strongest performers with respective average annual growth of 3.5% and 3.6% over the forecast period. Despite the strong growth projected for the former sector, activity in 2019 is set to remain 44% below its 2006 peak. Total output for the latter sector is also set to stay below its historic (2002) peak, but to a lesser extent (13%).

Output in both the public and private housing sectors is expected to rise at an average annual rate of 2.3% in each year to 2019. The former sector should have returned to growth in 2014, with a predicted double-digit expansion, following on from three successive annual contractions. Private housing saw a return to growth in 2013 and this trend is expected to have continued in 2014. Schemes such as 'Help to Buy' have been credited with boosting growth in the private housing sector. This is also evident in our forecasts which anticipate stronger growth in the first half of the forecast period as opposed to the latter half.

The infrastructure sector is the only one predicted to see a fall in activity over the five years to 2019 with an average annual contraction of 0.2%. Output in the sector has been rising steadily since 2009, driven by particularly strong new orders figures and a healthy pipeline of new work.

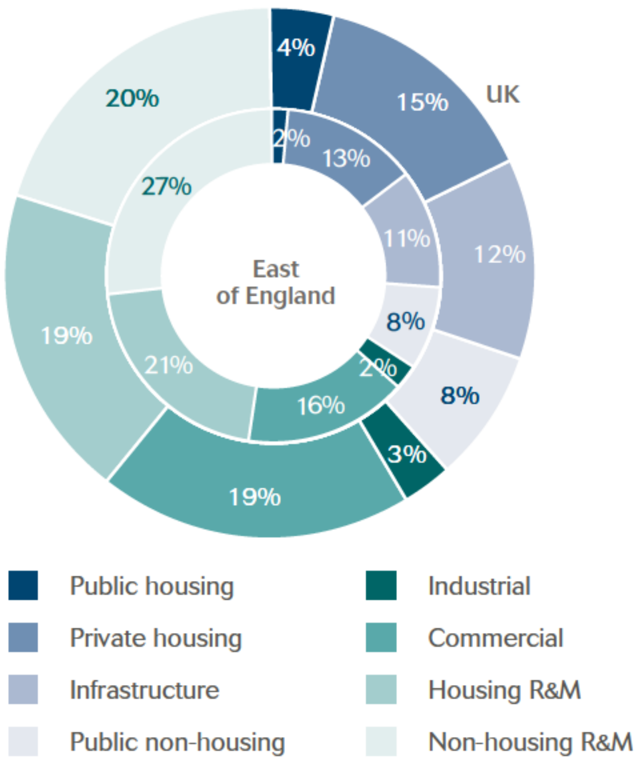
Activity is currently at a record high, boosted by Anglian Water's capital expenditure plans, a number of highway maintenance projects and Intergen's new power station on the London Gateway Logistics Park. We do not anticipate this rate of growth to continue through to 2019, although activity should remain fairly close to its current level.

Employment growth is expected to average 1.1% over the forecast period, which is below the equivalent UK rate of 1.5%. Construction trade supervisors (3.3%) are set for the strongest growth, followed by plasterers (2.6%), and scaffolders, painters and decorators and specialist building operatives nec (2.5%). The majority of occupational aggregates (24 out of 28) should see an increase in employment over the forecast period.

The East of England's annual recruitment requirement (ARR) of 4,260 represents 1.7% of base 2015 employment, in line with the UK average. Electrical trades and installation has the highest requirement at 810.

> The industrial and commercial sectors are expected to be the strongest performers with respective average annual growth of 3.5% and 3.6% over the forecast period.

Construction industry structure 2013 – UK vs East of England



Source: ONS, Experian

Total employment by occupation – East of England

Annual recruitment requirement (ARR) by occupation – East of England

Occupation	2015	2019	ARR
Senior, executive, and business process managers	14,050	13,870	-
Construction project managers	4,590	4,910	50
Other construction process managers	16,610	17,870	-
Non-construction professional, technical, IT and other office-based staff	35,200	35,560	-
Construction trades supervisors	5,730	6,430	-
Wood trades and interior fit-out	24,870	24,830	160
Bricklayers	8,090	8,230	310
Building envelope specialists	10,280	10,400	80
Painters and decorators	10,210	11,170	490
Plasterers	5,590	6,080	<50
Roofers	3,920	3,900	160
Floorers	3,580	3,510	-
Glaziers	2,830	2,800	80
Specialist building operatives nec*	4,050	4,440	240
Scaffolders	2,700	2,770	100
Plant operatives	3,550	3,730	-
Plant mechanics/fitters	2,780	3,040	230
Steel erectors/structural fabrication	1,920	2,020	<50
Labourers nec*	11,890	12,160	410
Electrical trades and installation	19,360	20,120	810
Plumbing and HVAC Trades	15,820	16,830	540
Logistics	3,020	3,270	360
Civil engineering operatives nec*	1,100	1,020	-
Non-construction operatives	1,620	1,680	-
Civil engineers	7,350	7,500	160
Other construction professionals and technical staff	16,380	17,030	-
Architects	5,330	5,670	-
Surveyors	4,950	5,170	-

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

Greater London

The region is projected to see the second highest annual average construction output growth rate, at 4.2% between 2015 and 2019. Construction employment is forecast to increase by an average yearly rate of 2.4% to reach 444,230 by 2019. The capital has one of the lowest annual recruitment requirements (ARR), of 2,050, which is equivalent to just 0.5% of base 2015 employment, well below the UK ratio of 1.7%.

Key findings

Greater London remained the only region and devolved nation in which construction activity was higher in 2013 than before the recession, despite a 3% fall in output in that year. Construction in the region is estimated to have returned to strong growth in 2014, with a rise in output of around 11% likely.

Looking forward, average annual increases of 6% are projected for the private housing sector between 2015 and 2019. Strong growth is likely in the short term before expected interest rate rises bring more muted expansion after that.

Yearly expansion of 5.7% on average is forecast for the commercial sector. Over the short term, a number of large projects have either started or are in the pipeline, such as the five-year redevelopment of the Selfridges department store on Oxford Street, Westfield Group's £1bn expansion of its mall in Shepherd's Bush, and the Brent Cross redevelopment project. By 2019, commercial output, at £7.65bn, is predicted to be a little above its pre-recessionary peak.

The public housing sector is likely to see average annual increases of 3.4% over the long term. This year a double-digit rise is expected as the London mayor's 2015–2018 £1.25bn housing programme begins in April. However, expansion is projected to slow down significantly before flattening out in 2019. Nevertheless, by the end of the forecast period, the sector is expected to have reached a new high of £2.78bn.

The weakest yearly rise, of 2.9%, on average is projected for the infrastructure sector. Crossrail, Thameslink and the Victoria Station upgrade are all due to be completed by 2018. The eight-year Thames tideway tunnel project is due to begin in 2016 but it isn't large enough to compensate for the wind down of work on the three transport schemes. Nonetheless, significant growth is expected in 2019 as it is assumed work will start on the High Speed 2 project, with the early work based near London.

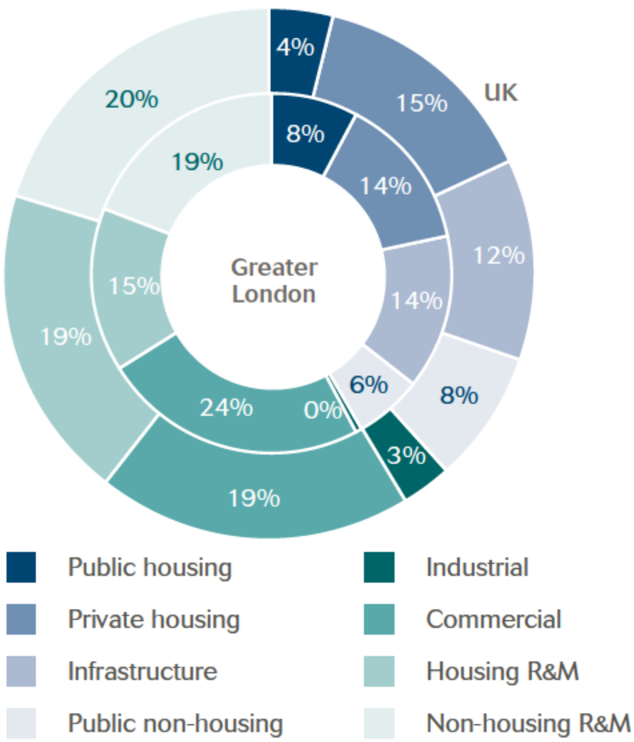
Construction in the capital will grow on average by 4.2% per year.

In 2013, the capital accounted for around 15.4% of UK construction employment and this is likely to increase to 16.2% in 2019. Over the next five years, construction employment is likely to rise by 2.4% per year on average in Greater London, which is higher than the overall UK rate of 1.5%.

Construction trades supervisors, bricklayers and logistics personnel are all expected to be in strong demand, with growth in these trades of around 5% a year between 2015 and 2019.

At 2,050 extra employees required per year over the forecast period, the region's ARR is just 0.5% of base 2015 employment, lower than the UK rate of 1.7%. Given the strong inflows that London naturally benefits from, only two occupational categories have an annual recruitment requirement (ARR) above 2.5% of base 2015 employment: floorers (4.7%) and glaziers (7.3%).

Construction industry structure 2013 – UK vs Greater London



Source: ONS, Experian

Total employment by occupation – Greater London

Annual recruitment requirement (ARR) by occupation – Greater London

Occupation	2015	2019	ARR
Senior, executive, and business process managers	28,630	30,760	340
Construction project managers	13,210	13,630	-
Other construction process managers	31,470	33,300	-
Non-construction professional, technical, IT and other office-based staff	61,810	65,530	-
Construction trades supervisors	9,010	10,570	-
Wood trades and interior fit-out	40,900	47,600	430
Bricklayers	6,620	7,920	-
Building envelope specialists	26,080	30,000	410
Painters and decorators	19,670	21,280	210
Plasterers	3,490	3,700	70
Roofers	3,160	3,730	50
Floorers	2,790	3,190	130
Glaziers	4,680	5,110	340
Specialist building operatives nec*	9,520	10,290	60
Scaffolders	1,410	1,530	-
Plant operatives	5,750	6,390	<50
Plant mechanics/fitters	2,610	2,500	-
Steel erectors/structural fabrication	2,900	3,120	-
Labourers nec*	15,010	14,350	-
Electrical trades and installation	20,460	21,800	-
Plumbing and HVAC Trades	17,810	19,790	-
Logistics	3,200	3,810	-
Civil engineering operatives nec*	1,930	2,070	-
Non-construction operatives	6,810	8,070	-
Civil engineers	9,240	9,760	-
Other construction professionals and technical staff	30,090	32,310	-
Architects	15,920	17,490	-
Surveyors	13,680	14,630	-

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

South East

Construction output in the South East is projected to grow at an annual average rate of 2.5% over the five years to 2019, a lower rate of growth than the UK as a whole (2.9%). Expansion is expected to be stronger in the new work (3.2%) than the repair and maintenance (R&M) sector (1.5%). This rate of output growth should drive an increase in employment of around 1.6% a year on average. The region's annual recruitment requirement (ARR), at 2,590, represents 0.7% of base 2015 employment, a lower ratio than the UK average (1.7%).

Key findings

Construction output in the South East fell for its second consecutive year in 2013. At £16.74bn it was at its lowest level since 1998. It is estimated to have returned to growth in 2014 and should continue to expand at an annual average rate of 2.5% over the forecast period.

The private housing and commercial sectors are predicted to see the strongest growth over the 2015 to 2019 period, at respective annual average rates of 3.9% and 4%. The former saw its activity fall in 2013, perhaps highlighting that 'Help to Buy' may have had a lesser impact on the housing market in the South East than elsewhere in the country. The pipeline of new work looks promising and a number of projects, including the £250m eco town in Borden, Hampshire, should drive growth through the forecast period. The latter sector should see a steady expansion in its activity on the back of strengthening new orders and a solid pipeline of retail-based projects. The £2bn Paramount theme park development on the Swanscombe Peninsula should boost activity over the medium term.

The public non-housing and public housing sectors are also set to expand at decent rates between 2015 and 2019. The former is forecast to see annual average growth of 3.3%, driven by good-sized projects such as the £298m redevelopment of Broadmoor Hospital in Berkshire. ProCure 21+ schemes should provide a steady stream of activity. Public housing should benefit from £122m worth of funding under the Affordable Housing Programme (AHP) which has been awarded to developments in the South and South West between 2015 and 2018.

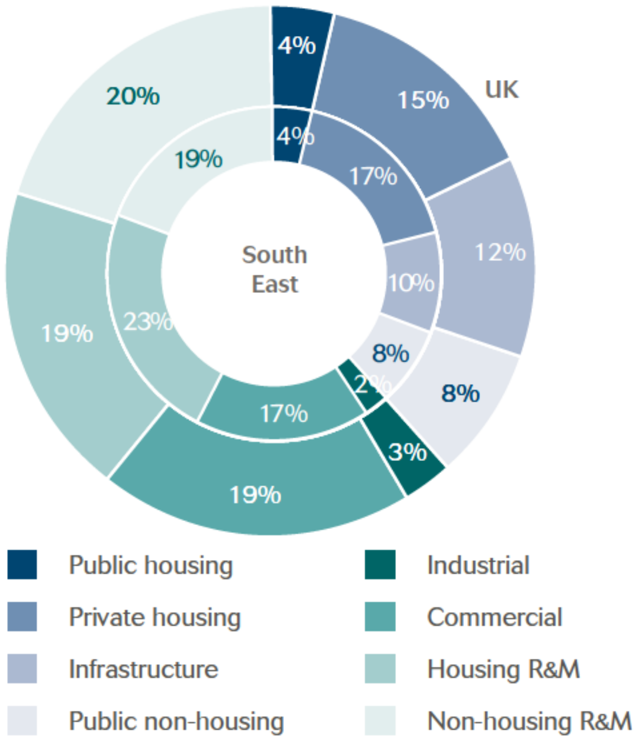
By 2019, construction employment is forecast to reach 400,000 in the South East.

Industrial and infrastructure construction output is set to increase moderately, at respective annual average rates of 1.8% and 1.2%. Growth in the former should be buoyed by a good number of medium-sized warehouse projects in the pipeline. Infrastructure output ought to remain at a higher than average level through the forecast period, supported by projects like the £140m waste treatment plant near Milton Keynes which recently began on site.

Employment growth is set to see average growth of 1.6% a year over the forecast period, slightly higher than the equivalent UK rate of 1.5%. Logistics (4.4%) should see the strongest annual average growth, followed by plant operatives (3.9%), steel erectors/structural fabricators (3.5%) and scaffolders (3.2%). The vast majority (27 out of 28) of occupational aggregates are forecast to show growth over the five years to 2019.

The region's annual recruitment requirement (ARR) of 2,590 represents 0.7% of base 2015 employment, which is well below the UK average of 1.7%. Painters and decorators have the highest absolute requirement at 660.

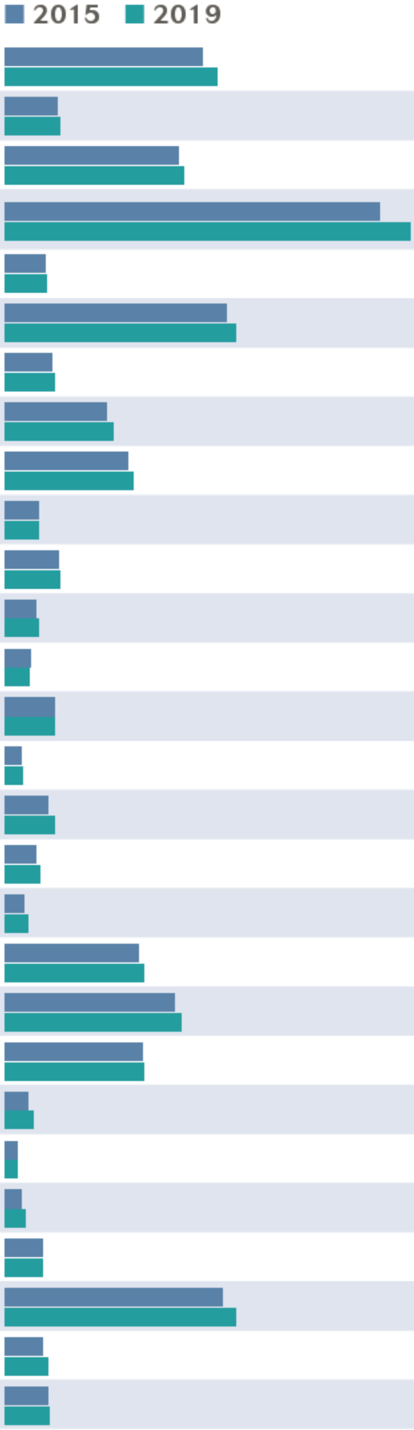
Construction industry structure 2013 – UK vs South East



Source: ONS, Experian

Total employment by occupation – South East

Annual recruitment requirement (ARR) by occupation – South East



	2015	2019	ARR
Senior, executive, and business process managers	30,570	32,730	-
Construction project managers	8,070	8,290	-
Other construction process managers	26,660	27,650	-
Non-construction professional, technical, IT and other office-based staff	57,840	62,350	-
Construction trades supervisors	6,020	6,490	-
Wood trades and interior fit-out	34,080	35,670	-
Bricklayers	7,130	7,670	-
Building envelope specialists	15,660	16,790	630
Painters and decorators	18,960	19,800	660
Plasterers	5,050	5,080	-
Roofers	8,100	8,380	140
Floorers	4,790	5,090	130
Glaziers	3,920	3,780	100
Specialist building operatives nec*	7,530	7,700	-
Scaffolders	2,440	2,690	-
Plant operatives	6,510	7,470	-
Plant mechanics/fitters	4,770	5,210	310
Steel erectors/structural fabrication	2,930	3,320	180
Labourers nec*	20,600	21,360	-
Electrical trades and installation	26,080	27,240	-
Plumbing and HVAC Trades	21,250	21,360	-
Logistics	3,500	4,110	130
Civil engineering operatives nec*	1,810	1,830	-
Non-construction operatives	2,590	3,030	-
Civil engineers	5,760	5,760	-
Other construction professionals and technical staff	33,530	35,640	-
Architects	5,850	6,410	310
Surveyors	6,570	6,700	-

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

South West

The South West is projected to see annual average output growth of 3.6% over the 2015 to 2019 period, higher than the UK rate of 2.9% and driven by very robust expansion in the infrastructure sector (19.1%). This strong output growth rate is expected to generate employment growth of 1.9% on average per year, again above the UK average of 1.5%. The South West also has a large annual average recruitment requirement (ARR) of 6,320, representing 2.7% of base 2015 employment, higher than the UK ratio of 1.7%.

Key findings

The South West's construction industry is estimated to have seen modest expansion of 1% a year in real terms in both 2013 and 2014, with private housing and repair and maintenance work the main engines of growth across the two years.

The South West's annual average growth rate of 3.6% over the five years to 2019 is heavily predicated on the start of work on nuclear new build at Hinkley Point C at some time during the first half of the forecast period. There will be other projects and programmes of work taking place in the infrastructure sector over the forecast period, such as capital investment in the water and sewerage sub-sector under the Asset Management Programme 6, which will run from April 2015 to March 2020 but, in terms of driving growth in the sector, they pale into insignificance against nuclear new build.

However, there is growth elsewhere. Private housing output is projected to rise by an average annual rate of 4.6% over the five years to 2019. While house price growth may be slowing, it is still expected to average between 3% and 5% a year over the 2015 to 2019 period. The scenario for house building remains benign at present, especially for the early part of the forecast period, with continued low interest rates and the stimulus from 'Help to Buy' joined by reductions in Stamp Duty for the majority of prospective purchasers and a plan to provide first-time buyers of new build dwellings with a 20% discount on market prices. However, over the medium term, growth will inevitably slow to more sustainable levels, particularly as affordability remains difficult and interest rates start to rise.

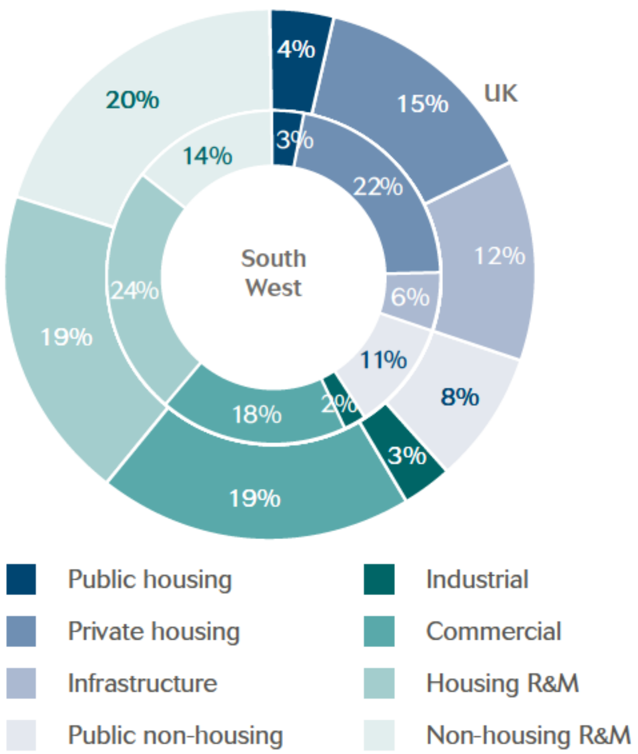
The commercial construction sector is also expected to see good growth at around 4% a year on average over the forecast period. The prospects for the economic sectors that drive demand for commercial premises are good, especially for professional and other private services and finance and insurance, suggesting that office construction could be the most buoyant of the commercial markets.

By 2019, employment in the South West is forecast to be 246,000.

Good output growth leads to good employment growth, projected at 1.9% a year on average over the 2015 to 2019 period. This implies a productivity growth rate in the region of 1.7% (output growth minus employment growth), higher than the UK as a whole (1.4%). However, a significant proportion of the expansion is driven by nuclear new build, which is a relatively less labour intensive area than many others. Therefore this 'implied' productivity growth rate is as much a factor of where the growth is in terms of sector than any real gain.

The South West traditionally has quite a high annual recruitment requirement (ARR) as the construction industry in the region has to compete with a strong engineering manufacturing sector in particular for the available skilled workforce. The region's ARR, at 6,320 for the 2015 to 2019 period, is similar to that projected last year for the 2014 to 2018 period (6,370).

Construction industry structure 2013 – UK vs South West



Source: ONS, Experian

Total employment by occupation – South West

Annual recruitment requirement (ARR) by occupation – South West

Occupation	2015	2019	ARR
Senior, executive, and business process managers	13,290	14,570	980
Construction project managers	3,120	3,580	-
Other construction process managers	12,050	13,800	420
Non-construction professional, technical, IT and other office-based staff	32,730	35,930	2,050
Construction trades supervisors	3,640	4,050	190
Wood trades and interior fit-out	31,050	32,750	-
Bricklayers	7,850	8,360	470
Building envelope specialists	11,350	11,970	230
Painters and decorators	11,110	11,350	170
Plasterers	4,650	4,810	420
Roofers	5,030	5,300	130
Floorers	1,120	1,160	70
Glaziers	2,930	3,080	200
Specialist building operatives nec*	4,060	4,190	100
Scaffolders	3,960	3,870	160
Plant operatives	4,660	5,270	-
Plant mechanics/fitters	2,300	2,110	-
Steel erectors/structural fabrication	2,390	2,430	-
Labourers nec*	6,710	6,270	230
Electrical trades and installation	13,980	14,350	<50
Plumbing and HVAC Trades	20,770	21,330	-
Logistics	830	990	100
Civil engineering operatives nec*	2,280	2,410	-
Non-construction operatives	1,470	1,490	-
Civil engineers	2,760	3,110	-
Other construction professionals and technical staff	14,230	16,160	220
Architects	2,890	3,370	-
Surveyors	7,320	8,320	140

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 2.2% over the 2015 to 2019 period, lower than the UK rate of 2.9%. Average growth rates for new work and repair and maintenance (R&M) are expected to be similar, at 2.3% and 2.1% respectively. This output growth rate should generate annual average employment growth of 1% over the forecast period, again below the UK average of 1.5%. Northern Ireland's annual average recruitment requirement (ARR), at 1,490, represents 2.4% of base 2015 employment.

Key findings

After a sixth consecutive year of contraction in 2013 it had been expected that construction output in Northern Ireland would finally see some growth in 2014. However, that seems not to have been the case, with an estimated decline of 5% likely based on 2014 data available so far. Private housing output seems to have gone into reverse after its first rise since 2006 in 2013, and poor performances are also estimated for the public housing, infrastructure and repair and maintenance sectors.

The estimated fall in 2014 will take construction output down to only 54% of its 2006 peak in Northern Ireland, thus any recovery will be from a very low base. However, we are anticipating recovery, not least because can activity levels fall much further? But the projected annual average output growth rate of 2.2% for the devolved nation will only take output in 2019 up to 61% of its 2006 peak.

Annual average output growth is expected to be strongest in the commercial (4.4%), private housing (3.7%) and public non-housing sectors (3.1%). Long-term developments such as City Quays and further work at the Titanic Quarter should benefit the commercial construction sector, while private housing activity will inevitably bounce back from its current low levels, although it is unlikely to return to its previous peak in the foreseeable future given that, at the time, output per capita was around 70% higher than the UK average. Growth in the public non-housing sector is expected to be driven by a significant amount of work in the education and health sub-sectors, particularly on colleges, in the early part of the forecast period, but expansion is likely to subside post-2016.

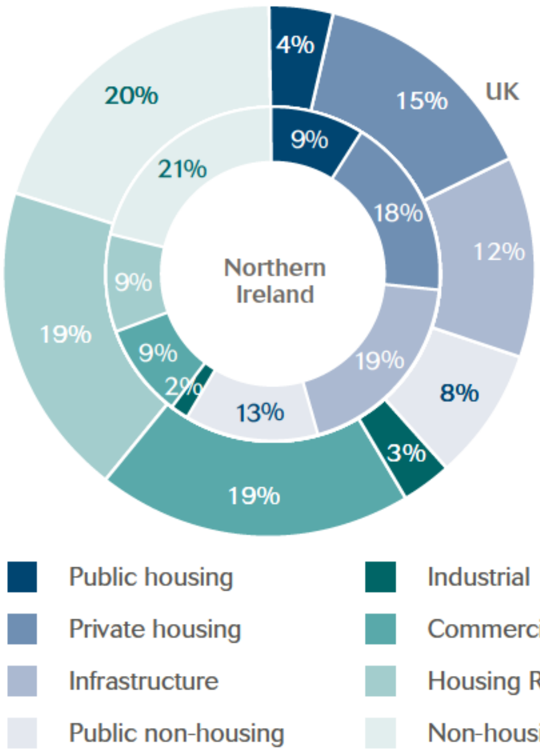
Employment is projected to rise to 64,470 in 2019, representing annual average growth of 1% over the five year period.

Employment growth is projected to average 1% a year over the 2015 to 2019 period, below the UK rate of 1.5%. This implies a productivity gain of 1.2% a year in Northern Ireland. However it should be remembered that different construction sectors are more or less labour intensive and thus 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 trades supervisors (4% annual average growth), but some trades show strong growth as well, such as plant operatives (3.4%) and bricklayers (3%).

Northern Ireland's annual recruitment requirement (ARR), at 1,490 for the 2015 to 2019 period shows further growth from last year when the requirement was for 1,280 a year on average between 2014 and 2018. Not surprisingly given demand growth, the requirement is strongest for bricklayers and plant operatives at around 12% of base 2015 employment.

Construction industry structure 2013 – UK vs Northern Ireland



Source: ONS, Experian

Total employment by occupation – Northern Ireland
Annual recruitment requirement (ARR) by occupation – Northern Ireland

Occupation	2015	2019	ARR
Senior, executive, and business process managers	3,640	3,440	-
Construction project managers	1,150	1,250	100
Other construction process managers	5,040	5,430	120
Non-construction professional, technical, IT and other office-based staff	6,900	6,850	-
Construction trades supervisors	920	1,070	50
Wood trades and interior fit-out	8,520	9,480	130
Bricklayers	2,520	2,820	300
Building envelope specialists	990	1,000	<50
Painters and decorators	3,230	3,210	100
Plasterers	2,240	2,240	130
Roofers	1,170	1,290	70
Floorers	260	260	<50
Glaziers	560	550	-
Specialist building operatives nec*	830	840	-
Scaffolders	240	260	-
Plant operatives	1,570	1,770	190
Plant mechanics/fitters	750	810	60
Steel erectors/structural fabrication	190	170	-
Labourers nec*	3,740	3,550	-
Electrical trades and installation	4,890	4,730	-
Plumbing and HVAC Trades	3,230	2,920	<50
Logistics	500	560	<50
Civil engineering operatives nec*	510	470	<50
Non-construction operatives	210	280	-
Civil engineers	2,470	2,650	-
Other construction professionals and technical staff	3,190	3,550	170
Architects	1,750	1,940	-
Surveyors	1,000	1,080	-

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.

1. CSN Methodology

Background

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

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

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

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

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

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

The model approach

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

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

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

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

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

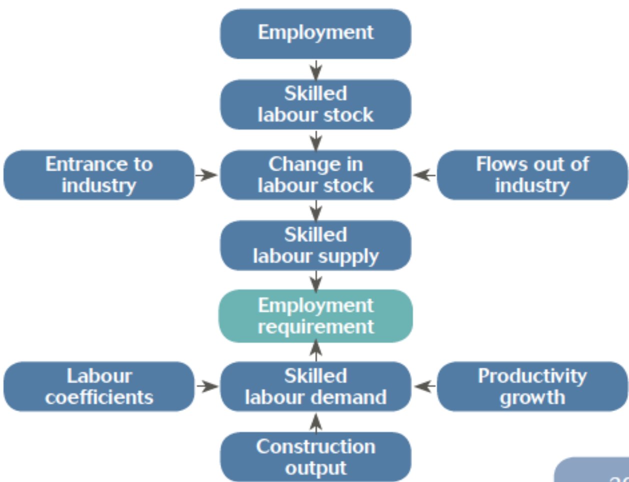
- Transfers to other industries
- International/domestic out migration
- Permanent retirements (including permanent sickness)
- Outflow to temporary sickness and home duties.

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

Flows into the labour market include:

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

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



2. Glossary of terms

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

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

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

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

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

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

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

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

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

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

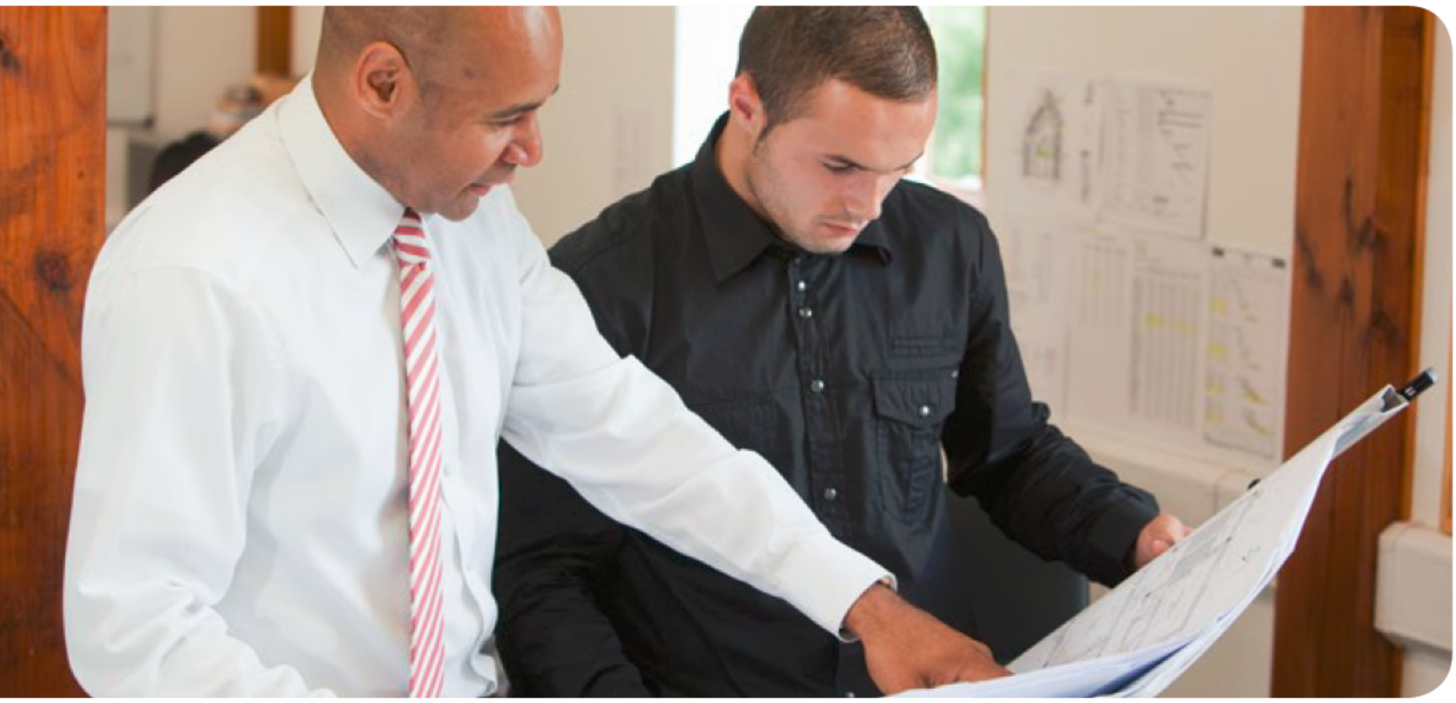
Output – total value of all goods and services produced in an economy.

Productivity – output per employee.

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

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

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



3. Notes and Footprints

Notes

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

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

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

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

5 Employment numbers are rounded to the nearest 10.

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

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

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

Footprints for Built Environment Sector Bodies

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

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

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

SummitSkills

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

Coverage – Building services engineering.

ConstructionSkills shares an interest with SummitSkills in SIC 43.21 Electrical installation and SIC 43.22 Plumbing, heat and air-conditioning installation. ConstructionSkills recognises the responsibility of Summit Skills across Standard Industrial Classifications (SIC) 43.21 and43.22; thus data relating to the building services engineering sector is included here primarily for completeness.

The Building Futures Group

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

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

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

Energy and Utility Skills

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

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

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

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

4. Definitions: types and examples of construction work

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

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

Private sector housing

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

Infrastructure – public and private

Water

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

Sewerage

Sewage disposal works, laying of sewers and surface drains.

Electricity

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

Gas, communications, air transport

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

Railways

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

Harbours

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

Roads

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

Public non-residential construction[1]

Factories and warehouses

Publicly owned factories, warehouses, skill centres.

Oil, steel, coal

Now restricted to remedial works for public sector residual bodies.

Schools, colleges, universities

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

Health

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

Offices

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

Entertainment

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

Garages

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

Shops

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

Agriculture

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

Miscellaneous

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

Private industrial work

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

Private commercial work[1]

Schools and universities

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

Health

Private hospitals, nursing homes, clinics.

Offices

Office buildings, banks.

Entertainment

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

Garages

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

Shops

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

Agriculture

All buildings and work on farms, horticultural establishments.

Miscellaneous

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

New work

New housing

Construction of new houses, flats, bungalows only.

All other types of work

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

Repair and maintenance

Housing

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

All other sectors

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

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

5. Occupational Groups

Occupational group
Description, SOC (2010) reference.

Senior, executive, and business process managers

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

Construction project managers

Construction project managers and related professionals	2436

Other construction process managers

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

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

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

Construction trades supervisors

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

Wood trades and interior fit-out

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

Bricklayers

Bricklayers and masons	5312

Building envelope specialists

Construction and building trades nec* (50%)	5319

Painters and decorators

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

Plasterers

Plasterers	5321

Roofers

Roofers, roof tilers and slaters	5313

Floorers

Floorers and wall tilers	5322

Glaziers

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

Specialist building operatives not elsewhere classified (nec*)

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

Scaffolders

Scaffolders, stagers and riggers	8141

Plant operatives

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

Plant mechanics/fitters

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

Steel erectors/structural fabrication

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

Labourers nec*

Elementary construction occupations (100%)	9120

Electrical trades and installation

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

Plumbing and heating, ventilation, and air conditioning trades

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

Logistics

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

Civil engineering operatives not elsewhere classified (nec*)

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

Non-construction operatives

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

*Not elsewhere classified

Civil engineers

Civil engineers	2121

Other construction professionals and technical staff

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

Architects

Architects	2431

Surveyors

Quantity surveyors	2433
Chartered surveyors	2434

6. CSN Website and contact details

The CSN website

citb.co.uk/csn

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

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

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

The website also contains information about:

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

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

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

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

CSN members therefore have:

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

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

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

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

Contact details

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

For more information about the Construction Skills Network, contact:

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