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Construction Skills Network Wales 2014-2018

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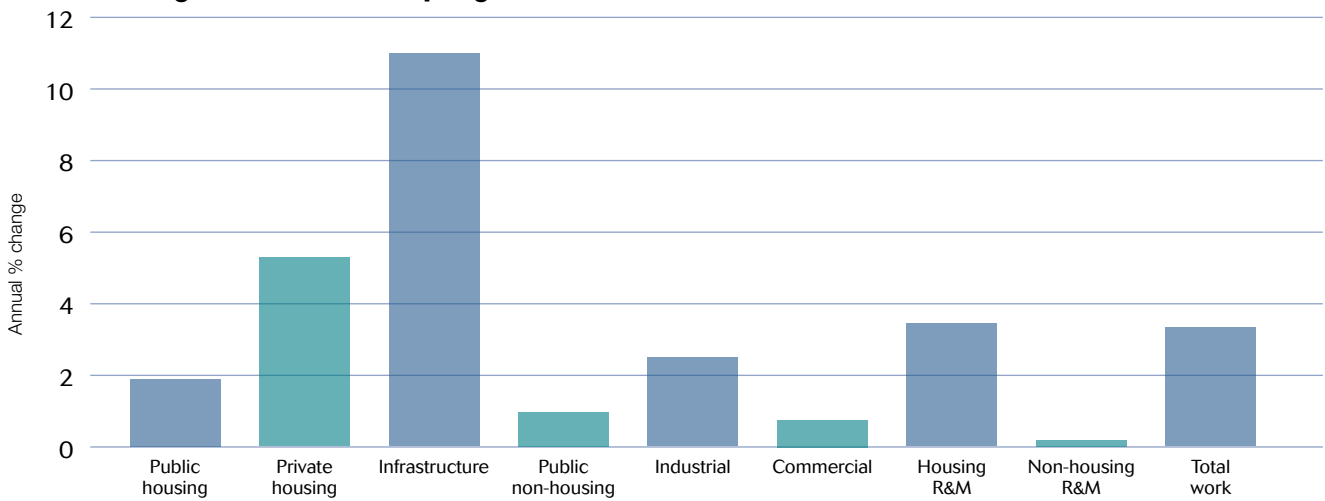
CSN explained

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1 Summary – Wales

The Welsh construction industry is expected to see output rise at an average rate of 3.4% per year over the five years to 2018. However, this strong rate of growth is significantly dependent on the start of the main construction work on the Wylfa nuclear power station project towards the end of the forecast period. Excluding Wylfa, the annual average output growth rate would fall to 2.5%. Construction employment in Wales is expected to expand at 1.8% per year on average over the same period, a much lower growth rate than for output, partly due to the fact that the infrastructure projects are traditionally less labour intensive than those in other sectors. The annual recruitment requirement (ARR) is 3,570, equivalent to 3.5% of base 2014 employment in Wales.

Annual average construction output growth 2014-2018 – Wales



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



1.1 Key findings

The overall economic climate has improved considerably in recent months. This has impacted positively on investment levels in the UK's private construction sector, and Wales is no exception. Wales' construction sector is being further boosted by the Welsh Government's priority of aiming to keep capital expenditure on all types of infrastructure – transport, energy, social – on a reasonably even keel, as well as the prospect of new nuclear build at Wylfa starting towards the end of the forecast period.

Therefore, overall construction output growth is forecast to be the second strongest of any region and devolved nation, at an annual average rate of 3.4%, only beaten by the South West's 3.5%. New work is expected to fare significantly better than repair and maintenance (R&M), with annual average growth rates of 4.1% and 1.8% respectively.

Infrastructure is projected to be by far the strongest sector, with an annual average output growth rate of 11% over the forecast period. Transport works, and in particular electrification of the valley lines and parts of the Great Western main line, will drive growth in the earlier part of the forecast period, with new nuclear build taking over in the latter part. Without Wylfa, infrastructure output growth would fall to around 5.4% a year on average.

The private housing sector is expected to be the next strongest, with projected annual output growth of 5.3% in the five years to 2018. New orders and housing starts are already on an upward trend, boosted at least in part by schemes such as Help to Buy. Projects such as the Coed Darcy development will provide strong output streams for the sector for the whole of the forecast period and beyond.

Employment growth, at an annual average rate of 1.8%, is considerably better than the whole-UK rate of 1.2%, but is low when put against Wales' output growth rate of 3.4% a year on average. Infrastructure projects are traditionally less labour intensive than those in other sectors, so have a much smaller impact on employment than output. The majority – 24 out of 28 – of the occupational groupings are expected to see growth in employment over the five years to 2018.

At 3,570, the ARR for Wales is equivalent to 3.5% of base 2014 employment, substantially above the UK figure of 1.5%. However, traditionally Wales has a large ARR as it tends to experience significant net outflows of its construction workforce to other regions and devolved nations, in particular to the North West and South West.

The Welsh construction industry is expected to see output rise at an average rate of 3.4% per year over the five years to 2018

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 Wales

2.1 Construction output in Wales – overview

After two years of growth, output in real terms is estimated to have fallen by 10% in 2012 to just under £3.5bn at 2005 prices. Construction output in real terms in Wales seems to have peaked in 2004 rather than in 2007, as it did for most other regions and devolved nations, and the 2012 outturn was 28% down on this peak. New work fell by 14%, while R&M rose by 2%.

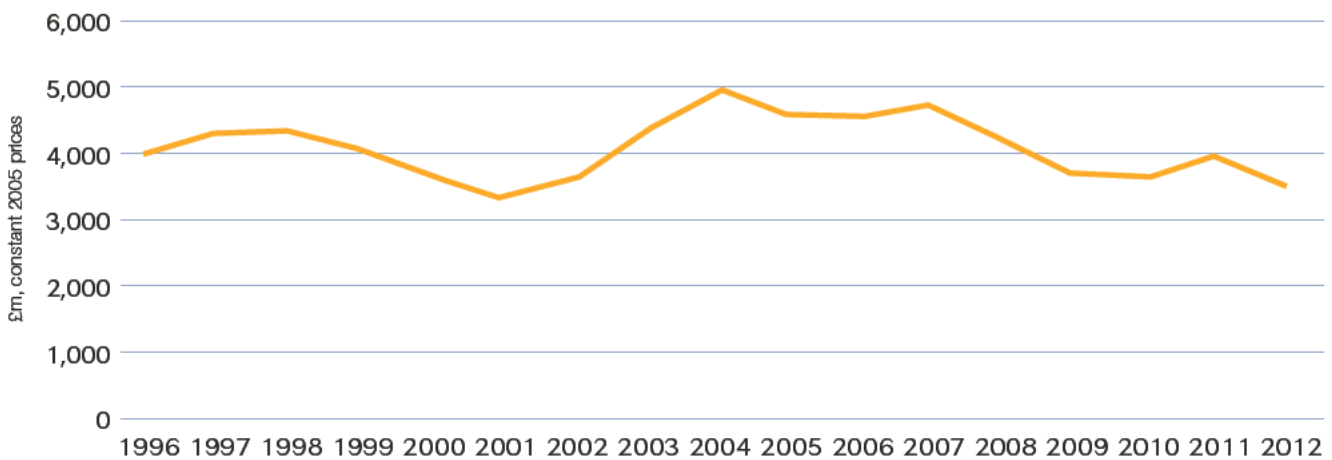
Of the new work sectors, only industrial and commercial showed any growth, the former seeing output increase

by 14% and the latter by a modest 1%. However, industrial construction remains at historically low levels in Wales, so the 14% increase in activity only equated to £15m in value terms.

2.2 Industry structure

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

Construction output – Wales 1996-2012



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

Overall, the structure of the Welsh construction industry was broadly similar to that of the UK as a whole in 2012. The main differences are a proportionally larger public non-housing sector in Wales compared with the UK average (14% vs. 10%) and a proportionally smaller non-housing R&M sector in Wales compared with the UK as a whole (15% vs. 20%).

This means that the new work takes a somewhat larger share of output in Wales (69%) than it does in the UK as a whole (64%).

2.3 Economic overview

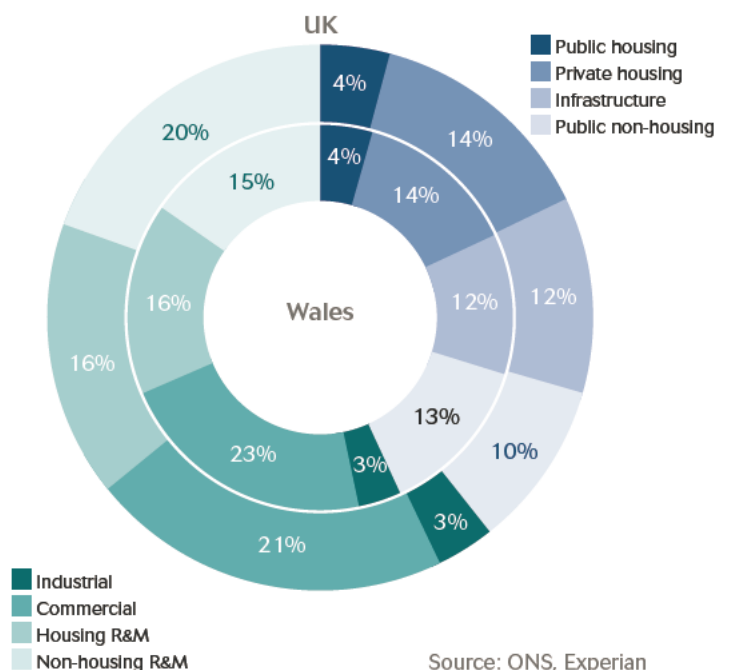
The expected performance of a regional or national economy over the forecast period (2014–2018) provides an indication of the construction sectors in which demand is likely to be strongest.

2.4 Economic structure

Gross value added (GVA) in Wales totalled £46.4bn (2010 prices) in 2012, a 1.1% decline on the previous year. GVA in Wales still lags its 2007 peak by almost 5%.

Excluding agriculture, forestry and fishing, which is a miniscule sector, growth was strongest for accommodation, food services and recreation (4.4%), although this is also a relatively small part of the Welsh economy, accounting for only 4.3% of GVA in 2012. Of the devolved nation's top five sectors, only public services and professional and other private services

Construction Industry structure 2012 – UK vs. Wales



Source: ONS, Experian

posted any growth, and in the latter's case it was a marginal 0.2%. Manufacturing output fell by 2% and wholesale and retail by 2.3%.

The Welsh economy still remains significantly more reliant on public services than the UK as a whole, with the sector in 2012 accounting for 24.5% of output in Wales, compared with 19.2% in the wider UK. Manufacturing also remains a much more important sector in Wales compared with the UK as a whole (16.6% vs. 10.3%), while professional and other private services and finance and insurance are proportionally smaller in Wales.

Economic structure – Wales (£ billion, 2010 prices)

Selected sectors	Actual	Forecast					
		Annual % change, real terms					
	2012	2013	2014	2015	2016	2017	2018
Public services	11.4	2.0	0.3	0.3	0.7	0.9	1.4
Professional and other private services	9.5	2.0	2.0	2.1	2.3	2.3	2.2
Manufacturing	7.7	-1.7	1.8	0.9	1.0	0.9	0.7
Wholesale and retail	5.0	3.9	2.1	1.9	2.1	1.9	1.9
Finance and insurance	2.5	-0.7	0.9	1.5	2.1	1.9	1.7
Total Gross Value Added (GVA)	46.4	0.8	1.4	1.4	1.7	1.6	1.7

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

retail with 2% and finance and insurance with 1.6%. Manufacturing growth is expected to remain modest, at just 1.1% a year on average and public services is projected to post annual average growth of just 0.7%, as public expenditure constraints continue to bite.

Of the sectors accounting for more than 1% of GVA, the strongest growth is forecast for information and communication, at 2.5% a year on average. This sector has been growing quite strongly across the UK in recent years and is expected to continue to do so, with the sector moving into the top five in some regions and devolved nations by 2018, but not in Wales.

On the current forecasts, overall GVA levels in Wales are expected to return to their 2007 peak in 2016.

Real household disposable income (RHDI) is estimated to have contracted by a little over 1% in 2013 but household consumption has risen by 1.5%, suggesting that consumers have been delving into their savings and/or increasing their debt levels over the course of the

2.5 Forward looking economic indicators

The Welsh economy is estimated to have returned to growth in 2013, with GVA expansion of 0.8%, largely driven by the wholesale and retail (3.9%), professional and other private services (2%) and public services (2%) sectors.

The devolved nation's economy is projected to grow at an annual average rate of 1.6% over the five years to 2017, below the UK average of 2%. Of Wales' five largest sectors, the professional and other private services sector is forecast to fare best, with annual average growth of 2.2%, followed by wholesale and

year. RHDI is expected to return to growth in 2014 with an average expansion of 1.3% a year over the forecast period. However, household consumption is projected to rise by 1.9% a year on average over the same period, suggesting further erosion of savings and an increase in personal debt.

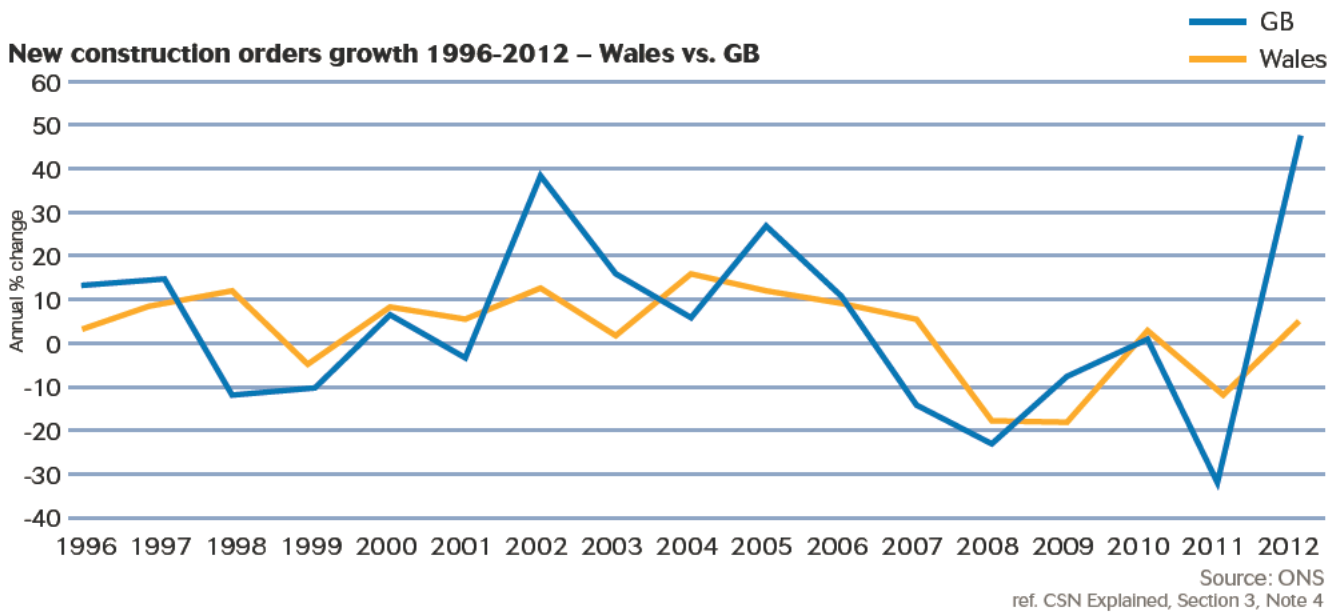
The working age population in Wales is estimated to be 1.8 million in 2012, 59.5% of the total population. Its share of total population is expected to grow slowly to reach 61% by 2018. The Labour Force Survey/ International Labour Organisation unemployment rate in Wales stood at an estimated 8.3% in 2013, higher than the UK average of 7.8%, but it is predicted to fall to 6.2% by 2018.

According to the Office for National Statistics, mix-adjusted house prices stood at 156,070 on average in 2012, a 4% rise on the previous year. Future expansion is predicted to range between 1% and 2.4% annually over the five years to 2018.

Economic Indicators – Wales (£ billion, 2010 prices – unless otherwise stated)

	Actual	Forecast					
		Annual % change, real terms					
	2012	2013	2014	2015	2016	2017	2018
Real household disposable income	42.48	-1.1	0.8	0.9	1.3	1.6	1.8
Household spending	40.13	1.5	1.5	1.7	2.1	2.1	2.1
Working age population (000s and as % of all)	1,805	59.9%	60.2%	60.6%	60.8%	61.0%	61.0
House prices (£)	156,070	1.1	1.0	1.8	1.9	2.1	2.4
LFS unemployment (millions)	0.13	-2.78	-2.44	-8.42	-5.17	-4.70	-5.51

Source: ONS, DCLG, Experian



2.6 New construction orders – overview

The level of new construction orders has become very volatile in Wales over the past two years. After a stable year in 2010, albeit at a low level, they fell by close to a third in 2011 to their lowest level since 1993, but picked up by nearly 50% in 2012 to just under £2.1bn in current prices.

Growth was experienced across all sectors in 2012 except public housing, with new orders rising by over two-and-a-half times in the infrastructure sector to £493m in current prices, their highest level since 2005.

The private housing (43%), public non-housing (32%) and commercial (29%) sectors also saw strong growth in their levels of new orders. Public housing's 2% fall in 2012 took new orders in the sector back down below the £100m mark for the first time since 2008.

2.7 New construction orders – current situation

New orders expansion continued into the first half of 2013, boding well for output in that year, with their level reaching £1.3bn in current prices, 25% up on the corresponding period of 2012. Particularly strong growth was seen in the private housing sector, with new orders up by 58% over the same period, and their level was 45% higher for the public non-housing sector and 23% higher for the commercial one.

In contrast, the decline in new orders for public housing deepened in the first half of 2013, with their level down by 28% compared with the same period of 2012.

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, ONS construction output statistics were only available for the first two quarters of 2013.

Construction output in Wales in the first half of 2013 totalled £2.19bn in current prices, 13% up on the corresponding period of 2012, but only 2% higher compared with the second half of that year. The decline in new orders in the public housing sector has already made itself felt on output, with the downturn for the first half of 2013 down by 19% on the corresponding period of 2012.

However, all the other construction sectors except the industrial sector have posted rises in output on the same measure, with the strongest sectors being non-housing R&M (up 27%), private housing (23%) and public non-housing (19%). Over 2013 as a whole, construction output in Wales is estimated to have grown by 5% in real terms.

New work construction orders – Wales (£ million, current prices)

	Actual	Annual % change				
		2012	2008	2009	2010	2011
Public housing	98	-13.6	53.9	31.4	-44.4	-2.0
Private housing	459	-61.5	-8.1	126.5	-40.3	42.5
Infrastructure	493	57.1	11.7	-29.1	-37.7	159.5
Public non-housing	499	14.9	-18.2	-14.6	-21.7	31.7
Industrial	82	-48.2	48.4	-68.6	-1.4	12.3
Commercial	462	-33.4	-30.0	12.1	-32.0	28.7
Total new work	2,094	-23.3	-8.0	1.4	-32.5	47.2

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

Construction output 2014-2015 – Wales (£ million, 2005 prices)

	Actual	Forecast			Annual average
		Annual % change			
	2012	2013	2014	2015	2014-15
Public housing	155	-12%	-2%	4%	1.0%
Private housing	477	13%	8%	6%	7.0%
Infrastructure	404	12%	5%	12%	8.6%
Public non-housing	469	13%	-6%	2%	-2.1%
Industrial	120	-24%	3%	5%	4.1%
Commercial	772	-7%	-6%	-1%	-3.1%
New work	2,397	3%	0%	4%	2.1%
Housing R&M	557	3%	-1%	7%	3.0%
Non-housing R&M	536	14%	-2%	2%	0.1%
Total R&M	1,094	8%	-1%	4%	1.5%
Total work	3,491	5%	-1%	4%	1.9%

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

A slight hiatus in growth is predicted for 2014 but, over the 2014-2015 period, the construction industry in Wales is expected to see annual average expansion of 1.9%, with new work (2.1%) stronger than R&M (1.5%).

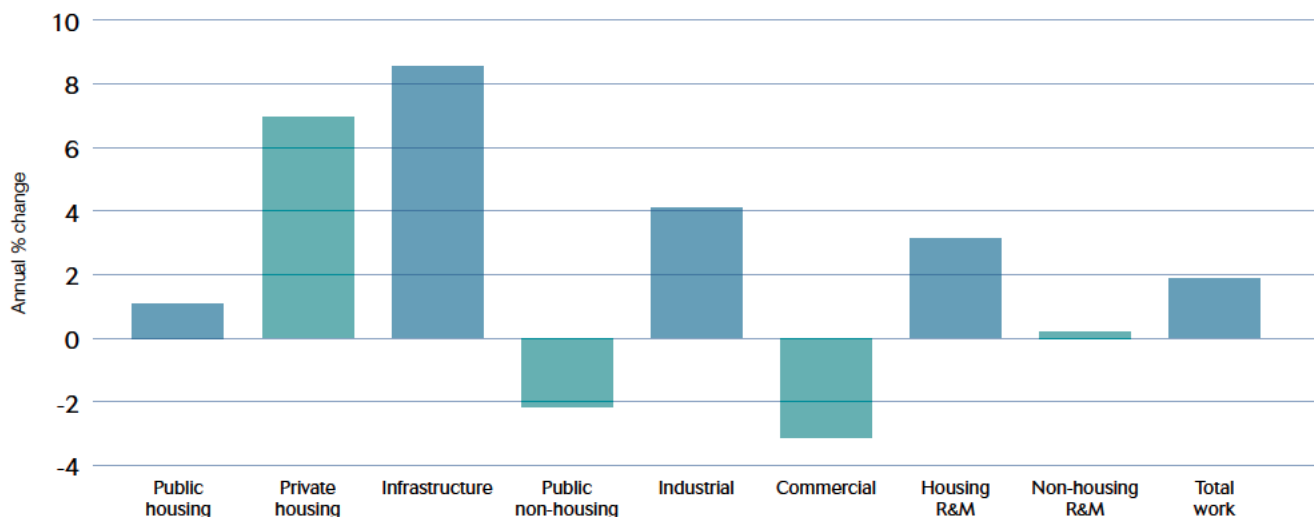
The Welsh Government has recently published its final budget for the financial years 2014-2015 and 2015-2016 and this shows a 24% rise in capital departmental expenditure limits (DELs) between 2013-2014 and 2014-2015, from £1.147bn to £1.423bn. However, in 2015-2016, the capital budget falls back to £1.350bn, a decline of 5%.

Among the biggest beneficiaries of the increase in capital allocations between 2013-2014 and 2014-2015 are the various transport budgets – motorway and trunk road operations, road and rail schemes, sustainable travel, and local roads infrastructure maintenance and improvement – which are projected to rise by 36%, from £212m in 2013-2014 to £289m in 2014-2015. A further 5% rise is planned for 2015-2016 to £301m.

It is this profile of capital expenditure on transport that will be driving annual average growth of 8.6% in

infrastructure output over the short term. There are a number of reasonably sized projects currently on site, including Section 3 of the A465 Heads of the Valley dualling project, the A477 St Clears to Red Roses improvement scheme, and the A55 tunnels upgrade near Conwy. Into the mix in 2015 will come the electrification of the valley lines and Great Western main line from Cardiff to Bridgend, which will be worth over £300m in total.

The housing and regeneration budget will also benefit strongly from the rise in capital allocations between 2013-2014 and 2014-2015, with a 23% increase from £275m to £366m, although it is expected to fall back to £349m in 2015-2016. Some of this will be to increase the supply and choice of affordable housing: £53m in 2013-2014, rising to £72m in 2014-2015 and falling back to £62m in the following year. Thus, the large falls in public housing output seen in 2012 and 2013 are expected to stop, although growth of only 1% is projected for the short term, as the impact of earlier declines continue to affect expansion.

Annual average construction output growth 2014-2015 – Wales

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

In contrast, we expect strong growth in private housing output in the short term, of around 7% on an annual basis between 2014 and 2015. As mentioned in the new orders sections, these are strongly up, as are housing starts, which reached 2,890 in the first half of 2013, which was 12% higher than in the corresponding period of 2012 (housing starts in Wales are no longer disaggregated between the public and private sectors, but historic data shows that the private side is by far the largest element). Schemes such as Help to Buy have undoubtedly been boosting demand in the sector and, combined with generally improving economic conditions, should provide a platform for good growth in housing market activity.

Overall, commercial construction is expected to decline by an annual average rate of 3.1% in the short term, although by 2015 the decline is projected to slow to around 1% as planned projects, such as the new motor racing circuit near Ebbw Vale, starts on site towards the end of this period. The £200m retail-led development at Talbot Green in South Wales has recently received outline planning permission, although as yet there is no confirmed state date. Bouygues has recently won a £20m contract for the regeneration of the Maelfa Centre in Llanedeyrn, where work could start in 2014.

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

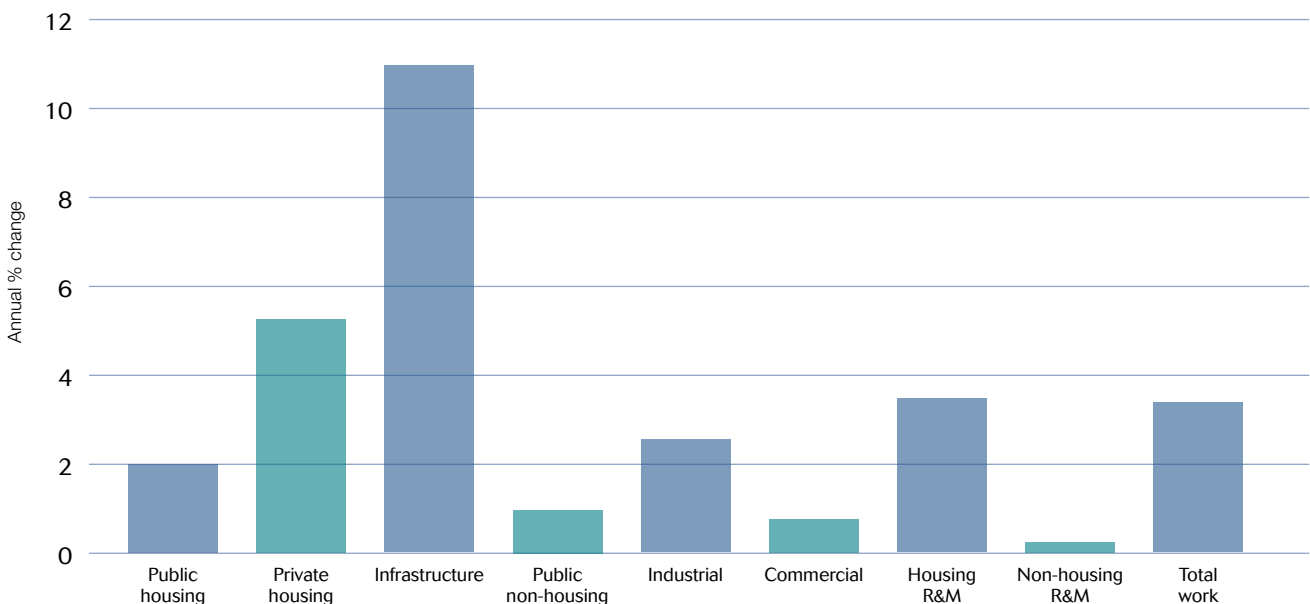
The Welsh construction industry is expected to have the second strongest growth rate of all the regions and devolved nations, with an annual average rate of 3.4% over the 2014 to 2018 period, only beaten by the South West with 3.5%. However, this strong growth rate is heavily predicated on the Wylfa nuclear power station in Anglesey, despite the fact that start of main works for this

project has now been put back to mid-2017 (from mid-2015 in last year’s forecast for the 2013 to 2017 period). Recent announcements from Horizon, the consortium led by Hitachi that is taking the project forward, suggest that main works may not start until the beginning of 2018, but there will be enough preliminary activity to provide a decent output stream for the year before that. If Wylfa were to be removed from the project mix then the annual average construction output growth rate would fall to 2.5% and, for infrastructure, from 11% to 5.4%.

Annual average growth in private housing is projected to be robust at 5.3% over the forecast period. The biggest housing project currently on site and likely to be so for some time is the Coed Darcy development, which is due to deliver 4,000 new homes in the Neath area over the next 20 years. In total, the scheme is expected to be worth £1.2bn. The Welsh Government is providing some financial support to take forward £75m of regeneration works in Merthyr Tydfil, Newport and Swansea, which is encouraging private developers to bring forward new projects. This should benefit the residential as well as commercial construction sectors.

The commercial construction sector is forecast to return to growth in 2016 on the back of some of the projects mentioned in the previous section. Development is also expected at the Cardiff Bay International Sports Village (ISV) over the forecast period, with outline planning permission recently granted for phases in the £250m scheme that include a 250-metre real-snow indoor ski slope, a 1,300-space multi-storey car park and 115-bedroom budget hotel. Shops, restaurants and bars will form a subsequent phase and can only be built after the ski slope and car park are completed. However, annual average growth over the whole of the forecast period is projected to be only a modest 0.7%.

Annual average construction output growth 2014-2018 – Wales



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

Construction output 2014-2018 – Wales (£ million, 2005 prices)

	Estimate	Forecast Annual % change					Annual average
		2013	2014	2015	2016	2017	
Public housing	136	-2%	4%	1%	2%	5%	1.9%
Private housing	541	8%	6%	3%	4%	5%	5.3%
Infrastructure	453	5%	12%	10%	14%	14%	11.0%
Public non-housing	529	-6%	2%	3%	2%	4%	1.0%
Industrial	91	3%	5%	2%	2%	1%	2.5%
Commercial	718	-6%	-1%	3%	3%	4%	0.7%
New work	2,468	0%	4%	4%	5%	7%	4.1%
Housing R&M	574	-1%	7%	3%	4%	3%	3.5%
Non-housing R&M	611	-2%	2%	1%	1%	-1%	0.2%
R&M	1,185	-1%	4%	2%	3%	1%	1.8%
Total work	3,653	-1%	4%	4%	4%	5%	3.4%

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

The impact of public expenditure cuts are expected to be felt in Wales by the end of 2014, and modest expansion is forecast after that, given an annual average growth rate of 1% over the forecast period. The 2014-2015 budget finalised by the Welsh Government in December 2013 shows a capital expenditure DEL for health and social services of £282m, up by 16% on 2013-2014. However, it is expected to drop to £235m in 2015-2016. The pattern for education and skills is the reverse, with a decline of 13% to £154m in 2014-2015, but then showing a 13% increase in 2015-2016. Over the past few months, some £225m of additional funding has been provided for the 21st Century Schools programme to accelerate building projects. The programme is now due to be completed in 2018-2019 rather than in 2020-2021, and this acceleration should lead to more investment during the current forecast period.

One of the biggest prospective projects in the public non-housing sector is the new 'super prison' planned for Wrexham. Work is scheduled to start in 2014 and to last until 2017, at a cost of £250m. When completed, it will be the largest prison in England and Wales.

2.10 Beyond 2018

Although the Wylfa new nuclear build project has been mentioned in the previous section, given its likely start date towards the end of the current forecast period, it will create a very strong output stream well into the 2020s. According to the current timelines published by the Nuclear Industry Association (NIA), construction on it will continue to 2024 and it could be even later.

In 2013, new plans for a Severn Barrage tidal power project were drawn up by a consortium headed by Hafren Power. However, the House of Commons Energy and Climate Change Committee decided in mid-2013 that it could not recommend the plan and ministers rejected it in mid-September because they said it 'does not demonstrate that it could deliver the benefits it claims it would achieve'. However, given that a barrage for the Severn Estuary was first mooted in 1847, there is every likelihood that new proposals will emerge in the future.

Construction employment in Wales is projected to grow at an annual average rate of 1.8% over the five years to 2018, higher than the UK rate of 1.2%, but significantly lower than the output growth rate

3 Construction employment forecasts for Wales

3.1 Total construction employment forecasts by occupation

The table presents actual construction employment (SICs 41-43, 71.1 and 74.9) in Wales 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.

Construction employment in Wales is projected to grow at an annual average rate of 1.8% over the five years to 2018, higher than the UK rate of 1.2%, but significantly lower than the output growth rate. While employment growth would generally be expected to lag behind output growth, implied productivity growth of 1.6% would be considered high for construction. However, as mentioned earlier, it is the Wylfa new nuclear build project that is driving such strong output growth and, as it is not projected to start until towards the end of the forecast period and its labour intensiveness is relatively low, it has a much smaller impact on employment than on output. As stated earlier, underlying output growth excluding Wylfa would be around 2.5% a year on average, given an implied productivity growth

rate of 0.7% a year, which is much more in line with expectations.

Employment is projected to return to growth in 2014 and expand steadily over the forecast period.

Wood trades and interior fit-out is by far the largest trade occupation in Wales, accounting for 12.8% of total construction employment in 2012, much higher than in the UK as a whole (9.9%). The occupational group is expected to see only modest growth in employment, of 1.9% a year on average, over the 2014-2018 period. Strongest growth is forecast for scaffolders (8.2% a year on average) and surveyors (6.5% a year). The vast majority of occupational groups (24 out of 28) are projected to see some growth in employment over the forecast 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 the inconsistency and coverage of supply data, these

Total employment by occupation – Wales

	Actual	Estimate	Forecast	
	2012	2013	2014	2018
Senior, executive, and business process managers	3,310	2,960	3,030	3,400
Construction project managers	1,350	1,470	1,490	1,570
Other construction process managers	6,920	7,060	7,190	7,680
Non-construction professional, technical, IT and other office-based staff	11,720	11,500	11,500	11,770
Construction trades supervisors	2,230	1,990	1,970	1,880
Wood trades and interior fit-out	13,540	12,180	12,440	13,360
Bricklayers	6,050	5,480	5,550	5,920
Building envelope specialists	4,630	4,530	4,560	4,770
Painters and decorators	4,920	5,120	5,140	5,310
Plasterers	4,100	3,660	3,740	4,080
Roofers	1,170	1,180	1,240	1,460
Floorers	110	100	100	110
Glaziers	580	520	510	490
Specialist building operatives nec*	3,690	4,030	4,110	4,450
Scaffolders	660	660	720	980
Plant operatives	1,800	1,820	1,860	2,050
Plant mechanics/fitters	1,140	1,020	1,040	1,110
Steel erectors/structural fabrication	1,250	1,110	1,120	1,140
Labourers nec*	4,920	4,680	4,490	4,680
Electrical trades and installation	6,920	6,200	6,360	6,990
Plumbing and HVAC trades	8,890	7,940	8,220	9,150
Logistics	770	690	700	720
Civil engineering operatives nec*	1,310	1,330	1,350	1,470
Non-construction operatives	1,450	1,300	1,270	1,170
Civil engineers	1,810	1,790	1,850	2,090
Other construction professionals and technical staff	4,950	4,910	5,030	5,450
Architects	1,140	1,250	1,260	1,310
Surveyors	4,170	3,730	4,050	5,100
Total (SIC 41-43)	93,430	88,530	89,700	95,710
Total (SIC 41-43, 71.1, 74.9)	105,500	100,210	101,890	109,660

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

flows do not include movements into the industry from training. 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.

The ARR for the 28 occupations within Wales' construction industry is illustrated in the table. The figure of 3,570 is indicative of the average requirements per year in the industry, based on the output forecasts for the devolved nation. This takes into account 'churn' i.e. the flows into and out of the industry, excluding training flows.

The ARR for Wales is equivalent to 3.5% of projected base 2014 employment, substantially higher than the UK average of 1.5% and the strongest of all the regions and devolved nations. This is traditionally the case, as Wales tends to suffer from net outflows of construction workers to other regions and devolved nations, especially to the South West and North West according to the Labour Force Survey. This has been further evidenced by data from CITB's 2012 Workforce Mobility and Skills Survey. According to the survey, 86% of the Welsh construction workforce originated there, the second highest proportion after Northern Ireland (96%). Applying this 86% share to the 2012 Labour Force Survey data for Wales suggests that just under 15,000 of those working in construction in the devolved nation in 2012 originated from elsewhere. However, the shares of other regions' and devolved nations' construction workforces that originated from Wales suggests that around 24,000 Welsh construction

workers were employed in other parts of the UK in 2012. This produces a net outflow of 9,000, a significant proportion in a relatively small employment market.

In absolute terms, the largest requirement is for wood trades and interior fit out personnel (530), which is not surprising as this is the largest occupational group. However, as a share of base projected 2014 employment, the requirement is largest for roofers and scaffolders at nearly 10%.

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 that includes 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 (not elsewhere classified) 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 – Wales

	2014-2018
Senior, executive, and business process managers	150
Construction project managers	-
Other construction process managers	-
Non-construction professional, technical, IT and other office-based staff	600
Construction trades supervisors	60
Wood trades and interior fit-out	530
Bricklayers	330
Building envelope specialists	70
Painters and decorators	170
Plasterers	70
Roofers	120
Floorers	-
Glaziers	-
Specialist building operatives nec*	-
Scaffolders	70
Plant operatives	60
Plant mechanics/fitters	70
Steel erectors/structural fabrication	-
Labourers nec*	100
Electrical trades and installation	180
Plumbing and HVAC trades	300
Logistics	<50
Civil engineering operatives nec*	-
Non-construction operatives	-
Civil engineers	110
Other construction professionals and technical staff	350
Architects	<50
Surveyors	170
Total (SIC 41-43)	2,900
Total (SIC 41-43, 71.1, 74.9)	3,570

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 disproportionately 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.

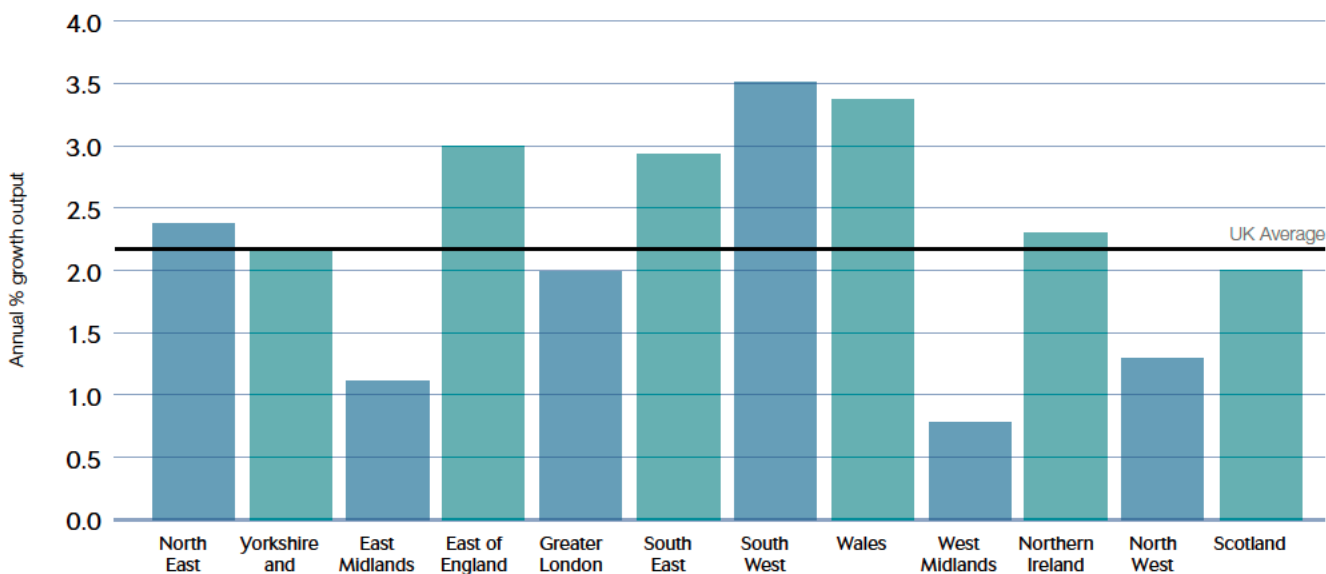
Despite the South West and Wales being the strongest areas in output terms, they do not top the employment rankings. Infrastructure work has a smaller labour requirement than other sectors and so impacts employment much less than output. The East of England has the strongest employment growth rate, of 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.

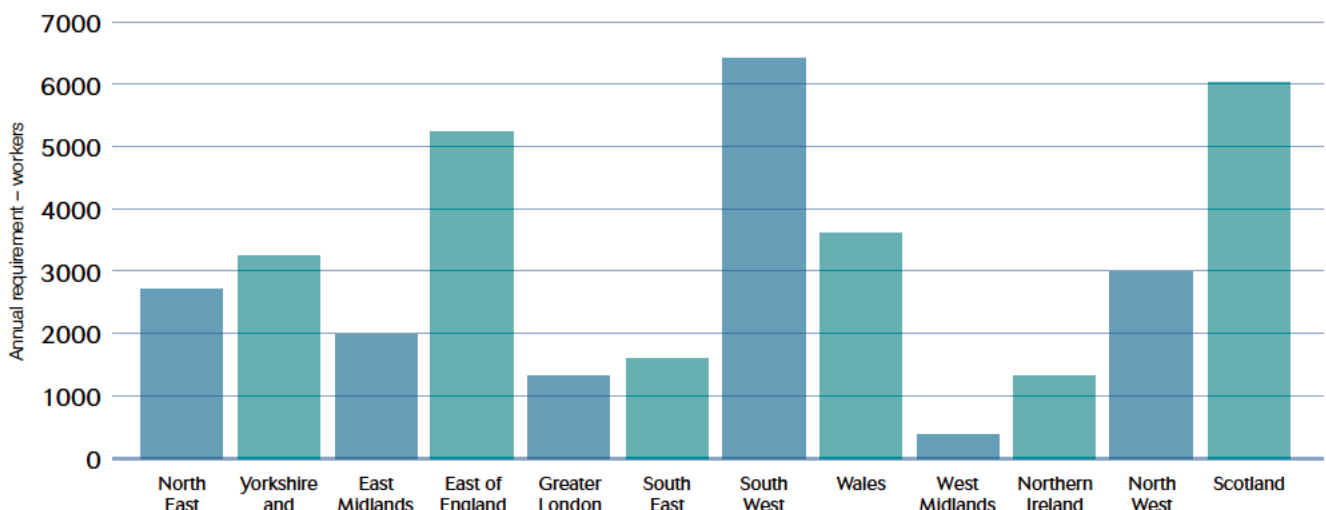


Annual average output growth by region 2014-2018



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

Annual recruitment requirement (ARR) by region 2014-2018



Source: CSN, Experian

The annual recruitment requirement (ARR) is 3,570, equivalent to 3.5% of base 2014 employment in Wales



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:

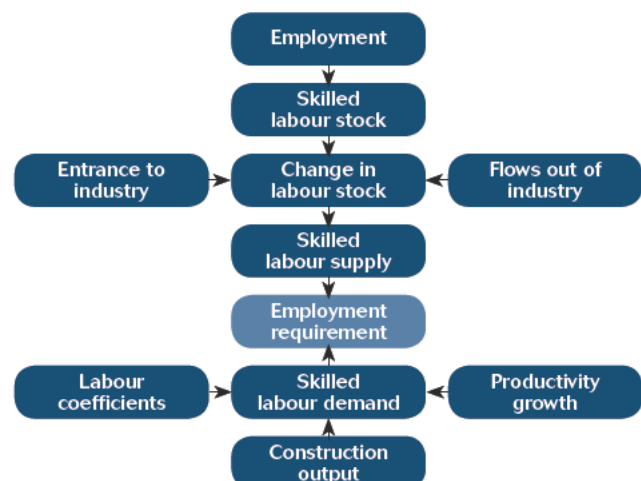
- Transfers to other industries
- International/domestic OUT migration
- Permanent retirements (including permanent sickness)
- Outflow to temporary sickness and home duties.

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 construction¹

Factories and warehouses

Publicly owned factories, warehouses, skill centres.

Oil, steel, coal

Now restricted to remedial works for public sector residual bodies.

Schools, colleges, universities

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

Health

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

Offices

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

Entertainment

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

Garages

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

Shops

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

Agriculture

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

Miscellaneous

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

Private industrial work

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

Private commercial work¹

Schools and universities

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

Health

Private hospitals, nursing homes, clinics.

Offices

Office buildings, banks.

Entertainment

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

Garages

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

Shops

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

Agriculture

All buildings and work on farms, horticultural establishments.

Miscellaneous

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

New work

New housing

Construction of new houses, flats, bungalows only.

All other types of work

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

Repair and maintenance

Housing

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

All other sectors

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

1 Where contracts for the construction or improvement of non-residential buildings used for public service provision, such as hospitals, are awarded by private sector holders of contracts awarded under the Private Finance Initiative, the work is classified as 'private commercial'.

2 Contractors reporting work may not always be aware of the distinction between improvement or renovation work and repair and maintenance work in the non-residential sectors.

3 Except where stated, mixed development schemes are classified to whichever sector provides the largest share of finance.

5 Occupational groups

Occupational group

Description, SOC (2010) reference.

Senior, executive, and business process managers

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

Construction project managers

Construction project managers and related professionals	2436
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Other construction process managers

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

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

IT operations technicians	3131
IT user support technicians	3132
Finance and investment analysts and advisers	3534
Taxation experts	3535
Financial and accounting technicians	3537
Vocational and industrial trainers and instructors	3563
Business and related associate professionals nec*	3539
Legal associate professionals	3520
Inspectors of standards and regulations	3565

Programmers and software development professionals	2136
Information technology and telecommunications professionals nec*	2139
Estate agents and auctioneers	3544
Solicitors	2413
Legal professionals nec*	2419
Chartered and certified accountants	2421
Business and financial project management professionals	2424
Management consultants and business analysts	2423
Receptionists	4216
Typists and related keyboard occupations	4217
Business sales executives	3542
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	Tool makers, tool fitters and markers-out	5222
Customer service managers and supervisors	7220	Vehicle body builders and repairers	5232
Office managers	4161		
Construction trades supervisors		Steel erectors/structural fabrication	
Skilled metal, electrical and electronic trades supervisors	5250	Steel erectors	5311
Construction and building trades supervisors	5330	Welding trades	5215
Wood trades and interior fit-out		Metal plate workers and riveters	5214
Carpenters and joiners	5315	Construction and building trades nec* (5%)	5319
Paper and wood machine operatives	8121	Smiths and forge workers	5211
Furniture makers and other craft woodworkers	5442	Metal machining setters and setter-operators	5221
Construction and building trades nec* (25%)	5319		
Bricklayers		Labourers nec*	
Bricklayers and masons	5312	Elementary construction occupations (100%)	9120
Building envelope specialists		Electrical trades and installation	
Construction and building trades nec* (50%)	5319	Electricians and electrical fitters	5241
Painters and decorators		Electrical and electronic trades nec*	5249
Painters and decorators	5323	Telecommunications engineers	5242
Construction and building trades nec* (5%)	5319	Plumbing and heating, ventilation and air conditioning trades	
Plasterers		Plumbers and heating and ventilating engineers	5314
Plasterers	5321	Pipe fitters	5216
Roofers		Construction and building trades nec* (5%)	5319
Roofers, roof tilers and slaters	5313	Air-conditioning and refrigeration engineers	5225
Floorers		Logistics	
Floorers and wall tilers	5322	Large goods vehicle drivers	8211
Glaziers		Van drivers	8212
Glaziers, window fabricators and fitters	5316	Elementary storage occupations	9260
Construction and building trades nec* (5%)	5319	Buyers and purchasing officers (50%)	3541
Specialist building operatives nec*		Transport and distribution clerks and assistants	4134
Construction operatives nec* (100%)	8149	Civil engineering operatives nec*	
Construction and building trades nec* (5%)	5319	Road construction operatives	8142
Industrial cleaning process occupations	9132	Rail construction and maintenance operatives	8143
Other skilled trades nec*	5449	Quarry workers and related operatives	8123
Scaffolders		Non-construction operatives	
Scaffolders, staggers and riggers	8141	Metal making and treating process operatives,	8117
Plant operatives		Process operatives nec*	8119
Crane drivers	8221	Metal working machine operatives	8125
Plant and machine operatives nec*	8129	Water and sewerage plant operatives	8126
Fork-lift truck drivers	8222	Assemblers (vehicles and metal goods)	8132
Mobile machine drivers and operatives nec*	8229	Routine inspectors and testers	8133
Plant mechanics/fitters		Assemblers and routine operatives nec*	8139
Metal working production and maintenance fitters	5223	Elementary security occupations nec*	9249
Precision instrument makers and repairers	5224	Cleaners and domestics	9233
Vehicle technicians, mechanics and electricians	5231	Street cleaners	9232
Elementary process plant occupations nec*	9139	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
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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:

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Research and Development

Research Analyst

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citb.co.uk



CITB, CIC and CITB-ConstructionSkills Northern Ireland are working as ConstructionSkills, the Sector Skills Council for Construction.