WHOLE LIFE CONSULTANTS LTD

CITB ANALYSIS

Construction skills gap analysis for the Humber LEP area

An analysis of the opportunities presented by the construction landscape in the Humber LEP

November 2018

EXECUTIVE SUMMARY

The Humber Local Enterprise Partnership (LEP) area can expect sustained spending on new construction projects of more than £900 million per year for the immediate future.

To meet this anticipated demand a total construction workforce of more than 28,000 people is required. With significant demand from neighbouring areas and with an aging workforce resulting in retirement, there are risks that the Humber LEP area may not always be able to meet demand for some occupations.

Across the area, new housing accounts for 52% of anticipated spend on new projects in 2019; with infrastructure accounting for 22% and private commercial developments for 15%.

The Humber LEP area's opportunity

The LEP and local authorities' opportunities are to: support growing businesses; develop a more appropriately and better skilled, flexible workforce; drive higher level skills, match skills and the local economy and encourage job creation. This will, in turn, support the delivery of infrastructure that will enable further development and ensure that the area is prepared to exploit opportunities as they emerge and deliver the new housing that is needed.

Construction on its own makes up a huge part of the UK economy representing more than 7% of GDP. But crucially it is also an enabler. It will create the new housing that is so desperately needed; will enhance the environment; will create better public spaces and facilities that we depend on; build the facilities for new technologies and manufacturing; and create new infrastructure that enables growth and prosperity. Construction opens up opportunities for major social and economic gains.

"The Humber LEP area will have a good range of opportunities in construction trades and professions over the coming years. With well-paid and highly skilled job opportunities in a range of trades and professions, we should be encouraging young people to look at construction as a career of choice. A skilled workforce is essential for the area to meet its growth aspirations. CITB is working with employers to inspire, attract and train this new talent for these valuable and rewarding careers."

Lynne Allison, CITB Partnership Manager

High demand occupations

The top ten occupations for which there is greatest demand in the LEP area are:

- Non construction professional, technical, IT and office based
- Wood trades and interior fit-out
- Electrical trades and installation
- Plumbing and HVAC trades
- Painters and decorators
- Labourers
- Other construction process managers
- Building envelope specialists
- Bricklayers

At risk occupations

The occupations at greatest risk of a shortfall in numbers available locally are:

- Architects
- Painters and decorators
- Logistics
- Labourers
- Plant operatives
- Wood trades and interior fit-out
- Specialist building operatives
- Building envelope specialists
- Bricklayers

Priority occupations

The report identifies occupations for which there is high demand AND a high risk of a shortfall.

- Painters and decorators
- Labourers
- Wood trades and interior fit-out
- Specialist building operatives
- Building envelope specialists
- Bricklayers
- Plumbing & HVAC trades
- Other construction process managers

Occupations in context – the challenge

This report sets out a challenge to the Humber LEP, local authorities, colleges, universities, training providers, construction employers and other stakeholders – namely to attract, train, recruit and maintain a high skilled construction workforce that meets anticipated demand.

Construction offers a range of well-paid high skilled jobs for which there is demonstrable demand. The opportunity is to exploit the opportunities to achieve social and economic gains by encouraging people from the area into these roles, providing the associated support and career pathways.

This challenge is set against the backdrop of: concerns about the future availability of skilled workers and demand from other UK regions and major infrastructure projects.

The professions

There is high demand for some professional roles, jobs which require a significant length of training before candidates become qualified. There are what also appear to be significant risks of a shortage of Architects. Architects, surveyors and civil engineers require higher level qualifications plus professional accreditation, so the effect of action now will only be felt in five to ten years' time. These are jobs in demand the world over. However, these roles do not need to be permanently on-site so it is likely that some demand may be met by those working outside the region.

There are also opportunities to modernise construction and for Humber LEP to start to encourage and adopt new technologies and new practices like off-site and modular construction to help meet demand.

Training and education

Ten providers have delivered 96% of construction training provision over the past five years within the Humber LEP area.

While provision of construction training has fallen by 13% over the past five years, overall there has been a shift in the Humber LEP towards offering more construction apprentice training. This can be seen as a positive move as apprenticeships and competency training are preferred by employers. All local authorities in the area saw an increase in apprenticeship starts though this has been most pronounced south of the Humber and in North Lincolnshire in particular where provision has doubled.

Recommendations

The report proposes recommendations that include:

1. Develop and strengthen relevant collaborative partnerships. With a view to building collaborative holistic action plans and encouraging local stakeholders to work together and input to, and take ownership of, the construction skills actions.
2. Establish a Humber LEP area construction skills strategy and action plan that recognises collective actions and solutions that may be required in and across the area.
3. Develop skills and training pathways for both current and future skills needs. Ensure training is appropriate for local needs and businesses. Develop LEP area construction training so that it is appropriate for the needs of the construction industry and local circumstances, addressing risks of supply shortfalls.
4. Outreach. Build a more positive image of construction locally with young people. Increase recruitment through new entrance points, career changes and reskilling. Emphasise that construction offers high value rewarding careers for all.
5. Use procurement as a lever to enable positive action. Develop smarter approaches to procurement to encourage wider contract award inclusivity of small and medium sized employers. With those tendering for construction and infrastructure contracts or those funding developments to be mandated to include provision for recruitment, training, apprenticeships and outreach.

CONTENTS

APPENDIX CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

This report represents the first step in developing and maintaining an evidence base, to be utilised by the Humber Local Enterprise Partnership (LEP), as well as those interested in the growth, prosperity and built environment in the area, to inform decision making that will help determine the employment and skills opportunities emerging in the construction industry.

Construction is a significant part of the economy and is a major employer. But it is also an enabler of economic growth and job creation and has a significant impact on enhancing the built environment, in creating the facilities required of a modern economy and addresses significant social issues, such as a shortage of housing.

It is also an enabler of other sectors' success by building the facilities required for commercial and industrial advances as well as the infrastructure that is, in turn, an enabler of growth. It is, therefore, essential for the Humber LEP area to invest in supporting the actions proposed in this report as well as referring to the wider evidence base available and involving stakeholders in the development of the associated plans.

The analysis starts to determine priorities for interventions to ensure local opportunities are maximised and that the area has the right future skills and training pathways in place to deliver demand led solutions.

Construction is a very mobile industry – with workers often travelling significant distances and, in the case of many management and professional roles, often working primarily remotely far from the construction site. This may draw skilled workers away from the Humber LEP area but may also mean workers move into the area to meet some demand and this needs to be taken into consideration in addition to the data presented in this report.

1.1. SCOPE

The local authorities analysed are:

- East Riding of Yorkshire
- City of Kingston upon Hull
- North East Lincolnshire
- North Lincolnshire

Figure 1 shows the area covered by the Humber LEP.

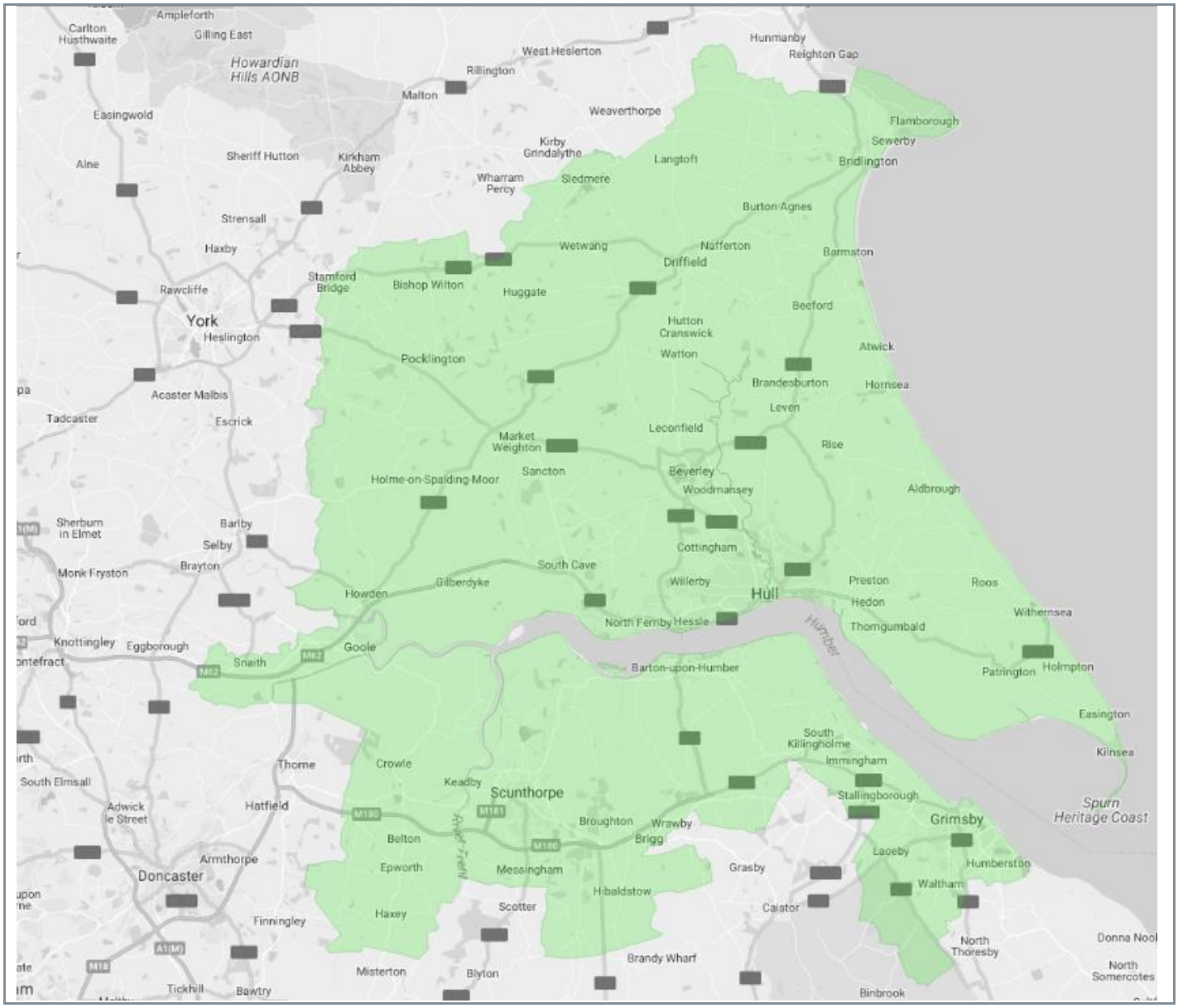


Figure 1: Humber LEP and surrounding areas

The LEP area's geography

It should be acknowledged in reviewing and interpreting this report that the geography of the Humber LEP area sets it apart from some other parts of the UK. Being coastal is not unusual – it does mean though that there is no movement of workers and students to or from the East. Of greater significance may be the Humber. This presents a natural barrier to some north south movement within the area and this may inhibit the take up of some options for students and workers. The Humber Bridge is a significant trunk route but the next significant crossings are: of the Trent via the M180 west of Scunthorpe and of the Ouse via the M62 near Howden. This means that for some journeys within the LEP options are limited without access to a car and may still be relatively long and slow.

2. LABOUR DEMAND IN THE HUMBER LEP

The following sections provide an estimate of the labour demand predicted by our Labour Forecasting Tool that construction investment will create across the LEP over the period 2018-2022. The tool and method of analysis are described in Appendix A.

SUMMARY OF DEMAND

- Our estimate of the labour demand in the Humber is around 28,370 people in 2018. The projected growth between 2018 and 2022 suggest that the labour demand in 2022 will be around 28,520 people.
- Around 63% of the workforce is employed in skilled trades & operatives, the other 37% are in managerial, professional & office based staff.
- During 2019 the most labour-intensive occupation group is “Non-construction professional, technical, IT, and other office–based staff (excl. managers)” with an annual demand of 3,710 people.
- The skilled trade & operative occupations in greatest demand are:
    - Wood trades and interior fit-out with a requirement for 3,110 people;
    - Electrical trades and installation follow with 2,220 people.
    - Plumbing and heating, ventilation, and air conditioning trades rank third, with a demand of 2,050 people

2.1. PIPELINE OF KNOWN PROJECTS

2.1.1. Glenigan pipeline analysis

We have considered projects in the Glenigan database[1] and the National Infrastructure and Construction Pipeline (NICP)[2]. These comprise what are referred to as the known projects.

An initial review of the Glenigan database identified 433 projects in the Humber LEP. Of the Glenigan projects, 74 projects were removed due to missing dates. Also excluded was one project which was clearly identified as a consultancy project. One project was removed because it was a duplicate. One project was removed due to it not being located in the analysed LEP and one was removed due to it being included in the NICP. A full set of the projects which were omitted from the analysis is provided in Appendix C. The spend in projects which were removed because of missing dates is around 2.6% of the total pipeline value. It is possible that this work will take place at some point in the future but as dates are unknown it is most likely that this will be later in the forecast period. Since dates are not known it is not possible to pinpoint when the labour will be required. However, an assessment of the labour demand from potential additional projects is included in the estimates of other work as outlined in Appendix A.

The Mean Value Theorem was applied to the remainder of the pipeline to identify the significant projects. The process identified 69 significant projects accounting for 84% of the total construction spend in the area. This allowed a detailed analysis of a large proportion of all the projects and a comprehensive consideration of the project types to which they were assigned.

Appendix D provides a full breakdown of the Glenigan significant projects and their construction values. The peak year for the Glenigan spend profile is 2019. The location of the significant projects within the Humber can be seen in Figure 2. The values of the projects are proportional to the sizes of the coloured dots.

[1] The Glenigan database allows contractors to identify leads and to carry out construction market analysis. It is updated every quarter to provide details of planning applications from local authorities supplemented with additional project-specific data. For the purposes of this analysis with have used the 2018/Q3 cut of data.

[2] The Infrastructure and Projects Authority (formerly Infrastructure UK and Major Projects Authority) compile annually a pipeline of UK infrastructure and construction projects and the associated annual public and private investment. For this report we have used the 2017 which includes details of around 700 projects valued at some £463bn.

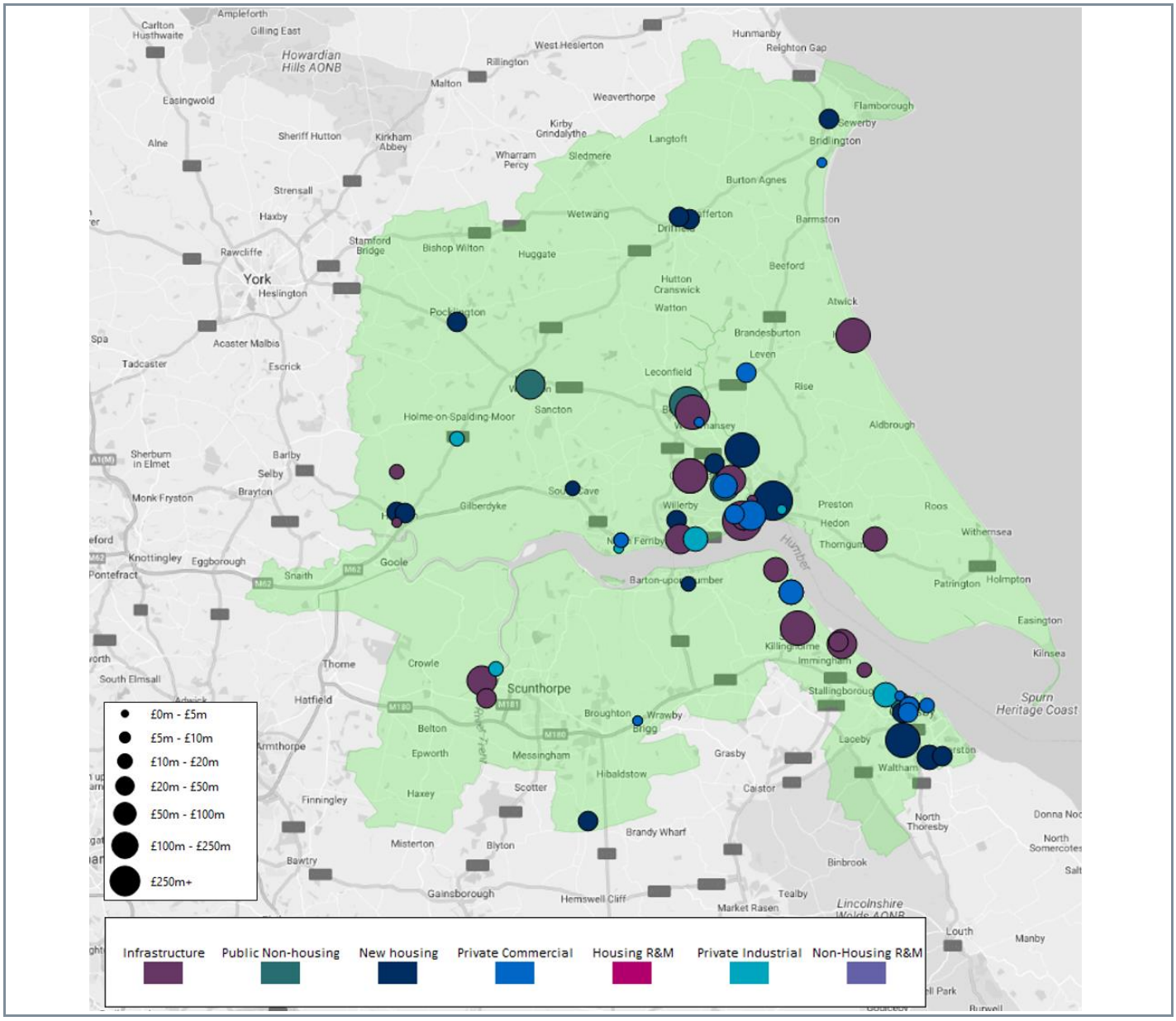


Figure 2: Location of significant Glenigan projects included in the analysis

2.1.2. Glenigan & NICP spend analysis

Implementing the methodology outlined in Appendix A leads to the following findings for the peak year for known projects of 2019. The peak year is used because the tail off in the known projects is more likely to be due to a lack of future planning rather than an actual tail off in workload.

Table 1 shows the distribution by project type of new build spend for the total pipeline of known projects.

Table 1: New-build construction spend by project type in 2019 (total known projects)

Project type	Construction spend in 2019 (2018 values - £m)	% of total
New housing	479	53%
Infrastructure	198	22%
Private commercial	137	15%
Private industrial	52	6%
Public non-housing	46	5%
Total	**912**	**100%**

Table 2 shows the infrastructure construction spend from the known projects in 2019 by infrastructure sub-type. Appendix E provides a full breakdown of the NICP and LEP projects and their construction values.

Table 2: Construction spend per infrastructure sub-type in 2019 (total known projects)

Project type	Construction spend in 2019 (2018 values - £m)	% of total
Energy	111	56%
Transport	31	16%
General infrastructure	26	13%
Water	18	9%
Flooding	12	6%
Total	**198**	**100%**

2.2. ESTIMATE OF FUTURE TOTAL LABOUR DEMAND

The known project pipeline may not include smaller projects or repair and maintenance work. Figure 3 shows the outcomes of the analysis of future labour demand with the forecast regional employment growth rate applied. The solid purple area shows the labour demand arising from the new build Glenigan and NICP projects. This is projected forward from the peak as shown in green. The R&M (including any in Glenigan or the NICP) is also shown along with the likely total labour demand arising from estimates of other work. The method for calculating these is provided in Appendix A. The total construction labour demand is around 28,370 people in 2018. The projected growth between 2018 and 2022 suggest that the labour demand in 2022 will be around 28,520.

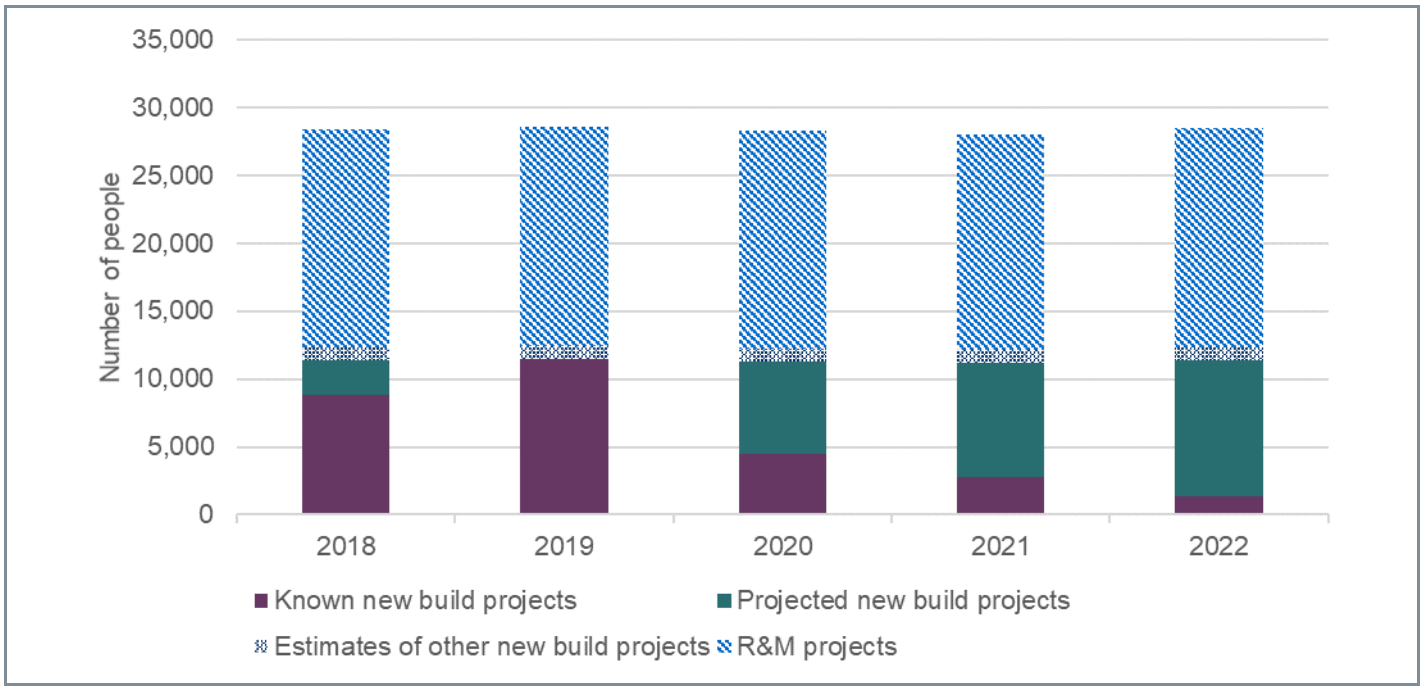


Figure 3: Total construction labour demand including estimates for both R&M and estimates of other work

2.2.1. Breakdown of labour demand by occupation

Figure 4 presents the breakdown of labour for skilled trades & operatives and managerial, professional & office based staff. Around 63% of the workforce are in skilled trades & operative occupations.

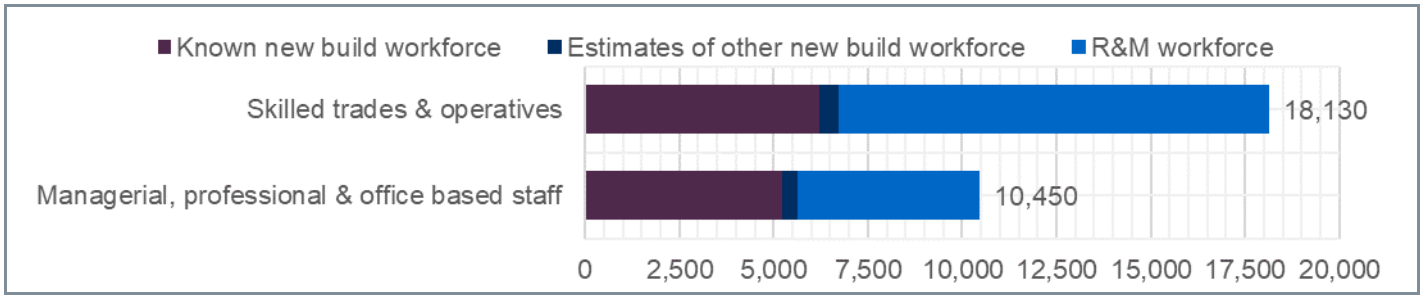


Figure 4: Total construction labour demand for 2019 by broad occupational group

For the peak year in Glenigan of 2019, Figure 5 shows the detailed breakdown for the 20 skilled trade & operative occupational groups for the pipeline of known projects, the estimates of other new-build work and the R&M work. These occupations will be predominately based at or near the location of the work.

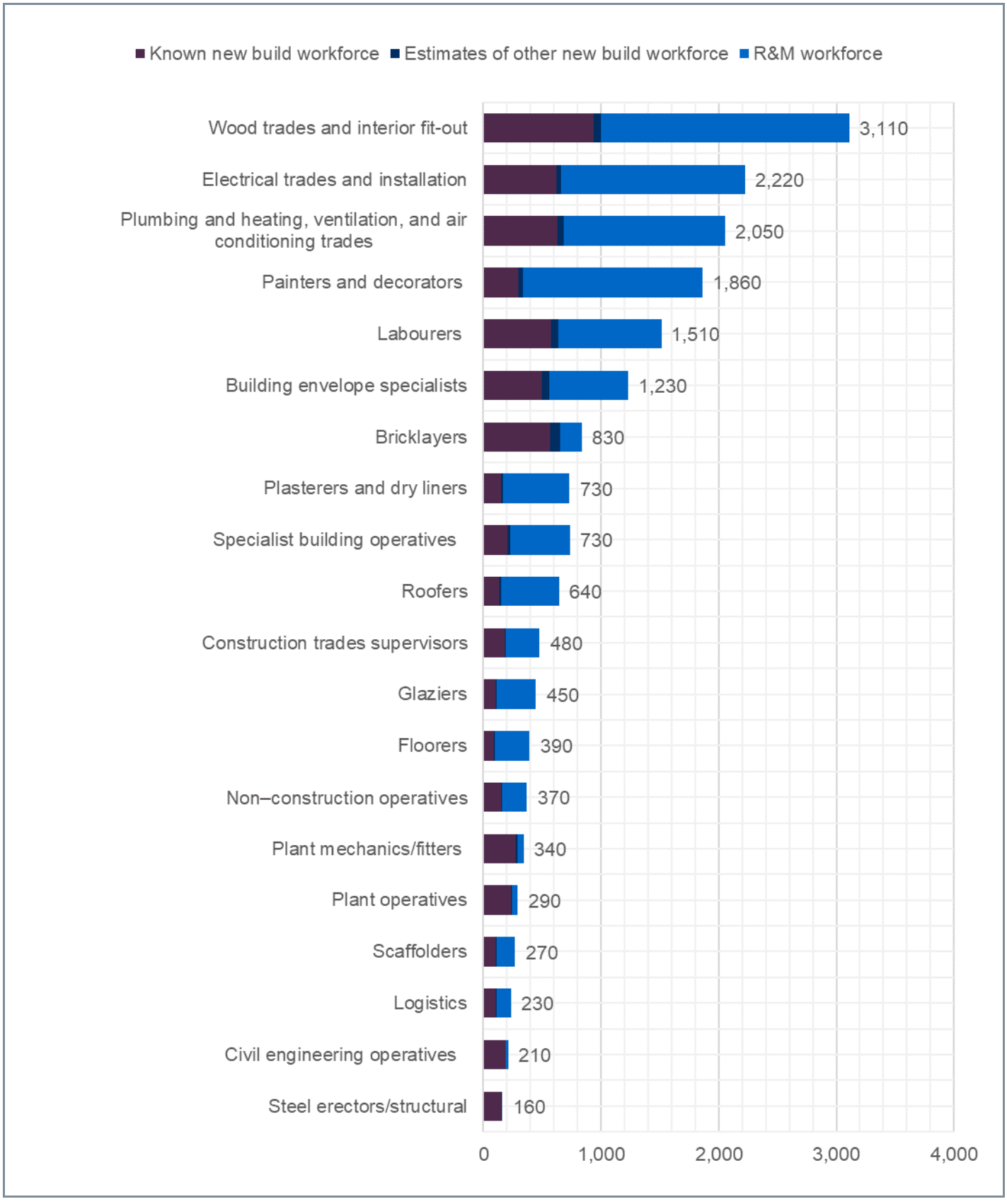


Figure 5: Construction labour demand for skilled trades & operative occupations in the peak year

Figure 6 shows a breakdown of the managerial, professional & office based occupations. Since it is possible for many of these people to work remotely from the site, they will not necessarily generate a local demand.

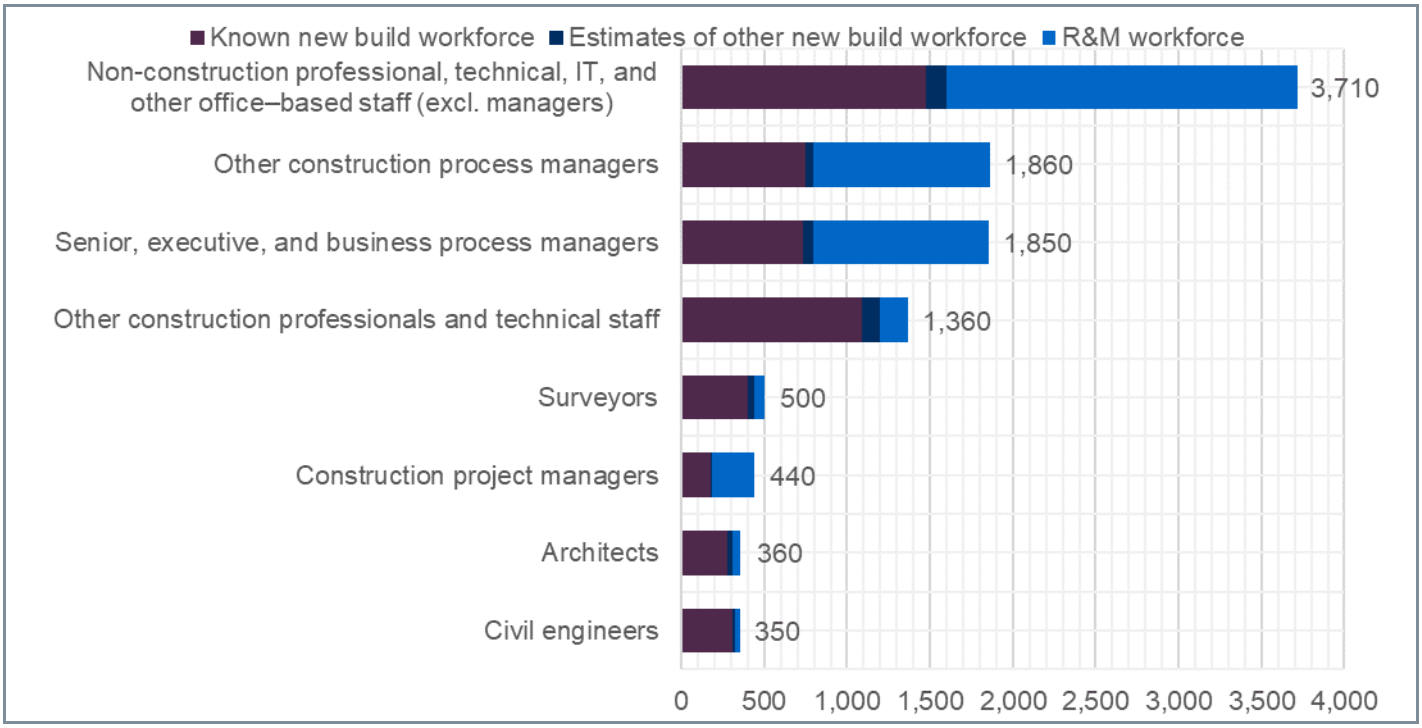


Figure 6: Construction labour demand managerial, professional & office based occupations in the peak year

2.2.2. Breakdown of labour demand by project type

Table 3 shows the labour demand generated by the known projects and the estimates of other work in 2019 broken down by project type.

Table 3: Labour demand by project type in 2019

Project type	Known pipeline labour demand in 2019 (people)	Estimates of other work labour demand in 2019 (people)	Total labour demand in 2019 (people)	% of total in 2019
Non-housing R&M	-	9,220	9,220	32%
Housing R&M	710	6,270	6,980	24%
New housing	5,570	940	6,510	23%
Private commercial	2,410	-	2,410	8%
Infrastructure	1,770	-	1,770	6%
Private industrial	910	-	910	3%
Public non-housing	770	-	770	3%
Total	**12,140**	**16,430**	**28,570**	**100%**

2.3. BREXIT – DEMAND CALCULATIONS AND FORECASTING

Economic forecasts are predicated on the Brexit position at the time of writing – early November 2018

The baseline forecasts that have informed the Construction Skills Network assumes that a deal will eventually be struck within a four year time horizon and it will include some form of trade access to the single market. As it is unlikely that the terms will be as good as the current situation, we have made a small downgrade to our long term export and investment projections, compared to our pre-Brexit vote baseline. No adjustments have been made to underlying population projections in our base case but downside risks clearly exist on this front from a potential slowdown in EU migration.

At the time of writing the proposals meant that after a proposed Brexit transition period, all migrants planning to live and work in Britain would have to demonstrate they are sufficiently skilled by meeting a minimum salary threshold. That figure has not yet been specified but, at present, non-EU migrants must earn more than £30,000 a year to work in the UK, so the assumption is that it will be a similar figure for EU migrants.

Low skilled people will be able to migrate to the UK but only in limited numbers. For example, the government in October 2018 announced a pilot scheme allowing British farmers to bring in fruit and vegetable pickers for up to six months each year during the harvest season. However, it has ruled out a wider system of sector-by-sector exemptions.

The current negotiations are just on the immediate terms of Brexit, the actual trade deal with the EU will take much longer to finalise, hence our four-year horizon.

3. LABOUR 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 the Humber LEP and how this relates to overall employment across the wider Yorkshire and Humber area and the UK as a whole. Data from CITB's Construction Skills Network (CSN) is used along with official Government sources.

For the second section, although training occurs at Further Education (FE) and Higher Education (HE) levels, the focus of this report is on the FE that takes place. This is because FE tends to be sourced and delivered in a closer proximity to the home and workplace, whereas the length of study time and specialisms for Universities for HE typically give much greater degrees of mobility. The much longer period of time taken to acquire qualifications and experience mean most HE qualified occupations are outside the period that this report can consider.

That does not mean that Humber LEP should not have ambitions to move workers through to higher level training and education. There may also be opportunities for more leadership and management, as well as specialist, training and development.

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.

3.1. MAIN POINTS

- Two thirds of the workforce in the Humber LEP is located in the Hull (37%) and East Riding (30%) local authorities.
- Current construction workforce within the LEP is estimated at 29,800 workers
- The Humber LEP accounts for 16% of Yorkshire and Humber's total current construction workforce and 18% of its construction firms
- Recent employment trends show an erratic pattern in construction workforce numbers within the Humber LEP over the last five years, against a backdrop of a broadly increasing workforce across Yorkshire and Humber as a whole
- 74 training providers have delivered construction-relevant FE courses within the Humber LEP over the last five years, with ten main providers delivering 96% of provision.

3.2. EXISTING WORKFORCE

Recent trends: Workforce & Businesses:

- The Humber LEP construction workforce was in sharp decline from 2011 to 2012, and had a sharp increase in 2014. It then increased year on year to 2015, but has since seen another decline and increase to up 2017. This highlights the erratic nature of the workforce in the Humber LEP.
- Self-employment within construction in the LEP remains 1% below 2013 levels and is currently at 10,400.
- From 2013 there has been a 15% increase in the number of Micro sized construction businesses within the LEP area, taking the proportion to 94%. Medium-sized construction businesses also increased by 20% during the same time period, so both account for much of the growth in the Humber LEP from 2013 to 2017.

An analysis of the Annual Population Survey shows that the LEP accounts for around 16% of construction employment in Yorkshire and Humber.

Table 5 applies this percentage share to the CSN occupational breakdown for the Yorkshire and Humber area as a whole to give an estimate of total employment at occupational and industry level in the Humber LEP. For comparison, the wider Yorkshire and Humber region has been included.

Construction employment peaked in the Humber LEP in 2017, and for the wider Yorkshire and Humber area. The construction workforce in the LEP has experienced an erratic relationship compared to the Yorkshire and Humber region as a whole, which has seen steady growth from 2014. In the Humber LEP, there has been a slightly more stable picture emerging from 2015 onwards. Ref: Figure 7.

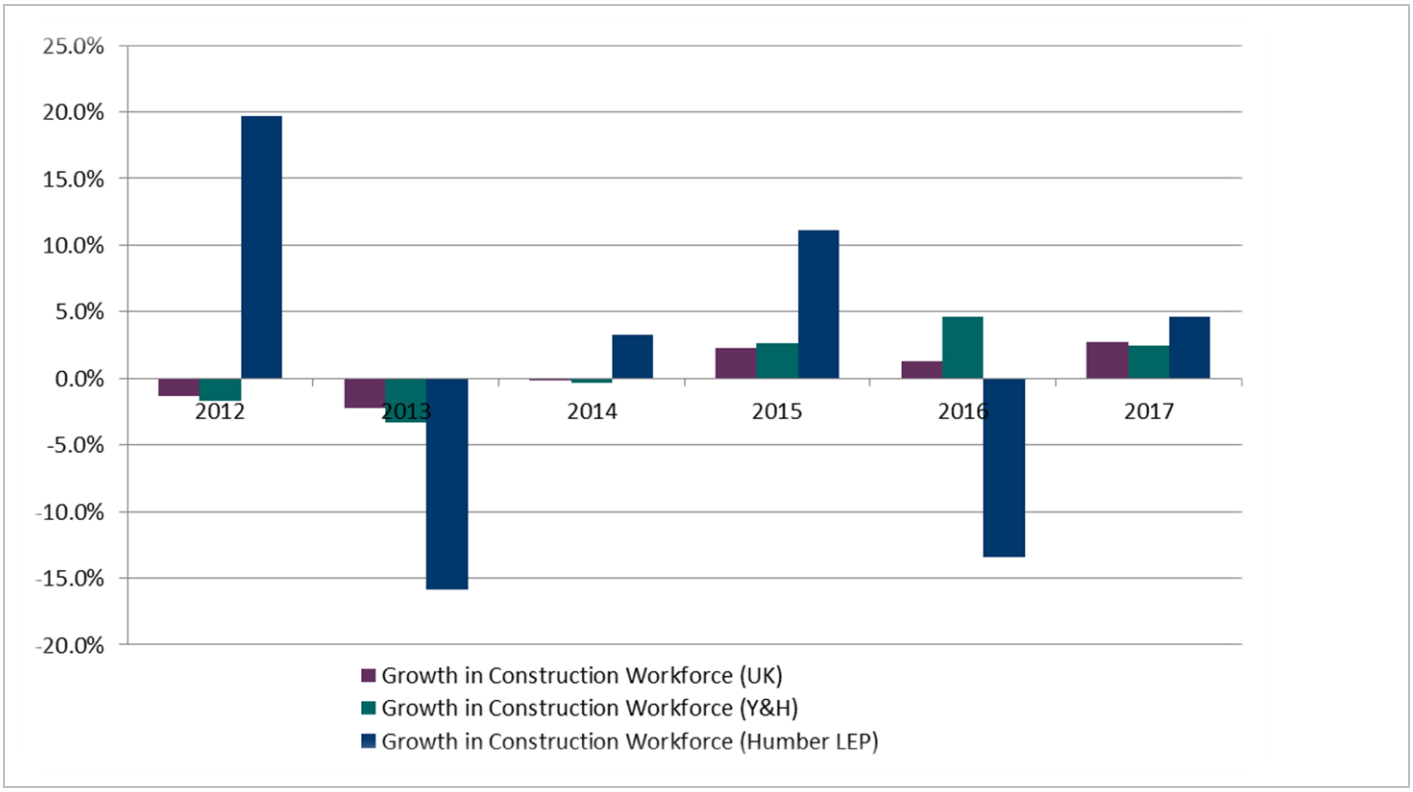


Figure 7: Year on year change in Construction Employment (Experian/CITB & NOMIS 2017)

The number of construction firms within the Humber LEP increased by 15% between 2013 and 2017, to just over 4,000 businesses. Much of this increase (500 businesses) was due to growth in the number of micro firms that employ fewer than nine people. This is a slower rate of growth compared to the Yorkshire and Humber region as a whole which saw a 23% increase in micro sized firms during the same period. The Humber LEP accounts for around 18% of construction firms based in Yorkshire and Humber.

For reference the number of construction firms in the UK has increased by 24% between 2013 and 2017. Ref Figure 8.

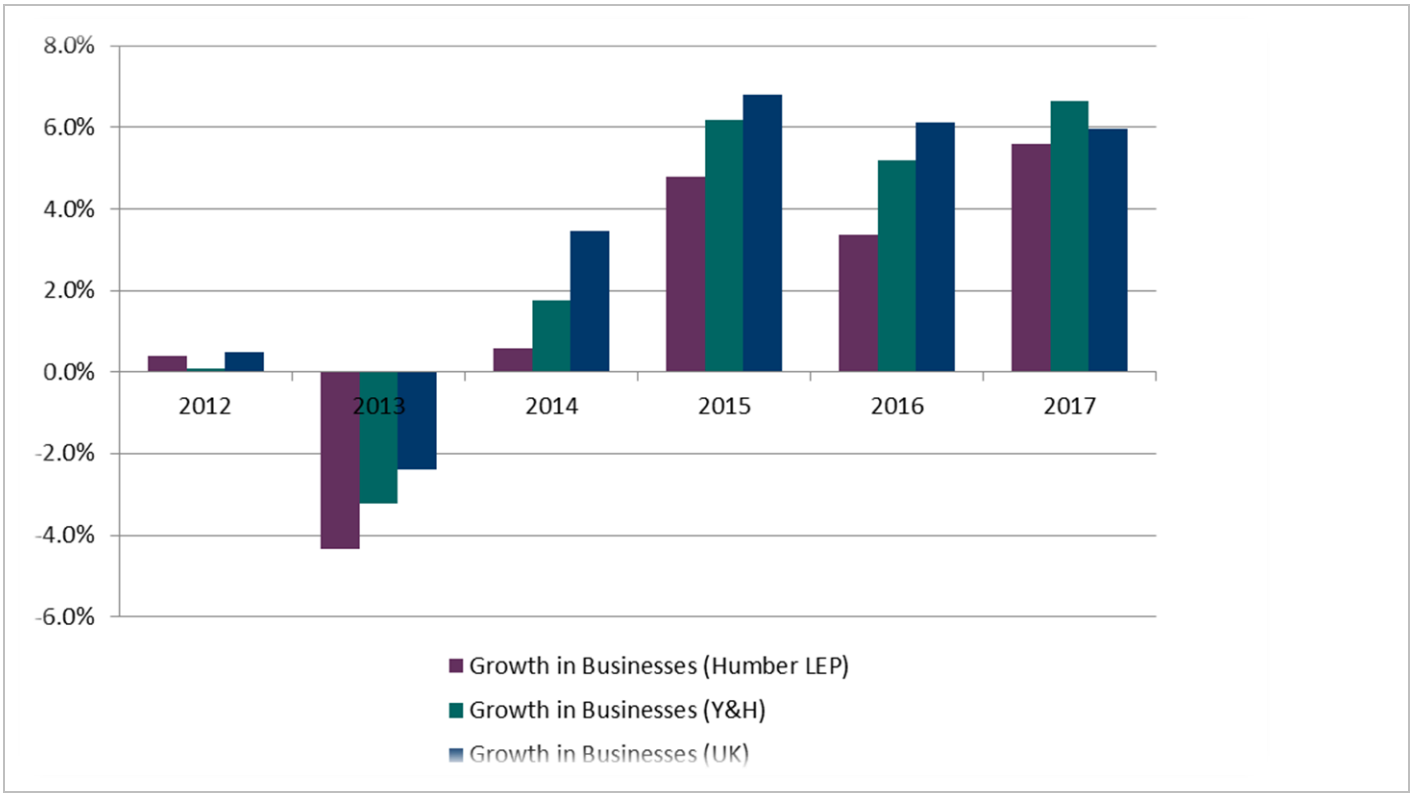


Figure 8: Year on year change in Construction Businesses (UK Business Count, NOMIS 2017)

As would be expected, a contracting construction workforce within the LEP, and a growing number of firms, means that those firms are on average smaller now than five years ago, employing on average 6.3 people in 2017 compared to an average of 7 in 2013.

Figure 9 shows the distribution of construction businesses within the Humber LEP, and Figure 10 shows the distribution of the construction workforce. Interestingly, there are noticeable differences between the two.

Comparing business to workforce distribution indicates that Hull has a higher share of employment compared to share of businesses meaning that the firms based there tend to be larger, employing on average 13.8 people. This situation is reversed in East Riding, North East Lincolnshire and North Lincolnshire where there are higher proportions of businesses to workforce, meaning that smaller firms predominate here with an average business size of 5.1 in East Riding and 6.5 in North East Lincolnshire.

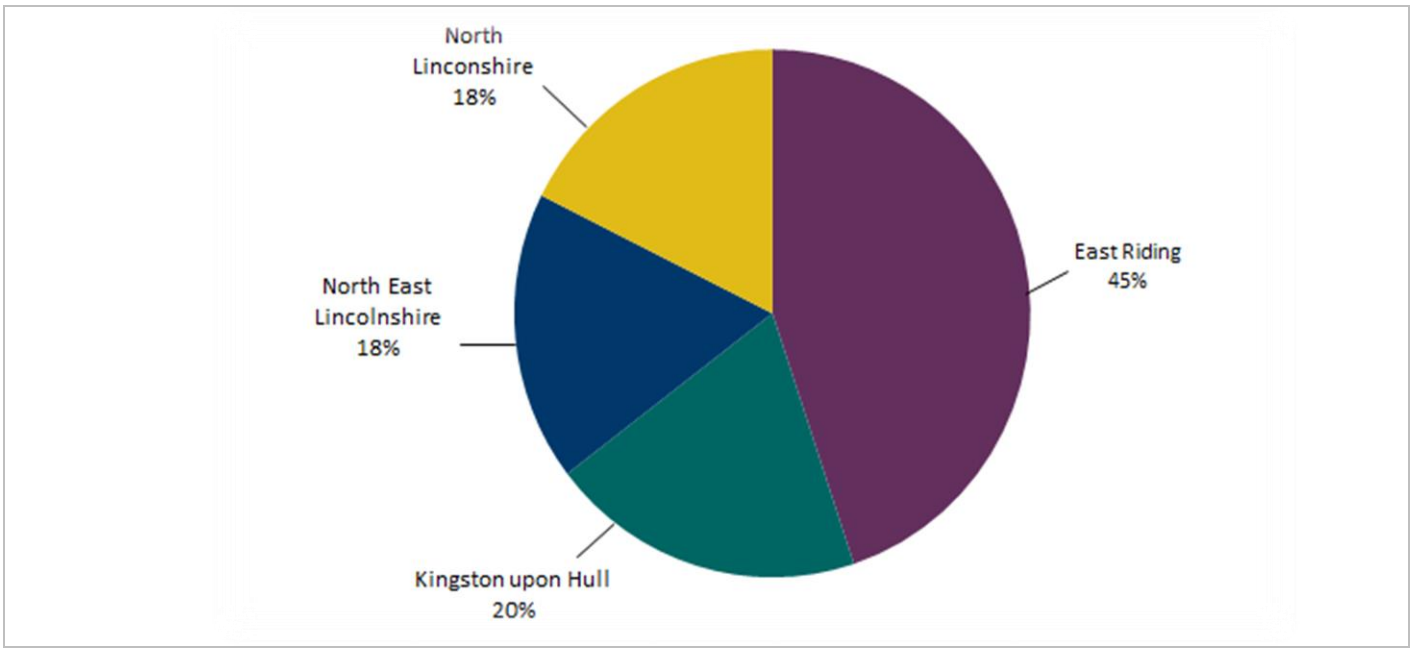


Figure 9: Distribution of construction businesses within the Humber LEP (UK Business Count, NOMIS 2017

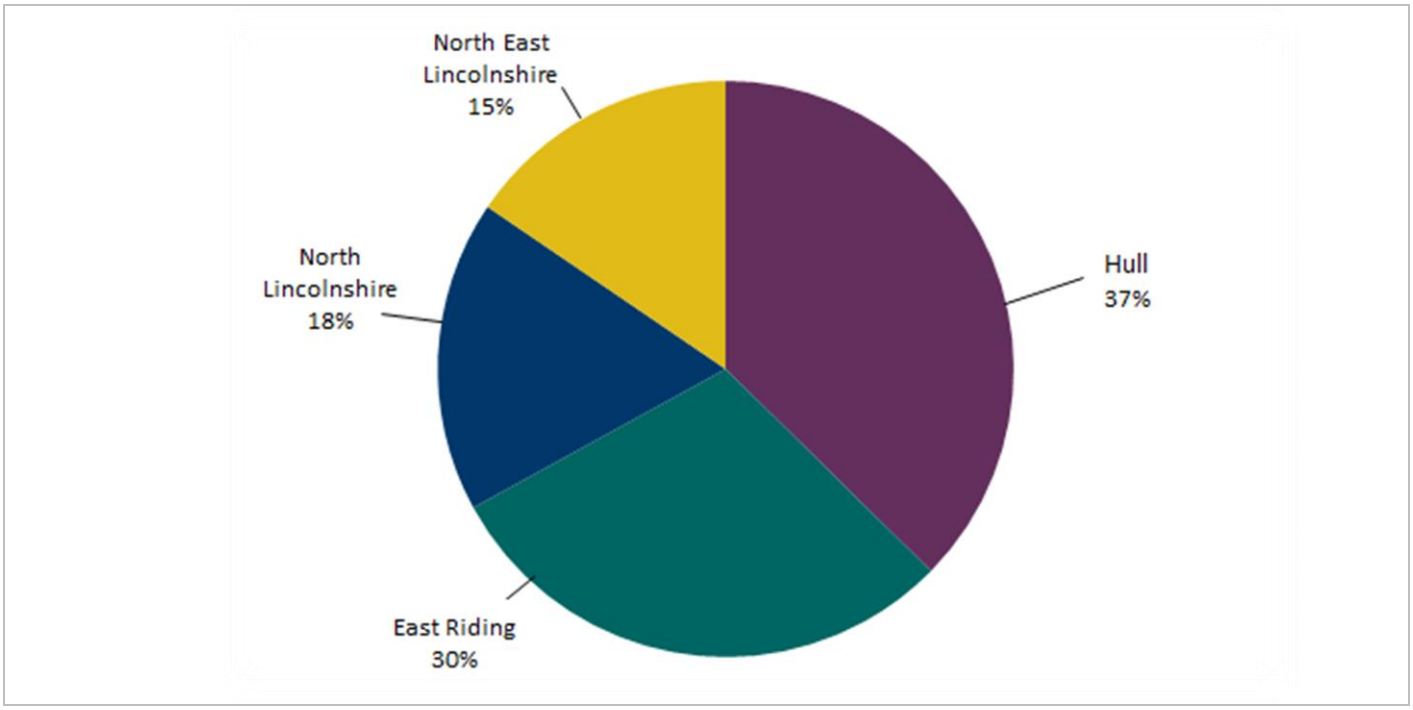


Figure 10: Construction employment by area within Humber LEP (2017, NOMIS)

The 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:

- • Direct employment vs. self-employment
- • 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 slightly higher than the level of self-employment in the Humber LEP at 35%, and 36% in Yorkshire and Humber as a whole. The level of self-employment in the LEP area has decreased steadily over the last five years by 5%. There has been a similar picture in the Yorkshire and Humber region as a whole which has seen an increase of decrease of 2% in self-employment levels over the last five years.

When it comes to business size, the distribution of companies across the LEP region is very close to the pattern seen across Yorkshire and Humber as a whole, and indeed the United Kingdom, with the majority of construction companies being micro sized, i.e. less than 10 employees, Figure 11.

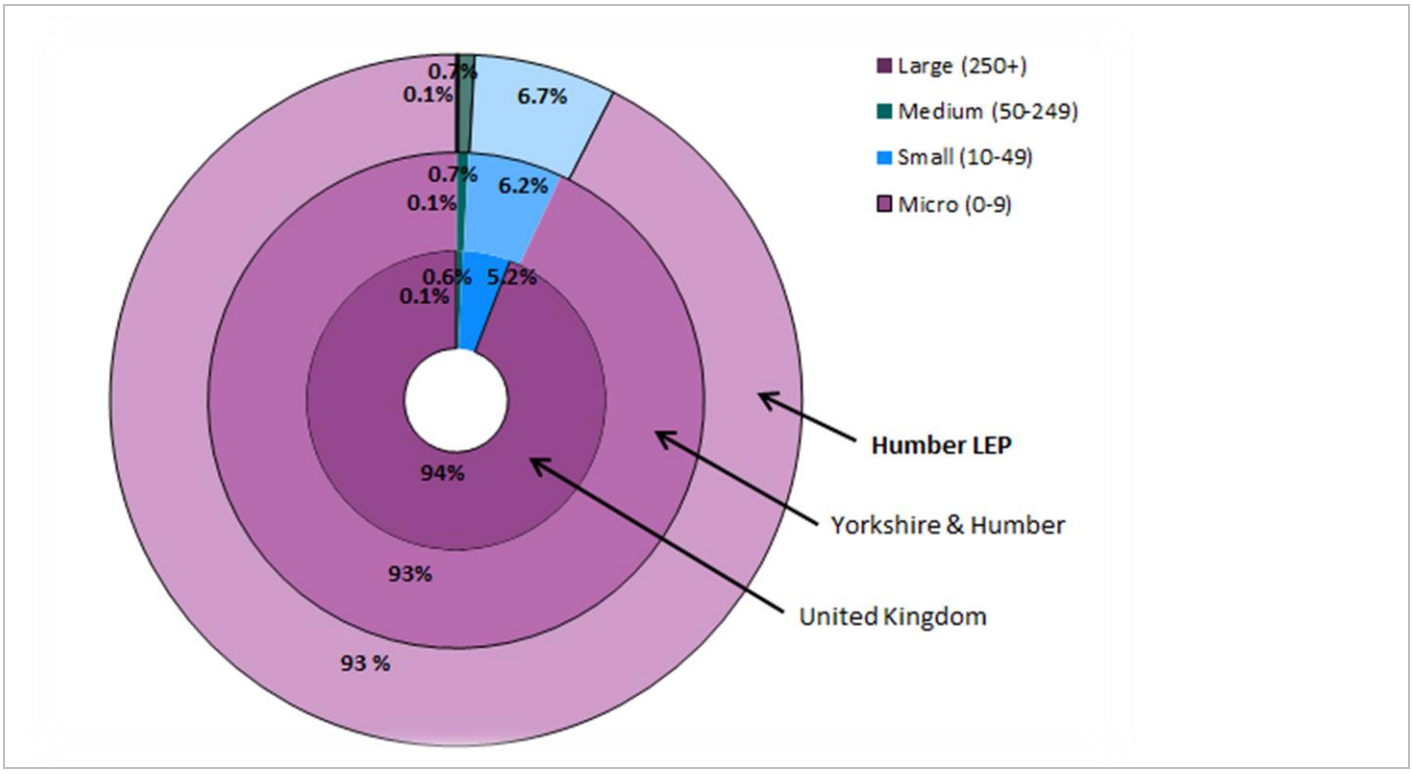


Figure 11: Size of Construction Businesses (UK Business Count, NOMIS 2017)

Nearly all of the net growth in construction businesses between 2013 and 2017 within the Humber LEP, a total of 500 additional firms, has come from an increase in the number of Micro sized companies (those employing fewer than ten people). There was also a small net increase of 25 firms employing between 10-49 workers and a net increase of 5 firms employing 50-249 workers, accounting for the overall balance. There has been no change in the number of large construction firms in the LEP employing 250+ people.

Table 4: Construction occupational breakdown, 2017 (Source Experian & CITB)

Occupation	Humber LEP	Yorkshire & Humber
Skilled Trades		
Wood trades and interior fit-out	2,968	18,324
Electrical trades and installation	2,912	17,974
Plumbing and HVAC Trades	2,313	14,278
Labourers nec*	1,318	8,136
Building envelope specialists	1,311	8,092
Painters and decorators	963	5,947
Specialist building operatives nec*	716	4,421
Bricklayers	919	5,670
Roofers	760	4,691
Plasterers	968	5,978
Plant mechanics/fitters	670	4,133
Plant operatives	277	1,709
Glaziers	521	3,213
Floorers	459	2,835
Logistics	202	1,247
Steel erectors/structural fabrication	496	3,064
Scaffolders	372	2,297
Managerial, professional and office based roles		
Civil engineering operatives nec*	587	3,625
Non-construction professional, technical, IT, and other office-based staff	4,501	27,783
Non–construction operatives	754	4,654
Other construction professionals and technical staff	2,008	12,396
Other construction process managers	2,172	13,408
Senior, executive, and business process managers	2,252	13,904
Surveyors	886	5,471
Construction Project Managers	487	3,005
Civil engineers	634	3,911
Construction Trades Supervisors	673	4,156
Architects	98	605
Non-construction professional, technical, IT, and other office-based staff	4,501	27,783
Non–construction operatives	754	4,654
Total	**32,573**	**201,066**

*nec = not elsewhere classified

4. TRAINING PROVISION

4.1. MAIN POINTS

The Humber LEP region has:

- 96% of learner volumes covered by ten main providers
- Training across a range of construction occupations
- Good levels of competence qualifications achievements across many construction occupations, most notably plant operatives, plumbing and HVAC trades, wood trades and interior fit-out, electrical trades and installation and bricklayers.

Construction training provision has fallen by 13% in the Humber LEP over the five years from 2012/13 to 2016/17, with the number of new starters dropping from 4,793 to 4,190 during that time. All local authorities within the LEP have witnessed declines in construction starts, with the exception of East Riding where starts increased by 2%.

CITB analysis of Education and Skills Funding Agency (ESFA) Individualised Learner Records from 2012/13 through to 2016/17 academic years for construction learners shows that:

- The Humber LEP accounts for 16% of identified construction related training across the Yorkshire and Humber region – a proportion that has changed little over the last five years.
- The fall in the total number of learners starting all construction across the LEP (13%), has been half than that of the 26% reduction in learners starting across the wider Yorkshire and Humber area as a whole.
- The number of construction apprenticeship starts in the LEP area has increased by 61% between 2012/13 and 2016/17 thanks to large increases in North East Lincolnshire and North Lincolnshire. Apprenticeship starts across the wider Yorkshire and Humber region have also increased by 29% over the same time.
- There has been a large drop in other Education and Training learner starts across both the LEP (down by 19%) and Yorkshire and Humber (down by 34%) as a whole.
- Overall there has been a shift in the Humber LEP towards offering more construction apprentice training (generally favoured by employers) and away from full time training (where some trainees can find it harder to enter employment after leaving college). All local authorities in the Humber LEP have seen an increase in the number of apprenticeship starts over the last 5 years, with Hull achieving the smallest increase (34%) and North Lincolnshire achieving the highest increase (103%).

The information shown in Table 5, which 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 5: Competence qualification learner aims in Humber LEP as a % of total learner aims in Yorkshire and Humber as a whole (all qualification levels)

Construction occupations	12-13	13-14	14-15	15-16	16-17	Total achievements	Total
Grand Total	14%	15%	15%	17%	21%	4563	16%
Main Occupations							
Plumbing and HVAC trades	17%	22%	20%	25%	28%	790	22%
Plant operatives	19%	14%	11%	28%	36%	1140	17%
Electrical trades and installation	9%	17%	15%	13%	30%	440	17%
Wood trades and interior fit-out	16%	12%	19%	15%	16%	750	16%
Bricklayers	15%	13%	12%	20%	15%	360	15%
Occupations with good provision							
Civil engineering operatives nec*	26%	11%	27%	10%	30%	250	22%
Specialist building operatives nec*	12%	32%	28%	19%	20%	240	22%
Scaffolders	24%	41%	31%	10%	0%	40	18%
Painters and decorators	17%	16%	18%	23%	13%	220	17%
Occupations to Monitor							
Building envelope specialists	4%	23%	14%	8%	3%	80	12%
Floorers	12%	5%	19%	4%	11%	50	10%
Construction Trades Supervisors	2%	6%	14%	0%	65%	40	10%
Other construction professionals and technical staff	33%	6%	11%	11%	0%	30	9%
Plasterers	7%	7%	8%	10%	9%	70	8%
Low Overall Learner Volumes							
Glaziers	6%	4%	8%	7%	14%	50	7%
Roofers	7%	7%	5%	2%	7%	30	6%
Construction managers	1%	31%	4%	0%	0%	10	4%
Plant mechanics/fitters	1%	2%	2%	1%	1%	10	1%
Logistics	0%	0%	0%	0%	0%	0	0%
Steel erectors/structural	0%	0%	0%	0%	0%	0	0%

*nec – not elsewhere classified

Note: Total learner aims are across the period 2012-2013 to 2016-17 have been rounded to the nearest 10

Nearly two-thirds of the achievements in the LEP are at Level 2 or above (74%).

The percentage comparison with Yorkshire and Humber as a whole, over the last four years, is used as a device to demonstrate the provision of training in the Humber LEP. It takes into account that roughly 16% of regional employment is based in the LEP area from which it can be inferred whether provision is higher or lower than would be expected. Low provision may indicate that trainees have to travel outside the LEP area to find appropriate training courses or, as in the case of plant operatives and mechanics, that an urban centre is not an appropriate location for such training.

Relatively high provision is highlighted in green and relatively low provision is highlighted in red.

Many of the occupations with Good Provision have good levels of training in comparison with relative levels of employment in the LEP which reflects the fact that many training providers offering FE courses are located in the LEP area.

The second group – Occupations to monitor: identifies a small number where we would expect higher levels of training, again linked to either the occupational size and/or demonstrating competence. For this cluster, which covers building envelope specialists, floorers, construction trade supervisors, other construction professionals and technical staff and plasterers, the share of training within the LEP is lower than would be expected. It is possible that individuals within the Humber LEP are travelling outside the area for these types 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. For several of the courses in this group, notably courses for Logistics and Steel erectors/structural, no training has taken place in the LEP over the last 5 years, which would indicate no local training facilities are available in the LEP area. 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 2012/13 through to 2016/17 74 different providers have delivered training in the Humber LEP area. However, there is a consistent pattern with 96% of construction training being delivered by the ten largest providers. Ref Table 6.

Table 6: Top 10 providers within the Humber LEP (Source: CITB/ESFA)

	2012-13	2013-14	2014-15	2015-16	2016-17	Total	Total %	% Ofqual Regulated
LTE Group	3602	2980	1602	1192	580	9956	31.9%	19.9%
Hull College*	1104	1148	1380	1321	2302	7255	23.3%	79.5%
Grimsby Institute of Further & Higher Education	1408	1099	1261	978	836	5582	17.9%	58.8%
North Lindsey College	540	661	491	405	473	2570	8.2%	69.7%
East Riding College	539	462	482	362	245	2090	6.7%	94.4%
Calderdale College	218	205	11		626	1060	3.4%	50.0%
Bishop Burton College	60	73	94	88	87	402	1.3%	78.9%
Barnsley Burton College	219	92	30	-	-	341	1.1%	32.0%
Leeds College of Building	61	115	97	6	-	279	0.9%	100.0%
Kingston Upon Hull City Council	78	32	60	54	32	256	0.8%	100.0%

Hull College is one of the largest providers of training across the LEP, and the vast majority of these qualifications being Ofqual registered. Conversely, Grimsby Institute of Further and Higher Education provides a below average proportion of qualifications that are Ofqual registered (average for all training providers in the Humber LEP is 68.3%).

It is believed that the majority of training listed as being delivered by LTE Group (formally The Manchester College), contains a subsidiary, called Novus, which provides training to those in HM Prisons.

*Harrogate College is not listed in the Skills Funding Agency data and so it is believed that the listing for Hull College is actually for Hull College group" that includes data for Harrogate college.

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 the Humber LEP, large decreases in learner starts in most local authority areas are not compensated for by an increase in construction training in East Riding, illustrated by the detail in below.

Table 7 below.

Table 7: Unique Learner starts by area, construction subjects, all levels (Source: CITB/ESFA)

Local Authority	12-13	13-14	14-15	15-16	16-17	Change	% Net Change
East Riding of Yorkshire	1003	810	899	813	1023	20	2%
Kingston upon Hull, City of	1867	1753	1684	1630	1702	-165	-9%
North East Lincolnshire	1284	1084	1022	844	874	-410	-32%
North Lincolnshire	644	785	584	492	591	-53	-8%
Total	4798	4432	4189	3779	4190	-608	-13%

Over three quarters of this training is at Level 2 or above, slightly higher in Hull at 81% and slightly lower in East Riding at 70%.

Overall, the Humber LEP has experienced a much lower drop in construction training between, 2012/13 and 2016/17 than the wider Yorkshire and Humber (-13% and -26% respectively).

Looking within the main programmes of learning being undertaken, the reason for the declines in both the LEP and the region is down to a fall in the amount of college based training. Whilst these 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 reassuring therefore, despite the falls in overall training, that the number of construction apprentices in both the Humber LEP increased by 61%, much higher than Yorkshire and Humber (29%) during the same time period.

4.2. APPRENTICESHIPS

In the Humber LEP area overall volumes of training are declining, whereas numbers of apprenticeship starts within the area are increasing by a large amount.

All Local Authority areas within the Humber LEP saw an increase in apprenticeship starts from 2012/13 to 2016/17. These four Local Authority areas saw an increase of 298 apprenticeship starts during this time period.

When looking at Table 10 the number of apprenticeship starts rose by 61% from 2012/13 to 2016/17, compared to a decrease (-13%) throughout the same time frame for the total number of construction learner starts within the LEP area. The increase in apprenticeships starts within the Yorkshire and Humber region from 2012/13 to 2016/17 was less that in the Humber LEP, with at 29% increase.

Table 8: Unique apprenticeship starts by area (Humber LEP), construction subjects (Source: CITB/ESFA)

Local Authority	2012-13	2013-14	2014-15	2015-16	2016-17	Increase/ decrease	% Net Change
East Riding of Yorkshire	115	139	193	211	188	73	63%
Kingston upon Hull, City of	232	314	367	397	311	79	34%
North East Lincolnshire	83	115	193	226	165	82	99%
North Lincolnshire	62	88	94	125	126	64	103%
Total	**492**	**656**	**847**	**959**	**790**	**298**	**61%**

When considering apprenticeship starts by occupation between 2012/13 and 2016/17 the biggest increases in volumes (increases of 10 and higher) have been in plumbing and HVAC trades, wood trades and interior fit-out, bricklayers, plasterers, civil engineering operatives nec*, glaziers, painters and decorators and floorers. In 2016/2017, plumbing and HVAC trades, wood trades and interior fit-out and bricklaying have larger numbers of apprenticeships starts. These higher numbers have increased steadily over the four occupations over the five year time period.

Table 9: Unique apprenticeship starts by occupation (Humber LEP), construction subjects (Source: CITB/ESFA)

Occupation	12-13	13-14	14-15	15-16	16-17	Increase / decrease
Plumbing and HVAC Trades	120	140	220	240	210	90
Wood trades and interior fit-out	110	140	160	170	180	70
Bricklayers	50	70	110	80	90	40
Plasterers	<10	10	20	20	20	20
Civil engineering operatives nec*	<10	20	20	70	20	20
Glaziers	<10	20	<10	10	20	20
Painters and decorators	20	30	40	30	30	10
Floorers	<10	<10	10	20	10	10
Specialist building operatives nec*	30	50	40	50	30	0
Construction Trades Supervisors	0	0	0	60	0	0
Roofers	<10	<10	<10	<10	<10	0
Other construction professionals and technical staff	<10	10	<10	10	<10	0
Plant mechanics/fitters	<10	<10	<10	<10	<10	0
Scaffolders	<10	10	<10	<10	<10	0
Building envelope specialists	10	10	<10	30	10	0
Electrical trades and installation	90	70	130	110	60	-30
Grand Total	**450**	**580**	**760**	**870**	**680**	**230**

5. MOBILITY OF THE WORKFORCE – YORKSHIRE & HUMBER REGION

Construction workforces are fluid by nature and this section of the report will discuss findings from CITB's survey into Workforce Mobility and Skills in the UK Construction Sector 2015 to give a picture of mobility within the workforce. Data specific to Yorkshire and the Humber is used to give an indication of circumstances that might impact on future training interventions and the supply of job opportunities for local people.

5.1. MAIN POINTS

- More than a third of all Yorkshire & Humber construction workers have worked in the industry for at least 20 years (36%). A total of nearly two thirds have done so for 10+ years (63%).
- Seven in ten of all construction workers in Yorkshire and the Humber (71%) were interviewed in the same region in which they were living in when they started their construction career.
- Within Yorkshire and the Humber, the average (mean) distance from workers' current residence (taking into account temporary residences) to their current site was 19 miles.
- Three quarters of construction workers in Yorkshire and the Humber stated confidence that when they finished the job they were on, they would get a job that allows them to travel from their permanent home to work on a daily basis (78%).
- Overall more than half of all construction workers have only worked on one project type (55%).
- Just under half of construction workers say they definitely will be working in the industry (45%) and a further four in ten think it is very or quite likely (40%).

Table 10 shows the region or nation an employer operates in compared with the region or nation they were previously working in. This is taken from the CITB survey into Workforce Mobility and Skills and gives an indication of the inter-regional movement of workers.

The Yorkshire & Humber region has a proportion of workers who spend some or all of their time in the region to work that is approximately average for the UK regions and nations. Relatively large numbers of workers have worked in the North East, the East Midlands as well as further afield.

As some respondents would have indicated that they had worked in more than one region, the totals for percentage figures in the table exceed 100%.

Table 10: 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 & 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 Report. BMG Research on behalf of CITB. Base: All respondents.
*denotes less than 0.5%

5.2. THE HUMBER LEP AREA'S GEOGRAPHY

It is worth considering the geography of the LEP area that includes large areas of relatively low population density but is also close to areas of high population density – for example, the East Riding, that is sparsely populated, particularly in the East is close to the Kingston upon Hull and the West Yorkshire conurbation is not far away. It is likely that these centres of population density outside the LEP area will have a net effect of drawing workers into them from the LEP area.

The Humber estuary may also be significant in shaping the mobility within the LEP area. This presents a natural barrier to some north south movement within the area which may inhibit the take up of some options for students and workers. The Humber Bridge is a significant trunk route but the next significant crossings are: of the Trent via the M180 west of Scunthorpe and of the Ouse via the M62 near Howden. This means that for some journeys within the LEP options are limited without access to a car and may still be relatively long and slow.

5.3. WORK HISTORY

Just over a third of construction workers in Yorkshire and the Humber have worked in the construction industry for over 20 years (36%) and almost two thirds have worked in the industry for at least 10 years (63%). With the most likely reason for working in the region because they grew up there/have always lived there (58%). Eight in ten (80%) construction workers in the region have remained in Yorkshire and the Humber for all or most of their career.

Further proof of the stability of the construction workforce in Yorkshire and the Humber is emphasised by the finding that in the majority of cases (82%) workers reported their last site was also in Yorkshire and the Humber.

In terms of the regions/nations in which workers' current employer operates in, the majority (88%) of workers in Yorkshire and the Humber reported that their employer operated within the region they were currently working in, while 15% operated in the North East, 11% in the East Midlands and 10% in the North West, as shown in Appendix Table 1, Appendix F.

5.4. 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 seven in ten of all construction workers in Yorkshire and the Humber (71%) were interviewed in the same region in which they were living in when they started their construction career.

Furthermore construction workers in Yorkshire and the Humber are again most likely to have stayed in the region where they studied for their first qualification (82%), with a small share achieving their qualification in the North East (8%). Additionally, there is a higher than average mention by workers in the East Midlands (9%) of achieving their qualification in Y & H. (See Appendix Table 2, Appendix F).

5.5. TRAVEL TO SITE

The majority of construction workers were interviewed on a site that was located within the same region/nation as their permanent home with one in seven construction workers in Yorkshire and the Humber travelling into the region for work from another region in which their current residence is based (which includes those travelling to/from work from a neighbouring region).

Additionally two thirds (66%) construction workers in Yorkshire and the Humber were interviewed on a site that was located within the same region as their current residence.

Workers in Yorkshire and the Humber were asked to indicate the furthest distance they have worked from their permanent or current home in the last 12 months.

- 53% had worked more than 50 miles away from their permanent home,
- 27% had worked between 51 and 100 miles away,
- Workers based in Yorkshire and the Humber were amongst those most likely to have travelled more than 100 miles from their permanent home to work in the last 12 months.
- Within Yorkshire and the Humber, the average (mean) distance from workers' current residence (taking into account temporary residences) to their current site was 19 miles.

5.6. 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 that specific site during this phase.

A fifth of all construction workers in Yorkshire and the Humber (20%) do not expect to work on that site for more than a month, including 9% that only expect to be there for about a week or less compared to three in ten who expect to stay on that site for a year or longer (29%). However a comparable proportion (30%) of workers did not know how much longer they could expect to be on site!

Three quarters of all construction workers in Yorkshire and the Humber 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 (78%).

5.7. SUB-SECTOR AND SECTOR MOBILITY

All workers were asked which (if any) of six 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 Yorkshire and the Humber; up from 61% to 85%. For all other types of projects the proportion of construction has reduced.

Overall more than half of all construction workers have only worked on one project type (55%), compared with a fifth in 2012 (19%), which again suggests a pattern of increased stability in the sector.

5.8. 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 Yorkshire and the Humber, just under half the construction workers say they definitely will be (45%); a further four in ten think it is very or quite likely (40%).

Excluding those aged 60 and over (as those over 60 may be assumed to be considering retirement in the next 5 years): 47% believe they will definitely want to be working in the construction sector, 28% believe it is very likely they will want to be working in the construction sector and 12% believe it is quite likely they will want to be working in the construction sector. Only 6% 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 (7%).

Overall the findings from the Mobility survey indicate a stable, well established workforce across Yorkshire and the Humber. There is some evidence of movement between neighbouring regions, specifically the East Midlands and North East 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 five years' time.

5.9. MODERN METHODS OF CONSTRUCTION AND DIGITAL SKILLS

In initial consultation, stakeholders enquired about the potential of modern methods of construction, offsite and modular construction to help address the need to build more new housing. Stakeholders have also enquired about the opportunities presented by digital technologies.

Digital technologies are hoped to open up opportunities to simplify and automate some tasks and enhance productivity. However there is no simple description or common understanding of an ever expanding list of new technologies with a multitude of applications. Some have already been adopted and have quickly become normalised – notably in surveying, in design and in the way that smart mobile telecommunications have enabled the sharing of information and enabled remote working. But the benefits have tended to be for professional roles and very large projects.

Building Information Modelling (BIM) is increasingly referred to, and visualisation and design tools are slowing being adopted. Future opportunities may include better analysis and application of data and the integration of multiple technologies. The CITB report Unlocking construction's digital future: A skills plan for industry goes some way to describe the developing technological landscape and where opportunities may be.

While no specific analysis has been undertaken to consider the specific opportunities and limitations associated with the LEP area, CITB has published a report that provides a timely assessment of how the adoption of offsite is changing the skills and training landscape for construction. This report is available on the CITB website.

Faster, Smarter, More Efficient: Building Skills for Offsite Construction

5.10. BARRIERS AND OPPORTUNITIES FOR PEOPLE ENTERING THE CONSTRUCTION INDUSTRY

Recruiting and retaining a sufficient talent pool has been one of the key challenges for the construction and built environment (CBE) sector for years. The challenge of finding and training the next generation of construction workers is immediate and pressing. CITB's 2017 White Paper considers:

- The value vocational qualifications offer to both individuals and employers in construction
- What happens to those leaving FE after completing a construction related course, and how many end up working in the sector
- The reasons people leave construction jobs or apprenticeships early.

Achievers and leavers: barriers and opportunities for people entering the construction industry

5.11. UNLOCKING CONSTRUCTION'S DIGITAL FUTURE: A SKILLS PLAN FOR INDUSTRY

Digital technology has the potential to transform construction - but only if the sector is equipped with the right skills and knowledge.

This report shows how modern technologies can raise productivity, increase efficiency and help attract people to the sector. Without widespread digital adoption, construction risks being marginalised and losing a generation of new talent to other sectors.

Unlocking construction's digital future: a skills plan for industry

5.12. THE IMPACT OF BREXIT

Stakeholders have asked about the potential impact of the UK's leaving the European Union. While it is impossible to offer with any certainty predictions of what may happen or how it will affect the local economy and construction, CITB has published a review, available on the CITB website, that considers some potential implications for UK construction.

MIGRATION AND CONSTRUCTION: The view from employers, recruiters and non-UK workers

6. THE DIFFERENCE BETWEEN DEMAND AND SUPPLY

6.1. MAIN POINTS

The occupations for which there appears to be the greatest risk of a shortfall between anticipated peak demand and the estimated supply of workers are:

Among skilled trades:

- Painters and decorators
- Plant operatives
- Logistics
- Specialist building operatives nec
- Wood trades and interior fit-out
- Labourers nec

Among professional and managerial roles:

- Architects

Furthermore, there appears to be relatively high demand for a large number of other occupations. Notably, as the LEP has expressed a particular interest in skills relevant to new housing, this includes occupations essential in traditional housebuilding.

Electrical trades and installation, Plumbing and HVAC trades and Building envelope specialists.

Before looking at demand against supply, it should be noted that the Glenigan 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.

It is also important to note that the demand calculations are based on data covering the Humber LEP area, whereas the supply figures are an extrapolation of data for the Yorkshire & Humber Region.

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.

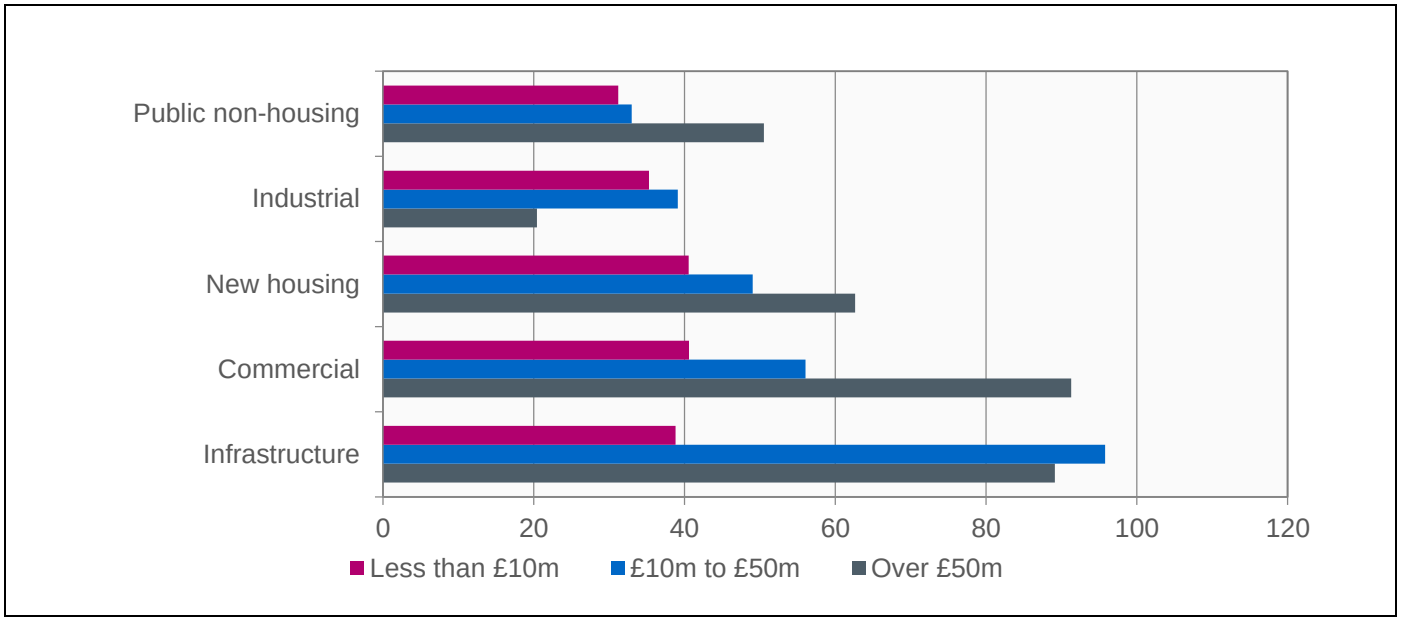


Figure 12: Average number of weeks from planning to work on site, UK2010-2013 (source UKCG/Glenigan)

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 Yorkshire and Humber indicate that it accounts for 42% of yearly construction output.

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 general operatives, 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.

Table 11: Occupational breakdown of demand for the Humber LEP area against current employment (Source CITB/WLC)

Skilled Trades	Humber LEP Current Employment	Humber LEP 2019 Demand	Risk rating: shortfall 2019 compared with 2016 employment
Painters and decorators	963	1863	1.93
Logistics	202	235	1.16
Labourers nec*	1318	1515	1.15
Plant operatives	277	291	1.05
Wood trades and interior fit-out	2968	3113	1.05
Specialist building operatives nec*	719	733	1.02
Building envelope specialists	1311	1228	0.94
Bricklayers	919	834	0.91
Plumbing and HVAC Trades	2313	2055	0.89
Glaziers	520	447	0.86
Floorers	459	391	0.85
Roofers	760	643	0.85
Electrical trades and installation	2912	2221	0.76
Plasterers	969	727	0.75
Scaffolders	372	266	0.72
Plant mechanics/fitters	670	344	0.51
Civil engineering operatives nec*	587	215	0.37
Steel erectors/structural fabrication	496	161	0.32
Professions and office based roles			
Architects	98	356	3.63
Construction project managers	487	438	0.90
Other construction process managers	2172	1863	0.86
Non-construction professional, technical, IT, and other office-based staff	4501	3715	0.83
Senior, executive, and business process managers	2252	1853	0.82
Construction trades supervisors	673	478	0.71
Other construction professionals and technical staff	2008	1365	0.68
Surveyors	886	502	0.57
Civil engineers	634	354	0.56
Non–construction operatives	754	369	0.49

Table 11 shows that there are some possible disparities where demand is expected to outstrip the current estimates for employment available locally. These occupations show high relative gap in comparison with other occupations.

In Table 11 those occupations highlighted:

- RED – [Top quartile] are at high risk or some risk of an immediate shortfall of workers and are worthy of urgent consideration for action to increase numbers of skilled workers.
- AMBER – [Second quartile] may become at risk of a shortfall as a result of changing demand and the movement of workers between localities and should be reviewed to determine where opportunities for further training and development exist
- BLUE – [Third quartile] should be monitored and tested to compare with local qualitative opinions to assess whether greater priority should be given to address problems.
- GREEN – [Bottom quartile] appear to be at relatively low risk compared with other occupations. This does not mean changes in construction demand, training provision or the movement of workers will not change this status and so monitoring is recommended. There is also known demand for some of these occupations on a national level and in areas with high demand outside the LEP area boundary that may have the effect of drawing workers away from the LEP area. Surveyors and civil engineers in particular fall into this category.

The gap analysis compares the number of workers calculated as being required to meet the peak construction demand (as described in the demand section of this report) with the number of workers estimated as being available in the Humber Riding LEP area (as described in the supply section of the report). This gives an indication as to the comparative risk of a shortfall between construction occupations.

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

6.1.1. Construction specific occupations

Demand for Architects is a reflection of the wider UK shortage. Additionally as professionally qualified occupations, which tend to require degree qualifications, there will be several years of education and training before becoming qualified plus years more to gain experience. And if new candidates are to be encouraged to join the 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 the area from the wider region and 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 anecdotal evidence to suggest that demand is met by provision based in other centres of population.

6.1.2. Cross-sector occupations

As skills in these occupations can be used in other sectors, the degree to which demand can be met will be influenced by factors other than construction demand.

Logistics and plant operatives in particular work across several sectors and so demand could be addressed by providing more attractive employment and training options than other sectors. When compared to other occupational groups it is also lower in actual numbers which magnifies percentage changes.

6.2. GAP ANALYSIS – TRAINING NEEDS

Looking at the future demand against current competence based training; there are two aspects to consider:

- Is there training in the areas of potential demand?
- Is there the volume of training required across the spread of occupati006Fns?

Taking the first of these, both the demand analysis and CSN has identified greatest demand among skilled construction trades as being for

- Painters and decorators
- Plant operatives
- Logistics
- Specialist building operatives nec
- Wood trades and interior fit-out
- Labourers nec

Plus: Architects in the professional and office based roles.

For architects (high risk of a shortfall) demand would typically be met from graduate level recruitment, which would not be restricted to supply from within the LEP area.

Training for manual occupations, as measured by learner aims, has declined in the LEP and the wider Yorkshire and Humber region, meaning that there is likely to be a need, in the short-term at least, to rely on workers from outside the area to meet demand.

The second question “is there the volume of training required across the spread of occupations?” is possibly mixed in response. There would appear to be:

- Provision for training across the range of occupations
- A core of providers who deliver the majority of training
- Good provision of competence qualifications for certain occupations, most notably plumbing and HVAC Trades, plant operatives, electrical trades and installation , wood trades and interior fit-out, bricklayers, civil engineering operatives nec, specialist building operatives nec, scaffolders and painting and decorating.
- There are occupations, such as steel erectors/structural fabrication, logistics, plant mechanics, construction project managers and glaziers where the levels of competence based training appear to be lower than we would expect.

6.2.1. Priority occupation – high demand and high risk

For the relevant occupations that are considered of highest priority – i.e. those in the two quartiles for demand and the top two quartiles for risk, training should also be considered a priority. When the qualification achievements over the past four years are compared with the anticipated peak demand for workers, this gives an indication of where there is relatively good or bad local training provision – shown in the right hand column in Table 12.

Table 12: Site based occupations with high demand and high risk of a shortfall compared with training provision

Occupation	Risk of shortfall	Peak demand	Training provision as a proportion of regional training	Five years training achievements as percentage of peak demand
Logistics	1.16	220	0%	0%
Painters and decorators	1.93	1860	17%	11.8%
Labourers nec*	1.15	1520		
Plant operatives	1.05	290	17%	393??
Wood trades and interior fit-out	1.05	3110	16%	24.1%
Building envelope specialists	0.94	1230	12%	6.5%
Specialist building operatives nec*	1.02	730	22% good	32.9%

7. CONCLUSIONS AND RECOMMENDATIONS

The aim of the Humber LEP should be to achieve progress in addressing the long term and immediate challenges that the construction industry faces in the area. Balancing the supply of construction workers and skills against future demand and ensuring that a well-qualified workforce is in place is likely to be assisted by the LEP encouraging collaboration between influential local stakeholders. Positive progress is likely to be the result of a succession of incremental and interlinked actions undertaken by organisations working towards common goals.

There is strong evidence to suggest that the Humber LEP area will suffer a shortage for some construction occupations. While these may be drawn in from others areas, it seems more likely that any net effect will be for workers to be drawn to other neighbouring areas of population and so the risk of inadequate local skills is that construction may be delayed or increase in price, inhibiting the achievement of local social and economic goals.

York, North Yorkshire & East Riding LEP area

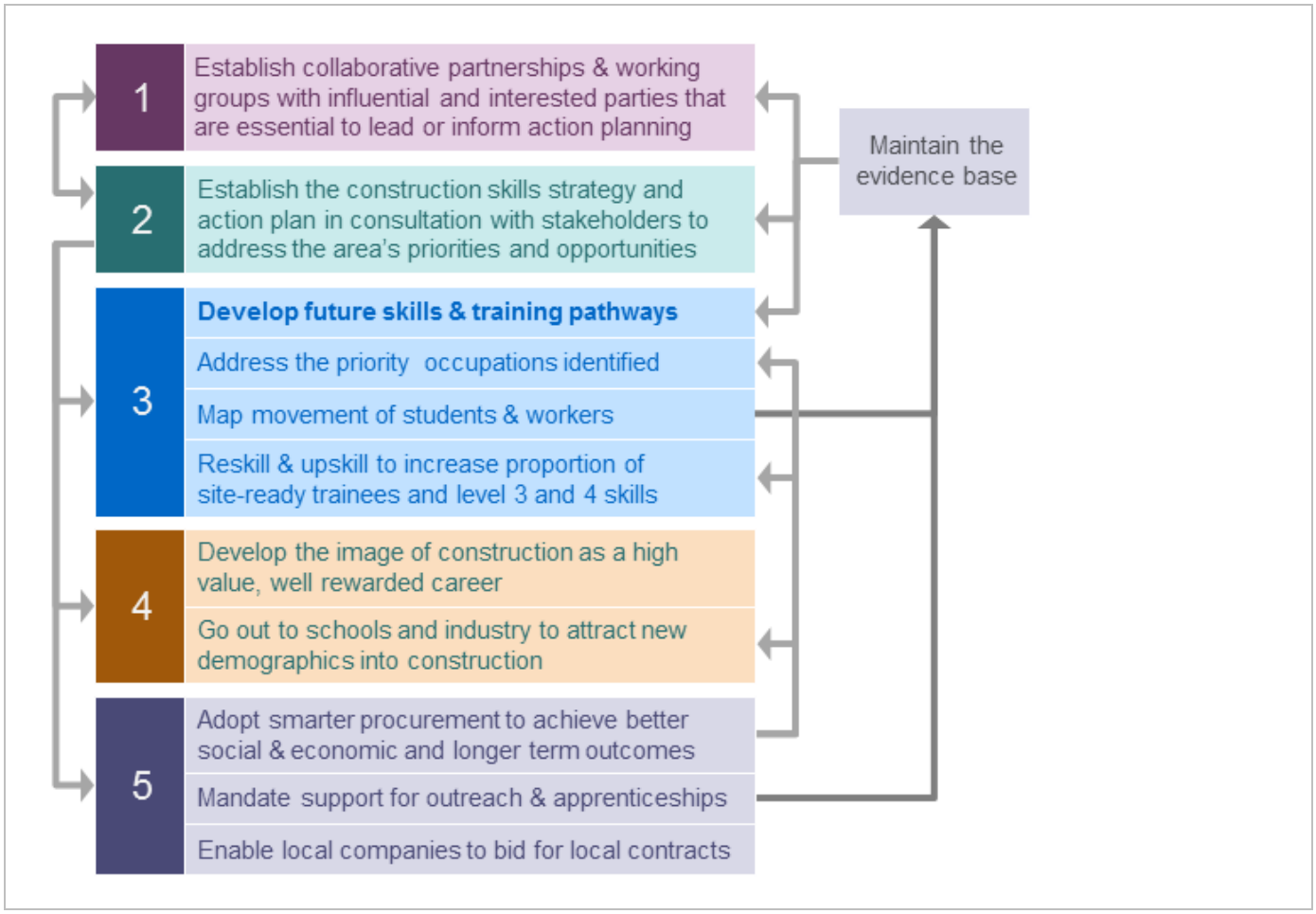
The York, North Yorkshire & East Riding LEP had a similar report produced earlier in 2018. There are a number of significant similarities in the findings of the two reports – in particular in relation to the priority occupations listed in section 7.2.2. This is unsurprising as the two areas share the East Riding and as neighbours will have similar circumstances and will have a significant influence on one another in sharing a significant proportion of the workforce and in the provision of training.

As a result the findings and recommendations in the two reports are closely aligned. It may therefore be appropriate for the two areas to collaborate in developing a construction action plan. The stakeholders and key audiences will often be common.

Action planning

It is the responsibility of the Local Enterprise Partnership and its influential stakeholders to review the recommendations, develop a strategy and agree an action plan to address the construction challenges and opportunities that exist in the Humber area. The LEP need not deliver the action plan but needs to take a leading role in coordinating and overseeing or delegating action and monitoring progress.

There are six integrated recommendations that follow a logical progression.



7.1. COLLABORATIVE PARTNERSHIPS

7.1.1. Conclusion

It will be essential to ensure that those interested in construction and with an influence over outputs and construction skills in the Humber LEP area work together.

Some significant initial progress has already been made with a network of colleges and private training establishments, sector specialists and other organisations already working together. However there will be significant opportunities to work together to: align better the training delivered with the needs of construction employers; to find new opportunities for drawing people into construction related careers and to deliver action that addresses the following recommendations.

7.1.2. Recommendation

a. The LEP should ensure that relevant stakeholders and influencers are engaged. Share available evidence with them with a view to building collaborative action plans. Points of common interest should be established to encourage these stakeholders to input to, and take ownership of, the construction skills actions. This will maintain a sense of shared ownership of the challenges, priorities and solutions. Those stakeholders should include: local construction businesses; major employers; local authorities; developers (especially those interested in housing); housing associations; those responsible for managing infrastructure (transport and utilities); construction training providers, local influencers and universities.

b. Early on, establish a construction working group comprising those with a remit to develop, or influential in, the built environment in the LEP area and neighbouring areas and task it with delivering outputs that achieve the LEP's desired social and economic outcomes. This should take ownership of 7.2 below.

c. Longer term projections and the development of scenarios may enable an assessment of the potential impacts of major initiatives that may skew demand. Scenario planning and actions around skills pathways and career development should, in response, focus on delivering appropriate levels of high quality training to meet the future demand for site based trades (see related recommendations below).

d. Identify demographic data available and associate actions with opportunities for target candidates where the greatest potential social and economic impact can be gained by addressing occupational shortfalls or other priorities.

e. Establish processes whereby those responsible for: setting local regulation and funding developments can agree with construction suppliers holistic outcome-based approaches for tackling social and economic opportunities. This might consider moving towards a balance of awarding contracts based on good value for money and achieving wider benefits linked to: the built environment; training; support for apprenticeships; outreach; etc. This links to requirements outlined in the *Public Services (Social Value) Act.*

7.2. SKILLS STRATEGY: ACTION PLANNING AND EXPLOITATION

Establish (or develop) a Humber LEP area construction skills strategy and action plan that identifies actions that could help achieve positive change for the construction landscape within the Humber LEP area.

7.2.1. Conclusions

An ambition to develop 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 to meet the needs of the Humber LEP 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 include localised initiatives supporting training needed by particular groups to enable them to access more formalised elements of training and careers pathways.

In the Local Enterprise Partnership area around 95% of Further Education (FE) training is provided by ten providers; 88% by the top five so the greatest potential impact is through mediated collaboration with and between these FE and training providers.

The majority of training provision is at low levels. These may be a necessary introduction to construction in an individual's development but often are insufficient in meeting the needs of employers and so very often do not lead to a career in the occupation for which the individual has received trained. This is supported by an apparent mismatch between training achievements and supply for some occupations.

Also, construction employers have expressed concern that often those newly qualified and having gained site access through a CSCS card or similar are not equipped with the variety of skills required – these might include general competencies such as numeracy, literacy, timekeeping, productivity, interpersonal skills.

This suggests a need to work with colleges, employers and graduating students to help ensure that a greater proportion move into appropriate additional and vocational training and the career for which they have a qualification.

7.2.2. Recommendations

a. Develop the Humber LEP construction skills strategy along with an action plan that ensures that priority is given to trades highlighted in this report as being:
   - In high demand AND at high risk of a shortfall.
   - In high demand
   - At high risk of a shortfall

Priority occupations

The report identifies occupations for which there is high demand AND a relatively high risk of a shortfall.

- Painters and decorators
- Labourers
- Wood trades and interior fit-out
- Specialist building operatives
- Building envelope specialists
- Bricklayers
- Plumbing & HVAC trades

High demand trades

- Wood trades and interior fit-out
- Electrical trades and installation
- Plumbing and HVAC trades
- Painters and decorators
- Labourers
- Building envelope specialists
- Bricklayers

High risk trades

Trades at immediate risk of a shortage locally

- Painters and decorators
- Logistics
- Labourers
- Plant operatives
- Wood trades and interior fit-out
- Specialist building operatives
- Building envelope specialists
- Bricklayers

b. Most local authorities are under pressure to maintain the provision of new housing but there are apparent shortages in some occupations in demand by house builders. A recommended action is to establish with local construction suppliers whether this trend is likely to continue and if so ensure that training provision addresses future demand for occupations of relevance, in particular site-based roles of relevance to house builders (see below).

c. An early action plan should assess if employers are facing specific skills shortages or skills wage inflation and what short-term interventions can be activated to address them. If issues are identified, consideration should be given to pursuing funding that can be utilised to support delivery of new training interventions.

d. Early consideration should be given to those occupations that need to be site-based, for which demand cannot be met by office based roles that could be located outside the LEP area.

Site based roles

While it is important to have sufficient provision of all construction roles locally, it is possible that in some cases the provision can be met from outside the LEP area.

Many professional roles such as architects, surveyors and senior managers may only need to visit the construction site occasionally. There may also be roles that are more mobile that travel to the site for a short duration but can operative over a large area – for example plant or scaffolding

However there are many roles that can only operate on the construction site and for which local provision is essential. Examples of those roles – also particularly relevant in house building include: bricklayers; building envelope specialists; electrical trades and installation; floorers; glaziers; painters and decorators; plasterers & dry liners; plumbing and HVAC trades; roofers; wood trades and interior fit-out. Most of the roles identified as being in high demand or at risk for the Humber LEP area are these site based roles.

e. Identify demographic data available and associate, as far as possible, relevant skills and training pathways and actions with opportunities for those where the greatest potential social and economic impact can be gained by addressing occupational shortfalls or other priorities.

f. Develop a co-ordinated approach to training and skills development that, as far as possible, integrates the development of multiple skills to enhance the success rates of initial construction training. (See 7.3 below.)

7.3. DEVELOP FUTURE SKILLS AND TRAINING PATHWAYS

7.3.1. Conclusions

It is clear there is high demand for several construction occupations and so there will be continuing demand to train people in essential skills. There are also some apparent gaps between supply and demand where immediate action would help address shortfalls in the near future.

CITB has received anecdotal evidence that in some locations, colleges would like to support the provision of more apprenticeships but that employers are not always providing the opportunities.

There will also be a developing need for new skills to address new construction methods (e.g. offsite and modular build and the need for BIM applications.) [BIM is Building Information Modelling.]

The CITB report – 'Faster, Smarter, More Efficient: Building Skills for Offsite Construction' – provides an assessment of how the adoption of offsite is changing the skills and training landscape for construction.

The CITB report Unlocking construction's digital future: A skills plan for industry goes some way to try and describe the developing technological landscape and where opportunities may be.

7.3.2. Recommendations

a. By working together the major colleges should avoid duplication of effort or share resources, enhance specialisations and explore innovative ways of delivering the curriculum that meets employers' and students' needs.

b. The aims of this should be to: reduce the provision of under-subscribed courses; add provision for over-subscribed courses; add additional or enhance specialist courses to reflect the potential need for new construction skills and balance the provision of training with anticipated demand from the construction contractors locally. Pilot a range of options incrementally to test validity and effectiveness and achieve the most expedient solutions.

c. Introduce understanding of the need for other competencies so that training includes: understanding other construction roles; future skills; the potential career pathways between construction roles.

d. For some candidates it may be that training should also incorporate development of other competencies such as: numeracy, literacy, interpersonal skills, time management, productivity.

e. Those interested in the area's future should review CITB's reports into digital technologies and future skills with a view to finding an exploiting opportunities to test or pilot new ways of working, with a view to enhancing knowledge, developing skills and ultimately finding productivity gains.

f. Action to address future skills needs should be incremental and take into consideration the delivery of training that supports construction industry needs – i.e. establish site ready proficient workers. Emphasis should be on ensuring that initial training leads individuals into more advanced and competency based training and high quality sustainable apprenticeships.

g. Identify and facilitate how FE colleges and employers can engage with specialist training providers as well as with major projects, to establish greater provision for priority roles:

h. Address any anticipated specific local needs and ensure that training delivers what employers need as part of a complete package of training initiatives.

i. This may involve establishing training pathways through which students can complete initial knowledge based training before progressing into vocational training and apprenticeships and gaining site experience (while finishing their training).

j. In the longer term there may also be opportunities for the LEP to work with those colleges that offer Higher Education qualifications and Universities to consider how they can attract, train and retain the higher level, advanced and 'future' skills for which there appears to be demand and inadequate provision (across the UK). For example that may be in high demand for the many significant projects that are expected to proceed in the Humber LEP area and further afield and that will increasingly need to utilise developing technology e.g. Building Information Modelling (BIM).

k. Consideration should also be given to building an understanding of the economic and transport inhibitors that may prevent people accessing training and apprenticeships. Are there options for ensuring that training is provided where it is accessible; that those with limited financial support can receive support with the provision of appropriate clothing and equipment or that there is assistance with transport to remote worksites. This is particularly relevant for remote and sparsely populated places which, in the Humber area present challenges to some potential students

7.4. OUTREACH: BUILD A MORE POSITIVE IMAGE OF CONSTRUCTION WITH YOUNG PEOPLE. AND INCREASE RECRUITMENT THROUGH NEW ENTRANCE POINTS, CAREER CHANGERS AND RESKILLING.

7.4.1. Conclusion

Construction is sometimes associated with negative and inaccurate stereotypes that deter potential recruits, with education choices and career decisions often influenced in school and sometimes at a very early age.

It is increasingly clear that influences and preferences are established early in childhood and so it may be appropriate to build a positive profile of construction with children before the age of 11 as well as during secondary education.

7.4.2. Recommendation

a. With an anticipated long term demand for some skills, the potential exists for a schools outreach programme to build a positive perception of construction as offering high value rewarding careers and encourages applications for construction skills courses and apprenticeships from a broader spectrum of young people – in particular ethnic minorities and women.

b. There are further opportunities for outreach with those aged 16 and above, in particular those studying relevant STE(A)M subjects but who have not considered that they lead into interesting and rewarding careers in construction or supporting construction.

   [CITB has supported employers and other stakeholders across the construction and built environment to develop an industry led initiative called Go Construct (www.goconstruct.org). This initiative inspires individuals to find out more about the sector, to access an experience with employers from school engagement via the Construction Ambassador scheme and find work experience placements.]

c. There may also be more mature audiences that can be encouraged to move into construction careers. This may include people with relevant transferable skills (e.g. from manufacturing or ex-military see *Careers Transition Partnership*) or those where there is a significant social gain by ensuring they are in valuable employment, e.g. ex-offenders and so contact should be made with HM Prison Service and DWP. Targeted intervention should be included within the construction skills action plan.

d. There is an opportunity to maximise Go Construct and introduce other similar employer and local authority led initiatives to raise engagement between the local employers, educators and individuals from all backgrounds (e.g. the Careers and Enterprise Company.)

e. For the long term, Careers advice should engage very young audiences – i.e. pre-secondary education – to address early on negative stereotypes that may deter some groups from construction careers.

f. Early on careers advisors educators and parents should be targeted to change perceptions of construction among significant influencers.

Go Construct is one of the construction industry's initiatives; supported by CITB, aimed at helping to attract more young people into construction careers by improving understanding of the careers and rewards available.

7.5. USE PROCUREMENT AND PLANNING REGULATION TO ENABLE SKILLS DEVELOPMENT

7.5.1. Conclusion

Construction is delivered through construction employers and suppliers, funded by private developers as well as by local authorities and regulated by local planning authorities. These organisations are better placed to prepare for the future if they have certainty on construction plans and programmes. Small and micro companies, in particular, have limited ability to maintain the processes and people to search for local opportunities or enable collaboration to support larger projects.

The Public Services (Social Value) Act places a requirement on public bodies to consider the achievement of wider social, environmental and economic benefits when commissioning public procurement.

The opportunities for small and micro companies (with limited resources and means) to respond to complex requirements, or invest in delivering services outside a basic construction contract, are severely limited.

Larger suppliers have expressed the view that some problems encountered with section 106 agreements include that: they are poorly thought out in terms of delivering tangible benefits; rarely are developed with contractors and agreed outputs are not measured and reported against. Others express concern that they are rarely consulted on in advance and greater value could be achieved from agreements.

7.5.2. Recommendations

a. The potential exists through smarter approaches to procurement (including co-ordinated approaches to Section 106 agreements) to encourage those tendering for construction and infrastructure contracts or those funding developments to be mandated to include provision for recruitment, training, apprenticeships and outreach that is co-ordinated across the Local Enterprise Partnership area, to achieve both good value for money and wider social benefits.
b. Early engagement with employers to discuss any such approach should be adopted as standard to find ways of ensuring that such requirements take into consideration the industry's needs and circumstances. (i.e. discuss wider social gains with potential suppliers well before tender documents are published. Let construction contractors input to sections 106 discussion.).
c. Provision could be made to hold contractors to account for commitments made. Such an approach could be co-ordinated through the Humber LEP and local authorities and be a requirement of planning applications and local authority and public sector contracts.
d. Procurement of major contracts, or conditions of planning consent could mandate the sharing of supply and sub-contracting through a locally managed portal available to businesses based within the region.
e. Consideration of the use of smaller lots when procuring schemes and supporting access for small and medium sized employers onto frameworks and supply chains to enable them to grow their businesses which will build further delivery capacity across the Humber LEP area.

7.6. MAINTAIN & ENHANCE THE EVIDENCE BASE

Utilise local qualitative knowledge and experience to inform the findings of this report. And use other sources of data available to help inform decision making. CITB publishes a range of research of relevance to the construction industry but other relevant information is also regularly published.

As part of this report, the Humber LEP can have 12 months access to the Labour Forecasting Tool, including the source project data used to compile this report. This should be utilised as part of the action planning process to test scenarios, and to update and check the evidence base that supports decision making as circumstances change.

Ensuring that pipeline visibility assists the local industry in reducing risks such as economic instability or maintaining sustainable employment. The demand forecasts produced using data from Glenigan are the result of a snapshot at a moment in time and so it is wise to update demand at regular intervals according to the need and capability.

END

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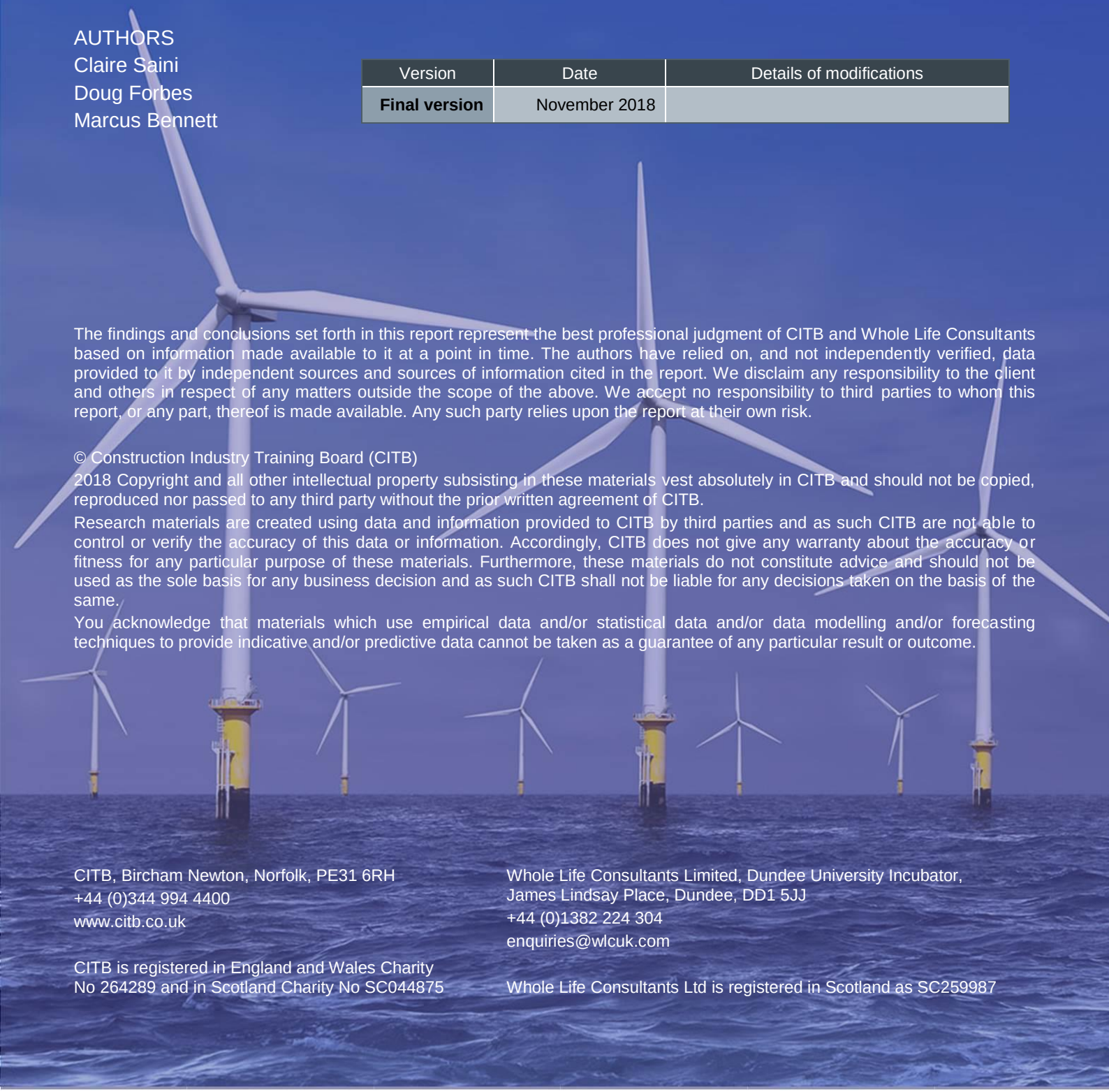
Version	Date	Details of modifications
Final version	November 2018	



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CITB Analysis

Construction skills gap analysis for the Humber LEP

Appendices to the Construction skills gap analysis for the Humber LEP

November 2018

APPENDIX CONTENTS

LIST OF TABLES

Appendix A. DEMAND ANALYSIS METHODOLOGY

Introduction

The Construction Skills Network (CSN) provides labour market intelligence for the construction industry. Developed by Experian on behalf of CITB it forecasts labour demand in each of 12 UK regions and provides forecasts of how the industry will change year on year. It is not designed however to predict labour demand at a sub-regional level. For this purpose, we use our prize-winning Labour Forecasting Tool (LFT) developed on behalf of CITB. Labour demand is calculated by converting the volume of construction activity forecast to take place in any geographical region into forecast labour demand using labour coefficients (the number of person years required to produce £1m of output). For the sake of consistency with ONS terminology the 'volume of activity' is referred to as 'output' throughout this report. The following sections describe:

- the sources of data we use;
- how the output is calculated;
- how we deal with the absence of comprehensive data that is the typical situation beyond the first year or two of our analysis;
- how we reconcile any differences between the results produced by the LFT and those produced by the CSN;
- the steps we take to deal with any shortcomings in the sources of data; and
- how the LFT converts output into labour demand.

Calculating construction output

Data sources

There are two principal sources of data: the Glenigan database and the National Infrastructure and Construction Pipeline (NICP).

Glenigan

The original purpose of the Glenigan database is to allow contractors to identify leads and to carry out construction market analysis. It is updated every quarter to provide details of planning applications from local authorities supplemented with additional project-specific data. Of particular relevance to this report, it provides a description of each project, its name, location, value, and in most cases, projected start and end dates. It contains many tens of thousands of projects. The Glenigan pipeline does not identify every single project in an LEP: projects which are small (typically but not exclusively those less than £250,000 in value), and most that involve repair and maintenance are not included.

We have used the latest available cut of Glenigan data including all the relevant projects which started before 2017 but excluding those which are already complete. We have included in our analysis only those projects shown to be at the following planning stages because there is a reasonable probability that these projects will be realised in practice.

- Planning not required
- Detail plans granted
- Reserved matters granted
- Application for reserved matters
- Plans approved on appeal
- Listed building consent

The values of some infrastructure projects given in the Glenigan database are the total value of construction and engineering works. In these cases, since the scope of this study is limited to the construction sector, an estimate of the engineering value has been calculated and subtracted from the total value. This provides what we have termed the construction value. The percentages applied to the total value of each infrastructure project type to derive the construction value are shown in **Error! Reference source not found.**. The construction/engineering proportions ave been validated through work we have undertaken for other clients and have been used in the production of Infrastructure UK's National Infrastructure Plan for Skills and the Construction Skills Network forecasts.

An initial review of the projects in the pipeline is carried out to ensure that only projects which have (a) a defined value and (b) defined start and end dates, are considered in the analysis, and that no projects are duplicated. For example "major leads" and "frameworks" may include smaller projects that are separately identified in the database.

Because of the size of the database, it is impossible to review the details of every project. Instead, we identify the small number of projects that represent the greatest value, the so-called significant projects. To do this, we use the Mean Value Theorem developed at the University of Dundee which states that maximum information from any set of data is obtained simply by considering the data whose value is greater than the average. This is a version of the Pareto rule which suggests that 80% of the value in a data set is contained within the 20% of items whose value is the greatest. The significant projects are then thoroughly inspected to make sure that the information reported in the Glenigan database is consistent and accurate as far as can be ascertained. Any anomalies are resolved, if necessary by returning to the source of the data. Since this process typically picks up the projects whose value represents 80% of the total, the scope for any errors in the remaining data to have a significant impact is severely limited.

Table A1: Proportion of total value related to construction

Infrastructure type	Sub-type	Construction value as a proportion of total value
Flooding	Flooding	90%
Transport	Bridges	100%
	Road tunnel	100%
	Roads	100%
	Air traffic control	100%
	Airports	100%
	Ports	90%
	Stations (underground/Network Rail)	80%
	Mixed rail	55%
	Electrification	35%
	Underground/DLR (not incl. stations)	35%
	Rail maintenance	10%
	Trams	55%
	Contactless ticketing	20%
Water	Water/wastewater treatment works	90%
Communications	Broadband/Digital infrastructure	20%
Energy	Photovoltaics	80%
	Generation (biomass)	50%
	Generation (energy from Waste)	50%
	Generation (nuclear)	50%
	Undefined electricity generation	40%
	Generation (fossil fuel)	25%
	Generation (renewables - offshore)	20%
	Generation (renewables - onshore)	10%
	Gas Transmission/distribution	30%
	Electricity transmission/distribution	25%
	Interconnectors	20%
	Nuclear decommissioning	60%
	Smart meters	0%
	Oil and gas	10%
Mining	Mining	80%
General infrastructure	General infrastructure	100%

For the significant projects, the project descriptions in the database are assigned the most appropriate project type to be used when the data is input to the LFT (each type is driven by a different underlying model). Cases where a project consists of more than one type are broken down into multiple forecasts which are assigned specific project types to more closely predict the labour demand. This takes account of the different types of work which may exist within a single project, e.g. mixed developments comprising residential, commercial and industrial buildings. For the non-significant projects, the default project type defined in the Glenigan pipeline is applied.

In order to maintain consistency with the CSN we have limited our forecast to the same time period as the most recently published CSN forecast.

NICP data

The Infrastructure and Projects Authority (formerly Infrastructure UK and Major Projects Authority) compiles a pipeline of UK infrastructure and construction projects and the associated annual public and private investment.

We examine the NICP data to identify infrastructure projects or programmes of work taking place in the region under consideration that are not included in the Glenigan database. The construction cost is calculated from the total cost reported in the NICP using the percentages in Table A1**Error! Reference source not found.**. Projects in the lenigan dataset and the NICP are combined (ensuring that there is no double counting) to create a pipeline of 'known' projects for the LEP. We have only considered those projects which are specifically allocated to the region under consideration in the NICP (i.e. projects at a national level have not been considered).

The pipeline includes both construction and infrastructure projects but for the purposes of this analysis we have included only projects which are clearly defined specific projects rather than regional programmes of work. This reduces the risk of double counting in the Glenigan data.

CSN data

The CSN model produced by Experian also uses Glenigan as a major source of data relating to the volume of construction activity in the UK. Experian supplement the Glenigan data with market intelligence collected by a variety of means including a series of 'Observatories' held every six months in each region, at which representatives of the industry are invited to comment on the validity of Experian's data and findings. In Experian's annual CSN report, their estimate of the output in each of the following sectors is published:

- Public housing
- Private housing
- Infrastructure
- Public non-housing
- Industrial
- Commercial
- Housing repair and maintenance
- Non-housing repair and maintenance

Aligning the Glenigan pipeline with CSN output

The following process is undertaken to ensure that the value of work in the Glenigan pipeline is aligned with output as measured by the CSN.

6. Considering the government region within which the research LEP lies, identify only the new build in the known projects by removing all repair and maintenance projects.
7. Compare the output identified in the known projects as new build at the regional level with the CSN new build at the regional level sector by sector e.g. residential, non-residential, infrastructure etc.
8. If in any sector the known new-build regional output for the peak year is more or less than that forecast by the CSN for the same year then the value of each new build known project is factored by the following ratio:

$$\frac{Value\ of\ CSN\ new\ build\ at\ regional\ level\ for\ given\ sector}{Value\ of\ known\ new\ build\ projects\ at\ regional\ level\ for\ given\ sector}$$

The outputs calculated in this way are referred to as 'factored new build outputs'

This process takes account of both projects (typically less than £250k in value) not included in the known projects and those whose value or probability of realisation is over-optimistic.

9. To take account of housing repair and maintenance (R&M) at the research LEP level, it is assumed that the proportion of the total output represented by housing R&M is the same at the local LEP level as it is at the regional level in the CSN. The Glenigan new build factored housing output is therefore multiplied by the following ratio:

$$\frac{Value\ of\ CSN\ housing\ R\&M\ at\ regional\ level}{Value\ of\ CSN\ new\ build\ housing\ at\ regional\ level}$$

to derive the output in housing R&M to be added to the factored new build output

10. The non-housing R&M to be added to the factored new build non-housing output is calculated in a similar way.

Dealing with the 'cliff edge'

As the time horizon extends there is less clarity on what is planned. As a result, the number of known projects declines the further into the future we look. This apparently declining workload is highly unlikely to reflect the total amount of work that will take place in the future. It is almost certain that there will be additional projects that come on stream which are yet to be identified. To overcome this 'cliff edge' effect we assume, based on an analysis of historical data, that the future workforce is approximately equal to the peak. It should be noted that the peak labour demand refers to the current "snapshot" of the scheduled construction spend. It is prudent to expect that, should the investment in future years follow the same pattern, the peak labour demand figures are likely to be roughly similar assuming the mix of projects remains consistent. The peak has, therefore, been projected forwards and backcast to create a more likely scenario of the ongoing workforce. The employment growth rate is based on the CSN employment forecast for the whole region under consideration.

A consequence of this approach is the implicit assumption that the proportion of people in each occupation in the additional projects remain unchanged year on year.

Calculating total labour demand

Our Labour Forecasting Tool is used to determine the labour demand generated by the construction outputs in the peak year. The LFT can determine the labour demand generated by a pipeline of construction projects given only the project types, their start and end dates and their locations. It quantifies the month-by-month demand in each of the 28 occupational groups shown in Appendix B. To do this, it uses labour coefficients (person years to produce £1m of output) derived from historical ONS data. The labour coefficients are updated annually as new data becomes available, and indexed to take account of different locations and changes in prices.

There are different labour coefficients for each occupation and for each of the following project types:

- residential
- non-residential
- infrastructure
- residential R&M
- non-residential R&M

Infrastructure projects can be broken down into the types shown in Table A1**Error! Reference source not found.**.

Appendix B. 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.

Table A2: Occupation definitions

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[3]	
(1115) Chief executives and senior officials	(1162) Managers and directors in storage and warehousing
(1131) Financial managers and directors	(1259) Managers and proprietors in other services nec
(1132) Marketing and sales directors	(1139) Functional managers and directors nec
(1133) Purchasing managers and directors	(2133) IT specialist managers
(1135) Human resource managers and directors	(2134) IT project and programme managers
(1251) Property, housing and estate managers	(3538) Financial accounts managers
(1136) Information technology and telecommunications directors	(3545) Sales accounts and business development managers
(2150) Research and development managers	
2 Construction project managers[3]	
(2436) Construction project managers and related professionals	
3 Other construction process managers[3]	
(1121) Production managers and directors in manufacturing	(3567) Health and safety officers
(1122) Production managers and directors in construction	(3550) Conservation and environmental associate professionals
(1161) Managers and directors in transport and distribution	
(1255) Waste disposal and environmental services managers	
4 Non-construction professional, technical, IT, and other office–based staff (excl. managers)[3]	
(3131) IT operations technicians	(3541) Buyers and procurement officers
(3132) IT user support technicians	(3562) Human resources and industrial relations officers
(3534) Finance and investment analysts and advisers	(4121) Credit controllers
(3535) Taxation experts	(4214) Company secretaries
(3537) Financial and accounting technicians	(7129) Sales related occupations nec
(3563) Vocational and industrial trainers and instructors	(7211) Call and contact centre occupations
(3539) Business and related associate professionals nec	(7219) Customer service occupations nec
(3520) Legal associate professionals	(9219) Elementary administration occupations nec
(3565) Inspectors of standards and regulations	(2111) Chemical scientists
(2136) Programmers and software development professionals	(2112) Biological scientists and biochemists
(2139) Information technology and telecommunications professionals nec	(2113) Physical scientists
	(3111) Laboratory technicians
(3544) Estate agents and auctioneers	(3421) Graphic designers
(2413) Solicitors	(2463) Environmental health professionals
(2419) Legal professionals nec	(2135) IT business analysts, architects and systems designers
(2421) Chartered and certified accountants	
(2424) Business and financial project management professionals	(2141) Conservation professionals
	(2142) Environment professionals
(2423) Management consultants and business analysts	(2425) Actuaries, economists and statisticians
(4216) Receptionists	(2426) Business and related research professionals
(4217) Typists and related keyboard occupations	(4124) Finance officers
(3542) Business sales executives	(4129) Financial administrative occupations nec
(4122) Book-keepers, payroll managers and wages clerks	(4138) Human resources administrative occupations
(4131) Records clerks and assistants	(4151) Sales administrators
(4133) Stock control clerks and assistants	(4159) Other administrative occupations nec
(7213) Telephonists	(4162) Office supervisors
(7214) Communication operators	(7130) Sales supervisors
(4215) Personal assistants and other secretaries	(7220) Customer service managers and supervisors
(7111) Sales and retail assistants	(4161) Office managers
(7113) Telephone salespersons	

[3] Managerial, professional & office based staff

5 Construction trades supervisors[4]	
(5250) Skilled metal, electrical and electronic trades supervisors (5330) Construction and building trades supervisors	
6 Wood trades and interior fit-out[4]	
(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[4]	
(5312) Bricklayers and masons	
8 Building envelope specialists[4]	
(5319) Construction and building trades nec (50%)	
9 Painters and decorators[4]	
(5323) Painters and decorators	(5319) Construction and building trades nec (5%)
10 Plasterers[4]	
(5321) Plasterers	
11 Roofers[4]	
(5313) Roofers, roof tilers and slaters	
12 Floorers[4]	
(5322) Floorers and wall tillers	
13 Glaziers[4]	
(5316) Glaziers, window fabricators and fitters	(5319) Construction and building trades nec (5%)
14 Specialist building operatives not elsewhere classified (nec)[4]	
(8149) Construction operatives nec (100%) (5319) Construction and building trades nec (5%)	(9132) Industrial cleaning process occupations (5449) Other skilled trades nec
15 Scaffolders[4]	
(8141) Scaffolders, stagers and riggers	
16 Plant operatives[4]	
(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[4]	
(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
18 Steel erectors/structural fabrication[4]	
(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[4]	
(9120) Elementary construction occupations (100%)	
20 Electrical trades and installation[4]	
(5241) Electricians and electrical fitters (5249) Electrical and electronic trades nec	(5242) Telecommunications engineers
21 Plumbing and heating, ventilation, and air conditioning trades[4]	
(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[4]	
(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

[4] Skilled trades & operatives

23 Civil engineering operatives not elsewhere classified (nec)[4]	
(8142) Road construction operatives (8143) Rail construction and maintenance operatives	(8123) Quarry workers and related operatives
24 Non–construction operatives[4]	
(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[3]	
(2121) Civil engineers	
26 Other construction professionals and technical staff[3]	
(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
27 Architects[3]	
(2431) Architects	
28 Surveyors[3]	
(2433) Quantity surveyors (2434) Chartered surveyors	

Appendix C. GLENIGAN PROJECTS REMOVED FROM HUMBER

This appendix contains a list of all the Glenigan projects removed from the analysis, stating the reason for their exclusion.

Table A3: Removed Glenigan projects from Humber

	Heading	Local authority	Value (£m)	Start date	End date	Reason for omission
1	Industrial Unit	North Lincolnshire	0.3			Missing dates
2	Theatre (Extension/Alterations)	North Lincolnshire	0.3			Missing dates
3	Industrial Building (Extension)	East Riding of Yorkshire	0.3			Missing dates
4	Bagging Plant/Office Building (Extension)	East Riding of Yorkshire	0.4			Missing dates
5	Play Barn/Cafe (Extension)	East Riding of Yorkshire	0.4			Missing dates
6	Office (Extension)	North Lincolnshire	0.4			Missing dates
7	Restaurant	North Lincolnshire	0.4			Missing dates
8	Golf Club (Extension)	East Riding of Yorkshire	0.5			Missing dates
9	Shop (Extension)	East Riding of Yorkshire	0.5			Missing dates
10	10 Flats (Conversion)	Hull City Council	0.5			Missing dates
11	Pre-Fabricated Building	Hull City Council	0.5			Missing dates
12	School Building (Extension)	East Riding of Yorkshire	0.5			Missing dates
13	Care Home (Extension)	Hull City Council	0.5			Missing dates
14	Garden Centre	North East Lincolnshire	0.5			Missing dates
15	Office Building	East Riding of Yorkshire	0.6			Missing dates
16	Car Showroom & MOT Bay	East Riding of Yorkshire	0.6			Missing dates
17	Factory Unit	Hull City Council	0.6			Missing dates
18	Industrial Building	North Lincolnshire	0.6			Missing dates
19	Sheltered Residential Care Home	East Riding of Yorkshire	0.6			Missing dates
20	Care Home (Extension)	East Riding of Yorkshire	0.7			Missing dates
21	Pavilion (Extension/Alterations)	East Riding of Yorkshire	0.7			Missing dates
22	Car Showroom (Extension/Alterations)	Hull City Council	0.7			Missing dates
23	Church & Community Hall (Extension/Alterations)	East Riding of Yorkshire	0.7			Missing dates
24	School Classrooms/Office (Extension)	North East Lincolnshire	0.7			Missing dates
25	Bulky Goods Retail/Retail Unit	Hull City Council	0.8			Missing dates
26	Medical Centre (Extension)	North Lincolnshire	0.8			Missing dates
27	4 Retail/Commercial Buildings	Hull City Council	0.8			Missing dates
28	Care Home (Extension)	Hull City Council	0.8			Missing dates
29	Office/Warehouse (Extension/Alterations)	Hull City Council	0.9			Missing dates
30	Charcoal Plant (New/Extension)	North East Lincolnshire	0.9			Missing dates
31	18 Flats (Conversion/Alterations)	Hull City Council	0.9			Missing dates
32	14 Houses	East Riding of Yorkshire	1.0			Missing dates
33	Helipad	Hull City Council	1.0			Missing dates
34	Power Generation Plant	North Lincolnshire	1.0			Missing dates
35	6 Industrial Units	East Riding of Yorkshire	1.0			Missing dates
36	16 Houses	North Lincolnshire	1.1			Missing dates
37	Petrol Filling Station (New/Extension)	North Lincolnshire	1.1			Missing dates
38	Factory Building	East Riding of Yorkshire	1.2			Missing dates
39	16 Houses	East Riding of Yorkshire	1.2			Missing dates
40	Waste Management Plant (Extension)	East Riding of Yorkshire	1.2			Missing dates

41	Warehouse & Bakery Building	East Riding of Yorkshire	1.3			Missing dates
42	12 Houses & 6 Flats (New/Conversion)	North Lincolnshire	1.4			Missing dates
43	Church & Church Hall (New/Alterations)	East Riding of Yorkshire	1.4			Missing dates
44	21 Houses & 1 Bungalow	East Riding of Yorkshire	1.5			Missing dates
45	Car Showroom	North East Lincolnshire	1.5			Missing dates
46	17 Houses & 6 Luxury Houses	North East Lincolnshire	1.6			Missing dates
47	3 Industrial/Storage Units	East Riding of Yorkshire	1.7			Missing dates
48	24 Bungalows & 1 Care Home	East Riding of Yorkshire	1.7			Missing dates
49	23 Holiday Lodges	East Riding of Yorkshire	1.7			Missing dates
50	Church (Extension)	East Riding of Yorkshire	1.9			Missing dates
51	60 Extra Care Flats & 1 Community Centre	North East Lincolnshire	1.9			Missing dates
52	Service Station	North Lincolnshire	2.0			Missing dates
53	33 Holiday Lodges/1 Managers Flat/Caravan Pitches (New/Extension)	East Riding of Yorkshire	2.1			Missing dates
54	30 Houses	East Riding of Yorkshire	2.3			Missing dates
55	Hostel	North East Lincolnshire	2.7			Missing dates
56	55 Flats	Hull City Council	2.8			Missing dates
57	Hotel (Extension)	East Riding of Yorkshire	3.0			Missing dates
58	Care Home	East Riding of Yorkshire	3.0			Missing dates
59	67 Flats	Hull City Council	3.0			Missing dates
60	Industrial Storage & Workshop Unit	East Riding of Yorkshire	3.5			Missing dates
61	11 Flats & Commercial Development (New/Extension)	Hull City Council	3.5			Missing dates
62	54 Houses	North East Lincolnshire	3.7			Missing dates
63	Nursing Home (Extension/Alterations)	Hull City Council	4.1			Missing dates
64	3 Commercial Units	East Riding of Yorkshire	4.7			Missing dates
65	Flood Defence Wall	East Riding of Yorkshire	5.0			Missing dates
66	Warehouse (Extension)	East Riding of Yorkshire	5.4			Missing dates
67	Landscape Works	Kingston-Upon-Hull	5.7			Missing dates
68	9 Houses/7 Flats & 1 Care Home	East Riding of Yorkshire	7.0			Missing dates
69	Food Industry (Extension)	Hull City Council	11.2			Missing dates
70	2 Factory Buildings	East Riding of Yorkshire	14.0			Missing dates
71	Hotel & Casino	Hull City Council	20.0			Missing dates
72	Horticultural Glasshouse	East Riding of Yorkshire	56.1			Missing dates
73	Bioethanol Production Facility	North East Lincolnshire	150.0			Missing dates
74	Marine Energy Park	North East Lincolnshire	200.0			Missing dates
75	Consultancy Framework Agreement	East Riding of Yorkshire	40.5	01/10/2018	01/10/2022	Consultancy
76	Offshore Wind Farm Hub	North East Lincolnshire	1500.0	14/01/2019	13/11/2020	Not in the area
77	Offshore Wind Farm	North East Lincolnshire	1500.0	09/04/2018	06/06/2022	In NICP
78	845 Residential Units	North East Lincolnshire	51.3	25/03/2019	25/03/2022	Duplicate

Appendix D. SIGNIFICANT GLENIGAN PROJECTS IN HUMBER

This appendix provides a list of all the significant projects analysed. The projects appear in the order they were put into the LFT.

Table A4: Significant Glenigan projects in Humber

	Description	Local authority	Value (£m)	Start date	End date	Project type
1	4000 Houses	Kingston upon Hull, City of	400.0	02/01/2017	06/01/2020	New housing
2	2,186 Houses	North East Lincolnshire	250.0	24/04/2009	24/12/2020	New housing
3	Offshore Wind Farm	North East Lincolnshire	221.5	10/09/2018	04/09/2023	Infrastructure
4	1660 Residential Units/School/Local Centre Units	Hull City Council	123.8	05/06/2017	25/06/2021	New housing, Public Non-housing
5	246 Student Flats, 143 Houses, Hotel & Leisure Development	Hull City Council	83.3	15/05/2019	11/05/2022	Public Non-housing, Private Commercial
6	Road (Improvements)	Kingston upon Hull, City of	82.1	02/03/2020	31/01/2025	Infrastructure
7	Logistics Park	North Lincolnshire	60.3	06/03/2017	04/03/2019	Private Industrial, Private Commercial, Infrastructure, Infrastructure
8	3,250 Properties Refurbishment Framework	Kingston-Upon-Hull	60.0	17/08/2015	10/08/2020	Housing R&M
9	Offshore Wind Farm	Hull City Council	58.3	12/09/2016	06/09/2021	Infrastructure
10	Offshore Wind Farm	Hull City Council	51.1	29/06/2020	27/06/2022	Infrastructure
11	Offshore Wind Farm	Hull City Council	51.1	29/06/2020	27/06/2022	Infrastructure
12	East Area Contractors Framework	East Riding of Yorkshire	48.0	01/04/2016	31/03/2020	Public Non-housing
13	Student Accommodation	Hull City Council	46.2	15/05/2017	19/08/2019	Public Non-housing, Private Commercial
14	Asset Management & Architectural Framework	North East Lincolnshire	38.1	03/11/2014	03/11/2018	Public Non-housing, Infrastructure, New housing, Private Commercial
15	Power Station	North Lincolnshire	35.5	20/08/2020	23/02/2023	Infrastructure
16	Public Realm Works	East Riding of Yorkshire	34.1	13/08/2019	28/04/2020	Infrastructure
17	Power Station	East Riding of Yorkshire	24.8	01/10/2018	28/03/2022	Infrastructure
18	YORcivil Contractors Framework	East Riding of Yorkshire	24.8	07/09/2017	07/09/2023	Infrastructure
19	Energy Centre	North East Lincolnshire	24.1	14/01/2019	13/01/2020	Infrastructure
20	385 Residential Units, 1 School & 1 Community Centre	North East Lincolnshire	24.0	11/02/2019	09/03/2020	New housing, Public Non-housing
21	Architectural Works & Asset Management Framework	North East Lincolnshire	23.8	16/01/2019	16/01/2023	Public Non-housing, Private Commercial
22	228 Houses & 76 Sheltered Houses	East Riding of Yorkshire	22.8	08/05/2017	08/05/2019	New housing
23	Schools	East Riding of Yorkshire	21.1	04/03/2019	07/03/2022	Public Non-housing
24	7 Restaurants/1 Cinema & 1 Shopping Centre (New/Alterations)	North East Lincolnshire	20.0	22/10/2018	11/12/2020	Private Commercial
25	302 Houses	North Lincolnshire	19.6	04/03/2019	30/03/2020	New housing
26	282 Houses & 18 Flats	East Riding of Yorkshire	19.0	27/08/2018	23/09/2019	New housing

27	293 Houses/Flats	East Riding of Yorkshire	18.6	26/03/2019	26/03/2020	New housing
28	Combined Cycle Gas Turbine	East Riding of Yorkshire	17.7	16/06/2020	16/06/2023	Infrastructure
29	224 Houses	North East Lincolnshire	16.8	05/11/2018	02/12/2019	New housing
30	Warehouse/Distribution Building	Hull City Council	16.3	23/02/2018	19/07/2019	Private Industrial
31	8 Serviced Flats & 1 Hotel (Conversion/Alterations)	Hull City Council	15.8	04/06/2018	28/06/2019	Private Commercial
32	211 Houses/14 Flats	East Riding of Yorkshire	15.4	20/11/2019	14/07/2021	New housing
33	3 Employment Buildings	East Riding of Yorkshire	15.1	08/04/2019	06/01/2020	Private Commercial, Private Industrial
34	Food Processing Facility (Extension)	North East Lincolnshire	14.7	12/10/2018	12/04/2019	Private Industrial
35	208 Houses & 18 Flats	East Riding of Yorkshire	14.5	22/10/2018	22/11/2019	New housing
36	Road Improvement Works	Kingston upon Hull, City of	14.5	13/07/2020	08/07/2022	Infrastructure
37	224 Holiday Accommodation Units	East Riding of Yorkshire	14.4	21/01/2019	17/02/2020	Private Commercial
38	188 Houses	East Riding of Yorkshire	14.1	16/07/2018	12/08/2019	New housing
39	143 Retirement Homes & 126 Houses	North East Lincolnshire	13.5	29/10/2018	22/11/2019	New housing
40	165 Houses	East Riding of Yorkshire	10.7	27/05/2019	22/06/2020	New housing
41	163 Houses	East Riding of Yorkshire	10.6	25/03/2019	25/04/2020	New housing
42	17 Retirement Sheltered Flats	East Riding of Yorkshire	10.2	04/03/2019	06/04/2020	New housing
43	11 Retail Units	North East Lincolnshire	9.8	11/03/2019	04/10/2019	Private Commercial
44	Container Terminal	North East Lincolnshire	9.2	18/02/2019	18/06/2020	Infrastructure
45	114 Houses/10 Flats & 6 Bungalows	East Riding of Yorkshire	9.0	22/04/2019	20/04/2020	New housing
46	115 Houses	North Lincolnshire	8.6	02/10/2017	26/10/2018	New housing
47	Pipeline Works	North Lincolnshire	8.5	08/01/2018	19/07/2019	Infrastructure
48	Gas Transmission Pipeline (Replacement)	East Riding of Yorkshire	8.5	31/10/2016	02/12/2019	Infrastructure
49	Flood Defence	Kingston upon Hull, City of	6.1	03/04/2017	27/12/2019	Infrastructure
50	Estuary Frontages	Kingston upon Hull, City of	5.9	03/10/2016	03/10/2018	Infrastructure
51	Mushroom Farm (Extension)	East Riding of Yorkshire	5.1	12/02/2019	25/08/2019	Private Industrial
52	Caravan Park (Extension/Alterations)	East Riding of Yorkshire	5.0	29/04/2019	25/11/2019	Private Commercial
53	Holiday Caravan Site (Conversion)	East Riding of Yorkshire	5.0	17/12/2018	30/07/2019	Private Commercial
54	18 Light Industrial/Commercial Units	North East Lincolnshire	4.9	03/12/2018	10/06/2019	Private Industrial, Private Commercial
55	Police Station	North East Lincolnshire	4.2	06/11/2017	30/11/2018	Public Non-housing
56	Demolition	North East Lincolnshire	4.0	05/11/2018	11/11/2019	Infrastructure
57	Bridge Works	Hull City Council	3.4	05/11/2018	06/03/2020	Infrastructure
58	Flood Defence Works	North Lincolnshire	3.4	17/12/2018	23/09/2019	Infrastructure
59	Shot Blast Building	North Lincolnshire	3.4	07/01/2019	15/07/2019	Private Industrial
60	Food Industrial Units (Extension)	North Lincolnshire	3.4	02/07/2018	29/10/2018	Private Industrial, Private Commercial
61	Light Industrial	Hull City Council	2.8	12/11/2018	20/05/2019	Private Industrial
62	Light Industrial	East Riding of Yorkshire	2.7	03/12/2018	10/06/2019	Private Industrial
63	Anaerobic Digestion Plant	East Riding of Yorkshire	2.6	21/05/2018	08/02/2019	Infrastructure

64	53 Care Apartment	East Riding of Yorkshire	2.5	04/03/2019	02/12/2019	Public Non-housing
65	Child/Adolescent Mental Health Service	Hull City Council	2.3	14/07/2018	22/06/2019	Public Non-housing
66	Road Works	North East Lincolnshire	2.0	25/03/2019	25/11/2019	Infrastructure
67	Road Junction (Improvements)	Kingston upon Hull, City of	1.8	15/07/2019	13/01/2020	Infrastructure
68	Bridge (Refurbishment)	East Riding of Yorkshire	1.4	04/06/2018	11/01/2019	Infrastructure
69	Waste Transfer Station Building	Hull City Council	0.3	04/02/2019	04/03/2019	Infrastructure

Appendix E. NICP AND LEP PROJECTS IN HUMBER

This appendix provides a list of all the NICP and LEP projects analysed. The projects appear in the order they were put into the LFT.

Table A5: Appendix Table 1:NICP and LEP projects in Humber

	Name	Value (£m)	Start date	End date	Source
1	Hornsea Project Two - Optimus and Breesea	84.2	01/04/2018	31/03/2021	NICP
2	Yorkshire Water: Wastewater Service AMP6	68.7	01/04/2018	31/03/2020	NICP
3	Energy Works (Hull)	66.0	01/04/2018	31/03/2019	NICP
4	Yorkshire Water: Water Service AMP6	48.0	01/04/2018	31/03/2020	NICP
5	Highways Maintenance Block Funding (SR10 allocation)	44.8	01/04/2018	31/03/2021	NICP
6	Yorkshire & the Humber Development programme	27.9	01/04/2018	31/03/2021	NICP
7	CE Yorkshire Distribution (Northern Powergrid Yorkshire) RIIO	20.9	01/04/2018	31/03/2021	NICP
8	Local Enterprise Partnerships Allocation for Transport in Strategic Economic Plans - Yorkshire & the Humber	19.1	01/04/2018	31/03/2021	NICP
9	Integrated Transport Block	15.9	01/04/2018	31/03/2021	NICP
10	National Productivity Investment Fund Round 1 Yorks Humber	6.9	01/04/2019	31/03/2021	NICP
11	Yorkshire & the Humber Construction programme	5.5	01/04/2018	31/03/2021	NICP
12	Challenge Fund Tranche 1 - Yorkshire & Humber	1.0	01/04/2018	31/03/2019	NICP
13	Challenge Fund - Tranche 2A Yorkshire & Humber	0.4	01/04/2018	31/03/2019	NICP

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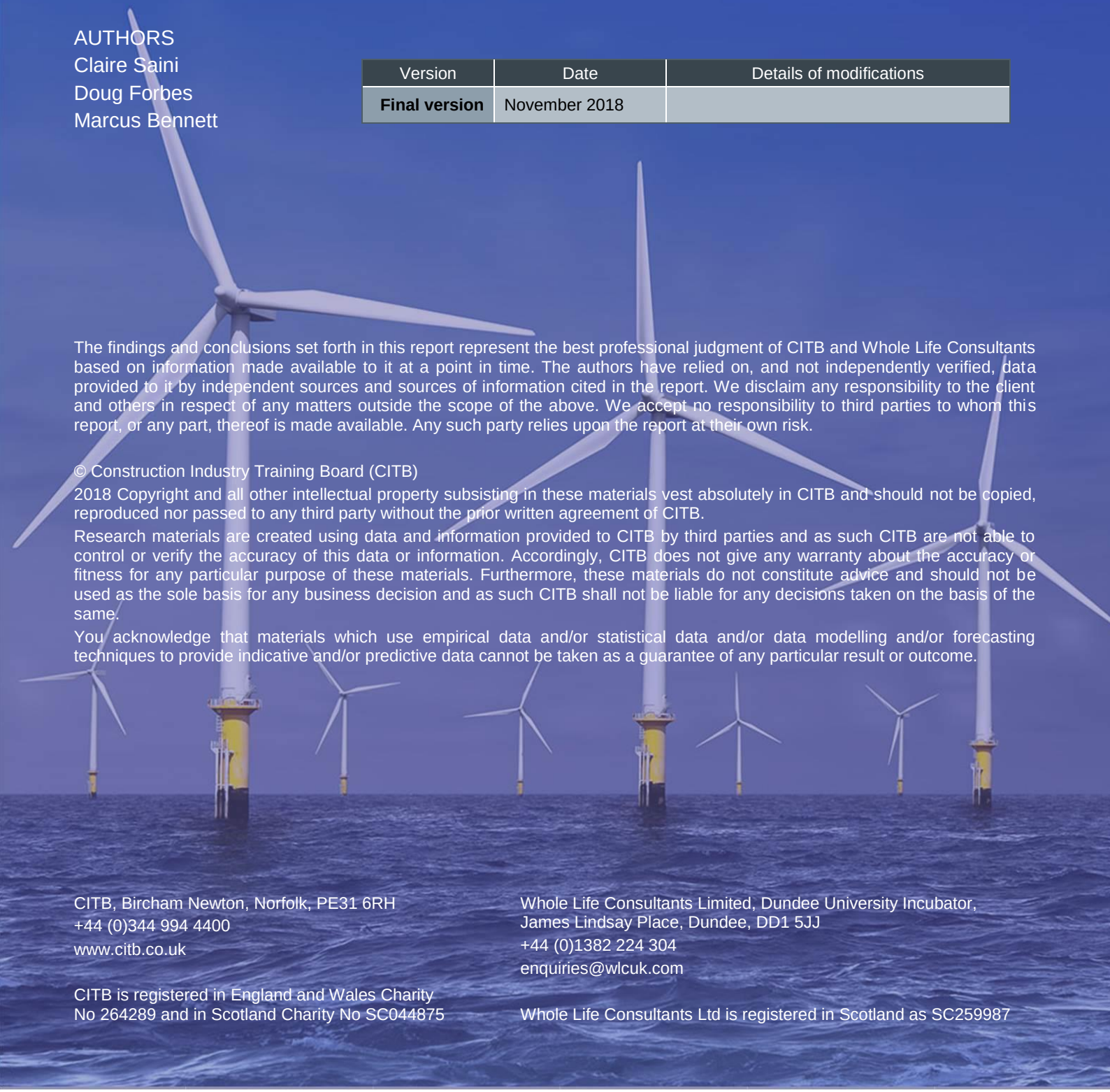
Final version	November 2018	



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