INDUSTRY INSIGHTS

NORTHERN IRELAND

Construction
Skills Network
**Labour Market
Intelligence
2018–2022**

About CITB

CITB is the Industrial Training Board (ITB) for the construction industry in Great Britain (Scotland, England and Wales). CITB uses its research and labour market intelligence to understand the sector's skills needs, and works with industry and government to make sure construction has the right skills, now and for the future.

CITB is modernising its funding approach to invest in areas that will deliver the best returns for industry, and enable the sector to attract and train talented people to build a better Britain.

About CITB NI

As the Industry Training Board and a partner in ConstructionSkills, the Sector Skills Council for the UK Construction industry, CITB NI is funded by a statutory levy from registered in scope employers. The organisation provides a range of services to the industry which incorporates identifying training needs, encouraging and advising on training, provision of training grants and research and policy development.

About Experian

Experian's Construction Futures team is a leading construction forecasting team in the UK, specialising in the economic analysis of the construction and related industries in the UK and its regions. As such we have an in-depth understanding of the structure of the construction industry and its drivers of change. The Construction Futures team has collaborated on the Construction Skills Network employment model with the CITB since 2005, manages a monthly survey of contractors' activity as part of the European Commission's harmonised series of business surveys, and a quarterly State-of-Trade survey on behalf of the Federation of Master Builders.

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SUMMARY – NORTHERN IRELAND

Construction output growth in Northern Ireland is projected to average 0.5% a year over the 2018 to 2022 period, a slower growth rate than across the UK as a whole. However, output is expected to sustain a level not far short of £3bn (2015 prices) during the forecast period, not seen since the 2008/09 recession. Nevertheless, given expected productivity gains, this level of expansion in output will not be enough to drive an overall increase in employment, which is predicted to fall by 0.4% a year on average over the five-year period. Due to net outflows from the devolved nation, there will still be an annual average recruitment requirement (ARR), estimated at 310, 0.5% of base 2018 employment, a lower ratio than for the UK of 1.2%.

Long term growth is expected to focus on the public housing sector at

5.7%

Employment is forecast to fall by

0.4%
a year on average

Northern Ireland has an ARR of

310

KEY FINDINGS

The recovery in the Northern Ireland construction industry, which started in 2014, continued last year, with an estimated rise in output of 11% to just under £2.9bn in 2015 prices, the best outturn since 2008. The public housing sector remained very buoyant with a third consecutive year of double-digit output increases, and robust growth was seen in the private housing and commercial construction sectors.

Almost inevitably after a period of strong recovery, output growth is projected to slow over the next few years, and average 0.5% a year over the 2018 to 2022 period, but sustain a level not far short of £3bn (2015 prices), the best performance since 2008. The sectors expected to expand are the housing (public and private) and repair & maintenance (R&M) sectors.

The public housing sector will be driven by the Northern Ireland Executive's plans to build 1,600 new social and affordable housing units. This target is being delivered in partnership with organisations such as Clanmill Housing Group, which has some 900 units on site or due to start within the next year. Output growth is predicted to average close to 6% a year over the 2018 to 2022 period.

The private housing sector is likely to see much more modest growth, of around 0.8% a year over the forecast period. There are some very big projects on site or in the pipeline at Newtownards, Coleraine, and Ballyclare, amongst others. However, they are all long-term, with output spread over many years, thus have only a moderate impact on year-on-year growth. Nevertheless, output is projected to be in the £530m to £560m region (2015 prices) a year over the forecast period, the best sustained level of activity since 2010.

While over the past 25 years the R&M sectors have fared better in Northern Ireland compared with the UK, a similar level of R&M growth in both geographies is expected going forward as the share in the former has now reached the same level as in the latter, and weaker economic growth and some retrenchment in disposable incomes are likely to affect expenditure in the sector.

Construction employment in the devolved nation is expected to fall by 0.4% a year on average over the forecast period, to around 61,770 in 2022, after peaking in 2019 at close to 63,500. The professional occupations are predicted to see growth overall, but the managerial/administrative and trades/manual ones to see some decline.

The average annual recruitment requirement is estimated at 310, representing 0.5% of base 2018 employment, a lower ratio than for the UK at 1.2%. Only one occupation, bricklayers, is flagged up as having a ratio to base employment of over 2.5%.

ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2022 – NORTHERN IRELAND
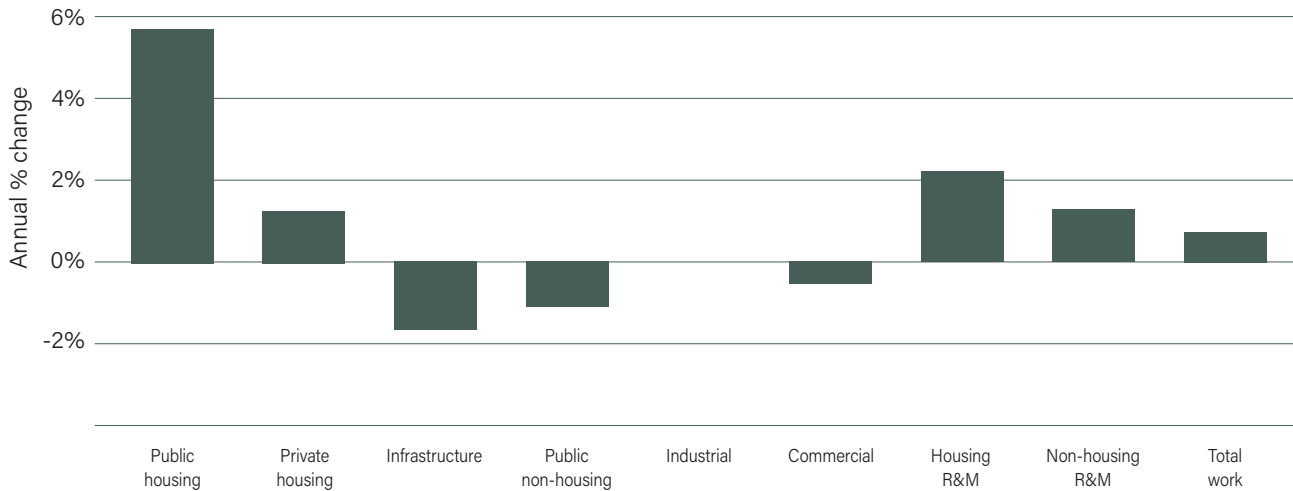
Source: CSN, Experian.
Ref: CSN Explained.

REGIONAL COMPARISON 2018-2022

	Annual average % change in output	Change in total employment	Total ARR
North East	-0.8%	-7,830	840
Yorkshire and Humber	0.8%	2,100	2,010
East Midlands	0.5%	-2,220	1,720
East of England	1.3%	2,530	4,540
Greater London	1.5%	4,020	2,010
South East	1.1%	16,550	2,250
South West	2.0%	11,520	4,480
Wales	4.6%	12,110	2,450
West Midlands	1.8%	9,660	3,390
Northern Ireland	0.5%	-1,240	310
North West	2.0%	26,720	5,470
Scotland	0.1%	-8,280	2,130
UK	**1.3%**	**65,640**	**31,600**

Source: CSN, Experian.
Ref: CSN Explained.

> Construction output growth in Northern Ireland is projected to average 0.5% a year over the 2018 to 2022 period, compared to the UK growth rate of 1.3%.

THE OUTLOOK FOR CONSTRUCTION IN NORTHERN IRELAND

CONSTRUCTION OUTPUT NORTHERN IRELAND – OVERVIEW

Construction output in Northern Ireland reached £2.61bn (2015 prices) in 2016, a 7% increase on the previous year and its highest level since 2009, continuing the recovery that began in 2014. The public housing sector posted its second consecutive year of strong growth (22%), and double-digit percentage increases were also seen in the infrastructure (19%) and industrial and commercial (21%) sectors. The only sector to experience a decline in 2016 was the public non-housing one, where output contracted by 17%, although this was after two years of very strong growth.

In recent revisions to construction output data the Northern Ireland Statistics and Research Agency (NISRA) has combined the data series for the industrial and commercial sectors.

INDUSTRY STRUCTURE

The diagram, Construction Industry Structure 2016 – UK vs. Northern Ireland, illustrates the sector breakdown of construction in Northern Ireland, compared to that in the UK. Effectively, the percentages for each sector illustrate what proportion of total output each sector accounts for.

One of the interesting impacts of the revision to output data for the devolved nation is that it has brought the split between new work and R&M in line with the UK average, with the former accounting for 64% of total construction output in both in 2016. The discontinued data had indicated a much bigger share of new work in Northern Ireland.

Apart from this change, however, Northern Ireland's construction market is still structurally very different from the UK's. The private housing (17% vs. 20%), industrial and commercial (11% vs. 22%) and housing R&M sectors (13% vs. 19%) are all significantly smaller proportionally in Northern Ireland than the UK, while the opposite is true for infrastructure (17% vs. 12%), public non-housing (14% vs. 7%) and non-housing R&M (23% vs. 17%).

ECONOMIC OVERVIEW

The expected performance of a regional or national economy over the forecast period (2018–2022) provides an indication of the construction sectors in which demand is likely to be strongest.

Gross value added (GVA) in Northern Ireland totalled £34.2bn (2013 prices) in 2016, but this represented only a 1% rise on the previous year, a lower growth rate than for the UK (1.8%). Of the three largest sectors in the devolved nation, public services output declined by 1%, manufacturing saw only marginal growth of less than half a percent, with just the professional and other private services sector posting a decent rise, of 1.9%.

Northern Ireland's economy is under pressure as fears about the economic repercussions of leaving the single market weigh on investment and hiring across the UK. For Northern Ireland, it is the issues of tariffs on exports, diminished access to EU markets, uncertainty around the rights of EU workers currently employed in the UK as well as the squeeze on domestic spending due to higher inflation that form the basis of these fears. A hard Brexit could have a real impact on the economy in the devolved nation and there is still little clarity on what Brexit will eventually look like.

Estimates for 2017 indicate GVA growth of 1.4% in Northern Ireland, a little below the UK growth rate of 1.6%, with expansion strengthening to 1% in the manufacturing sector and public services returning to growth. However, household finances remain under pressure, with an estimated fall of 1.4% in real disposable incomes, which has in turn pushed consumer spending growth down by a percentage point, to 1.2%. The unemployment rate has edged down only slightly to 5.2% in 2017 (from around 7% in 2012) and is above the UK average of 4.5%.

ECONOMIC STRUCTURE

Northern Ireland's economy has a strong presence of public services and a higher proportion of manufacturing activity than seen nationally. Over 27% of its GVA comes from the public sector compared to the UK average of 18%. Manufacturing underpins 15% of GVA compared to the UK average of 10%. This overreliance on more undynamic sectors is what usually pulls the region to the bottom of economic league tables. Even within manufacturing, the region's specialism is in the lower-end food and drink sector. Nevertheless, there has been some rebalancing of the economy in recent years with the share of public services 4% lower than it was in 2000, while manufacturing's has dropped by a percentage point.

Inevitably, with these two sectors taking a larger share of output in the devolved nation, faster growing sectors, such as professional and other private services, take smaller ones. It accounted for 18% of output in Northern Ireland in 2016, compared with 28% across the UK.

CONSTRUCTION OUTPUT 2000-2016 – NORTHERN IRELAND
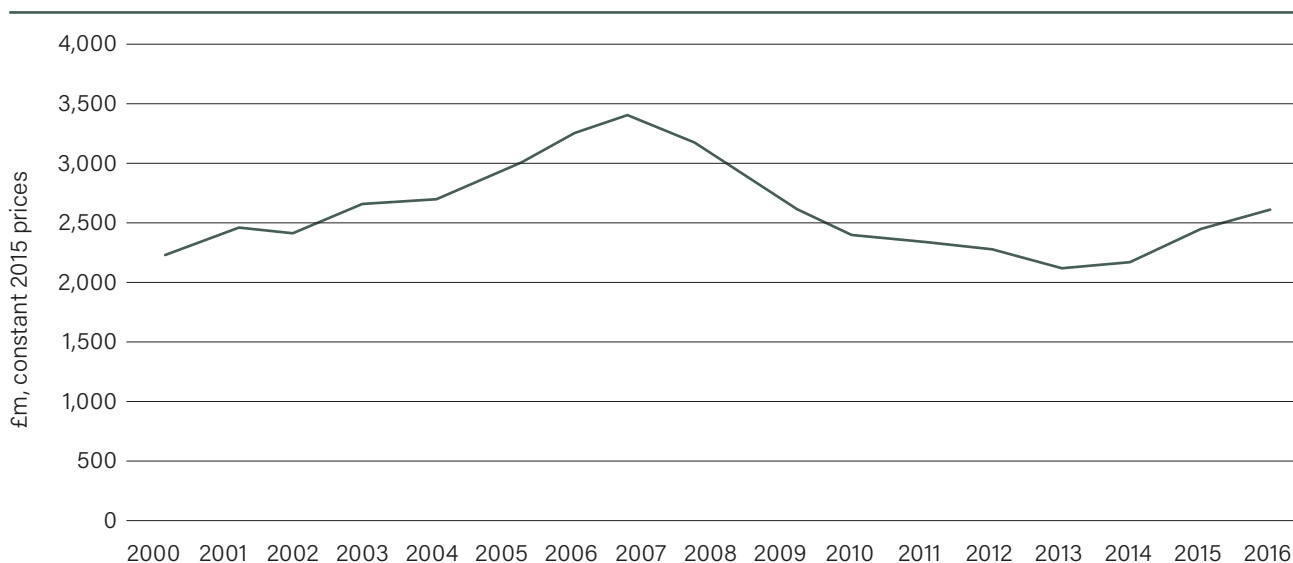
CONSTRUCTION INDUSTRY STRUCTURE 2016 – UK VS NORTHERN IRELAND

Public housing	Infrastructure	Industrial	Housing R&M
3% | 5%	12% | 17%	3% | 0%	19% | 13%

Private housing	Public non-housing	Commercial	Non-housing R&M
20% | 17%	7% | 14%	19% | 11%	17% | 23%

■ UK   ■ Northern Ireland
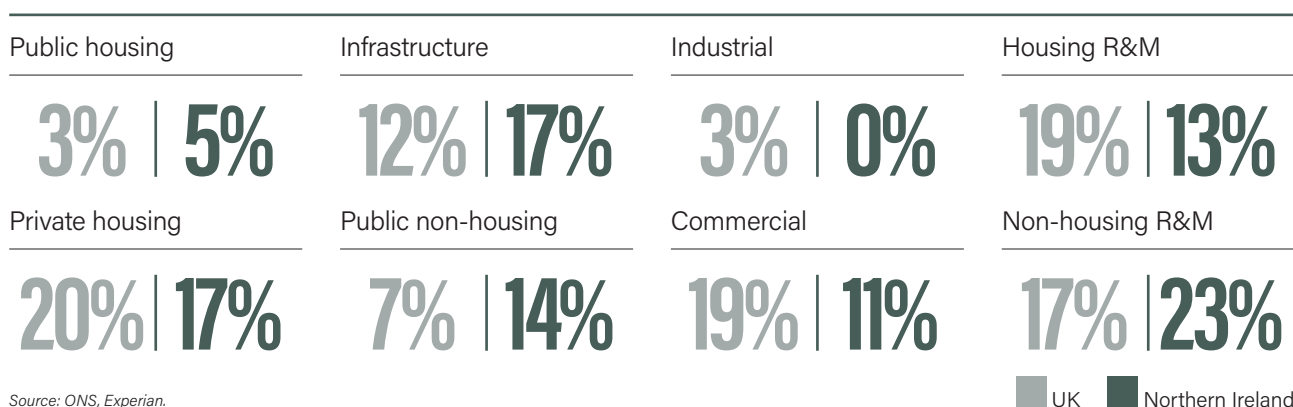
ECONOMIC STRUCTURE – NORTHERN IRELAND (£ BILLION, 2013 PRICES)

	Actual	Forecast (Annual % change, real terms)					
	2016	2017	2018	2019	2020	2021	2022
Public Services	9.4	0.8	0.7	1.3	1.7	1.9	2.3
Professional & Other Private Services	6.2	2.0	1.3	1.7	1.7	1.9	2.4
Manufacturing	5.0	0.9	0.8	1.2	0.8	0.9	1.1
Wholesale & Retail	4.9	1.7	1.1	1.6	1.9	2.3	2.9
Finance & Insurance	1.3	0.9	1.0	1.3	1.8	2.3	3.0
Total Gross Value Added (GVA)	**34.2**	**1.4**	**1.1**	**1.5**	**1.6**	**1.8**	**2.3**

FORWARD LOOKING ECONOMIC INDICATORS

GVA growth in Northern Ireland is projected to lag the UK's by around 0.3% a year on average over the forecast period (1.7% vs. 2%), the almost inevitable consequence of two factors, the one mentioned in the previous section regarding the economic structure of the devolved nation's economy, and secondly, lower population growth. GVA growth in recent years has been driven as much by overall increases in population as any productivity gain and unless this is addressed, lower population growth will inevitably mean lower GVA growth. Population growth in Northern Ireland over the five years to 2020 is projected to average 0.5% a year, a little down on the UK rate of 0.6%.

The key challenge in Northern Ireland is to rebalance the economy towards a more dynamic private sector base. The pace of diversification has been relatively modest and reliance on the relatively slow-growing public sector and manufacturing (in most years at least) is a hindrance.

Real household disposable income is expected to return to growth, albeit modest, this year and the rate of increase to accelerate steadily during the forecast period, although even by 2022 it is expected to remain below 2%. This should lead to an accelerating rate of household spending growth, which should be bolstered by a continuing, albeit modest, rise in workforce jobs over the 2018 to 2022 period. The unemployment rate is expected to pick up to 5.4% in 2020, but should start to subside again thereafter.

CONSTRUCTION OUTPUT – SHORT-TERM FORECASTS (2018–2019)

Construction output data for Northern Ireland are published by the Department of the Economy and at the time of writing data was available for the second quarter of 2017, although unlike the English regions and other devolved nations, an estimate of output in constant prices is made. No new orders data are available for the devolved nation.

Total construction output in the first half of 2017 reached £1.39bn (2013 prices), 4% up on the previous half year and 8% higher than in the corresponding period of 2016. On an annualised basis output hit £2.72bn in the second quarter of last year, its highest level since the first quarter of 2011. Growth has been centred in the private sectors, private housing and the industrial and commercial ones, with output in the former up by nearly 9% in the second quarter of 2017 compared with the end of 2016 and by 29% in the latter.

Output growth for 2017 as a whole is estimated at 11%, taking its level in 2015 prices up to £2.9bn, its highest since 2008, driven by double-digit expansion in the public housing (21%) private housing (16%), and industrial and commercial (37%) sectors.

Growth is projected to moderate sharply in the short term, to an average annual rate of 1.7%, but this comes after three years of strong increases, which have pushed output levels back up towards the £3bn level.

The prospects for public housing look reasonably good over the short term with projected output growth averaging 4.7% a year in 2018 and 2019. The Northern Ireland Executive's plans to build 1,600 new social and affordable housing units is being delivered in partnership with organisations such as Clanmill Housing Group. As of last summer Clanmill had 21 schemes on site due to deliver nearly 540 units, with a further 360 across twelve sites scheduled to start within the next year. Green Pastures evangelical church is taking forward a 'mini-village' development on the outskirts of Ballymena, to include social and student housing, such as 80 safe houses for vulnerable adults. The project is expected to complete in autumn 2019.

By the end of 2017 private housing output per capita will still be below the UK average in Northern Ireland, and house price growth is still reasonable. According to the December ONS House Price Index, prices in Northern Ireland were up by 5.6% in the year to October. Annual house price growth had generally been on a falling trend since June 2016, but that trend reversed in July last year. Thus, although private housing output growth is expected to slow from its estimated 16% last year, it still should average close to 4% in 2018 and 2019.

ECONOMIC INDICATORS – NORTHERN IRELAND (£ BILLION, CURRENT PRICES – UNLESS OTHERWISE STATED)

	Actual	Forecast (Annual % change, real terms)					
	2016	2017	2018	2019	2020	2021	2022
Real household disposable income (2013 prices)	29.4	-1.4	0.6	0.9	1.3	1.6	1.9
Household spending (2013 prices)	30.6	1.2	0.5	1.4	2.0	2.1	2.2
Working age population (000s and as % of all)	1,169	62.7%	62.6%	62.6%	62.9%	62.7%	62.5%
House prices (£)	123,000	4.0	1.8	1.7	2.0	2.2	3.3
LFS unemployment (millions)	0.05	-10.7	1.2	2.5	1.9	-1.4	-4.8

Source: ONS, DCLG, Experian.

The Infrastructure sector is expected to be one of the main beneficiaries of the extra £1bn available to the Northern Ireland Executive after the DUP's post-election negotiations with the Conservative party. £400m has been earmarked for Infrastructure projects over the next two years, including plugging the gap in funding for the York Street interchange caused by the loss of European Union money. However, according to the Royal Institution of Chartered Surveyors (RICS), both Infrastructure and public non-housing workloads were heavily down in the second quarter of 2017. While a number of factors have affected these sectors, RICS believes the current political impasse in the devolved nation is having a negative effect, thus it is likely that 2019 rather than this year will be a better one for growth in the sector.

There are some substantial road improvement projects just starting or in the pipeline. Work began on the £120m-£140m A6 upgrade between the M22 and Castledawson in 2017 and is due to start on another section of the A6 between Derry and Dungiven, worth between £160m and £180m, in the first half of 2018.

Output in the public non-housing sector peaked in 2015 at around £440m (2015 prices), but fell sharply to £366m in 2016 and is estimated to have fallen even further to £330m last year. Activity in the sector is expected to regain some stability this year and next, with only a modest decline of around 0.5% on an annual average basis.

County Down based contractor Graham has been appointed to build the £57m maternity unit at the Royal Victoria in Belfast. Work should begin at the beginning of 2018 and complete in 2021. Work is continuing on Ulster Hospital's new acute facilities, worth between £90m and £100m, and is due to complete in the third quarter of 2019. The University of Ulster's £263m campus extension is ongoing and due to complete in 2019. The new 75,000 square metre campus will accommodate up to 15,000 students and staff.

As was mentioned in Outlook for Construction, NISRA has combined the industrial and commercial data series into one, the assumed reason being that the industrial construction sector was very small in the devolved nation and thus was prone to a high level of volatility.

The sector has been benefiting from a surge in hotel building in Belfast as the city has enhanced its attractiveness as a tourist direction. This has contributed to very strong output growth in both 2016 and 2017, but this impact may be coming to an end. Nevertheless, there are still projects in the pipeline, such as Ebrington Leisure Group's £15m, 152-bed, hotel planned for the former Ebrington Barracks in Derry/Londonderry.

Work has now completed on phase 2 of City Quays, the £250m redevelopment of Belfast Harbour, with the £46m City Quays 3 phase due to have started construction at the end of last year. The £400m Royal Exchange mixed-use development in Belfast is now pending a planning decision and if successful work could start in early 2018. The scheme will include retail, office, leisure, residential, and community facilities.

CONSTRUCTION OUTPUT – LONG-TERM FORECASTS (2018-2022)

Construction output in Northern Ireland is projected to grow by 0.5% a year on average over the 2018 to 2022 period, and sustain a level not far short of £3bn (2015 prices), the best performance since 2008.

Mention has already been made of the Northern Ireland Executive's target of 1,600 new social and affordable housing units and this should continue to drive expansion in public housing output over the whole of the forecast period. In fact, the public housing sector is likely to be the most buoyant between 2018 and 2022, with an annual average growth rate not far short of 6%. The devolved nation has a very active housing association sector, which will drive expansion. Choice Housing Association is one of the biggest in Northern Ireland with an annual turnover of £42m. Its 2015-2020 corporate strategy plan indicated that it is looking to build 500 new homes annually across the period. According to its 2017/18 Business Plan 500 units will be started and 380 completed over the financial year.

Apex Housing Association operates both north and south of the border and has an extensive development programme, with 680 units currently under construction across 17 sites, with another 326 across 11 sites in the pipeline. Radius Housing Association is another major social housing provider in the devolved nation, managing over 33,000 properties. It currently has 400 units in construction across 13 schemes, the largest of which is a 90-home project in Springfield Road, Belfast.

In contrast, the expectations for private housing are relatively modest during the forecast period, with under a percentage rise a year on average. Lacuna Developments are putting together proposals for a 19 storey, 108-flat residential development on Academy Street, Belfast, with retail outlets on the ground floor. If the scheme runs to schedule, work should start this year with completion in 2020. Work is ongoing on the £200m, 1,000-home Rivenwood development near Newtownards, with the first properties in phase 2 of the project now being released for sale. There are also substantial schemes proposed for Coleraine and Ballyclare, amongst others. However, they are all long-term, with output spread over many years, thus have only a moderate impact on year-on-year growth. Nevertheless, output is projected to be in the £530m to £560m region (2015 prices) a year over the forecast period, the best sustained level of activity since 2010.

Over the whole of the 2018 to 2022 period infrastructure output is projected to decline by 1.5% a year on average, but this disguises the fact that it is expected to hit a new high of around £530m (2015 prices) in 2019. There are plenty of projects in the pipeline and year-on-year performance will depend on their timing.

Belfast Power Limited, a subsidiary of Evermore Energy, is developing a new gas-fired power station on the Belfast Harbour estate. The £280m project should begin construction this year and when operational in 2020 should produce enough

CONSTRUCTION OUTPUT - NORTHERN IRELAND (£ MILLION, 2015 PRICES)

	Actual	Forecast (Annual % change)			Annual average
	2016	2017	2018	2019	2018-2019
Public housing	135	21%	5%	4%	4.7%
Private housing	443	16%	5%	3%	3.7%
Infrastructure	437	8%	1%	12%	6.1%
Public non-housing	366	-10%	-2%	1%	-0.5%
Industrial	0	–	–	–	–
Commercial	287	37%	-2%	-5%	-3.5%
New work	**1,668**	**12%**	**1%**	**3%**	**2.2%**
Housing R&M	335	9%	2%	-1%	0.4%
Non-housing R&M	613	8%	2%	0%	1.0%
Total R&M	**947**	**8%**	**2%**	**-1%**	**0.8%**
Total work	**2,615**	**11%**	**1%**	**2%**	**1.7%**

Source: Experian.
Ref: CSN Explained.

ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2019 NORTHERN IRELAND
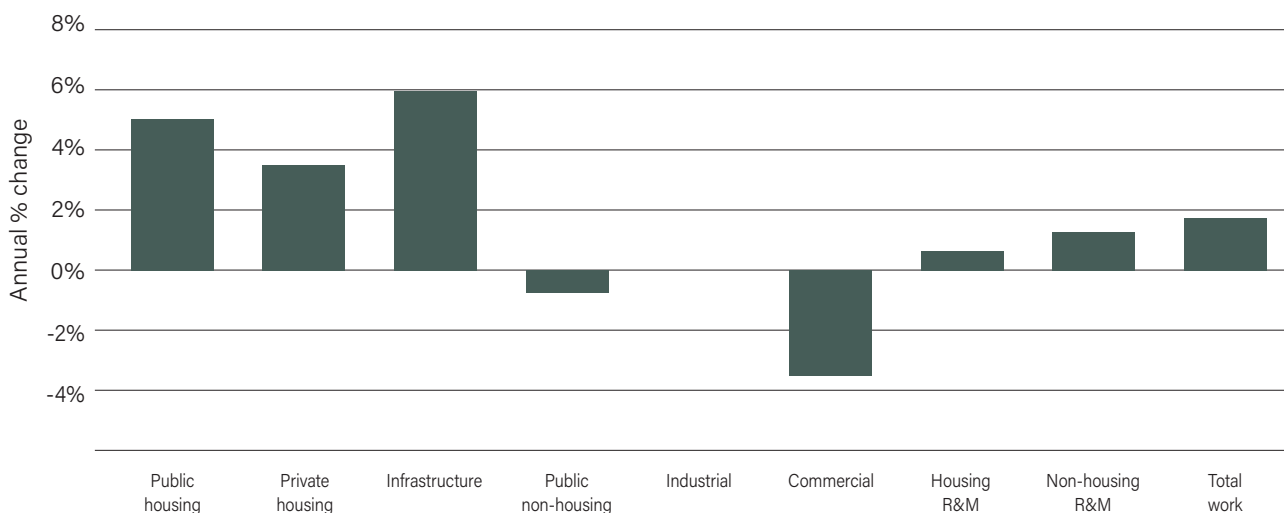
Source: Experian.
Ref: CSN Explained.

Employment is predicted to fall by 0.4% a year on average over the five-year period. Bricklayers will be most in-demand during the forecast period.

electricity to power 500,000 homes and businesses across the devolved nation. Rose Energy, in collaboration with three major players in the food industry, has submitted proposals for a £100m biomass power station near Glenavy in County Antrim. If it gets the go-ahead it will generate enough electricity to power 25,000 homes.

Over £200m has been earmarked for water main renewals over the next 10 years throughout Northern Ireland, while in the transport arena, projects in the pipeline include the £100m-£120m Belfast Transport Hub, further improvements to the A5 and A6, and a new multi-modal transport hub for Derry/Londonderry, which has recently been boosted by a €23.5m grant from the European Union. Central to the hub is the refurbishment of the existing Waterside rail station in Derry/Londonderry.

In the public non-housing sector, the new £90m-£100m Belfast Regional Children's Hospital is expected to enter procurement in the first quarter of 2019, but apart from this project there is little of any size in the pipeline in the health sub-sector, although it may be that some of the extra £1bn mentioned in the infrastructure section could eventually find its way to health construction. The pipeline looks much more substantial in the education sub-sector. £40m to £45m has been allocated to up to 50 schools for refurbishment and extension to their respective estates. Funding will be awarded on a scheme-by-scheme basis. The big expenditure is in the further education sector, however, with 11 college schemes worth between £186m and £235m due to enter procurement over the next couple of years and all but two scheduled to be on site by the end of 2019. The £160m to £180m redevelopment of Magilligan Prison was due to enter procurement in the second quarter of 2017 and all being well construction should start in mid-2018, although it is scheduled to last for six years. Thus, it is a bit 'swings and roundabouts' in the sector, with health construction declining but education increasing. Overall, output in the sector is projected to continue to subside, by around 1% a year on average.

Manufacturing output is projected to grow by a modest 1% a year on average over the 2018 to 2022 period, but the transport and storage sector should see expansion of around 1.9% a year, suggesting that demand for distribution and logistics facilities could be a bit stronger than that for factories. However, neither growth rate is particularly strong thus general demand for new industrial space is expected to be muted, although there are always requirements for bespoke facilities.

Of the sectors that drive demand for commercial space, the information and communication one is expected to fare best with annual average growth of 2.1% over the forecast period, with the remaining sectors seeing expansion of under 2% a year. Deloitte Real Estate's first Crane Survey for Belfast made upbeat reading, with some 30 projects on site or in the pipeline. City Quays 4 is currently in design stage and if all goes according to plan work should start some time in 2019. Signature Living has chosen the location for its proposed George Best themed hotel in Belfast, the site of the former Scottish Mutual building. The company is taking forward a total of four hotel projects across the city in an investment totalling £80m. Overall, output in the sector is projected to subside by 0.5% a year between 2018 and 2022, but its year-on-year level should remain well above £350m (2015 prices), which will be the best performance since 2008.

In contrast to the UK, which has seen a flat long-term trend in R&M output in real terms, Northern Ireland has seen significant growth, of around 4% a year on average over the past 25 years. However, a similar level of R&M growth in both geographies is expected going forward, for two reasons. First, the share of R&M in total construction output in Northern Ireland has now reached the same level as in the UK as a whole. Secondly, given weaker economic growth and some retrenchment in disposable incomes, there may be some delaying of the purchase of big ticket items in the domestic sector and some postponement of routine maintenance in the non-housing one, although this was not the case in 2017.

BEYOND 2022

The long-term residential developments at Rivenwood and Ballyclare have recently been joined by a 3,500-home scheme for the Buncrana Road area of Derry/Londonderry. These are all projects that will deliver output streams well beyond 2022.

The Islandmagee gas storage facility scheme is still on the table, but while project design has been completed there is no sign yet of construction work beginning. The estimated timescale for the whole project is seven years in three construction phases, thus even if it were to start in 2018, construction would continue until 2025.

The timetable for the 100MW Fair Head Tidal Array project has not changed from last year, meaning the 'demonstrator' project of 10MW is scheduled to start in 2018 and phase 2, the main 100MW installation, in 2021, with completion in 2025.

CONSTRUCTION OUTPUT – NORTHERN IRELAND (£ MILLION, 2015 PRICES)

	Estimate	Forecast (Annual % change)					Annual average
	2017	2018	2019	2020	2021	2022	2018-2022
Public housing	163	5%	4%	7%	7%	6%	5.7%
Private housing	514	5%	3%	1%	-4%	0%	0.8%
Infrastructure	473	1%	12%	-8%	-11%	1%	-1.5%
Public non-housing	330	-2%	1%	-3%	0%	-1%	-1.1%
Industrial	0	-	-	-	-	-	-
Commercial	395	-2%	-5%	1%	3%	1%	-0.5%
New work	**1,875**	**1%**	**3%**	**-2%**	**-3%**	**1%**	**0.1%**
Housing R&M	365	2%	-1%	2%	4%	4%	2.0%
Non-housing R&M	660	2%	0%	2%	-1%	1%	0.8%
R&M	**1,024**	**2%**	**-1%**	**2%**	**1%**	**2%**	**1.2%**
Total work	**2,899**	**1%**	**2%**	**-1%**	**-1%**	**1%**	**0.5%**

Source: CSN, Experian.
Ref: CSN Explained.

ANNUAL AVERAGE CONSTRUCTION OUTPUT GROWTH 2018-2022 NORTHERN IRELAND
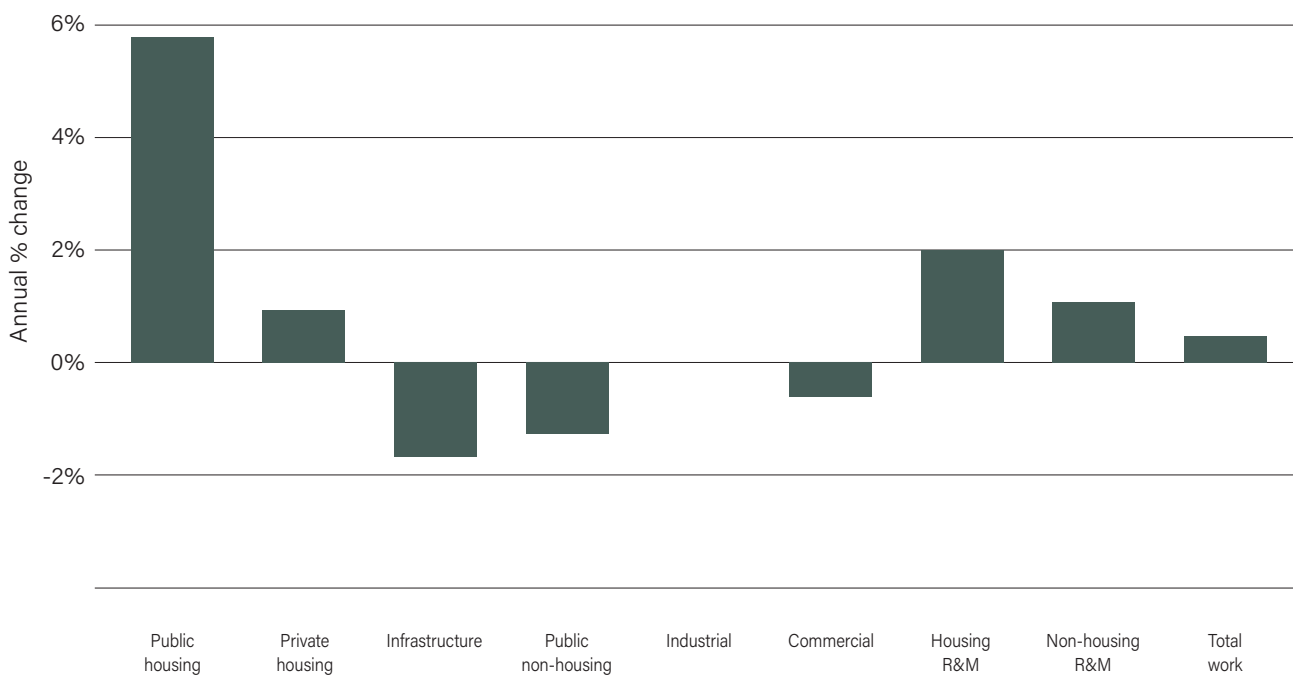
Source: CSN, Experian.
Ref: CSN Explained.

CONSTRUCTION EMPLOYMENT FORECASTS FOR NORTHERN IRELAND

TOTAL CONSTRUCTION EMPLOYMENT FORECASTS BY OCCUPATION

The table presents actual construction employment (SICs 41-43, 71.1, and 74.9) in Northern Ireland for 2016, the estimated total employment across 28 occupational categories in 2017 and forecasts for the industry for 2018 to 2022. A full breakdown of occupational groups is provided in the CSN Explained section.

After six years of decline, construction employment in Northern Ireland finally started growing again in 2015 and in 2016 reached 62,120, 1% up on the previous year. However, that still left it 14% below its peak level in 2008. This represents the size of the workforce working within the devolved nation and there is plenty of anecdotal evidence of firms based in Northern Ireland winning contracts in the rest of the UK, and in the Republic of Ireland.

Looking ahead the projected 0.5% rise in average annual output will not be enough to drive employment growth over the whole of the 2018 to 2022 period, given expected productivity gains. Thus, employment is projected to decline marginally over the forecast period, by 0.4% a year on average. It is projected to end the forecast period in 2022 at just over 61,770, having peaked at around 63,500 in 2019.

While across the UK as a whole, professionals and managerial/administrative occupations are expected to fare better than the trades/manual ones, the prognosis is a little different for Northern Ireland. Professionals are projected to see growth of about 1% a year on average, but the trade/manual and managerial/administrative ones are expected to decline modestly.

In most demand are expected to be logistics personnel (annual average growth rate of 2.7%) and architects (2.6%).

Annual recruitment requirement (ARR) by occupation

	Total employment	2018	2022	ARR
Non-manual occupations				
Other construction process managers	5,890 / 5,930			50
Construction Project Managers	980 / 1,040			<50
Non-construction professional, technical, IT, and other office-based staff	6,770 / 6,190			–
Senior, executive, and business process managers	2,770 / 2,600			–
Construction Trades Supervisors	900 / 870			–
Non–construction operatives	200 / 180			–
Manual occupations				
Bricklayers	2,470 / 2,620			80
Wood trades and interior fit-out	8,070 / 8,530			<50
Plant operatives	1,810 / 1,720			<50
Plasterers	2,150 / 2,060			<50
Roofers	1,150 / 1,220			<50
Labourers nec*	4,390 / 3,930			–
Electrical trades and installation	4,270 / 4,040			–
Painters and decorators	3,290 / 3,130			–
Plumbing and HVAC Trades	3,720 / 3,300			–
Logistics	520 / 570			–
Scaffolders	250 / 260			–
Specialist building operatives nec*	700 / 720			–
Building envelope specialists	900 / 910			–
Steel erectors/structural fabrication	210 / 180			–
Glaziers	550 / 520			–
Plant mechanics/fitters	620 / 650			–
Floorers	310 / 300			–
Civil engineering operatives nec*	460 / 470			–
Professional occupations				
Other construction professionals and technical staff	3,740 / 4,000			50
Civil engineers	2,860 / 2,680			–
Surveyors	1,020 / 1,060			–
Architects	1,930 / 2,090			–

*Source: ONS, CSN, Experian. Ref: CSN Explained. *Not elsewhere classified.*

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, these flows do not include movements into the industry from training, due to the inconsistency and coverage of supply data. 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.

Despite the fall in employment, net flows mean that Northern Ireland still has an annual recruitment requirement, estimated at an average of 310 over the five-year period to 2022. This requirement represents 0.5% of base 2018 employment, a lower ratio than across the UK as a whole (1.2%). Bricklayers is the only occupation flagged up as having an ARR ratio of above 2.5%.

In absolute terms the biggest annual average requirements are for bricklayers (80), other construction process managers (50), and other construction professionals and technical staff (50).

Please 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 already 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.

ANNUAL RECRUITMENT REQUIREMENT BY OCCUPATION – NORTHERN IRELAND

	2018-2022
Non–manual occupations	
Non-construction professional, technical, IT, and other office-based staff	–
Other construction process managers	50
Senior, executive, and business process managers	–
Construction trades supervisors	–
Construction project managers	<50
Manual occupations	
Wood trades and interior fit-out	<50
Labourers nec*	–
Electrical trades and installation	–
Painters and decorators	–
Plumbing and HVAC Trades	–
Bricklayers	80
Plant operatives	<50
Logistics	–
Plasterers	<50
Roofers	<50
Scaffolders	–
Specialist building operatives nec*	–
Building envelope specialists	–
Steel erectors/structural fabrication	–
Glaziers	–
Plant mechanics/fitters	–
Floorers	–
Civil engineering operatives nec*	–
Professional occupations	
Other construction professionals and technical staff	50
Civil engineers	–
Surveyors	–
Architects	–
Total (SIC 41-43)	**260**
Total (SIC 41-43, 71.1, 74.9)	**310**

Source: CSN, Experian.
Ref: CSN Explained.

COMPARISONS ACROSS THE UK

It remains the case that the strongest economic growth will be in the south-east corner of England – Greater London, the South East and the East of England – which are the only three regions projected to see higher GVA growth than the UK rate of 2% a year on average to 2022.

The picture is more mixed across the regions and devolved nations in construction terms, although generally overall economic performance tends to drive stronger construction growth in the south-east corner of England, except where major infrastructure schemes have an impact.

Construction output growth is projected to be strongest in Wales, averaging 4.6% a year over the 2018 to 2022 period. The Welsh construction market is the third smallest in the UK, at an estimated £5.7bn (2015 prices) in 2017, thus the start of work on the Wylfa nuclear power station will have a major impact on output levels in the devolved nation. However, growth is not entirely reliant on this project, with others, such as the M4 upgrade around Newport and the commitment to build 20,000 new affordable homes by 2020/21 making significant contributions.

Construction output in Scotland is likely to remain largely static over the 2018 to 2022 period as further falls in infrastructure output from its very high peak in 2015 is counteracted by good growth in the housing sectors, with Scotland's target for affordable homes set at 50,000. The new Queensferry Crossing is now complete, as are the major motorway upgrades, with the Aberdeen Western Peripheral Route due to finish by spring 2018. There are other sizeable infrastructure projects ongoing, such as the dualling of the A9 between Perth and Inverness, but work on these will be spread over a long time period, thus their impact on growth is diluted.

Northern Ireland has experienced something of a boom in commercial construction activity over the past few years, driven in large part by a substantial expansion of hotel provision in Belfast. However, this may be slackening, while the current political impasse in the devolved nation is likely to impact negatively the timing of new infrastructure and other public projects, leading to relatively modest total output growth of 0.5% a year.

It is the case across the English regions that growth in the construction sector will tend to reflect expansion in the wider economy, unless the region benefits from the siting of major infrastructure projects. Both the South West and North West, which lead the English region growth rankings with 2% a year on average, will benefit from new nuclear build, at Hinkley Point in the case of the former and Moorside in the case of the latter. Enabling works at Hinkley Point have been ongoing for some time while some work at Moorside is projected to begin in 2022. London, and the East Midlands and West Midlands will also see good growth in infrastructure activity as work on High Speed 2 builds up over the forecast period. The strong infrastructure growth in the West Midlands should enable it to experience annual average expansion in total construction output of 1.8%, just behind the South West and North West.

London only manages average yearly growth of 1.5%, as while it benefits from strong infrastructure growth and above average expansion in the housing sectors, commercial construction in the capital is the most vulnerable to a more cautious attitude from investors and developers due to Brexit uncertainty.

Employment growth across the regions and devolved nations tends to mirror that of output, but at a lower level to take account of expected productivity gains and with some minor adjustments depending on whether output growth is in high or low labour intensive sectors. Annual average employment growth is projected to range from a high of 2.1% in Wales to a low of -1.6% in the North East, against a UK rate of 0.5%.

As the annual recruitment requirement (ARR) takes into account known supply-side factors, such as intra-regional labour movements and movements between other industries and construction, the pattern can look significantly different to the profile of output and employment, as some regions and devolved nations have historically strong net inflows and some suffer from large net outflows. For the 2018 to 2022 period, the largest absolute ARRs are for the North West (5,470), the East of England (4,540) and the South West (4,480). However, relative to base employment, Wales has the largest ARR (2.2%), followed by the South West and North West (1.9%). London is the biggest region for construction employment, but has a relatively low ARR at 2,010, just 0.5% of base 2018 employment, as the capital tends to act as a magnet for the workforce from other regions and internationally anyway.

ANNUAL AVERAGE OUTPUT GROWTH BY REGION 2018-2022 – NORTHERN IRELAND

Annual % growth output

Region	Value
North East	-0.8%
Yorkshire and Humber	0.85%
East Midlands	0.4%
East of England	1.45%
Greater London	1.55%
South East	1.1%
South West	2.0%
Wales	4.7%
West Midlands	1.85%
Northern Ireland	0.4%
North West	2.0%
Scotland	0.15%

UK average ≈ 1.5%
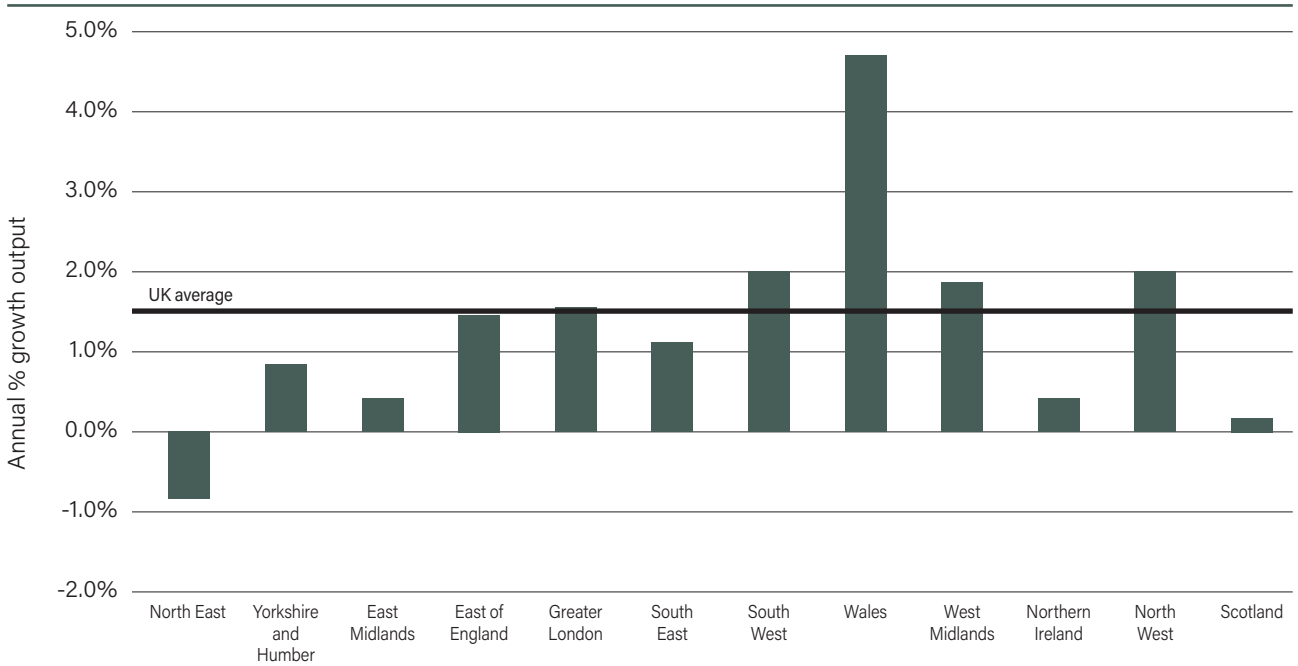
Source: CSN, Experian.
Ref: CSN Explained.

ANNUAL RECRUITMENT REQUIREMENT (ARR) BY REGION 2018-2022 – NORTHERN IRELAND

Annual requirement – workers

Region	Value
North East	850
Yorkshire and Humber	2000
East Midlands	1780
East of England	4480
Greater London	2000
South East	2180
South West	4480
Wales	2320
West Midlands	3210
Northern Ireland	250
North West	5580
Scotland	2180
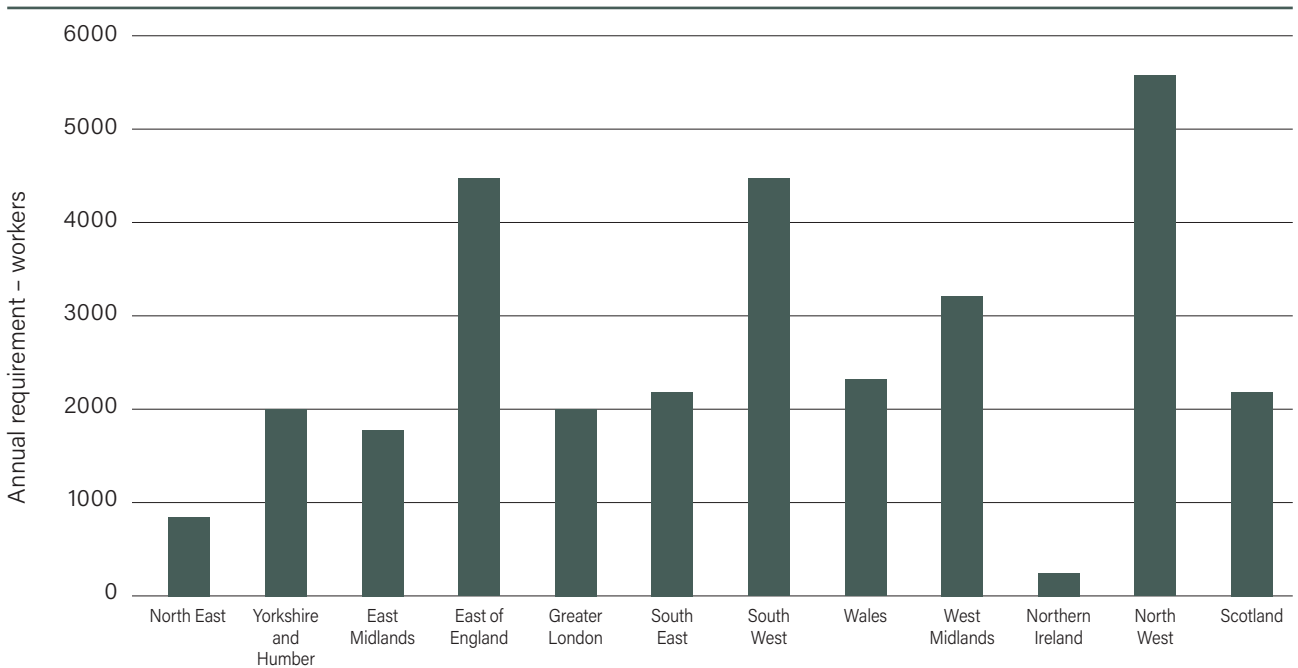
Source: CSN, Experian.

❝ There will be an ARR estimated at 310, over the forecast period. ❞

CSN EXPLAINED

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

CSN METHODOLOGY 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.

GLOSSARY provides clarification of some of the terms that are used in the reports.

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

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

OCCUPATION GROUPS 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.

CSN METHODOLOGY

BACKGROUND

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

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

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

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

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

THE MODEL APPROACH

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

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

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

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

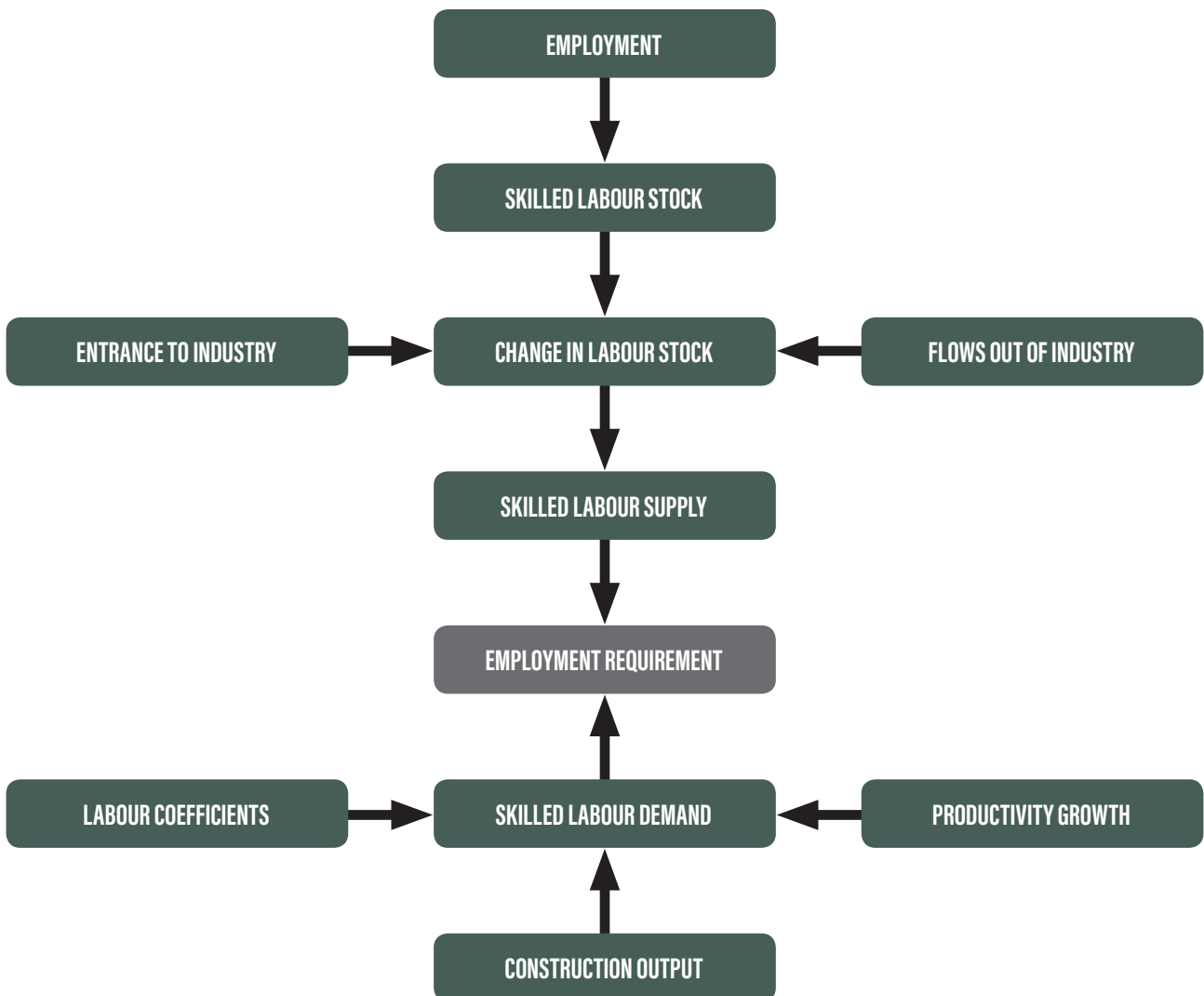The key leakages (outflows) that need to be considered are:

- Transfers to other industries

- International/domestic out migration

- Permanent retirements
  (Including permanent sickness)

- Outflow to temporary sickness and home duties.

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

Flows into the labour market include:

- Transfers from other industries

- International/domestic immigration

- Inflow from temporary sickness and home duties.

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

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                    ┌─────────────────────┐
                    │     EMPLOYMENT      │
                    └─────────────────────┘
                               │
                               ▼
                    ┌─────────────────────┐
                    │ SKILLED LABOUR STOCK│
                    └─────────────────────┘
                               │
                               ▼
┌──────────────────┐ ┌─────────────────────┐ ┌──────────────────┐
│ ENTRANCE TO      │→│ CHANGE IN LABOUR    │←│ FLOWS OUT OF     │
│ INDUSTRY         │ │ STOCK               │ │ INDUSTRY         │
└──────────────────┘ └─────────────────────┘ └──────────────────┘
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                    ┌─────────────────────┐
                    │ SKILLED LABOUR SUPPLY│
                    └─────────────────────┘
                               │
                               ▼
                    ┌─────────────────────┐
                    │ EMPLOYMENT REQUIREMENT│
                    └─────────────────────┘
                               ▲
                               │
┌──────────────────┐ ┌─────────────────────┐ ┌──────────────────┐
│ LABOUR           │→│ SKILLED LABOUR      │←│ PRODUCTIVITY     │
│ COEFFICIENTS     │ │ DEMAND              │ │ GROWTH           │
└──────────────────┘ └─────────────────────┘ └──────────────────┘
                               ▲
                               │
                    ┌─────────────────────┐
                    │ CONSTRUCTION OUTPUT │
                    └─────────────────────┘
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GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

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

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

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

Productivity – output per employee.

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

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

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

NOTES

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. 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.

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

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

FOOTPRINTS FOR THE BUILT ENVIRONMENT SECTOR

CITB and CITB Northern Ireland are responsible for SIC 41 Construction of buildings, SIC 42 Civil engineering, SIC 43 Specialised construction activities and SIC 71.1 Architectural and engineering activities and related technical consultancy.

The table summarises the SIC codes (2007) covered by CITB and CITB Northern Ireland:

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

The CSN's current baseline forecast assumes that a deal between the UK and EU will be agreed within a four year time horizon, with some form of trade access to the single market. As it is unlikely that the trade terms will be as favourable as the current situation, the forecast includes a small downgrade to the UK's long term export and investment projections, compared to the pre-Brexit vote baseline. No adjustments have been made to underlying population projections in the base case as it is too early to assess any potential slowdown in EU migration.

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]

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

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

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

OCCUPATIONAL GROUPS

Occupational group

Description, SOC (2010) reference.

Senior, executive, and business process managers

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

Construction project managers

Construction project managers and related professionals	2436

Other construction process managers

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

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

IT operations technicians	3131
IT user support technicians	3132
Finance and investment analysts and advisers	3534
Taxation experts	3535
Financial and accounting technicians	3537
Vocational and industrial trainers and instructors	3563
Business and related associate professionals nec*	3539
Legal associate professionals	3520
Inspectors of standards and regulations	3565
Programmers and software development professionals	2136
Information technology and telecommunications professionals nec*	2139
Estate agents and auctioneers	3544
Solicitors	2413
Legal professionals nec*	2419
Chartered and certified accountants	2421
Business and financial project management professionals	2424

Management consultants and business analysts	2423
Receptionists	4216
Typists and related keyboard occupations	4217
Business sales executives	3542
Bookkeepers, payroll managers and wages clerks	4122
Records clerks and assistants	4131
Stock control clerks and assistants	4133
Telephonists	7213
Communication operators	7214
Personal assistants and other secretaries	4215
Sales and retail assistants	7111
Telephone salespersons	7113
Buyers and procurement officers	3541
Human resources and industrial relations officers	3562
Credit controllers	4121
Company secretaries	4214
Sales related occupations nec*	7129
Call and contact centre occupations	7211
Customer service occupations nec*	7219
Elementary administration occupations nec*	9219
Chemical scientists	2111
Biological scientists and biochemists	2112
Physical scientists	2113
Laboratory technicians	3111
Graphic designers	3421
Environmental health professionals	2463
IT business analysts, architects and systems designers	2135
Conservation professionals	2141
Environment professionals	2142
Actuaries, economists and statisticians	2425
Business and related research professionals	2426
Finance officers	4124
Financial administrative occupations nec*	4129
Human resources administrative occupations	4138
Sales administrators	4151
Other administrative occupations nec*	4159
Office supervisors	4162
Sales supervisors	7130
Customer service managers and supervisors	7220
Office managers	4161

Construction trades supervisors

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

Wood trades and interior fit-out

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

Bricklayers

Bricklayers and masons	5312

Building envelope specialists

Construction and building trades nec* (50%)	5319

Painters and decorators

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

Plasterers

Plasterers	5321

Roofers

Roofers, roof tilers and slaters	5313

Floorers

Floorers and wall tilers	5322

Glaziers

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

Specialist building operatives not elsewhere classified (nec*)

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

Scaffolders

Scaffolders, stagers and riggers	8141

Plant operatives

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

Plant mechanics/fitters

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

Steel erectors/structural fabrication

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

Labourers nec*

Elementary construction occupations (100%)	9120

Electrical trades and installation

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

Plumbing and heating, ventilation, and air conditioning trades

Plumbers and heating and ventilating engineers	5314
Pipe fitters	5216
Construction and building trades nec* (5%)	5319

Air-conditioning and refrigeration engineers	5225

Logistics

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

Civil engineering operatives not elsewhere classified (nec*)

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

Non-construction operatives

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

Civil engineers

Civil engineers	2121

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

CITB RESEARCH

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