
CONSTRUCTION SKILLS GAP ANALYSIS FOR GREATER MANCHESTER 2017

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1. A PICTURE OF DEMAND

1.1 THE ECONOMIC ENVIRONMENT OF CONSTRUCTION

The construction industry has recovered well in recent years and has been contributing to the UK's economic growth since 2013. With steady performance following a double dip after the capital spending cuts of the 2010 emergency budget, the output of the industry finally surpassed pre-crisis levels in the second half of 2015. The composition of the industry's output has changed over this period, with infrastructure contributing a significantly increased share of total output, and housing seeing a resurgence since 2013 to become the largest and fastest growing component. However the latest national data shows a contraction in new orders at their fastest rate since 2014, and comes on the back of four months of falling output overall. All components of output saw negative growth in June 2017, except for private industrial and private housing, which saw growth of 5.1% to reach the highest level of monthly output on record. Despite this, construction output in the North West is at a record high, and with Greater Manchester expected to continue to grow at faster than the national average, there are reasons to be cheerful.

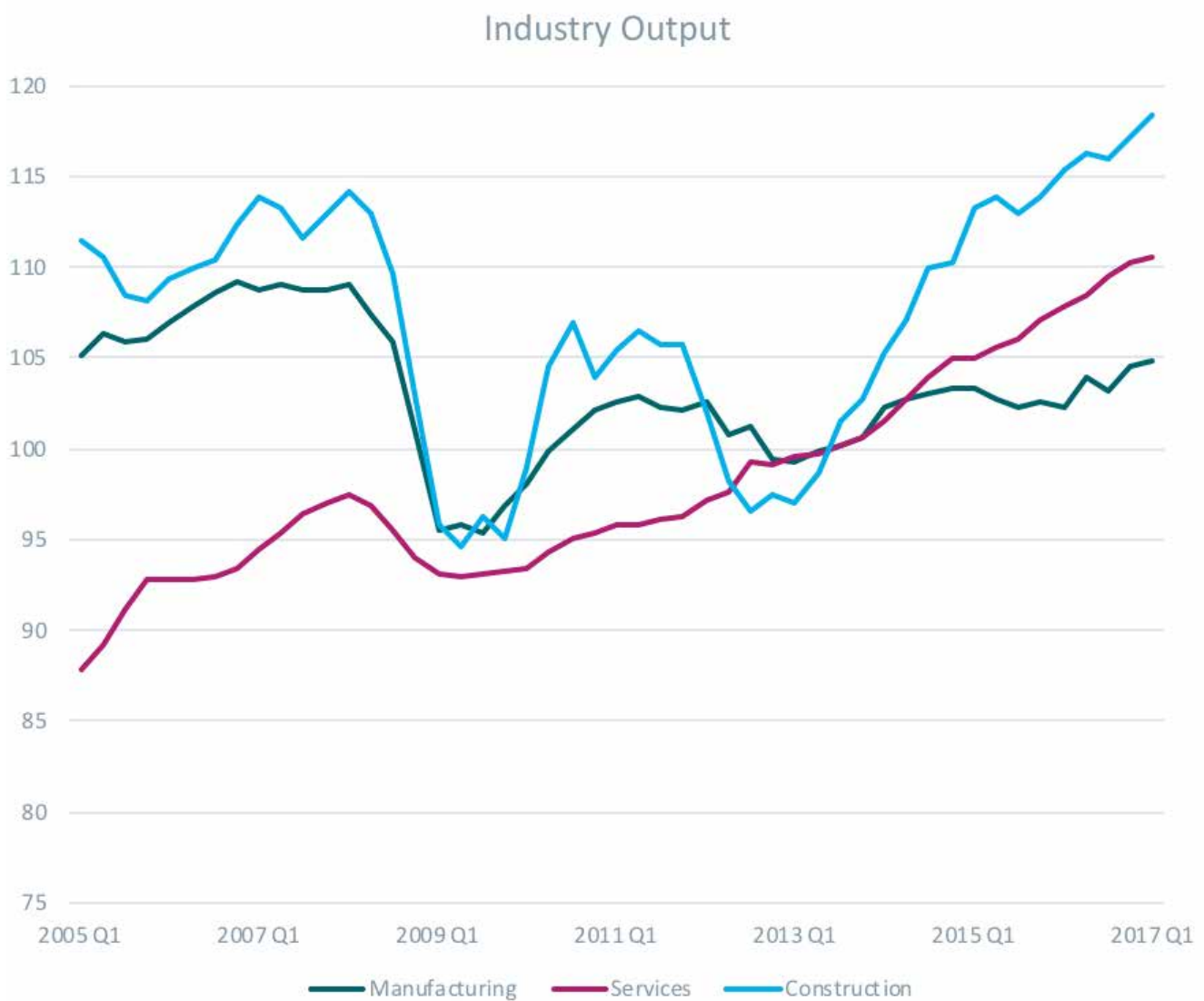


Figure 1: ONS Index of Production; Index of Services; Output in the Construction Industry

Output in the Construction Industry (NW)

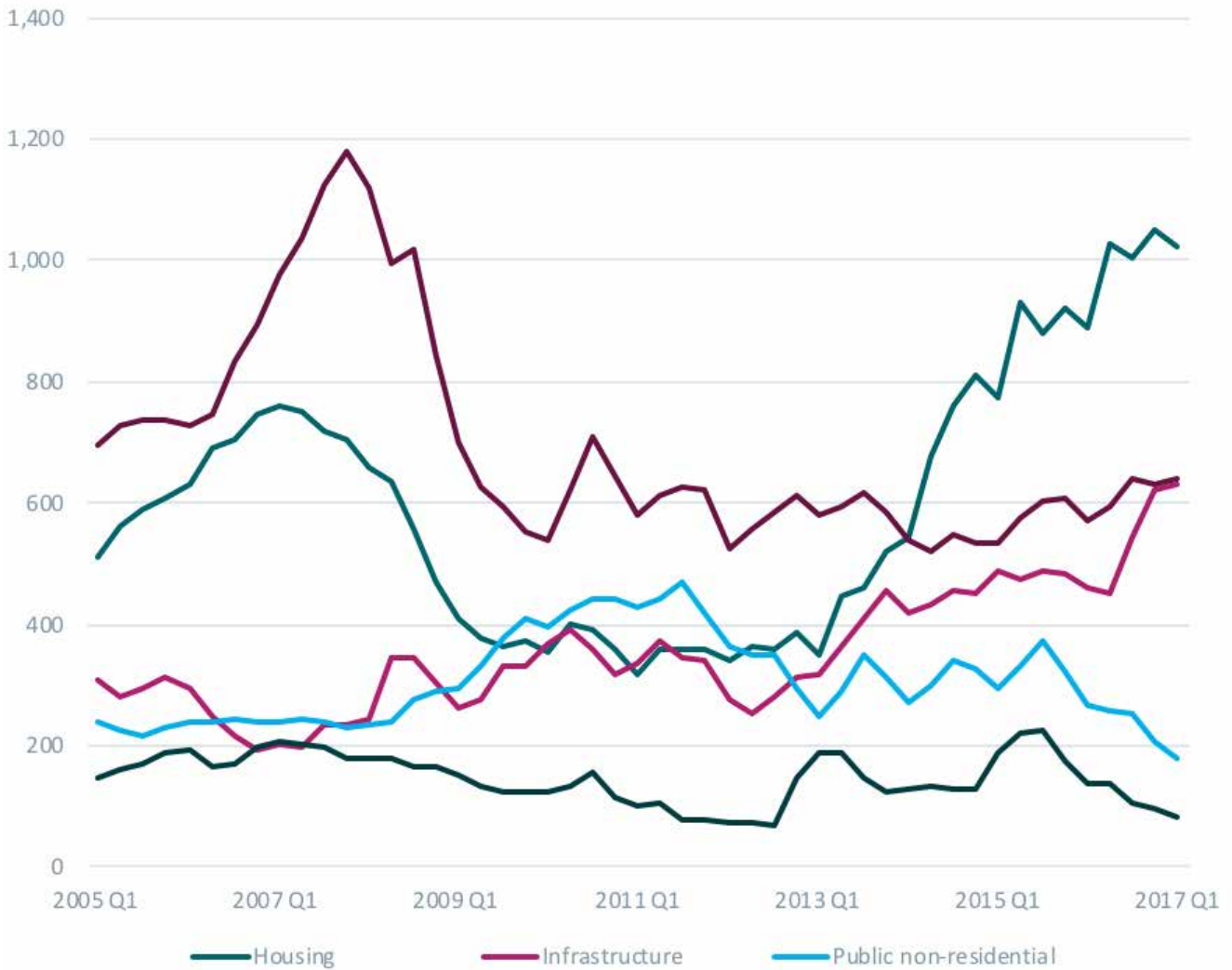


Figure 2: Output in the Construction Industry (ONS 2016)

The most significant influence on the current UK economic climate is undoubtedly Brexit. The referendum decision aroused unprecedented uncertainty within the business environment, and saw a significant overnight deflation in the value of the pound, with no recovery seen since. Whilst this devaluation may have boosted export sales early on, the downside effects in terms of increased import prices are beginning to feed through. This was always going to be the case in an import-export economy but particularly so in sectors like manufacturing and construction, where the import component of exports is large. Almost six months on since the triggering of Article 50, there is still serious uncertainty around transition periods and our future relationship with our biggest trading partner. For a sector such as construction, being heavily reliant on international supply chains and with 12% of the national workforce coming from abroad, the current environment will be raising serious doubts as to whether recent performance may be indicative of a new longer-term trend.

1.2 MAIN POINTS

1. THERE IS CURRENTLY £12.5 BILLION WORTH OF PROJECTS IN THE PIPELINE FOR GREATER MANCHESTER
2. £8.8 BILLION OF THIS OUTPUT IS SET TO BE DELIVERED IN THE FOUR-YEAR PERIOD 2017-2020
3. NEW PROJECT STARTS OVER THE SAME PERIOD ARE WORTH A TOTAL OF £7.8 BILLION
4. £3.5 BILLION OR 45% OF THE INDUSTRY'S TOTAL OUTPUT OVER THIS PERIOD IS ACCOUNTED FOR BY HOUSING PROJECTS

1.3 PIPELINE SUMMARY

The total pipeline for Greater Manchester includes 769 projects and a total value of £12.5bn, with a project visibility extending to 2033.

Our analysis of Greater Manchester enables us to formulate an estimation for the output of the construction industry in for the years 2017-2020. Applying our methodology to the data supplied by Barbour ABI, we forecast that the output of the industry over this period will total £8.8bn within Greater Manchester. This is slightly below the £8.9 billion that was forecast for the period 2015 – 2018 in the 2015 NW Pipeline.



Figure 3: GM Construction Output, GMCC & CITB GM Construction Pipeline 2017

	Number of Project Starts	Value of Project Starts
2013-2016	620	£8.2bn
2017-2020	567	£7.8bn

Table 1: Project Starts, GMCC & CITB GM Construction Pipeline 2017

The estimations for the total values of project starts during the analysed period (of 2017-2020) equals £7.85bn.

1.4 SECTORS

Construction Annual Output 2017-2020 By Sectors
(£billions)

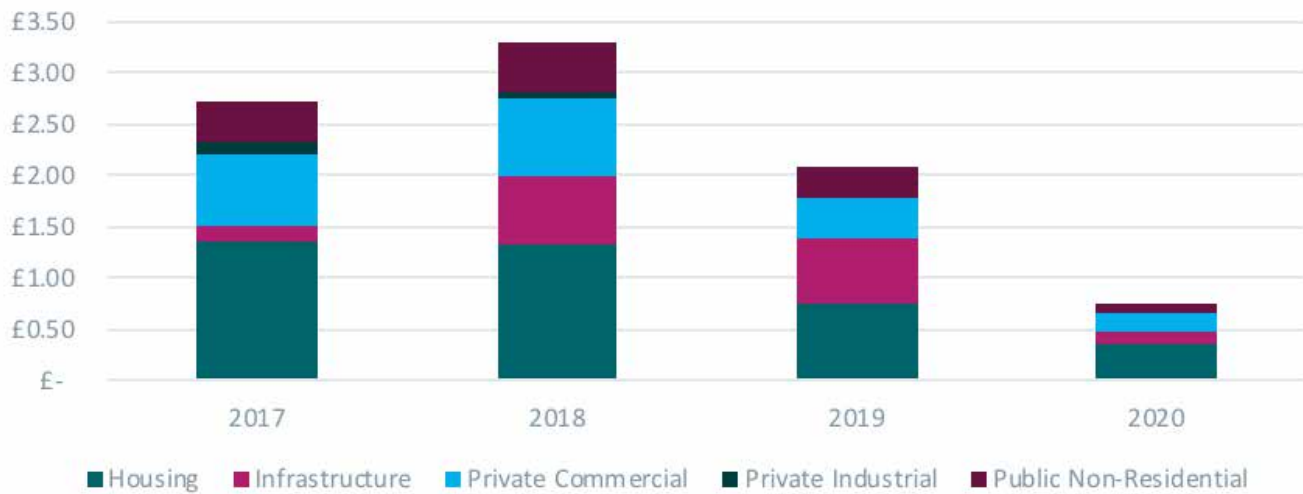


Figure 4: GM Construction Output, GMCC & CITB GM Construction Pipeline 2017

Category	2017	2018	2019	2020	Total Output
Housing	£1.35bn	£1.32bn	£0.76bn	£0.36bn	£3.79bn
Infrastructure	£0.16bn	£0.67bn	£0.62bn	£0.13bn	£1.58bn
Private Commercial	£0.70bn	£0.77bn	£0.41bn	£0.17bn	£2.04bn
Private Industrial	£0.11bn	£0.07bn	£0.00bn	£0.00bn	£0.18bn
Public Non-Residential	£0.38bn	£0.48bn	£0.29bn	£0.08bn	£1.24bn
Total Output	£2.71bn	£3.31bn	£2.08bn	£0.75bn	£8.84bn

Table 2: Output by category, GMCC & CITB GM Construction Pipeline 2017

The analysis of the project valuations by sectors follow the similar (underlying) trend. This is attributable to issues of low visibility of capturing projects which commence in 2019 and 2020, it would be anticipated that further projects would enter the system, particularly for housing.

The £8.8 billion of total output for 2017-2020 is comprised mainly of housing projects which contributes £3.79 billion, amounting to 42%. The second most valuable sector is deemed Private Commercial, equalling £2.04 billion during this time and making up 23% of the total output. This is followed by £1.58 billion in by the infrastructure sector, rounding up to 18%. Lastly, Public Non-Residential and Private Industrial supplying the values of £1.2 billion or 14% and £176 million to fulfil the projection.

Value of Project Starts 2017-20

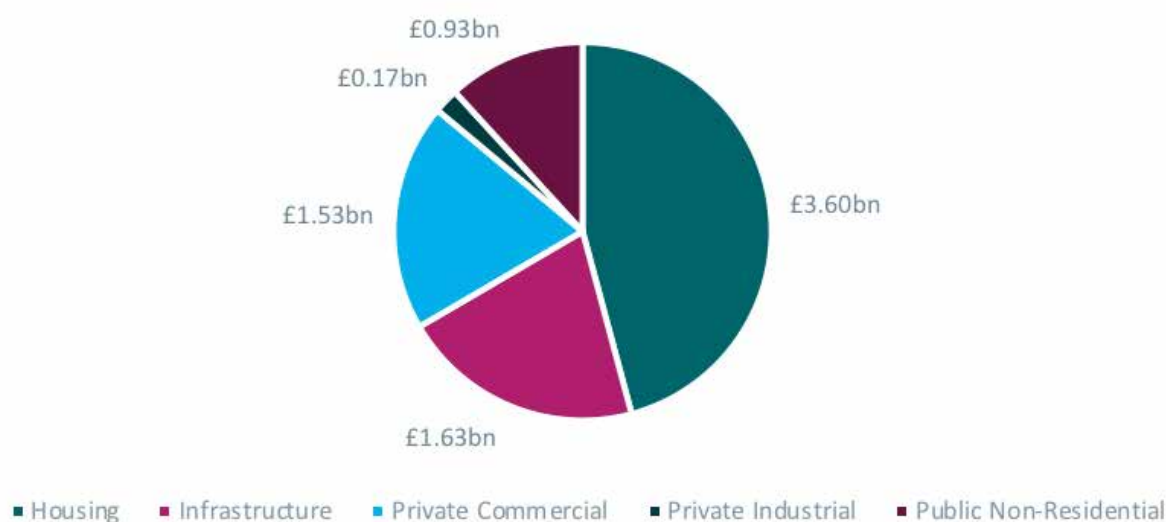


Figure 5: GM Project Starts, GMCC & CITB GM Construction Pipeline 2017

The most active sector in terms of project starts for the period 2017-2020 is housing, accounting for £3.6bn or 46% of the total value of project starts. The spread of these projects over the period is heavily skewed, with 89% or £3.2 billion of this total value is attributed to projects starting in 2017, and just 10% or £393 million due to start in 2018. This skew is explained by the limitation in project visibility as we look forward rather than a forecast of falling output.

The Infrastructure sector represents the next largest proportion of projects due to start, totalling 20.7% or £1.6billion of total project start value. Interestingly, the make-up of this figure mainly consists of work due to start in 2018 (63% or £1.04 billion of the periods total value of £1.63 billion), whereas, 2017 only accounts for 33% or £552 million. This is largely determined by the significant development beginning in 2018 of 'Trafford 1900MW CCGT Power Station' with a cost of £900million. Its intended date of completion is 2020.

The expansion of the Public Non-Residential sector suggests a more prosperous period of Government expenditure, surpassing the investments of Private Industrial and closing the gap on Private Commercial. On the contrary, this could portray a constriction of investment in the aforementioned sectors.

1.5 REGIONS



Figure 6: GM Output by Local Authority, GMCC & CITB GM Construction Pipeline 2017

The city of Manchester dominates forecasted output in the pipeline, accounting for 58% the total at £5.1 billion. There are also substantial developments occurring in Salford amassing £1.2 billion representing 14.5%. Other projects contributing to the total for Greater Manchester are Stockport (£619 million), and Trafford with £556 million. The remaining constituencies are expected to experience development exceeding the value of £100 million, with Tameside as the exception.

All projects in analysis:

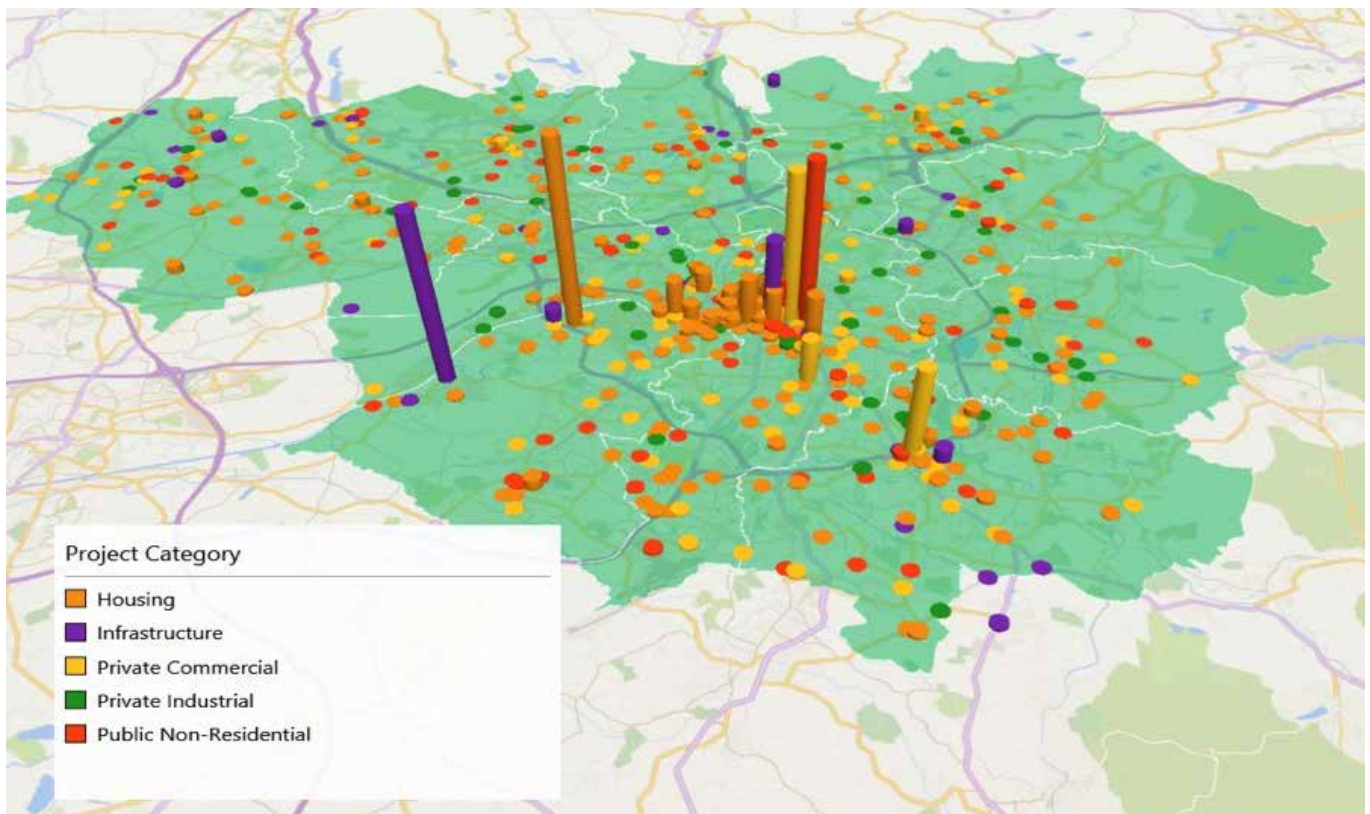


Figure 7: GM Output, GMCC & CITB GM Construction Pipeline 2017

Sub-£100m Projects in Analysis:

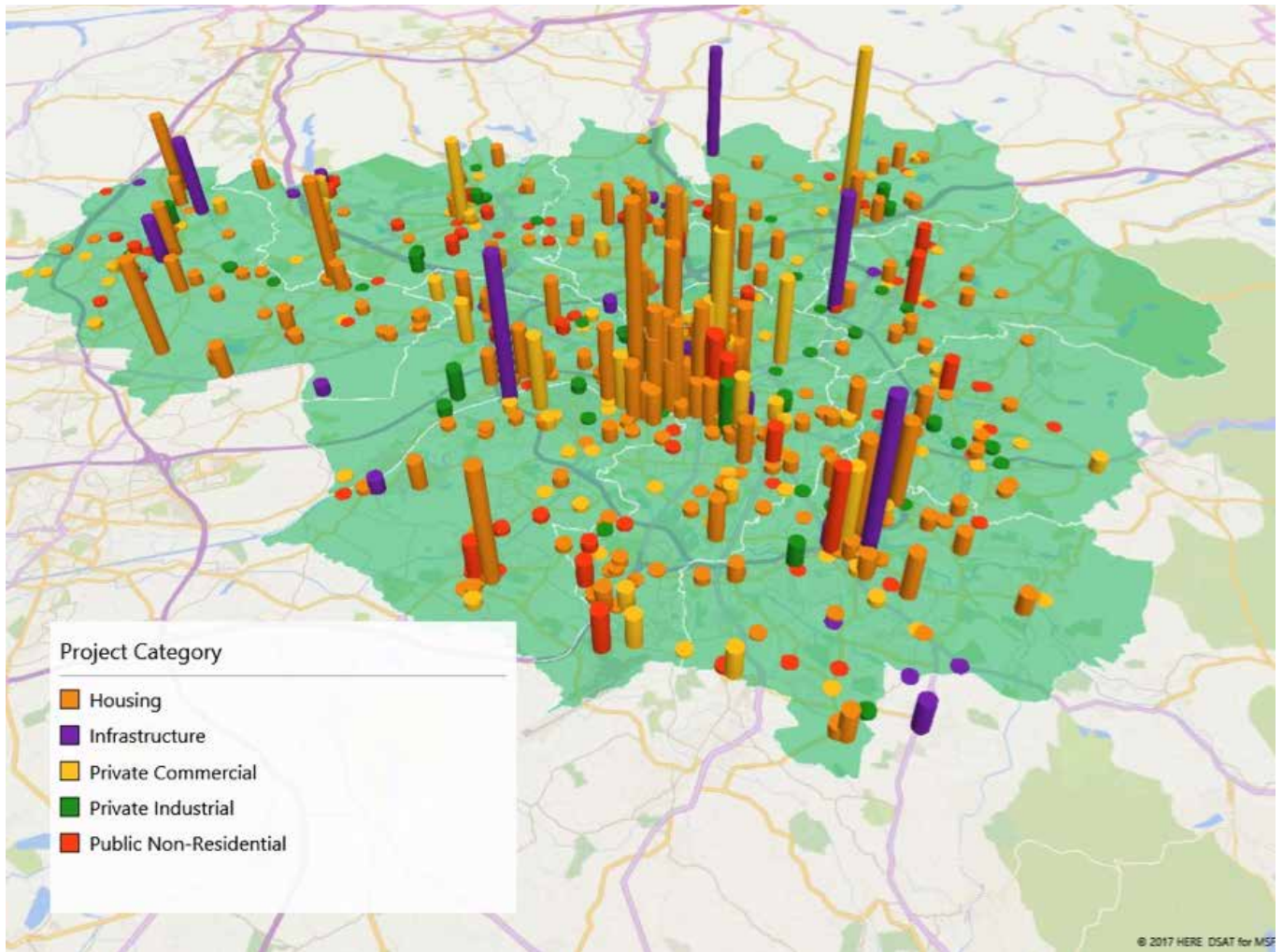


Figure 8: GM Sub-£100m Output, GMCC & CITB GM Construction Pipeline 2017

1.6 SPOTLIGHT ON HOUSING

An integral component of the transformative process underway in the region of Greater Manchester is housing. In conjunction with initiatives to stimulate its economic prosperity, are requirements of the provision of sufficient accommodation. Over the years, the region has remained an attractive destination, experiencing consistent population growth. The most recent release from the Office for National Statistics (ONS) in 2016 provides an estimate that the Metropolitan borough of Greater Manchester is home to 2,782,141 residents, rising approximately 26,000 from 2015.

This influx is predominately realised in city of Manchester, and the State of the City Report (2016), demonstrates that its population growth trend is around 1.5%, comparable to the average rate for England, which sits at just north of 0.5% for the last decade. The city represents the second most densely populated city outside of Southern England, with 4,666 people per square kilometre.

Authority	Area (sq. km)	Estimated Populations mid-2016	2016 people per sq. km
Bolton	140	283,115	2,022
Bury	99	188,669	1,906
Manchester	116	541,263	4,666
Oldham	142	232,724	1,639
Rochdale	158	216,165	1,368
Salford	97	248,726	2,564
Stockport	126	290,557	2,306
Tameside	103	223,189	2,167
Trafford	106	234,673	2,214
Wigan	188	323,060	1,718

Table 3: (ONS)UK Mid-Year Population Estimates (2016)

In the North West of England Plan Regional Spatial Strategy for the years leading up to 2021, the report identifies that approximately 9,045 housing units need to be built annually for the region of Greater Manchester, to comply with demand.

The Greater Manchester Spatial Framework draft published in October 2016, produced an updated revision of this figure, estimating that the annual requirement of had risen to 11,360 units. The report recognises the impending necessity for significant housing construction, pledging to deliver 227,000 additional homes through the period 2015-2035 in order to satisfy expected rates of demand.

Though the phasing plan of the strategy delivery is gradually augmented, only managing to exceed the current annual figure of required dwellings in 2020/2021.

5. 6,100 IN 2015/16
6. 7,400 IN 2016/17
7. 8,700 IN 2017/18
8. 10,000 IN 2018/19

1.7 KEY PROJECTS

Title	Value	Location	Start Year	End Year
ONE NORTH TRANSPORT PLAN MASTERPLAN	£15.0bn	GM	-	-
NEW RAIL LINE, NETWORK RAIL, WEST COAST	£8.5bn	Manchester	-	-
EFA - BALANCE OF FUND PROGRAMME	£3.1bn	GM	06/12/2016	-
EFA - DEVOLVED BUDGET - NORTH WEST	£1.7bn	GM	08/12/2016	-
TRINITY ISLANDS - VERTICAL VILLAGE MASTERPLAN	£1.3bn	Manchester	-	-
TRAFFORD WATERS MASTERPLAN	£1.0bn	Trafford	01/10/2017	01/10/2032
TRAFFORD 1900MW CCGT POWER STATION	£0.9bn	Manchester	01/01/2018	01/01/2020
NOMA 53 PROJECT MASTERPLAN	£0.8bn	Manchester	01/06/2010	01/06/2025
MIDDLEWOOD LOCKS MASTERPLAN	£0.7bn	Salford	-	-
MANCHESTER ENTERPRISE ZONE MASTERPLAN	£0.7bn	Manchester	-	-
SALFORD CENTRAL DEVELOPMENT - CHAPEL STREET	£0.7bn	Salford	-	-
NORTHERN HUB	£0.6bn	Manchester	01/10/2014	01/10/2019
MAYFIELD MANCHESTER MASTERPLAN	£0.6bn	Manchester	01/03/2017	-
MANCHESTER ENTERPRISE ZONE LOT 2 AIRPORT CITY NORTH	£0.6bn	Manchester	-	-
HOLT TOWN WATERFRONT	£0.5bn	Manchester	-	-
CARRINGTON ENERGY CENTRE	£0.5bn	Trafford	01/04/2012	01/10/2015
NEW BRIDGEFIELD TOWN CENTRE MASTERPLAN	£0.5bn	Stockport	01/06/2015	01/06/2018
MEDIA CITY - PHASE 4-7	£0.5bn	Salford	-	-
CARRINGTON 880MW CCGT POWER STATION	£0.5bn	Trafford	19/05/2014	-
MANCHESTER AIRPORT T2 TRANSFORMATION PROJECT	£0.5bn	Manchester	-	-
PORT SALFORD FREIGHT TERMINAL - WESTERN GATEWAY PROJECT	£0.4bn	Salford	-	-
NORTHLEIGH REGENERATION MASTERPLAN	£0.3bn	Wigan	-	-
ENABLING WORKS NORTH - HIGH SPEED TWO	£0.3bn	Manchester	01/10/2017	01/10/2021
UNIVERSITY OF MANCHESTER - ESTATES MASTERPLAN PHASE 2	£0.3bn	Manchester	01/01/2018	01/01/2022
GREAT NORTHERN WAREHOUSE - 120 APARTMENTS/OFFICES & LEISURE	£0.3bn	Manchester	-	-

Table 4: Top 25 projects by value, GMCC & CITB GM Construction Pipeline 2017

Not all of these projects are included in the pipeline analysis because information on project dates are not available. Therefore, not all of these projects form part of the £1.5bn total pipeline value. The projects included in the pipeline analysis are shaded in green.

1.8 DEMAND FORECAST BY OCCUPATION

Most In-Demand Professions 2018	
Senior, executive, and business process managers	3,691
Non-construction professional, technical, IT, and other office-based staff (excl. managers)	7,587
Other construction professionals and technical staff	5,504
Wood trades and interior fit-out	5,180
Other construction process managers	4,053
Electrical trades and installation	3,718
Plumbing and heating, ventilation, and air conditioning trades	3,503
Labourers	2,758
Bricklayers	2,578
Building envelope specialists	2,558

Table 5: Top 10 in demand professions, GMCC & CITB GM Construction Pipeline 2017

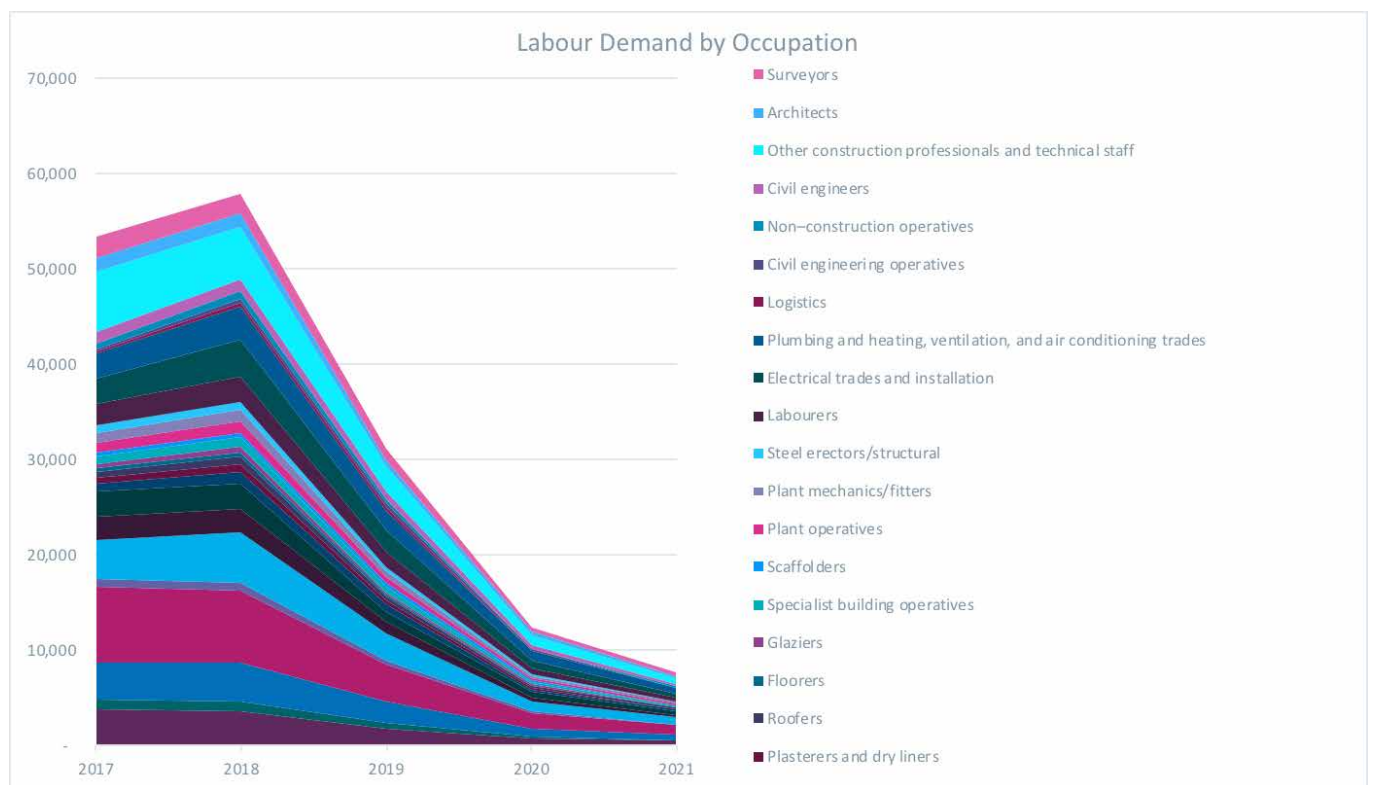


Figure 9: Demand by Occupation, GMCC & CITB GM Construction Pipeline 2017

2. A PICTURE OF SUPPLY

When looking at the supply of workers there are two main elements to consider: the size of the current workforce and the existing amount of training.

The first element of this section takes a view on the current employment levels in Greater Manchester and how this relates to overall employment across the wider North West region and the UK as a whole. Data from CITB's Construction Skills Network are used along with official Government sources.

The second part looks at levels of education and training at both Further Education (FE) and Higher Education (HE) levels. Unlike FE, which tends to be delivered close to the home and workplace, people are typically prepared to travel further for HE courses, although this does not mean that cities and regions should not have ambitions to move workers through to higher level training and education.

Finally, the demand forecasts are then compared against employment, training and workforce mobility to give an indication of possible gaps and/or occupational pinch points.

2.1 MAIN POINTS

9. AROUND TWO-THIRDS OF THE CONSTRUCTION WORKFORCE IN GREATER MANCHESTER IS LOCATED WITHIN THE FOUR AUTHORITIES OF MANCHESTER (31%), BOLTON (13%), WIGAN (11%), AND STOCKPORT (10%)
10. CURRENT CONSTRUCTION WORKFORCE WITHIN GREATER MANCHESTER IS ESTIMATED AT JUST UNDER 110,000 WORKERS
11. GREATER MANCHESTER ACCOUNTS FOR 40% OF THE NORTH WEST'S TOTAL CURRENT CONSTRUCTION WORKFORCE AND 37% OF ALL CONSTRUCTION FIRMS IN THE NORTH WEST
12. RECENT EMPLOYMENT TRENDS SHOW THE CONSTRUCTION WORKFORCE WITHIN GREATER MANCHESTER GROWING AT A SLIGHTLY FASTER PACE THAN THE NORTH WEST AS A WHOLE OVER THE LAST FIVE YEARS (7.1% VS. 5.5%)
13. AROUND 60 TRAINING PROVIDERS HAVE DELIVERED CONSTRUCTION-RELEVANT FE COURSES WITHIN GREATER MANCHESTER OVER THE LAST THREE YEARS, WITH ELEVEN MAIN PROVIDERS DELIVERING 85% OF PROVISION.

2.2 EXISTING WORKFORCE

Recent trends: Workforce & Businesses:

14. THE SIZE OF THE GREATER MANCHESTER CONSTRUCTION WORKFORCE FELL SLIGHTLY IN 2016, DOWN BY JUST UNDER 0.7%, BUT ITS LONG-TERM TREND IS UPWARDS HAVING RISEN BY 7% OVER THE LAST FIVE YEARS.
15. THERE HAS BEEN A 17% INCREASE IN THE NUMBER OF MICRO SIZED CONSTRUCTION BUSINESSES FROM 2011 TO 2016 WITHIN GREATER MANCHESTER, ACCOUNTING FOR ALMOST ALL (97%) OF THE GROWTH IN CONSTRUCTION BUSINESSES OVER THIS PERIOD .

An analysis of the Annual Population Survey shows that Greater Manchester accounts for around 40% of construction employment in the North West.¹ Table 1 applies this percentage share across the CSN occupational breakdown for the North West area as a whole to give an estimate of total employment at occupational and industry level in Greater Manchester. For comparison, the wider North West region has been included.

Construction in the wider North West fared slightly better following the recession, falling by 23% between 2008 and 2012, but despite a strong recovery in 2013 employment fell back 18% below its 2008 peak. Ref: **Figure 10**.

1 ONS/NOMIS (2017) Annual Population Survey workplace analysis by industry January - December 2016

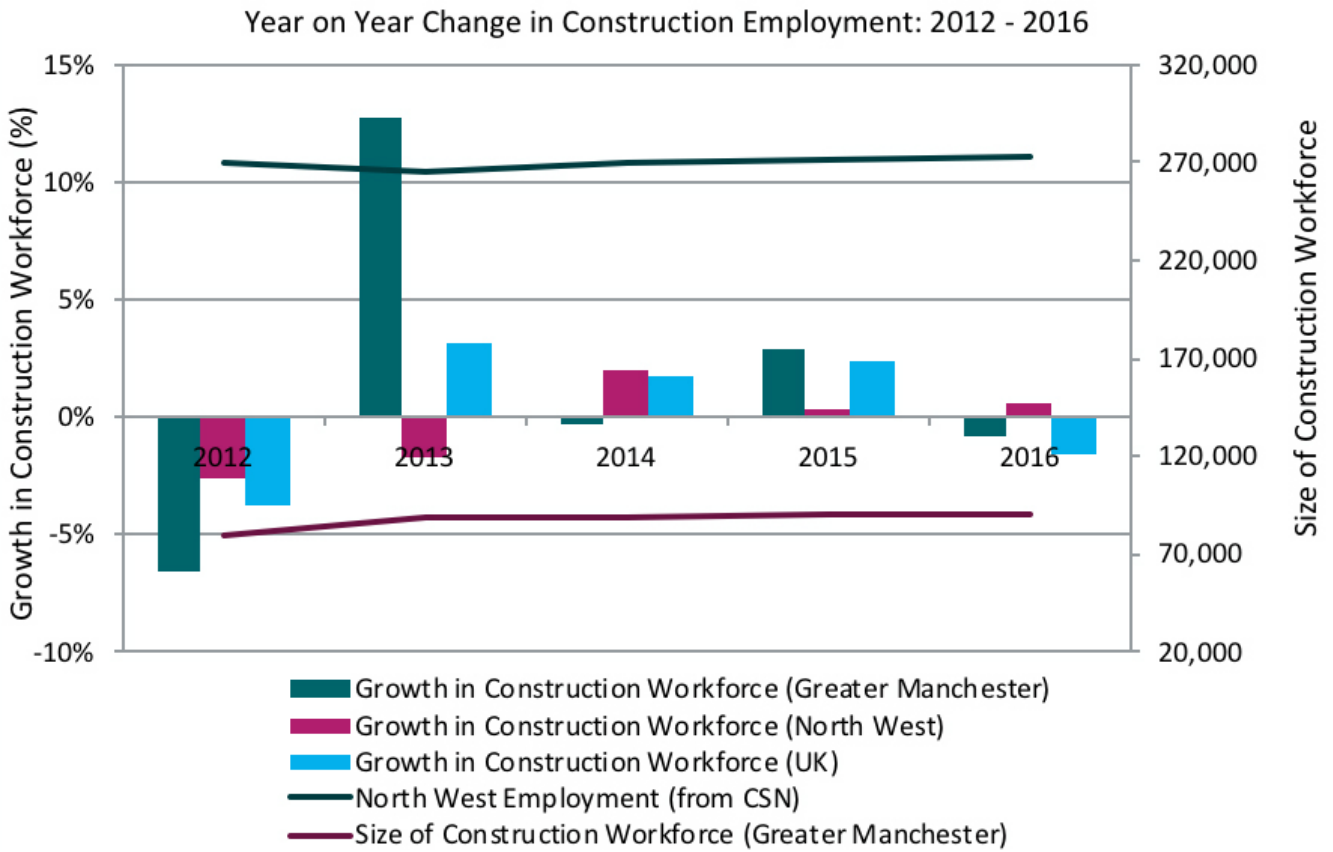


Figure 10: Year on year change in Construction Employment (Experian/CITB & NOMIS 2016)

The proportion of construction businesses within Greater Manchester has increased slightly from a 36% share of all construction businesses across the North West in 2012 to a 37% share in 2016. Construction businesses in Greater Manchester have risen from 8,635 in 2012 to 9,990 in 2016, a 16% rise over this period. Across the North West as a whole the number of businesses increased by just over 3,000 to 27,135 over the same time period, a rise of 13% on 2012 levels. Ref: Figure 11.

Year on Year Change in Construction Businesses: 2012 - 2016

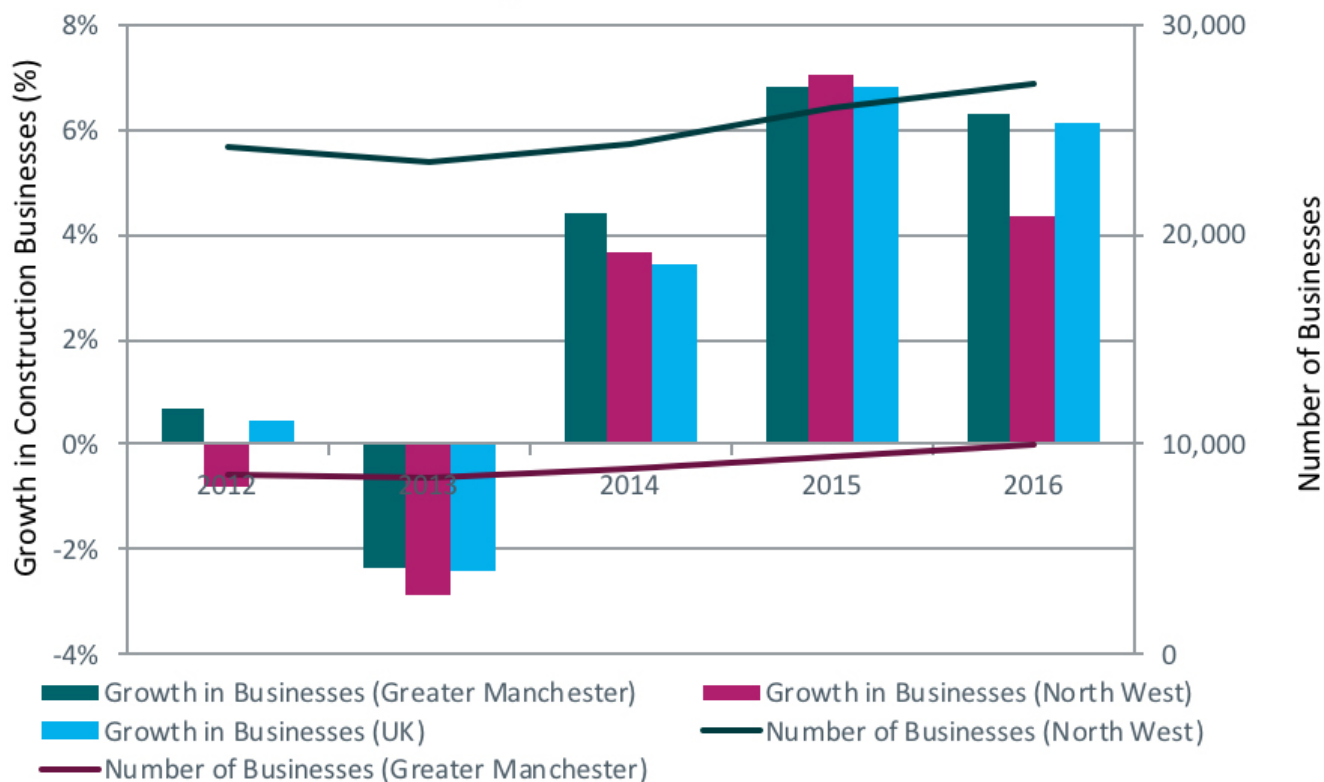


Figure 11: Year on year change in Construction Businesses (UK Business Count, NOMIS 2016)

Figure 12 shows the distribution of construction businesses within Greater Manchester, and 13 shows the distribution of the construction workforce.

Comparing business to workforce distribution indicates that Manchester, accounting for 12% of construction businesses but 31% of construction employment, has more large and medium sized firms, whereas the opposite is the case in both Rochdale and Oldham where micro and small firms are the norm.

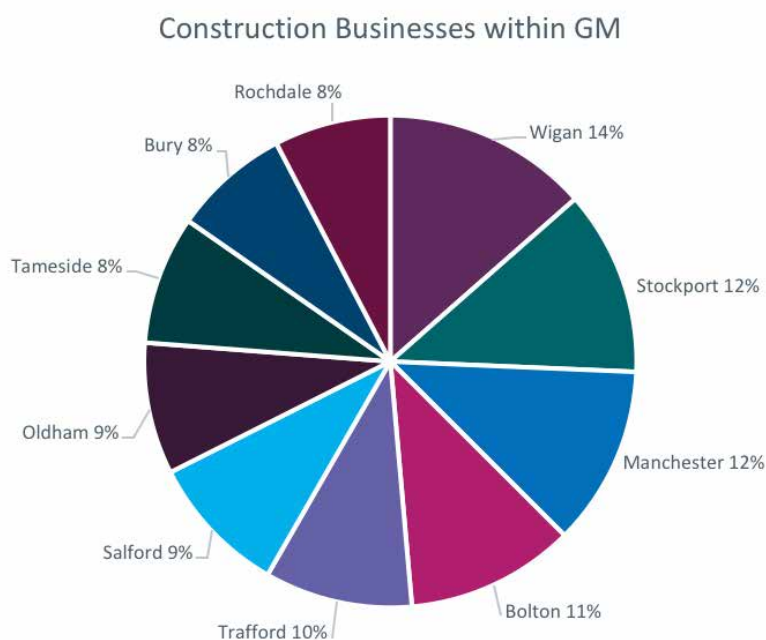


Figure 12: Distribution of construction businesses within Greater Manchester (UK Business Count, NOMIS 2016)

Despite occasional large annual changes in the number of businesses at a local level, due to fluctuation in small and micro enterprises, the proportions shown in figure 12 above show little long term change.

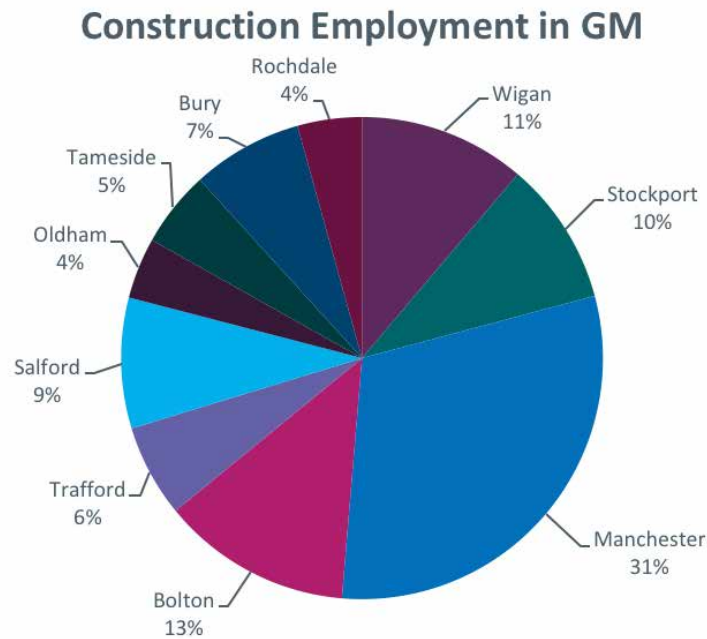


Figure 13: Construction employment by district authority within Greater Manchester (2016, NOMIS)

This slightly different pattern between workforce and number of businesses highlights two of the main factors that are important when looking at the construction sector. These are:

- 16. DIRECT EMPLOYMENT VS. SELF-EMPLOYMENT
- 17. SIZE OF BUSINESSES.

Overall the construction sector has high levels of self-employment with around 40% of the GB construction workforce being self-employed. This is similar to levels seen in Greater Manchester as a whole (38%), but does hide some wide variations at a district council level where self-employment in 2016 is as high as 70% in Oldham and as low as 22% in Salford.

When it comes to business size, the distribution of companies across Greater Manchester is very close to the pattern seen across the North West as a whole, and indeed the United Kingdom, with the majority of construction companies being micro sized, i.e. less than 10 employees, ref **Figure 14**.

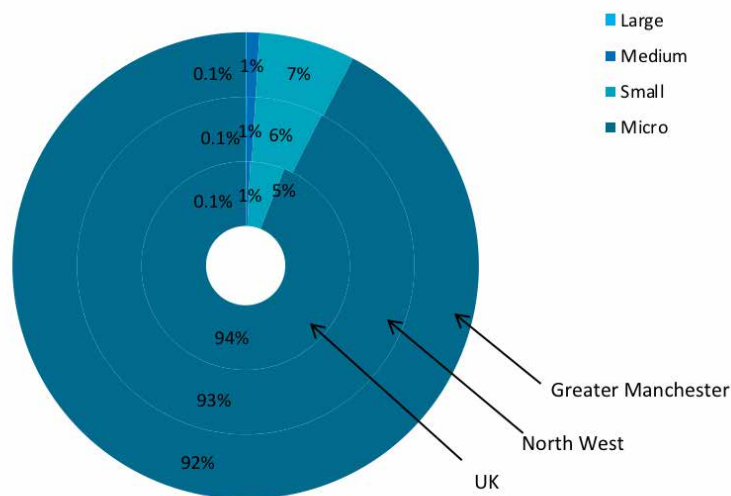


Figure 14: Size of Construction Businesses (UK Business Count, NOMIS 2016)

Across Greater Manchester 92% of all construction businesses are Micro sized. This is in line with both the wider North West region (93%) and also Great Britain as a whole (94%). The majority of the growth in construction businesses within Greater Manchester has been due to an increase in the number of Micro sized companies, accounting for 98% of the growth in construction businesses from 2012 to 2016 during this period. Growth in Micro businesses in Greater Manchester has increased at a slightly faster rate than the North West as a whole (17% growth in Greater Manchester vs 13% in the North West region since 2012).

Table 6: Construction occupational breakdown, 2016 (Source Experian & CITB)

Occupation	Greater Manchester	North West
Senior, executive, and business process managers	6,760	16,790
Construction Project Managers	1,800	4,480
Other construction process managers	8,570	21,290
Construction Trades Supervisors	1,780	4,420
Civil engineers	1,790	4,450
Other construction professionals and technical staff	8,420	20,930
Surveyors	2,380	5,900
Architects	1,490	3,690
Wood trades and interior fit-out	10,540	26,180
Bricklayers	2,920	7,260
Building envelope specialists	3,440	8,550
Painters and decorators	4,500	11,190
Plasterers	2,130	5,290
Roofers	2,380	5,910
Floorers	1,300	3,230
Glaziers	1,180	2,940
Specialist building operatives nec*	2,350	5,830
Scaffolders	1,260	3,140
Plant operatives	1,910	4,740
Plant mechanics/fitters	2,070	5,140
Steel erectors/structural fabrication	1,040	2,590
Labourers nec*	5,850	14,540
Electrical trades and installation	8,510	21,150
Plumbing and HVAC Trades	7,610	18,900
Logistics	1,000	2,480
Civil engineering operatives nec*	520	1,300
Non-construction professional, technical, IT, and other office-based staff	14,470	35,960
Non-construction operatives	1,700	4,220
Total	109,670	272,490

Key

Manager/Professional occupations
Skilled Trades
Office-based Staff

2.3 TRAINING PROVISION

Greater Manchester has:

18. 85% OF LEARNER VOLUMES COVERED BY ELEVEN MAIN PROVIDERS
19. TRAINING ACROSS THE FULL RANGE OF CONSTRUCTION OCCUPATIONS
20. GOOD LEVELS OF COMPETENCE QUALIFICATIONS ACHIEVEMENTS ACROSS MANY CONSTRUCTION OCCUPATIONS, MOST NOTABLY PLANT OPERATIVES, SPECIALIST BUILDING OPERATIVES NEC, AND BUILDING ENVELOPE SPECIALISTS.

Numbers in Further Education construction training fell by 10% in Greater Manchester in 2015/16, and are now below their 2013/14 level, although still some 5% higher than in 2012/13. In contrast apprentice training has seen consistent annual increases, rising by 29% in the year to 2015/16. Overall FE and apprentice training fell by 2.5% in 2015/16.

CITB analysis of Skills Funding Agency Individualised Learner Records from 2013/14 through to 2015/16 academic years for construction learners shows that:

21. GREATER MANCHESTER ACCOUNTS FOR 40% OF IDENTIFIED CONSTRUCTION RELATED TRAINING ACROSS THE NORTH WEST REGION
22. WHILST THERE HAS BEEN A SMALL INCREASE IN THE NUMBER OF FE LEARNERS AND APPRENTICES STARTING IN GREATER MANCHESTER, BY JUST OVER 2%, THIS HAS OCCURRED AGAINST A BACK DROP OF ALMOST NO CHANGE IN THE NUMBERS STARTING ACROSS THE WIDER NORTH WEST AREA AS A WHOLE
23. THE FALLS IN FE TRAINING SINCE 2014/15 WERE NOT UNIFORM ACROSS ALL THE BOROUGHES OF GREATER MANCHESTER, INDEED MANCHESTER, ROCHDALE AND WIGAN ALL SAW STRONG GROWTH INCREASING BY 148 (12%), 107 (15%), AND 230 (28%) RESPECTIVELY.
24. THE DECREASES ACROSS GREATER MANCHESTER AS A WHOLE HAVE BEEN LARGELY CAUSED BY LARGE REDUCTIONS IN SALFORD (DOWN 181, 22%), STOCKPORT (DOWN 172, 26%) OLDHAM (DOWN 245, 36%), AND BOLTON (DOWN 446, 46%).

Looking at the “Competence” based qualifications (which are in the main NVQs) a link can be made between the qualification title and the likely occupation that an individual will have. For example someone starting or achieving a Bricklaying qualification is highly likely to be working as a Bricklayer as competence based qualifications are based on an assessment of work based skills.

Table 7: Competence qualification achievement in Greater Manchester as a % of total achievements in North West as a whole (all qualification levels) looks at qualification achievements over the last three years for the identified competence based qualifications, comparing achievement volumes against the overall pattern with the North West as a whole. From this analysis there looks to be patterns for particular occupations.

[The information shown in Table 7: Competence qualification achievement in Greater Manchester as a % of total achievements in North West as a whole (all qualification **levels**) has been produced by mapping qualification reference numbers and titles to the most appropriate Construction Skills Network occupations. This has been built up over a number of years by CITB with over 1,800 qualifications reviewed and linked where possible. Note: there are some qualifications that have broad or generic titles that cannot be linked to distinct occupations.]

Table 7: Competence qualification achievement in Greater Manchester as a % of total achievements in North West as a whole (all qualification levels)

Construction Occupations	2013-14	2014-15	2015-16	Total Achievements	Total
Grand Total	37%	40%	32%	5,880	37%
Main Occupations					
Plant operatives	44%	49%	38%	910	45%
Plumbing and HVAC Trades	39%	40%	38%	860	39%
Wood trades and interior fit-out	37%	37%	31%	850	35%
Specialist building operatives nec*	54%	51%	45%	520	51%
Electrical trades and installation	27%	21%	29%	520	26%
Occupations with good provision					
Building envelope specialists	24%	69%	34%	420	47%
Scaffolders	44%	37%	40%	220	40%
Plasterers and dry liners	37%	48%	39%	180	40%
Occupations to Monitor					
Bricklayers	30%	30%	25%	320	28%
Painters and decorators	38%	29%	34%	240	33%
Civil engineering operatives nec*	35%	36%	18%	190	30%
Roofers	39%	37%	39%	160	38%
Glaziers	18%	27%	29%	150	25%
Floorers	30%	51%	16%	110	39%
Low Overall Learner Volumes					
Construction Trades Supervisors	51%	33%	66%	60	57%
Steel erectors/structural	56%	76%	17%	50	53%
Other construction profs. and technical staff	57%	28%	30%	50	35%
Plant mechanics/fitters	10%	15%	19%	40	15%
Logistics	82%	100%	9%	30	68%
Construction managers	61%	12%	-	<25	36%

Key

Relatively high training compared to wider region

Relatively low training compared to wider region

*nec – not elsewhere classified

Note: Total achievements are across the period 2013-2014 to 2015-16 have been rounded to the nearest 10

The majority of the achievements referred to in **Table 7: Competence qualification achievement in Greater Manchester as a % of total achievements in North West as a whole (all qualification levels)** are at Level 2 (about 80%), with a smaller proportion at Level 3 (about 20%) and a very small minority at Level 4 and above (0.1%).

The percentage comparison with the North West as a whole is used as a device to demonstrate the provision of training in Greater Manchester by occupations relative to one another to gauge where provision is relatively high or low.

There are a group of **occupations that account for the main training volumes**, where both the numbers of trainees are high, and the their proportion in comparison to the proportions in the workforce are also high. These are:

25. PLANT OPERATIVES
26. PLUMBING AND HVAC TRADES
27. WOOD TRADES AND INTERIOR FIT-OUT
28. SPECIALIST BUILDING OPERATIVES NEC*
29. ELECTRICAL TRADES AND INSTALLATION

For occupations such as Wood Trades and Plumbing, the volume of training will be related to their share of employment, while for others such as Plant Operators, training will be more related to the need to demonstrate competence for these roles through card scheme monitoring, for example the CPCS Card scheme for Plant Operatives.

The second group – Occupations with good provision: identifies a higher level of provision for occupations such as Building Envelope Specialists, Scaffolders, and Plasterers and Dryliners. It could be that there are providers with particular specialisms in these areas operating within Greater Manchester, or a particular need for this type of training.

For the third group – Occupations to monitor: the reverse is the case - a small number of occupations where we would expect higher levels of training given either the occupational size and/or the need to demonstrate competence. For this cluster, which covers Bricklayers, Painters and Decorators, Civil Engineering Operatives nec, Roofers, Glaziers, and Floorers the share of training happening within Greater Manchester is lower than would be expected. It is possible that individuals may be travelling outside the area for this type of training.

Lastly there is a group of **occupations where the low level of learner volumes** makes it difficult to judge patterns across the years. Whilst the training provider network can adjust to cover changes in demand, there will be a requirement for a certain volume of training to make it viable for a provider to deliver it. These occupations could suffer from this intermittent demand or learners could be travelling further afield to more specialist training providers.

In terms of training providers, from 2013/14 through to 2015/16 60 different providers have delivered training in Greater Manchester at FE Level. However, there is a consistent pattern with 85% of training being delivered by a core network of 11 providers. Ref: 8.

Provider	2013-14	2014-15	2015-16	Total
The Manchester College	1270	1320	1,130	3,720
Economic Solutions Ltd	550	1130	1,180	2,860
Bolton College	840	630	470	1,940
Salford City College	650	600	460	1,710
Wigan and Leigh College	520	520	620	1,660
Tameside College	480	450	580	1,510
Stockport College	550	450	450	1,450
Hopwood Hall College	490	400	550	1,440
Trafford College	390	400	340	1,130
Bury College	350	370	370	1,090
The Oldham College	470	300	320	1,090

Table 8: Top Construction FE providers by Unique Learner Starts within Greater Manchester (Source: CITB/SFA)

All main providers of FE training are located within Greater Manchester. This profile is typical of many geographic areas in that there is a relatively small group of FE colleges delivering the majority of construction training. A smaller proportion of additional training is then delivered by a larger number of other providers. Sometimes these smaller specialist providers can operate far from the normal base of those for whom they provide training. In total this training covers the majority of the main occupations involved in the construction workforce.

When looking at training provision across individual local authorities within Greater Manchester, significant increases in Manchester, Rochdale, Salford, and Wigan have, to some extent, been off-set by significant decreases in Bolton, Oldham, and Stockport. Additionally, increases in training in 2014-15 have to some extent been reversed by declines in 2015-16, so that across the three years training provision as a whole is up by just over 2%, , illustrated by the detail in 9 below.

Local authority	2013-14	2014-15	2015-16	% Change
Bolton	1,107	1,075	804	-27.4%
Bury	600	658	548	-8.7%
Manchester	1,350	1,628	1,593	18.0%
Oldham	857	600	648	-24.4%
Rochdale	797	798	935	17.3%
Salford	1,055	1,433	1,254	18.9%
Stockport	917	803	788	-14.1%
Tameside	817	714	842	3.1%
Trafford	1,079	1,091	1,073	-0.6%
Wigan	1,100	1,324	1,403	27.5%
Grand Total	9,679	10,124	9,888	2.2%

Table 9: Unique Learner starts by area, construction subjects, FE & Apprentices (Source: CITB/SFA)

The number of construction apprentices over the same three years has increased in all areas, with Bolton (where the numbers have doubled) and Salford (where the numbers have almost tripled) being stand out areas. The net effect of falls in FE training and an increase in apprentice training have produced the small overall increase in training seen in Greater Manchester. Whilst the college based courses are an important stepping stone or progression route for learners to acquire knowledge, construction employers tend to have a preference for practical or competence based skills, so it is positive that Greater Manchester has witnessed this increase in apprenticeships over these three years.

3. MOBILITY OF THE WORKFORCE

Construction workforces are fluid by nature and this section of the report will look at findings from the CITB survey into Workforce Mobility and Skills in the UK Construction Sector 2015 to give a picture of mobility within the workforce. Data specific to the North West will be analysed in order to understand how this might impact on future training interventions and the supply of job opportunities for local people.²

3.1 MAIN POINTS

30. TWO FIFTHS OF NORTH WEST CONSTRUCTION WORKERS HAVE WORKED IN THE CONSTRUCTION INDUSTRY FOR OVER 20 YEARS (40%). TWO-THIRDS HAVE WORKED IN THE INDUSTRY FOR AT LEAST 10 YEARS (66%).
31. THE MAJORITY OF CONSTRUCTION WORKERS IN THE NORTH WEST (91%) STARTED THEIR CONSTRUCTION CAREER THERE. WORKERS IN THE NORTH WEST ARE AMONG THE MOST LIKELY TO HAVE REMAINED IN THE SAME REGION/NATION IN WHICH THEY WERE BASED FOR THEIR FIRST CONSTRUCTION JOB.
32. WITHIN THE NORTH WEST, THE AVERAGE (MEAN) DISTANCE FROM WORKERS' CURRENT RESIDENCE (TAKING INTO ACCOUNT TEMPORARY RESIDENCES) TO THEIR CURRENT SITE WAS 20.5 MILES (22 MILES IS THE UK AVERAGE).
33. MORE THAN THREE QUARTERS OF ALL CONSTRUCTION WORKERS IN THE NORTH WEST ARE CONFIDENT THAT WHEN THEY FINISH THEIR CURRENT JOB THEY WILL GET A JOB THAT ALLOWS THEM TO TRAVEL FROM THEIR PERMANENT HOME TO WORK ON A DAILY BASIS (79%).
34. OVERALL AROUND TWO FIFTHS OF ALL CONSTRUCTION WORKERS HAVE ONLY WORKED ON ONE TYPE OF PROJECT (43%)
35. AROUND HALF OF CONSTRUCTION WORKERS IN THE REGION AGED UNDER 60 SAY THEY DEFINITELY WILL BE WORKING IN THE INDUSTRY IN 5 YEARS' TIME (52%) AND A FURTHER THIRD THINK IT IS VERY OR QUITE LIKELY (33%).

3.2 WORK HISTORY

Two-thirds of construction workers in the North West have worked in the construction industry for at least 10 years (66%), and two-fifths (40%) have worked in it for over 20 years. The fact that they grew up in the region, or have always lived there, is the most likely reasons why construction workers are based within the North West (69%) which is higher than the UK average (55%). Over nine in ten (91%) construction workers in the region have remained in the North West for all or most of their career, compared to the UK average of 80%.

Further evidence of the stability of the construction workforce in the North West comes from the finding that in most cases (89%) workers reported their last site was also in the North West.

In terms of the regions/nations in which workers' current employer operates in, the majority (93%) of workers in the North West reported that their employer operated within the region they were currently working in, while 6% operated in the West Midlands and 4% operated in both Yorkshire and the Humber and London, as shown in Appendix B Table 12 Region/nation employer operates in compared with region/nation working in currently.

3.3 WORKER ORIGINS

Workers were asked which region/nation they were living in just before they got their first job in construction in the UK. Overall 9 in 10 construction workers in the North West were living in the region when they started their construction career (91%). Workers currently based in the North West are amongst those most likely to have remained in the same region/nation in which they were based for their first construction job. Furthermore construction workers in the North West are among the most likely to have stayed in the region where they studied for their first qualification (90%), with Scotland, Northern Ireland, and the North East being the only three regions/nations with

2 CITB (2015) Workforce Mobility and Skills in the UK Construction Sector – North West

a higher percentage. At the lower end of the range, only around half of construction workers in the East of England (50%), South East (55%) and London (58%) are based in the same region/nation as where their first qualification was achieved.

3.4 TRAVEL TO SITE

The majority of construction workers (88%) in the North West also had their permanent home in the region, meaning that 12% travelled into the region for work from another region or country in which their current residence is based. The main region/country from which people travelled to work in the North West were the West Midlands (8% of all workers in the NW at the time of the survey) and Wales (3%). This means that after the North East, construction workers in the North West are the most likely within England to currently be living in the same region as the site they work on.

Workers in the North West were asked to indicate the furthest distance they have worked from their permanent or current home in the last 12 months. Figure 15 shows that 1 in 8 construction workers have worked no more than 20 miles away (12%) and a further third have worked between 21 and 50 miles away (35%). This leaves half that have worked more than 50 miles away from their permanent home (51%), with a quarter that have worked between 51 and 100 miles away (23%) and more than a quarter that have worked more than 100 miles away (28%). In the UK workers based in the North West were the most likely to have travelled more than 100 miles from their permanent home to work in the last 12 months (UK average – 21%).

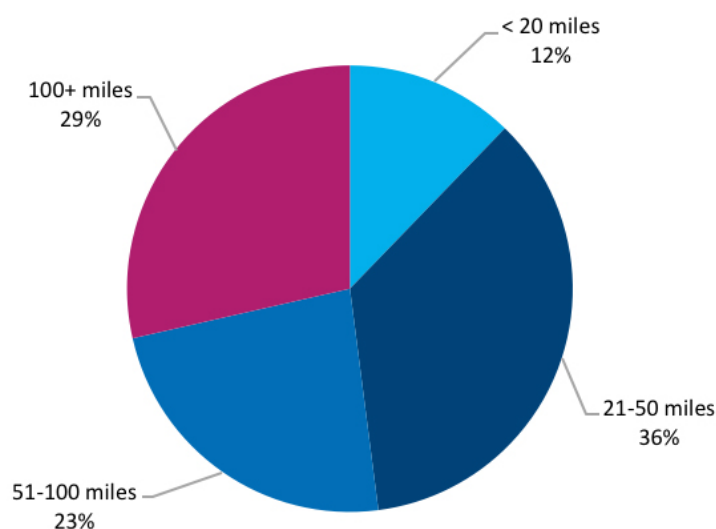


Figure 15: Furthest distance worked in past 12 months (CITB, 2015)

However, the average (mean) distance from workers' current residence (taking into account temporary residences) to their current site was 20.5 miles for the North West, slightly less than the UK average of 22 miles. This indicates that although workers can travel some distance to work, it is likely to be intermittent.

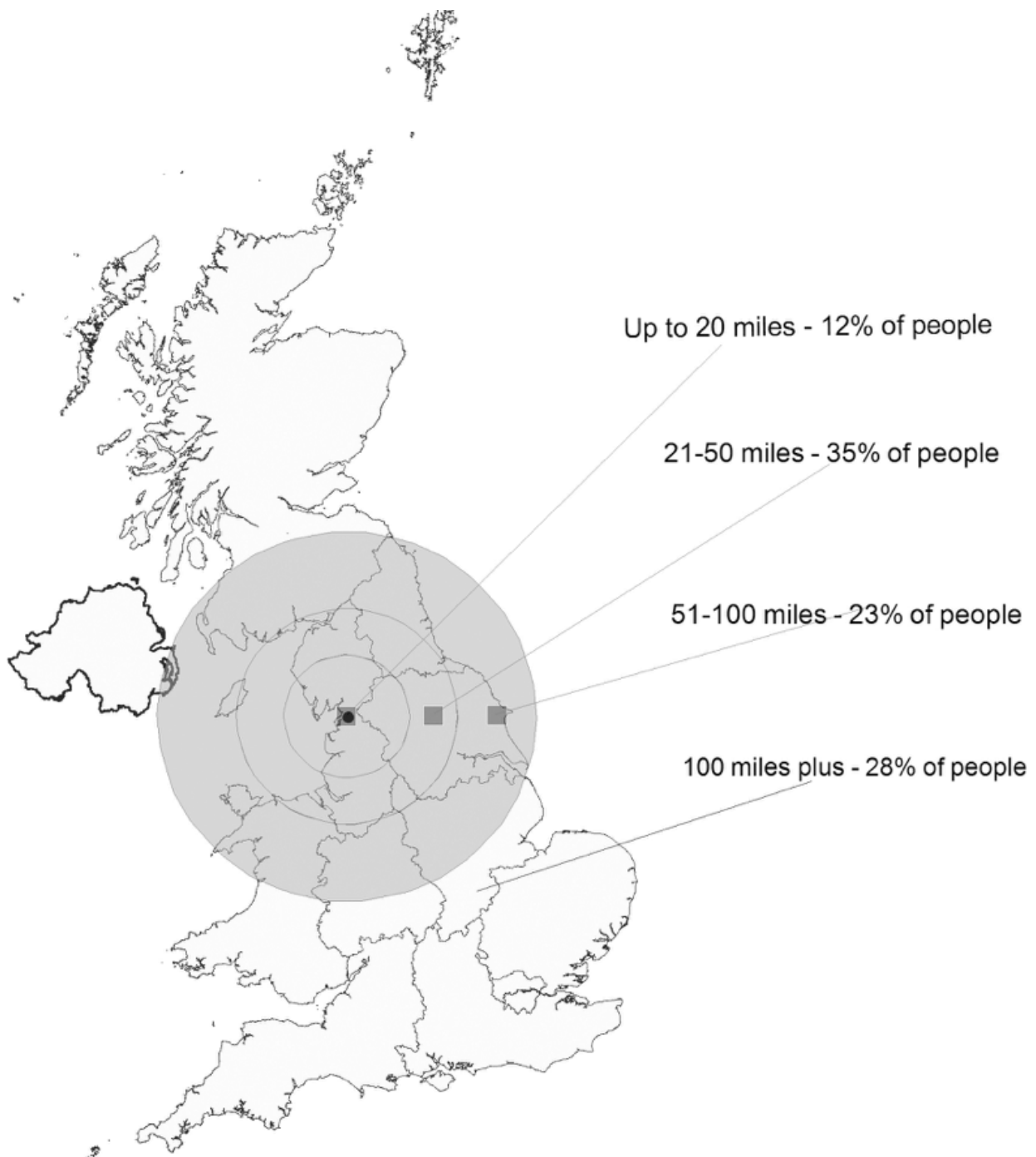


Figure 16: Furthest distance worked in past 12 months (CITB, 2015)

3.5 SITE DURATION AND CHANGE

In order to get a measure of workplace stability, workers were asked to indicate how long in total they expect to work at their current site. Around a fifth of all construction workers in the North West (21% cf. 33% in 2012) do not expect to work on that site for more than a month, including 5% that only expect to be there for about a week or less. Almost a quarter (23%) expect to stay on that site for a year or longer, a notable increase compared with 2012 (6%), suggesting more stable employment in the North West than in 2012. However a comparable proportion (27%) of workers did not know how much longer they could expect to be on site, indicating that a significant minority of temporary workers are living with some uncertainty and insecurity.

More than three quarters of all construction workers in the North West are confident that when they finish this job they will get a job that allows them to travel from their permanent home to work on a daily basis (79%). Compared with workers in other regions/nations, those in the North West are amongst the most confident in this respect; second only to those in Scotland (81%).

3.6 SUB-SECTOR AND SECTOR MOBILITY

All workers were asked which of types of construction work they have spent periods of at least 3 months at a time working in.

Compared with 2012 there has been a significant increase in the proportion of construction workers that have been working on new housing within the North West; up from 72% to 93%. For all other types of projects the proportion of construction workers that have worked on them has fallen since 2012.

Overall around two fifths of all construction workers have only worked on one project type (43%), compared with a fifth in 2012 (21%), which again suggests a pattern of increased stability in the sector.

3.7 LEAVING THE SECTOR

In order to assess the potential outflow from the sector in the next five years (led by worker preference), all workers were asked how likely it is that in 5 years' time they will still want to be working in construction. Within the North West, half the construction workers say they definitely will be (51%) and a further third think it is very or quite likely (33%). Just 2% say they definitely won't be and a further 5% hope to be retired by then, while 5% don't know.

Excluding those aged 60 and over (as those over 60 may be assumed to be considering retirement in the next 5 years) 52% believe they will definitely want to be working in the construction sector and a further 33% believe it is very likely or quite likely they will want to be working in the construction sector. Only 7% think on any level that they will not want to be working in the construction sector in 5 years' time which is less than in 2012 (15%).

Overall the findings from the Mobility survey indicate a stable, well established workforce across the North West. There is some evidence of movement between neighbouring regions, especially the West Midlands and Wales, but on the whole the workforce have grown up in the region, undertaken their initial construction training in the region and have stayed there for the majority of their working life. Additionally, optimism across the workforce is high with a majority expecting to still be in the construction industry in 5 years' time.

Setting the Mobility survey research against the overall workforce and business patterns noted earlier indicates that whilst the North West region as a whole has a stable workforce, workers within the Lancashire LEP area will not be limited to working only within the LEP – they may travel to work in other areas of the North West outside of the LEP. Likewise, workers in other areas of the North West will also be travelling to work within Lancashire LEP.

4. DEMAND AGAINST SUPPLY

4.1 MAIN POINTS

Before looking at demand against supply, it should be noted that the Barbour dataset used to produce the demand view is based on projects that are picked up at various stages of the planning process. As such there will be projects in the pipeline that may not go ahead or be subject to delay; additionally there will be newer projects that will be added to the list. In this respect the view is essentially a snapshot of what potential work could look like.

When looking forward, there will be less visibility on future projects for work that requires shorter planning times. Research carried out by CITB on behalf of UKCG showed that the lead time from planning to work starting on site varied by the type of work and value. Large scale infrastructure and commercial projects took the longest time whereas lower value work in general, along with work in the industrial sector, was able to get on site quickest.

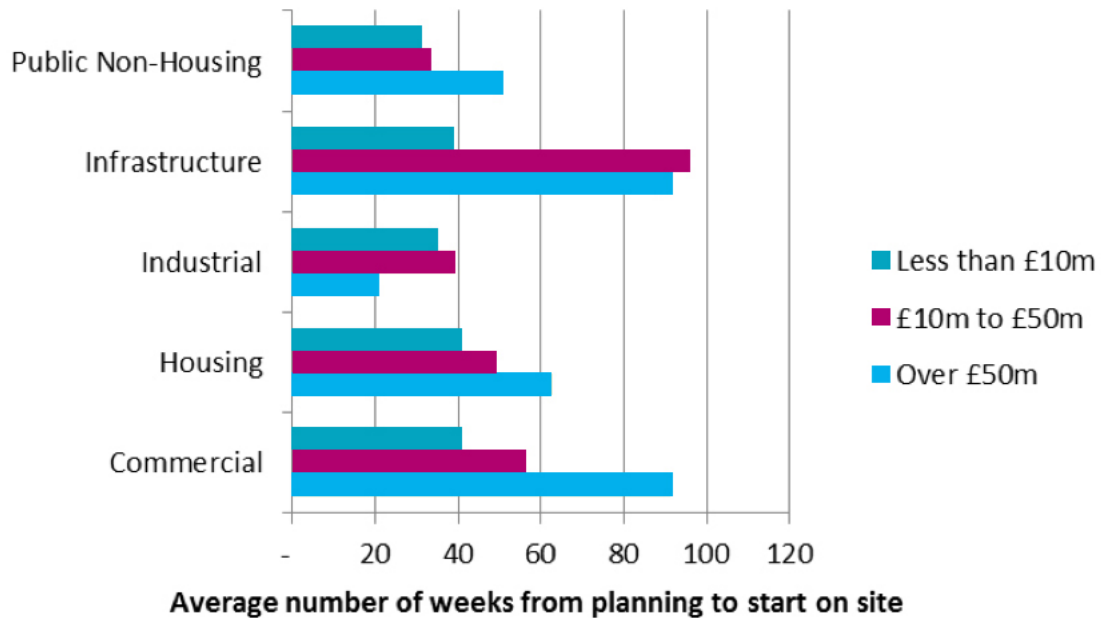


Figure 17: Average number of weeks from planning to work on site, UK 2010-2013 (Source: UKCG/Barbour)

There will also be work carried out that does not require planning permission, for example household repair and maintenance (R&M) work, and this can account for a significant share of work in the construction sector. Current estimates for R&M work in the North West indicate that it accounts for 34% of yearly construction output.³

Also, whilst different types of projects can be categorised by their type of build, such as housing, commercial or industrial, the workforce skills required are less easy to categorise in the same way as some occupations will be able to apply their skills across a number of sectors. For example, evidence from the 2015 Mobility research shows that occupations such as labourer/General Operatives, banksmen/ bankspersons, roofers and bricklayers are most likely to have only worked on one project type, while painters and decorators, carpenters and joiners, and site managers are more likely to have worked on a wide range of projects.⁴

3 CITB(2016) Construction Skills Network – North West

4 CITB(2015) Workforce Mobility and Skills in the UK Construction Sector – North West

4.2 GAP ANALYSIS

With current construction employment in Greater Manchester estimated at just under 110,000, the identified demand forecast from projects in the Barbour dataset accounts for 103% of current employment in 2018 before reducing, as the identified projects visibility decreases. Ref: Table 10.

Table 10: Occupational breakdown of demand for Greater Manchester compared to current employment (Source CITB/WLC)

Occupation	Greater Manchester Employment	2018 demand as a % of 2016 employment
Senior, executive, and business process managers	6,760	108%
Construction Project Managers	1,800	100%
Other construction process managers	8,570	88%
Construction Trades Supervisors	1,780	95%
Civil engineers	1,790	98%
Other construction professionals and technical staff	8,420	93%
Surveyors	2,380	125%
Architects	1,490	133%
Wood trades and interior fit-out	10,540	110%
Bricklayers	2,920	140%
Building envelope specialists	3,440	148%
Painters and decorators	4,500	118%
Plasterers	2,130	109%
Roofers	2,380	88%
Floorers	1,300	98%
Glaziers	1,180	123%
Specialist building operatives nec*	2,350	104%
Scaffolders	1,260	79%
Plant operatives	1,910	79%
Plant mechanics/fitters	2,070	77%
Steel erectors/structural fabrication	1,040	101%
Labourers nec*	5,850	95%
Electrical trades and installation	8,510	95%
Plumbing and HVAC Trades	7,610	102%
Logistics	1,000	81%
Civil engineering operatives nec*	520	107%
Non-construction professional, technical, IT, and other office-based staff	14,470	102%
Non-construction operatives	1,700	77%
Total	109,670	103%

Key

Manager/Professional occupations

Skilled Trades

Office-based Staff

Peak demand <90% of current employment

Peak demand between 90% - 120% of current employment

Peak demand >120% of current employment

Note: nec*: not elsewhere classified; HVAC: Heating, ventilation and air-conditioning.

Table 10 shows that demand is likely to exceed current employment estimates for many of the occupations listed, suggesting a need for significant extra training, and reliance on migration from neighbouring areas and regions. Potential shortfalls are particularly high amongst: Architects, Surveyors, Bricklayers, Building envelope specialists, and Glaziers where the demand exceeds local supply by nearly 25% or more.

While some of these occupations are construction specific, others have cross-sector implications.

Demand for **Architects** and **Surveyors** is a reflection of the wider UK shortage.⁵ Additionally as professionally qualified occupations, which tend to require degree qualifications, there will be at least three years of education and training before becoming qualified plus years more to gain experience. And if new candidates are to be encouraged to join these professions, it is likely that encouragement is required some years before they start training.

It is therefore highly likely that the short-term demand increase identified would require workers to be drawn into Greater Manchester from the wider region and possibly beyond.

It should also be noted that for some professions workers often have an office location away from the site location and travel between them. And for some, there is some anecdotal evidence to suggest that demand is met by provision based in other centres of population.

Bricklayers are in demand regionally and nationally as a result of the increase in house building since the end of the recession, as mentioned in the preceding section with a significant increase in the proportion of construction workers that have been working on new housing within the North West; up from 72% to 93%. Bricklaying and trowel occupation qualifications are widely offered at most FE colleges that run construction courses, with over 100 people qualifying annually in Greater Manchester so much of the demand for bricklayers should be met from current training in the city and the wider North West region.

Building Envelope Specialists install the elements of the outer shell of a building. Demand for people skilled in this role will be high based on planned projects, at almost 150% of Building Envelope Specialists based in Greater Manchester, but encouragingly this is one of the occupations with good provision suggesting that much of this demand can be met from within Greater Manchester.

While overall demand for **Glaziers** is relatively small when compared to other trades, in comparison to base employment it represents a significant recruitment risk. In addition, owing to its niche nature, training opportunities for these occupations tend to be lower than other trades, as can be seen by it being one of the occupations with lower than average training.

In addition to the major projects identified in the Barbour Pipeline, there will also be other work carried out in the North East LEP region that is captured within the demand analysis where additional workers will be required. This additional work includes projects that are less than £250,000, as well as repair and maintenance work that does not require planning consent.

Plant operatives are crucial to the progress and productivity of the construction industry but the risk of shortages for some plant operatives appear less extreme than the experiences of individual local expert witnesses suggest. This is a complex situation and there are a number of factors that may help explain this disparity that include:

36. PLANT OPERATIVES MAY WORK ACROSS SECTORS. ALTHOUGH THE ANALYSIS IS SPECIFIC TO THE CONSTRUCTION SECTOR, THE PLANT EQUIPMENT AND SERVICES PROVIDERS WILL OFTEN WORK ACROSS MULTIPLE SECTORS AND MANY SKILLS FOR SOME EQUIPMENT TYPES WILL BE TRANSFERABLE. SO WORKERS MAY MOVE BETWEEN SECTORS. AROUND 21% OF UK PLANT OPERATIVES WORK WITHIN CONSTRUCTION.
37. PLANT SUPPLY FIRMS AND THEREFORE THE PLANT OPERATIVES ARE RELATIVELY MOBILE AND SO ARE THOUGHT MORE LIKELY THAN SOME OCCUPATIONS TO TRAVEL OVER A LARGER AREA TO UNDERTAKE WORK. THIS MAY ALSO SKEW RESEARCH FINDINGS WHERE SUPPLY MAY BE MET FROM OUTSIDE A PROJECT'S REGION.

5 Migration Advisory Committee (MAC) Shortage Occupation List 2015

38. TRAINING PROVISION APPEARS OFTEN TO EXCEED EXPECTATIONS. WITHIN THE CONSTRUCTION SECTOR THERE ARE TWO MAIN CAUSES FOR THIS:
- PLANT OPERATIVES WILL OFTEN BE REQUIRED TO WORK WITH MULTIPLE TYPES OF MACHINERY AND REQUIRE CERTIFICATION FOR EACH SIGNIFICANT EQUIPMENT TYPE – SO MAY HOLD MULTIPLE CERTIFICATIONS.
 - OTHER PROFESSIONS – NOTABLY SITE BASED ROLES, SUCH AS BRICKLAYERS AND LABOURERS – MAY BE REQUIRED TO USE PLANT ON-SITE FOR WHICH THEY HAVE GAINED CERTIFICATION.
39. IN ADDITION, THE IMPLICATION IN RELATION TO TRAINING PROVISION FOR A GROUP OF OCCUPATIONS THAT ARE MOBILE IS THAT WHILE TRAINING PROVISION MAY BE DELIVERED IN ONE LOCATION, THE BENEFITS OF THAT TRAINING MAY BE FELT IN DIFFERENT REGIONS AND MORE LIKELY ON A NATIONAL LEVEL.
40. SHORTAGES MAY BE FOR SPECIFIC EQUIPMENT TYPES WHILE OVERALL THE STATISTICS MAY INDICATE GOOD LEVELS OF PROVISION. THIS IS PARTICULARLY THE CASE WITH COMPLEX INFRASTRUCTURE WORKS, WHERE UNUSUAL SPECIALIST MACHINE IS REQUIRED BUT FOR WHICH THERE IS A SHORTAGE OF APPROPRIATELY QUALIFIED WORKERS. THIS MAY GO SOME WAY TO EXPLAIN SHORTAGES HIGHLIGHTED BY CECA.
41. PLANT OPERATIVE EMPLOYERS ALSO OPERATE WITH DIFFERENT BUSINESS MODELS AND THIS CAN COMPLICATE THE PICTURE:
- SOME EMPLOY THEIR OWN OPERATIVES AND OWN THE PLANT,
 - SOME WILL EMPLOY OPERATIVES AND HIRE THE PLANT,
 - SOME WILL PROVIDE THE PLANT FOR HIRE AND AGENCIES PROVIDE THE OPERATIVES.

4.3 GAP ANALYSIS – LONG TERM

When looking at the longer term past 2018, the amount of known work in the LEP area decreases. To give a view on the gap analysis across the wider range of work and over the longer term, the annual Average Recruitment Requirement (ARR) details within the North West CSN 2017-2021 report can be used if it is weighted to reflect the fact that Greater Manchester accounts for about 40% of the construction workforce in the North West.

The short term demand and long term demand for skilled workers in an area can be quite different. A greater or lesser proportion of the short term demand will be met by workers from outside the area, who will stay for only as long as the demand exists. This is especially true for highly skilled or niche jobs where it wouldn't be viable to train people to meet a temporary spike in demand.

Where the demand for specific skills becomes a long term need, then reliance on a migratory workforce is not feasible, and this then becomes an annual recruitment requirement to be met by recruiting new workers to the industry. As would be expected, the relative requirement for occupations in the longer term is lower than the short term spike in demand created by the scale of some of the know projects discussed in this report.

It is also worth noting that some of the professional occupations, notably architects, give a slightly misleading picture in terms of supply and demand as they can be based almost anywhere in the world, and don't necessarily need to visit the construction site. Others, such as Surveyors, will travel widely to construction projects, so a high demand in one area need not be met by employees from that area over the long term.

There are several occupations where the overall long term demand creates a need for workers that is not reflected in the short term pipeline of known projects, e.g. plasterers, plant operatives, logistics operatives, and civil engineers nec. This allows slightly longer to plan for how to match supply with demand, and should also afford more time to meet more of this demand via local training.

With these points in mind, the long term forecast for Greater Manchester identifies a range of occupations with a high occupational requirement, either as a proportion of employment or as a percentage of overall demand. These occupations are:

- 42. WOOD TRADES AND INTERIOR FIT-OUT (% OF OVERALL DEMAND)
- 43. PLASTERERS (% OF EMPLOYMENT)
- 44. ELECTRICAL TRADES (% OF DEMAND)
- 45. PLUMBING & HVAC TRADES (% OF DEMAND)
- 46. LOGISTICS (% OF EMPLOYMENT)
- 47. CIVIL ENGINEERING OPERATIVES NEC (% OF EMPLOYMENT)
- 48. NON CONSTRUCTION PROFESSIONAL, TECHNICAL, IT, AND OTHER OFFICE BASED JOBS (% OF DEMAND)

Several other occupations have a moderately high demand figure which would require monitoring ref. Table 11 below:

Table 1: Occupational breakdown of ARR for Greater Manchester (Source CITB)

Occupation	Greater Manchester Employment	Greater Manchester ARR	ARR as a % of 2016 employment
Senior, executive, and business process managers	6,760	20	0.3%
Construction Project Managers	1,800	-	-
Other construction process managers	8,570	80	0.9%
Construction Trades Supervisors	1,780	48	2.7%
Civil engineers	1,790	<20	-
Other construction professionals and technical staff	8,420	28	0.3%
Surveyors	2,380	-	-
Architects	1,490	44	3.0%
Wood trades and interior fit-out	10,540	276	2.6%
Bricklayers	2,920	152	5.2%
Building envelope specialists	3,440	44	1.3%
Painters and decorators	4,500	72	1.6%
Plasterers	2,130	104	4.9%
Roofers	2,380	36	1.5%
Floorers	1,300	<20	-
Glaziers	1,180	32	2.7%
Specialist building operatives nec*	2,350	-	-
Scaffolders	1,260	-	-
Plant operatives	1,910	76	4.0%
Plant mechanics/fitters	2,070	44	2.1%
Steel erectors/structural fabrication	1,040	24	2.3%
Labourers nec*	5,850	164	2.8%
Electrical trades and installation	8,510	260	3.1%
Plumbing and HVAC Trades	7,610	224	2.9%
Logistics	1,000	56	5.6%
Civil engineering operatives nec*	520	28	5.4%

Non-construction prof., tech., IT, and other office-based staff	14,470	220	1.5%
Total	107,970	2,060	1.80%

Key

Manager/Professional occupations	Occupational demand is <1.5 average for Greater Manchester
Skilled Trades	Occupational demand is 1.5-2.5x average for Greater Manchester
Office-based Staff	Occupational demand is > 2.5x average or >10% of total ARR

4.4 GAP ANALYSIS – TRAINING NEEDS

Looking at the future demand against current competence based training, there are two aspects:

49. IS THERE TRAINING IN THE AREAS OF POTENTIAL DEMAND?
50. IS THERE THE VOLUME OF TRAINING REQUIRED ACROSS THE SPREAD OF OCCUPATIONS?

Taking the first of these, *'is there the training in the areas of potential demand?'* the demand analysis identifies Surveyors, Architects, Bricklayers, Building Envelope Specialists, and Glaziers as being in demand.

Both Surveyors and Architects are typically met from graduate level recruitment, which would not be restricted to supply from within Greater Manchester or the wider North West region. With the wider impacts on these occupations, a training needs analysis specific to Greater Manchester is unlikely to give credible views.

For Bricklayers and Glaziers, the potentially limited availability of training places in Greater Manchester may constrain the ability to meet the demand for skilled workers. Recent levels of training in these occupations are lower than would be expected based on the size of the local workforce. There may well be a need to expand provision, a need that is made easier to meet given that the course infrastructure is already in place, providing that skilled staff are available to offer the training – this is not always possible if a shortage of skilled workers leads to high wages in the industry.

Provision of training for Building Envelope Specialists within Greater Manchester is good in relation to the size of the workforce. Although the gap analysis suggests that this occupation may have the greatest mismatch between supply and demand, the training numbers suggest that this demand could be met relatively easily providing that high wages in the industry don't draw teaching staff away from training providers.

The second question *"is there the volume of training required across the spread of occupations?"* is important given the range of occupations where demand is expected to be high, and the response is possibly mixed. There would appear to be:

51. PROVISION FOR TRAINING ACROSS THE RANGE OF OCCUPATIONS
52. A CORE OF PROVIDERS WHO DELIVER THE MAJORITY OF TRAINING
53. GOOD PROVISION OF COMPETENCE QUALIFICATIONS FOR CERTAIN OCCUPATIONS, MOST NOTABLY BUILDING ENVELOPE SPECIALISTS, SCAFFOLDERS, AND PLASTERERS.

However:

54. THERE ARE OCCUPATIONS, SUCH AS BRICKLAYING, PAINTING AND DECORATING, ROOFING, GLAZING, AND FLOORING WHERE THE LEVELS OF COMPETENCE BASED TRAINING APPEAR TO BE SLIGHTLY LOW.

Although limited, the growth that is occurring in education and training within Greater Manchester appears to be within the practical, competence based qualifications that employers have a preference for, as opposed to the "knowledge/theory" based qualifications.

SUMMARY OF RECOMMENDATIONS

1. Build a collaborative partnership to deliver change.
2. Conduct a review of provision and skills pathways to ensure fit-for purpose training and deliver a future construction curriculum that meets the needs of business.
3. Build a more positive image of construction. Increase recruitment through new entrance points, career changers and reskilling, focusing on improved messaging that construction is a well-paid sector with good career opportunities.
4. Support businesses and individuals to make the most of apprenticeship opportunities.
5. Use procurement and planning consent as a lever to enable skills development.
6. Maintain the evidence base on a regular basis and where possible drill down into specific areas of concern

5.1 CONCLUSION

The aim of action following publication of the Greater Manchester Construction Skills Gap Analysis report should be to achieve progress in addressing the long term and immediate challenges that the construction industry faces in Greater Manchester. Balancing the supply of construction workers and skills against future demand and ensuring that a well-qualified workforce is in place requires collaboration between local stakeholders working towards common goals.

It is clear that training provision does not always align with demand and does not address the requirements of construction employers. (e.g. much training delivered is at levels 1 and 2, much is knowledge rather than competency based.) Providers and businesses must work together to create new learning pathways and improve outcomes that deliver more site ready high-skilled workers.

In particular, a common complaint of construction employers is that new starters are not often 'site ready' so actions must include work with employers to enhance new starters' site readiness and behaviours. In addition, individuals often complete FE courses, but progress into a career in the occupation for which they trained. This is supported by an apparent mismatch between training achievements and occupational supply. Emphasis should therefore be on the provision of competency based training and on site learning so that students are employable.

In common with national trends 85% of FE training in Greater Manchester is delivered by eleven providers (ten colleges and one non-for profit organisation). By working together these providers may be able to avoid duplication of effort or share resources, enhance specialisations and explore innovative ways of delivering the curriculum to meet business needs.

A stable supply of skills requires that enough people to choose to join the industry. It is well known that construction is often associated with inaccurate stereotypes and regarded as a low value occupation that deters potential. However, the problem is not simply about numbers of people coming into the industry. The challenge is to recruit the right people, with appropriate skills, into occupations with the most acute shortages. We need a change of approach to careers campaigns and recruitment to address this. In particular we need to: encourage applications from ethnic minorities and women, raise the profile of professional and managerial roles and increase understanding of the full range of job roles available. IAG activity must be more co-ordinated and targeted if it is to have greater impact.

The certainty that the Construction Skills Gap analysis delivers should enable employers to have the additional confidence required to deliver apprenticeship opportunities. In order to increase numbers significantly, businesses - especially SMEs- need good advice about how to recruit and finance apprentices they must also have confidence that the training they receive will be high quality. To meet the needs of the industry we need more Higher Apprenticeships provision and more high quality vacancies leading to employment.

The evidence base must be communicated and maintained. Longer term projections include the potential impact of major initiatives that may skew demand. Manchester has identified a number of longer term very large infrastructure ambitions (e.g. High Speed 2 and Northern Powerhouse Rail). Industry, partners and providers will therefore need to be kept informed about likely demand where there is change.

Collaborative action is essential to ensure a stable supply of construction workers is established for the long term. Delaying action only ensures that in time construction output and productivity will be hampered and wages inflated, but with strong partnership between industry, providers and key stakeholders gaps and shortages could be significantly reduced.

5.2 RECOMMENDATIONS

RECOMMENDATION 1 FORM COLLABORATIVE PARTNERSHIPS TO DELIVER CHANGE

The Combined Authority, CITB and Greater Manchester Chamber should ensure that the right stakeholders are engaged and share evidence with them with a view to agreeing collaborative action.

Stakeholders include: local construction businesses, major employers, local authorities, developers, other local partners, colleges, construction training providers and universities.

Plans for construction skills will need to align with associated strategies such as that for HS2.

RECOMMENDATION 2 CONDUCT A REVIEW OF PROVISION AND SKILLS PATHWAYS TO ENSURE FIT-FOR PURPOSE TRAINING

A review of skills and training pathways should be undertaken so that provision matches the needs of employers and the local economy. Priority should be given to trades and professions highlighted in this report as being:

- 55. IN HIGH DEMAND AND AT HIGH RISK OF A SHORTFALL.
- 56. WHERE THERE IS A MISMATCH BETWEEN DEMAND AND TRAINING ACHIEVEMENTS.

Colleges and providers should be supported to:

- 57. TARGET POTENTIAL GROUPS OF INDIVIDUALS, ESPECIALLY TO THOSE OCCUPATIONS THAT ARE NOT WELL UNDERSTOOD. E.G. STEEL FIXERS, BUILDING ENVELOPE SPECIALISTS
- 58. INCREASE THE PROPORTION OF 'SITE-READY' WORKERS;
- 59. DEVELOP CLEAR PROGRESSION PATHWAYS.
- 60. ADOPT INNOVATIVE LEARNING TECHNIQUES, SUCH AS IMMERSIVE LEARNING
- 61. ENSURE THAT CURRICULUM CONTENT AND DELIVERY IS APPROPRIATE TO THE MODERN CONSTRUCTION INDUSTRY

An ambition of developing construction skills and training pathways should be to match training and development with the needs of employers and the local economy. In support of this ambition further understanding is needed of where the potential sources of people are within the Greater Manchester area and what the end to end skills and training pathways are that need to be in place to enable improved flows of people and skills supply to meet demand. These pathways may potentially include localised initiatives supporting training needed by particular people groupings preparatory to and post more formalised elements of the pathway.

RECOMMENDATION 3

BUILD A MORE POSITIVE IMAGE OF CONSTRUCTION AND INCREASE RECRUITMENT THROUGH NEW ENTRANCE POINTS, CAREER CHANGERS AND RESKILLING.

There are already numerous organisations and businesses engaged in careers activity in Greater Manchester, but there needs to be better co-ordination of the available resources so that:

62. THE STRENGTHS OF DIFFERENT ORGANISATIONS ARE UTILISED TO GREATEST EFFECT
63. ALL RELEVANT AUDIENCES (INCLUDING FE) ARE REACHED
64. SCHOOLS AND COLLEGES ARE APPROACHED WITH A MORE COHERENT OFFER RATHER THAN MULTIPLE APPROACHES.
65. ORGANISATIONS AND BUSINESSES RESOURCES ARE USED WELL AND DUPLICATION OF EFFORT IS MINIMISED. GO CONSTRUCT (WWW.GOCONSTRUCT.ORG) IS A CONSTRUCTION INDUSTRY OWNED INITIATIVE, THAT HIGHLIGHTS AND EXPLAINS CONSTRUCTION CAREERS.
66. SPECIFIC GROUPS OF PEOPLE (E.G. EXPERIENCED WORKERS FROM OTHER SECTORS, EX-OFFENDERS OR EX-FORCES PERSONNEL) ARE TARGETED WITH TANGIBLE OPPORTUNITIES RELATING TO IDENTIFIED PROJECTS OR JOB ROLES.

RECOMMENDATION 4

SUPPORT BUSINESSES AND INDIVIDUALS TO TAKE UP APPRENTICESHIPS

GMCA and partner organisations should identify ways to support SMEs and individuals to take up apprenticeships. This should include action to:

67. PROMOTE THE BENEFITS OF APPRENTICESHIPS TO BUSINESSES OF ALL SIZES
68. WORK WITH LARGER EMPLOYERS TO ENCOURAGE AND SUPPORT THEIR SUPPLY-CHAIN TO TAKE UP APPRENTICESHIPS
69. PROVIDE SMES WITH INFORMATION AND ADVICE ABOUT FINANCIAL SUPPORT (INCLUDING BOTH APPRENTICESHIP LEVY FUNDING AND CITB GRANT) AND HOW TO TAKE ON AN APPRENTICE.
70. HELP PROVIDERS TO OFFER HIGH QUALITY APPRENTICESHIP TRAINING THAT INCLUDES SUPPORT FOR EMPLOYERS TO ENSURE SUCCESSFUL ACHIEVEMENT OF PROGRAMMES.
71. ASK EMPLOYERS TO COLLABORATE WITH TRAINING PROVIDERS AND UNIVERSITIES TO CREATE APPRENTICESHIPS AT DEGREE AND MANAGEMENT LEVEL
72. ADDRESS THE SHORTAGE OF ON-SITE, COMPETENCY BASED APPRENTICESHIPS.
73. BUILD ON SUCCESSFUL APPROACHES, SUCH AS SHARED APPRENTICESHIP SERVICES.

RECOMMENDATION 5

USE PROCUREMENT AS A LEVER TO ENABLE SKILLS DEVELOPMENT

Further develop smart approaches to procurement (including co-ordinated approaches to Section 106 agreements) to encourage those bidding for contracts be mandated to include provision for social value associated with recruitment, training, apprenticeships and outreach. This should include:

74. EARLY ENGAGEMENT WITH BUSINESSES AND DEVELOPERS TO DISCUSS WAYS OF ENSURING THAT REQUIREMENTS TAKE INTO CONSIDERATION THE INDUSTRY'S NEEDS.
75. EXPLORING WHETHER PROCUREMENT OR PLANNING CONSENT COULD MANDATE THE SHARING OF SUPPLY AND SUB-CONTRACTING THROUGH A LOCALLY MANAGED PORTAL.

RECOMMENDATION 6

MAINTAIN & ENHANCE THE CONSTRUCTION EVIDENCE BASE

Develop and update the evidence base that supports decision making on a regular basis to demonstrate construction pipeline opportunities and as a control measure to ensure demand is matched with supply and skills gaps are monitored.

76. ENSURE THAT PIPELINE VISIBILITY ASSISTS THE LOCAL INDUSTRY IN REDUCING RISKS SUCH AS PIPELINE PREDICTABILITY, ECONOMIC INSTABILITY OR MAINTAINING SUSTAINABLE EMPLOYMENT.
77. WORK WITH STAKEHOLDERS AND OTHER RESEARCH BODIES TO IDENTIFY AREAS WHICH REQUIRE A DEEPER DRILL DOWN INTO SPECIFIC OCCUPATION AND SECTOR ISSUES.

In conclusion, CITB and Greater Manchester Chamber of Commerce believes that the report plays a useful part in drawing attention to the skills requirement of the construction sector. The Chamber and the CITB have been engaged in delivering demand pipeline analyses for several regions in the UK. These regional analyses show that the outlook for construction remains positive across the UK, although it is not possible to gain a full and accurate pipeline beyond the next two to three years. This report makes a significant contribution by highlighting the areas of skills shortage, so that remedial measures may be designed by policymakers. There are no quick fix solutions to the construction skills shortage. But by implementing the recommendations that this report makes, we can address wage inflation in the construction industry while ensuring that the delivery of construction projects in the future is not hampered by the lack of skilled labour.

WHO WE ARE

Greater Manchester Chamber of Commerce (GMCC) is the UK's largest accredited Chamber, representing over 4,700 businesses that together employ over 400,000 people, over one-third of the working population of the country's largest area of economic activity outside London and the South East. We are a not-for-profit private company, working proactively to create a better business environment for our members by helping to connect them to business opportunities in Greater Manchester, the UK and across the globe. GMCC has covered the ten local authority areas within the Manchester City Region since 2004, but traces its roots back to the Manchester Commercial Society in 1794. It delivers over 120 events each year offering outstanding networking opportunities to its member companies. It works closely with its partners on a local, national and international scale to provide its members with unique opportunities to develop their business and to provide them with a mechanism to interact with local and central government on issues affecting the city region. To have a look at everything we offer, visit www.gmchamber.co.uk.

CHAMBER RESEARCH

Chamber Research (CR) is the brand under which GMCC offers its best-in-class expertise in policy, economic insight and business intelligence to its members and its key partners, as well as commercially to a wide variety of clients. Operating under its three key pillars of influence, insight and intelligence, Chamber Research provides a holistic, comprehensive suite of services that allow clients access to its extensive experience of primary and secondary research, economic research, policy research and lobbying as well as large-scale big data analytics and information systems (databases, CRM systems, cloud security) design and consultancy.

Chamber Research is an award-winning enterprise, having recently gained the accolade of Most Effective Campaign in the British Chambers of Commerce Awards 2015 for its revolutionary methodology contained within its *Construction Pipeline Analysis* which has been championed by industry, HM Treasury and the government's Chief Construction Advisor. Working with key partners Barbour ABI (exclusive provider of new orders in the construction industry data to the Office for National Statistics) and the Construction Industry Training Board, Chamber Research is able to deliver a new way of understanding future construction demand and the challenges and opportunities that are presented to the local economy, industry and government in its delivery.

Chamber Research has experience and expertise in a number of key fields including traditional desk-based research across a wide range of industry sectors, primary research design and supporting methodologies including digital surveys, face-to-face interviews and focus groups. It also has experience in economic impact analysis, competitor analysis, policy and government advisory roles, public affairs and commercial viability studies supported by a strong expertise in large-scale data management, manipulation and analytics and information technology systems. Where expertise is required for individual projects that does not exist in-house, Chamber Research maintains close connections with a number of partners who individually are leaders in their fields to support collaborative and high-quality projects for all clients.

CITB

We are the Industry Training Board and a partner in the Sector Skills Council for the construction industry in England, Scotland and Wales.



We are dedicated to ensuring the construction workforce has the right skills for now and the future based on our three strategic priorities – Careers, Standards & Qualifications and Training & Development.

Our Careers priority supports the promotion of construction as an attractive sector to work in. This is delivered through initiatives such as the award winning Go Construct website, our network of nationwide industry ambassadors who engage with local communities and our Ofsted Outstanding CITB Apprenticeships which supports thousands of apprentices every year.

With Standards & Qualifications we are ensuring qualifications and training courses meet the standards that employers need. We work with industry to develop occupational standards and frameworks that ensure our industry has the right skills in the right place, at the right time.

Through Training and Development we are focussed on supporting training provision for a skilled workforce, accessed when needed, delivered in the methods needed. We use our evidence, influence and, where necessary, our funding to ensure training is accessible in multiple formats which take account of emerging learning technologies, thereby ensuring more employers train and that the training is relevant. The development of our Training Directory and the establishment of a National Competence Register will increase access, reduce duplicate training and provide insight where skills gaps remain.

We are tackling our industry's skills issue by attracting and supporting the development of people to construct a better Britain.

CITB RESEARCH INSIGHT

CITB work collaboratively to deliver detailed and accurate skills forecasting analysis across the construction sector. Based on the ability to produce detailed demand forecasts using the CITB award winning Labour Forecasting Tool, the team have developed a methodology that enables a forward projected view of demand and supply and an analysis of any skills gaps and shortages that may occur at occupational level.

The CITB Research Insight team have developed considerable expertise in understanding construction labour supply. This encompasses movement within the construction labour market regarding the mobility of the workforce, the impact of migrant workers and the considerable 'flows' created regarding retirement, sickness and movements to other industries. CITB has access to specific data from a range of different sources utilised in this report that provides a picture of the current construction workforce and those entering the industry. Our analysis compares forecasted demand with supply to create a 'skills gap analysis' at occupational level and will highlight areas of risk.

This research capability covers the whole construction sector and can be performed on a geographical basis, a sector basis (such as infrastructure or housing) or on a specific project such as HS2.

The technique has been honed over years of experience and working on a wide range of projects. The team work with third party and primary data to create new forecasting models that are bespoke and unique. We also work with partners from other parts of the built environment where projects require different types of expertise.

This analysis has been conducted over the last 10 years and includes clients from the Olympic Legacy, HM Treasury, Welsh Government, Tideway, HS2, Tidal Lagoon Ltd, and a wide range of Local Enterprise Partnerships, Core Cities and Local Authorities. Our reports cover the analysis of thousands of projects and our work involves significant repeat business.

APPENDIX A. OCCUPATIONAL DEFINITIONS

Reference is made in this report to a range of occupational aggregates for construction occupations. This appendix contains details of the 166 individual occupations which are aggregated into 28 occupational aggregates.

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).	
1 Senior, executive, and business process managers	
(1115)	Chief executives and senior officials
(1131)	Financial managers and directors
(1132)	Marketing and sales directors
(1133)	Purchasing managers and directors
(1135)	Human resource managers and directors
(1251)	Property, housing and estate managers
(1136)	Information technology and telecommunications directors
(2150)	Research and development managers
(1162)	Managers and directors in storage and warehousing
(1259)	Managers and proprietors in other services nec
(1139)	Functional managers and directors nec
(2133)	IT specialist managers
(2134)	IT project and programme managers
(3538)	Financial accounts managers
(3545)	Sales accounts and business development managers
2 Construction project managers	
(2436)	Construction project managers and related professionals
3 Other construction process managers	
(1121)	Production managers and directors in manufacturing
(1122)	Production managers and directors in construction
(1161)	Managers and directors in transport and distribution
(1255)	Waste disposal and environmental services managers
(3567)	Health and safety officers
(3550)	Conservation and environmental associate professionals

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).

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

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

5 Construction trades supervisors

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

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).

6 Wood trades and interior fit-out

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

7 Bricklayers

(5312)	Bricklayers and masons
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8 Building envelope specialists

(5319)	Construction and building trades nec (50%)
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9 Painters and decorators

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

10 Plasterers

(5321)	Plasterers
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11 Roofers

(5313)	Roofers, roof tilers and slaters
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12 Floorers

(5322)	Floorers and wall tillers
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13 Glaziers

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

14 Specialist building operatives not elsewhere classified (nec)

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

15 Scaffolders

(8141)	Scaffolders, staggers and riggers
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16 Plant operatives

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

17 Plant mechanics/fitters

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

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).

18 Steel erectors/structural fabrication

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

19 Labourers nec

(9120)	Elementary construction occupations (100%)
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20 Electrical trades and installation

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

21 Plumbing and heating, ventilation, and air conditioning trades

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

22 Logistics

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

23 Civil engineering operatives not elsewhere classified (nec)

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

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).

24 Non-construction operatives

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

25 Civil engineers

(2121)	Civil engineers
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26 Other construction professionals and technical staff

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

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).

27 Architects

(2431)	Architects
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28 Surveyors

(2433)	Quantity surveyors
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(2434)	Chartered surveyors
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APPENDIX B. REGION EMPLOYER OPERATES IN, COMPARED WITH WORKING IN

Appendix Table 2: Region/nation employer operates in, compared with region/nation working in currently

Region/nation employer operates in	Region/nation currently working in											
	EM %	EE %	GL %	NE %	NW %	NI %	SC %	SE %	SW %	WA %	WM %	YH %
East Midlands	83	16	8	13	3	2	4	12	8	7	24	11
East of England	12	67	15	11	2	1	4	19	8	7	9	6
London	10	27	84	13	4	1	5	27	12	7	9	6
North East	9	9	8	93	3	1	4	6	7	7	8	15
North West	11	9	8	14	93	1	4	6	7	11	11	10
Northern Ireland	3	3	3	2	1	99	3	2	1	3	2	1
Scotland	6	4	6	9	1	2	97	2	4	4	5	4
South East	13	23	27	12	3	*	4	65	21	7	11	6
South West	9	5	7	10	3	*	4	18	83	10	15	5
Wales	6	5	5	8	3	*	4	3	10	96	14	4
West Midlands	21	9	8	12	6	*	4	7	12	9	92	8
Yorkshire and the Humber	15	10	7	19	4	1	5	6	8	8	8	88
Republic of Ireland	1	2	3	*	*	2	1	1	1	2	2	*
Other parts of Europe	*	*	*	1	0	0	0	0	*	0	1	0
Outside Europe	*	1	0	*	0	0	0	0	*	0	*	0
Other / Unsure	1	3	2	3	2	*	1	3	1	*	1	3
Unweighted bases	410	366	452	427	435	274	463	439	494	290	352	369

Source: Workforce Mobility and Skills in the UK Construction Sector 2015, North West Report. BMG Research on behalf of CITB.

Base: All respondents. *denotes less than 0.5%

