Construction Skills Network 2012-2016

Blueprint for UK Construction Skills 2012-2016

LABOUR MARKET INTELLIGENCE

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Contents

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ConstructionSkills is the Sector Skills Council for construction, tasked by Government to ensure the UK's largest 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.

Chairman's message

2012 is already a year that denotes 'construction' in public awareness. We may not realise it, but with the London Olympic and Paralympic Games looming, images of the stadium and other venues are already becoming iconic, not just for the sporting associations, but as symbols of our industry. Beyond this public image, the construction industry continues to be one of the country's most important economic sectors, contributing 8% to GDP and employing 3 million workers in its supply chain - it has the potential to stimulate the economy, and help lead the country to full recovery. However as these figures for 2012-16 show, long term trends in output and employment are now being adjusted downwards. Even by 2016 we still will not see a return to 2007-08 levels of construction activity.

We know that the industry is not immune to the economic uncertainty that has plagued the UK's economy over recent years and the CSN figures show that construction output is expected to fall by 3% during 2012 - a further 45,000 skilled workers and tradesmen will be lost. Investment is still being made, with recent commitments to HS2, the first nuclear power plants and the revival of private housing, as well as continuing work on projects like Crossrail, demonstrating a guarantee of long term infrastructure investment. But firms still need to work hard to ensure survival in these difficult times.

Having a skilled, well trained and forward looking workforce has always been central to the construction sector's growth and success. But now more than ever, it is vital that the industry invests in training and the future skills need. However, for that to happen we need to have a very clear picture of what is needed across the industry, so that we can effectively plan and invest; to get to a positive end goal, we need to continue to prepare for the future, whilst weathering the challenges of today. It is during such difficult times that an understanding of the labour market is so essential. That is what the CSN forecasts give us.

The forecasts continue to capture a unique evidence-base for the industry. They allow organisations to examine demand and its drivers, utilising robust labour market intelligence to inform strategic and business planning.

Forecasting in the current unpredictable environment continues to be extremely challenging. Our CSN projections continue to leverage influence across a broad representation of industry stakeholders. They are recognised for their accuracy, relevance and usefulness and reinforce our aspiration to validate results with industry stakeholders across the UK who represent the many facets of industry and are able to provide first hand insight into market conditions. Insight that will help us to pinpoint opportunities for growth. We publish the findings' retrospective accuracy, to demonstrate their robustness and value.

The financial turbulence experienced over the past four years has enhanced the need to be able to predict skills requirements and understand market drivers of the changing strategic environment that construction will operate in. The CSN Forecasts for 2012 to 2016 represent our seventh set of five-year forecasts of output and employment. I do hope they are of value in shaping the future of your organisation.

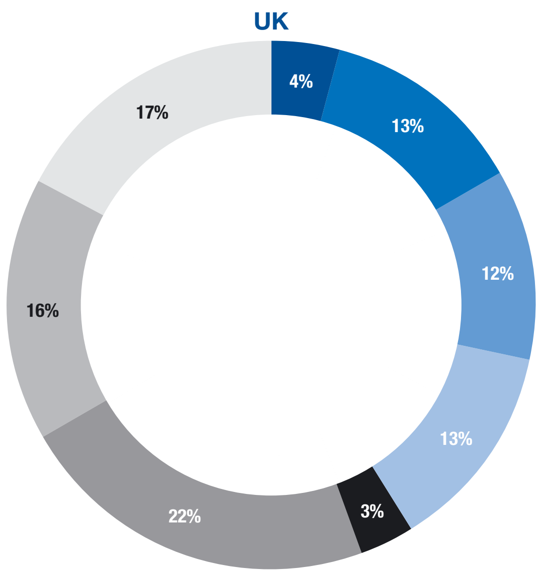
Judy Lowe
Chairman,
Construction Skills Network

The Big Picture

Total employment by occupation - UK
Annual recruitment requirement (ARR) by occupation - UK

Occupation	2012	2016	ARR
Senior, executive, and business process managers	126,270	138,060	1,100
Construction managers	255,340	282,190	3,380
Non-construction professional, technical, IT, and other office-based staff	307,050	324,300	3,640
Wood trades and interior fit-out	263,290	277,770	3,210
Bricklayers	66,840	63,120	2,570
Building envelope specialists	94,760	100,390	410
Painters and decorators	116,060	112,540	2,280
Plasterers and dry liners	49,450	51,470	2,430
Roofers	39,250	40,250	1,020
Floorers	33,220	33,700	1,560
Glaziers	28,130	26,940	1,740
Specialist building operatives nec*	54,980	52,990	1,300
Scaffolders	20,180	20,300	980
Plant operatives	43,380	44,570	2,510
Plant mechanics/fitters	36,720	34,120	1,080
Steel erectors/structural	29,480	29,630	880
Labourers nec*	86,170	89,720	5,230
Electrical trades and installation	195,110	209,290	610
Plumbing and HVAC Trades	175,490	177,400	560
Logistics	36,280	39,280	2,970
Civil engineering operatives nec*	53,550	55,110	1,690
Non–construction operatives	36,760	36,350	-
Civil engineers	46,900	51,630	1,280
Other construction professionals and technical staff	177,420	194,160	1,680
Architects	37,860	39,850	950
Surveyors	66,980	73,000	1,180

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK

Public housing
Private housing
Infrastructure
Public non-housing
Industrial
Commercial
Housing R&M
Non-housing R&M

Source: ONS, Experian

The UK economy and the construction industry are in for an extended recovery period, with construction output in 2016 still only 95% of its 2007 peak.

Construction employment will decline in the early part of the forecast period, but will start to grow again in 2014 to reach just under 2.6 million by 2016.

The prospects for construction in the short term have worsened in the second half of 2011 and there are two fundamental reasons for this.

The first is the worsening economic environment. Despite the very upbeat trade statistics for October, for which it is difficult to see any reason, growth in the UK economy is faltering as the eurozone debt crisis looms large on the horizon. Forecasts for economic expansion in the eurozone have now turned slightly negative for 2012 and thus the prospects for UK exporters have worsened considerably. A slight decline in overall exports is now predicted for 2012 and this, combined with almost no growth in household spending domestically and very sluggish investment expansion, suggests that UK economic performance will be poor.

The predicted economic conditions will impact both consumer and investor confidence, making the possibility of a good performance in the private construction sectors in 2012 much less likely. Growth in private housing output will remain relatively anaemic around its still low level while in the current economic climate there is little prospect of manufacturers increasing investment in industrial facilities. Faltering economic growth is already having an adverse effect on the London offices market, a crucial component of commercial construction given the dearth of development activity in regional centres, and in the other major sub-sectors – retail and leisure.

The second major factor is, perversely, the relative strength of the public non-housing sector in 2011. While public housing has performed much as expected in that year, public non-housing output has held up much better than expected. However, the parameters within which the sector has to work going forward in terms of Departmental Expenditure Limits are known, so the fact that work has held up relatively well in 2011 suggests that the downturn in the sector will be stronger in 2012 and beyond than previously anticipated.

These two factors combined suggest that 2012 could be another year of decline for the industry, with recovery postponed to 2013 at the earliest. The road to recovery may be a longer and more uncertain one than anticipated in 2010, with output in 2016 still nearly 5% below its 2007 peak.

Looking further ahead, UK economic performance is predicted to lag the long-term trend, with GDP growing at an annual average rate of 1.8% over the five years to 2016, compared with around 2.5%.

The prospects for the two sectors largely responsible for growth during the decade to 2007; financial and business services, and public services, are much more muted over the forecast period. While financial and business services will still be one of the strongest sectors with a projected annual average growth rate of nearly 3%, this compares poorly with its 6.6% yearly expansion rate between 1998 and 2007. Given the much more constrained regime for public expenditure going forward, output in the public services sector will stagnate over the 2012 to 2016 period, compared with annual average growth of 1.7% over the decade to 2007.

While pressures on household finances will ease towards the end of 2012, high levels of unemployment are likely to continue to impact on consumer confidence and spending. The Labour Force Survey (LFS) measure of unemployment is expected to peak at over 9.5% in the third quarter of 2012 and remain over 9% until the end of 2013.

Thus what are the drivers of construction output growth over the medium term, given that public expenditure on the built environment is due to fall and the prospects for consumer-driven expansion remain muted?

The major ones are centred around energy and the environment – security, capacity and carbon emission reduction - and these impinge to a greater or lesser extent on almost all construction sectors.

The UK is due to lose around 25% of its energy production capacity over the next decade, and this will need to be replaced with, ideally, low carbon facilities in order to meet 2020 carbon emission reduction targets. On the demand side of the equation, carbon-zero targets for new build, both housing and non-housing, have already been implemented or come into affect during the next decade, while the retrofitting of the existing built environment has gained in importance in recent years in readiness for the introduction of the Green Deal in October 2012.

All these represent challenges for the construction industry because it is over 25 years since the last nuclear power station was built in the UK, while carbon-zero new build will require different and innovative methods of construction. The challenge in the retrofitting market will be to provide bespoke solutions, including long-term maintenance packages that are attractive and affordable to home owners and other building stockholders.

Employment in the construction industry is predicted to rise by a little over 76,000 between 2012 and 2016, to just below 2.6 million, which is still nearly 5% below its 2008 peak. At just 0.6% a year, the annual average growth rate for employment is significantly below that for output (1.4%) and it disguises continuing falls to 2013 before the workforce starts to expand again. Given that employment only fell by just over 5% in 2009 compared with a decline in hours worked of over 8% and in output in that year of over 13%, the indication is that there is considerable excess capacity in the industry to take up before firms look to expand their workforces.

For some of the traditional construction trades, such as bricklayers, long-term changes in construction processes as much as the weak performance of their primary sectors, may constrain workforce growth going forward.

The annual recruitment requirement (ARR) for the 2012 to 2016 period, at around 46,000, is a little up on that predicted for the 2011 to 2015 period (43,000), but it remains well down on that seen during the boom years of close to 90,000. The ARR brings together increases in demand for employment based on anticipated levels of workload, with the supply-side 'churn' in the industry, i.e. those moving in and out of the industry for one reason or another – retirement, death, movements between industries, etc. – but not including flows in from training. The ARR represents the levels of recruitment required over and above the normal 'churn' rates in a particular period. One of the main reasons for the low ARR over the current forecast period is that there will be a considerable level of normal inflow from unemployment once the industry starts to show sustained recovery.

Comparing the Sectors

Public and private housing

The future does not look bright for the public housing sector. Government funding under the 2011 to 2015 Affordable Housing Programme (AHP) is not much more than half the level available between 2008 and 2011 and the Kickstart Housing Delivery programme is winding down, with all units funded under the programme to be completed by June 2012. The more constrained scenario for the sector is already reflected in the new orders data, which shows a 20% fall in the first three quarters of 2011 compared with the corresponding period of 2010. Furthermore, latest data from the Homes and Communities Agency (HCA) is showing a collapse in affordable housing starts in England in the six months to September 2011. While some of this may be a temporary hiatus between one AHP and another, it will have a significant impact on both completions and output in 2012. In Scotland, the situation for public housing is better with the government committed to deliver 30,000 completed affordable homes by the end of the current parliament, backed by investment of £600m. However, as England accounts for around 80% of UK housing starts and completions, it is what happens in that market which drives the overall outlook for the sector. The prospect is for a further fall in 2013 as registered social landlords (RSLs) continue to struggle to fill the funding gap from other sources, thus stabilisation in the sector is not anticipated until 2014, with modest growth thereafter.

Even with growth in 2010 and 2011, by the end of the latter year private housing output is estimated to be only two-thirds of its 2007 peak. New orders were 5% higher in the first nine months of 2011 compared to the same period the previous year, and combined with the strong orders growth in 2010, suggests that output will continue to rise. The private housing market is currently being adversely affected by economic conditions and low consumer confidence. In the light of the eurozone's troubles and the knock-on effect on banks, credit conditions may tighten somewhat in 2012 and it remains the case that the primary reason for poor demand is the inability of many potential first-time buyers to raise the necessary deposit for house purchase. A number of programmes to support the market, such as the new build indemnity and First Buy, have been put in place, and these should help to drive moderate growth in the sector over the forecast period. The sector's annual average growth rate of 4.6% in the five years to 2016 does compare favourably with the 3.6% recorded during the last growth period between 1995 and 2007, although given how far activity in the sector fell during the recession, a stronger recovery might have been expected. On these projections, output in 2016 will still be over 20% below the 2006 peak.

Infrastructure

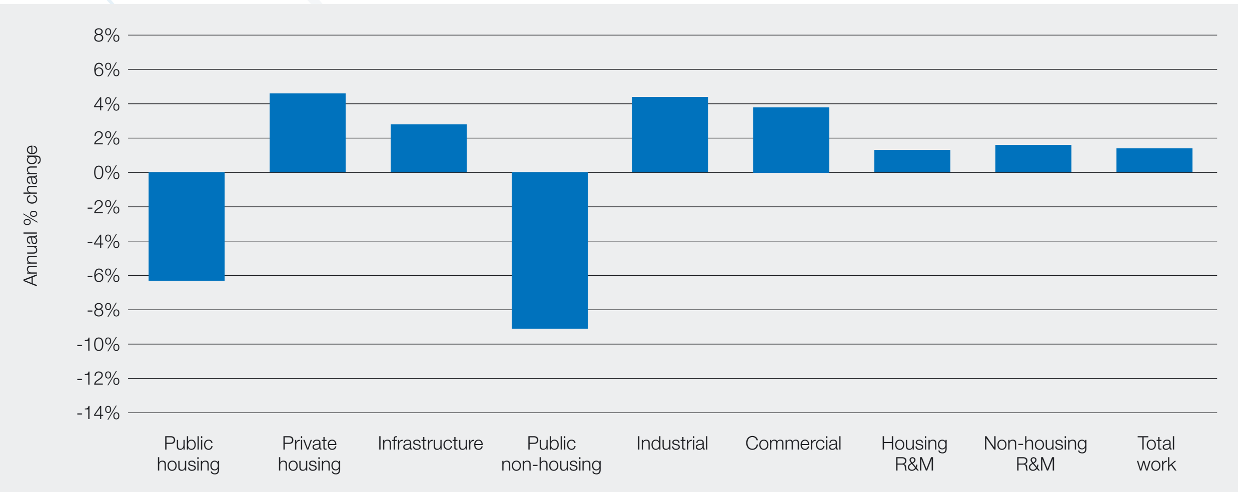
Given its very strong growth in recent years and the fact that output in the sector is already exceeding the previous record, it is something of a wonder that infrastructure activity will continue to increase over the forecast period. Work on the Crossrail project does not peak until 2013/14, by which time a start on site should have been made on at least one of the proposed new nuclear build projects, most likely at Hinkley Point. Thus the main drivers of growth will be the rail and energy sub-sectors, with roads work likely to shrink sharply over the period. Both the roads and rail sub-sectors will benefit from extra funding announced in the Autumn Statement, although projects financed from this are unlikely to get on site before 2013.

However, the rate of growth in the sector is expected to slow year-on-year from 2014 and 2016 could represent the peak for infrastructure output, at 25% above its previous 1993 high, which was during the building of the Channel Tunnel.

Public non-housing

The relatively good performance of the public non-housing sector in 2011 almost certainly means a deeper fall in 2012. If the belief that Building Schools for the Future (BSF) 'legacy' projects have been brought forward is correct, then the fall-off in education construction work in 2012 has to be heavier than previously predicted, despite the announcement of extra funding for English schools in the Autumn Statement. The Olympics build programme is all but complete, barring some finishing works and that will punch another large whole in the sector's activity this year compared to 2010 and 2011. Given the profile of decline in the relevant Departmental Expenditure Limits (DELs), it will be 2015 before output stabilises, back down at the sort of level that could be sustainable in the long term.

Annual average construction output growth 2012-2016 - UK



Source: CSN, Experian
Footnote: 2 (See Appendix III)

Industrial

The outlook for UK manufacturing has worsened significantly in recent months, with domestic demand in the short term weakening and the export-led recovery evaporating. Growth in the former in 2012 is expected to be negligible and the latter could see a small decline, given that the eurozone, the destination for a large proportion of the UK's exports, is likely to sink back into recession. In the light of the above, it is difficult to see any impetus for manufacturers to increase investment levels. Thus growth in the sector will primarily come from the warehouse sub-sector, benefitting from the development of new transport hubs such as London Gateway.

The industrial sector temporarily became the smallest sector in the UK construction industry in 2010, when it was overtaken by public housing in output terms. However, the large falls expected in public housing output in 2012 and 2013 means that industrial construction should overtake the former again in 2012. However, the sector's share of total construction output will remain below 5% for the whole of the forecast period and in 2016 will still be 30% below its 1998 to 2007 average.

Commercial

The increasing economic uncertainty created by the eurozone's problems started to have an impact on developer confidence in the offices market towards the end of 2011, even in London. Weak domestic demand will continue to impact on the requirement for new retail and leisure facilities and with a new round of rent reviews due shortly, there could be further increases in vacancy rates in these sub-sectors. Growth in new orders in the sector was only modest in the first three quarters of 2011. Thus again it is likely to be 2013 at the earliest before we see any real growth in activity.

Over the medium-term the focus may shift to the refurbishment of existing buildings rather than high-profile new build in the offices market. While there remains a glut of secondary space in the market in many regional centres, availability of Grade A space is tightening, albeit slowly, and this should provide some impetus for office construction over the medium-term.

In the retail and leisure sub-sectors, once currently mothballed projects are re-activated, it would be no great surprise to find some schemes scaled back to match more constrained economic circumstances.

Repair &Maintenance

The outlook continues to be gloomy for the housing repair, maintenance and improvement sectors. Public spending in this area will be hit by the funding constraints that local authorities are now under, while in the private sector, further falls in household incomes will impact on consumers' spending at the discretionary end of the market. However, a further £2.1bn of funding has recently been provided to upgrade social housing that did not reach the Decent Homes standard at the end of 2010 and this, combined with significant retrofitting projects in the North West, Scotland and Wales should serve to mitigate falls in public housing R&M work. Growth is expected to return to the private sector in 2013 as economic conditions improve and consumers reactivate postponed improvements. The Green Deal will come into operation in October 2012 but these forecasts assume only moderate take-up during the forecast period as householders adopt a 'wait and see' attitude.

Public expenditure constraints strongly suggest that any movement in public non-housing R&M will be downwards over the next couple of years, although by 2014 activity levels should stabilise. On the private side, expansion is expected to stall in 2012 as weak economic growth impacts on profit margins and asset values. However, there is likely to be a growing backlog of cyclical maintenance that will need to be addressed at some point, thus growth is projected to resume in 2013.

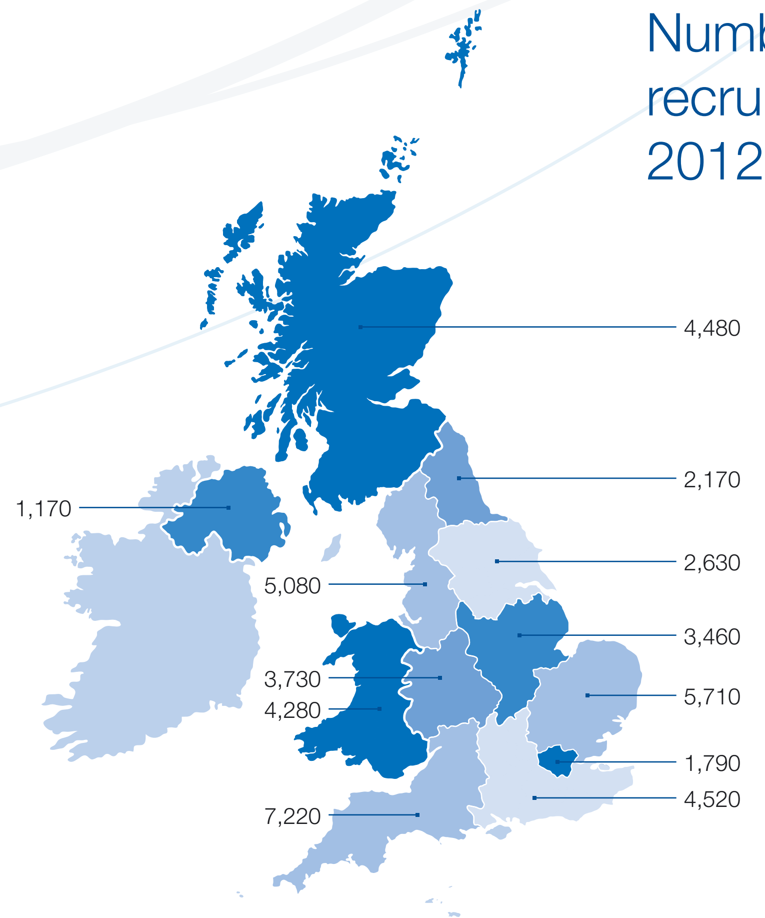
Construction output - UK (£ million, 2005 prices)

	Estimate	Forecast annual % change					Annual average
	2011	2012	2013	2014	2015	2016	2012-16
Public housing	4,262	-25%	-10%	0%	5%	2%	-6.3%
Private housing	13,849	5%	7%	5%	4%	2%	4.6%
Infrastructure	13,161	0%	8%	3%	2%	1%	2.8%
Public non-housing	12,310	-24%	-10%	-10%	0%	1%	-9.1%
Industrial	3,544	5%	10%	3%	3%	1%	4.4%
Commercial	22,988	-1%	9%	4%	3%	4%	3.8%
New work	**70,115**	**-5%**	**5%**	**2%**	**3%**	**2%**	**1.4%**
Housing R&M	16703	-1%	1%	3%	3%	1%	1.3%
Non-housing R&M	18,159	-1%	2%	2%	2%	2%	1.6%
R&M	**34,862**	**-1%**	**2%**	**2%**	**2%**	**2%**	**1.4%**
Total work	**104,977**	**-3%**	**4%**	**2%**	**3%**	**2%**	**1.4%**

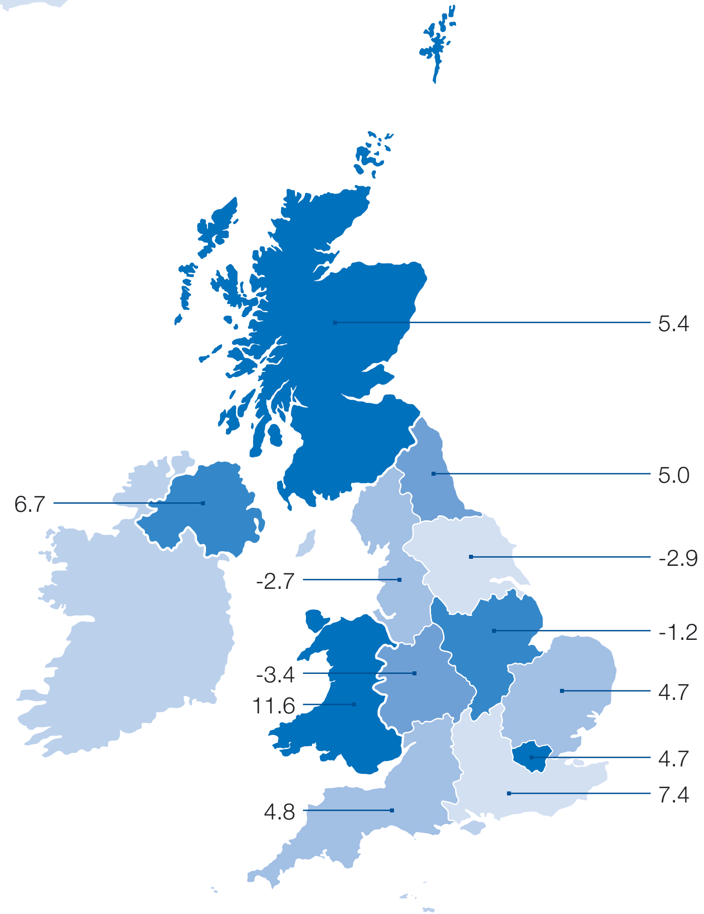
Source: CSN, Experian
Footnote: 2 (See Appendix III)

Comparing the UK regions and nations

Number of new recruits required annually 2012-2016



Total employment growth 2012-2016



Five regions/devolved nations are expected to out-perform the UK average in construction output terms over the five years to 2016 – the East of England (2.9%), Greater London (2.5%), the South East (2.2%), the South West (2.2%) and Northern Ireland (2.1%) – while Wales and Scotland should see growth close to the UK average (1.4%). Two regions are predicted to experience annual average output declines over the forecast period, the North West (-0.9%) and the West Midlands (-1.1%).

There seems to be the emergence of a north/south divide, with the greater south east (the South East, Greater London and the East of England) faring best, and the northern English regions faring worst. In between are the devolved nations, who, although they have their overall expenditure limits set by Westminster, through their devolved administrations they have more control on what it will be spent on than the English regions. Already the devolved administrations in Scotland and Northern Ireland have redirected a proportion of resource funding to the capital expenditure account, which should benefit the construction industry in these areas. In the case of Scotland some £750m of resource expenditure is intended to be diverted to fund capital projects up to 2014/15.

There are a number of reasons for the emergence of this north/south divide. The first is the more constrained outlook for public expenditure going forward. While declines in public housing activity are expected to be fairly similar across the board, with one or two exceptions, the profile for the public non-housing sector is very different. Output in this sector hit a new historic high in 2010 and since 2007 had grown by over 72% in real terms, primarily driven by work under the BSF programme.

The problem is that those regions that benefitted strongly from the early stages of BSF have further to fall in output terms now that the programme has been cancelled and once 'legacy' projects come out of the system. The North West and West Midlands were particularly strong beneficiaries during the early BSF stages and thus are projected to have the steepest falls in public non-housing output over the five years to 2016.

The devolved nations were not part of the BSF programme, thus are not affected by its cancellation. Scotland has its own Schools for the Future programme, worth £1.25bn in total which is currently ongoing, thus although health and education capital expenditure is due to decline north of the border it will not be quite as steep as in the UK as a whole.

Second, major infrastructure projects are tending to be greater south-east centric at present. Infrastructure activity in the UK is at a historic high, exceeding its previous peak in 1993 during the building of the Channel Tunnel. This level of activity is being driven largely by projects in the south-east corner of England, e.g. Crossrail, Thameslink, M25 widening, London Gateway port, to name a few.

That is not to say that there are not projects elsewhere, there are, but they are tending to be of a lesser size. The two areas outside of the greater south east likely to see strong growth in infrastructure output are Scotland and the South West. Scotland has some major transport projects getting underway or in the pipeline, the largest of which is the Forth Replacement Crossing, and these should sustain output levels. It has been a while since the South West had a major infrastructure project, but it is likely to see the first of the new generation of nuclear power stations start at Hinkley Point midway through the forecast period. There are a total of eight new nuclear facilities planned across five regions/devolved nations – the South West, the East of England, the North West, the North East, and Wales – but most will not begin until after 2016.

Third, growth in the commercial sector is likely to be stronger in the greater south east than elsewhere in England. The offices market has already been strengthening in London and along the M4 corridor/Thames Valley, while excess capacity issues remain a problem across many regional centres. The northern English regions also have many currently mothballed retail and leisure developments for which it is difficult to see an economic imperative to restart, at least in the short term.

However, the increasing economic uncertainty caused by eurozone debt problems has weakened demand for new office premises even in London and the South East in the short term. While the decision has been made to re-activate work on Leadenhall Tower and 20 Fenchurch Street, the wonderfully nicknamed 'Cheesegrater' and 'Walkie-Talkie' towers, developers may hold fire on further schemes until the sovereign debt crisis reaches some kind of resolution.

Outside of the greater south east the two strongest commercial markets are expected to be Scotland and Northern Ireland. In Glasgow and Edinburgh so little new space has been brought to market over the past three years that there is a dearth of good Grade A premises, while in Northern Ireland a number of town centre developments, such as Sirocco Quays in Belfast and Queens Parade in Bangor, are due to take place during the forecast period.

The north/south divide is less evident in employment terms, as growth in the construction workforce is also linked to sector as well as overall industry performance. Wales is predicted to have the strongest growth in employment, despite only moderate growth in output. That is because most of its growth is focussed in the more labour intensive repair and maintenance sectors. Not surprisingly, employment growth is also stronger than the UK average in the South East, Greater London, East of England and the South West. Employment growth in Scotland is also quite high at an annual average of 1.1%, nearly twice the rate across the UK as a whole (0.6%)

The ARR is a function of both the demand for construction employment and its supply, or 'churn' rate. Thus the highest ARR levels tend to be found in those regions and devolved nations with high employment growth and significant net outflows. At an absolute level the South West has the biggest projected ARR for the 2012-2016 period, of 7,220, based on relatively strong output and employment growth and high net workforce outflows.

As a proportion of projected 2012 base employment, Wales has the largest ARR at 4.1%, primarily driven by the highest employment growth over the period.

In contrast, although Greater London has one of the highest output growth rates and above average employment growth, its ARR as a percentage of base 2012 employment, at 0.5%, is the lowest in the UK. This is because Greater London traditionally has high net workforce inflows from other regions and from outside the UK, thus its requirement over and above the normal net flows is relatively small.

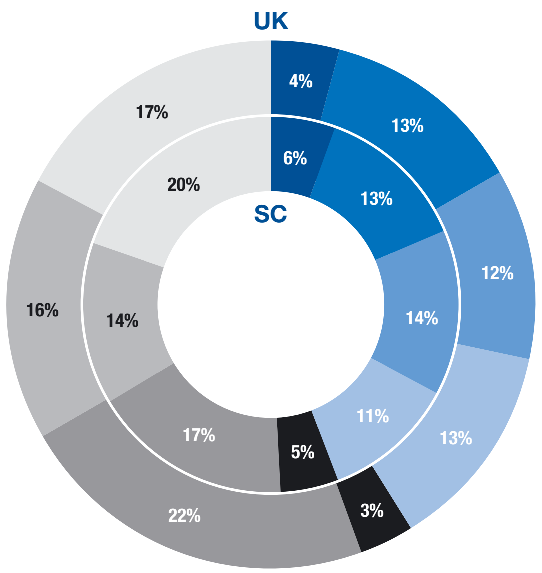
In total seven out of 12 regions and devolved nations have a projected ARR rate higher than the UK average of 1.9% - Wales (4.1%), the South West (3.7%), East of England (2.6%), North East and East Midlands (2.3%) and Northern Ireland and the North West (2.0%).

Scotland

Total employment by occupation - Scotland
Annual recruitment requirement (ARR) by occupation - Scotland

Occupation	2012	2016	ARR
Senior, executive, and business process managers	11,350	13,520	-
Construction managers	31,880	35,670	-
Non-construction professional, technical, IT, and other office-based staff	32,890	38,230	480
Wood trades and interior fit-out	30,700	38,120	610
Bricklayers	3,630	3,150	50
Building envelope specialists	5,240	5,300	-
Painters and decorators	8,740	9,290	220
Plasterers and dry liners	3,590	4,120	80
Roofers	3,590	4,120	<50
Floorers	2,690	2,610	-
Glaziers	1,710	1,700	-
Specialist building operatives nec*	6,380	5,400	-
Scaffolders	3,200	2,560	-
Plant operatives	7,410	8,870	1,220
Plant mechanics/fitters	4,350	4,550	360
Steel erectors/structural	3,510	4,000	220
Labourers nec*	6,210	7,280	-
Electrical trades and installation	16,320	13,720	-
Plumbing and HVAC Trades	15,180	13,530	-
Logistics	4,240	4,770	580
Civil engineering operatives nec*	5,880	6,810	160
Non–construction operatives	4,330	3,490	-
Civil engineers	3,760	4,100	400
Other construction professionals and technical staff	21,510	19,030	-
Architects	4,760	5,640	90
Surveyors	6,720	6,110	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. Scotland

Public housing
Private housing
Infrastructure
Public non-housing
Industrial
Commercial
Housing R&M
Non-housing R&M

Source: ONS, Experian

Scotland's annual average output growth rate over the 2012 to 2016 period, at 1.3% is higher than the 1% predicted in 2010 for the 2011 to 2015 period, and in line with the UK average. There is little difference between the growth rates of the new work (1.4%) and repair and maintenance (R&M) sectors (1.2%). Construction employment is predicted to reach 265,700 by 2016, a 5% rise over the five-year forecast period. The devolved nation's annual recruitment requirement (ARR), at 4,480, represents 1.8% of projected base 2012 employment, close to the UK average of 1.9%.

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Forth Replacement Crossing

Key findings

The strong recovery seen in the Scottish construction industry in 2010 has proved to be short-lived, with an estimated decline of 3% in output for 2011 in real terms. The weakening economic conditions in the second half of 2011, due to the well-publicised debt problems among eurozone countries, has meant that activity has been as depressed in the private sectors as in the public ones. In fact, the public construction sectors have held up in 2011 better than expected, given the scale of public expenditure cuts announced over the past 18 months.

The weak prospects for growth in both the UK and Scottish economies for 2012 suggest that overall levels of private investment will continue to struggle to show any significant growth, thus the prospects for the private housing, industrial and commercial sectors remain muted in the short term. Combine this with the likelihood that public expenditure cuts will hit the public housing and public non-housing sectors hard, the prognosis for 2012 is for another year of declining output overall.

Growth is predicted to return to the construction sector in 2013, and over the totality of the five-year period to 2016, output is forecast to grow at an annual average rate of 1.3% in Scotland, in line with the UK average. Three sectors are expected to see annual average growth in excess of 4%; private housing, infrastructure and commercial construction.

Prospects for the private housing sector will improve as credit conditions ease, consumer confidence improves and first-time buyers slowly return to the market. The sector's projected average yearly growth of 4.4% is above that seen in the last growth cycle between 1995 and 2007 of 3.4%, but is less than would have been expected considering by how much activity in the sector has declined in recent years.

The Scottish Government has made concerted efforts to support spending on road, rail and water facilities as much as possible, thus the capital budgets for these sectors combined actually rises from £704m in 2011/12 to £938.8m in 2014/15, an increase of a third in nominal terms. The infrastructure sector will be further boosted by the transfer of £750m from the resource to the capital budget over its Spending Review period.

While commercial construction in Scotland's two main centres, Edinburgh and Glasgow, remains muted, there are a number of large projects with planning consent that should go-ahead once economic conditions improve and financing has been obtained.

Construction employment in Scotland is projected to grow at an annual average rate of 1.1%, almost twice the rate of the UK as a whole (0.6%). Scotland is one of only three regions/devolved nations where employment is expected to be higher in 2016 than its previous peak.

Scotland's annual average growth rate of 1.3% is in line with the UK average figure

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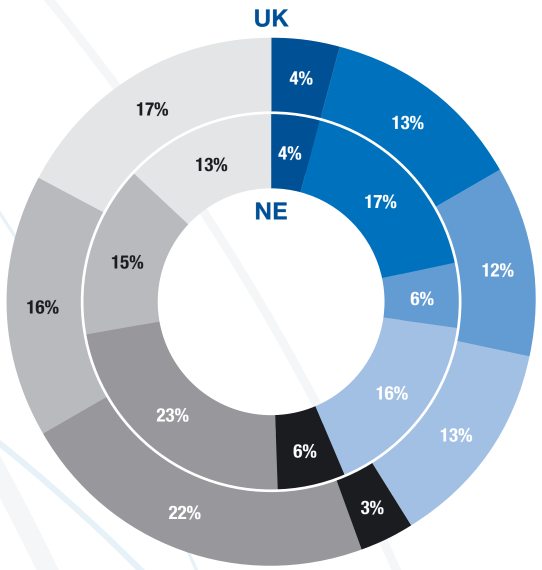
North East

Total employment by occupation - North East
Annual recruitment requirement (ARR) by occupation - North East

Occupation	2012	2016	ARR
Senior, executive, and business process managers	3,820	4,040	-
Construction managers	9,810	11,590	-
Non-construction professional, technical, IT, and other office-based staff	8,410	8,370	-
Wood trades and interior fit-out	7,260	7,670	-
Bricklayers	2,440	2,430	280
Building envelope specialists	2,280	2,550	-
Painters and decorators	3,770	3,820	180
Plasterers and dry liners	3,010	3,470	60
Roofers	3,550	3,900	290
Floorers	1,820	1,940	130
Glaziers	980	900	-
Specialist building operatives nec*	2,540	2,800	430
Scaffolders	1,400	1,600	150
Plant operatives	2,200	2,270	-
Plant mechanics/fitters	1,920	1,560	-
Steel erectors/structural	1,500	1,600	300
Labourers nec*	4,050	4,480	200
Electrical trades and installation	7,170	8,040	-
Plumbing and HVAC Trades	8,480	9,370	-
Logistics	1,580	1,590	-
Civil engineering operatives nec*	2,900	2,990	130
Non–construction operatives	1,570	1,490	-
Civil engineers	2,380	2,830	-
Other construction professionals and technical staff	7,960	8,610	-
Architects	720	790	<50
Surveyors	1,630	1,770	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. North East

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M

Source: ONS, Experian

The North East is expected to see very modest growth over the forecast period with the average annual output rate at 0.5%. The greatest decline in output is expected in 2012 before a recovery begins in 2013 with activity increasing by 3%. Construction employment is forecast to reach 102,470 by 2016, 8% higher than in 2012. The North East accounts for 5% of total UK annual recruitment requirements (ARR) and it is 2.3% of total projected base 2012 employment, slightly higher than in the UK as a whole (1.9%).

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Stockton Casino
Kier

Key findings

The industrial sector will see the largest annual average growth rate of 6% in the five years to 2016. However, it will be coming back from a low base and even by 2016 output in the sector is predicted to be half of its 2006 peak in real terms.

The public housing and public non-housing sectors are expected to see the biggest declines in output, both averaging around 11% over the five year period to 2016. Under the National Affordable Housing Programme (NAHP) 2008-2011 the North East benefited from around £217m of investment in homes for rent and low cost ownership. The current Affordable Housing Programme 2011-2015 will see much less funding available. The new Homes and Communities Agency (HCA) operating areas have amalgamated the North East and Yorkshire & Humber, and the combined area is due to receive just £181m.

The North East benefited strongly from initial stages of the Building Schools for the Future (BSF) programme. However, as 'legacy' projects wind down, education construction in the region will fall sharply. In addition, the majority of hospital construction work in the region was done during the ProCure 21 programme, therefore both these factors contribute towards falling output in the public non-housing sector.

The commercial sector is predicted to see an annual average growth rate of 2.2%. The market will be supported by major projects such the regeneration of Gateshead town centre and the Nissan plant in Sunderland worth £150m and £189m respectively.

The private housing (1.6%) and infrastructure (1.5%) sectors are projected to experience only moderate growth to 2016, with demographic factors weak for the former and little in the way of large transport or energy projects in the pipeline for the region at present.

Construction employment is forecast to reach 102,470 in 2016 which is 8% higher than in 2012. Of the construction-specific trades and professions, civil engineers are expected to see a 19% rise in employment levels to 2016. Construction managers (18%), labourers nec (11%), architects (10%) and other construction professionals and technical staff (8%) are also likely to experience reasonable growth.

The North East accounts for 5% of total UK annual recruitment requirements (ARR) and it is 2.3% of total projected base 2012 employment, slightly higher than in the UK as a whole (1.9%). The largest absolute requirement is for specialist building operatives nec (430), but as a share of 2012 base employment steel erectors/structural trades will be the most sought after (20%).

North East is expected to see very modest growth over the forecast period, annual average output rate of 0.5%

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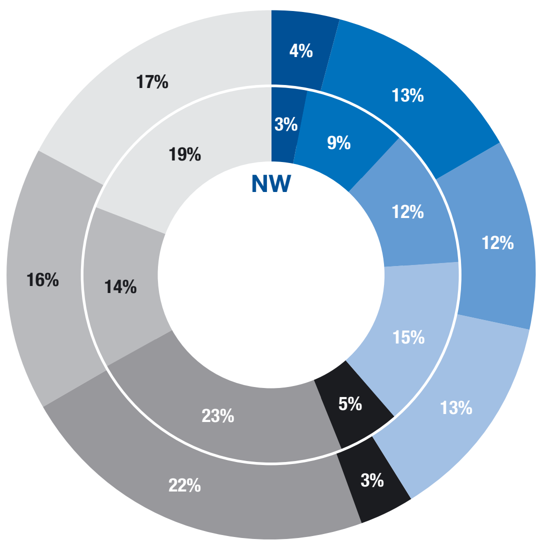
North West

Total employment by occupation - North West
Annual recruitment requirement (ARR) by occupation - North West

	2012	2016	ARR
Senior, executive, and business process managers	10,770	10,110	-
Construction managers	27,630	30,850	-
Non-construction professional, technical, IT, and other office-based staff	31,990	29,920	-
Wood trades and interior fit-out	26,650	26,600	-
Bricklayers	6,620	6,220	750
Building envelope specialists	7,330	7,780	-
Painters and decorators	10,480	9,880	1,060
Plasterers and dry liners	7,480	7,870	1,170
Roofers	4,710	4,930	70
Floorers	3,900	3,890	300
Glaziers	2,590	2,430	330
Specialist building operatives nec*	3,590	3,800	-
Scaffolders	1,410	1,510	<50
Plant operatives	5,650	5,930	-
Plant mechanics/fitters	5,000	3,990	420
Steel erectors/structural	3,260	3,340	-
Labourers nec*	9,990	10,480	-
Electrical trades and installation	19,480	20,700	-
Plumbing and HVAC Trades	18,370	19,400	-
Logistics	3,550	3,490	210
Civil engineering operatives nec*	2,550	2,230	510
Non–construction operatives	4,250	3,740	-
Civil engineers	4,680	5,320	-
Other construction professionals and technical staff	19,720	20,580	-
Architects	1,920	1,730	230
Surveyors	8,280	8,660	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. North West

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M

Source: ONS, Experian

The North West is forecast to see declining activity, with an annual average growth rate of -0.9% in the five years to 2016. The public non-housing sector which accounts for the second biggest share in the new work market is expected to decline by an annual average of 18.9%. While a fall of 7% is predicted for total work in 2012, recovery is expected to begin in 2013, with growth of 3%. However, the improvement in 2013 is largely a bounce-back effect from the previous year and growth is forecast to peter out thereafter. At 255,380 total construction employment in 2016 for the region is expected to increase by a mere 1% on the 2012 level but remain 4% below the 2010 level.

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Media City
Peel Media

Key findings

The commercial sector accounts for the largest share of new work in the North West and is forecast to see a modest average annual growth rate of 1.7%, with expansion peaking at 8% in 2013.

The public non-residential sector is expected to be the worst performing sector in the North West and in the UK as a whole. Output is expected to decline by 18.9% each year on average over the coming five years in the North West.

Public housing is expected to decrease by an annual average of 6.7% over the forecast period. Approximately £188m has been allocated to the North West under the 2011-2015 Affordable Homes Programme (AHP) by the HCA. This sum is significantly lower than the allocation of £689m made for the region during the 2008-2011 AHP.

The industrial sector is projected see the greatest annual average increase of 6.8%. The sector will be supported by the manufacturing industry as the industry grows over the forecast period, albeit at a slower rate year on year. The infrastructure sector will see small falls of 1.1% on an annual average basis whilst the private housing sector is expected to see growth rates of 3% over the same period.

Construction employment in the North West is predicted to reach 255,380 in 2016. There is expected to be a decline in employment until 2013 before a rise is seen in the latter part of the forecast period. The 3% rise in output in 2013 is the main driver of employment growth in 2014 and although growth in total workloads stalls thereafter, the more labour intensive repair and maintenance sectors continue to expand.

Construction managers will see the largest increase in employment levels of 21% between 2010 and 2016. However, focusing on 2012 to 2016 it is the civil engineers that will see the largest increase in employment of 14%.

The annual recruitment requirement (ARR) for the North West is 5,080. Of this, plasterers and dry liners have the highest ARR (23%) in the region. This occupation tends to be more prevalent in the R&M sector, which is projected to perform better than new work. The North West's ARR represents 2% of projected base 2012 employment, roughly in line with the UK average of 1.9%.

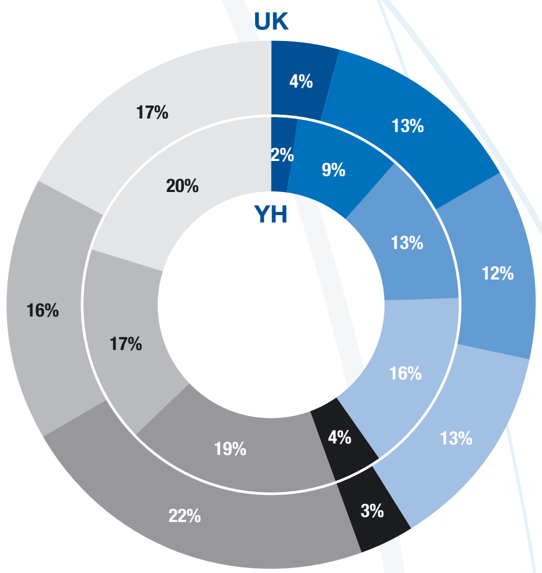
The North West is forecast to see declining activity, with an annual average **growth rate of -0.9%** in the five years to 2016.

Yorkshire and Humber

Total employment by occupation - Yorkshire and Humber
Annual recruitment requirement (ARR) by occupation - Yorkshire and Humber

Occupation	2012	2016	ARR
Senior, executive, and business process managers	10,540	9,380	-
Construction managers	22,740	25,880	630
Non-construction professional, technical, IT, and other office-based staff	21,980	21,040	-
Wood trades and interior fit-out	24,650	24,920	-
Bricklayers	8,620	8,640	260
Building envelope specialists	7,490	8,260	-
Painters and decorators	6,060	5,530	410
Plasterers and dry liners	4,740	4,990	80
Roofers	3,080	3,390	70
Floorers	2,650	2,720	430
Glaziers	1,890	1,840	-
Specialist building operatives nec*	4,590	5,010	-
Scaffolders	1,470	1,610	-
Plant operatives	3,150	3,480	110
Plant mechanics/fitters	4,150	3,320	-
Steel erectors/structural	2,000	2,100	<50
Labourers nec*	9,000	10,020	60
Electrical trades and installation	13,710	15,080	-
Plumbing and HVAC Trades	20,460	21,930	310
Logistics	3,180	3,030	230
Civil engineering operatives nec*	6,040	5,430	-
Non–construction operatives	2,890	2,550	-
Civil engineers	5,200	6,160	-
Other construction professionals and technical staff	12,640	13,150	-
Architects	2,300	1,960	-
Surveyors	4,690	4,890	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. Yorkshire and Humber

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M

Source: ONS, Experian

The region's construction industry is expected to stagnate over the forecast period with no annual average growth predicted. The repair and maintenance (R&M) sector (1.6%) is expected to perform better compared with the new work market (-1.0%). Public non-housing will see the greatest decline in the five years to 2016 an annual average growth rate of -12.0%. Construction employment in the region is forecast to reach 216,310 in 2016 which is 3% higher than in 2012.

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Eco Village
Gentoo Group

Key findings

The industrial sector is projected to have the best annual average growth rate (6.6%) during the 2012-2016 period. Private housing (5%) and the commercial (1.4%) sectors will also see rises in activity. The projected increase in output in the private housing sector over the forecast period is in line with that seen over the last growth period, 1995-2007, of 5.1% a year on average.

One of the big projects in the pipeline for the commercial market is a £100m Chinese styled theme park in Rotherham. If planning permission is successful it is expected that the project will take approximately 18 to 24 months to build.

The public non-housing sector will see the biggest fall as outturn decreases by 12% a year on average in the five years to 2016. Yorkshire and Humber benefited quite strongly from the Building Schools for Future (BSF) programme. Currently there are only a handful of schools still to be developed with almost all schools post wave 4 stopped. This, alongside relatively little funding available under the ProCure 21+ programme when compared to the ProCure 21 framework, leads to the strong falls in output.

The public housing (-6.1%) and infrastructure (-2.8%) sectors are also predicted to see negative growth during the forecast period. This is despite £150m of managed motorways construction on the M62 along with ports and power station work.

Construction employment in Yorkshire and Humber is forecast to reach 216,310 in 2016, 3% higher than 2012 but 7% lower when compared to 2010.

Civil engineers are expected to see the biggest rise in employment levels of 18% in 2016 when compared to 2012. Construction managers follow closely behind as employment increases by 14%. In absolute terms this occupation sees the largest increase as employment increases by 3,140 to 25,880. Other construction specific occupations such as labours nec. (11%) and other construction professionals and technical staff (4%) also see growth in employment levels.

The annual recruitment requirement (ARR) for Yorkshire and Humber, at 2,630, represents 1.3% of projected 2012 base employment, below the national average of 1.9%. This is not surprising considering the low employment demand in the region and the fact that it has very little workforce outflows to other regions.

At 630 and accounting for 24% of Yorkshire and Humber's total ARR, construction managers are the most in demand in the region.

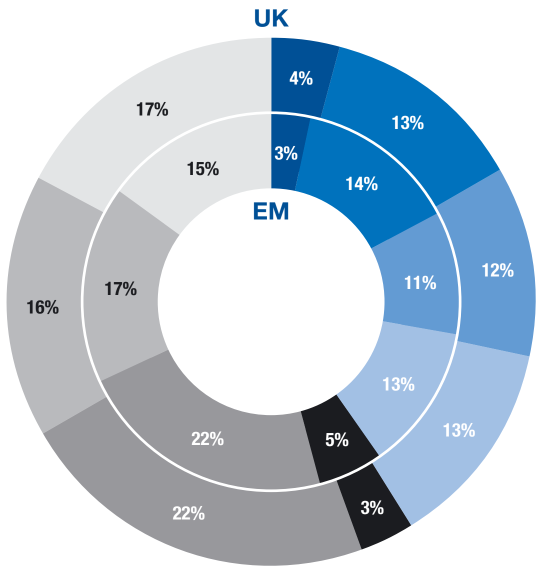
With growth of 1.6%, repair and maintenance is expected to perform better than new work (-1.0%)

East Midlands

Total employment by occupation - East Midlands
Annual recruitment requirement (ARR) by occupation - East Midlands

Occupation	2012	2016	ARR
Senior, executive, and business process managers	6,830	8,230	-
Construction managers	16,870	20,680	500
Non-construction professional, technical, IT, and other office-based staff	13,060	14,230	240
Wood trades and interior fit-out	18,400	17,150	290
Bricklayers	5,210	4,570	-
Building envelope specialists	3,570	3,420	90
Painters and decorators	5,370	5,600	340
Plasterers and dry liners	3,900	3,960	-
Roofers	2,910	2,720	-
Floorers	2,530	2,240	-
Glaziers	2,450	2,160	-
Specialist building operatives nec*	4,040	3,840	<50
Scaffolders	1,220	1,280	210
Plant operatives	2,670	2,550	80
Plant mechanics/fitters	2,500	2,050	-
Steel erectors/structural	1,390	1,520	250
Labourers nec*	6,040	5,740	1,050
Electrical trades and installation	15,600	14,670	-
Plumbing and HVAC Trades	9,180	8,770	-
Logistics	1,040	1,290	-
Civil engineering operatives nec*	4,770	4,440	<50
Non–construction operatives	3,140	3,380	-
Civil engineers	1,910	1,740	70
Other construction professionals and technical staff	7,120	8,520	230
Architects	1,370	1,510	90
Surveyors	5,850	6,510	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. East MIdlands

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M

Source: ONS, Experian

The East Midlands is forecast to see construction output rise at an average rate of 1% per year over the five years to 2016, putting it towards the bottom of the growth table for the regions and devolved nations. It is weaker than the UK figure of 1.4%. New work output is expected to increase by 0.8% per year on average, compared with 1.3% for the repair and maintenance (R&M) sector. Total construction employment in the region is expected to rise by 2.6% from 2012's projected level to around 152,770 in 2016. However, this is still 17% lower than 2006's peak.

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David Lock Associates Ltd

Key findings

Private housing is expected to fare well over the forecast period, as improving conditions in the wider economy stimulate demand. However, despite the strong growth forecast in each year of the 2012-2016 period, output is expected to be only 59% of its 2006 peak in 2016, reflecting the size of the output falls during the recession. The strengthening conditions in the macro economy are also likely to lead to a recovery in demand for office and leisure facilities. The extension of the Victoria Shopping Centre in Nottingham is expected to start during the forecast period.

Although work is due to start imminently on the Nottingham Express Transit (NET) Line 2 project and last for around four years, infrastructure output in the region will decline in each year to 2016. The East Midlands infrastructure sector has seen strong growth in recent years, partly due to the M1 improvement scheme, and there is little else, apart form the NET project, to replace this.

The public expenditure cuts will impact on the public housing and public non-housing sectors, which are both expected to see output decline, on average, in each year of the forecast period. The number of affordable housing starts in the East Midlands has fallen by 97% in the six months to September 2011, compared with the corresponding period of 2010, and this will inevitably impact on output in the sector.

Funding levels for affordable housing across England have been almost halved for the 2011-2015 Affordable Housing Programme, compared with the 2008-11 period and thus there is unlikely to be any substantial growth in the sector over the forecast period. Nevertheless, this compares to a record level of output in the sector in 2010.

The East Midlands did not benefit from the early waves of the Building Schools for the Future (BSF) programme as much as some other regions, and thus output in the sector is expected to fall at a weaker rate than the national average over the 2012-2016 period.

Construction employment in the East Midlands is expected to continue to decline over the next couple of years, and only return to growth in 2015. Overall it is forecast to decline by 0.2% per year on average over the 2012-2016 period, compared to average growth of 0.6% for the UK as a whole. The largest increases in absolute terms in construction-specific employment are expected for surveyors (660), logistics personnel (250) and painters and decorators (230). In terms of percentage of base 2012 employment, logistics personnel (24%) are expected to be the most in demand.

The ARR for the East Midlands of 3,460 is equivalent to 2.3% of base 2012 employment in the region.

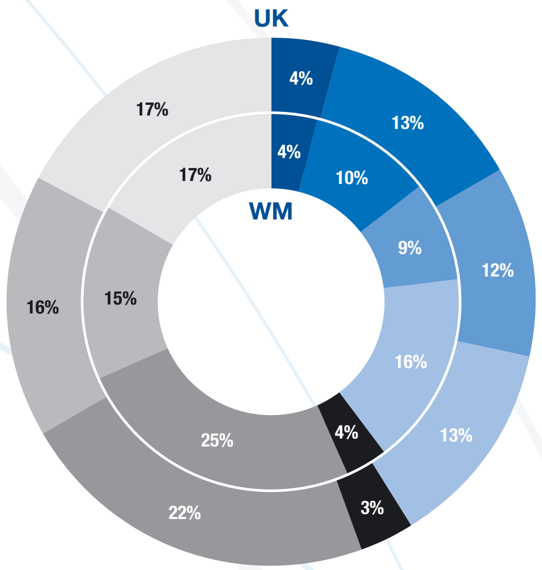
Total construction employment in the region is expected to rise by **2.6% from 2012's** projected level to around **152,770 in 2016.**

West Midlands

Total employment by occupation - West Midlands
Annual recruitment requirement (ARR) by occupation - West Midlands

Occupation	2012	2016	ARR
Senior, executive, and business process managers	11,820	13,650	-
Construction managers	19,530	17,840	980
Non-construction professional, technical, IT, and other office-based staff	34,360	33,190	510
Wood trades and interior fit-out	20,290	20,450	-
Bricklayers	5,860	4,440	-
Building envelope specialists	8,250	9,810	190
Painters and decorators	12,520	10,640	-
Plasterers and dry liners	2,620	2,730	-
Roofers	4,020	3,190	-
Floorers	2,340	2,210	-
Glaziers	4,000	4,490	130
Specialist building operatives nec*	5,440	5,370	-
Scaffolders	1,130	1,220	-
Plant operatives	2,430	2,030	140
Plant mechanics/fitters	2,050	2,000	-
Steel erectors/structural	3,300	2,670	-
Labourers nec*	5,220	5,080	1,040
Electrical trades and installation	15,910	16,610	200
Plumbing and HVAC Trades	13,350	11,190	-
Logistics	3,930	4,400	460
Civil engineering operatives nec*	3,280	2,780	-
Non–construction operatives	2,830	2,920	-
Civil engineers	4,310	3,330	-
Other construction professionals and technical staff	14,970	17,650	-
Architects	2,150	2,430	-
Surveyors	5,350	5,580	80

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. West Midlands

Public housing
Private housing
Infrastructure
Public non-housing
Industrial
Commercial
Housing R&M
Non-housing R&M

Source: ONS, Experian

The region's construction industry is expected to decline by an annual average rate of 1.1% over the forecast period. Projected performance is very different for the new work and repair and maintenance (R&M) sectors, with the former declining by 2.3% a year on average but the latter seeing growth of 1.7%. Construction employment in the West Midlands is forecast to reach 207,900 in 2016, 2% lower than in 2012. Despite this weak performance, the region will still have an annual recruitment requirement (ARR) of 3,730.

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Key findings

Not all sectors in the West Midlands are forecast to experience negative growth over the forecast period. The private housing, industrial, commercial and R&M sectors are all projected to see growth. However, modest expansion in these sectors is overshadowed by strong falls in the public housing and public non-housing sectors.

The public non-housing sector will be by far the worst performing with an annual average decline of 18.4%. The region benefited strongly from the early waves of the Building Schools for the Future programme (BSF) and in fact has the biggest remaining project still ongoing, in Wolverhampton, thus once these complete activity is expected to fall sharply.

Over the forecast period public housing will also see a drop in output levels of 6.8% on average. Under the Affordable Homes Programme 2011-2015 funding for the West Midlands will be considerably less when compared to the 2008-2011 National Affordable Housing Programme (NAHP).

The industrial sector will see the strongest growth (3.8%) over the forecast period on an annual average basis. Wolverhampton is set to see a new Jaguar Land Rover engine plant worth £350m. The plant will produce low emission four cylinder engines and is planned to open in 2014.

The private housing and commercial sectors will grow by 3.6% and 1.2% respectively on an annual average basis in the five years to 2016. City Sentral a new shopping centre worth £250m is due to transform Stoke-on-Trent once completed in 2015.

Overall the R&M sector is expected to perform better as average growth per year is 1.7% over the forecast period with the non-housing sector (2.6%) performing better than the housing one (0.7%).

Construction employment in the West Midlands is forecast to reach 207,900 in 2016 which is 2% lower than 2012. The region is projected to experience an annual average decline in employment of 0.7% over the forecast period.

However 12 of the 26 occupational categories are expected to see growth including other construction professionals and technical staff (16%), architects (13%) and glaziers (12%).

The West Midlands accounts for 8.1% of total UK ARR, a little less than its share of employment in 2010 (8.5%). At 3,730 it represents 1.8% of the region's base 2012 employment, similar to the UK average of 1.9%.

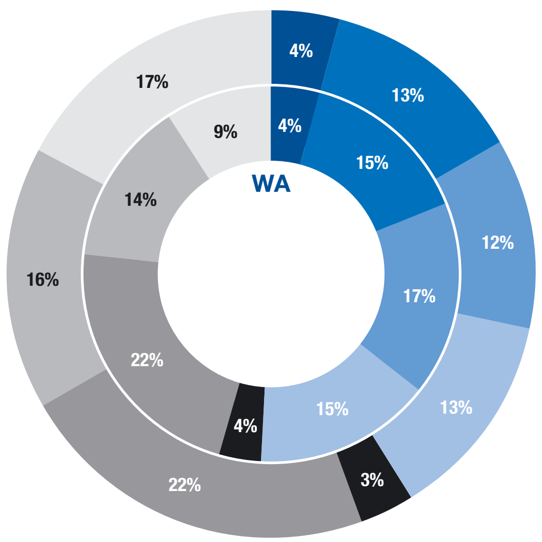
The Private Housing, Industrial, Commercial and R&M sectors are all projected to see growth

Wales

Total employment by occupation - Wales
Annual recruitment requirement (ARR) by occupation - Wales

Occupation	2012	2016	ARR
Senior, executive, and business process managers	2,220	2,170	-
Construction managers	6,080	7,020	-
Non-construction professional, technical, IT, and other office-based staff	11,470	10,890	550
Wood trades and interior fit-out	14,900	17,900	470
Bricklayers	4,480	4,850	380
Building envelope specialists	4,400	4,390	<50
Painters and decorators	4,070	4,300	50
Plasterers and dry liners	2,970	3,440	-
Roofers	600	670	-
Floorers	1,540	1,510	-
Glaziers	1,580	1,530	70
Specialist building operatives nec*	2,390	2,860	220
Scaffolders	2,040	2,540	50
Plant operatives	2,020	1,720	400
Plant mechanics/fitters	850	900	<50
Steel erectors/structural	1,730	2,010	-
Labourers nec*	5,180	5,860	420
Electrical trades and installation	8,540	8,290	-
Plumbing and HVAC Trades	7,080	7,870	-
Logistics	2,460	2,740	170
Civil engineering operatives nec*	4,270	3,870	-
Non–construction operatives	1,130	1,150	-
Civil engineers	1,420	1,430	250
Other construction professionals and technical staff	5,240	6,110	530
Architects	600	600	120
Surveyors	4,250	4,700	540

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. Wales

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M

Source: ONS, Experian

Construction output in Wales is forecast to grow at an annual average rate of 1.3% over the five years to 2016, roughly in line with the UK average of 1.4%. However Wales' construction employment is predicted to grow at a much faster rate than output, 2.2% a year on average, which is considerably higher than the UK average (0.6%). However, construction employment in Wales has suffered much more than the UK as a whole, with a peak to trough fall of 28% compared with 10% for the UK, thus this more robust growth is from a much lower base.

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YYH

Key findings

While the overall construction output growth rate in Wales is very similar to the UK as a whole, there is significant variation across some of the sectors. It looks like public housing output in Wales has fared significantly better than across the UK as a whole in 2011. However, given the much reduced funding available going forward – a reduction of 17% between 2011/12 and 2013/14 – the trend can only be downwards over the next couple of years in Wales.

Private housing forecasts are fairly similar across the UK as a whole as most regions and devolved nations' markets are affected by the same factors – economic growth, house prices, consumer spending and confidence, and credit conditions. Given relatively weak economic performance, at least in the short term, growth in private housing output is likely to be only moderate over the forecast period.

While there are a number of small to medium sized transport projects taking place in Wales at present, such as the A465 improvement work, there is a dearth of major projects. This situation may be rectified towards the end of the forecast period as work starts on one of the new generation of nuclear plants proposed, at Wylfa in Anglesey. However, most of the construction activity from this project will be beyond the current forecast period.

Falls in public non-housing output are likely to be relatively moderate, given that Building Schools for the Future (BSF) was an English programme and thus not applicable to Wales.

While capital budgets for health and education work in Wales will be under pressure, programmes such as the 21st Century Schools Programme should help to mitigate the overall decline.

In the repair and maintenance (R&M) sectors, the Arbed programme has delivered a good level of work retrofitting domestic properties with energy efficient and microgeneration measures and will continue to do so for some time to come.

The construction workforce in Wales contracted by over 38,000 between 2007 and 2010, a much bigger fall in percentage terms than that seen across the UK as a whole. The suggestion is, therefore, that there is much less slack in the Welsh industry, which is part of the reason that employment in Wales is projected to grow quite strongly over the forecast period, by over 11,500 over the five years to 2016.

Wood trades and interior fit out continues to be the largest occupational category, accounting for close to 14% of total construction employment in Wales in 2010. This occupational category is expected to grow by 32% in the five years to 2016, as are specialist building operatives nec*, with scaffolders increasing by 37%. In contrast bricklayers are only expected to increase by a little more than 1% over the forecast period.

Wales traditionally has quite a high annual recruitment requirement (ARR) and this year is no exception, with a requirement of 4,280 a year on average over the forecast period.

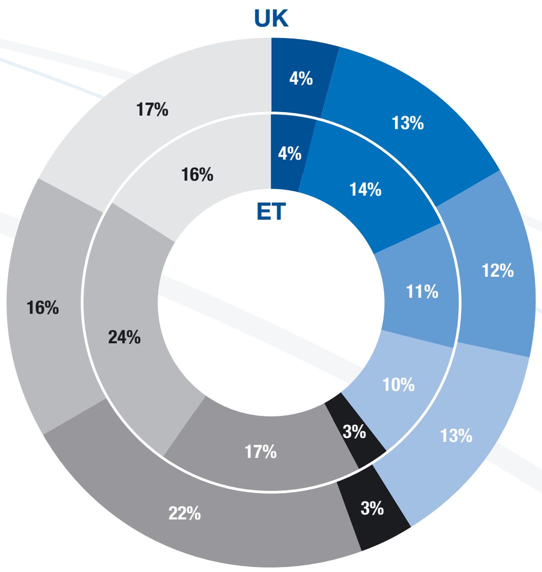
Construction output in Wales is forecast to grow at an annual average **rate of 1.3%** over the five years to 2016, roughly in line with the UK average **of 1.4%.**

East of England

Total employment by occupation - East of England
Annual recruitment requirement (ARR) by occupation - East of England

Occupation	2012	2016	ARR
Senior, executive, and business process managers	15,280	17,380	600
Construction managers	17,160	16,440	550
Non-construction professional, technical, IT, and other office-based staff	31,600	34,010	-
Wood trades and interior fit-out	25,280	27,490	1,170
Bricklayers	6,060	5,270	-
Building envelope specialists	11,010	10,650	-
Painters and decorators	10,470	9,810	-
Plasterers and dry liners	4,640	5,290	190
Roofers	2,660	2,400	190
Floorers	4,620	4,970	410
Glaziers	2,950	2,470	390
Specialist building operatives nec*	5,750	4,810	-
Scaffolders	1,410	1,140	220
Plant operatives	3,340	3,460	-
Plant mechanics/fitters	3,560	3,250	-
Steel erectors/structural	2,420	2,210	-
Labourers nec*	8,670	7,630	400
Electrical trades and installation	19,490	21,390	-
Plumbing and HVAC Trades	13,020	14,470	80
Logistics	2,840	3,100	<50
Civil engineering operatives nec*	5,310	5,830	210
Non–construction operatives	2,370	2,660	-
Civil engineers	2,060	2,190	120
Other construction professionals and technical staff	14,120	19,050	470
Architects	2,670	3,130	160
Surveyors	5,240	7,080	510

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. East of England

Public housing
Private housing
Infrastructure
Public non-housing
Industrial
Commercial
Housing R&M
Non-housing R&M

Source: ONS, Experian

Construction output in the East of England is forecast to rise at an average rate of 2.9% per year between 2012 and 2016, the strongest of all the regions and devolved nations. New work output is expected to see growth of 3.7% per year on average, compared with 1.8% for the repair and maintenance (R&M) sector. Total construction employment in the region is expected to decline to 224,000 in 2012 before rising by 6% to total 237,580 in 2016. However, this is still 8% lower than 2006's peak.

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Key findings

There are a number of large infrastructure projects in the region currently on site or due to get underway during the forecast period. Construction on the London Gateway port project is ongoing and it is due to open in the final quarter of 2013, along with the distribution and logistics park, which will drive growth in the industrial construction sector. Linked to the ports development is the £600m Gateway Energy Centre, with construction expected to start in 2013. Work on the new nuclear power station at Sizewell in Suffolk is due to start towards the end of the forecast period.

Despite the boost to the region's industrial construction sector from the distribution and logistics park, output is still only expected to be 57% of its 2006 level in 2016, reflecting the marked declines in output in the sector during the recession.

The private housing sector is expected to see growth in each year of the forecast period, as easing credit conditions and improvements in the wider economy should stimulate demand for housing. The outlook for commercial construction in the East of England is also strong. In addition to two PFI health projects in Cambridge, demand for office and retail facilities is expected to strengthen in the next couple of years, encouraging developers to restart work on mothballed developments.

It is not surprising that it is the two public sectors, housing and non-housing, which are expected to fare the worst over the forecast period. However, the East of England was not one of the main beneficiaries of the early waves of the Building Schools for the Future (BSF) programme and thus its public non-housing sector does not have as far to fall as some other English regions. The substantial funding cuts for the public housing sector across England will contribute to an average annual output decline of 3.1% in the sector, although it is expected that there will be some growth in the sector towards the end of the forecast period as housing associations are likely to find it easier to access credit.

Construction employment in the East of England is expected to continue to decline in the short term, returning to growth in 2013 and rising at an average rate of 0.9% per year, slightly above the UK average (0.6%). In absolute terms, wood trades and interior fit-out (2,210), electrical trades and installation (1,900) and surveyors are expected to see the largest increases in employment between 2012 and 2016. However, in percentage terms, the strongest rises are forecast for surveyors (35%) and architects (17%).

The region's ARR of 5,710 is equivalent to 2.5% of base 2012 employment.

The private housing sector

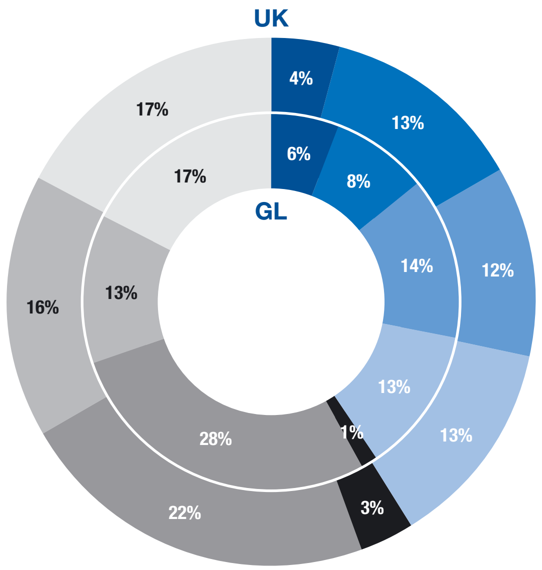
is expected to see growth in each year of the forecast period

Greater London

Total employment by occupation - Greater London
Annual recruitment requirement (ARR) by occupation - Greater London

Occupation	2012	2016	ARR
Senior, executive, and business process managers	22,590	23,340	500
Construction managers	35,980	47,070	-
Non-construction professional, technical, IT, and other office-based staff	40,500	46,270	-
Wood trades and interior fit-out	34,160	30,510	-
Bricklayers	4,070	3,830	150
Building envelope specialists	18,990	19,420	-
Painters and decorators	23,930	22,850	-
Plasterers and dry liners	4,570	3,680	200
Roofers	3,850	3,210	-
Floorers	2,160	2,050	180
Glaziers	2,270	2,170	90
Specialist building operatives nec*	6,730	6,510	340
Scaffolders	3,490	3,600	160
Plant operatives	3,440	3,340	80
Plant mechanics/fitters	4,070	3,990	-
Steel erectors/structural	3,310	3,750	50
Labourers nec*	13,170	13,020	-
Electrical trades and installation	27,560	31,160	-
Plumbing and HVAC Trades	22,350	22,140	-
Logistics	5,630	5,120	<50
Civil engineering operatives nec*	7,050	6,870	-
Non–construction operatives	6,540	6,690	-
Civil engineers	7,140	7,590	<50
Other construction professionals and technical staff	21,480	25,090	-
Architects	13,020	14,080	-
Surveyors	11,620	13,920	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. Greater London

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M

Source: ONS, Experian

Construction output in Greater London is forecast to rise at an average rate of 2.5% over the five years to 2016, stronger that the national average of 1.4%, and weaker only than the East of England (2.9%). Growth in new work output is projected to average 2.9% per year, substantially stronger than the average of 1.5% for the repair and maintenance sector. Construction employment in the capital is expected to rise by 6% from 2012's projected level to around 371,270 in 2016. This is also 3% higher than the previous peak in 2008.

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Key findings

Greater London's infrastructure sector is expected to fare well over the forecast period, as there are a number of large projects underway or due to start during the forecast period. Work is ongoing on Crossrail and various station upgrade projects in the capital, and a further part of the Thameslink project, the upgrade of London Bridge station is due to start in 2013.

The private housing sector in London has held up well during the recession, partly due to overseas buyers at the higher end of the market. It is expected to fare well over the forecast period, and output in 2016 could be 65% higher than its previous peak in 2007. Commercial construction output in the capital will be boosted by a number of large office projects, certainly in the shorter term, with work having restarted on the 'Shard of Glass', 'Cheesegrater' and the 'Walkie-Talkie'. As conditions improve in the wider economy, demand for retail and leisure facilities is expected to pick up, boosting commercial construction output.

It will come as no surprise that it is the two public sectors, housing and non-housing, that will fare the worst over the forecast period, as is the case across most of the UK. The capital benefitted strongly from the early waves of the Building Schools for the Future (BSF) programme and the National Affordable Housing Programme (NAHP) and thus these sectors have further to fall than across some other English regions.

Funding levels have been almost halved for the 2011-15 Affordable Housing Programme, compared with the 2008-11 period, although the capital has been allocated 36% of the total funding for new programme, which may provide some boost to output towards the end of the period. That said, the latest figures from the Homes and Communities Agency (HCA) suggest that in the six months to September 2011 there were just 56 affordable housing units started in London, a decline of 98% on the corresponding period of 2010. Thus the short term outlook for the sector is very bleak.

Construction employment in the capital is expected to total 371,270 in 2016, 6% higher than 2012's projected level and 3% above the previous peak in 2008. In absolute terms, the largest increases in construction-specific occupations are for other construction professionals and technical staff (3,610), electrical trades and installation (3,600) and surveyors (2,300). In terms of the percentage of base 2012 employment, surveyors (20%) and other construction professionals and technical staff (17%) are likely to be most in demand.

The ARR for Greater London is 1,790, equivalent to just 0.5% of base 2012 employment. This is the lowest of all the regions and devolved nations, and reflects the high level of flows into the region.

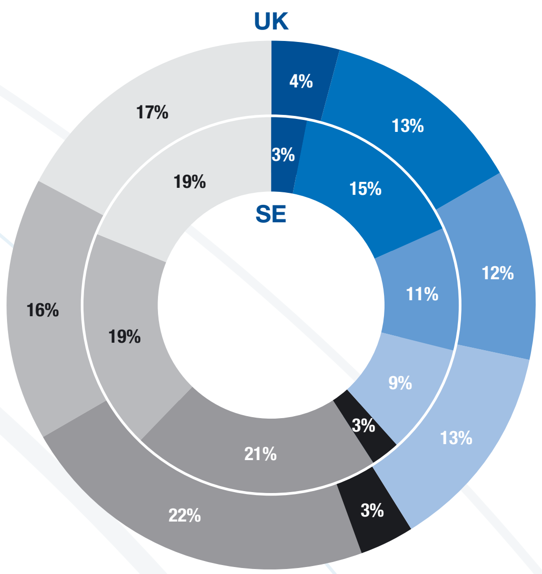
With projects such as Crossrail and Thameslink, infrastructure will rise
on average
5% per year
for the forecast period 2012-2016

South East

Total employment by occupation - South East
Annual recruitment requirement (ARR) by occupation - South East

Occupation	2012	2016	ARR
Senior, executive, and business process managers	21,810	26,700	-
Construction managers	43,910	45,610	-
Non-construction professional, technical, IT, and other office-based staff	55,750	59,570	-
Wood trades and interior fit-out	33,680	35,100	-
Bricklayers	11,080	10,980	-
Building envelope specialists	14,510	16,980	70
Painters and decorators	17,810	18,260	-
Plasterers and dry liners	5,560	5,440	-
Roofers	5,810	6,970	-
Floorers	5,270	4,960	-
Glaziers	3,780	3,180	450
Specialist building operatives nec*	7,190	6,050	220
Scaffolders	2,240	2,180	-
Plant operatives	4,200	3,940	360
Plant mechanics/fitters	3,800	3,820	-
Steel erectors/structural	3,760	3,530	<50
Labourers nec*	10,100	12,070	970
Electrical trades and installation	32,610	39,480	220
Plumbing and HVAC Trades	26,720	26,710	-
Logistics	5,030	6,490	950
Civil engineering operatives nec*	7,470	8,340	610
Non–construction operatives	4,540	5,520	-
Civil engineers	7,080	8,880	410
Other construction professionals and technical staff	32,650	34,850	-
Architects	3,360	3,350	240
Surveyors	9,240	9,180	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. South East

Public housing
Private housing
Infrastructure
Public non-housing
Industrial
Commercial
Housing R&M
Non-housing R&M

Source: ONS, Experian

Construction output in the South East is forecast to rise at an average annual rate of 2.2% over the five years to 2016, weaker only than the East of England and Greater London. It is also stronger than the UK average of 1.4%. New work output is expected to see growth of 2.6% per year on average, compared with just 1.4% for the repair and maintenance (R&M) sector. Construction employment in the region is expected to rise by 7.7% from 2012's projected level to total 408,140 in 2016. This is 5% higher than the previous peak in 2008.

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Key findings

The strong performance of the region is at least partly due to its relatively smaller exposure to the public sector, certainly on the non-housing side. The South East did not benefit from the Building Schools for the Future (BSF) programme as much as other regions and thus its public non-housing sector has less far to fall. It is forecast to decline by 4.2% per year on average over the period, compared with a figure of 9.1% for the UK as a whole.

The public housing sector in the South East, on the other hand, did fare quite well from the 2008-11 National Affordable Housing programme and therefore is likely to see output fall quite sharply in the shorter term. In the six months to September 2011, there were just 23 affordable housing units started in the region, according to statistics from the Homes and Communities Agency (HCA), compared with 2,683 units in the corresponding period of 2010, highlighting the bleak outlook for the sector over the next year or so.

Growth is expected to be strongest in the commercial and private housing sectors, with both benefitting from an improvement in conditions in the wider economy, which should stimulate demand. Credit conditions are also expected to ease, which should make it easier to obtain funding, both on the supply and the demand side. The region's industrial construction sector will also fare well, although this partly reflects a bounce back from the very low levels to which the sector fell to during the recession.

The region's infrastructure sector has seen strong growth in recent years, largely boosted by work gathering pace on M25 widening schemes. However, that is due to finish before the 2012 Olympics and there is nothing of a similar scale to replace this, although work is gathering momentum on the £850m redevelopment of Reading station, which should provide some boost to the sector. Average annual output growth in the South East's infrastructure sector is expected to be weak, but the level of output in the sector in 2016 will still be almost double its average over the 10 years to 2010.

Total construction employment in the South East is projected to total 378,960 in 2012 and will rise in each year of the forecast period to 2016. It is expected to rise at an average rate of 1.4% per year, substantially above the UK figure of 0.6%. In absolute terms, the largest increases are for electrical trades and installation (6,870) and building envelope specialists (2,470). However, in percentage terms, logistics personnel (29%) and civil engineers (25%) are likely to be most in demand.

The South East's ARR is equivalent to 1.2% of 2012 employment, a little weaker than the UK figure of 1.9%.

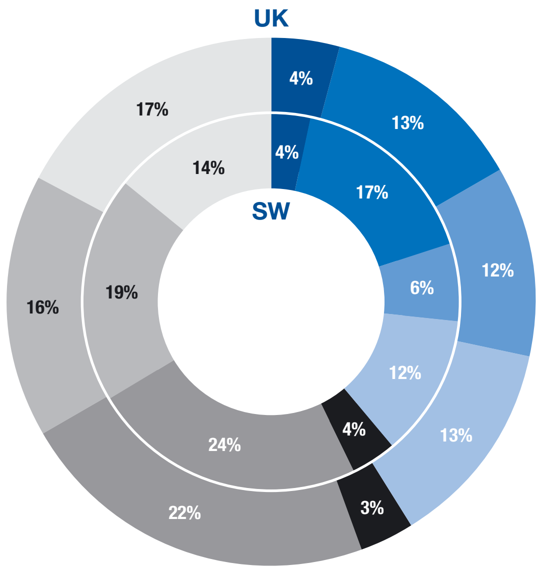
Construction output is **forecast to rise** at an average annual rate of 2.2% from 2012-2016

South West

Total employment by occupation - South West
Annual recruitment requirement (ARR) by occupation - South West

Occupation	2012	2016	ARR
Senior, executive, and business process managers	7,900	8,180	-
Construction managers	20,660	20,970	720
Non-construction professional, technical, IT, and other office-based staff	19,410	21,390	1,860
Wood trades and interior fit-out	18,270	23,990	670
Bricklayers	5,080	5,060	550
Building envelope specialists	9,730	9,410	-
Painters and decorators	9,940	9,890	-
Plasterers and dry liners	4,390	4,430	580
Roofers	3,130	3,310	300
Floorers	3,100	3,900	-
Glaziers	3,060	3,060	210
Specialist building operatives nec*	4,680	4,900	80
Scaffolders	850	790	90
Plant operatives	4,330	4,340	<50
Plant mechanics/fitters	3,750	3,960	180
Steel erectors/structural	2,110	1,860	-
Labourers nec*	5,460	4,600	1,090
Electrical trades and installation	13,470	13,680	190
Plumbing and HVAC Trades	17,160	17,070	-
Logistics	1,700	2,140	170
Civil engineering operatives nec*	3,550	5,040	-
Non–construction operatives	2,550	2,270	-
Civil engineers	5,340	5,800	-
Other construction professionals and technical staff	17,910	19,440	440
Architects	3,980	3,770	-
Surveyors	3,420	3,890	50

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. South West

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing R&M
- Non-housing R&M

Source: ONS, Experian

The construction industry is forecast to expand at an average rate of 2.2% per year over the five years to 2016 in the South West. This is substantially higher than the UK average of 1.4%. New work output is expected to be more buoyant than repair and maintenance, with average growth rates of 2.7% and 1.1%, respectively. Total construction employment in the region is projected to reach 207,140 in 2016, 6% above 2012's expected total but still 19% below 2006's peak.

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Sea City

Key findings

It is the infrastructure sector in the South West that is expected to be the most buoyant over the five years to 2016. Preliminary works have started on the new nuclear power station, Hinkley Point C, although main construction works are not expected to begin until late 2013. The region's infrastructure sector traditionally accounts for a smaller proportion of total construction output than it does nationally, although strong growth is expected to take output in the sector to a record high by 2016.

The private housing sector is also expected to fare well over the forecast period, as easing credit criteria and improving conditions in the wider economy stimulate demand for housing. However, despite growth in each of the five years to 2016, private housing construction output is still only expected to be about 80% of its 2007 peak by 2016.

Public housing construction in the South West has fared well in recent years, boosted by funding allocations under the 2008-11 National Affordable Housing programme. Funding for affordable housing in England for the 2011-15 period has been almost halved, and no region will be immune from these cuts. The latest affordable housing starts figures from the Homes and Communities Agency (HCA) showed that there were just 22 units started in the South West in the six months to September 2011, compared with 1,349 in the corresponding period of 2010. This highlights the bleak outlook for the sector, certainly in the short term.

The region's public non-housing sector is also expected to see output decline in each year, on average, over the forecast period. However, the pace of contraction is expected to be weaker than the national average, partly reflecting a much smaller allocation of funding for the South West under early stages of the Building Schools for the Future (BSF) programme compared with other regions. Thus the sector has less far to fall once work on the few remaining BSF schemes winds down.

Construction employment in the South West is forecast to continue to decline in the short term, returning to growth in 2014 and rising in the remaining years of 2012-16 period. It is expected to rise at an average rate of 0.9%, above the UK figure (0.6%). In absolute terms, the largest construction-specific increases in employment are forecast to be for wood trades and interior fit-out (5,720), other construction professionals and technical staff (1,530) and civil engineering operatives nec* (1,490). In percentage terms civil engineering operatives nec* (42%) and wood trades and interior fit-out (31%) are expected to be the most in demand.

The ARR for the South West is 7,220, the largest of all the regions and devolved nations, and equivalent to 3.7% of base 2012 employment.

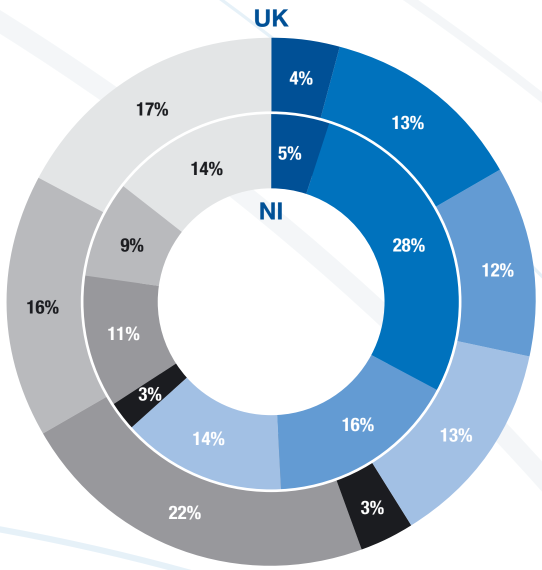
Construction is forecast to expand at an average rate of 2.2% per year in the South West, higher than the UK average of 1.4%

Northern Ireland

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

Occupation	2012	2016	ARR
Senior, executive, and business process managers	1,340	1,340	-
Construction managers	3,090	2,580	-
Non-construction professional, technical, IT, and other office-based staff	5,630	7,190	-
Wood trades and interior fit-out	9,060	7,870	-
Bricklayers	3,690	3,680	150
Building envelope specialists	1,950	2,420	<50
Painters and decorators	2,900	2,670	<50
Plasterers and dry liners	1,980	2,050	70
Roofers	1,350	1,430	90
Floorers	600	690	110
Glaziers	870	1,000	70
Specialist building operatives nec*	1,640	1,640	-
Scaffolders	330	270	70
Plant operatives	2,540	2,640	80
Plant mechanics/fitters	730	740	100
Steel erectors/structural	1,180	1,030	-
Labourers nec*	3,080	3,460	-
Electrical trades and installation	5,240	6,450	-
Plumbing and HVAC Trades	4,140	4,960	170
Logistics	1,100	1,120	130
Civil engineering operatives nec*	480	470	60
Non–construction operatives	620	510	-
Civil engineers	1,630	2,260	<50
Other construction professionals and technical staff	2,110	2,080	<50
Architects	1,020	880	-
Surveyors	690	720	-

NEC* - Not elsewhere classified



Construction industry structure 2010 - UK vs. Northern Ireland

Public housing
Private housing
Infrastructure
Public non-housing
Industrial
Commercial
Housing R&M
Non-housing R&M

Source: ONS, Experian

The construction industry is projected to expand at an annual average rate of 2.1% over the five years to 2016 in Northern Ireland, a stronger rate than for the UK as a whole (1.4%). However, the industry in the province will be recovering from a much steeper peak to trough fall in output than in the UK as a whole (31% compared with 16%). Employment growth in the province is forecast to average 1.3% over the five year period to 2016, with an annual recruitment requirement (ARR) of 1,170, representing 2% of base 2012 employment.

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Titanic

Key findings

The construction industry in Northern Ireland has continued to underperform the UK as a whole in output terms. Output in the UK rose by 8% in 2010, but it fell by 6% in Northern Ireland. While the estimates for 2011 suggest that they have at least moved in the same direction in that year, downwards, there is likely to be significant difference in the rate of decline, with Northern Ireland performing much worse.

One of the factors causing this divergence has been the performance of the public sectors over the past couple of years, much worse in Northern Ireland than the UK as a whole. This suggests that investment under the Northern Ireland Investment Strategy for 2008 to 2011 started to wind down towards the end of the period. Looking forward and comparing the relative levels of funding available in the 2011 to 2015 Investment Strategy with the 2008 to 2011 Strategy, the implication is for further declines, of around 20%, although the falls will not be evenly spread. While expenditure on housing is likely to hold up reasonably well, that on education will fall sharply.

The profile of expenditure on roads initially looked positive. However, uncertainty around the level of funding that the government in the Republic of Ireland can now provide towards the biggest project in the sub-sector, the improvement of the A5 trunk road, means that the prospects are not quite as good as previously expected.

A recovery in private housing output is finally expected to begin in 2012, although activity in the sector will be starting from less than half of what it was in 2007. There are some quite sizeable projects in the pipeline, including ongoing residential developments in the Titanic Quarter, and a £100m scheme on Larne Lough. Other mixed-use developments, such as Sirocco Quays, will have a large residential element. Given that, even in its much reduced state, the private housing sector accounts for over a quarter of Northern Ireland's construction output, its health is of great importance to the industry as a whole.

Construction employment is projected to grow at an annual average rate of 1.3% between 2012 and 2016, a better rate than for the UK as a whole (0.6%). However, as is the case for output, employment in Northern Ireland will be recovering from a much greater fall than in the UK as a whole (28% compared with 10%). This rate of growth will still leave employment in the province in 2016 23% below its 2007 peak. The occupations expected to be most in demand over the next five years are civil engineers and building envelope specialists, both of which are projected to see employment growth in excess of 30%, hopefully pulling back into employment many of those who had lost their jobs during the recession.

The ARR for the five-year period to 2016 for Northern Ireland is estimated at 1,170, with the biggest requirements in absolute terms for plumbing and HVAC trades (170) and bricklayers (150). Northern Ireland's ARR, at 2% of projected 2012 employment, is roughly in line with the UK average (1.9%).

Construction employment is projected to grow at an annual average rate of **1.3% between 2012 and 2016,** a better rate than for the UK as a whole (0.6%)

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CSN EXPLAINED

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 both a UK, national and regional level.

Section 2 provides a glossary to clarify some of the terms that are used in the reports, while section 5.3 has some further notes that relate to the data sources that are used for the various charts and tables. Section 3 also outlines what is meant by the term footprint, when talking about the areas of responsibility that lie with a Sector Skills Council.

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 26 occupational groups into the individual standard occupational classification (SOC) codes that are aggregated to provide the employment and recruitment requirement.

Section 6 then concludes by giving details about the range of LMI reports, the advantages of being a CSN member and the contact details should people be interested in joining.

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1. CSN methodology

Background

The **Construction Skills Network (CSN)**, launched in 2005, represents a radical change in the way that ConstructionSkills collect and produce information on the future employment and training needs of the industry. CITB-ConstructionSkills, CIC and CITB Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction to produce robust Labour Market Intelligence to provide 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 of 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 bi-annually and consist of key regional stakeholders invited from industry, Government, education and other SSCs, all of whom contribute local industry knowledge and views on training, skills, recruitment, qualifications and policy. The National Group also includes representatives from industry, Government, education and other SSCs. This Group convenes once a year and sets the national scene, effectively forming a backdrop for the Observatories.

At the heart of the CSN are a number of forecasting 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, comprised of statisticians and modelling experts.

It is envisaged that the models will evolve over time as new research is published and modelling techniques improve. 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 inter-related 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 ConstructionSkills 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.

Demand is based upon the results of discussion groups comprising industry experts, a view of construction output and a set of 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 make use of a set of specific statistics for each major type of work that 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 years' 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:

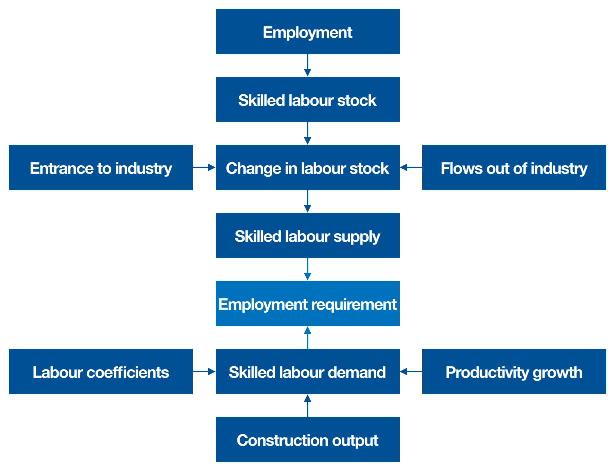
- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

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

Flows into the labour market include:

- transfers in from other industries
- international/domestic IN migration
- inflow from temporarily sick 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.



2. Glossary of terms

- **Building envelope specialists** – any trade involved with the external cladding of the building other than bricklaying, e.g. curtain walling.
- **Demand** – demand 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 Employers Skills Survey, from the Department for Education and Skills. These data sets are translated into labour requirements by trade by using a series of **coefficients** to produce the labour demand that relates to the forecasted 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 years' supply. In essence this is the number of workers of each occupation/trade 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, from around 53,000 households each quarter (>100,000 people).
- **LMI** (Labour Market Intelligence) – data that are quantitative (numerical) or qualitative (insights and perceptions) on workers, employers, wages, conditions of work, etc.
- **Macroeconomics** – the study of an economy on 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 – official statistics on economy, population and society at national UK 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 UK Standard Industrial Classification of Economic Activities produced by the **ONS**.
- **SOC codes** – Standard Occupational Classification codes.
- **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.

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3. Notes and footprints

Notes

1 Except for Northern Ireland, output data for the English regions, Scotland and Wales are 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 to a 2005 constant price basis, i.e. 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 year-on-year 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 45, 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 45.31 and 45.33.

Footprints for Built Environment SSCs

ConstructionSkills is responsible for SIC 45 Construction and part of SIC 74.2 Architectural and Engineering activities and related technical consultancy.

The table summarises the SIC codes (2003) covered by ConstructionSkills:

	SIC Code	Description
ConstructionSkills	45.1	Site preparation
	45.2	Building of complete construction or parts; civil engineering
	45.3	Building installations (except 45.31 and 45.33 which are covered by SummitSkills)
	45.4	Building completion
	45.5	Renting of construction or demolition equipment with operator
	74.2*	Architectual and engineering activities and related technical consultancy

* AssetSkills has a peripheral interest in SIC 74.2

The sector footprints for the other SSCs 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 45.31 Installation of wiring and fittings and SIC 45.33 Plumbing. ConstructionSkills recognises the responsibility of Summit Skills across Standard Industrial Classfications (SIC) 45.31 and 45.33, thus data relating to the building services engineering sector is included here primarily for completeness.

AssetSkills

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.

AssetSkills has a peripheral interest in SIC 74.2.

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.

4. Definitions: types and examples of construction work

Public sector housing - local authorities and housing associations, new towns and government departments

Housing schemes, old people's homes 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, and decommissioning of nuclear power stations, onshore wind farms.

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, police headquarters.

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

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

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

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

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

Private industrial work

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

[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'.

Private commercial work[2]

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.[3]

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.[4]

[2] 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'.

[3] 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.

[4] Except where stated, mixed development schemes are classified to whichever sector provides the majority (i.e. over 50%) of finance.

5. Occupational groups

Occupational group

Description, SOC reference.

Senior, executive and business process managers

Directors and chief executives of major organisations, 1112
Senior officials in local government, 1113
Financial managers and chartered secretaries, 1131
Marketing and sales managers, 1132
Purchasing managers, 1133
Advertising and public relations managers, 1134
Personnel, training and Industrial relations managers, 1135
Office managers, 1152
Civil service executive officers, 4111
Property, housing and land managers, 1231
Information and communication technology managers, 1136
Research and development managers, 1137
Customer care managers, 1142
Storage and warehouse managers, 1162
Security managers, 1174
Natural environment and conservation managers, 1212
Managers and proprietors in other services nec*, 1239

Construction managers

Production, works and maintenance managers, 1121
Managers in construction, 1122
Quality assurance managers, 1141
Transport and distribution managers, 1161
Recycling and refuse disposal managers, 1235
Managers in mining and energy, 1123
Occupational hygienists and safety officers (H&S), 3567
Conservation and environmental protection officers, 3551

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

IT operations technicians, 3131
IT user support technicians, 3132
Estimators, valuers and assessors, 3531
Finance and investment analysts/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 factories, utilities and trading standards, 3565
Software professionals, 2132
IT strategy and planning professionals, 2131
Estate agents, auctioneers, 3544
Solicitors and lawyers, judges and coroners, 2411
Legal professionals nec*, 2419
Chartered and certified accountants, 2421
Management accountants, 2422
Management consultants, actuaries, economists and statisticians, 2423
Receptionists, 4216
Typists, 4217
Sales representatives, 3542
Civil Service administrative officers and assistants, 4112
Local government clerical officers and assistants, 4113
Accounts and wages clerks, book-keepers, other financial clerks, 4122
Filing and other records assistants/clerks, 4131
Stock control clerks, 4133
Database assistants/clerks, 4136
Telephonists, 4141
Communication operators, 4142
General office assistants/clerks, 4150
Personal assistants and other secretaries, 4215
Sales and retail assistants, 7111
Telephone salespersons, 7113
Buyers and purchasing officers (50%), 3541
Marketing associate professionals, 3543
Personnel and industrial relations officers, 3562
Credit controllers, 4121
Market research interviewers, 4137
Company secretaries (excluding qualified chartered secretaries), 4214
Sales related occupations nec*, 7129
Call centre agents/operators, 7211
Customer care occupations, 7212
Elementary office occupations nec*, 9219

Wood trades and interior fit-out

Carpenters and joiners, 5315
Pattern makers, 5493
Paper and wood machine operatives, 8121
Furniture makers, other craft woodworkers, 5492
Labourers in building and woodworking trades (9%), 9121
Construction trades nec* (25%), 5319

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Bricklayers

Bricklayers, masons, 5312

Building envelope specialists

Construction trades nec* (50%), 5319
Labourers in building and woodworking trades (5%), 9121

Painters and decorators

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

Plasterers and dry liners

Plasterers, 5321

Roofers

Roofers, roof tilers and slaters, 5313

Floorers

Floorers and wall tilers, 5322

Glaziers

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

Specialist building operatives nec*

Construction operatives nec* (80%), 8149
Construction trades nec* (5%), 5319
Industrial cleaning process occupations, 9132

Scaffolders

Scaffolders, stagers, riggers, 8141

Plant operatives

Crane drivers, 8221
Plant and machine operatives nec*, 8129
Transport operatives nec*, 8219
Fork–lift truck drivers, 8222
Mobile machine drivers and operatives nec*, 8229
Agricultural machinery drivers, 8223

Plant mechanics/fitters

Metal working production and maintenance fitters, 5223
Motor mechanics, auto engineers, 5231
Labourers in process and plant operations nec*, 9139
Tool makers, tool fitters and markers-out, 5222
Vehicle body builders and repairers, 5232
Auto electricians, 5233
Vehicle spray painters, 5234
Tyre, exhaust and windscreen fitters, 8135

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Steel erectors/structural

Steel erectors, 5311
Welding trades, 5215
Sheet metal workers, 5213
Metal plate workers, shipwrights and riveters, 5214
Construction trades nec* (5%), 5319
Smiths and forge workers, 5211
Moulders, core makers, die casters, 5212
Metal machining setters and setter-operators, 5221

Labourers nec*

Labourers in building and woodworking trades (80%), 9121

Electrical trades and installation

Electricians, electrical fitters, 5241
Electrical/electronic engineers nec*, 5249
Telecommunications engineers, 5242
Lines repairers and cable jointers, 5243
TV, video and audio engineers, 5244
Computer engineers, installation and maintenance, 5245

Plumbing and heating, ventilation, and air conditioning trades

Plumbers and HVAC trades, 5314
Pipe fitters, 5216
Labourers in building and woodworking trades (6%), 9121
Construction trades nec* (5%), 5319

Logistics

Heavy goods vehicle drivers, 8211
Van drivers, 8212
Packers, bottlers, canners, fillers, 9134
Other goods handling and storage occupations nec*, 9149
Buyers and purchasing officers (50%), 3541
Transport and distribution clerks, 4134
Security guards and related occupations, 9241

Civil engineering operatives nec*

Road construction operatives, 8142
Rail construction and maintenance operatives, 8143
Quarry workers and related operatives, 8123
Construction operatives nec* (20%), 8149
Labourers in other construction trades nec*, 9129

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 (vehicle and metal goods), 8132
Routine inspectors and testers, 8133
Assemblers and routine operatives nec*, 8139
Stevedores, dockers and slingers, 9141
Hand craft occupations nec*, 5499
Elementary security occupations nec*, 9249
Cleaners, domestics, 9233
Road sweepers, 9232
Gardeners and groundsmen, 5113
Caretakers, 6232

Civil engineers

Civil engineers, 2121

Other construction professionals and technical staff

Mechanical engineers, 2122
Electrical engineers, 2123
Chemical engineers, 2125
Design and development engineers, 2126
Production and process engineers, 2127
Planning and quality control engineers, 2128
Engineering professional nec*, 2129
Electrical/electronic technicians, 3112
Engineering technicians, 3113
Building and civil engineering technicians, 3114
Science and engineering technicians nec*, 3119
Architectural technologists and town planning technicians, 3121
Draughtspersons, 3122
Quality assurance technicians, 3115
Town planners, 2432
Electronics engineers, 2124
Building inspectors, 3123
Scientific researchers, 2321

Architects

Architects, 2431

Surveyors

Quantity surveyors, 2433
Chartered surveyors (not Quantity surveyors), 2434

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6. CSN website and contact details

The CSN website – http://www.cskills.org/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 research reports such as the ‘2020Vision’ and ‘Closer look at Greater London’ are also freely available.

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 into the workforce.

The website also contains further information about:

- how the CSN works
- the CSN Model approach
- how the Model can be used to explore scenarios
- CSN team contact information
- access to related ConstructionSkills research
- details for those interested in becoming members of the network.

The CSN website can be found at:
http://www.cskills.org/csn

CSN members area

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, which play a vital role in being able to feed back observations, knowledge and insight on 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
- access sub-regional LMI reports
- 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 joining the CSN as a member, please contact us at:
csn@cskills.org

For more information about the
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0344 994 4400
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http://www.cskills.org/contact-us/offices.aspx

Cskills website
http://www.cskills.org/

CSN webpage
http://www.cskills.org/supportbusiness/businessinformation/csn/index.aspx

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Alliance Sector Skills Councils

CITB-ConstructionSkills, CIC and CITB-ConstructionSkills Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction. (CITB-ConstructionSkills Registered Charity Number 264289)