

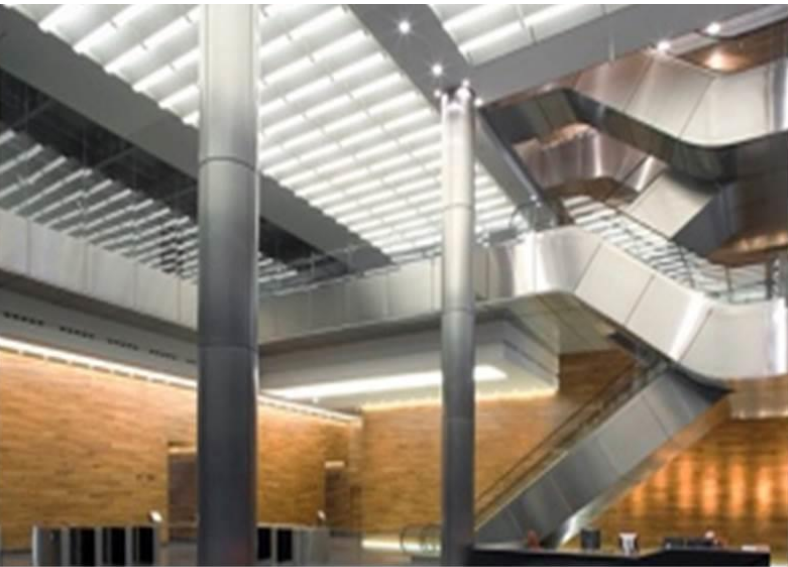


WHOLE LIFE CONSULTANTS LTD



CITB ANALYSIS

Construction skills gap analysis for the York, North Yorkshire & East Riding area



An analysis of the opportunities
presented by the construction
landscape in the York, North
Yorkshire & East Riding area

April 2018



EXECUTIVE SUMMARY

The York, North Yorkshire & East Riding LEP area can expect sustained spending on new construction projects of well over £1.3 billion per year for at least five years.

To meet this anticipated demand a total (peak) construction workforce of more than 49,000 is required for the forecast period. But with an aging workforce there are risks that the LEP area may not be able to build everything on the wish list.

Across the LEP area, new housing accounts for 47% of anticipated spend on new projects in 2018; infrastructure for 23% and private commercial developments for 16%. [The proportion of new spend associated with new housing is greater than has been recorded in other similar analysis conducted for most other geographic areas during the latter part of 2017 and 2018. This highlights the significance of housing in the LEP area.]

The LEP area's opportunity

The Local Enterprise Partnership's priorities 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 around 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 York, North Yorkshire and East Riding area has a significant number of construction job opportunities available over the coming years. These are well paid, skilled jobs that we should be encouraging people to aspire to. These are the jobs that will shape the built environment and house people for generations to come. CITB is working with employers to attract and train new talent for these rewarding and valuable careers."

Lynne Allison, CITB Local Manager

Priority occupations

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

- Wood trades and interior fit-out
- Plumbing and HVAC Trades
- Other construction process managers
- Other construction professionals & technical staff
- Painters and decorators
- Labourers nec*
- Building envelope specialists
- Bricklayers
- Specialist building operatives nec*
- Plus non-construction professionals, technical, IT and office based staff

Occupations in context – the challenge

This report sets out a challenge to the Local Enterprise Partnership and its stakeholders, namely to attract, train, recruit and maintain a high skilled construction workforce that meets anticipated demand.

This challenge is set against the backdrop of: concerns about the future availability of skilled workers (for example as a result of an ageing workforce retiring or Brexit) and demand from other UK regions and major infrastructure projects.

The Professions

There is high demand for several professional roles, jobs which require a significant length of training before candidates become qualified.

Architects appear to be at risk of shortage in the LEP area. These along with 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 new construction in the LEP area to start to encourage and adopt new technologies and new practices like off-site and modular construction to help meet demand.

Training and education

Over the past four years 69 different providers have delivered training in the York, North Yorkshire and East Riding LEP. However, 87% of construction training has been delivered by just ten of these.

Construction training has fallen by 33% in the LEP area over the past four years, with the number of new starters dropping from 1,166 in 2012/13 to 782 in 2015/16

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 York, North Yorkshire & East Riding 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.

GoConstruct 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.

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1. INTRODUCTION

This report represents the first step in developing and maintaining an evidence base, to be utilised by the York, North Yorkshire & East Riding Local Enterprise Partnership and 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 York, North Yorkshire & East Riding 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.

This report represents the concluded research, seeking to identify issues so that a practical approach can be taken to realising the opportunities that activity in the construction sector can generate in developing skills, creating jobs and enhancing the local economy, built environment and opportunities.

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.

The York, North Yorkshire & East Riding LEP area however faces some significant geographic challenges with large sparsely populated areas, often with challenging infrastructure that can make the movement of workers and students particularly challenging in accessing appropriate training and construction sites. The area is also bordered by a number of significant metropolitan areas that are likely to have a net effect of drawing skilled workers to them from the LEP area.

1.1. SCOPE

1.1.1. The commission

This work was produced for the York, North Yorkshire and East Riding Local Enterprise Partnership.

Its purpose is to describe the anticipated demand for construction within the LEP area and contrast that with the provision of construction workers and training to offer a picture based on the best data available on the opportunities for enhancing the construction environment so as to support a construction skills strategy for the area that enhances the skills available, the training in place to support those skills and ultimately enhances productivity and makes a positive contribution to developing the built environment and social and economic circumstances.

1.1.2. Area covered

Figure 1 shows the area covered by the York, North Yorkshire & East Riding LEP, the local authorities involved are:

- Craven
- East Riding of Yorkshire
- Hambleton
- Harrogate
- Richmondshire
- Ryedale
- Scarborough
- Selby
- York

This area also includes other local authorities:

- North Yorkshire County Council
- North York Moors National Park Authority
- Yorkshire Dales National Park Authority

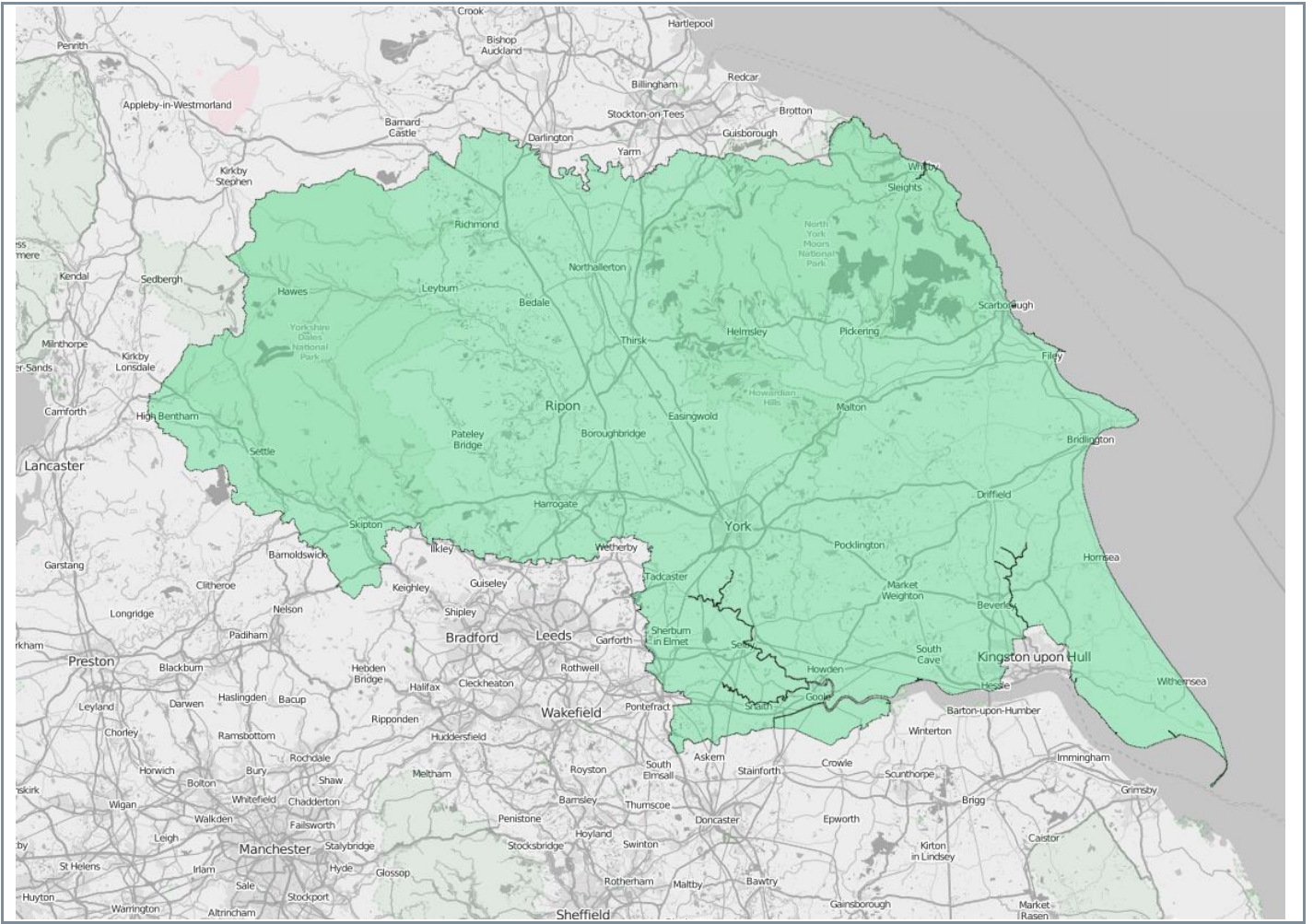


Figure 1: York, North Yorkshire & East Riding and surrounding areas

The LEP area includes some of the most sparsely populated areas of England such as Ryedale, Richmondshire Craven and Hambleton. There are also significant distances between urban areas and in extremes of weather some remote and exposed locations can be difficult to access. These issues can exacerbate problems associated with travel between construction sites or to places of education – these may present particular difficulties to those with limited financial means or without access to their own transport in accessing training.

2. LABOUR DEMAND IN THE YORK, NORTH YORKSHIRE & EAST RIDING AREA

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

2.1. SUMMARY OF DEMAND – MAIN POINTS

- Our estimate of the labour demand in the York, North Yorkshire & East Riding area is around 49,050 people in 2018. The projected growth between 2018-2022 suggest that the labour demand in 2022 will be around 49,350 people.
- Around 61% of the workforce is employed in skilled trades and operatives, the other 39% are in managerial, professional & office based staff.
- The skilled trade & operative occupations in greatest demand are:
 - Wood trades and interior fit-out with a requirement for 5,200 people;
 - Electrical trades and installation follow with 3,650 people.
 - Plumbing and heating, ventilation, and air conditioning trades rank third, with a demand of 3,350 people

2.2. PIPELINE OF KNOWN PROJECTS

2.2.1. Glenigan pipeline analysis

We have considered projects in the Glenigan database¹ 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 586 projects in the York, North Yorkshire & East Riding area. Of the Glenigan projects, one project was removed due to missing values and 72 were removed due to missing dates. Also excluded were 13 projects which were clearly identified as consultancy projects. 1 project was removed because it was a duplicate. Two projects were removed due to them not being located in the analysed area. 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 9.3% 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 82 significant projects accounting for 85% 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 2018. The location of the significant projects within the York, North Yorkshire & East Riding 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 we have used the 2017Q4 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 Autumn 2017 NICP which includes details of around 700 projects valued at some £463bn.

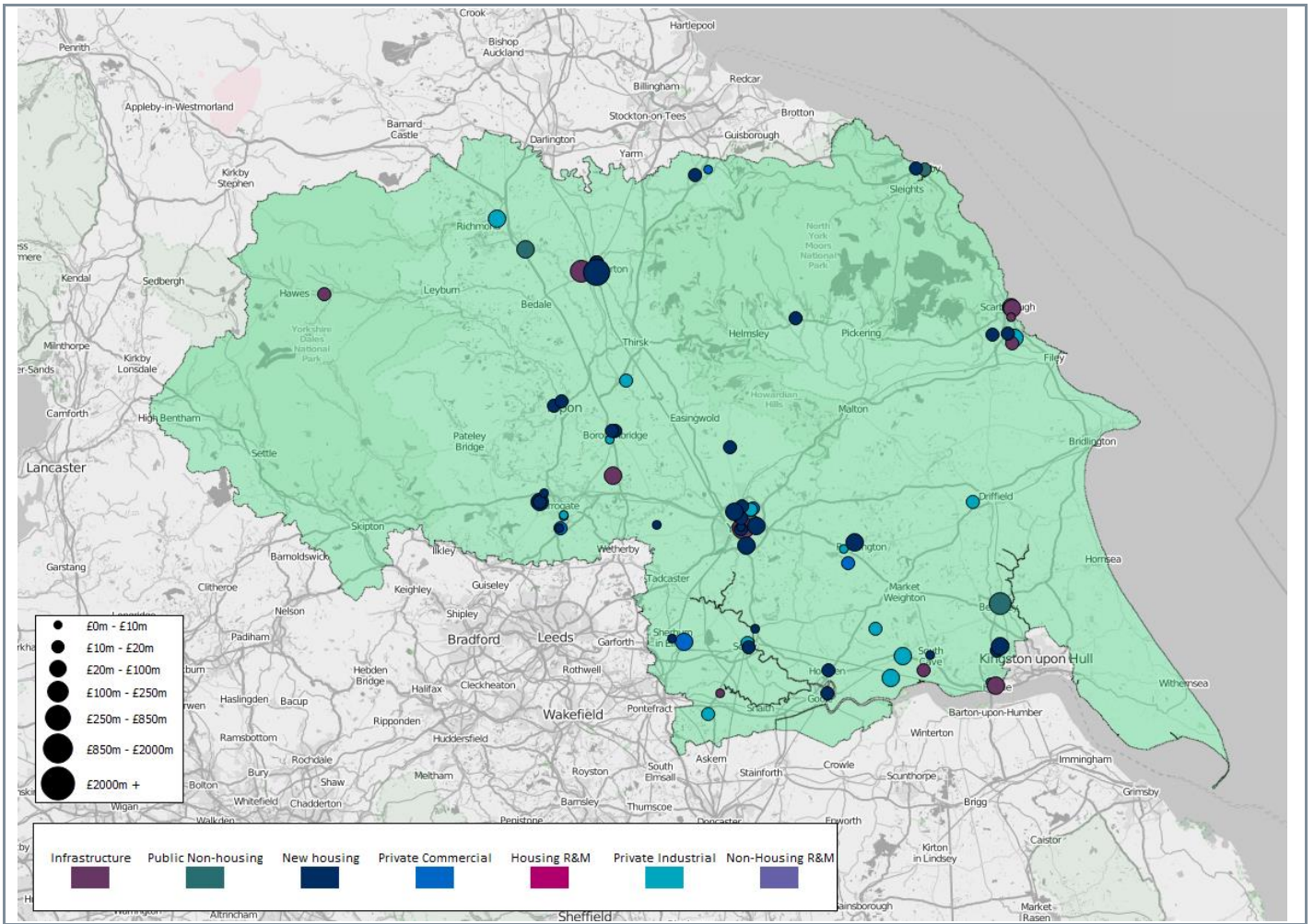


Figure 2: Location of significant Glenigan projects included in the analysis

2.2.2. Glenigan & NICP spend analysis

Implementing the methodology outlined in Appendix A leads to the following findings for the peak year for known projects of 2018. 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 2018 (total known projects)

Project type	Construction spend in 2018 (2017 values - £m)	% of total
New housing	611	47%
Infrastructure	306	23%
Private commercial	206	16%
Private industrial	116	9%
Public non-housing	67	5%
Total	1,306	100%

Table 2 shows the infrastructure construction spend from the known projects in 2018 by infrastructure sub-type.

Table 2: Construction spend per infrastructure sub-type in 2018 (total known projects)

Project type	Construction spend in 2018 (2017 values - £m)	% of total
Mining	160	52%
Transport	45	15%
Energy	37	12%
Water	28	9%
General infrastructure	27	9%
Flooding	9	3%
Total	306	100%

2.3. 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 49,050 people in 2018. The projected growth between 2018 and 2022 suggest that the labour demand in 2022 will be around 49,350.

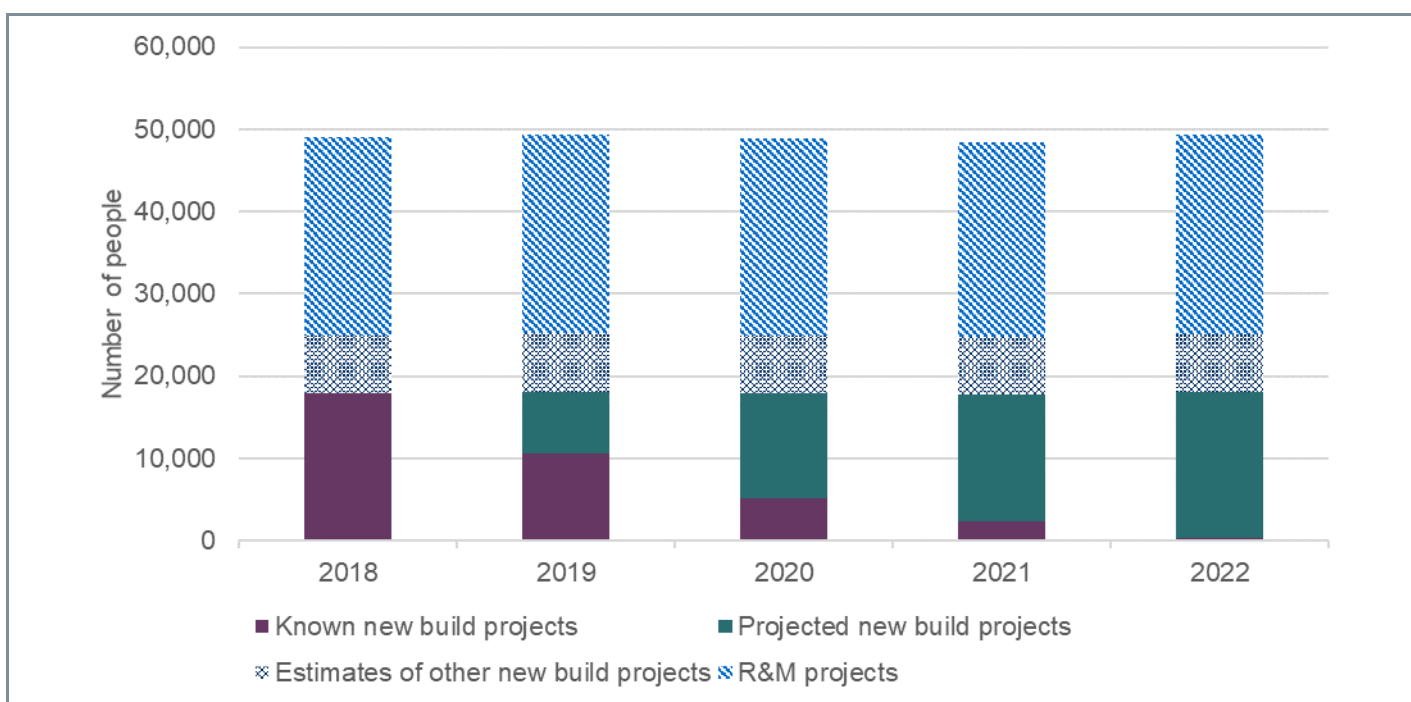


Figure 3: Total construction labour demand including estimates for both R&M and estimates of other work

2.3.1. Breakdown of labour demand by occupation

Figure 4 presents the breakdown of labour for skilled trades & operatives and managerial, professional & office based staff. Around 61% of the workforce are in skilled trades & operative occupations.

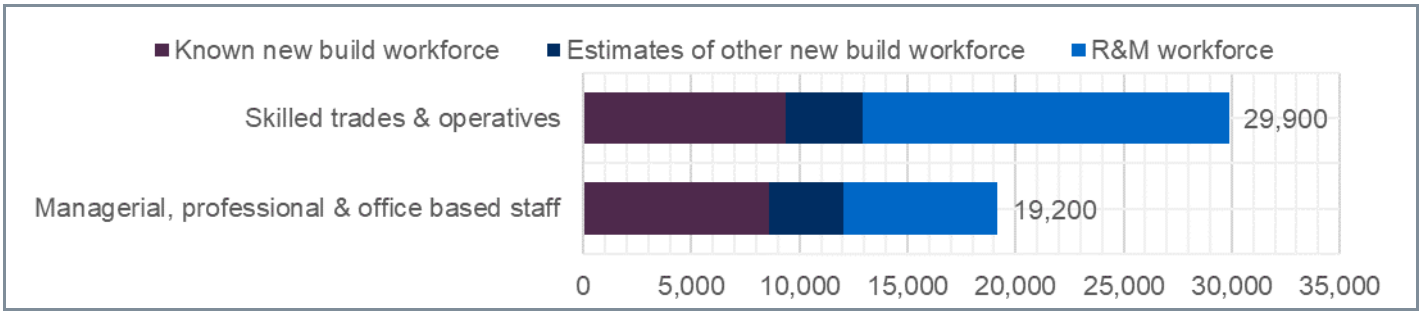


Figure 4: Total construction labour demand for 2018 by broad occupational group

For the peak year in Glenigan of 2018, 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.

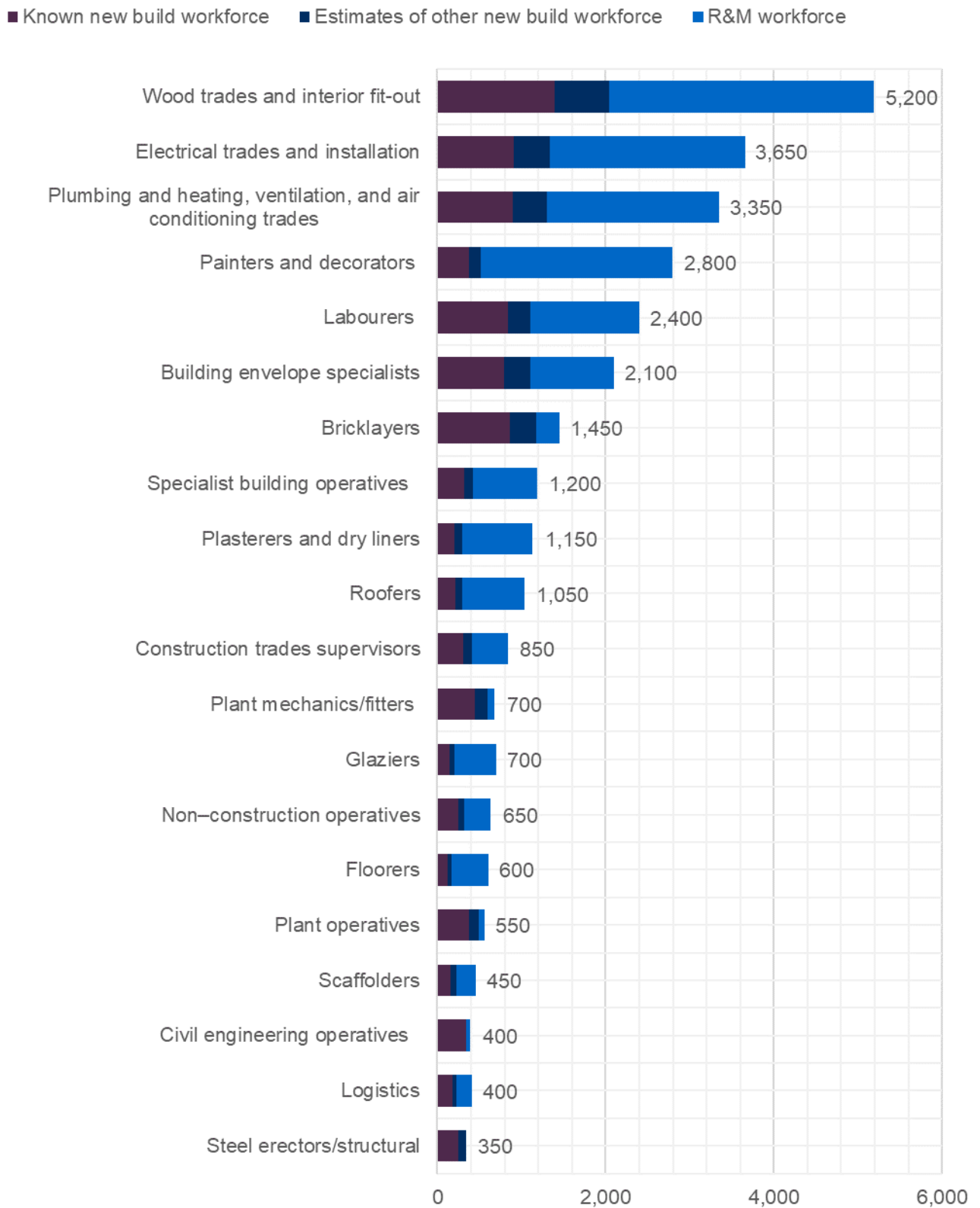


Figure 5: Construction labour demand for skilled trades & operative occupations in the peak year

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.

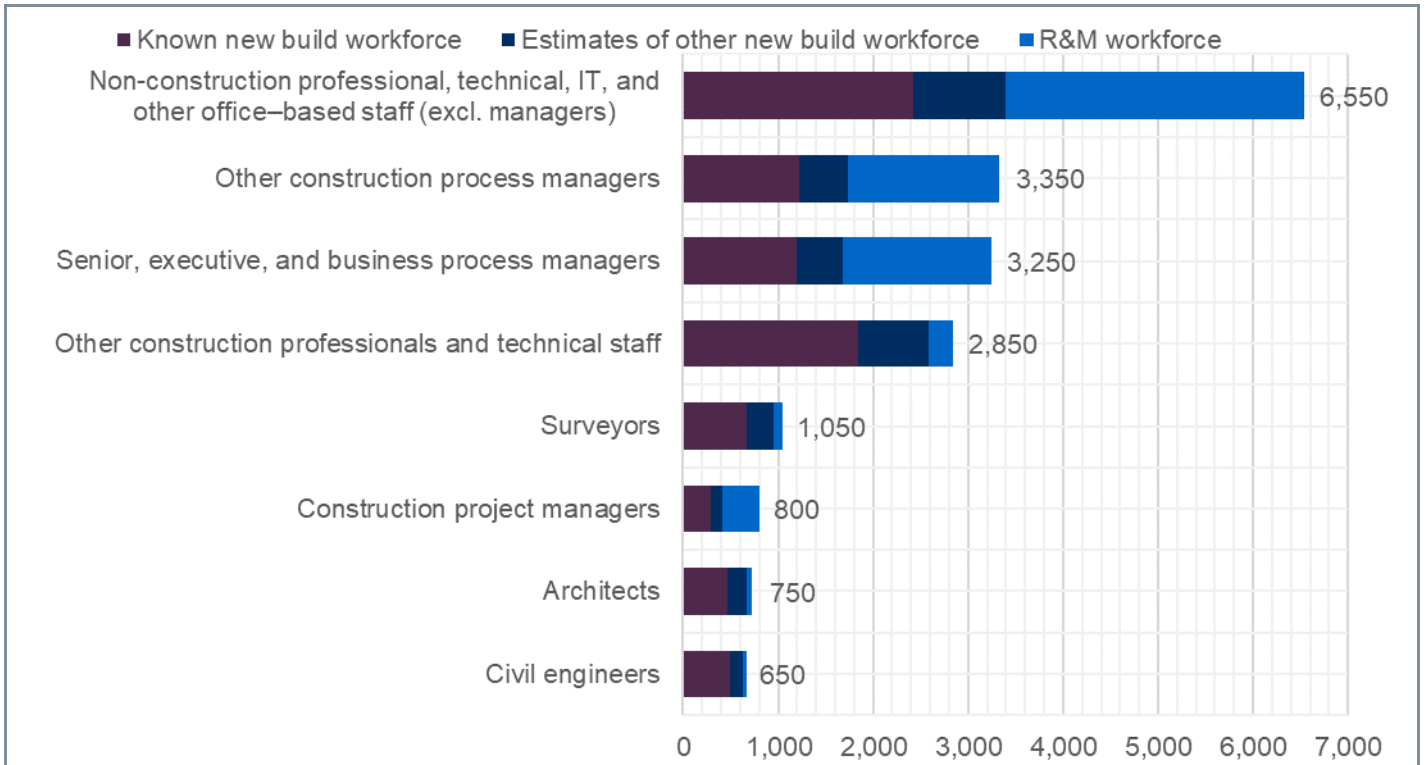


Figure 6: Construction labour demand managerial, professional & office based occupations in the peak year

2.3.2. 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 2018 broken down by project type.

Table 3: Labour demand by project type in 2018

Project type	Known pipeline labour demand in 2018 (people)	Estimates of other work labour demand in 2018 (people)	Total labour demand in 2018 (people)	% of total in 2018
Non-housing R&M	-	13,650	13,650	28%
Housing R&M	350	10,100	10,450	21%
New housing	8,000	2,400	10,400	21%
Private commercial	3,850	4,650	8,500	17%
Infrastructure	2,700	-	2,700	5%
Private industrial	2,100	-	2,100	4%
Public non-housing	1,250	-	1,250	3%
Total	18,250	30,800	49,050	100%

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 York, North Yorkshire and East Riding 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 the York, North Yorkshire and East Riding 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

- Over half of the workforce in the York, North Yorkshire and East Riding is located in the East Riding (29%) and York (25%) local authorities.
- Current construction workforce within the LEP area is estimated at 36,500 workers
- York, North Yorkshire and East Riding accounts for 18% of Yorkshire and Humber's total current construction workforce and 26% of its construction firms
- Recent employment trends show an erratic pattern in construction workforce numbers within York, North Yorkshire and East Riding over the last five years, against a backdrop of a broadly increasing workforce across Yorkshire and Humber as a whole
- 69 training providers have delivered construction-relevant FE courses within York, North Yorkshire and East Riding over the last four years, with ten main providers delivering 87% of provision.

3.2. EXISTING WORKFORCE

Recent trends: Workforce & Businesses:

- The York, North Yorkshire and East Riding construction workforce was in decline from 2010 to 2013, and had a sharp increase in 2014. It has been in decline since then, but at a slower rate than previous years.
- Self-employment within construction in the LEP remains 14% below 2013 levels and is currently at 12,300.
- From 2015 there has been a 6% increase in the number of Micro sized construction businesses within the LEP area, accounting for almost all (94%) of the growth in construction businesses in the LEP over this period

An analysis of the Annual Population Survey shows that the LEP accounts for around 18% 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 York, North Yorkshire and East Riding LEP. For comparison, the wider Yorkshire and Humber region has been included.

Construction employment peaked in York, North Yorkshire and East Riding in 2013. 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 York, North Yorkshire and East Riding LEP, there has been a slightly more stable picture emerging since the sharp decline in workforce in 2014. Ref: Figure 7.

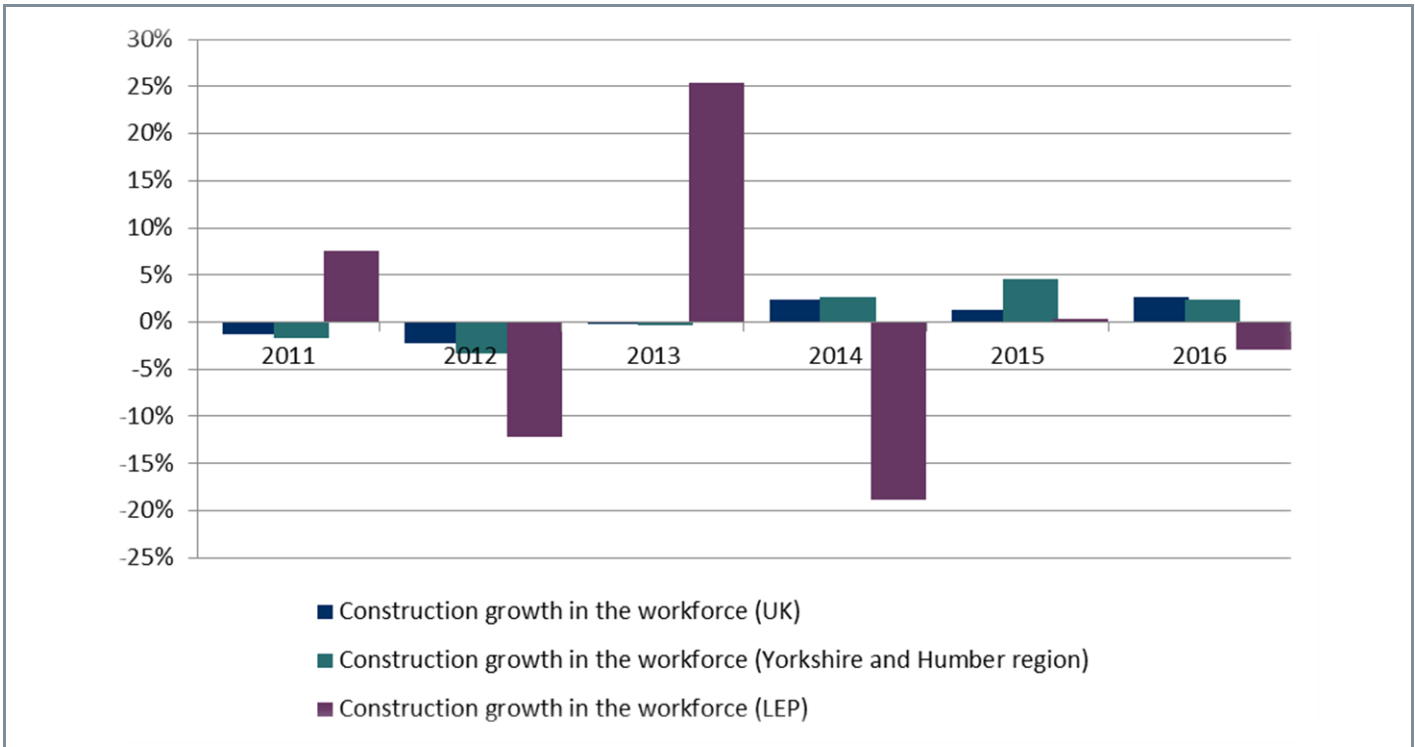


Figure 7: Year on year change in Construction Employment (Experian/CITB & NOMIS 2016)

The number of construction firms within York, North Yorkshire and East Riding increased by 11% between 2013 and 2017, to just under 6,000 businesses. Much of this increase (575 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 21% increase in micro sized firms during the same period. The York, North Yorkshire and East Riding accounts for around 26% of construction firms based in Yorkshire and Humber.

For reference the number of construction firms in the UK has increased by 14% between 2013 and 2017. Ref Figure 8.

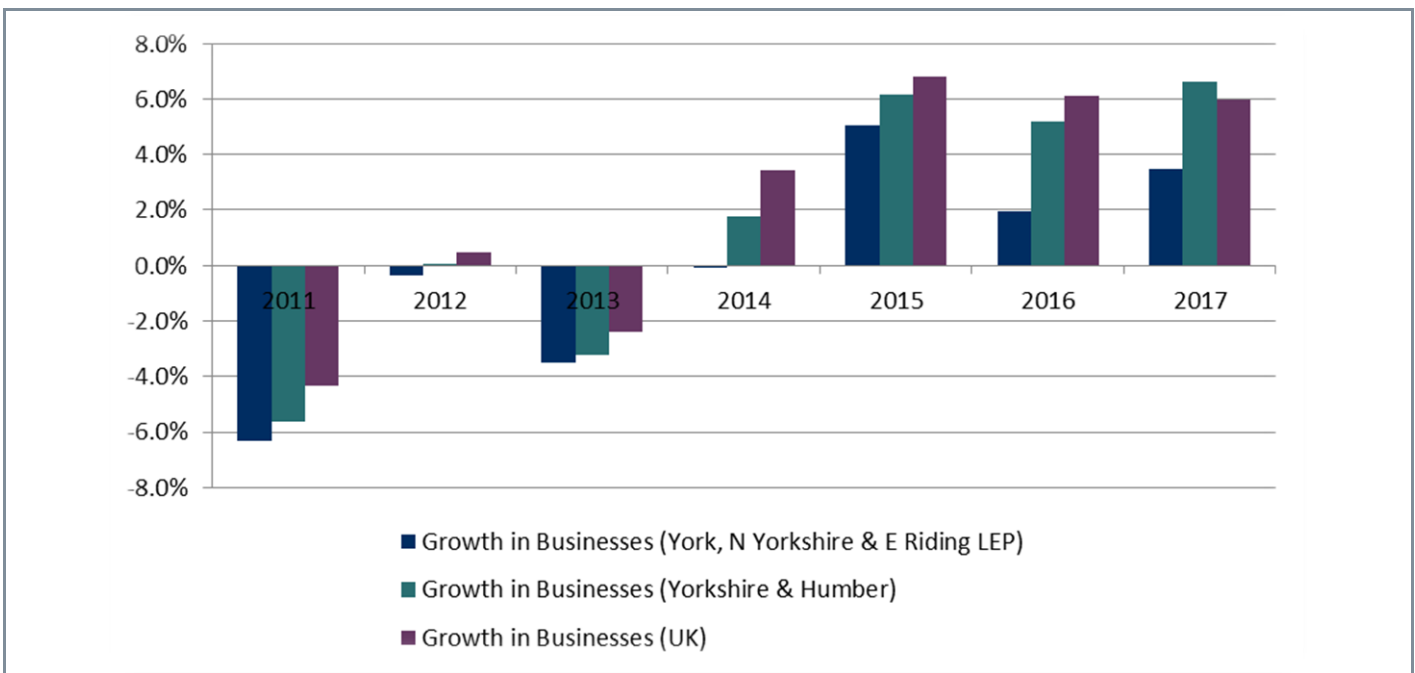


Figure 8: Year on year change in Construction Businesses (UK Business Count, NOMIS 2017)

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 5.5 people in 2017 compared to an average of 6 in 2013.

Figure 9 shows the distribution of construction businesses within the York, North Yorkshire and East Riding LEP, and Figure 10 shows the distribution of the construction workforce.

Comparing business to workforce distribution indicates that York and Richmondshire have a higher share of employment compared to share of businesses meaning that the firms based there tend to be larger, employing on average 10.7 people. This situation is reversed in East Riding, Harrogate, Hambleton, Scarborough, Selby and Craven 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 3.7 people in Scarborough.

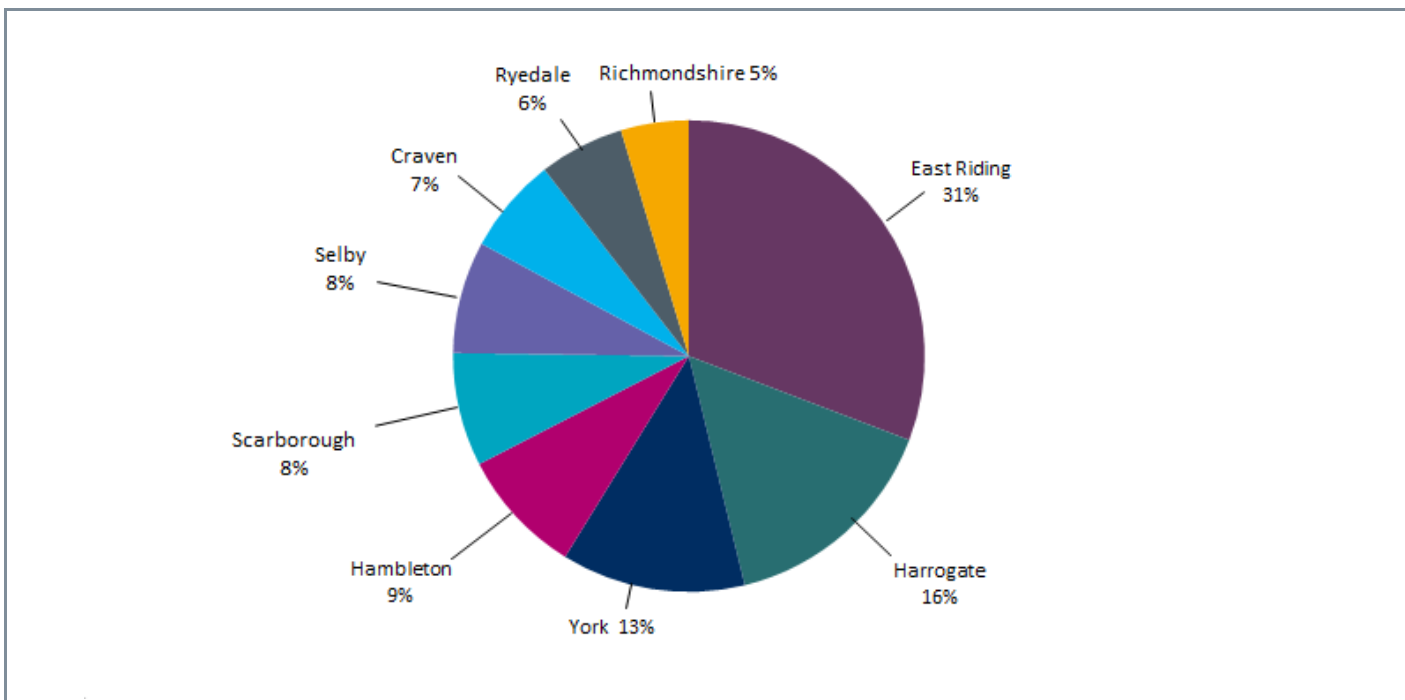


Figure 9: Distribution of construction businesses within the York, North Yorkshire and East Riding (UK Business Count, NOMIS 2017)

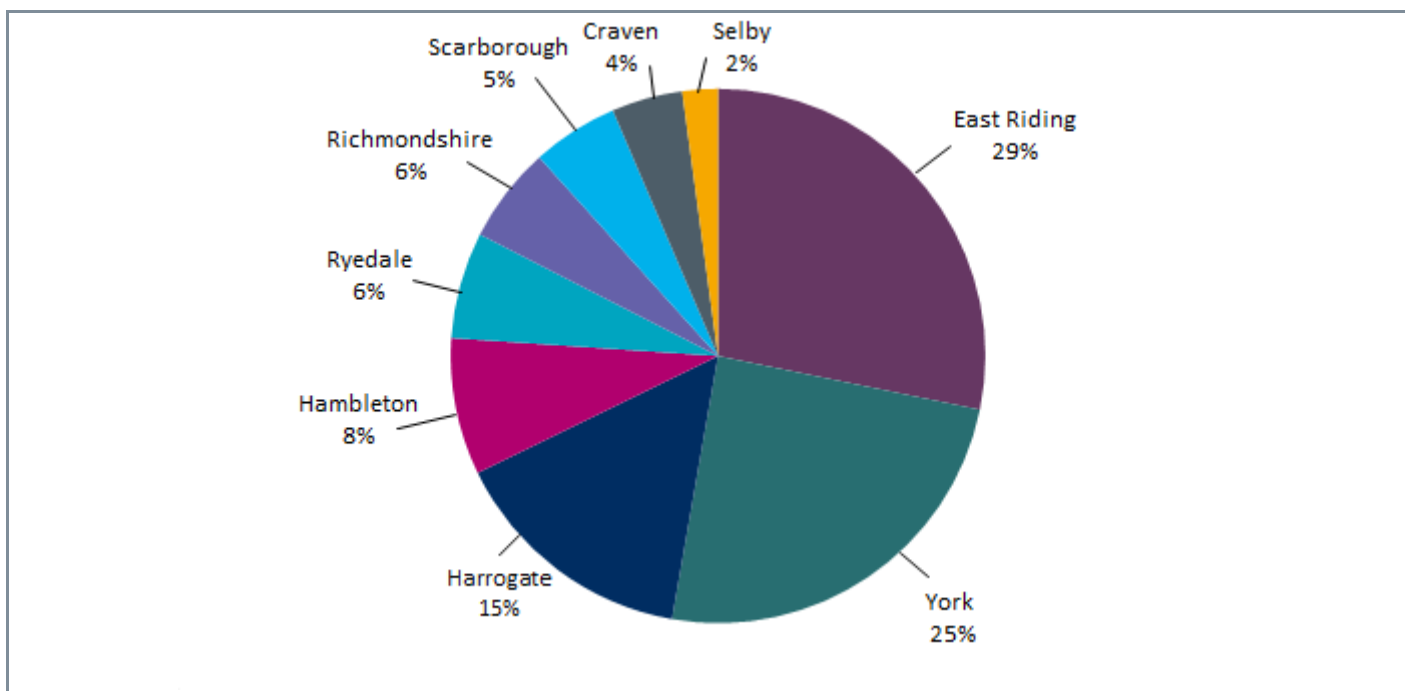


Figure 10: Construction employment by area within York, North Yorkshire and East Riding (2017, NOMIS)

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 broadly in line with the level of self-employment in the York, North Yorkshire and East Riding LEP 38%, and slightly lower than the figure for Yorkshire and Humber as a whole at 40%. The level of self-employment in the LEP area has decreased steadily over the last five years by 24%. There has been a contrasting picture in the Yorkshire and Humber region as a whole which has seen an increase of 26% 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.

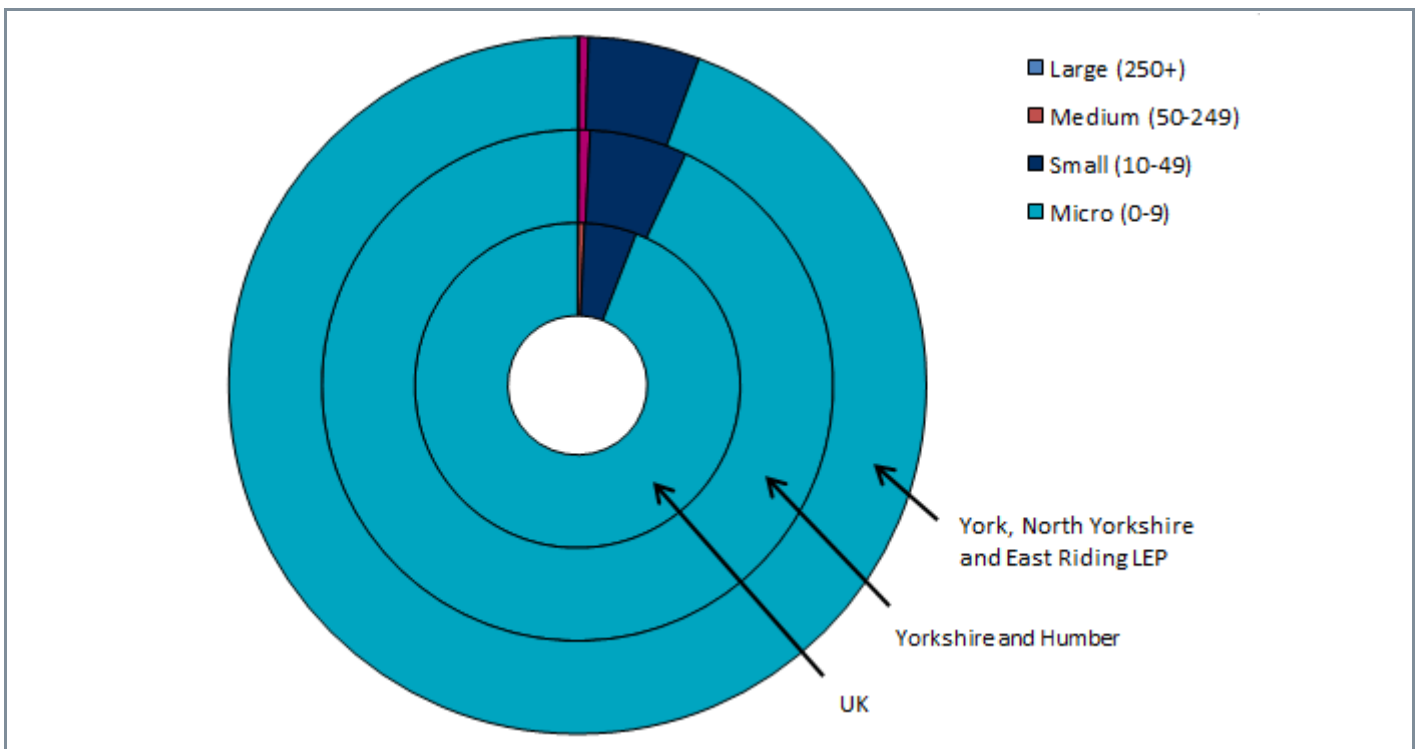


Figure 11: Size of Construction Businesses (UK Business Count, NOMIS 2017)

Nearly all of the net growth in construction businesses between 2013 and 2017 within the York, North Yorkshire and East Riding LEP, a total of 565 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 15 firms employing between 10-49 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, 2016 (Source Experian & CITB)

Occupation	York, North Yorkshire and East Riding LEP	Yorkshire and Humber
Skilled trades		
Wood trades and interior fit-out	3,262	18,324
Electrical trades and installation	3,199	17,974
Plumbing and HVAC Trades	2,542	14,278
Labourers nec*	1,448	8,136
Building envelope specialists	1,440	8,092
Painters and decorators	1,059	5,947
Specialist building operatives nec*	787	4,421
Bricklayers	1,009	5,670
Roofers	835	4,691
Plasterers	1,064	5,978
Plant mechanics/fitters	736	4,133
Plant operatives	304	1,709
Glaziers	572	3,213
Floorers	505	2,835
Logistics	222	1,247
Steel erectors/structural fabrication	545	3,064
Scaffolders	409	2,297
Civil engineering operatives nec*	645	3,625
Managerial, professional and office based roles		
Other construction professionals and technical staff	2,207	12,396
Other construction process managers	2,387	13,408
Senior, executive, and business process managers	2,475	13,904
Surveyors	974	5,471
Construction Project Managers	535	3,005
Civil engineers	696	3,911
Construction Trades Supervisors	740	4,156
Architects	108	605
Non-construction professional, technical, IT, and other office-based staff	4,945	27,783
Non-construction operatives	828	4,654
Total	36,477	204,929

*nec = not elsewhere classified

4. TRAINING PROVISION

4.1. MAIN POINTS

York, North Yorkshire and East Riding has:

- 87% 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, wood trades and interior fit-out, bricklayers, electrical trades and installation and plumbing and HVAC trades.

Construction training provision has fallen by 33% in the York, North Yorkshire and East Riding over the four academic years from 2012/13 to 2015/16, with the number of new starters dropping from 1,166 to 782 during that time. All local authorities within the LEP area have witnessed declines in construction starts, with the exception of Craven where starts increased by 1%.

CITB analysis of Education and Skills Funding Agency (ESFA) Individualised Learner Records from 2012/13 through to 2015/16 academic years for construction learners shows that:

- The York, North Yorkshire and East Riding accounts for 19% of identified construction related training across the Yorkshire and Humber region – a proportion that has changed little over the last four years.
- The fall in the total number of learners starting all construction across the LEP (33%), has been slightly more pronounced than the 27% 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 54% between 2012/13 and 2015/16 thanks to large increases in Richmondshire, East Riding and Selby. Apprenticeship starts across the wider Yorkshire and Humber region have also increased by 54% over the same time.
- There has been a large drop in other Education and Training learner starts across both the LEP (down by 40%) and Yorkshire and Humber as a whole.
- Overall there has been a shift in the York, North Yorkshire and East Riding 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). Only one local authority within the LEP has seen a small decline in the number of apprenticeship starts from 97 to 94 in Harrogate from 2012/13 to 2015/16.

The information shown in Table 5: Competence qualification Learner Aims in York, North Yorkshire and East Riding as a % of total Learner Aims in Yorkshire and Humber as a whole (all qualification levels) has been produced by mapping qualification reference numbers and titles to the most appropriate Construction Skills Network occupations. This has been built up over a number of years by CITB with over 1,800 qualifications reviewed and linked where possible. Note: there are some qualifications that have broad or generic titles that cannot be linked to distinct occupations.

Table 5: Competence qualification Learner Aims in York, North Yorkshire and East Riding 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	Total Achievements	Total
Total	20%	22%	16%	18%	4,210	19%
Main occupations						
Plant Operatives	24%	28%	17%	21%	1,400	23%
Wood trades and interior fit-out	28%	23%	18%	23%	760	23%
Bricklayers	29%	40%	27%	33%	570	32%
Electrical trades and installation	20%	14%	14%	12%	260	14%
Plumbing and HVAC Trades	4%	10%	10%	15%	260	10%
Occupations with good provision						
Painters and decorators	20%	30%	20%	22%	230	23%
Plant mechanics/fitters	80%	45%	58%	48%	160	61%
Specialist building operatives nec*	12%	19%	20%	19%	150	17%
Glaziers	12%	15%	19%	15%	100	17%
Occupations to Monitor						
Civil engineering operatives nec*	23%	6%	14%	6%	90	12%
Floorers	19%	19%	19%	7%	60	15%
Plasterers and dry liners	7%	14%	16%	12%	60	12%
Low Overall Learner Volumes						
Building envelope specialists	3%	13%	0%	19%	40	7%
Roofers	12%	3%	4%	5%	20	6%
Construction Trades Supervisors	5%	9%	10%	0%	20	7%
Scaffolders	21%	3%	2%	11%	10	9%
Steel erectors/structural	50%	3%	26%	0%	10	15%
Other construction professionals & technical	4%	1%	6%	5%	10	4%
Construction managers	0%	17%	4%	0%	10	2%
Logistics	0%	0%	0%	0%	0	0%

*nec – not elsewhere classified

Note: Total learner aims are across the period 2012-2013 to 2015-16 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 York, North Yorkshire and East Riding LEP. It takes into account that roughly 18% 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.

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 Civil engineering operatives nec*, Floorers and Plasterers and dry liners, the share of training within the LEP is lower than would be expected. It is possible that individuals within the York, North Yorkshire and East Riding 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 Roofers and Steel erectors/structural, training has declined sharply from a higher level which may indicate a loss of local training facilities. 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 2015/16 69 different providers have delivered training in the York, North Yorkshire and East Riding area. However, there is a consistent pattern with 87% of construction training being delivered by the ten largest providers. Ref Table 6.

Table 6: Top 10 providers within the York, North Yorkshire and East Riding (Source: CITB/ESFA)

Provider	2012-13	2013-14	2014-15	2015-16	Total	Total (%)	% Qualifications Ofqual Registered
The Manchester College	2,153	1,633	920	444	7,747	33.1%	17.3%
York College	558	431	458	331	2,667	11.4%	91.8%
Craven College	421	547	363	305	2,362	10.5%	53.2%
Grimsby Institute of Further and Higher Education	399	335	349	301	2,084	8.9%	74.3%
East Riding College	381	276	295	305	1,943	8.1%	87.8%
Hull College*	194	199	180	145	1,057	4.6%	83.1%
Calderdale College	204	224	44		676	3.0%	100.0%
YH Training Services Limited	241	62	59	63	729	2.7%	89.4%
Bishop Burton College	60	84	112	94	504	2.2%	65.1%
Selby College	105	70	76	95	546	2.2%	82.1%

York College is one of the largest providers of training across the LEP area, and the vast majority of these qualifications are Ofqual registered. Conversely Craven College and the Bishop Burton College provide a below average proportion of qualifications that are Ofqual registered. (The average for all training providers in the York, North Yorkshire and East Riding is 78.9%). This requires further investigation but may not necessarily be a negative issue – e.g. training may be for specialised job specific activities commissioned by employers.

It is believed that the majority of training listed as Manchester College was delivered by Novus, a subsidiary of The Manchester College that provides training to those in HM Prisons.

*Harrogate College is not listed in the Skills Funding Agency data and so it is believed that some of the listings for Hull College will actually be for “Hull College Group” that includes data for Harrogate College. However Hull is easily accessible for students based in the East Riding and so provision is also likely to be delivered in Hull.

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 York, North Yorkshire and East Riding LEP, there have been large decreases in learner starts in most local authority areas with the exception of relatively stable provision in Craven, shown in 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	Change 2012-2015	% Net change
Craven	296	352	321	300	4	1%
East Riding of Yorkshire	1,002	857	941	857	-145	-14%
Hambleton	354	141	180	150	-204	-58%
Harrogate	356	365	270	213	-143	-40%
Richmondshire	184	87	61	46	-138	-75%
Ryedale	64	65	39	41	-23	-36%
Scarborough	424	438	286	304	-120	-28%
Selby	196	207	185	152	-44	-22%
York	795	823	852	783	-12	-2%
Grand Total	3,592	3,233	3,042	2,747	-845	-24%

Almost three quarters of this training is at Level 2 or above, slightly higher in Hambleton at 90% and slightly lower in Craven at 46%.

Overall, the York, North Yorkshire and East Riding has experienced a slightly larger drop in construction training between, 2012/13 and 2015/16 than the wider Yorkshire and Humber (-24% and -18% 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 LEP and the region both increased by 54%.

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 – YORKSHIRE & HUMBER REGION

- 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%).

Table 8 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 8: 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. NORTH YORKSHIRE'S & EAST RIDING'S GEOGRAPHY

It is worth considering the geography of the LEP area that includes large areas of relatively sparsely populated country and smaller town but is close to areas of economic activity – e.g. The Tees Valley, Kingston upon Hull and the West Yorkshire conurbation. It is likely that these centres of activity outside the LEP area will have a net effect of drawing workers into them from the LEP area.

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 being that they grew up there or 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

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. 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. THE IMPACT OF BREXIT

In initial consultation, stakeholders of the York, North Yorkshire & East Riding LEP 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
- Labourers nec*
- Wood trades and interior fit-out
- Specialist building operatives 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.

Building envelope specialists; bricklayers; plumbing and HVAC trades; roofers; glaziers; floorers; electrical trades and installation plus scaffolders.

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 York, North Yorkshire & East Riding 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.

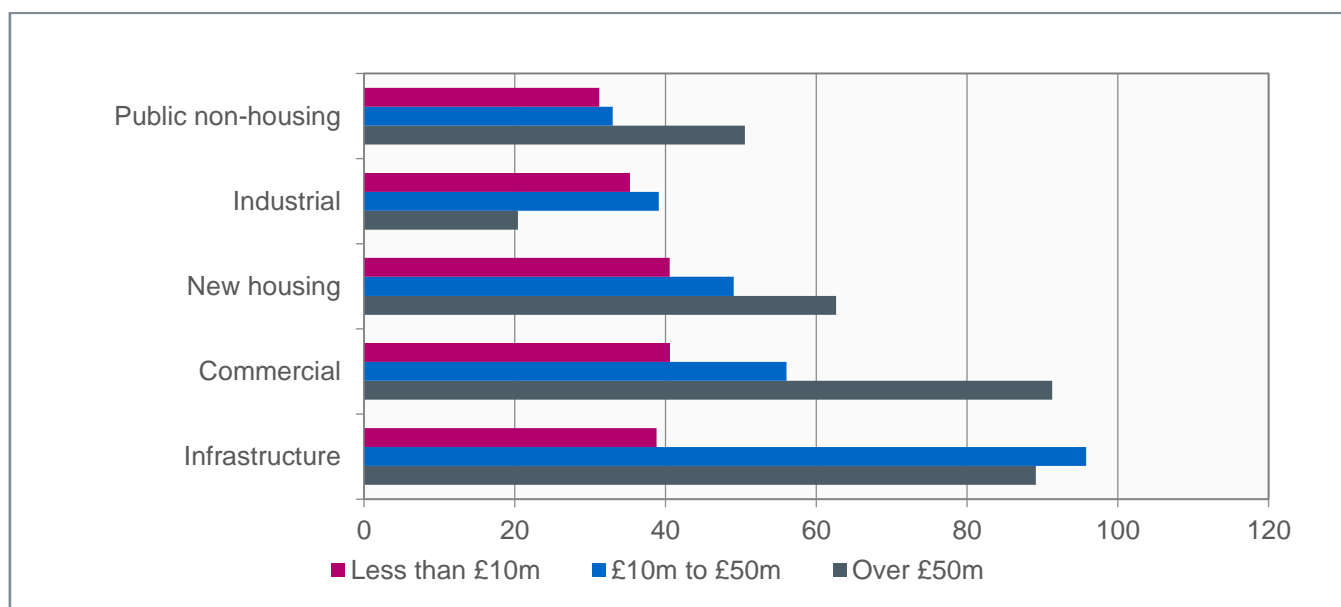


Figure 12: Average number of weeks from planning to work on site, UK2010-2013 (source UKCG/Glenigan)

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 the Yorkshire & Humberside region indicate that it accounts for 34% 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 9: Occupational breakdown of demand for York, North Yorkshire & East Riding LEP area against current employment (Source CITB/WLC)

Occupation	Employment	Risk
Skilled trades		
Painters and decorators	1,075	2.61
Plant operatives	300	1.84
Logistics	225	1.81
Labourers nec*	1,475	1.64
Wood trades and interior fit-out	3,300	1.57
Specialist building operatives nec*	800	1.49
Building envelope specialists	1,450	1.44
Bricklayers	1,025	1.42
Plumbing and HVAC Trades	2,575	1.30
Roofers	850	1.23
Glaziers	575	1.20
Floorers	500	1.20
Electrical trades and installation	3,225	1.13
Scaffolders	425	1.10
Plasterers & dry liners	1,075	1.05
Plant mechanics/fitters	750	0.91
Steel erectors/structural fabrication	550	0.62
Civil engineering operatives nec*	650	0.59
Professions and office based roles		
Architects	100	6.69
Construction project managers	550	1.48
Other construction process managers	2,425	1.38
Senior, executive, and business process managers	2,500	1.30
Other construction professionals and technical staff	2,225	1.27
Construction trades supervisors	750	1.12
Surveyors	975	1.06
Civil engineers	700	0.95
Non-construction professional, technical, IT & office-based	5,000	1.31
Non-construction operatives	850	0.75

Table 12 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 12 those occupations highlighted:

- **RED** – [Top quartile] are at high risk of an immediate shortfall of workers and are worthy of urgent consideration for action to increase numbers of skilled workers.
- **AMBER RED** – [Second quartile] appear to be at risk of a shortfall and should be reviewed to determine where opportunities for further training and development exist
- **AMBER** – [Third quartile] still show some risk of a shortfall but 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 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 York, North Yorkshire and East Riding (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 occupation 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 occupations?

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

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

Plus: other construction process managers; other construction professionals and technical staff.

For surveyors (relatively high demand); 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 & 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 wood trades and interior fit-out, bricklayers, plant operatives, electrical trades and installation, plumbing and HVAC Trades, painters & decorators, plant mechanics/fitters, civil engineering operatives nec* and roofers
- There are occupations, such as plasterers and dry liners, glaziers, specialist building operatives nec*, scaffolders, floorers, building envelope specialists, construction trades supervisors and steel erectors/structural 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 10.

Table 10: 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	Four years training achievements as percentage of peak demand
Wood trades and interior fit-out	1.57	5190	23% good	14.6%
Plumbing and HVAC Trades	1.30	3350	10%	7.8%
Other construction process managers	1.38	3325		
Painters and decorators	2.61	2800	23% good	8.2%
Labourers nec*	1.64	2400		
Building envelope specialists	1.44	2100	7% poor	1.9%
Bricklayers	1.42	1450	32% good	39.3%
Specialist building operatives nec*	1.49	1200	17%	12.5%

7. CONCLUSIONS AND RECOMMENDATIONS

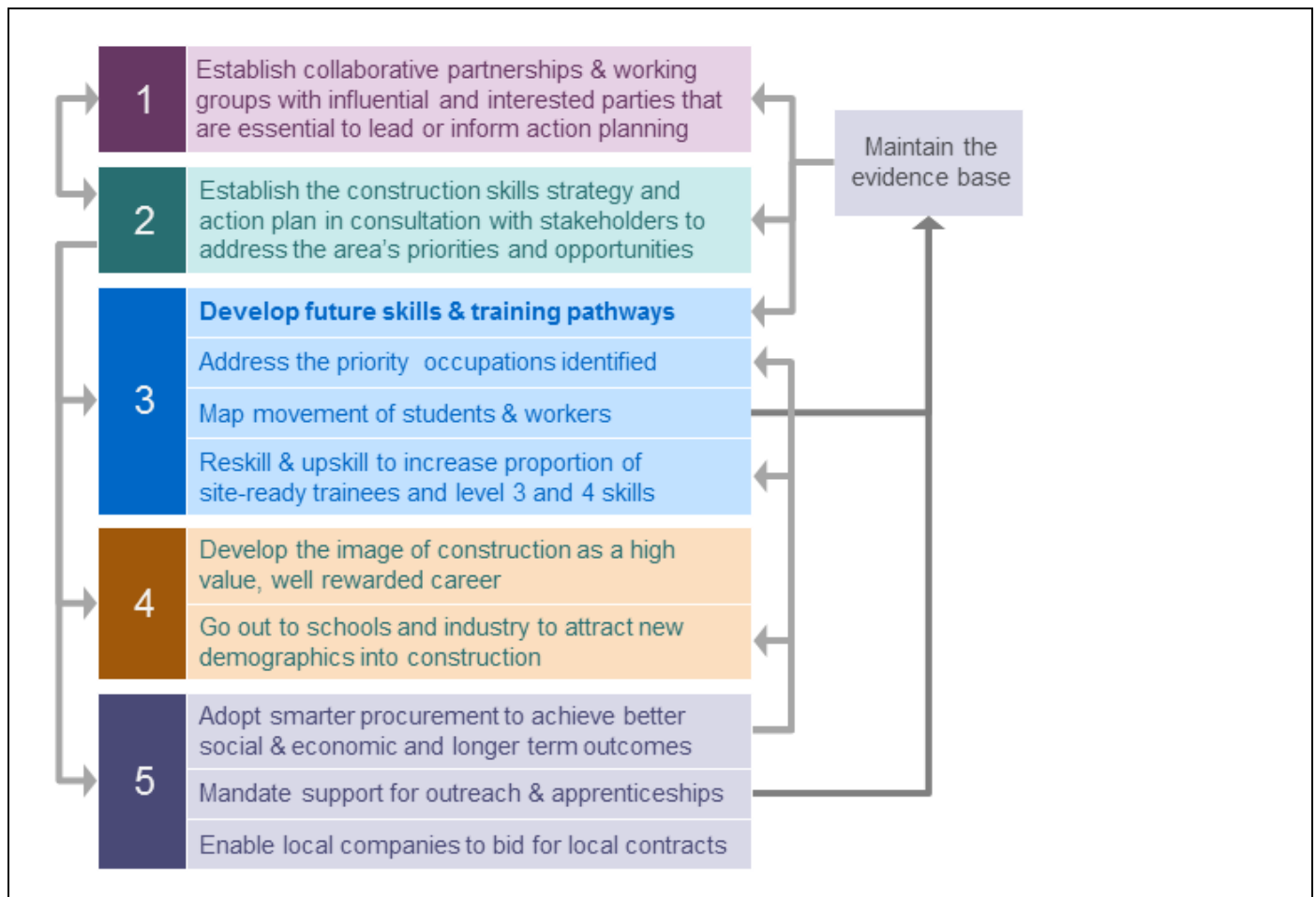
The aim of the York, North Yorkshire & East Riding LEP should be to achieve progress in addressing the long term and immediate challenges that the construction industry faces in the area. Balancing the supply of construction workers and skills against future demand and ensuring that a well-qualified workforce is in place is likely to be assisted by the Local Enterprise Partnership 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 York, North Yorkshire & East Riding LEP area will suffer a shortage for some critical 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.

There are six integrated recommendations that follow a logical progression.

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 York, North Yorkshire & East Riding 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



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 York, North Yorkshire & East Riding LEP area work together.

Some initial progress has already been made – for example the housing board is taking seriously the need to address targets for new homes to be built. 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. In particular, the LEP has commitment to maintain the provision of new housing. However, there is already demand for and an apparent shortage of site based housing construction skills. 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 York, North Yorkshire & East Riding LEP area construction skills strategy and action plan which recognises collective and potentially unique actions and solutions that may be required across the 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 York, North Yorkshire & East Riding 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 87% of Further Education (FE) training is provided by ten providers; so the greatest potential impact is through mediated collaboration with and between the FE colleges.

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 York, North Yorkshire & East Riding 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	High demand trades	High risk trades
<p>The report identifies occupations for which there is relatively high demand AND a risk of a shortfall.</p> <ul style="list-style-type: none"> • Wood trades and interior fit-out • Plumbing & HVAC Trades • Other construction process managers • Other construction professionals & technical staff • Painters and decorators • Labourers • Building envelope specialists • Bricklayers • Specialist building operatives nec* 	<ul style="list-style-type: none"> • Painters and decorators • Plant operatives • Logistics • Labourers • Wood trades & interior fit-out • Specialist building operatives • Construction project managers • Building envelope specialists • Bricklayers • Other construction process managers • Plumbing and HVAC Trades 	<p>Trades at immediate risk of a shortage locally</p> <ul style="list-style-type: none"> • Wood trades and interior fit-out • Electrical trades and installation • Plumbing & HVAC Trades • Other construction process managers • Other construction professionals & technical staff • Painters & decorators • Labourers • Building envelope specialists • Bricklayers • Specialist building operatives • Plasterers & dry liners

- b. The LEP has stated in consultation its aim 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 operate 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.

- 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.

Construction training needs to improve the success rate of producing site-ready, competent, multi-skilled workers.

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.

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. 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.
- f. 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:
- g. Address any anticipated specific local needs and ensure that training delivers what employers need as part of a complete package of training initiatives.
- h. 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).
- i. 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 York, North Yorkshire & East Riding LEP area and further afield and that will increasingly need to utilise developing technology e.g. Building Information Modelling (BIM).
- j. 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 York, North Yorkshire & East Riding 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.

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.

Public bodies have a requirement under the Public Services (Social Value) Act to ensure procurement addresses wider social, environmental and economic benefits.

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.

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 York, North Yorkshire & East Riding 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 York, North Yorkshire & East Riding LEP area.

7.6. MAINTAINING & ENHANCING 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 York, North Yorkshire & East Riding LEP is given 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
V3	1 March 2018	First collated draft
V4	12 March 2018	Draft shared with LEP for consultation
V5	April 2018	Amendments from LEP & updates

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CITB Analysis

Construction skills gap analysis for the York, North Yorkshire & East Riding



Appendices to the Construction
skills gap analysis for the York,
North Yorkshire & East Riding area
April 2018



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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 area: 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 Appendix Table 1. The construction/engineering proportions have 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.

Appendix Table 1: 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 York, North Yorkshire & East Riding LEP area 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 Appendix Table 1. Projects in the Glenigan dataset and the NICP are combined (ensuring that there is no double counting) to create a pipeline of 'known' projects for the area. We have only considered those projects which are specifically allocated to the York, North Yorkshire & East Riding LEP area in the NICP (i.e. projects at a national level have not been considered).

The Autumn 2016 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 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:

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

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 LEP level, it is assumed that the proportion of the total output represented by housing R&M is the same at the 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:

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

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 Appendix Table 1.

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.

Appendix Table 2: 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 managers³	
(1115) Chief executives and senior officials (1131) Financial managers and directors (1132) Marketing and sales directors (1133) Purchasing managers and directors (1135) Human resource managers and directors (1251) Property, housing and estate managers (1136) Information technology & telecommunications directors (2150) Research and development managers	(1162) Managers and directors in storage and warehousing (1259) Managers and proprietors in other services nec (1139) Functional managers and directors nec (2133) IT specialist managers (2134) IT project and programme managers (3538) Financial accounts managers (3545) Sales accounts and business development managers
2 Construction project managers³	
(2436) Construction project managers and related professionals	
3 Other construction process managers³	
(1121) Production managers and directors in manufacturing (1122) Production managers and directors in construction (1161) Managers and directors in transport and distribution (1255) Waste disposal and environmental services managers	(3567) Health and safety officers (3550) Conservation and environmental associate professionals
4 Non-construction professional, technical, IT, and other office-based staff (excl. managers)³	
(3131) IT operations technicians (3132) IT user support technicians (3534) Finance and investment analysts and advisers (3535) Taxation experts (3537) Financial and accounting technicians (3563) Vocational and industrial trainers and instructors (3539) Business and related associate professionals nec (3520) Legal associate professionals (3565) Inspectors of standards and regulations (2136) Programmers and software development professionals (2139) IT and telecommunications professionals nec (3544) Estate agents and auctioneers (2413) Solicitors (2419) Legal professionals nec (2421) Chartered and certified accountants (2424) Business & financial project management professionals (2423) Management consultants and business analysts (4216) Receptionists (4217) Typists and related keyboard occupations (3542) Business sales executives (4122) Book-keepers, payroll managers and wages clerks (4131) Records clerks and assistants (4133) Stock control clerks and assistants (7213) Telephonists (7214) Communication operators (4215) Personal assistants and other secretaries (7111) Sales and retail assistants (7113) Telephone salespersons	(3541) Buyers and procurement officers (3562) Human resources and industrial relations officers (4121) Credit controllers (4214) Company secretaries (7129) Sales related occupations nec (7211) Call and contact centre occupations (7219) Customer service occupations nec (9219) Elementary administration occupations nec (2111) Chemical scientists (2112) Biological scientists and biochemists (2113) Physical scientists (3111) Laboratory technicians (3421) Graphic designers (2463) Environmental health professionals (2135) IT business analysts, architects and systems designers (2141) Conservation professionals (2142) Environment professionals (2425) Actuaries, economists and statisticians (2426) Business and related research professionals (4124) Finance officers (4129) Financial administrative occupations nec (4138) Human resources administrative occupations (4151) Sales administrators (4159) Other administrative occupations nec (4162) Office supervisors (7130) Sales supervisors (7220) Customer service managers and supervisors (4161) Office managers

³ Managerial, professional & office based staff

5 Construction trades supervisors⁴	
(5250) Skilled metal, electrical and electronic trades supervisors	
(5330) Construction and building trades supervisors	
6 Wood trades and interior fit-out⁴	
(5315) Carpenters and joiners	(5442) Furniture makers and other craft woodworkers
(8121) Paper and wood machine operatives	(5319) Construction and building trades nec (25%)
7 Bricklayers⁴	
(5312) Bricklayers and masons	
8 Building envelope specialists⁴	
(5319) Construction and building trades nec (50%)	
9 Painters and decorators⁴	
(5323) Painters and decorators	(5319) Construction and building trades nec (5%)
10 Plasterers⁴	
(5321) Plasterers	
11 Roofers⁴	
(5313) Roofers, roof tilers and slaters	
12 Floorers⁴	
(5322) Floorers and wall tillers	
13 Glaziers⁴	
(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%)	(9132) Industrial cleaning process occupations
(5319) Construction and building trades nec (5%)	(5449) Other skilled trades nec
15 Scaffolders⁴	
(8141) Scaffolders, staggers and riggers	
16 Plant operatives⁴	
(8221) Crane drivers	(8222) Fork-lift truck drivers
(8129) Plant and machine operatives nec	(8229) Mobile machine drivers and operatives nec
17 Plant mechanics/fitters⁴	
(5223) Metal working production and maintenance fitters	(9139) Elementary process plant occupations nec
(5224) Precision instrument makers and repairers	(5222) Tool makers, tool fitters and markers-out
(5231) Vehicle technicians, mechanics and electricians	(5232) Vehicle body builders and repairers
18 Steel erectors/structural fabrication⁴	
(5311) Steel erectors	(5319) Construction and building trades nec (5%)
(5215) Welding trades	(5211) Smiths and forge workers
(5214) Metal plate workers, and riveters	(5221) Metal machining setters and setter-operators
19 Labourers nec⁴	
(9120) Elementary construction occupations (100%)	
20 Electrical trades and installation⁴	
(5241) Electricians and electrical fitters	(5242) Telecommunications engineers
(5249) Electrical and electronic trades nec	
21 Plumbing and heating, ventilation, and air conditioning trades⁴	
(5314) Plumbers and heating and ventilating engineers	(5319) Construction and building trades nec (5%)
(5216) Pipe fitters	(5225) Air-conditioning and refrigeration engineers
22 Logistics⁴	
(8211) Large goods vehicle drivers	(3541) Buyers and purchasing officers (50%)
(8212) Van drivers	(4134) Transport and distribution clerks and assistants
(9260) Elementary storage occupations	

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 operatives⁴	
(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 engineers³	
(2121) Civil engineers	
26 Other construction professionals and technical staff³	
(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 Architects³	
(2431) Architects	
28 Surveyors³	
(2433) Quantity surveyors (2434) Chartered surveyors	

APPENDIX C. GLENIGAN PROJECTS REMOVED FROM YORK, NORTH YORKSHIRE & EAST RIDING

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

Appendix Table 3: Removed Glenigan projects from York, North Yorkshire & East Riding

	Heading	Local authority	Value (£m)	Start date	End date	Reason for omission
1	Electricity Generation Plant	East Riding	0.0	21/02/2018	17/05/2018	Missing Values
2	Office Block (Extension)	East Riding	0.3			Missing dates
3	Convenience Store	Scarborough	0.3			Missing dates
4	Convenience store	East Riding	0.3			Missing dates
5	Industrial Building (Extension)	East Riding	0.3			Missing dates
6	Church Meeting Hall	Harrogate	0.3			Missing dates
7	Workshop/Storage Building	East Riding	0.3			Missing dates
8	Storage Facilities (Extension/Alterations)	Scarborough	0.3			Missing dates
9	Play Barn/Cafe (Extension)	East Riding	0.4			Missing dates
10	9 Workshop Units	East Riding	0.5			Missing dates
11	Golf Club (Extension)	East Riding	0.5			Missing dates
12	Youth Club (Extension)	York	0.5			Missing dates
13	Church/Community Hall (Extension/Alterations)	York	0.5			Missing dates
14	Oil/Gas Exploration Area	North Yorkshire	0.5			Missing dates
15	Golf Course (Conversion)	York	0.5			Missing dates
16	Retail Unit	Hambleton	0.5			Missing dates
17	10 Flats (Conversion/Alterations)	York	0.5			Missing dates
18	School Building (Extension)	East Riding	0.5			Missing dates
19	Leisure Centre (Extension/Alterations)	Yorkshire Dales National Park	0.6			Missing dates
20	Office Building	East Riding	0.6			Missing dates
21	Village Hall	Scarborough	0.6			Missing dates
22	Car Showroom & MOT Bay	East Riding	0.6			Missing dates
23	Village Hall (Extension)	East Riding	0.6			Missing dates
24	16 Flats (Conversion/Alterations)	Selby	0.6			Missing dates
25	Sheltered Residential Care Home	East Riding	0.6			Missing dates
26	Warehouse	Yorkshire Dales National Park	0.7			Missing dates
27	Agricultural Machinery Shed	Harrogate	0.7			Missing dates
28	Industrial Building	North Yorkshire	0.7			Missing dates
29	Care Home (Extension)	East Riding	0.7			Missing dates
30	Dairy Unit (Extension)	York	0.7			Missing dates
31	6 Garages	Scarborough	0.7			Missing dates
32	Shop Mezzanine Floor (Alterations)	York	0.7			Missing dates
33	School Pavilion (Extension)	Hambleton	0.7			Missing dates
34	Church & Community Hall (Extension/Alterations)	East Riding	0.7			Missing dates

	Heading	Local authority	Value (£m)	Start date	End date	Reason for omission
35	Hotel (Extension/Alterations)	Harrogate	0.7			Missing dates
36	10 Houses	Harrogate	0.8			Missing dates
37	Care Home (Extension)	North Yorkshire	0.8			Missing dates
38	Public House (Extension)	East Riding	0.8			Missing dates
39	Caravan Showroom (New/Extension)	East Riding	0.8			Missing dates
40	13 Houses (Conversion/Alterations)	North Yorkshire	0.8			Missing dates
41	Guest House (Conversion/Extension)	Richmondshire	0.8			Missing dates
42	Industrial Workshop (Extension)	York	0.8			Missing dates
43	11 Houses	Selby	0.8			Missing dates
44	12 Holiday Lodges	North Yorkshire	0.9			Missing dates
45	School (Extension)	York	0.9			Missing dates
46	14 Houses	East Riding	1.0			Missing dates
47	Restaurant & Workshop/Office	York	1.0			Missing dates
48	Industrial Storage Unit	East Riding	1.0			Missing dates
49	14 Houses/Luxury Houses	York	1.0			Missing dates
50	Pond & Pumping Station	North Yorkshire	1.0			Missing dates
51	22 Flats (Conversion)	Scarborough	1.1			Missing dates
52	Respite Care Centre (Extension)	York	1.1			Missing dates
53	Office Building	Harrogate	1.2			Missing dates
54	Warehouse (Extension)	York	1.2			Missing dates
55	Warehouse & Bakery Building	East Riding	1.3			Missing dates
56	17 Holiday Lodges	Craven	1.3			Missing dates
57	Church & Church Hall (New/Alterations)	East Riding	1.4			Missing dates
58	20 Flats & 9 Houses (New/Alterations)	Harrogate	1.5			Missing dates
59	21 Houses & 1 Bungalow	East Riding	1.5			Missing dates
60	Workshop	Hambleton	1.5			Missing dates
61	6 Aircraft Hangars & 1 Storage	East Riding	1.6			Missing dates
62	3 Industrial/Storage Units	East Riding	1.7			Missing dates
63	24 Bungalows & 1 Care Home	East Riding	1.7			Missing dates
64	23 Holiday Lodges	East Riding	1.7			Missing dates
65	Church (Extension)	East Riding	1.9			Missing dates
66	Visitor Centre	York	2.0			Missing dates
67	Petrol Filling Station	York	2.1			Missing dates
68	33 Holiday Lodges/1 Managers Flat/Caravan Pitches (New/Extension)	East Riding	2.1			Missing dates
69	Recycling Warehouse Building	Craven	2.2			Missing dates
70	30 Houses	East Riding	2.3			Missing dates
71	Hotel (Extension/Alterations)	York	2.4			Missing dates
72	Garden Centre (Extension/Alterations)	Harrogate	2.5			Missing dates
73	Motor Vehicle Dealership	York	2.5			Missing dates
74	Hotel (Extension)	East Riding	3.0			Missing dates
75	Retail Development	North Yorkshire	3.2			Missing dates
76	Industrial Storage & Workshop Unit	East Riding	3.5			Missing dates

	Heading	Local authority	Value (£m)	Start date	End date	Reason for omission
77	Visitors/Maintenance Building (Extension)	East Riding	3.5			Missing dates
78	Solar Farm	Harrogate	4.1			Missing dates
79	94 Flats (Conversion)	Harrogate	4.5			Missing dates
80	Warehouse (Extension)	York	4.5			Missing dates
81	3 Commercial Units	East Riding	4.7			Missing dates
82	Flood Defence Wall	East Riding	5.0			Missing dates
83	Warehouse (Extension)	East Riding	5.4			Missing dates
84	53 Student Flats	Scarborough	5.6			Missing dates
85	Non Food Retail Unit & Manufacturing Facility	Craven	6.5			Missing dates
86	2 Industrial/Warehouse Units (Conversion/Extension)	Richmondshire	8.5			Missing dates
87	Equine Facilities Centre (New/Extension)	York	9.5			Missing dates
88	119 Houses & 43 Townhouses	Selby	11.2			Missing dates
89	13 Commercial Units	Harrogate	13.0			Missing dates
90	5 Industrial Units	Harrogate	13.6			Missing dates
91	Hospital Mental Health Unit (Extension)	Harrogate	16.0			Missing dates
92	238 Residential Units	Harrogate	17.9			Missing dates
93	Horticultural Glasshouse	East Riding	56.1			Missing dates
94	Waste to Energy	North Yorkshire	200.0			Missing dates
95	Waste to Energy	York	200.0			Missing dates
96	Gas Storage Facility	East Riding	500.0			Missing dates
97	Management Consulting Services Framework	York	4.5	01/07/2014	26/06/2018	Consultancy
98	Consultant Consortia Framework	York	24.0	01/04/2015	01/04/2018	Consultancy
99	YORresouce Construction Management Services	East Riding	600.0	06/08/2012	06/08/2018	Consultancy
100	Quantity Surveying Framework	York	0.5	01/09/2014	01/09/2018	Consultancy
101	Professional Services Framework	East Riding	200.0	01/08/2016	29/07/2019	Consultancy
102	Consultancy Framework	York	10.0	01/04/2017	03/04/2021	Consultancy
103	AMP 7 Framework	York	1500.0	01/04/2020	01/04/2025	In the NICP

APPENDIX D. SIGNIFICANT GLENIGAN PROJECTS IN YORK, NORTH YORKSHIRE & EAST RIDING

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

Appendix Table 4: Significant Glenigan projects in York, North Yorkshire & East Riding

	Description	Local authority	Value (£m)	Start date	End date	Project type
1	Extra Care Housing (Framework)	Hambleton	850.0	03/08/2015	03/08/2021	New housing
2	Mineral Transport System	North Yorkshire	642.5	02/10/2017	04/10/2021	Infrastructure
3	Construction Framework	Selby	150.0	03/10/2016	05/10/2020	New housing
4	Highway Maintenance	York	80.3	09/04/2012	09/04/2022	Infrastructure
5	Factory (Conversion)	Selby	71.2	03/10/2016	01/10/2018	Private Commercial
6	1199 Houses/Bungalows & Neighbourhood Centre/Industrial Units	Hambleton	54.4	16/09/2018	16/10/2019	New housing, Private Commercial, Public Non-housing, Private Industrial, Infrastructure
7	East Area Contractors Framework	East Riding	52.8	01/04/2016	31/03/2020	Public Non-housing
8	Power Station	East Riding	51.4	22/04/2021	18/04/2024	Infrastructure
9	655 Homes	York	45.8	23/04/2015	27/04/2018	New housing, Private Commercial
10	230 Houses and 42 Flats	York	44.0	05/08/2013	05/08/2018	New housing
11	Food Production Plant (Extension/Alterations)	Scarborough	42.3	08/01/2018	22/10/2018	Private Industrial
12	Civil Engineering Contractors Framework Agreement	Hambleton	33.6	01/08/2016	01/08/2020	Infrastructure
13	Waste Recovery Facility	Harrogate	32.1	23/03/2015	23/06/2018	Infrastructure
14	350 Houses & 17 Flats	Harrogate	27.5	30/07/2018	30/08/2019	New housing
15	8 Flats & 1 Hotel/Restaurant	York	25.0	25/06/2018	25/06/2019	New housing, Private Commercial
16	215 Houses	York	25.0	04/07/2016	15/06/2018	New housing
17	317 Houses & 8 Flats	East Riding	24.4	08/06/2017	05/07/2018	New housing
18	228 Houses & 76 Sheltered Houses	East Riding	22.8	08/05/2017	08/05/2019	New housing
19	YORcivil Contractors Framework	East Riding	22.0	07/09/2017	07/09/2023	Infrastructure
20	Wharf/Jetty Facilities	East Riding	20.2	01/04/2019	31/08/2020	Infrastructure
21	Sports Stadium & Commercial Units	York	19.9	08/01/2018	08/07/2019	Private Industrial, Public Non-housing, Private Commercial
22	466 Houses	Scarborough	18.0	05/12/2016	03/12/2018	New housing
23	176 Houses & 14 Bungalows	Scarborough	17.6	05/12/2016	07/12/2018	New housing
24	233 Residential Units	Harrogate	17.5	02/04/2018	29/04/2019	New housing
25	Military Technical & Living Accommodation	Richmondshire	17.0	02/10/2017	01/10/2018	Public Non-housing
26	Care Home	York	17.0	16/04/2018	16/04/2020	Public Non-housing
27	226 Houses	Hambleton	17.0	23/04/2018	20/05/2019	New housing
28	241 Houses	Scarborough	16.3	25/06/2018	25/07/2019	New housing
29	5 Offices & 4 Retail	Harrogate	16.1	12/03/2018	10/12/2018	Private Commercial
30	Factory (Extension)	East Riding	15.6	18/09/2017	26/03/2018	Private Industrial

	Description	Local authority	Value (£m)	Start date	End date	Project type
31	201 Houses	Selby	15.1	30/07/2018	30/08/2019	New housing, Private Commercial
32	7 Retail Units	York	15.0	12/03/2018	08/10/2018	Private Commercial
33	151 Extra Care Flats	York	15.0	08/01/2018	18/02/2019	New housing
34	149 Houses/54 Flats/22 Bungalows & 1 School	North Yorkshire	13.5	13/12/2017	11/12/2019	New housing, Public Non-housing
35	263 Flats & 1 Convenience Store	York	13.2	22/04/2018	20/05/2019	New housing, Private Commercial
36	176 Houses	Harrogate	13.2	02/01/2017	27/07/2018	New housing
37	Demolition	Scarborough	12.9	12/12/2017	11/01/2019	Infrastructure
38	55 Extra Care Units	Harrogate	12.1	03/01/2017	18/05/2018	New housing
39	175 Houses/Bungalows	Hambleton	12.0	28/05/2018	28/06/2019	New housing
40	180 Houses	East Riding	11.7	13/09/2018	13/09/2019	New housing
41	15 Distribution/Warehouse & Offices	Richmondshire	11.3	30/07/2018	30/09/2019	Private Industrial
42	150 Holiday Lodges/Static Caravans	East Riding	11.3	21/05/2018	19/11/2018	Private Commercial
43	130 Houses/Flats	Harrogate	11.3	12/02/2018	11/03/2019	New housing
44	101 Residential Units/Community Centre/Multi Storey Car Park	York	11.2	25/09/2017	31/05/2019	New housing, Public Non-housing, Infrastructure
45	148 Houses/Flats	East Riding	11.1	19/02/2018	18/03/2019	New housing
46	17 Retirement Sheltered Flats	East Riding	10.2	06/12/2018	09/01/2020	New housing
47	5 Restaurants & 1 Cinema (New/Alterations)	Scarborough	10.1	12/02/2018	24/09/2018	Private Commercial
48	145 Houses	Harrogate	10.0	31/07/2018	31/07/2019	New housing
49	Apart - Hotel Development	York	10.0	08/01/2018	04/02/2019	Private Commercial
50	121 Houses/Bungalows & 12 Flats	Selby	10.0	26/01/2018	26/02/2019	New housing
51	115 Houses & 16 Flats	Harrogate	9.8	06/03/2017	27/04/2018	New housing
52	Production & Distribution Unit	East Riding	9.1	14/01/2019	22/07/2019	Private Industrial
53	Public House (Conversion/Extension)	Scarborough	9.0	05/02/2018	17/09/2018	Private Commercial
54	114 Houses/10 Flats & 6 Bungalows	East Riding	9.0	05/03/2018	04/03/2019	New housing
55	116 Houses/Townhouses & 12 Flats	Harrogate	8.9	19/03/2018	15/04/2019	New housing
56	103 Houses & 22 Flats	Harrogate	8.7	01/10/2018	25/10/2019	New housing
57	Residential & Commercial	Selby	8.5	18/09/2018	18/08/2020	Private Industrial
58	Warehouse	Hambleton	8.2	07/08/2017	26/01/2018	Private Industrial
59	Hotel	York	7.7	02/04/2018	12/11/2018	Private Commercial
60	Vegetable Processing & Freezing Factory	East Riding	7.6	19/03/2018	19/09/2018	Private Industrial
61	YORbuild2 North Area Contractors Framework	Scarborough	6.5	01/04/2016	31/03/2020	Public Non-housing
62	Peatland (Restoration)	Hambleton	6.4	05/02/2018	13/08/2018	Infrastructure
63	Gas Transmission Pipeline (Replacement)	East Riding	6.4	31/10/2016	02/12/2019	Infrastructure
64	Car Showroom	York	6.3	23/10/2017	30/07/2018	Private Commercial
65	Track Resignalling	East Riding	6.1	08/02/2016	08/03/2018	Infrastructure
66	2 Factory Buildings	East Riding	5.9	19/03/2018	24/09/2018	Private Industrial

	Description	Local authority	Value (£m)	Start date	End date	Project type
67	Mental Health Hospital	York	5.7	05/03/2018	06/09/2019	Public Non-housing
68	Indoor Trampoline Centre	Harrogate	5.6	02/02/2018	02/09/2018	Private Commercial
69	2 Growing Houses	Selby	5.5	12/03/2018	17/09/2018	Private Industrial
70	Cliffs (Refurbishment)	North Yorkshire	4.5	07/05/2018	04/11/2019	Infrastructure
71	5 Employment Units	Harrogate	4.1	18/09/2017	01/07/2018	Private Industrial
72	54 Holiday Lodges (New/Alterations)	Hambleton	4.1	06/08/2018	14/01/2019	Private Commercial
73	Water Treatment Works (Alterations)	Scarborough	4.0	18/07/2017	14/12/2018	Infrastructure
74	Cold Store (Extension)	Harrogate	3.8	24/04/2018	30/10/2018	Private Industrial
75	50 Houses	Selby	3.8	18/06/2018	18/08/2018	New housing
76	Hospital (Refurbishment)	North Yorkshire	3.4	12/03/2018	09/09/2019	Public Non-housing
77	Renewable Energy Facility	East Riding	2.6	19/03/2018	28/01/2019	Infrastructure
78	53 Care Apartment	East Riding	2.3	23/01/2018	23/10/2018	Public Non-housing
79	Care Home	East Riding	2.2	30/07/2018	29/04/2019	Public Non-housing
80	Industrial Building (Extension)	East Riding	2.1	05/02/2018	13/08/2018	Private Industrial
81	Care Home	Scarborough	1.7	16/04/2018	14/01/2019	Public Non-housing
82	Roads improvement works	Scarborough	1.6	04/06/2018	05/11/2018	Infrastructure

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V5	April 2018	Amendments from LEP & updates

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