citb.co.uk

In association with Experian

# Construction Skills Network

## North West 2014-2018

Labour Market Intelligence

CITB is 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.

# Contents


1 Summary and key findings ..... 4
2 The outlook for construction in the North West ..... 6
3 Construction employment forecasts for the North West ..... 12
4 Comparisons across the UK ..... 14


## Tables and charts


1 Annual average construction output growth 2014-2018 ..... 4
2 Regional comparison 2014-2018 ..... 5
3 Construction output 1996-2012 ..... 6
4 Construction industry structure 2012 – UK vs. North West ..... 6
5 Economic structure ..... 7
6 Economic indicators ..... 7
7 New construction orders growth 1996-2012 ..... 8
8 New work construction orders ..... 8
9 Construction output 2014-2015 ..... 9
10 Annual average construction output growth 2014-2015 ..... 9
11 Annual average construction output growth 2014-2018 ..... 10
12 Construction output 2014-2018 ..... 11
13 Total employment by occupation ..... 12
14 Annual recruitment requirement by occupation ..... 13
15 Annual average output growth by region ..... 15
16 Annual recruitment requirement by region ..... 15

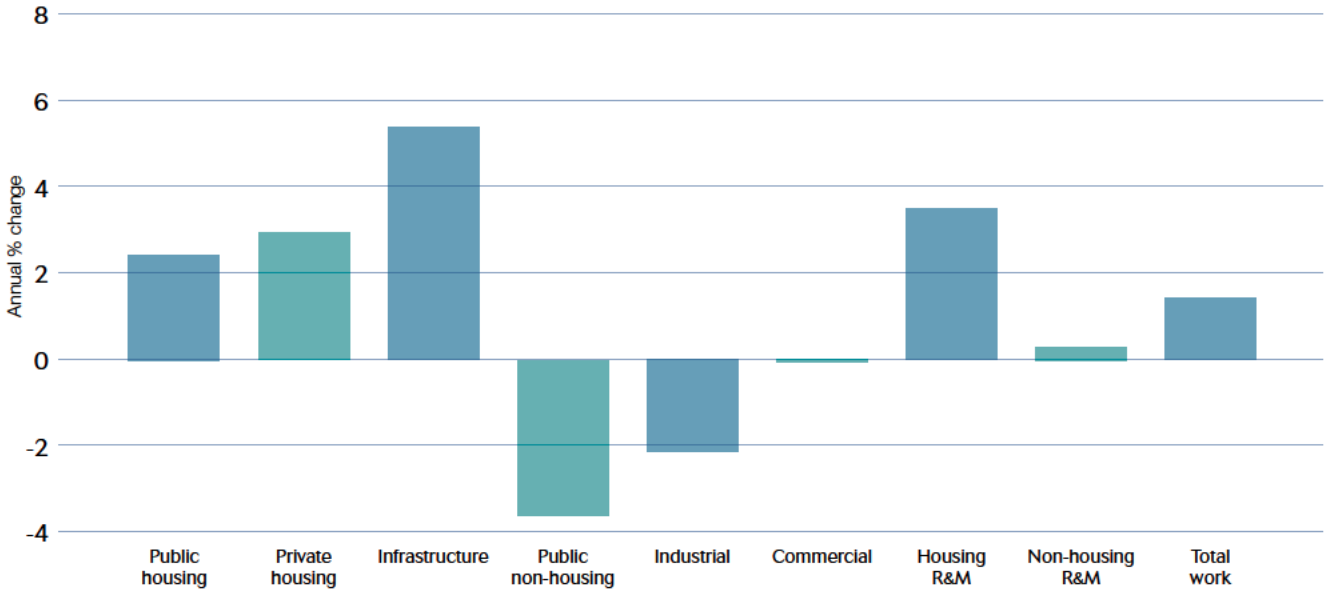

## CSN explained


1 CSN methodology ..... 17
2 Glossary of terms ..... 18
3 Notes and footprints ..... 19
4 Definitions: types and examples of construction work ..... 20
5 Occupational groups ..... 22
6 CSN website and contact details ..... 25

# 1 Summary – North West

The North West is projected to see an annual average increase of 1.3% in construction output over the forecast period, faring worse than the UK as a whole, where annual average growth of 2.2% is predicted. Construction employment is likely to be around 273,890 in 2018, 4% higher than in 2014. The region accounts for 8.2% of the total UK annual recruitment requirement (ARR) and it represents 1.1% of total projected base 2014 employment in the North West, which is lower than the UK figure of 1.5%.

**Annual average construction output growth 2014-2018 – North West**




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

Over the five years to 2018, construction output in the North West is forecast to increase by an average rate of 1.3% per year

## 1.1 Key findings

The best-performing sector is predicted to be infrastructure with annual average growth of 5.3% over the next five years. Over the short term, projects such as the new Mersey Gateway bridge and the Carrington power station should keep the sector buoyant. Work is projected to commence on the new Moorside nuclear power station by 2018, which is likely to lead to strong output growth in that year.

The private housing market is forecast to experience yearly increases of 2.9% between 2014 and 2018. However, the expansion of the sector is expected to be much stronger in the short term when compared with the latter end of the forecast period, due to the Government's Help to Buy scheme.

The region is still suffering from the after-effects of the cancelled Building Schools for the Future (BSF) programme and that, combined with ongoing financial constraints, is likely to lead to an annual average fall of 3.6% in public non-housing output over the next five years. However, the market is expected to turn around by 2017.

The commercial sector is likely to experience flat annual average growth over the five years to 2018. However, the improvements in the region's economy are likely to provide more of an incentive for new development work. As a result, the market will begin to see a turnaround in 2016. However, even with good growth in the second half of the forecast period, output in 2018 is still projected to be only 54% of its 2007 peak.

Of all regions and devolved nations, the North West is expected to see one of the slowest rates of average annual growth in total construction output during the 2014 and 2018 period.

Overall construction employment in the region is forecast to see annual average increases of 0.8% per annum over the next five years. The strongest increases in employment are projected for the plant trades, with annual average growth of 5.6% for plant mechanics/fitters and 3.6% for plant operatives.

The region's ARR, at 2,970, represents 1.1% of total projected base 2014 employment, lower than the UK average (1.5%). The largest absolute requirement is for electrical trades and installation (510) but, as a share of 2014 base employment, the civil engineering operatives nec occupation will be the most sought after, at 10%. Plant mechanics/fitters (9%), logistics (8%), glaziers (5%) and bricklayers (5%) also have relatively high ARRs.

**Regional comparison 2014-2018**

| | Annual average % change in output | Change in total employment | Total ARR |
|---|---|---|---|
| North East | 2.4% | 2,660 | 2,680 |
| Yorkshire and Humber | 2.2% | 8,590 | 3,170 |
| East Midlands | 1.1% | 5,910 | 1,980 |
| East of England | 3.0% | 24,220 | 5,150 |
| Greater London | 2.0% | 27,490 | 1,290 |
| South East | 2.9% | 28,900 | 1,600 |
| South West | 3.5% | 16,700 | 6,370 |
| Wales | 3.4% | 9,490 | 3,570 |
| West Midlands | 0.8% | -2,090 | 380 |
| Northern Ireland | 2.3% | 3,400 | 1,280 |
| North West | 1.3% | 10,300 | 2,970 |
| Scotland | 2.0% | 12,240 | 5,960 |
| UK | 2.2% | 147,810 | 36,400 |

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

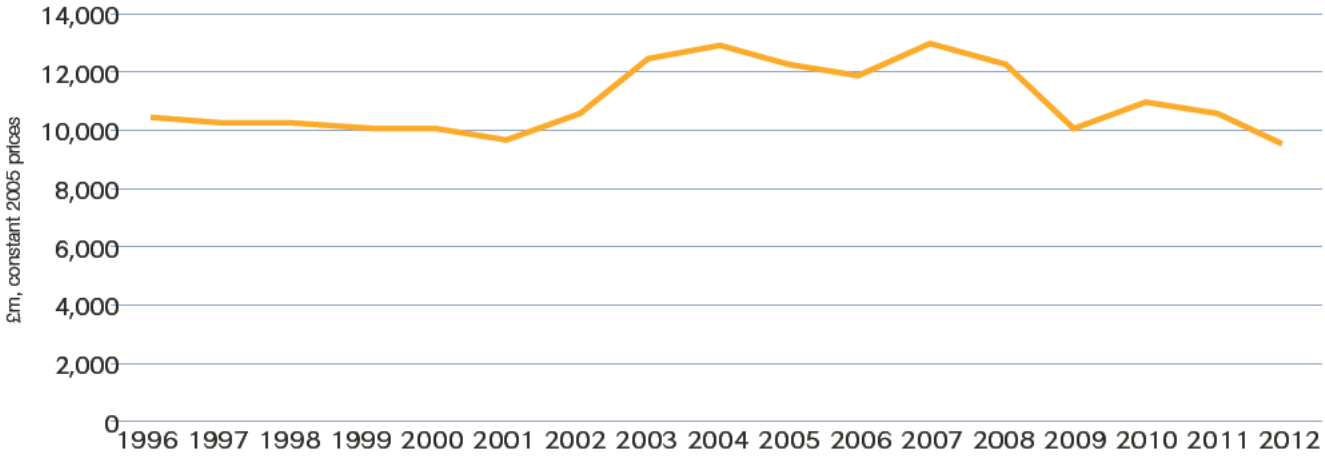
# 2 The outlook for construction in the North West

## 2.1 Construction output in the North West – overview

After a fall of 3% in 2011, the region's total construction output declined by a further 10% in 2012 – to £9.4bn at 2005 prices. Whilst the new work sector saw a decrease of 15% to £5.8bn, the repair and maintenance (R&M) sector registered a much smaller fall of 1%, to £3.6bn.

Private housing was the only sector to experience a rise in activity (of 2%) in 2012, but this came after five consecutive years of declining output. The public non-housing sector saw a decline of 26%. The region was one of the main beneficiaries of the early stages of the BSF programme, so it was inevitable that output would fall sharply once projects from the now-cancelled programme started to complete. Infrastructure activity also declined sharply in 2012, to just 55% of its 2003 peak.

**Construction output – North West 1996-2012**



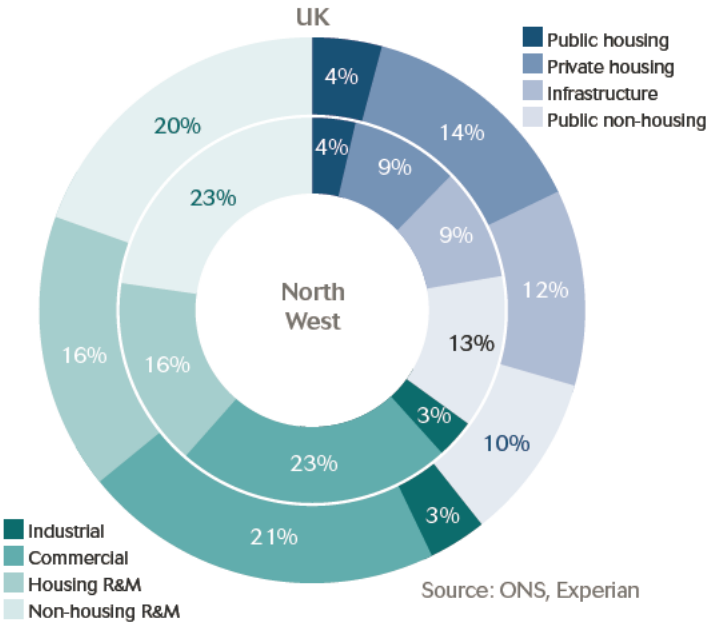

Source: ONS
ref. CSN Explained, Section 3, Note 1

## 2.2 Industry structure

The diagram, Construction industry structure 2012 – UK vs. North West, illustrates the sector breakdown of construction in the North West compared to that in the UK as a whole. The percentages for each sector illustrate the proportion of total output accounted for by each sector.

The region's new work sector (61%) as a proportion of total output is smaller than that of the UK as a whole (64%). Nevertheless, the structure of the North West construction market is broadly similar to the UK as a whole, the main differences being proportionally smaller private housing (9% vs. 14%) and infrastructure (9% vs. 12%) and proportionally larger public non-housing (13% vs. 10%) and non-housing R&M (23% vs. 20%) sectors.

**Construction industry structure 2012**
**UK vs. North West**




Source: ONS, Experian

## 2.3 Economic overview

The expected performance of a regional or national economy over the forecast period (2014–2018) provides an indication of the construction sectors in which demand is likely to be strongest.

## 2.4 Economic structure

In 2012, Gross Value Added (GVA) in the North West edged up by 0.6% to £122.2bn in 2010 prices. As a share of the UK, the region accounted for 9.1% of GVA in 2012.

Professional and other private services accounted for the greatest share of the region's GVA at 23%, whilst public services came in second at 19%. The manufacturing sector and wholesale and retail were ranked third and fourth respectively. Whilst there were output increases in public services (2.1%) and wholesale and retail (0.7%), marginal falls were experienced in manufacturing (-0.3%) and professional and other private services (-0.1%).

The strongest growth was seen in the information and communication sector (10.4%) in 2012, but this sector only accounted for about 6% of output in the region in that year, although it has been growing fast.

**Economic structure – North West (£ billion, 2010 prices)**

| Selected sectors | Actual | Forecast *Annual % change, real terms* | | | | | |
|---|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Public services | 23.8 | -1.1 | 0.7 | 0.8 | 0.8 | 1.0 | 1.4 |
| Professional and other private services | 27.9 | 4.3 | 0.7 | 0.9 | 1.7 | 1.9 | 2.0 |
| Manufacturing | 20.1 | 1.9 | 2.3 | 1.4 | 1.2 | 0.9 | 0.8 |
| Wholesale and retail | 13.8 | 3.9 | 2.6 | 2.4 | 2.4 | 2.1 | 2.0 |
| Information and communication | 7.1 | 3.7 | 3.5 | 3.3 | 3.5 | 3.1 | 2.9 |
| Total Gross Value Added (GVA) | 122.2 | 1.1 | 1.6 | 1.7 | 1.9 | 1.8 | 1.8 |

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

## 2.5 Forward looking economic indicators

GVA in the North West is projected to grow at an annual average rate of 1.8% over the 2014 to 2018 period, more slowly than the UK average of 2%.

Professional and other private services, the biggest sector, is forecast to see annual average growth of 1.4%, while public services, the second largest sector, is likely to see only meagre growth of 0.9% a year on average. That the public sector will only experience a small rise should come as no surprise, given the current financial constraints. Manufacturing is projected to register an expansion of 1.3% a year over the next five years, while the corresponding figure for wholesale and retail is 2.3%.

In 2013 real household disposable incomes (RHDI) are estimated to have declined by 0.7%. However, as the economy begins to see more of a sustained recovery and the employment situation in the region begins to improve, RHDI growth should begin to pick up, eventually reaching 1.9% in 2018, which would be the highest yearly growth rate since 2004. With this rise, household spending also sees an upward trend over the five years to 2018.

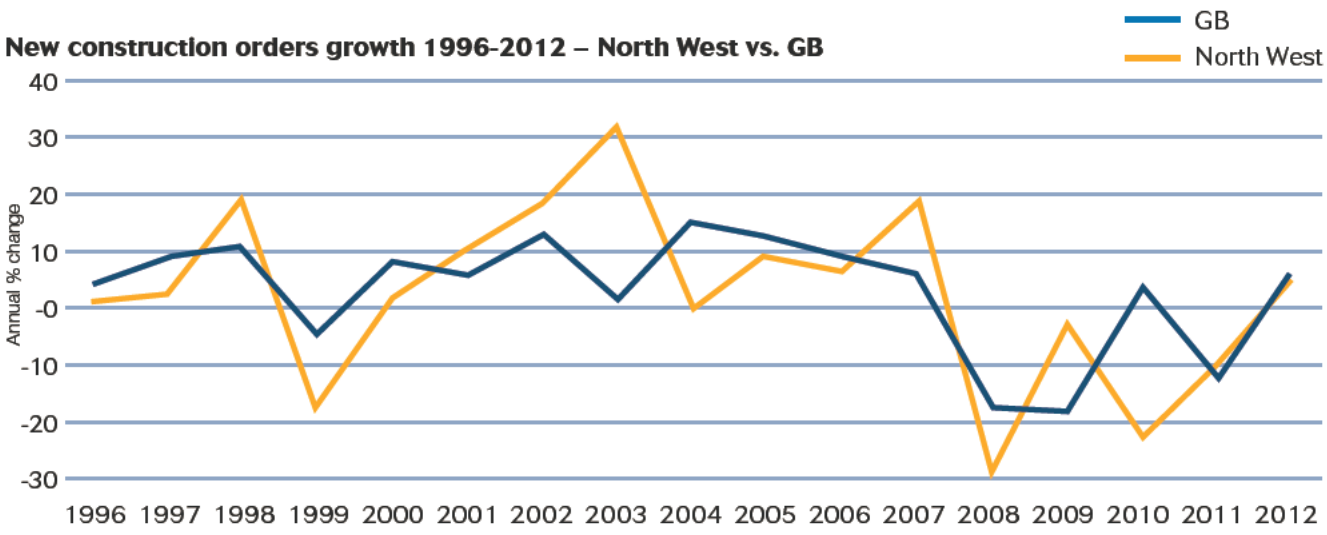
The working age population stood at 4.295 million in 2012 and is likely to increase as a share of total population between the 2014 and 2018 period. The region's house prices are predicted to rise by 2.5% in 2018, lower than the projected UK rise of 3.2%.

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

| | Actual | Forecast *Annual % change, real terms* | | | | | |
|---|---|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Real household disposable income | 100 | -0.7 | 1.2 | 1.4 | 1.6 | 1.7 | 1.9 |
| Household spending | 103 | 1.1 | 1.1 | 1.5 | 1.8 | 1.9 | 2.0 |
| Working age population (000s and as % of all) | 4,295 | 61.5 | 61.8 | 62.1 | 62.3 | 62.4 | 62.4 |
| House prices (£) | 159,291 | 0.3 | 1.4 | 1.7 | 2.1 | 2.2 | 2.5 |
| LFS unemployment (millions) | 0.31 | -8.86 | -2.28 | -7.78 | -4.27 | -3.84 | -4.88 |

Source: ONS, DCLG, Experian

**New construction orders growth 1996-2012 – North West vs. GB**




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

## 2.6 New construction orders – overview

After four consecutive years of falls, total construction orders in the region rose by 4% to £4.5bn in 2012. However, orders were only half the level of the 2007 peak.

In 2012, infrastructure orders experienced the greatest rise of 63%, to £1.1bn, although they remained 40% below their 2009 peak. The industrial sector also saw a large rise in orders, of 53% to £284m. The private housing (£797m) and commercial (£1.3bn) sectors also grew, by 7% and 1% respectively. The greatest decline, of 32% to £822m, was seen for the public non-housing sector, the lowest level since 2002 and only 42% of its 2009 peak. Public housing orders registered a small decrease, of 1%, to £253m.

## 2.7 New construction orders – current situation

New orders in the first half of 2013 were up by 61% to £3.1bn when compared to the corresponding period in the preceding year.

Over the same timeframe, all sectors except the commercial sector saw an increase in orders, with the public non-housing sector registering the greatest rise, of 115% to £967m. Infrastructure orders also reported a large jump of 109% to £641m. These magnitudes of movement demonstrate how volatile new orders can be at the sector level within regions, when a single large project can make a substantial difference to the overall figures.

## 2.8 Construction output – short-term forecasts (2014–2015)

Regional Office for National Statistics (ONS) output statistics are published in current prices and are thus inclusive of any inflationary effect. At the time of writing, regional ONS construction output statistics were only available for the first two quarters of 2013.

In the first six months of 2013, total construction output in the region went up by 9% to £5.8bn, compared with the corresponding period of 2012. All sectors except the public non-housing sector saw a rise in activity, with the industrial sector seeing the greatest expansion, of

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

| | Actual | Annual % change | | | | |
|---|---|---|---|---|---|---|
| | 2012 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Public housing | 253 | -43.0 | 18.2 | -28.9 | 31.4 | -0.8 |
| Private housing | 797 | -46.0 | -43.4 | 3.9 | 32.3 | 7.4 |
| Infrastructure | 1,056 | 58.5 | 61.7 | -55.9 | -16.4 | 63.5 |
| Public non-housing | 822 | 21.5 | 31.4 | -20.4 | -22.1 | -31.8 |
| Industrial | 284 | 0.9 | -49.7 | -19.6 | -32.4 | 52.7 |
| Commercial | 1,262 | -54.0 | -29.3 | 2.4 | -12.6 | 0.8 |
| Total new work | 4,474 | -29.2 | -2.4 | -23.5 | -10.4 | 4.5 |

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

**Construction output 2014-2015 – North West (£ million, 2005 prices)**

| | Actual | Forecast *Annual % change* | | | Annual average |
|---|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2015 | 2014-15 |
| Public housing | 333 | 11% | -2% | 3% | 0.5% |
| Private housing | 886 | 13% | 7% | 4% | 5.5% |
| Infrastructure | 870 | 16% | 8% | -1% | 3.7% |
| Public non-housing | 1,205 | -22% | -15% | -2% | -8.8% |
| Industrial | 319 | 53% | 8% | -7% | 0.4% |
| Commercial | 2,161 | -1% | -11% | -1% | -5.7% |
| New work | 5,775 | 3% | -3% | 0% | -1.7% |
| Housing R&M | 1,475 | 8% | 5% | 5% | 5.0% |
| Non-housing R&M | 2,142 | -2% | 1% | 1% | 1.1% |
| Total R&M | 3,618 | 2% | 3% | 3% | 2.8% |
| Total work | 9,392 | 3% | -1% | 1% | 0.1% |

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

116% to £365m, although this was bouncing back from a very low base. The weakest increase in output, of 7%, was experienced by the commercial sector, taking its half yearly total to £1.2bn.

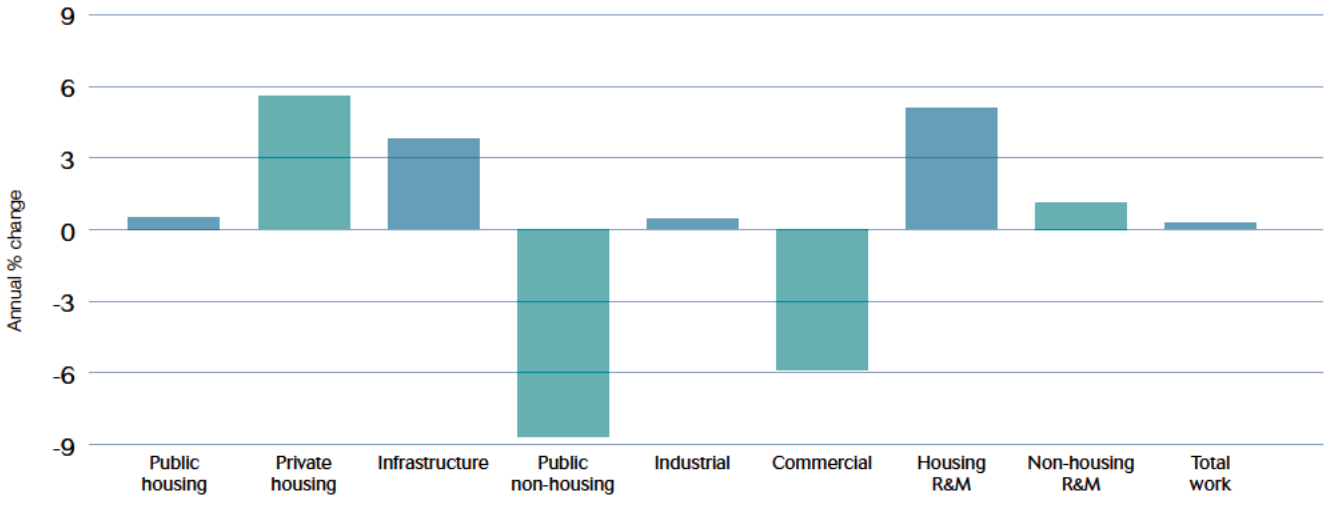
Moving on to the table and chart, over the next two years total construction output in the North West is expected to be flat. The new work sector is projected to see an annual average decrease of 1.7%, while the R&M sector is forecast to experience an expansion of 2.8% a year.

An annual average output rise of 5.5% per year between 2014 and 2015 is estimated for the private housing sector. The North West is thought to have experienced double digit growth last year due in part to the Help to Buy Scheme. However, the increase in output is likely to be more modest over the following two years. In Salford, a four-year, £430m scheme began in September 2012, which will include the construction of 1,600 new homes, modernisation of a further 1,250 homes, new sports pitches and new community green spaces.

Moderate yearly growth of 3.7% is projected for the infrastructure sector for the next two years. In the energy sub-sector, work has started on an 880 MW power station in Carrington, Greater Manchester, with an estimated value of £600m and due to start operation in early 2016. To ensure minimal impact to the environment and maximum energy efficiency, the plant is being built using the latest natural gas combined cycle technology. Work on other sizeable projects, such as the Mersey Gateway, should also provide the sector with growth over the short term.

With regard to the public housing sector, the Homes and Communities Agency's Quarterly Survey of Private Registered Providers 2013/14 for the second quarter of 2013 shows that just over 90% of social housing providers that responded believe that their current debt facilities are sufficient for more than a year. These providers have indicated that they have enough funding in place to deliver on programmes scheduled to start by April 2015. This positive news should help to keep output at its current high level over the short term.

**Annual average construction output growth 2014-2015 – North West**




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

The best performing sector is predicted to be infrastructure with annual average growth of 5.3% over the next five years

In the commercial sector, the current value of projects that are either in the pipeline or about to start is unlikely to lead to an increase in output for the sector over the short term. As a result, yearly average falls of 5.7% are predicted for the next two years. One scheme which is due to start in Liverpool in 2014 is the £150m development known as Project Jennifer. Plans include homes, health facilities, and an indoor and outdoor market as well as the city's largest Sainsbury's store. There are also plans for a petrol station and parking. This mixed-use development is due to be completed in autumn 2016.

## 2.9 Construction output – long-term forecasts (2014–2018)

Over the five years to 2018, construction output in the North West is forecast to increase by an average rate of 1.3% per year. Whilst new work output is expected to rise at an average annual rate of 1.1%, the R&M sector will fare slightly better, with growth averaging 1.6% per year over the period.

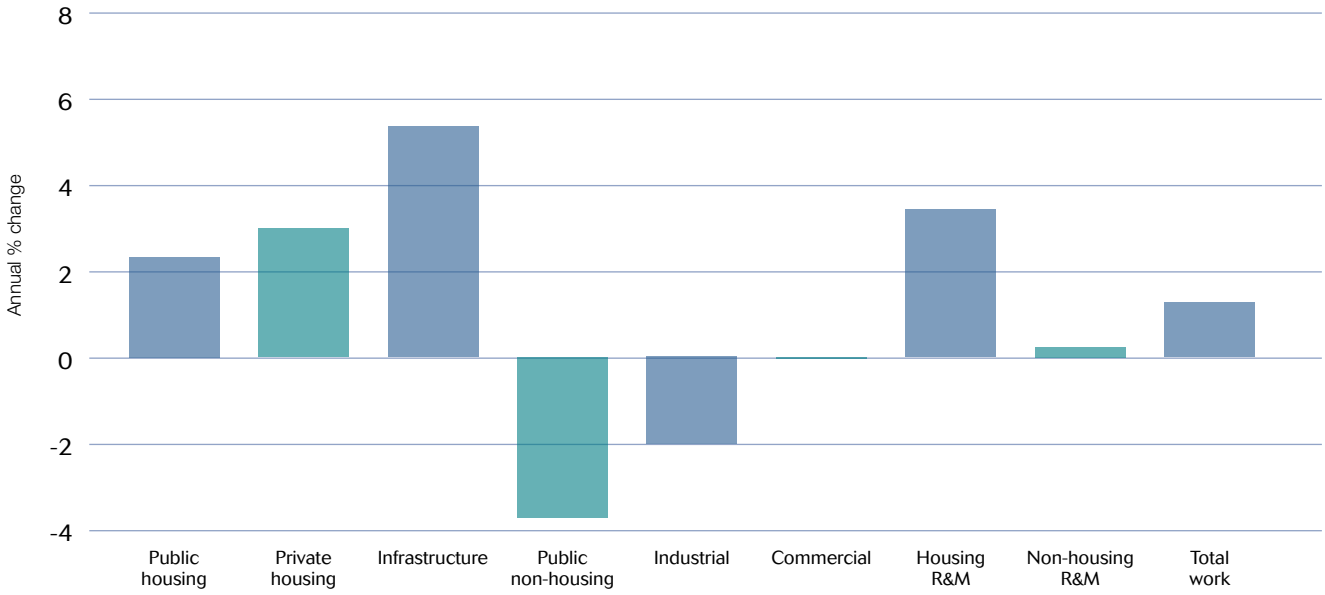
The largest annual average growth of 5.3% is forecast to be seen in the infrastructure sector between 2014 and 2018. Output is likely to register growth of 8% in 2018 as works start on the nuclear new build at Moorside. Elsewhere, United Utilities has set out plans for its Annual Management Programme (AMP) framework agreement, which runs from 2015-2020. It is thought the company will spend around £3bn on capital water and sewerage works over the period.

Over the next five years, the private and public housing sectors are projected to experience annual average growth of 2.9% and 2.3% respectively. The latter sector is expected to perform slightly better than in the UK as a whole (2.2%) and, by 2018, it will have reached a record high.

The public non-housing sector is likely to see the greatest annual average falls, of 3.6% over the five years to 2018. However, the decline tapers towards the middle of the forecast period and some growth in the sector is expected in 2017 and 2018. The sector has been slightly boosted in the short term by the likely reclassification of work on the Royal Liverpool Hospital from the private to the public sector, as it is now largely publicly funded. The Royal Liverpool and Broadgreen University Hospitals NHS Trust is making a £110m contribution to the project and £100m is now being made available by the Department for Health. Financial close on the project is likely to be reached in January 2014 and work is expected to start soon after.

Commercial construction output is expected to register flat growth on an annual average basis over the next five years. However, the sustained improvement in the economy is likely to provide more impetus for new development work. As a result, the market begins to see a turnaround in 2016, and by 2018 the outturn for the sector is projected to rise by 6%. It is likely that over the forecast period work on individual projects within the £4.5bn regeneration of Liverpool Docks and the £5.5bn programme at Wirral Waters will speed up as their financial viability improves.

**Annual average construction output growth 2014-2018 – North West**




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

**Construction output 2014-2018 – North West (£ million, 2005 prices)**

| | Estimate | Forecast *Annual % change* | | | | | Annual average |
|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2014-18 |
| Public housing | 370 | -2% | 3% | 2% | 3% | 6% | 2.3% |
| Private housing | 1,004 | 7% | 4% | 2% | 0% | 1% | 2.9% |
| Infrastructure | 1,010 | 8% | -1% | 4% | 7% | 8% | 5.3% |
| Public non-housing | 937 | -15% | -2% | -6% | 2% | 4% | -3.6% |
| Industrial | 486 | 8% | -7% | 2% | -1% | -2% | -2.0% |
| Commercial | 2,140 | -11% | -1% | 1% | 5% | 6% | 0.0% |
| New work | 5,947 | -3% | 0% | 1% | 3% | 5% | 1.1% |
| Housing R&M | 1,590 | 5% | 5% | 5% | 1% | 0% | 3.4% |
| Non-housing R&M | 2,109 | 1% | 1% | 1% | 0% | -2% | 0.2% |
| R&M | 3,699 | 3% | 3% | 3% | 1% | -1% | 1.6% |
| Total work | 9,647 | -1% | 1% | 2% | 2% | 2% | 1.3% |

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

## 2.10 Beyond 2018

According to the Nuclear Industry Association's timeline, main construction works at Moorside nuclear power station are now likely to start in 2018. The construction and commissioning of this work is likely to continue until 2025, before the plant becomes operational in 2026.

Nuclear decommissioning work at Sellafield will continue long into the 2020s, and a site still needs to be found for the storage of low-radioactive waste from the UK's nuclear facilities, although this may not now be in the North West.

# 3 Construction employment forecasts for the North West

## 3.1 Total construction employment forecasts by occupation

The table presents actual construction employment (SICs 41-43, 71.1, and 74.9) in the North West for 2012, the estimated total employment across 28 occupational categories in 2013 and forecasts for the industry for 2014 to 2018. A full breakdown of occupational groups is provided in Section 5 of CSN Explained.

Average construction output growth in the region (1.3%) is lower when compared to the UK as a whole (2.2%). As a result, employment growth is also lower in the North West, at an annual average of 0.8%, compared with 1.2% for the UK as whole.

In 2012, the largest construction trade occupation in the region was wood trades and interior fit-out, which accounted for 10% of the total workforce. This is the same profile as the UK as a whole, where wood trades and interior fit-out is also the biggest trade occupation.

The majority of the occupations are forecast to see employment rise over the five year period to 2018, with plant mechanics/fitters likely to experience the greatest annual average increase, of 5.6%. On the professionals side, surveyors are projected to see 2.1% annual average growth in employment over the five years to 2018, and architects will increase by 1.4% a year on average over the same period.

## 3.2 Annual recruitment requirements (ARR) by occupation

The ARR is a gross requirement that takes into account workforce flows into and out of construction, due to factors such as movements between industries, migration, sickness and retirement. However, due to

**Total employment by occupation – North West**

| | Actual | Estimate | Forecast | |
|---|---|---|---|---|
| | 2012 | 2013 | 2014 | 2018 |
| Senior, executive and business process managers | 16,570 | 17,410 | 17,480 | 18,050 |
| Construction project managers | 4,270 | 4,660 | 4,730 | 4,960 |
| Other construction process managers | 20,460 | 19,470 | 20,140 | 22,310 |
| Non-construction professional, technical, IT and other office-based staff | 34,850 | 33,430 | 33,240 | 33,130 |
| Construction trades supervisors | 4,000 | 3,570 | 3,500 | 3,230 |
| Wood trades and interior fit-out | 26,610 | 28,520 | 28,780 | 29,930 |
| Bricklayers | 7,910 | 7,070 | 6,970 | 6,810 |
| Building envelope specialists | 6,660 | 7,280 | 7,220 | 7,140 |
| Painters and decorators | 12,100 | 10,810 | 10,850 | 11,120 |
| Plasterers | 5,850 | 5,230 | 5,120 | 4,870 |
| Roofers | 6,300 | 5,630 | 5,710 | 6,010 |
| Floorers | 3,580 | 3,660 | 3,730 | 3,950 |
| Glaziers | 2,640 | 2,880 | 2,930 | 3,120 |
| Specialist building operatives nec* | 5,120 | 4,780 | 4,670 | 4,380 |
| Scaffolders | 2,930 | 3,200 | 3,330 | 3,730 |
| Plant operatives | 5,040 | 4,920 | 5,110 | 5,860 |
| Plant mechanics/fitters | 4,760 | 5,200 | 5,490 | 6,840 |
| Steel erectors/structural fabrication | 1,900 | 1,980 | 1,940 | 1,800 |
| Labourers nec* | 13,400 | 12,830 | 12,680 | 12,180 |
| Electrical trades and installation | 23,220 | 21,210 | 21,170 | 21,390 |
| Plumbing and HVAC Trades | 16,860 | 15,060 | 15,270 | 15,590 |
| Logistics | 2,190 | 2,340 | 2,290 | 2,200 |
| Civil engineering operatives nec* | 1,150 | 1,250 | 1,280 | 1,450 |
| Non-construction operatives | 4,500 | 4,020 | 3,930 | 3,610 |
| Civil engineers | 3,920 | 3,920 | 3,910 | 3,910 |
| Other construction professionals and technical staff | 23,050 | 23,080 | 23,540 | 25,170 |
| Architects | 3,890 | 4,250 | 4,320 | 4,550 |
| Surveyors | 5,700 | 5,940 | 6,080 | 6,600 |
| Total (SIC 41-43) | 232,870 | 226,410 | 227,560 | 233,660 |
| Total (SIC 41-43, 71.1, 74.9) | 269,430 | 263,600 | 265,410 | 273,890 |

Source: ONS, CSN, Experian. Ref. CSN Explained, Section 3, Notes 5 and 6

*Not elsewhere classified

the inconsistency and coverage of supply data, these flows do not include movements into the industry from training. Therefore, the ARR provides an indication of the number of new employees that would need to be recruited into construction each year in order to realise forecast output.

The ARR for the 28 occupations within the North West's construction industry is illustrated in the table. The figure of 2,970 is indicative of the average requirements per year for the industry, as based on the output forecasts for the region. This takes into account 'churn' i.e. the flows into and out of the industry, excluding training flows.

In absolute terms the largest requirement is for electrical trades and installation (510), equivalent to 17% of the region's total ARR. However, as a proportion of base 2014 employment, the civil engineering operatives nec* occupation is likely to be most in demand (10%). The region's ARR of 2,970 is equivalent to 1.1% of base 2014 employment, lower than the UK average (1.5%).

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

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

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

**Annual recruitment requirement by occupation – North West**

| | 2014-2018 |
|---|---|
| Senior, executive and business process managers | - |
| Construction project managers | - |
| Other construction process managers | - |
| Non-construction professional, technical, IT and other office-based staff | - |
| Construction trades supervisors | - |
| Wood trades and interior fit-out | 180 |
| Bricklayers | 360 |
| Building envelope specialists | - |
| Painters and decorators | 460 |
| Plasterers | 270 |
| Roofers | 90 |
| Floorers | 80 |
| Glaziers | 150 |
| Specialist building operatives nec* | - |
| Scaffolders | - |
| Plant operatives | 70 |
| Plant mechanics/fitters | 470 |
| Steel erectors/structural fabrication | - |
| Labourers nec* | - |
| Electrical trades and installation | 510 |
| Plumbing and HVAC Trades | - |
| Logistics | 180 |
| Civil engineering operatives nec* | 130 |
| Non-construction operatives | - |
| Civil engineers | - |
| Other construction professionals and technical staff | - |
| Architects | <50 |
| Surveyors | - |
| Total (SIC 41-43) | 2,950 |
| Total (SIC 41-43, 71.1, 74.9) | 2,970 |

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

# 4 Comparisons across the UK

The strongest growth in construction output is expected in the South West and Wales, as both will benefit from new nuclear build projects during the forecast period. Even though main construction works at Wylfa, Wales, are not due to start until mid-2017 at the earliest, this is a very large project in a relatively small market, making its impact on overall construction output similar to Hinkley Point in the South West, despite the latter starting three years earlier.

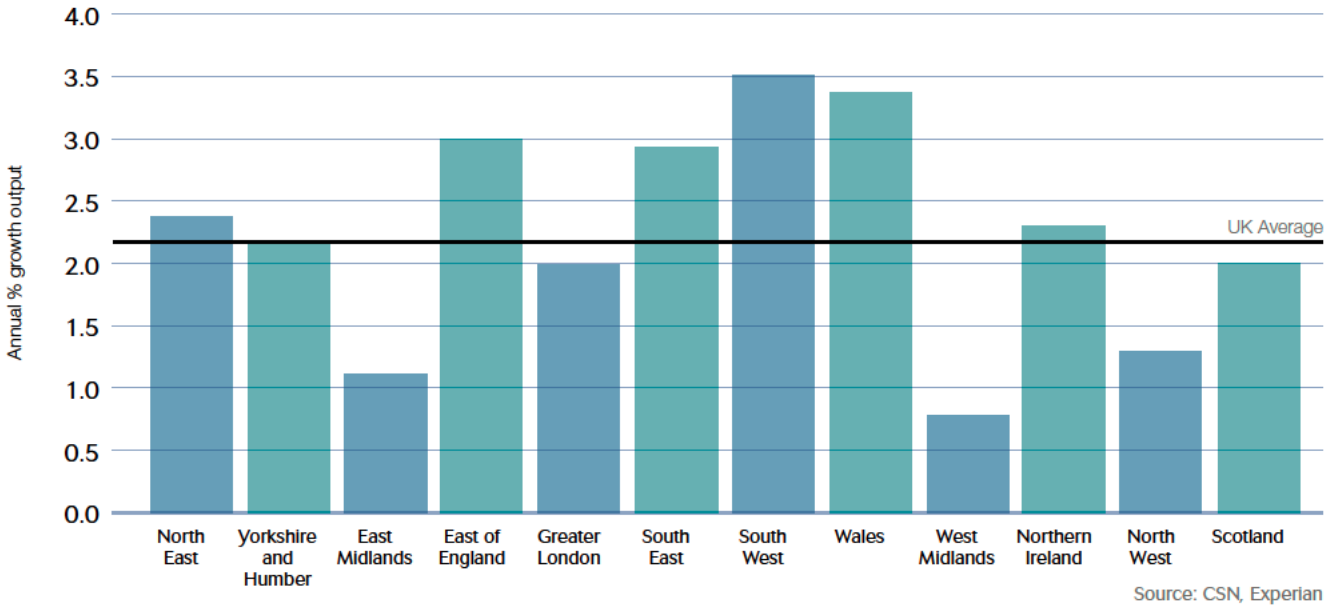
Once the South West and Wales are stripped away, the south east corner of England is again due to do rather better than the rest of the UK. The South East benefits disproportionally from growth in the private housing sector which takes a larger share of output in the region than the UK average (18% vs. 14%). This combined with a higher than average growth rate (5.7% vs. 4.6%) helps boost overall expansion in the South East's construction sector (with an annual average growth of 2.9% to 2018). The East of England has a slightly stronger average growth rate of 3% a year. The main reasons for the region's higher than average increase in construction output are good growth in private housing, combined with higher than average infrastructure expansion when work starts on the site of the Sizewell C new nuclear project at the beginning of 2018. In addition, strong growth in industrial construction is linked to the development of distribution and logistics facilities around London Gateway Port.

Interestingly however, Greater London's projected annual average output growth rate of 2% is slightly below the UK average (2.2%). Greater London is the only region to have experienced expansion in construction output in real terms over the five years to 2012; therefore activity in some sectors may be close to peaking. For example, infrastructure activity is projected to decline by an annual average of 2.4% in the five years to 2018, as projects such as Crossrail and Thameslink wind down in the second half of the forecast period.

Despite the South West and Wales being the strongest areas in output terms, they do not top the employment rankings. Infrastructure work has a smaller labour requirement than other sectors and so impacts employment much less than output. The East of England has the strongest employment growth rate, of 2% a year on average over the forecast period. This is due to two factors – a strong output growth rate and the region's higher than average share of the much more labour intensive R&M sectors compared with the UK as whole (45% vs. 36%). All regions are expected to see employment growth except the West Midlands, where output growth of just 0.8% a year on average is not enough to drive expansion of employment given anticipated productivity gains.

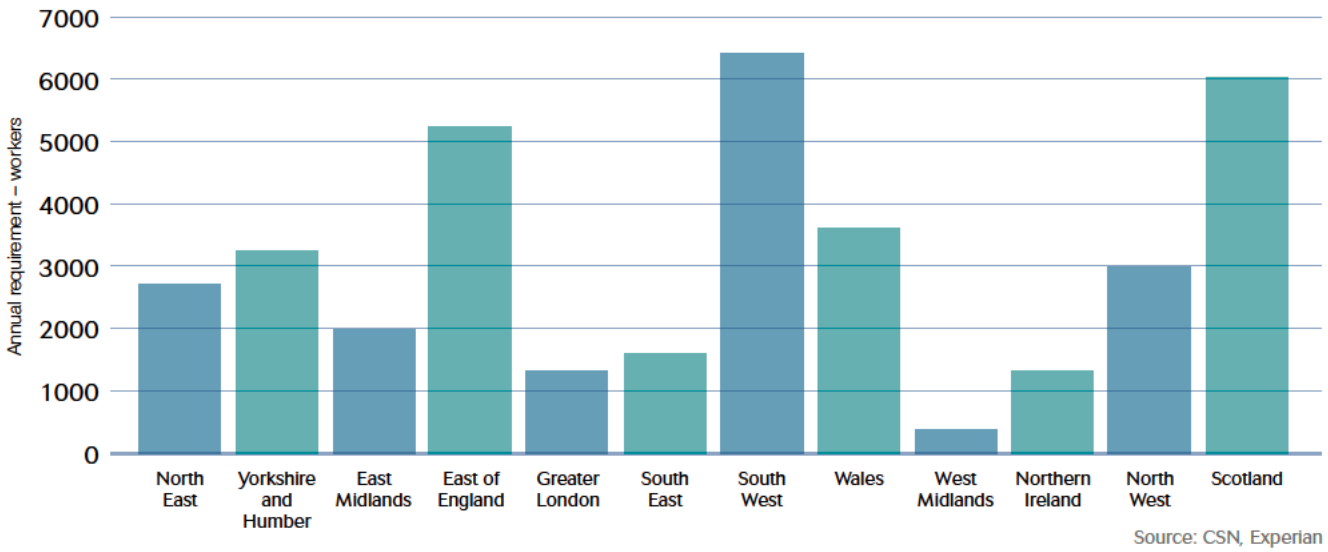
Concerns about prospective skills shortages have been increasing in some quarters recently, which may initially seem surprising given the industry's position in the recovery cycle. Construction output in 2013 is likely still to be 15% below its 2007 peak, and employment is likely to be 13% down on its 2008 peak. This would suggest that a substantial pool of construction workers is waiting to re-enter the industry. However, many of these workers may have taken jobs in other sectors, or retired. Questions remain about the number of workers who will come back into the industry as growth continues and, of these, how many will have been out of the industry for such a length of time that they will require some level of retraining.

## Annual average output growth by region 2014-2018




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

## Annual recruitment requirement (ARR) by region 2014-2018




Source: CSN, Experian

# CSN Explained

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

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

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

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

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

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

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

# 1 CSN methodology

## Background

The **Construction Skills Network** has been evolving since its conception in 2005, acting as vehicle for ConstructionSkills to collect and produce information on the future employment and training needs of the industry. CITB, CIC and CITB-ConstructionSkills Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction, to produce robust labour market intelligence which provides a foundation on which to plan for future skills needs and to target investment.

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

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

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

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

## The model approach

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

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

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

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

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

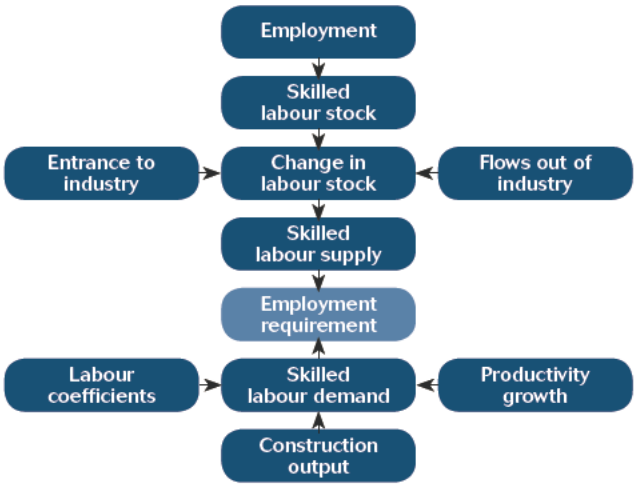
- Transfers to other industries
- International/domestic OUT migration
- Permanent retirements (including permanent sickness)
- Outflow to temporary sickness and home duties.

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

Flows into the labour market include:

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

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



# 2 Glossary of terms

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

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

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

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

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

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

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

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

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

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

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

**Productivity** – output per employee.

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

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

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

# 3 Notes and footprints

## Notes

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

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

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

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

5 Employment numbers are rounded to the nearest 10.

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

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

8 The Employment and ARR tables show separate totals for SIC 41-43 and SIC 41-43, 71.1 and 74.9. The total for SIC 41-43 covers the first 24 occupational groups on the relevant tables and excludes civil engineers, other construction professionals and technical staff, architects and surveyors. The total for SIC 41-43, 71.1 and 74.9 includes all occupations.

## Footprints for Built Environment SSCs

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

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

## The sector footprints for the other 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 43.21 Electrical installation and SIC 43.22 Plumbing, heat and air-conditioning installation. ConstructionSkills recognises the responsibility of SummitSkills across Standard Industrial Classifications (SIC) 43.21 and 43.22; thus data relating to the building services engineering sector is included here primarily for completeness.

### 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 71.1 Architectural and engineering activities and related technical consultancy.

### Energy and Utility Skills

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

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

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

AssetSkills has a peripheral interest in SIC 71.1

# 4 Definitions: types and examples of construction work

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

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

## Private sector housing

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

## Infrastructure – public and private

### Water

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

### Sewerage

Sewage disposal works, laying of sewers and surface drains.

### Electricity

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

### Gas, communications, air transport

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

### Railways

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

### Harbours

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

### Roads

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

## Public non-residential construction[1]

### Factories and warehouses

Publicly owned factories, warehouses, skill centres.

### Oil, steel, coal

Now restricted to remedial works for public sector residual bodies.

### Schools, colleges, universities

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

### Health

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

### Offices

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

### Entertainment

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

### Garages

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

### Shops

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

### Agriculture

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

### Miscellaneous

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

## Private industrial work

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

## Private commercial work[1]

### Schools and universities

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

### Health

Private hospitals, nursing homes, clinics.

### Offices

Office buildings, banks.

### Entertainment

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

### Garages

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

### Shops

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

### Agriculture

All buildings and work on farms, horticultural establishments.

### Miscellaneous

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

## New work

### New housing

Construction of new houses, flats, bungalows only.

### All other types of work

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

## Repair and maintenance

### Housing

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

### All other sectors

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

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

# 5 Occupational groups

| Occupational group<br>Description, SOC (2010) reference. | |
|---|---|
| **Senior, executive, and business process managers** | |
| Chief executives and senior officials | 1115 |
| Financial managers and directors | 1131 |
| Marketing and sales directors | 1132 |
| Purchasing managers and directors | 1133 |
| Human resource managers and directors | 1135 |
| Property, housing and estate managers | 1251 |
| Information technology and telecommunications directors | 1136 |
| Research and development managers | 2150 |
| Managers and directors in storage and warehousing | 1162 |
| Managers and proprietors in other services nec* | 1259 |
| Functional managers and directors nec* | 1139 |
| IT specialist managers | 2133 |
| IT project and programme managers | 2134 |
| Financial accounts managers | 3538 |
| Sales accounts and business development managers | 3545 |
| **Construction project managers** | |
| Construction project managers and related professionals | 2436 |
| **Other construction process managers** | |
| Production managers and directors in manufacturing | 1121 |
| Production managers and directors in construction | 1122 |
| Managers and directors in transport and distribution | 1161 |
| Waste disposal and environmental services managers | 1255 |
| Health and safety officers | 3567 |
| Conservation and environmental associate professionals | 3550 |
| **Non-construction professional, technical, IT, and other office-based staff (excl. managers)** | |
| IT operations technicians | 3131 |
| IT user support technicians | 3132 |
| Finance and investment analysts and advisers | 3534 |
| Taxation experts | 3535 |
| Financial and accounting technicians | 3537 |
| Vocational and industrial trainers and instructors | 3563 |
| Business and related associate professionals nec* | 3539 |
| Legal associate professionals | 3520 |
| Inspectors of standards and regulations | 3565 |
| Programmers and software development professionals | 2136 |
| Information technology and telecommunications professionals nec* | 2139 |
| Estate agents and auctioneers | 3544 |
| Solicitors | 2413 |
| Legal professionals nec* | 2419 |
| Chartered and certified accountants | 2421 |
| Business and financial project management professionals | 2424 |
| Management consultants and business analysts | 2423 |
| Receptionists | 4216 |
| Typists and related keyboard occupations | 4217 |
| Business sales executives | 3542 |
| Book-keepers, payroll managers and wages clerks | 4122 |
| Records clerks and assistants | 4131 |
| Stock control clerks and assistants | 4133 |
| Telephonists | 7213 |
| Communication operators | 7214 |
| Personal assistants and other secretaries | 4215 |
| Sales and retail assistants | 7111 |
| Telephone salespersons | 7113 |
| Buyers and procurement officers | 3541 |
| Human resources and industrial relations officers | 3562 |
| Credit controllers | 4121 |
| Company secretaries | 4214 |
| Sales related occupations nec* | 7129 |
| Call and contact centre occupations | 7211 |
| Customer service occupations nec* | 7219 |
| Elementary administration occupations nec* | 9219 |
| Chemical scientists | 2111 |
| Biological scientists and biochemists | 2112 |
| Physical scientists | 2113 |
| Laboratory technicians | 3111 |
| Graphic designers | 3421 |
| Environmental health professionals | 2463 |
| IT business analysts, architects and systems designers | 2135 |
| Conservation professionals | 2141 |
| Environment professionals | 2142 |
| Actuaries, economists and statisticians | 2425 |
| Business and related research professionals | 2426 |
| Finance officers | 4124 |
| Financial administrative occupations nec* | 4129 |
| Human resources administrative occupations | 4138 |
| Sales administrators | 4151 |
| Other administrative occupations nec* | 4159 |
| Office supervisors | 4162 |

*Not elsewhere classified

| | |
|---|---|
| Sales supervisors | 7130 |
| Customer service managers and supervisors | 7220 |
| Office managers | 4161 |

## Construction trades supervisors

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

## Wood trades and interior fit-out

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

## Bricklayers

| | |
|---|---|
| Bricklayers and masons | 5312 |

## Building envelope specialists

| | |
|---|---|
| Construction and building trades nec* (50%) | 5319 |

## Painters and decorators

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

## Plasterers

| | |
|---|---|
| Plasterers | 5321 |

## Roofers

| | |
|---|---|
| Roofers, roof tilers and slaters | 5313 |

## Floorers

| | |
|---|---|
| Floorers and wall tilers | 5322 |

## Glaziers

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

## Specialist building operatives nec*

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

## Scaffolders

| | |
|---|---|
| Scaffolders, stagers and riggers | 8141 |

## Plant operatives

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

## Plant mechanics/fitters

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

## Steel erectors/structural fabrication

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

## Labourers nec*

| | |
|---|---|
| Elementary construction occupations (100%) | 9120 |

## Electrical trades and installation

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

## Plumbing and heating, ventilation and air conditioning trades

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

## Logistics

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

## Civil engineering operatives nec*

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

## Non-construction operatives

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

## Civil engineers

| | |
|---|---|
| Civil engineers | 2121 |

*Not elsewhere classified

## Other construction professionals and technical staff

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

## Architects

| | |
|---|---|
| Architects | 2431 |

## Surveyors

| | |
|---|---|
| Quantity surveyors | 2433 |
| Chartered surveyors | 2434 |

*Not elsewhere classified

# 6 CSN website and contact details

## The CSN website

**citb.co.uk/research/construction-skills-network**

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

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

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

The website also contains information about:

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

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

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

- Details of specific projects
- Demand within various types of work or sectors
- Labour supply issues
- 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 contact with the CITB research team CSN members can:

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

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

## Contact details

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

For more information about the Construction Skills Network, contact:
Alan Tanner
Research and Development
Research Analyst
0344 994 4400
alan.tanner@citb.co.uk

citb.co.uk