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Construction Skills Gap Analysis for the North East Local Enterprise Partnership

Final Report



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1. Executive Summary

1.1. Introduction

This report presents the results of a research exercise to create an 'evidence base' to determine the employment and skills opportunities emerging in the construction industry in the area of the North East LEP.

The construction sector is an 'enabler' of economic growth and job creation and so it is critical for the North East LEP to understand the sector as far as possible, and support or enable the industry in delivering local employment, economic and social gains. It is an important step to have invested in the creation of this evidence base and consult with stakeholders in its development.

The analysis starts to indicate where training interventions may have the greatest positive effect to ensure local opportunities are maximised and that the North East LEP area has the right future curriculum in place to deliver demand led solutions.

This report will provide a tangible starting point for future planning and enable dialogue with stakeholders to enable evidence based decision making.

The report only considers the construction industry and has not assessed other industries or wider economic and social factors taking place in the North East LEP area.

1.2. The steps followed in producing the report

The research detailed in the report consists of both quantitative and qualitative analysis that has taken place. The steps in this process are explained in detail in the report but are summarised as:

1. Gather data on known construction projects expected to take place in the North East LEP area.
2. Forecasting demand for construction using the CITB Labour Forecasting Tool (LFT). Using coefficients based on experience of previous construction, the LFT forecasts construction demand by sector and then occupation for the known projects. Estimates of other work are included.
3. An analysis of the existing supply of workers is compared with labour demand forecasts to identify occupations at risk of a potential shortfall might exist now and in the future.
4. Consideration is given to questions of mobility, employment status and experience of the workforce to give some context to the demand and gap analysis.
5. Where available, data on training achievements in recent years is also considered, again to give context to the demand and gaps analysis.
6. A set of recommendations is made based on the main findings of the report plus CITB's wider experience of the UK construction industry and trends in employment and training as well as wider economic circumstances.

1.2.1. Construction occupations

Relevant explanatory information is provided in the relevant section of the report. Additional explanation and background is also provided in the appendices – notably, the descriptions of the each of the **28 occupations** referred to in this report is provided at Appendix Table 15.

1.2.2. Demand analysis – peak year and whole pipeline comparisons

In some cases the demand analysis refers to the data drawn from the pipeline of projects for the whole five year period assessed – this is because it offers the most complete data on what construction is likely to take place across the LEP area.

However as the completeness of that data tails away over time, this report also refers to data for the year for which the greatest activity appears to take place (2017). That is because it gives the most helpful estimate of what the total demand for construction will be at any one moment in time by occupation and provides the most reliable benchmark for employment demand.

1.3. Known demand

The analysis of submitted planning application data provides a known pipeline of construction projects the value of which is shown in the following table. The significant projects represent those projects that are greater than the average for the total number of projects for the North East area. This shows that a relatively small proportion of the number of projects (14%) make up the majority of the value of construction (88%).

Summary of the projects assessed in establishing the demand pipeline

PIPELINE projects reviewed	Total projects	Significant projects	%
Projects	684	95	14%
Total construction spend	£15,108m	£13,336m	88%

In addition to these known projects, there will be construction activity for which planning applications are not required – these tend to be repair and maintenance and smaller projects. Calculated estimates have been given for this work in the main report. Also, the peak for known projects takes place during 2017 but this will regularly be supplemented with new planning applications. So the total construction pipeline for the next five years will exceed significantly the VALUE indicated in the table above. The greatest construction activity in the known pipeline is for infrastructure, new housing and private commercial developments.

The division of construction spend by sector for 2017

Project Type	Construction spend in 2017 (2016 values - £m)	% of total
Infrastructure	709	38%
New Housing	574	31%
Private Commercial	284	15%
Private Industrial	174	9%
Public Non-housing	131	7%
Total	1871	100%

1.4. Prioritisation by occupation

There are a number of factors to consider in identifying priority occupations.

1. **Demand** – how great is the demand for workers in this occupational category? (This normally correlates approximately with existing supply.) In the report, demand is ranked across 28 occupations.
2. **Risk** – what is the perceived risk of a shortfall of workers in any one occupational group in comparison with the other 27 occupations? Risk has been given a numerical value that indicates the relative risk of a shortfall in workers. There are four occupations for which it appears there is an **immediate gap** between supply of, and demand for, workers.
3. **Site based or remote workers** – do workers in an occupational category need to be on site? Each occupation has been broadly divided into four groups:
 - **Non-construction workers** and **Office based workers**. These job roles are filled by people who spend the majority of their time based away from the construction site. They often need not be based within the locality of the site. However some of these roles may visit the site for the purposes of management, quality control or inspection.
 - **Mobile workers**. These job roles are filled by occupations that do require some attendance on site. However they may also be highly mobile and so can travel significant distances to get to the site from outside the region. Or they are roles that require a significant element of off-site manufacture.
 - **On-site workers**. These skilled trades roles tend to require the majority of time to be spent on site, so they need to be based within reasonable travelling distance on a day to day basis during construction.
4. **Provision of training** – for some occupations (in most cases skilled trades) some data is available on the number of relevant qualification achievements completed in the previous three academic years – this gives an indication of the training provision available and so should be helpful in engaging with training providers, and in curriculum development, to address potential shortfalls or opportunities.

1.5. Demand by occupation for known projects

The following table shows the occupations listed in the report, for which there appears to be greatest demand for the known pipeline of projects. The figures show demand at the points for which peak demand data is available (2017), based on data drawn from the Glenigan database, supplemented with the NICP and compared with CSN data.

Construction occupations – demand in number of workers for peak activity – top two quartiles

Rank	Occupation	Peak demand
1	Non-construction professional, technical, IT, and other office-based staff	9,323
2	Wood trades and interior fit-out	6,156
3	Other construction professionals and technical staff	5,216
4	Other construction process managers	4,775
5	Electrical trades and installation	4,362
6	Senior, executive, and business process managers	4,278
7	Plumbing and HVAC Trades	4,057
8	Labourers nec*	3,262
9	Building envelope specialists	2,653
10	Painters and decorators	2,592
11	Surveyors	2,028
12	Bricklayers	1,991
13	Specialist building operatives nec*	1,545
14	Civil engineers	1,359

1.6. Occupations at risk of a shortfall

In comparing peak demand by occupation with data available on the existing workforce, we can establish an indication of any risk of a potential shortfall in workers for the North East area. The top two quartiles of the 28 occupations are listed in order of greatest potential risk of a gap between demand and supply.

On-site occupations

- Building envelope specialists
- Painters and decorators
- Glaziers
- Wood trades and interior fit-out
- Bricklayers

Professions and office based roles

- Architects
- Surveyors
- Non-construction operatives
- Logistics
- Senior, executive & business process managers
- Civil engineers
- Other construction process managers
- Construction project managers

It is important to note that provision for some of these occupations is likely to be met by supply elsewhere, particularly 'professional' occupations and those that do not need to be 'on-site'. 'On-site' occupations are highlighted in bold.

1.7. Demand AND risk of a shortfall

In addition to identifying occupations at risk of shortfall (above), one approach to identifying priority occupations is to identify those occupations for which there appears to be both high demand AND high risk of a gap between demand and existing supply. These are (unranked):

On-site occupations

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

Professions and office based roles

- Non-construction professional, technical, IT, & office-based staff
- Senior, executive, and business process managers
- Other construction process managers
- Architects
- Other construction professionals & technical staff
- Surveyors

This does not mean, and it should not be inferred, that other occupations are not: important; in demand or at risk of suffering a gap between demand and supply.

The occupations above have been highlighted only as offering a shortlist (eleven of the 28 construction occupations) where the greatest risk may be and so where the greatest benefit might be achieved by addressing any potential future shortfall. This should not be at the exclusion of considering other occupations (where there is either high demand or a high relative gap) and working with stakeholders to identify critical occupations.

1.8. Further Education training achievements

Of those occupations where FE training achievement statistics are available, there are four occupations for which training achievements appeared to have declined or are relatively low in comparison with the region. These are:

- **Wood trades and interior fit-out** – also showing high demand and high relative gap (above)
- **Bricklayers** – for which there is high demand
- **Specialist building operatives nec***
- **Building envelope specialists** – also showing high demand and high relative gap (above)

1.9. The North East's demand and economy

The demand for construction and skilled workers need to be considered in the context of other available information.

The CITB Construction Skills Network (CSN), indicates that the North East is likely to see a small annual average decline in construction demand over the coming five years (one of the weakest outlooks across the UK regions and devolved nations).

While total construction in the region may experience a small decline, this needs to be considered in the context of an industry with an ageing workforce, likely to need to replace retiring workers.

Construction is also a mobile occupation and it is possible that demand from other regions may draw workers from the North East.

Anecdotal evidence from the LEP indicates that some occupations, in particular infrastructure professionals, are already being drawn away by the higher salaries on offer from major infrastructure projects in the south.

Although overall growth may be relatively low, there will be a continuing demand for construction skills and the associated training, development and other support. This is particularly important as construction is an enabler for other critical social and economic factors like: increasing and improving housing stock, infrastructure and building manufacturing facilities.

Table of Contents

2.	INTRODUCTION.....	11
2.1.	The North East LEP strategic economic plan	11
2.2.	The area reviewed	12
3.	DEMAND ANALYSIS METHODOLOGY	13
3.1.	About labour forecasting.....	13
4.	CONSTRUCTION LABOUR DEMAND IN THE NORTH EAST LEP AREA	14
4.1.	Introduction.....	14
4.2.	Pipeline of denominated projects	14
4.2.1.	Glenigan pipeline analysis.....	14
4.2.2.	Glenigan & NICP spend analysis.....	15
4.3.	Estimate of future total labour demand	16
4.3.1.	Breakdown of labour demand by occupation.....	18
4.3.2.	Breakdown of labour demand by project type	19
4.4.	Summary of demand	19
5.	CONSTRUCTION LABOUR SUPPLY IN THE NORTH EAST LEP AREA...	20
5.1.	Existing workforce.....	20
5.2.	Training provision	25
5.3.	Apprenticeships	28
5.4.	Higher Education.....	30
5.5.	Career progression	32
5.6.	Main points – supply	32
6.	MOBILITY OF THE WORKFORCE	34
6.1.	Work history	34
6.2.	Worker origins	34
6.3.	Travel to site	35
6.4.	Site duration and change.....	35
6.5.	Sub-sector and sector mobility	36
6.6.	Leaving the sector	36
6.7.	Main points – mobility	36
7.	DEMAND AGAINST SUPPLY.....	38
7.1.	Gap Analysis	39
7.1.1.	Construction specific occupations	41
7.1.2.	Cross-sector occupations	41
7.1.3.	Mobility of some roles and the impact on risk of shortfall.....	41
7.2.	Gap Analysis – Long Term.....	42
7.3.	Gap Analysis – Training needs.....	44
8.	RECOMMENDATIONS AND CONCLUSIONS	46

List of Figures

Figure 1: The North Eastern LEP area and surrounding areas	12
Figure 2: Location of significant projects included in the analysis	15
Figure 3: Total construction labour demand including estimates for both R&M and estimates of other work	17
Figure 4: Construction labour demand by occupation in the peak year	18
Figure 5: Year on year change in Construction Employment (Experian/CITB & NOMIS 2016)	21
Figure 6: Year on year change in Construction Businesses (UK Business Count, NOMIS 2016)	21
Figure 7: Distribution of construction businesses within the North East LEP (UK Business Count, NOMIS 2016)	22
Figure 8: Construction employment by area within the North East LEP area (2016, NOMIS)	22
Figure 9: Size of Construction Businesses (UK Business Count, NOMIS 2016)	23
Figure 10: <i>Higher Education achievements per annum in the North East LEP</i> (Source: HESA)	30

List of Tables

Table 1: Key data for significant projects in Glenigan.....	14
Table 2: New-build construction spend by project type in 2017 (total denominated project pipeline).....	16
Table 3: Construction spend per infrastructure sub-type in 2017 (total denominated project pipeline).....	16
Table 4: Labour demand by work type in 2017	19
Table 5: Construction occupational breakdown, 2016 (Source Experian & CITB).....	24
Table 6: Competence qualification achievement in North East LEP as a % of total competence qualification achievements in North East region as a whole (Source: CITB/SFA).....	26
Table 7: Top 10 training providers within the North East LEP by number of starts – excluding apprenticeships (Source: CITB/SFA)	27
Table 8: <i>Unique Learner starts by area, construction subjects, all levels</i> <i>(Source: CITB/SFA)</i>	28
Table 9: <i>Unique apprenticeship starts by area (North East LEP), construction</i> <i>subjects (Source: CITB/SFA)</i>	29
Table 10: <i>Unique apprenticeship starts by occupation (North East LEP),</i> <i>construction subjects (Source: CITB/SFA)</i>	29
Table 11: Achievements on construction related degree courses at HE institutions in the North East – 2014/15 academic year (Source: HESA)	31
Table 12: Occupational breakdown of demand for North East LEP area against current employment (Source CITB/WLC)	39
Table 13: Occupational breakdown of ARR for North East region as a whole (Source CITB)	43
Table 14: Proportion of total value related to construction.....	53
Appendix Table 15: Definitions for the 28 occupations referred to in this report.....	58
Appendix Table 16: Projects listed in Glenigan that have been excluded from the demand analysis as a result of incomplete data	64
Appendix Table 17: Significant projects in the North east listed in the Glenigan data.....	70
Appendix Table 18: Region/nation employer operates in, compared with region/nation working in currently	76

2. Introduction

This report has been produced in response to a discussion held between CITB and the North East LEP seeking evidence that indicates anticipated demand for construction and associated skills needs as well as the availability of workers and training across the North East area.

The supply of labour is complex and fluid and so where possible, consideration has been given to the wider 'travel to learn' and 'travel to work' as construction workers often travel considerable distances to work and London, in particular, tends to draw in workers from a large area as well as being attractive to migrant workers.

The CITB research team specialises in analysis in this area and will compare the demand and supply picture to create a gap analysis at occupational level, to inform supply side interventions in the short, medium and longer term.

We have assessed the construction projects for which information is available looking ahead over a five year period.

2.1. The North East LEP strategic economic plan

The LEP's strategic economic plan makes clear the importance of skills to the area's development. In many cases these targets are of relevance to the construction industry and align with some of the findings of this report as well as anecdotal evidence that the authors are aware. The plan states:

Improving skills is fundamental to our future economic prosperity and will help ensure that our region has better jobs. We will continue to improve the skills pipeline in our region by:

- *Developing 'North East Ambition' – a programme that will deliver outstanding careers guidance*
- *Excelling in technical and professional education through our Further Education Colleges and private providers*
- *Working in partnership with higher education and business, to deliver job-ready graduates and high quality employment opportunities*
- *Reducing the gap between our best and lowest performing schools*
- *Maintaining employment in our 50+ workforce by helping older workers to develop their skills.*

2.2. The area reviewed

The demand analysis examined the construction projects for which details were available for the seven local authorities in the North East LEP areas:

1. County Durham
2. Gateshead
3. Newcastle upon Tyne
4. North Tyneside
5. Northumberland
6. South Tyneside
7. Sunderland.

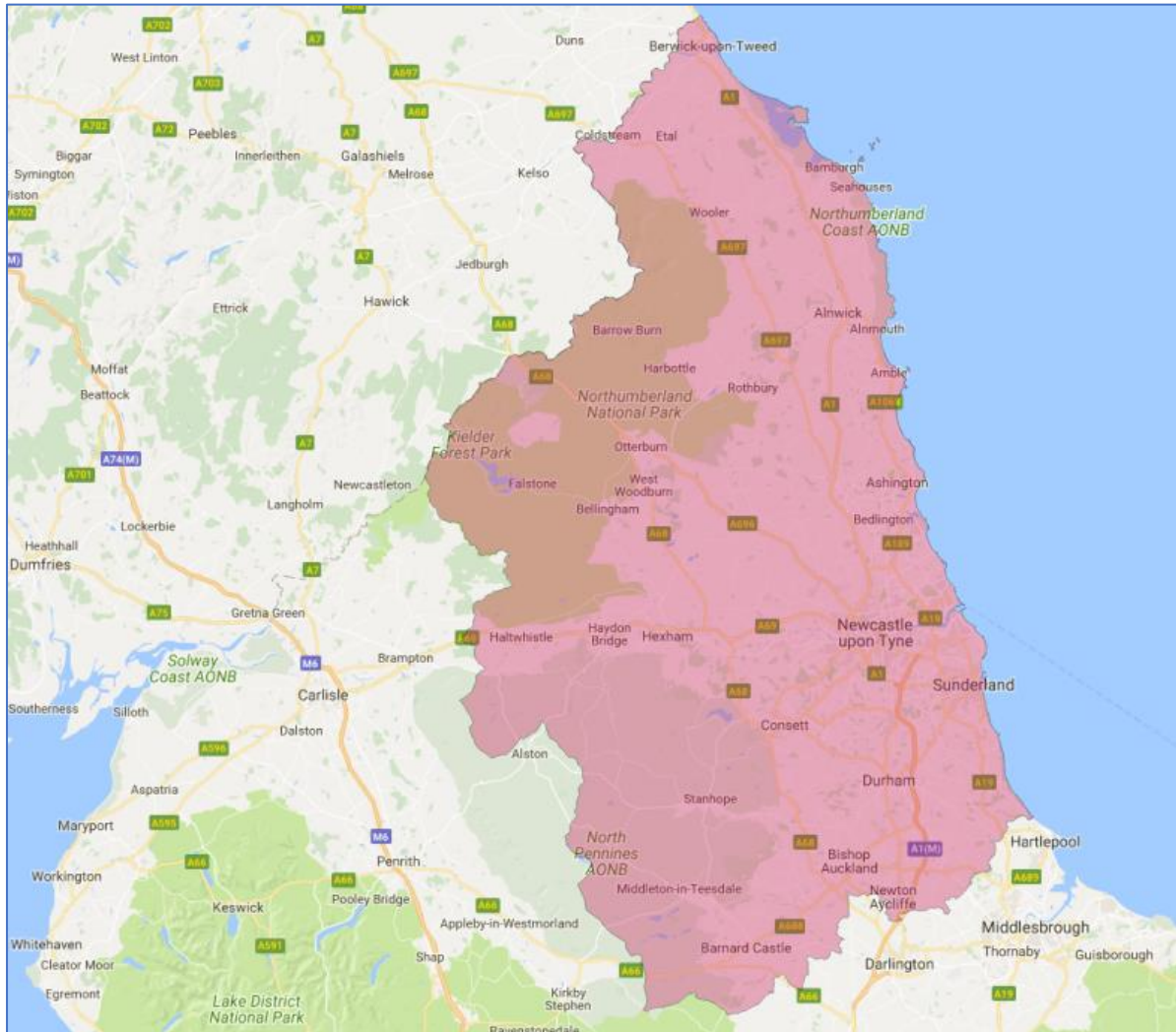


Figure 1: The North Eastern LEP area and surrounding areas

3. Demand analysis methodology

3.1. About labour forecasting

Labour demand depends on the expected level and type of construction activity within a defined geographical area. This commission involves a mixture of projects with different types of work happening at different times. Our analysis derives as complete a picture as possible of the type and timings of projects within an area. To produce the demand forecast we have utilised the following.

- **Glenigan Pipeline:** Glenigan produce a pipeline of forthcoming projects within each local authority of the UK. These are collated to allow contractors to identify leads and to carry out construction market analysis.
- This pipeline data has been supplemented with some additions provided by the LEP.
- **National Infrastructure and Construction Pipeline (NICP):** The Infrastructure and Projects Authority (formerly Infrastructure UK and Major Projects Authority compile a pipeline of UK infrastructure and construction projects and the associated annual public and private investment¹). The Autumn 2016 NICP includes details of the annual spend on each of around 720 items valued at some £500bn to 2020 and beyond.

Once this picture has been determined the labour demand for each project is estimated using our Labour Forecasting Tool (LFT).

- **Labour Forecasting Tool:** CITB's Labour Forecasting Tool is an online application that can forecast labour needs for a range of construction projects using labour coefficients derived from data provided by the Office for National Statistics (ONS). The LFT forecasts monthly skills and employment needs from a project's value and start/completion dates.
- **Construction Skills Network:** The Construction Skills Network (CSN) provides market intelligence for the UK construction industry. The data it produces highlights trends and how the industry will change year-on-year, allowing businesses to understand the current climate and plan ahead for the future.

The LFT produces an estimate of the labour demand on a monthly basis. It should be noted that the workforce will only peak for a relatively short period of time. The ramp up and ramp down to that peak may be quite large and is likely to be smoothed by local contracting markets. In light of that we have presented the average workforce during the year of the peak. Labour demand figures have been rounded to the nearest 50.

An explanation of the methodology is included in Appendix A.

¹ The Autumn 2016 pipeline includes both construction and infrastructure projects but for the purposes of this analysis we have solely used projects which are clearly defined specific projects rather than regional programmes of work.. This reduces the risk of double counting with data in Glenigan.

4. Construction labour demand in the North East LEP area

4.1. Introduction

The following sections provide an estimate of the labour demand that construction investment will create across the North Eastern LEP over the period 2017-2021. They report the outputs determined from the analysis described in Section 2 and the labour demand they generate as calculated by the Labour Forecasting Tool

4.2. Pipeline of denominated projects

4.2.1. Glenigan pipeline analysis

The initial review of the Glenigan database identified 796 projects in the NE LEP area. Of these, one project was removed because there was no value provided, and 93 were removed due to missing dates. Also excluded were 12 projects which were clearly identified as consultancy projects and six duplicated projects. 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 7% of the total pipeline. The majority of projects omitted were residential developments typically valued at between £1m and £50m. It is possible that this work will take place at some undefined 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, but an assessment of the labour demand is made in the estimates of other work from the additional projects.

The Mean Value Theorem was applied to the remainder of the pipeline to identify the significant projects. The process identified 96 significant projects accounting for just under 76% 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.

Table 1 shows the number of significant projects within the North Eastern LEP area, the percentage of spend arising from the significant projects and the total spend. The construction spend shown in this table takes account of any adjustments for engineering works and any incomplete, duplicate or consultancy projects. Values are shown in 2016 prices, the base price used in the Glenigan database.

Table 1: Key data for significant projects in Glenigan²

	Number of projects	Construction spend (£m – 2016 values)
All Glenigan projects	684	15,108
Significant Glenigan projects	95	13,336
Percentage within significant projects	14%	88%

Appendix D provides a full breakdown of the significant projects and their construction values. The peak year for the spend profile is 2017. The location of the significant projects within the North

² The values in this table are the values from the Glenigan pipeline to which the construction element percentage has been applied and thus reflect the adjusted values of infrastructure projects values to distinguish between construction and engineering construction.

Eastern LEP can be seen in Figure 2: Location of significant projects included in the analysis. The radius of the markers is proportional to the value of the work taking place.

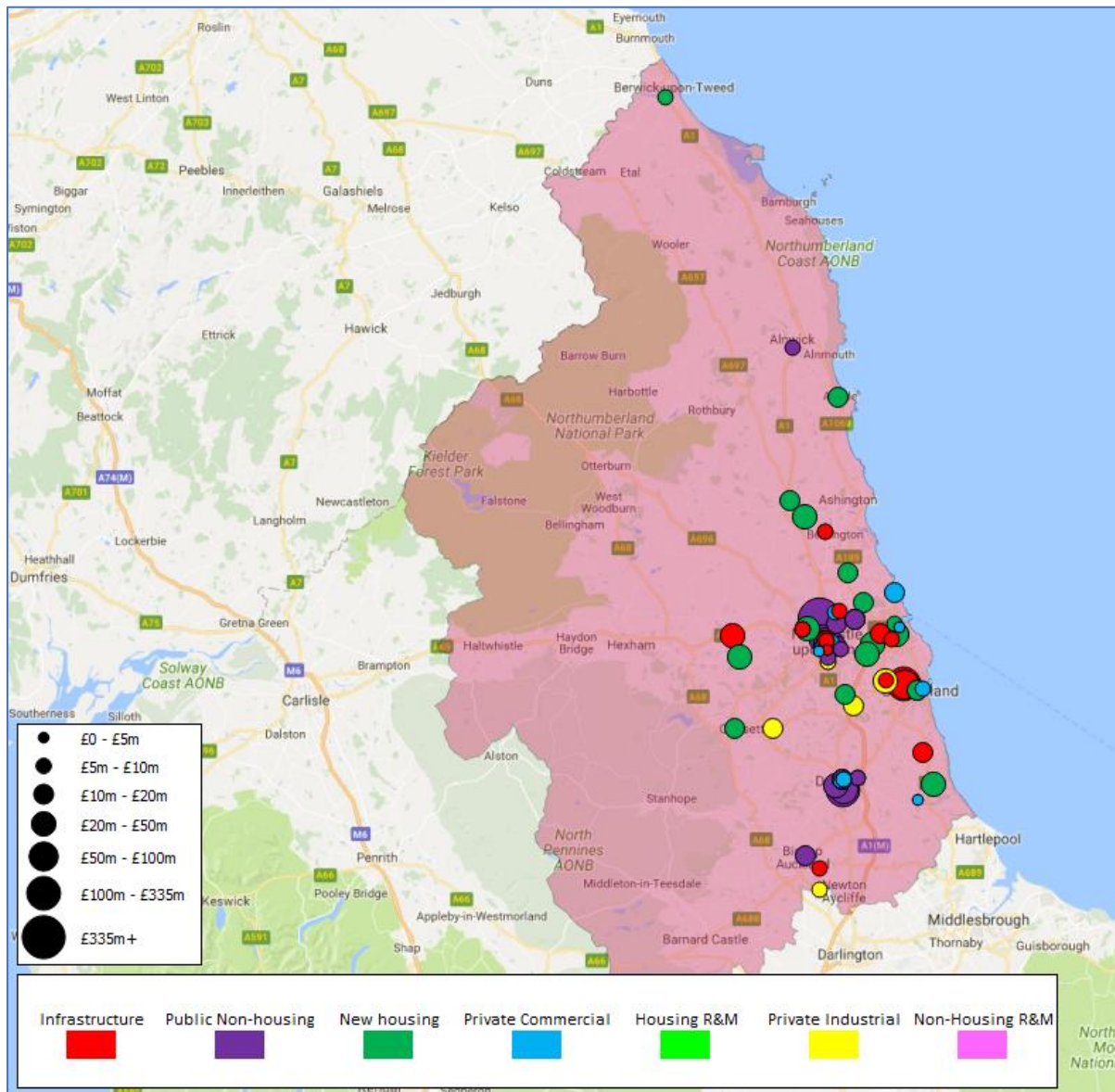


Figure 2: Location of significant projects included in the analysis

4.2.2. Glenigan & NICE spend analysis

Implementing the methodology outlined in Section 2 leads to the following findings for the peak year for denominated projects of 2017. The peak year is used because the tail off in the denominated projects is more likely to be due to a lack of future planning rather than an actual tail off in workload.

Table 2 shows the distribution by sector of new build spend for the total pipeline of denominated projects.

Table 2: New-build construction spend by project type in 2017 (total denominated project pipeline)

Project Type	Construction spend in 2017 (2016 values - £m)	% of total
Infrastructure	709	38%
New Housing	574	31%
Private Commercial	284	15%
Private Industrial	174	9%
Public Non-housing	131	7%
Total	1,871	100%

Table 3 shows the infrastructure construction spend from both Glenigan and the NICP in 2017 by sub-sector.

Table 3: Construction spend per infrastructure sub-type in 2017 (total denominated project pipeline)

Project Type	Construction spend in 2017 (2016 values - £m)	% of total
General Infrastructure	285	40%
Transport	277	39%
Water	81	11%
Energy	51	7%
Flooding	9	1%
Communications	6	1%
Total	709	100%

4.3. Estimate of future total labour demand

As outlined in the Section 2 the denominated project pipeline may not include smaller projects or repair and maintenance work. Figure 3: Total construction labour demand including estimates for both R&M and estimates of other work shows the outcomes of the analysis of future labour demand with an employment growth rate included. The solid blue area shows the labour demand arising from the new build Glenigan and NICP projects. Any R&M included in Glenigan or the NICP is also shown. The red shaded area shows the likely total labour demand arising from estimates of other work. The total construction labour demand including the volume of R&M imputed from the CSN model peaks for the area in 2017 at 69,200.

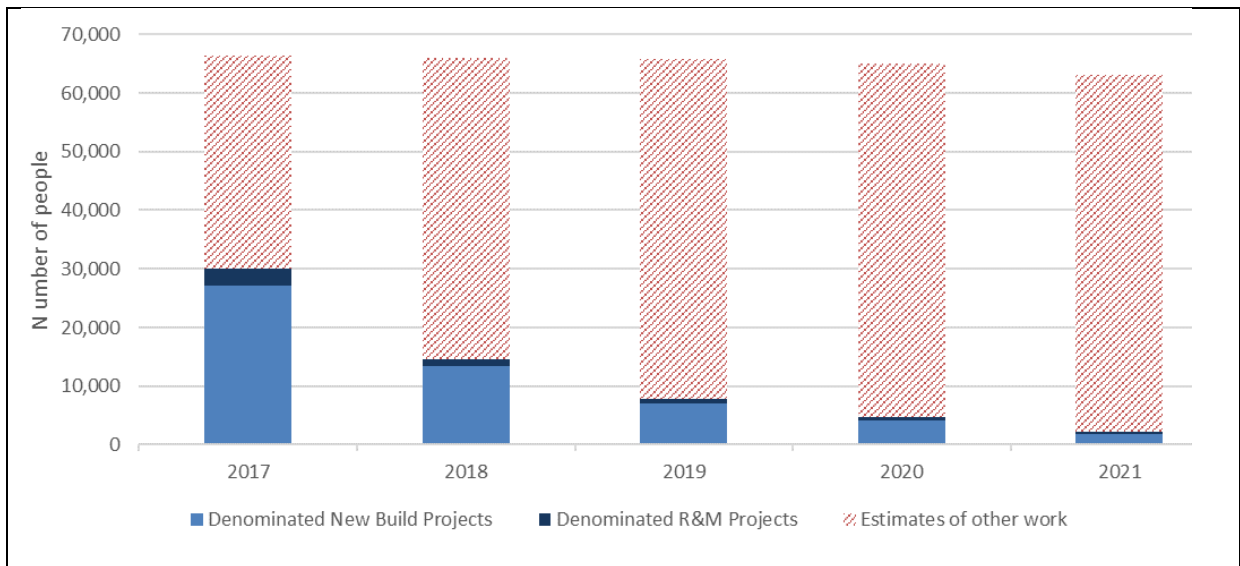


Figure 3: Total construction labour demand including estimates for both R&M and estimates of other work

4.3.1. Breakdown of labour demand by occupation

For the peak year in Glenigan of 2017 the detailed breakdown by each of the 28 occupational groups for the Glenigan and the NICP projects is shown in Figure 4: Construction labour demand by occupation in the peak year. This shows the breakdown by occupation for both the pipeline of denominated projects and the estimates of other work.

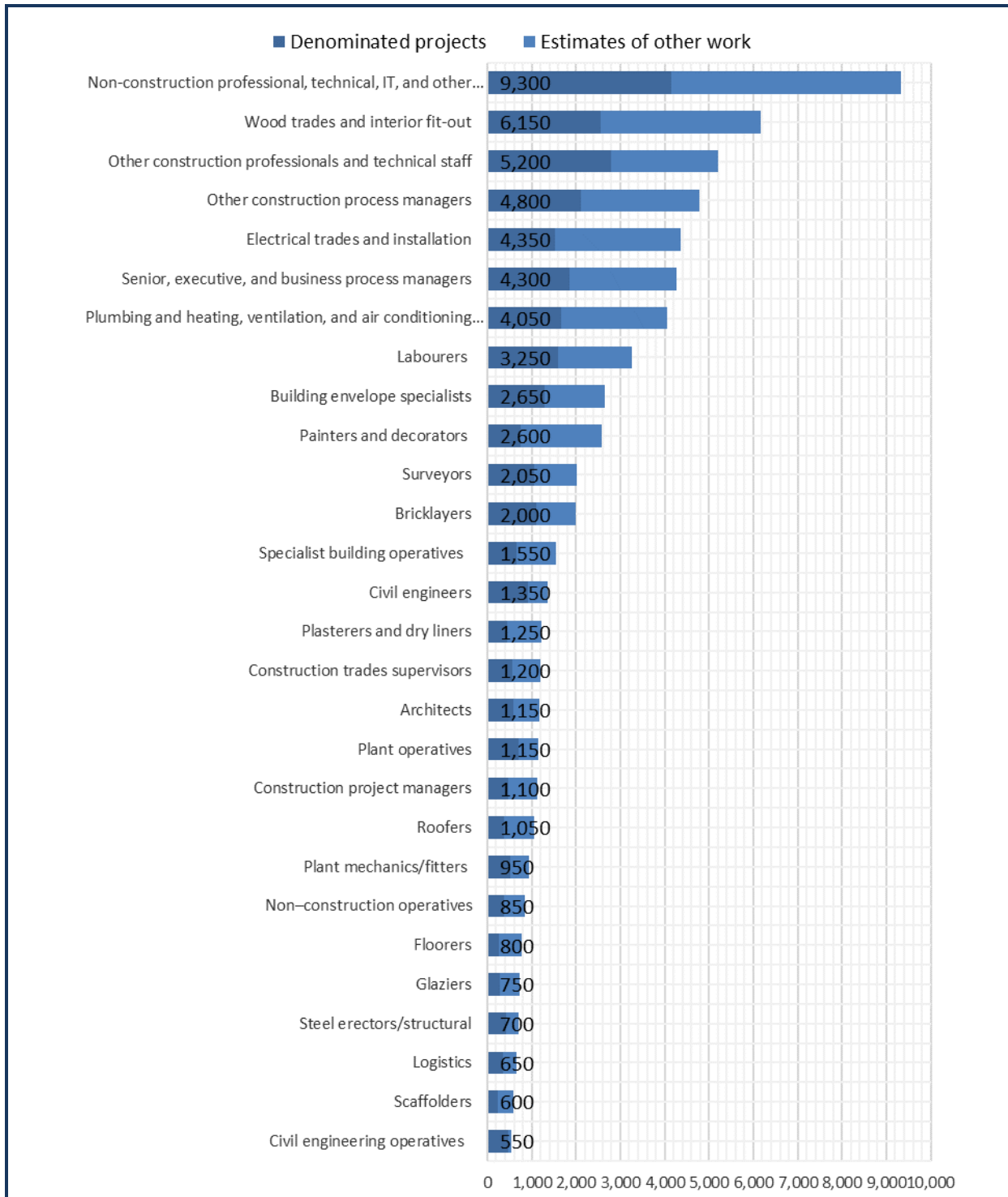


Figure 4: Construction labour demand by occupation in the peak year

4.3.2. Breakdown of labour demand by project type

Table 5 shows the labour demand generated by the denominated projects and the estimates of other work in 2017.

Table 4: Labour demand by work type in 2017

Project Type	Labour Demand from denominated projects (People)	Labour Demand from estimates of other work (People)	Total Labour Demand (People)	% of total
Private Commercial	9,800	12,500	22,300	32%
New Housing	9,400	5,300	14,700	21%
Non-housing R&M	-	11,650	11,650	17%
Housing R&M	-	7,600	7,600	11%
Private Industrial	2,850	2,050	4,900	7%
Infrastructure	4,600	-	4,600	7%
Public Non-housing	3,450	-	3,450	5%
Total	30,100	39,100	69,200	100%

4.4. Summary of demand

- The labour demand arising from the construction spend in the North Eastern LEP area peaks at around 69,200 people in 2017, taking account of estimates of other work including R&M in addition to the pipeline of denominated projects.
- During 2017, the peak year of the Glenigan pipeline demand, the most labour-intensive occupation group is “non-construction professional, technical, IT and other office-based staff” with an annual demand of 9,300 people.
- The estimate of labour demand for the trade occupations for the peak year of 2017 are as follows:
 - The trade occupation for which demand is highest is “Wood trades and interior fit-out” with a requirement for 6,150 people;
 - “Electrical trades and installation” trades follow with 4,350 people.
 - “Plumbing and heating, ventilation, and air conditioning trades” rank third, with a demand of 4,050 people.

5. Construction labour supply in the North East LEP area

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

The first element of this section takes a view on the current employment levels in the North East LEP and how this relates to overall employment across the wider North East region and the UK as a whole. The North East LEP covers Durham, Gateshead, Newcastle upon Tyne, North Tyneside, Northumberland, South Tyneside and Sunderland local authority areas, and the North East LEP area falls entirely within the larger North East region (which, in addition to those mentioned, also includes Darlington, Hartlepool, Middlesbrough, Redcar & Cleveland and Stockton-On-Tees local authority areas). All comparisons have therefore been made against the North East region as a whole and, where applicable, the UK. Data from CITB's Construction Skills Network (CSN) is used along with official Government sources. Employment and employers are considered together as they are intrinsically linked, particularly as a large proportion of construction workers are employed within micro businesses or are self-employed, where the business location is also the home location.

For the second section, whilst training occurs at Further Education (FE) and Higher Education (HE) levels, the main 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. Nevertheless, Higher Education in the region is also analysed, but should be considered in the context of the enhanced mobility levels of the learners at this level.

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.

5.1. Existing workforce

- The North East LEP construction workforce experienced positive growth of 3.3% in 2016.
- There has been a 19% increase in the number of Micro sized construction businesses from 2012 to 2016 within the North East LEP, accounting for almost all (95%) of the growth in construction businesses in the LEP over this period
- Self-employment within construction in the North East LEP remains 10% below 2012 levels at 15,400 workers, but did witness positive growth of 18% on 2015 levels.

An analysis of the Annual Population Survey shows that the North East LEP area accounts for around 78% of construction employment in the North East region as a whole.³ Please note this employment is 'workplace' analysis – i.e. it is the number of workers employed by employers within the North East LEP. Table 5 applies this percentage share across the CSN occupational breakdown for the North East region as a whole to give an estimate of total employment at occupational and industry level in the North East LEP area. For comparison, the wider North East region has been included.

In 2015, the number of construction workers in both the North East LEP area and the North East region as a whole returned to growth for the first time since the recession (2.5% and 1.3% growth respectively). In 2016, the North East LEP followed this up with a second successive year of growth (3.3%) whilst the wider North East region stagnated slightly (-0.8%). Ref: Figure 5.

³ ONS/NOMIS (2016) Annual Population Survey workplace analysis by industry Oct 2015 to – Sept 2016

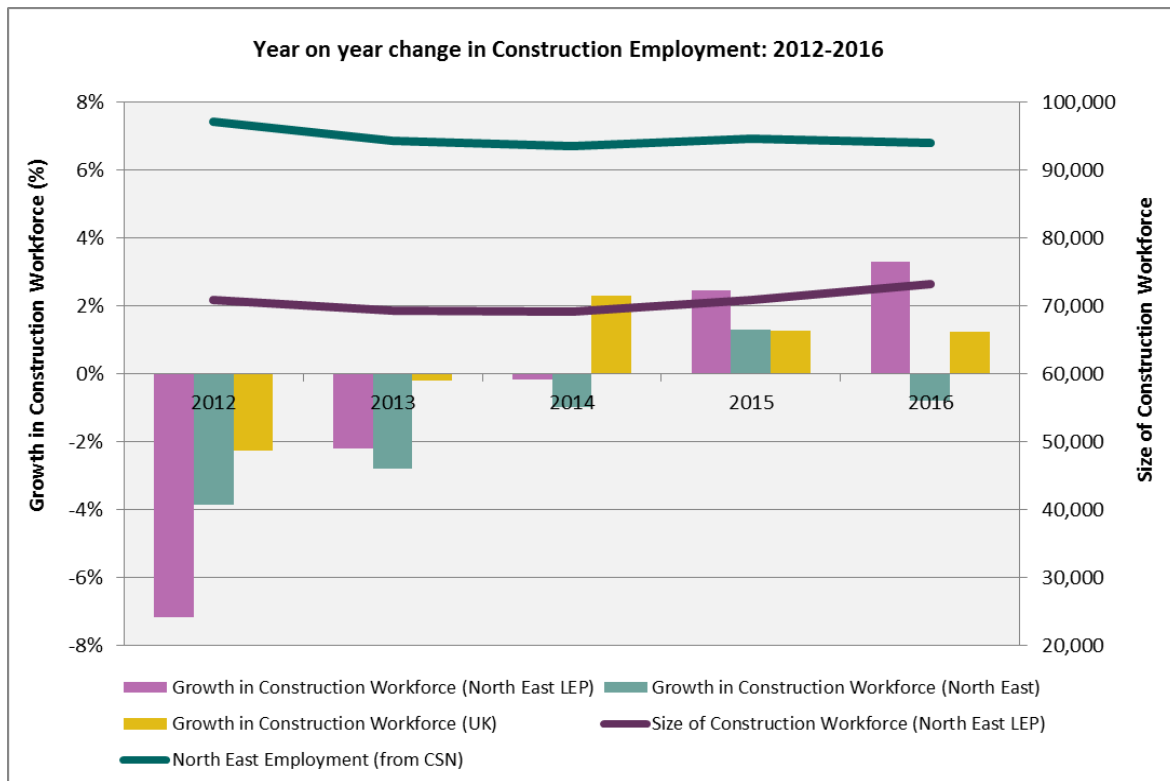


Figure 5: Year on year change in Construction Employment (Experian/CITB & NOMIS 2016)

The number of construction businesses within the North East LEP has decreased slightly from a 75% share of all construction businesses across the North East in 2012 to a 74% share in 2016. In actual numbers, the increase in construction businesses in the North East LEP region is 955 from 2012 to 2016, an 18% rise over this period. Across the rest of the North East region there was an increase of around 395 businesses over the same time period, a rise of 23% on 2012 levels. Ref: Figure 6.

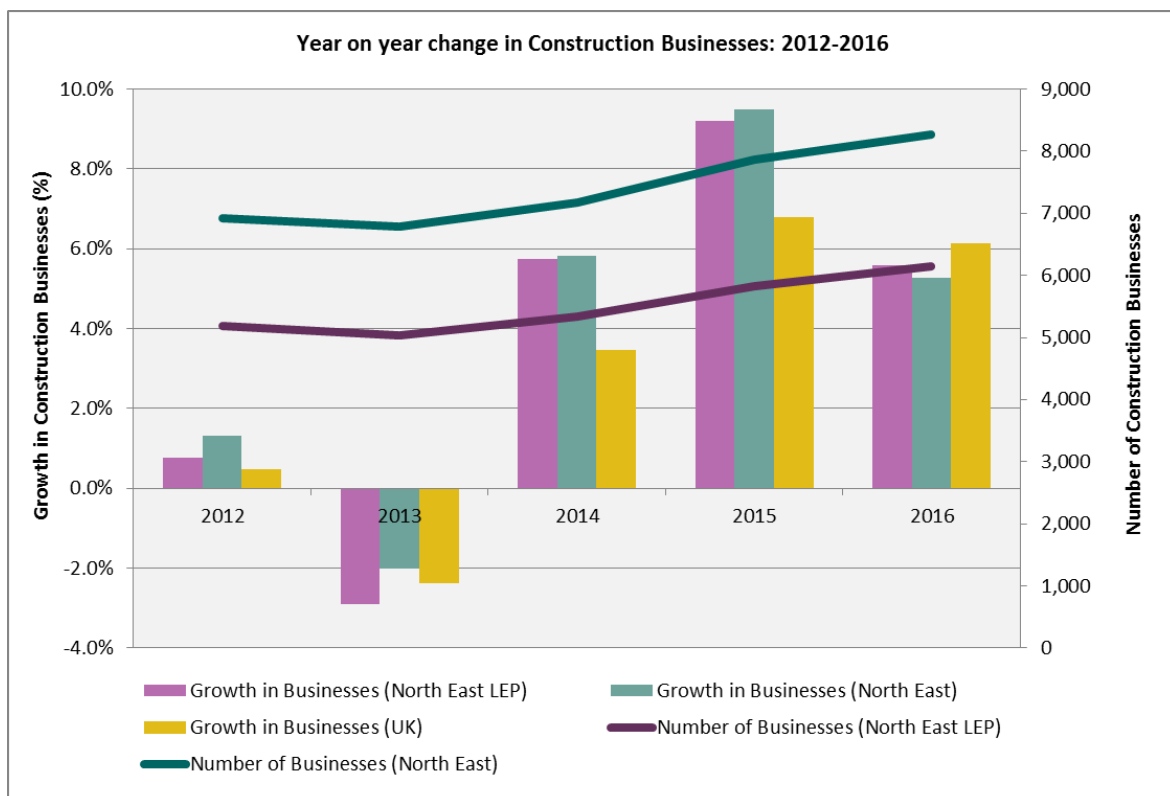


Figure 6: Year on year change in Construction Businesses (UK Business Count, NOMIS 2016)

Figure 7 shows the distribution of construction businesses within the North East LEP, and Figure 8 shows the distribution of the construction workforce. Interestingly, there are noticeable differences.

Comparing business to workforce distribution indicates that Durham, Northumberland and North Tyneside all have higher shares of businesses compared to workforce and are therefore likely to have more micro and small sized firms. More large and medium sized firms are likely to be located within the Newcastle-upon-Tyne area.

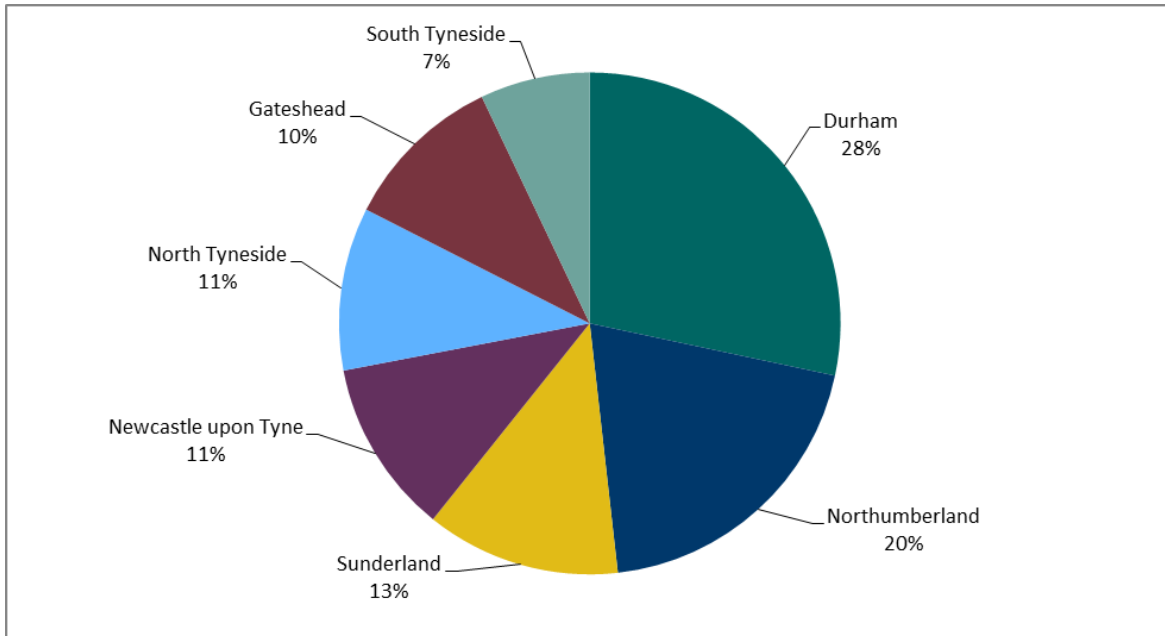


Figure 7: Distribution of **construction businesses** within the North East LEP (UK Business Count, NOMIS 2016)

Between 2012 and 2016 there is a broadly consistent pattern in construction workforce distribution across the LEP, with the main area being Newcastle-upon-Tyne, ref Figure 8. However, the notable exception to this is Durham, which has suffered a reduction in share of North East LEP construction workforce from 29% in 2012 to 20% in 2016, meaning it was overtaken by Newcastle upon Tyne in 2015 as the local authority with the highest construction workforce within the North East LEP.

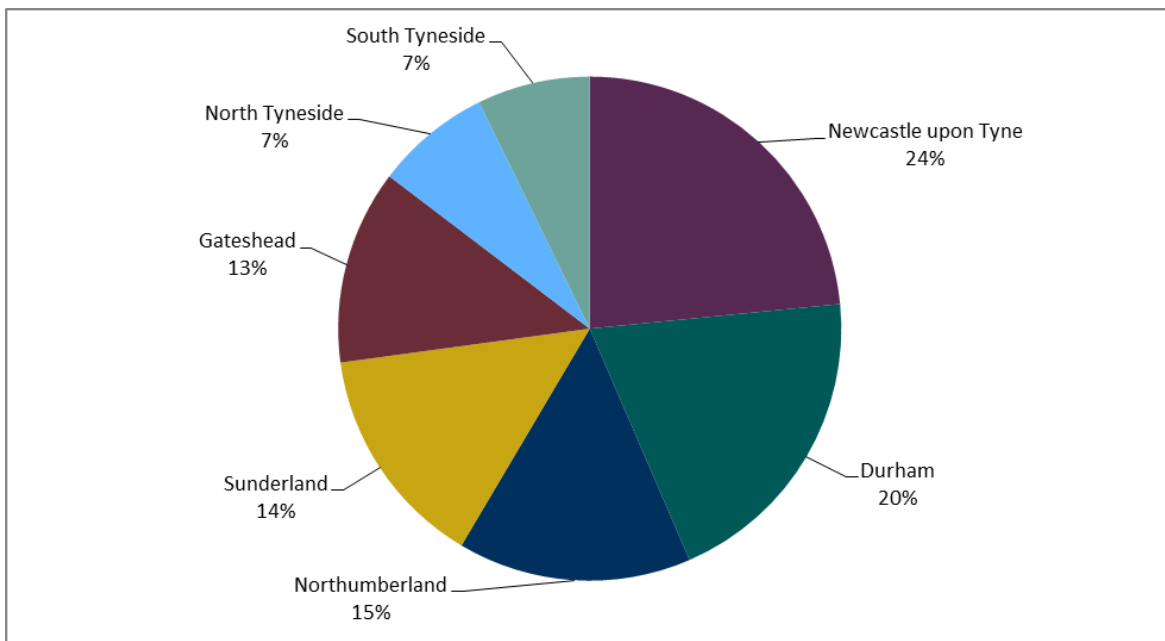


Figure 8: **Construction employment** by area within the North East LEP area (2016, NOMIS)

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

- Direct employment vs. self-employment
- Size of businesses.

Overall the construction sector has high levels of self-employment with around 40% of the UK construction workforce being self-employed. However, the figure is notably lower in the North East LEP area, with only 26% of those working in construction here classified as self-employed, similar to the levels across the wider North East region (28%). This is perhaps as a consequence of the slightly higher proportion of large companies in the North East LEP as a percentage of total companies (0.2% in the NE LEP vs. 0.1% average for the UK), particularly if these large companies are employing significant numbers of people. Whilst self-employment levels have remained stable across the wider North East region since 2012 at around 28% of the total construction workforce in the region, the North East LEP has seen this figure reduce from a 29% share to a 26% share of their workforce over the same period.

When it comes to business size, the distribution of companies across the North East LEP area is close to the pattern seen across the North East region as a whole, and indeed the United Kingdom, with the majority of construction companies being micro sized, i.e. less than 10 employees. However, the North East LEP has a slightly higher proportion of large companies (0.2% of total companies in the North East LEP) and also small companies (8% of total companies in the North East LEP) than the average for the UK (0.1% and 5% respectively), ref Figure 9.

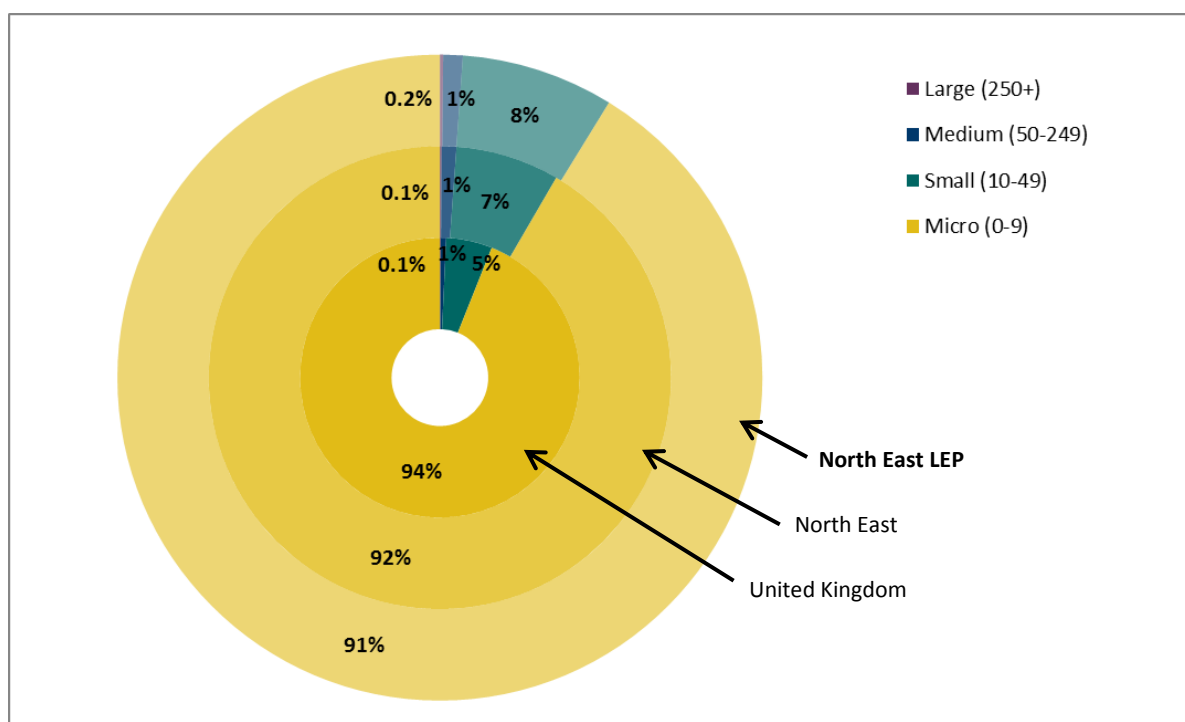


Figure 9: Size of Construction Businesses (UK Business Count, NOMIS 2016)

In the North East LEP, 91% of all construction businesses are Micro sized. This is in line with both the wider North East region (92%) and also Great Britain as a whole (94%). The majority of the growth in construction businesses within the North East LEP has been due to an increase in the number of Micro sized companies, accounting for 95% of the growth in construction businesses from 2012 to 2016 in the LEP during this period. Growth in Micro businesses in the North East LEP has increased at a similar rate as the North East as a whole (19% growth in North East LEP vs 21% in the North East region as a whole since 2012).

Table 5: Construction occupational breakdown, 2016 (Source Experian & CITB)

Construction workers in the North East LEP area listed by occupation [Calculated as 78% of the CSN data for the North East Region]	North East LEP	North East Region
Other construction professionals and technical staff	6,360	8,160
Other construction process managers	4,690	6,020
Senior, executive, and business process managers	3,610	4,630
Construction Trades Supervisors	2,670	3,430
Civil engineers	1,180	1,510
Construction Project Managers	1,120	1,440
Surveyors	1,040	1,330
Architects	290	370
Electrical trades and installation	5,750	7,380
Wood trades and interior fit-out	5,460	7,010
Labourers nec*	5,090	6,530
Plumbing and HVAC Trades	4,830	6,210
Specialist building operatives nec*	2,710	3,480
Bricklayers	2,370	3,040
Plant operatives	1,970	2,520
Plant mechanics/fitters	1,920	2,470
Plasterers	1,910	2,450
Painters and decorators	1,800	2,300
Floorers	1,790	2,300
Building envelope specialists	1,780	2,280
Roofers	1,740	2,230
Steel erectors/structural fabrication	1,200	1,540
Scaffolders	1,100	1,410
Civil engineering operatives nec*	950	1,210
Glaziers	560	720
Logistics	380	490
Non-construction professional, technical, IT, and other office-based staff	8,510	10,930
Non-construction operatives	440	560
Total	73,200	93,970

Note: numbers rounded to the nearest 10

Key

Manager/Professional occupations
Skilled Trades
Office-based Staff

5.2. Training provision

Total volumes of training provision in the North East LEP have remained relatively stable over the three years from 2012/13 to 2014/15, with the number of new starters increasing by 2%.

However, there has been a notable increase in learner volumes (starts and achievements) within the Gateshead area (mainly at Level 1).

CITB analysis of Skills Funding Agency Individualised Learner Records from 2012/13 through to 2014/15 academic years for construction learners shows that:

- The North East LEP accounts for 76% of identified construction related training across the North East region
- Whilst there has been an increase in the number of learners starting across the North East LEP (2%), this has occurred against a backdrop of a 1% reduction in learners starting across the wider North East region as a whole
- Although apprenticeship starts have increased across the North East as a whole (19% from 2012/13 to 2014/15), nearly all of this growth is concentrated in the North East LEP area (27% increase, compared to just 6% increase across the remainder of the North East region)
- There has been a small drop in other Education and Training learner starts across both the North East LEP (-3%) and the North East as a whole (-4%)
- Positively, construction training within the North East LEP is balanced slightly more towards what would be classed as “Competence” based qualifications that are generally sought by construction employers, as opposed to “Knowledge” or theory based provision
- Looking at the location of provision, the increase in starters within the North East LEP has been driven largely by learner volumes in Gateshead (an increase of 380 from 2012/13 to 2014/15, or 35%) and to a lesser extent, Durham (up 270, 12%) and North Tyneside (up 70, 6%)
- The decreases across the region as a whole have been largely caused by a reduction in learner volumes from 2012/13 to 2014/15 outside of the LEP in Hartlepool (down 280, -30%), and Darlington (down 170, -26%), but reductions within LEP have also contributed, most notably Northumberland (down 190, -16%) and Sunderland (down 170, -13%)

“Knowledge” based qualifications describe those qualifications that typically have a theoretical basis so are more likely to be ‘classroom based’. “Competence” based qualifications, in the main achieve a recognised NVQ and so a link can be made between the qualification title and the likely occupation that an individual will have. For example someone starting or achieving a Bricklaying qualification is highly likely to be working as a Bricklayer as competence based qualifications are based on an assessment of work based skills.

Table 6 looks at qualification achievements over the last three years for the identified competence based qualifications, comparing achievement volumes against the overall pattern with the North East as a whole. From this analysis there looks to be patterns for particular occupations.

[The information shown in Table 6 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 6: **Competence** qualification achievement in North East LEP as a % of total competence qualification achievements in North East region as a whole (Source: CITB/SFA)

Construction Occupations	2012-13	2013-14	2014-15	Total Achievements (Learner Aims)	Total
Grand Total	77%	76%	76%	7,580	76%
Main Occupations					
Plant operatives	85%	85%	80%	3,140	84%
Wood trades and interior fit-out	70%	65%	69%	890	68%
Plumbing and HVAC Trades	83%	64%	72%	670	73%
Civil engineering operatives nec*	64%	75%	75%	380	72%
Plasterers and dry liners	82%	82%	86%	210	83%
Occupations to Monitor					
Bricklayers	54%	63%	74%	400	64%
Specialist building operatives nec*	36%	46%	58%	170	46%
Building envelope specialists	48%	78%	55%	130	68%
Occupations with good provision					
Electrical trades and installation	83%	85%	74%	360	81%
Painters and decorators	78%	82%	84%	310	81%
Scaffolders	72%	87%	92%	290	82%
Glaziers	91%	81%	86%	200	85%
Roofers	88%	93%	78%	150	85%
Low Overall Learner Volumes					
Floorers	86%	86%	73%	90	80%
Other construction profs. and technical staff	100%	71%	85%	90	87%
Construction Trades Supervisors	42%	94%	38%	80	47%
Plant mechanics/fitters	80%	67%	82%	30	76%
Construction managers	100%	100%	-	<25	100%
Logistics	100%	-	-	<25	100%
Steel erectors/structural	-	100%	-	<25	100%

*nec – not elsewhere classified

Note: Total achievements are across the period 2012-2013 to 2014-15 have been rounded to the nearest 10

The majority of the achievements referred to in Table 6 are at Level 2 (over 80%), with a smaller proportion at Level 3 (about 19%) and a very small minority at Level 4 and above (0.1%).

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

- **Relatively high provision is highlighted in green** and
- **Relatively low provision is highlighted in red.**

There are a group of **occupations that account for the main training volumes**, which are generally consistent with the overall training pattern seen in the North East. These are:

- Plant Operatives
- Wood Trades and Interior Fit-Out
- Plumbing and HVAC Trades
- Civil Engineering Operatives nec*
- Plasterers and Dry Liners

Here the qualification achievements are consistent to the overall share of training being achieved in the LEP area or there is a larger volume of training being delivered against them. For occupations such as Wood Trades and Plumbing, the volume of training will be related to their share of employment, while for others such as Plant Operators, training will be more related to the need to demonstrate competence for these roles through card scheme monitoring, for example the CPCS Card scheme for Plant Operatives.

The second group – Occupations 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 Bricklayers, Specialist Building Operatives nec, and Building Envelope Specialists, the share of training happening within the LEP is slightly lower than would be expected. It is possible that individuals within the North East LEP may be travelling outside the area for this type of training.

For the third group – Occupations with good provision: the reverse is the case and there appears to be a higher level of provision for occupations such as Electrical Trades and Installation, Painters and Decorators, Scaffolders, Glaziers, and Roofers. It could be that there are providers with particular specialisms in these areas operating with the LEP, or a particular need for this type of training.

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

In terms of training providers, from 2012/13 through to 2014/15 91 different providers have delivered training for the North East LEP area. However, there is a consistent pattern with over 79% of training being delivered by a core network of 10 providers. Ref: Table 7.

Table 7: Top 10 training providers within the North East LEP by number of starts – excluding apprenticeships (Source: CITB/SFA)

Provider	2012-13	2013-14	2014-15	Total (Learner Aims)	% Share of Total Quals	% of Quals Ofqual Registered
Manchester College	2,820	3,620	1,660	8,100	22.5%	19%
Newcastle College	2,110	2,070	1,760	5,940	16.5%	86%
Sunderland College	1,010	950	730	2,690	7.5%	96%
Gateshead College	660	1,000	550	2,210	6.1%	64%
Durham New College	670	620	820	2,110	5.8%	89%
Health & Safety Training Ltd	760	730	590	2,090	5.8%	100%
Northumberland College	790	440	490	1,720	4.8%	88%
TRN (Train) Ltd	990	350	190	1,520	4.2%	57%
Tyne Metropolitan College	380	370	540	1,290	3.6%	79%
East Durham College	330	290	250	870	2.4%	100%

Note: Number of starts has been rounded to the nearest 10

All of the top 10 providers are located within the North East LEP, with the exception of the largest, Manchester College. Although obviously some distance away from the LEP, Manchester College still delivers more training to the North East LEP area than any other provider, yet it is notable however that the vast majority of these qualifications are not Ofqual registered. Newcastle College, Sunderland College and Gateshead College are also significant providers, with the former two providing a notably higher percentage of qualifications that are Ofqual registered than Gateshead.

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 North East LEP in Table 8, decreases in learner starts in South Tyneside, Northumberland and Sunderland are compensated for by significant increases in Gateshead and Durham. It should be noted that most of the increase in Gateshead is being driven by increases in learner starts at Level 1.

Table 8: Unique Learner starts by area, construction subjects, all levels (Source: CITB/SFA)

Local Authority	2012-13	2013-14	2014-15	% Net change	% Quals at Level 2+
County Durham	2,330	2,310	2,610	12%	60%
Gateshead	1,090	1,590	1,470	35%	46%
Newcastle upon Tyne	1,820	1,690	1,850	2%	53%
North Tyneside	1,170	1,070	1,240	6%	63%
Northumberland	1,190	990	1,000	-16%	54%
South Tyneside	350	340	230	-33%	53%
Sunderland	1,330	1,340	1,160	-13%	46%
Grand Total	8,940	8,920	9,110	2%	54%

Note: Number of starts has been rounded to the nearest 10

As a whole, the North East LEP area is showing a small increase in the number of construction learner starts of 2% across the three years at a time when the wider North East region experienced a slight decline of 1% over the same period.

Looking within the main programmes of learning being undertaken, the reasons for the positive trend are twofold. Whilst providers within the North East LEP, particularly within Gateshead, have been successful at attracting learners onto the more college-based construction education and training courses, there has also been a more general increase in the number of apprenticeships within the North East LEP over this period. Whilst the college based courses are an important stepping stone or progression route for learners to acquire knowledge, construction employers tend to have a preference for practical or competence based skills, so it is positive that the North East LEP has witnessed this increase in apprenticeships over these three years, which are investigated in more detail in the next section.

5.3. Apprenticeships

When apprenticeships are considered as a subset of all construction training in the North East LEP, we can see that the number of apprenticeship starters is increasing at a greater rate than that of training starters as a whole. Table 9 shows that the number of apprenticeship starters in the North East LEP went up by 27% from 2012/13 to 2014/15, much higher than the 2% increase in the total number of construction learner starts across the same time period (see Table 8).

The Local Authority areas within the North East LEP making the biggest contribution to this increase from 2012/13 to 2014/15 are Gateshead (250 starters), Sunderland (170), County Durham (150) and Northumberland (110). North Tyneside on the other hand has seen a significant decrease of 130 starters over the same period.

The North East LEP has a 74% share of total apprenticeship starters per annum in the North East region, and the increase of 450 apprenticeship starters (a 27% increase) from 2012/13 to 2014/15 across the North East LEP compares favourably to the increase of 19% over the North East region as a whole. Indeed, when the remainder of the North East region (i.e. outside the LEP) is considered in isolation, the increase in apprenticeship starters here over the same period is just 50 (a 6% increase).

Table 9: Unique apprenticeship starts by area (North East LEP), construction subjects (Source: CITB/SFA)

Local Authority	2012-13	2013-14	2014-15	Increase/ decrease	% Net Change
County Durham	340	430	490	150	43%
Gateshead	300	380	550	250	82%
Newcastle upon Tyne	340	290	420	80	23%
North Tyneside	330	110	200	-130	-39%
Northumberland	210	260	320	110	51%
South Tyneside	80	100	80	<25	-3%
Sunderland	160	250	330	170	109%
Grand Total	1,640	1,640	2,090	450	27%

Note: Number of starts and any increase/decrease have been rounded to the nearest 10

Table 11 considers apprenticeship starts by trade, and shows the biggest increase in volume terms from 2012/13 to 2014/15 has occurred in bricklayers, roofers and civil engineering operatives. The only occupations to experience notable decreases over the same time period are painters and decorators and plasterers and dry liners.

Table 10: Unique apprenticeship starts by occupation (North East LEP), construction subjects (Source: CITB/SFA)

Occupation	2012-13	2013-14	2014-15	Increase/ decrease	% Net Change
Bricklayers	150	170	230	90	61%
Roofers	<25	30	80	60	295%
Civil engineering operatives nec*	<25	50	80	60	259%
Wood trades and interior fit-out	340	300	380	40	11%
Specialist building operatives nec*	60	80	80	30	46%
Glaziers	<25	40	30	<25	367%
Building envelope specialists	40	50	60	<25	54%
Electrical trades and installation	180	130	200	<25	11%
Plant operatives	<25	<25	30	<25	65%
Plumbing and HVAC Trades	270	260	280	<25	4%
Scaffolders	40	50	50	<25	28%
Plant mechanics/fitters	<25	<25	<25	<25	500%
Floorers	<25	<25	30	<25	42%
Construction Trades Supervisors	<25	<25	<25	<25	-27%
Other construction profs. and technical staff	40	40	40	<25	-9%
Painters and decorators	130	100	90	-30	-26%
Plasterers and dry liners	90	90	60	-30	-37%

Note: Number of starts and any increase/decrease have been rounded to the nearest 10

5.4. Higher Education

The North East LEP area has:

- Three HE providers based there, accounting for nearly all (95%) of construction related achievements per annum across the North East.
- Good provision across all four construction HE areas, mostly from the University of Newcastle-upon-Tyne and the University of Northumbria in Newcastle.
- High number of achievements as a percentage of existing workforce: over 100% for architects, 32% for civil engineers, 16% for surveyors and over 10% for construction project managers/construction trade supervisors.

There are five broad Higher Education (HE) qualifications that relate to construction: Architecture, Building, Civil Engineering, Landscape & Garden Design and Planning.

All these courses are offered in the North East region at the four HE institutions that are either based or operate there, of which three are in the North East LEP: the University of Durham, the University of Newcastle-upon-Tyne, and the University of Northumbria at Newcastle. The other HE institution in the North East region that does not fall within the North East LEP area is Teesside University.

Figure 10 shows the number of achievements per annum on these courses at HE institutions in the North East LEP. These have been decreasing year on year from 1,350 in 2012/13 to 1,240 in 2014/15, an 8% reduction over this period. However, it is interesting to note that the reduction in numbers have been concentrated in both Building (reduced by 33%) and Planning (reduced by 36%), whilst Civil Engineering and Architecture achievement numbers have increased over the same period (by 40% and 23% respectively). There were only a very small number of achievements in Landscape & Garden Design in 2012/13 and 2013/14, and zero in 2014/15.

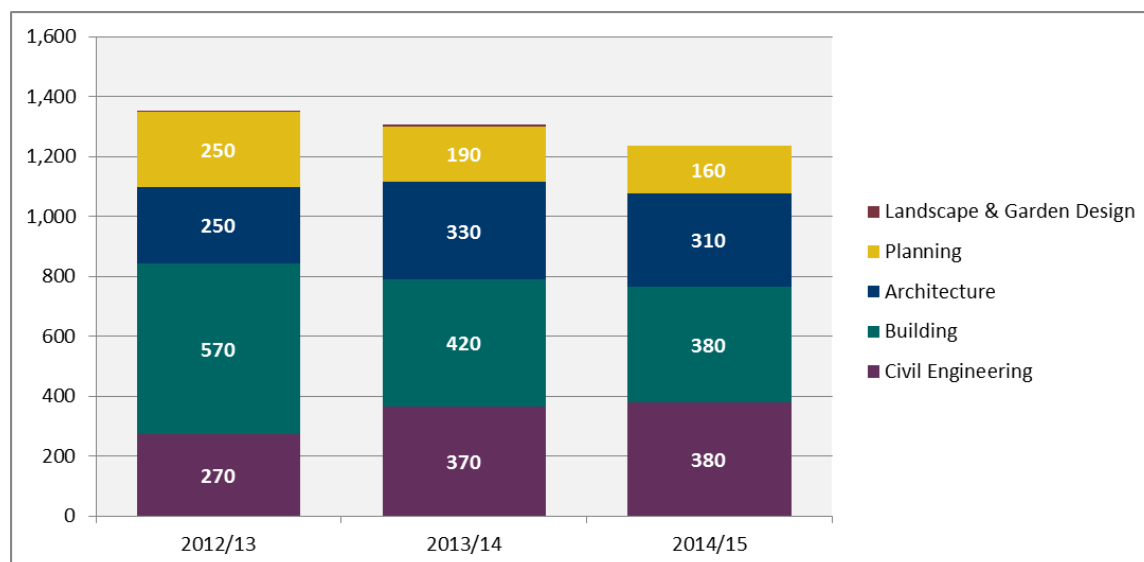


Figure 10: Higher Education achievements per annum in the North East LEP (Source: HESA)

Table 11 looks at the spread of achievements by qualification area across the institutions in the North East for the 2014/15 academic year. This highlights the extent to which institutions in the North East LEP dominate delivery of construction related qualifications at HE level in the North East region, accounting for 89% of all Civil Engineering qualifications, 95% of all Building qualifications, and 100% in both Architecture and Planning.

At an institutional level, the University of Newcastle-upon-Tyne dominates the delivery of Civil Engineering achievements and Planning achievements, whilst the University of Northumbria at

Newcastle is responsible for nearly all Building achievements in the North East. Both the University of Newcastle-upon-Tyne and the University of Northumbria at Newcastle contribute significantly to the Architecture achievements in the North East.

Institution	Civil Engineering	Building	Architecture	Planning	Total
University of Durham	20	0	0	0	20
University of Newcastle-upon-Tyne	320	0	190	130	640
University of Northumbria at Newcastle	40	380	130	30	580
Teesside University	50	20	0	0	70
Total - North East	430	400	320	160	1,310
Total - North East LEP only	380	380	310	160	1,230
% of achievements delivered in LEP	88%	95%	97%	100%	94%

Table 11: Achievements on construction related degree courses at HE institutions in the North East – 2014/15 academic year (Source: HESA)

When achievements within the LEP area for 2014/15 are considered as a proportion of those currently employed in the corresponding roles within the LEP area, Civil Engineering achievements account for about 32% of the current number of civil engineers; Building achievements account for 10% of the current number of construction project managers and construction trade supervisors; Architecture achievements account for over 100% of the current number of architects; and Planning achievements account for 16% of the current number of surveyors.

These figures for achievements per annum considered as a percentage of the existing workforce across all four areas of construction HE qualifications are high, indicating a very good level of higher education provision in the North East LEP for construction. However, in comparison with Further Education the likelihood is significantly greater that, after graduation, HE students will move into or out of the area and may not take up positions in the jobs for which they studied. Nevertheless, it gives a crude indication of the adequacy of provision for these subjects within the LEP area, implying that HE availability is sufficient to meet likely demand and the likely challenge being whether these graduates can be retained within the LEP to fill any demand for these roles that exist going forward. The adequacy of skills supply and forecast demand is considered later in this report.

There are a number of significant challenges to address in understanding Higher Education's place in UK construction. Most significantly, those starting and completing HE level qualifications are more willing to travel significant distances to study and then find employment. For many students the opportunity to leave home and move to a new town or city is one motivation for entering HE. In the UK, this has become normalised. A 2014 study undertaken by Education Phase on behalf of TV Licensing indicated that the average distance from home to place of HE study was around 90 miles. This also indicated that of the sample, only around 5% of HE students were studying within 20 miles of home but that 78% moved 60 or more miles or were from overseas.

However, when questioned, different institutions respond differently – with some universities indicating that they believe they attract students from closer to home while others have a more national and often international focus. This is in part down to the course type and its availability elsewhere, but there appears to be a rough correlation between UCAS points entry requirements and distance students travel. Typically the most demanding universities draw students from a greater average distance, with some universities targeting international students.

Once a student has finished their course there is limited centrally available data on their destination – both in terms of career type and location. In a significant proportion of cases those completing higher education move into career unrelated to their course.

5.5. Career progression

Relatively limited information is available to explain any trends in career progression. The complexity of occupations, qualifications and the inability to track individuals make establishing a clear picture extremely difficult.

There is some anecdotal evidence to suggestions that:

1. Some more experienced workers are able to move into supervisory roles.
2. Some experienced workers take on a greater variety of occupational skills (perhaps able to say they have several occupations).
3. There is more structured career progression among the professions.
(Backed by professional development routes through Professional Chartership, which has structure as an individual works their way to Member or Fellow. However not all professionals will be a part of a professional body.)
4. The professions are more likely to work to an older age in their chosen field.
(Assuming 'professionals' tend to suffer less physical impact on the body than a trade career.) However this is balanced against professionals tending to start at an older age as a result of the need for higher level education and accreditation.

In December 2016 CITB commissioned a report considering "Career progression in the construction industry". This identified a number of trends in relation to the **Progression of construction workers into teaching and training roles:**

Anecdotal evidence suggests that the primary issue (especially amongst full-time teaching staff) is fear about losing touch with one's professional or vocational background and there is a view that that regular return to industry should be facilitated so that technical teachers could refresh their knowledge and skills.

Results of a 2010 study into what employers wanted from training and trainers showed that, while they prioritised industry skills and knowledge above education skills and knowledge, a complex mixture of the two was required, which was generally felt to be lacking.

This suggests that initiatives aiming to utilise 'retirees' in Vocational Education Training (VET) needs to consider how individuals can keep their skills up-to-date.

In this sense whilst any initiative to engage retirees in training has some benefit in terms of keeping skilled people engaged with the sector it creates another challenge if employers perceive those individuals to have out-dated skills.

5.6. Main points – supply

North East LEP area training provision:

- Around 90 training providers have delivered construction-relevant FE courses within the North East LEP over the last three years.
- With ten main providers delivering 79% of provision.
- Training is delivered across the full range of construction occupations.

- With good levels of competence qualifications achievements across many construction occupations, most notably Roofers, Glaziers, Plant Operatives, Plasterers and Dry Liners, Scaffolders, Electrical Trades and Installation, and Painters and Decorators.

North East LEP area workforce:

- Current construction workforce within the North East LEP is estimated at just over 73,000 workers, which experienced positive growth of 3.3% in 2016.
- Nearly half of the workforce in the North East LEP is located within Newcastle upon Tyne (24%) and Durham (20%) local authority areas.
- The North East LEP area accounts for 78% of the North East's total current construction workforce and 74% of all construction firms in the North East.
- Recent employment trends show strengthening growth in construction workforce numbers within the North East LEP area over the last two years, against a backdrop of a small decrease in workforce levels across the North East as a whole in 2016.

6. Mobility of the workforce

Construction workforces are fluid by nature and this section of the report will look at findings from the CITB survey into Workforce Mobility and Skills in the UK Construction Sector 2015 to give a picture of mobility within the workforce. Data specific to the North East Region will be analysed in order to understand how this might impact on future training interventions and the supply of job opportunities for local people.⁴

Appendix Table 18: Region/nation employer operates in, compared with region/nation working in currently. This is taken from the CITB survey into Workforce Mobility and Skills and gives an indication of the inter-regional movement of workers. In comparison with other English regions this indicates that a relatively large proportion of workers spend some or all of their time in the region to work.

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%.

6.1. Work history

Just under two thirds of construction workers have worked in the industry for at least 10 years (61%), with just over a third working in the construction industry for over 20 years (36%) and. The most likely reason for working in the region is because they grew up there/have always lived there (80%), much higher than the UK average of 55%. Nearly nine in ten (88%) construction workers in the region have remained in the North East for all or most of their career, compared to the UK average of 80%.

Further proof of the stability of the construction workforce in the North East is emphasised by the finding that in the majority of cases (86%) workers reported their last site was also in the North East.

In terms of the regions/nations in which workers' current employer operates in, the majority (93%) of workers in the North East reported that their employer operated within the region they were currently working in, while 19% operated in Yorkshire and the Humber, 14% in the North West, and 13% in both the East Midlands and London, as shown in Appendix Table 18: Region/nation employer operates in, compared with region/nation working in currently.

6.2. 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 nearly all construction workers in the North East (96%) were interviewed in the same region in which they were living in when they started their construction career. Workers currently based in the North East are among the most likely to have remained in the same region in which they were based when they started their construction careers, on a par with Scotland (96%) and Northern Ireland (97%) in this respect.

Furthermore construction workers in the North East are again most likely to have stayed in the region where they studied for their first qualification (92%), with Scotland and Northern Ireland again being the only two with a higher percentage. Additionally, there is a higher than average mention by workers in Yorkshire and the Humber (8%) of construction workers achieving their qualification in the North East.

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

6.3. 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 just 3% of all construction workers in the North East 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).

Workers in the North East were asked to indicate the furthest distance they have worked from their permanent or current home in the last 12 months. Figure shows that nearly two fifths have worked more than 50 miles away from their permanent home (39%), with 13% that have worked between 51 and 100 miles away and a quarter that have worked more than 100 miles away (26%). Workers based in North East were amongst those most likely to have travelled more than 100 miles from their permanent home to work in the last 12 months.

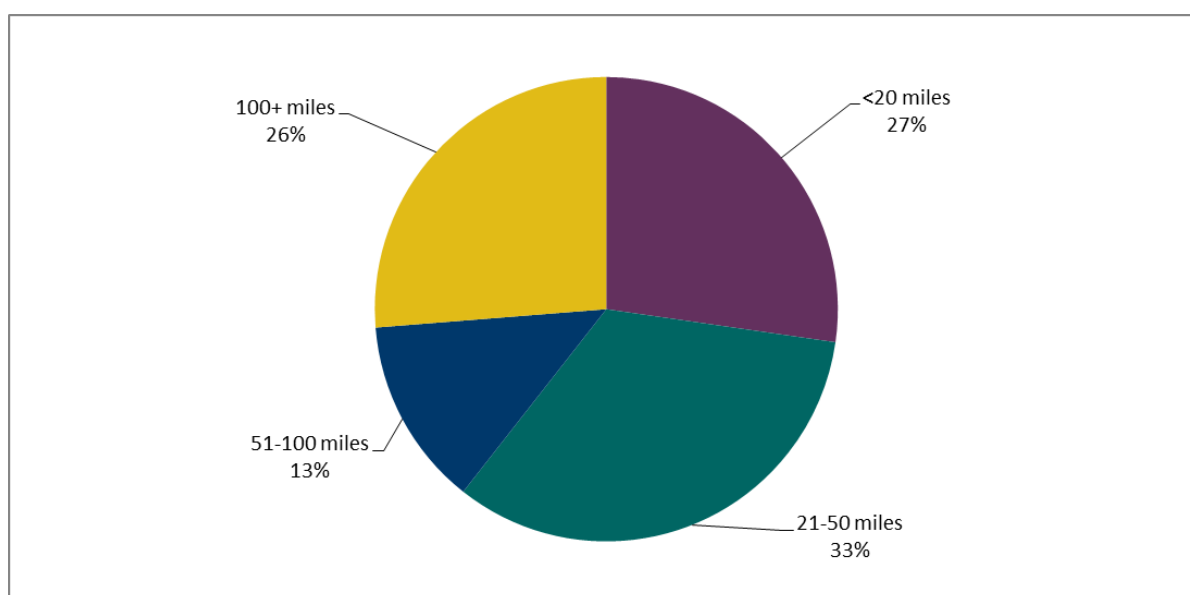


Figure 10: Furthest distance worked in past 12 months (CITB, 2015)

However, the average (mean) distance from workers' current residence (taking into account temporary residences) to their current site was 14 miles for the North East, slightly less than the UK average of 22 miles. This indicates that although workers can travel some distance to work, it is likely to be intermittent.

6.4. 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 one in six of all construction workers in the North East (16%) do not expect to work on that site for more than a month, including 7% that only expect to be there for about a week or less. A third expect to stay on that site for a year or longer (32%), a notable increase compared with 2012 (21%), suggesting more stable employment in the North East than in 2012. However a comparable proportion (30%) of workers did not know how much longer they could expect to be on site, indicating that a significant minority of temporary workers are living with some uncertainty and insecurity.

Three quarters of all construction workers in the North East 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 (76%).

6.5. Sub-sector and sector mobility

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

Compared with 2012 there has been a significant increase in the proportion of construction workers that have been working on new housing within the North East, up from 69% to 86%. For all other types of projects the proportion of construction workers that have worked on them has fallen since 2012.

Overall one half of all construction workers have only worked on one project type (49%), a large increase compared with 1% in 2012, which again suggests a pattern of increased stability in the sector.

6.6. Leaving the sector

In order to assess the potential outflow from the sector in the next five years (led by worker preference), all workers were asked how likely it is that in 5 years' time they will still want to be working in construction. Within the North East, half the construction workers say they definitely will be (48%) and a further third think it is very or quite likely (35%). Just 1% say they definitely won't be and a further 7% hope to be retired by then, while 5% don't know.

Excluding those aged 60 and over (as those over 60 may be assumed to be considering retirement in the next 5 years) 50% believe they will definitely want to be working in the construction sector and a further 36% believe it is very likely or quite likely they will want to be working in the construction sector. Only 4% think on any level that they will not want to be working in the construction sector in five years' time which is less than in 2012 (11%).

6.7. Main points – mobility

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

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

- More than a third of all construction workers in the North East have worked in the industry for at least 20 years (36%). Just under two thirds have done so for 10+ years (61%).

- Nearly all construction workers in the North East (96%) were interviewed in the same region in which they were living in when they started their construction career. Workers in the North East are among the most likely to have remained in the same region/nation in which they were based for their first construction job.
- Just 3% of all construction workers interviewed in the North East travelled into the region from another region in which their current residence is based.
- Within the North East, the average (mean) distance from workers' current residence (taking into account temporary residences) to their current site was 14 miles (22 miles is the UK average).
- Three quarters of all construction workers in the North East are confident that when they finish their current job their next job will allow them to travel to work from their permanent home on a daily basis (76%).
- Overall about half of all construction workers in the North East have only worked on one project type (49%).
- Around half of construction workers say they definitely will be working in the industry in five years' time (48%) and a further third think it is very or quite likely (35%).

7. Demand against supply

Before looking at demand for construction compared with supply of construction workers, 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 North East LEP area, whereas the supply figures are an extrapolation of data for the North East 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.

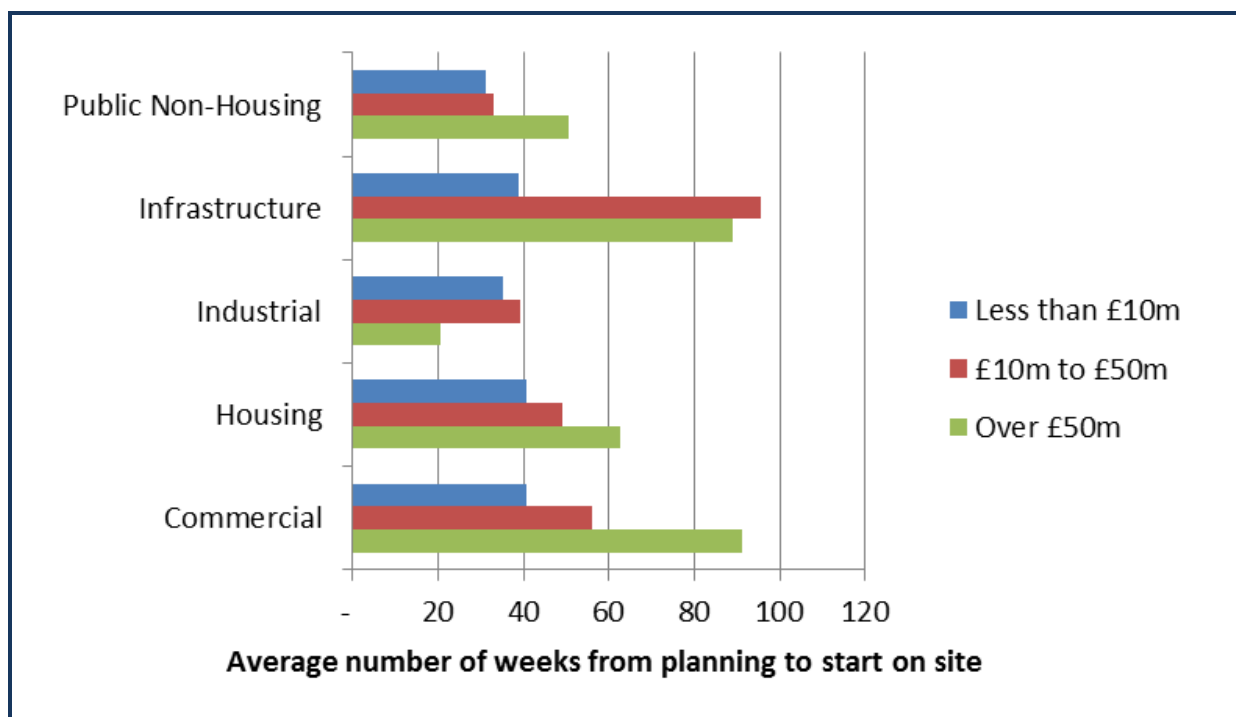


Figure 12: Average number of weeks from planning to work on site, UK 2010-2013 (Source: UKCG/Glenigan)

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 North East indicate that it accounts for 24% of yearly construction output.⁵

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 plasterers and banksmen/bankpersons are most likely to have only worked on one project type, while bricklayers, site managers, dryliners, and scaffolders are more likely to have worked on a wide range of projects.⁶

⁵ CITB(2016) Construction Skills Network – North East

⁶ CITB(2015) Workforce Mobility and Skills in the UK Construction Sector – North East

7.1. Gap Analysis

With current construction employment in the North East LEP area estimated at just over 73,000, the identified demand forecast from projects in Glenigan accounts for 91% of current employment in 2017 before reducing, as the identified projects visibility decreases. Ref: Table 12.

Table 12: Occupational breakdown of demand for North East LEP area against current employment
(Source CITB/WLC)

Occupation	North East LEP demand	Risk: shortfall 2017 demand compared with 2016 employment
Architects	1,150	3.97
Surveyors	2,050	1.95
Civil engineers	1,350	1.16
Other construction process managers	4,800	1.02
Construction project managers	1,100	1.00
Other construction professionals and technical staff	5,200	0.82
Construction trades supervisors	1,200	0.45
Logistics	650	1.74
Building envelope specialists	2,650	1.49
Painters and decorators	2,600	1.49
Glaziers	750	1.30
Wood trades and interior fit-out	6,150	1.13
Bricklayers	2,000	0.84
Plumbing and HVAC Trades	4,050	0.84
Electrical trades and installation	4,350	0.76
Plasterers	1,250	0.64
Labourers nec*	3,250	0.64
Roofers	1,050	0.61
Plant operatives	1,150	0.58
Steel erectors/structural fabrication	700	0.58
Specialist building operatives nec*	1,550	0.57
Civil engineering operatives nec*	550	0.57
Scaffolders	600	0.53
Plant mechanics/fitters	950	0.49
Floorers	800	0.43
Non-construction operatives	850	1.92
Senior, executive, and business process managers	4,300	1.19
Non-construction professional, technical, IT, and other office-based staff	9,300	1.10
Total	66,350	1.06

Key

Manager/Professional occupations
Skilled Trades
Office-based Staff

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

Table 12 shows that there are some possible disparities where demand is likely to outstrip current employment estimates for a number of occupations. 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** – [Second quartile] are at some risk of a shortfall and should be reviewed to determine where opportunities for further training and development exist
- **AMBER GREEN** – [Third quartile] are at a lower risk of a shortfall but should be monitored and tested to compare with local qualitative opinions.
- **GREEN** – [Bottom quartile] appear to be at relatively low risk. This does not mean changes in construction demand, training provision or the movement of workers will not change this status and so testing local stakeholder opinion in relation to site based roles is advised.

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 North East LEP area (as described in the supply section of the report). This gives an indication as to the comparative risk of a shortfall between construction occupations. This is not an absolute value – rather a method for prioritising risk by occupation in comparison with other occupations.

Those risks appear most likely to be:

Among professional and managerial roles:

- Architects
- Surveyors
- Senior, executive and business process managers
- Civil Engineers

Among skilled trades:

- Logistics
- Building envelope specialists
- Painters and decorators
- Glaziers
- Wood Trades and interior fit out

There also appears to be relatively high demand for Non-construction operatives.

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

7.1.1. Construction specific occupations

Demand for **Civil engineers, Architects** and **Surveyors** is a reflection of the wider UK shortage.⁷ Additionally as professionally qualified occupations, which tend to require degree qualifications, there will be at least three years of education and training before becoming qualified plus years more to gain experience. And if new candidates are to be encouraged to join these professions, it is likely that encouragement is required some years before they start training.

It is therefore highly likely that the short-term demand increase identified would require workers to be drawn into the North East LEP area from the wider North East 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 some anecdotal evidence to suggest that demand is met by provision based in other centres of population.

7.1.2. 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.

Non-construction operatives move between construction and other sectors such as manufacturing and wholesale/distribution. It is possible that experienced workers could be required by other sectors as well as across the broader North East region.

Logistics skills also have an element of cross over, particularly with retail and transport sectors, which could mitigate potential demand. When compared to other occupational groups it is also lower in actual numbers which magnifies percentage changes.

In addition to the major projects identified in the Glenigan Pipeline, there will also be other work carried out in the North East LEP area that is captured within the demand analysis where additional workers will be required. This additional work includes projects that are less than £250,000, as well as repair and maintenance work that does not require planning consent, and as noted earlier, this is expected to mean a total workforce demand of just under 70,000 between 2017 and 2019.

This is quite a static level of future work that would account for around 90% of current employment, which indicates that future employment demand in most cases will be focused on replacing the current workforce levels and equipping them with appropriate skills, rather than an overall increase in demand.

7.1.3. Mobility of some roles and the impact on risk of shortfall

In consultation with local stakeholders about an apparent mismatch between the local experience of some individuals and the identified gaps for some occupations.

It is important to understand the mobility of construction industry workers but also that in many cases regular or permanent attendance on-site is not necessary. This is the case for some mobile roles but can have a significant impact on professional roles where roles may be filled by remote workers operating from other regions.

An example of this is the case of **Architects** and **surveyors**, for which the data available indicates a high risk of a gap between the local demand and supply. Anecdotal feedback received from stakeholders within the profession has both supported and disputed this suggestion.

⁷ Migration Advisory Committee (MAC) Shortage Occupation List 2015

It is possible that in some cases architectural services for the North East LEP area has been met by provision from outside the region. There are other regions from which CITB has established an over provision and it is likely that, in particular, projects led by large developers, commercial and infrastructure projects may go to large national and international architectural services providers.

This is likely to be the case for other professional and office based roles.

7.2. Gap Analysis – Long Term

When looking at the longer term past 2017, the amount of known work in the LEP area decreases. To give a view on the gap analysis across the wider range of work and over the longer term, the annual Average Recruitment Requirement (ARR) details within the wider North East CSN 2017-2021 report can be used, bearing in mind that North East LEP has consistently related to around 78% of regional employment in recent years. With this relative share, it is fair to assume that the North East LEP area will face similar long term demands to those of the North East region as a whole.

[The ARR is a gross requirement that takes into account workforce flows into and out of construction, due to such factors as movements between industries, migration, sickness and retirement. However, these flows do not include movements into the industry from training. The ARR provides an indication of the number of new employees that would need to be recruited into construction each year in order to realise forecast output.]

Table 13: Occupational breakdown of ARR for North East region as a whole (Source CITB)

Occupation	2016 Employment Forecast (North East)	ARR 2017-2021 (North East)	ARR as % of 2016 Employment Forecast
Non-construction prof, technical, IT, other office-based staff	10,929	200	1.8%
Construction trades supervisors	3,430	150	4.4%
Other construction professionals and technical staff	8,158	110	1.3%
Senior, executive, and business process managers	4,632	110	2.4%
Specialist building operatives nec*	3,479	110	3.2%
Labourers nec*	6,528	90	1.4%
Wood trades and interior fit-out	7,012	70	1.0%
Roofers	2,228	70	3.1%
Floorers	2,303	60	2.6%
Plant operatives	2,524	50	2.0%
Painters and decorators	2,304	50	2.2%
Steel erectors/structural fabrication	1,543	50	3.2%
Scaffolders	1,410	50	3.5%
Civil engineers	1,510	30	2.0%
Civil engineering operatives nec*	1,213	30	2.5%
Electrical trades and installation	7,381	20	0.3%
Construction project managers	1,441	20	1.4%
Plumbing and HVAC Trades	6,205	-	0.0%
Other construction process managers	6,024	-	0.0%
Bricklayers	3,036	-	0.0%
Plant mechanics/fitters	2,469	-	0.0%
Plasterers	2,451	-	0.0%
Building envelope specialists	2,284	-	0.0%
Surveyors	1,332	-	0.0%
Glaziers	721	-	0.0%
Non-construction operatives	561	-	0.0%
Logistics	492	-	0.0%
Architects	374	-	0.0%
Total	93,974	1,270	1.3%

Key

Manager/Professional occupations
Skilled Trades
Office-based Staff

The CSN 2017-2021 ARR is consistent with the earlier analysis in identifying a requirement for:

- Senior, Executive and Business Process Managers
- Non-Construction Office Based Staff

The CSN 2017-2021 ARR also identifies some other occupations with an occupational requirement, either as actual volumes or as a percentage of current employment. These occupations are:

- Construction Trade Supervisors (volume and % of employment)
- Specialist Building Operatives nec (volume and % of employment)
- Other Construction Professionals and Technical Staff (volume)
- Scaffolders (% of employment)
- Steel Erectors/Structural Fabrication (% employment)
- Roofers (% of employment)

The **Non-Construction Office Based Staff** are likely to have skills that can be transferred over a range of industries so there will exist a wider pool of potential recruitment to draw from in this instance.

Construction Trade Supervisors and **Specialist Building Operatives nec** have been identified due to a combination of comparatively high ARR by volume and an ARR as a percentage of current employment notably above the regional average.

Other Construction Professionals have been identified solely in volume terms because of their comparatively high ARR by volume and high overall employment levels, accounting for 8.7% of all regional construction employment.

For **Scaffolders**, **Steel Erectors/Structural Fabrication**, and **Roofers**, the ARR as a percentage of current employment is notably above the regional average at 3.5%, 3.2% and 3.1% respectively, which indicates potential occupational pressure to meet forecasted demand.

7.3. Gap Analysis – Training needs

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

- 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, *'is there the training in the areas of potential demand?'* the demand analysis and CSN identify civil engineering skills as being in demand, with the demand analysis also identifying Architects and Surveyors.

As covered earlier, Logistics and Non-Construction Operatives are not construction specific; therefore we would anticipate supply and demand to be more influenced by retail/warehouse/transport demands. For Civil Engineers, this would typically be met from graduate level recruitment, which would not be restricted to supply from within the North East LEP area. With the wider impacts on these occupations, a training needs analysis specific to the North East LEP area is unlikely to give credible views.

The North East LEP area, like the wider region, already delivers a significant volume of Plant Operative training and there is also good training provision for the likes of Plasters and Dry Liners, Glaziers and Roofers. For Plant Operatives, one of the factors will be the exact type of training required, i.e. is an operative trained to use a particular type of machine or perform a niche task?

Further work would have to be carried out to determine the extent to which specialist skills in these areas would match future demand, however at the moment the view would be that there is capability 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 Plant Operatives, Glaziers, Roofers and Plasterers.

However:

- There are occupations, such as Bricklaying, Specialist Building Operatives nec and Building Envelope Specialists where the levels of competence based training appears to be slightly low.

Although limited, the growth that is occurring in education and training within the North East LEP appears to be within the practical, competence based qualifications that employers have a preference for, as opposed to the “knowledge/theory” based qualifications.

8. Recommendations and conclusions

8.1. Recommendation 1

Skills strategy: pipeline identification, planning and exploitation

Review and develop, as appropriate, the North East LEP construction skills strategy to ensure that any gap between demand and skills provision for high demand or priority professions and trades identified in the report does not become a problem; ensuring that there is good local provision for high demand occupations and that any risk of an immediate shortfall in .

- It may be appropriate to consider this as a series of smaller geographic areas. It seems sensible also to base these geographic areas on infrastructure that enable or hinder the movement of workers and students.
- Longer term projections and the development of scenarios may enable an assessment of the potential impacts of major initiatives that may skew demand.

8.2. Recommendation 2

Reskilling and upskilling construction workers and those from other sectors

This will support the LEP's goal of maintaining employment among older workers by helping them develop their skills.

A holistic construction skills plan may also benefit from identifying cross-sectoral occupational impacts on labour requirements and opportunities.

This may benefit from considering the North East construction economy in the context of the wider economy and other sectors. The North East area appears to have less of a shortfall of construction workers compared with some regions and looks as though (in comparison with other regions) may experience a stagnation of demand. It is also possible that changes in UK employment as a result of the UK leaving the European Union may have an impact that should be monitored.

It may be that there is greater potential value in helping residents to take up high value construction opportunities rather than move into other sectors.

This may also include recognising the potential demand for “non-construction professionals...” and the opportunity to support the development of career progression opportunities that upskill construction workers to take on more supervisory, senior and managerial and affiliated roles. Such an approach would need to be matched with the recruitment and development of construction skills – so as not to create a shortage of trades by encouraging them to move into managerial roles.

It also appears that a significant proportion of construction training delivered is at level two, as well as at level one. However there may be an opportunity to develop a curriculum that moves workers up through the skills levels and develops more training at levels three, four and above and in specialisms likely to be in demand in the longer term.

8.3. Recommendation 3

Collaborative partnerships

Establish a construction skills group and identify potential partners within the area where they have an interest in construction outputs and construction skills and share analysis with them with a view to engaging them in contributing to building collaborative holistic action plans.

Those stakeholders include: local construction businesses; major employers; local authorities; those responsible for managing infrastructure (transport and utilities); construction training providers, local stakeholders and influencers and universities.

The momentum gained from the work done to-date should be maintained with continuing engagement with those (and new) stakeholders, with them encouraged 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. (However it may also require compromise.)

The North East's local authorities and LEP have some economic and political significance and influence and should use this influence considerably to leverage others to work together to achieve positive prioritised and co-ordinated action. This may in particular include establishing immediately, closer working relationships with the largest projects taking place across the region (that will have disproportionate significance) in developing and supporting the skills strategy.

8.4. Recommendation 4

Develop the future curriculum, the provision and appropriateness of construction skills training.

- a) An ambition of a future construction skills curriculum should be to match training and development with the needs of employers and the local economy. As the bulk of training is delivered by a relatively small number of the larger colleges, the greatest potential impact is through mediated collaboration, between the FE colleges. By working together the major colleges can avoid duplication of effort or share resources, enhance specialisations and explore innovative ways of delivering the curriculum that meets employer 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. A starting point may be to consider those occupations where there appears to be high demand and a high relative gap.
- c) One potential opportunity may be to identify and facilitate how FE colleges and employers can engage with specialist training providers as well as with major projects, to establish greater provision to address what is a common complaint of construction employers. That is – new starters are not often enough 'site ready' so a curriculum might include working with employers to enhance new starters' site readiness and behaviours.
- d) 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. For example that may be in high demand for the many significant projects that are expected to proceed in the North East area and further afield and that will increasingly need to utilise developing technology (e.g. BIM). See recommendation 9.

- e) 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.

8.5. Recommendation 5

Outreach

Build a more positive image of construction with young people.

And increase recruitment through new entrance points, career changes and reskilling.

Enhanced outreach is in concert with the LEP's 'North East Ambition' programme to deliver outstanding careers guidance.

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

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

CITB has supported employers across the construction and built environment to come together working with a number of stakeholders 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.

There is an opportunity to maximise Go Construct and other employer led initiatives to raise engagement between the local employers, educators and individuals from all backgrounds.

8.6. Recommendation 6

Use procurement as a lever to enable skills development

The potential exists through smarter approaches to procurement to encourage those bidding for construction and infrastructure contracts to be mandated to include provision for co-ordinated recruitment, training, apprenticeships and outreach within their responses to tender. Provision would also be required to hold contractors to account for commitments made. Such an approach could be co-ordinated through local authorities and be a requirement of planning applications and local authority and public sector contracts.

It may also be possible to encourage major contracting businesses to follow such an approach in support of the Region's skills and economic development. Early engagement with employers to discuss any such approach is recommended.

Similarly 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.

8.7. Recommendation 7

Procurement and supply opportunities to be co-ordinated through the LEP and or local authorities

Establish, as far as possible, processes and communication that help enable local companies to compete for, or be involved, with projects undertaken within the LEP area. Doing so will help create a more stable and sustainable local construction economy and may give local companies greater confidence to invest in recruitment and training.

Opportunities might include establishing a process whereby, once major construction contracts are awarded, details of the primary contractors are shared with local planning authorities and published in order to allow discussions to take place around meeting emerging skills needs and establishing collaborative opportunities in the North East area.

Better awareness of who to speak with in relation to providing services to major contractors may enable local sub-contractors to shift a greater proportion of their work and resources within the North East area so improving their efficiency (by reducing distance to site), and benefitting the local economy.

Business information providers are available that provide a wealth of detail on the construction market, projects and contracts – that have the potential to be of benefit to firms in the local supply chain. The LEP or local authorities could put in place a contract to share such data with local firms.

8.8. Recommendation 8

Develop a longer term plan for developing skills relevant to the future of construction

The LEP's skills goals include: excelling in technical and professional Further Education. And working in partnership with higher education and business, to deliver job-ready graduates and high quality employment opportunities.

Some of the occupations for which there appear to be high demand and a high relative gap include: Other construction professionals, Surveyors, Civil Engineers and Architects – typically requiring higher level qualifications.

Increasing demand for and provision of training for these occupations might help address a future local skills issue.

As the home of three universities, the North East LEP area has opportunities to engage with these to establish ways of developing the future of construction and civil engineering.

The opportunity may be to ensure that the workforce is not just trained but “well trained” (typically above average and with skills likely to be of significance and in demand in the future).

Building the profile of the North East area to exploit that centre of excellence would also require a sophisticated and holistic communication plan or integration with existing communication planning.

Where there are opportunities apprenticeships should be delivered at higher levels – 3, 4 and 5.

There may be opportunities for the LEP and local councils to use their influence and engagement with significant projects to address what appears to be a shortfall in workers qualified at levels 3, 4 and 5.

8.9. Maintaining & enhancing the evidence base

Utilise the licence to use the CITB Labour Forecasting Tool to regularly update the evidence base that supports decision making as circumstances change and to demonstrate construction pipeline opportunities. 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 forecasts on a regular basis – six monthly is suggested.

END

APPENDICES

Appendix A. Demand analysis methodology

A.1.1. 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 details on 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 take account of any shortcomings in the sources of data; and how the LFT converts output into labour demand.

A.1.2. Calculating construction output

A.1.2.1. Data sources

There are two principal sources of data: the Glenigan database and the National Infrastructure and Construction Pipeline (NICP). Once we have elicited the appropriate date, the results are sent to the NE LEP to supplement and/or confirm.

A.1.2.2. 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 (2016Q4) 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 Table 14. 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.

Table 14: 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 thoroughly inspected and 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 housing, commercial and industrial.

For the non-significant projects, the default project type defined in the Glenigan pipeline is applied.

In order to maintain consistency with the CSN, whose forecasts extend only as far as 2020/21, we have limited our analysis of the Glenigan data to the annual spends up to and including 2020/21.

A.1.2.3. NICP data

The Infrastructure and Projects Authority (formerly Infrastructure UK and Major Projects Authority) compile a pipeline of UK infrastructure and construction projects and the associated annual public and private investment. For this report we have used the Autumn 2016 NICP which includes details of around 720 projects valued at some £500bn.

The NICP data is examined to identify infrastructure projects or programmes of work taking place in the NE LEP that are not included in the Glenigan database. The construction cost is calculated from the total cost reported in the NICP using the percentages in Table 14. Projects in the Glenigan dataset and the NICP are combined (ensuring that there is no double counting) to create a pipeline of 'denominated' projects for the area. We have only considered those projects which are specifically allocated to the NE LEP 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 with data in Glenigan.

A.1.2.4. 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

A.1.2.5. Validation by North East LEP

Finally, the resulting pipeline of work was shared with the North East LEP to check its validity and identify any omissions or other issues.

A.1.3. 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.

1. Considering the government region within which the NE LEP lies (in this case, the North East), identify only the new build in the denominated projects by removing all repair and maintenance projects.
2. Compare the output identified in the denominated 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.
3. If in any sector the denominated 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 denominated project** is factored by the following ratio:

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

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 denominated projects and those whose value or probability of realisation is over-optimistic.

4. To take account of housing repair and maintenance (R&M) in the denominated projects 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 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

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

A.1.4. Dealing with the ‘cliff edge’

As the time horizon extends there is less clarity on what is planned. As a result, the number of denominated 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.

A.1.5. Calculating total labour demand

Our Labour Forecasting Tool is used to determine the labour demand generated by the construction outputs in the peak year calculated as described in Sections 2.2, and 2.4. 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 A. 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 changes in prices.

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

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

Infrastructure projects can be broken down into the types shown in Table 14.

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 15: Definitions for the 28 occupations referred to in this report

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).	
1 Senior, executive, and business process managers	
	(1115) Chief executives and senior officials (1131) Financial managers and directors (1132) Marketing and sales directors (1133) Purchasing managers and directors (1135) Human resource managers and directors (1251) Property, housing and estate managers (1136) Information technology and telecommunications directors (2150) Research and development managers (1162) Managers and directors in storage and warehousing (1259) Managers and proprietors in other services nec (1139) Functional managers and directors nec (2133) IT specialist managers (2134) IT project and programme managers (3538) Financial accounts managers (3545) Sales accounts and business development managers
2 Construction project managers	
	(2436) Construction project managers and related professionals
3 Other construction process managers	
	(1121) Production managers and directors in manufacturing (1122) Production managers and directors in construction (1161) Managers and directors in transport and distribution (1255) Waste disposal and environmental services managers (3567) Health and safety officers (3550) Conservation and environmental associate professionals
4 Non-construction professional, technical, IT, and other office-based staff (excl. managers)	
	(3131) IT operations technicians (3132) IT user support technicians (3534) Finance and investment analysts and advisers (3535) Taxation experts (3537) Financial and accounting technicians (3563) Vocational and industrial trainers and instructors (3539) Business and related associate professionals nec (3520) Legal associate professionals (3565) Inspectors of standards and regulations (2136) Programmers and software development professionals (2139) Information technology and telecommunications professionals nec (3544) Estate agents and auctioneers (2413) Solicitors (2419) Legal professionals nec (2421) Chartered and certified accountants (2424) Business and financial project management professionals (2423) Management consultants and business analysts (4216) Receptionists

	<p>(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</p>
5 Construction trades supervisors	
	<p>(5250) Skilled metal, electrical and electronic trades supervisors (5330) Construction and building trades supervisors</p>
6 Wood trades and interior fit-out	
	<p>(5315) Carpenters and joiners (8121) Paper and wood machine operatives (5442) Furniture makers and other craft woodworkers (5319) Construction and building trades nec (25%)</p>
7 Bricklayers	

	(5312) Bricklayers and masons
8 Building envelope specialists	
	(5319) Construction and building trades nec (50%)
9 Painters and decorators	
	(5323) Painters and decorators (5319) Construction and building trades nec (5%)
10 Plasterers	
	(5321) Plasterers
11 Roofers	
	(5313) Roofers, roof tilers and slaters
12 Floorers	
	(5322) Floorers and wall tillers
13 Glaziers	
	(5316) Glaziers, window fabricators and fitters (5319) Construction and building trades nec (5%)
14 Specialist building operatives not elsewhere classified (nec)	
	(8149) Construction operatives nec (100%) (5319) Construction and building trades nec (5%) (9132) Industrial cleaning process occupations (5449) Other skilled trades nec
15 Scaffolders	
	(8141) Scaffolders, staggers and riggers
16 Plant operatives	
	(8221) Crane drivers (8129) Plant and machine operatives nec (8222) Fork-lift truck drivers (8229) Mobile machine drivers and operatives nec
17 Plant mechanics/fitters	
	(5223) Metal working production and maintenance fitters (5224) Precision instrument makers and repairers (5231) Vehicle technicians, mechanics and electricians (9139) Elementary process plant occupations nec (5222) Tool makers, tool fitters and markers-out (5232) Vehicle body builders and repairers
18 Steel erectors/structural fabrication	
	(5311) Steel erectors (5215) Welding trades (5214) Metal plate workers, and riveters (5319) Construction and building trades nec (5%) (5211) Smiths and forge workers (5221) Metal machining setters and setter-operators
19 Labourers nec	
	(9120) Elementary construction occupations (100%)
20 Electrical trades and installation	

	(5241) Electricians and electrical fitters (5249) Electrical and electronic trades nec (5242) Telecommunications engineers
21 Plumbing and heating, ventilation, and air conditioning trades	
	(5314) Plumbers and heating and ventilating engineers (5216) Pipe fitters (5319) Construction and building trades nec (5%) (5225) Air-conditioning and refrigeration engineers
22 Logistics	
	(8211) Large goods vehicle drivers (8212) Van drivers (9260) Elementary storage occupations (3541) Buyers and purchasing officers (50%) (4134) Transport and distribution clerks and assistants
23 Civil engineering operatives not elsewhere classified (nec)	
	(8142) Road construction operatives (8143) Rail construction and maintenance operatives (8123) Quarry workers and related operatives
24 Non-construction operatives	
	(8117) Metal making and treating process operatives (8119) Process operatives nec (8125) Metal working machine operatives (8126) Water and sewerage plant operatives (8132) Assemblers (vehicles and metal goods) (8133) Routine inspectors and testers (8139) Assemblers and routine operatives nec (9249) Elementary security occupations nec (9233) Cleaners and domestics (9232) Street cleaners (5113) Gardeners and landscape gardeners (6232) Caretakers (9241) Security guards and related occupations (3319) Protective service associate professionals nec
25 Civil engineers	
	(2121) Civil engineers
26 Other construction professionals and technical staff	
	(2122) Mechanical engineers (2123) Electrical engineers (2126) Design and development engineers (2127) Production and process engineers (2461) Quality control and planning engineers (2129) Engineering professionals nec (3112) Electrical and electronics technicians (3113) Engineering technicians (3114) Building and civil engineering technicians (3119) Science, engineering and production technicians nec

	(3121) Architectural and town planning technicians (3122) Draughtspersons (3115) Quality assurance technicians (2432) Town planning officers (2124) Electronics engineers (2435) Chartered architectural technologists (3531) Estimators, valuers and assessors (3116) Planning, process and production technicians
27 Architects	
	(2431) Architects
28 Surveyors	
	(2433) Quantity surveyors (2434) Chartered surveyors

Appendix C. **Glenigan projects removed from the North Eastern LEP**

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

Appendix Table 16: Projects listed in Glenigan that have been excluded from the demand analysis as a result of incomplete data

Number	Heading	Local Authority	Value (£m)	Start Date	End Date	Reason for omission
1	Demolition	Newcastle-Upon-Tyne		28/03/2018	16/12/2018	Missing Values
2	40 Houses	Sunderland	2.7			Missing dates
3	24 Houses	Gateshead	1.8			Missing dates
4	420 Houses	County Durham	25.0			Missing dates
5	Golf Course & Sports Pitches	North Tyneside	2.7			Missing dates
6	400 Houses/1 Retail Unit & Football Pitches	Northumberland	30.1			Missing dates
7	21 Holiday Units	North Tyneside	1.5			Missing dates
8	16 Residential/Commercial Units	Northumberland	1.3			Missing dates
9	Waste Reception & Processing Building	Northumberland	1.0			Missing dates
10	80 Residential Units	North Tyneside	5.2			Missing dates
11	71 Houses	Northumberland	4.8			Missing dates
12	120 Residential/Commercial Units	Northumberland	7.9			Missing dates
13	97 Residential Units	Northumberland	6.4			Missing dates
14	3 Commercial Units	North Tyneside	4.6			Missing dates
15	54 Residential Units & 1 Care Home	North Tyneside	8.7			Missing dates
16	30 Sheltered Flats/4 Care Flats & 1 Care Home	North Tyneside	1.6			Missing dates
17	Garden Centre	North Tyneside	0.4			Missing dates
18	770 Residential Units	Sunderland	30.0			Missing dates
19	35 Houses	Gateshead	2.4			Missing dates
20	88 Residential/Commercial Units	Northumberland	5.9			Missing dates
21	36 Houses	Northumberland	3.0			Missing dates
22	193 Houses	Gateshead	12.0			Missing dates
23	School(New/Refurb)	Gateshead	2.4			Missing dates
24	Anaerobic Digestion Facility	South Tyneside	12.0			Missing dates

Number	Heading	Local Authority	Value (£m)	Start Date	End Date	Reason for omission
25	70 Houses	Northumberland	4.7			Missing dates
26	271 Extra Care Homes	Northumberland	11.6			Missing dates
27	14 Houses	Sunderland	1.4			Missing dates
28	50 Houses	Northumberland	3.4			Missing dates
29	Training Centre	North Tyneside	6.9			Missing dates
30	85 Houses	Northumberland	5.7			Missing dates
31	11 Houses	Northumberland	0.8			Missing dates
32	144 Houses	Sunderland	9.1			Missing dates
33	389 Dwellings/15 Apartments	Northumberland	30.3			Missing dates
34	Community Centre (Extension)	Gateshead	0.3			Missing dates
35	Office Unit and Workshop (Extension/New)	South Tyneside	1.1			Missing dates
36	250 Houses	Sunderland	18.8			Missing dates
37	400 Houses	North Tyneside	30.0			Missing dates
38	Holiday Caravans/Lodges Development	Northumberland	4.6			Missing dates
39	12 Houses	Northumberland	0.9			Missing dates
40	27 Houses	Sunderland	2.0			Missing dates
41	Office Development	North Tyneside	1.2			Missing dates
42	Industrial Workshop	Northumberland	0.9			Missing dates
43	Berwick Infirmary	Northumberland	1.9			Missing dates
44	15 Houses (New/Conversion)	Northumberland	1.1			Missing dates
45	290 Houses & 1 Retail Unit	North Tyneside	21.8			Missing dates
46	7 Flats & 2 Shops/Offices (Extension/Alterations)	Sunderland	0.5			Missing dates
47	82 Houses	Sunderland	6.2			Missing dates
48	Retail Unit/Leisure Centre	Northumberland	1.6			Missing dates
49	128 Student Accommodation Flats	Sunderland	6.5			Missing dates

Number	Heading	Local Authority	Value (£m)	Start Date	End Date	Reason for omission
50	9 Houses & 4 Bungalows	Gateshead	1.0			Missing dates
51	School (New/Alterations)	Blyth Valley	0.4			Missing dates
52	13 Flats	Durham County	0.7			Missing dates
53	10 Houses	Durham County	0.7			Missing dates
54	Light Industry/Warehouse/Office	Durham County	0.8			Missing dates
55	Shop (Extension)	Durham County	0.8			Missing dates
56	12 Houses	Durham County	0.9			Missing dates
57	12 Houses	Durham County	0.9			Missing dates
58	Theatre (Redevelopment)	Newcastle-Upon-Tyne	0.9			Missing dates
59	18 Flats (Alterations)	Durham County	0.9			Missing dates
60	14 Houses	Durham County	1.0			Missing dates
61	12 Flats & 9 Shop Units (Conversion/Alterations)	Durham County	1.1			Missing dates
62	25 Flats	Newcastle-Upon-Tyne	1.2			Missing dates
63	18 Houses	Durham County	1.3			Missing dates
64	Community Building	Durham County	1.5			Missing dates
65	25 Houses	Durham County	1.7			Missing dates
66	Football Club House (Extension)	Newcastle-Upon-Tyne	2.0			Missing dates
67	36 Houses	Durham County	2.4			Missing dates
68	47 Residential Units	Durham County	3.1			Missing dates
69	50 Houses	Durham County	3.3			Missing dates
70	53 Flats (New/Conversion)	Wansbeck	3.6			Missing dates
71	85 Residential Units & 1 Cricket Clubhouse	Derwentside	3.7			Missing dates
72	31 Hotel Flats	Durham County	4.0			Missing dates
73	3 Commercial Units	Blyth Valley	4.1			Missing dates
74	70 Houses	Durham County	5.3			Missing dates

Number	Heading	Local Authority	Value (£m)	Start Date	End Date	Reason for omission
75	Quay (Upgrading)	Newcastle-Upon-Tyne	6.0			Missing dates
76	Hotel Development (Conversion)	Newcastle-Upon-Tyne	6.9			Missing dates
77	Industrial Warehouse/Restaurant	Durham County	6.9			Missing dates
78	67 Residential Units	Newcastle-Upon-Tyne	7.0			Missing dates
79	111 Houses & 6 Flats	Durham County	7.5			Missing dates
80	Supermarket	Durham County	7.7			Missing dates
81	136 Residential/Commercial Units (New/Conversion)	Durham County	8.6			Missing dates
82	277 Student Town Houses/Cluster Flats	Durham County	11.0			Missing dates
83	135 Houses & 13 Commercial Units	Durham County	11.1			Missing dates
84	150 Houses	Durham County	11.3			Missing dates
85	Hotel & 50 Homes	Sedgefield	17.5			Missing dates
86	365 Houses/Bungalows & Retail/Employment Development	Durham County	22.0			Missing dates
87	310 Residential Units	Durham County	23.3			Missing dates
88	400 Residential Units	Durham County	23.9			Missing dates
89	Student Accommodation	Newcastle-Upon-Tyne	31.0			Missing dates
90	425 Residential/Care Facility/Commercial Units	Newcastle-Upon-Tyne	31.9			Missing dates
91	900 Houses	Durham County	51.5			Missing dates
92	Business & Employment Development	Durham County	70.0			Missing dates
93	Wind Turbine Factory & Research	Newcastle-Upon-Tyne	100.0			Missing dates
94	Hospital Redevelopment	Berwick-Upon-Tweed	200.0			Missing dates
95	Framework for Asbestos Management Services	Sunderland	60.0	15/03/2016	17/03/2020	Consultancy
96	Asbestos Management Services Framework	Sunderland	1.4	07/11/2016	07/11/2017	Consultancy
97	Transportation/Civil Engineering Framework	Gateshead	15.0	26/11/2012	26/11/2016	Consultancy
98	Mechanical, Electrical & Consulting Engineers Consultants	Sunderland	1.0	19/06/2017	21/06/2021	Consultancy
99	Consultancy Framework (New/Refurb)	Sunderland	15.0	05/03/2014	05/03/2018	Consultancy

Number	Heading	Local Authority	Value (£m)	Start Date	End Date	Reason for omission
100	Construction Consultancy Services	Durham City	400.0	24/02/2014	24/02/2018	Consultancy
101	Design Team Framework	Durham City	12.0	15/08/2016	10/08/2020	Consultancy
102	Consultancy Framework	Durham City	1.5	03/10/2016	03/01/2017	Consultancy
103	Planning Consultants Framework.	Newcastle-Upon-Tyne	3.0	03/10/2016	03/10/2020	Consultancy
104	Asbestos Consultancy Framework	Durham City	2.0	14/11/2016	12/11/2018	Consultancy
105	Construction & Engineering Consultancy Services Framework	Newcastle-Upon-Tyne	10.0	01/05/2017	01/05/2021	Consultancy
106	APR15/01 Technical and Commercial Consultancy Services	Newcastle-Upon-Tyne	5.0	12/06/2017	11/06/2018	Consultancy
107	8 Flats & 1 Library	Northumberland	0.5	04/01/2017	04/02/2018	Duplicate
108	150 Residential Units	Gateshead	11.3	25/09/2017	23/10/2018	Duplicate
109	875 Homes & 1 Local Centre	Northumberland	65.7	08/06/2017	06/07/2018	Duplicate
110	77 Extra Care Flats	Sunderland	1.4	04/01/2016	30/01/2017	Duplicate
111	7 Office/Industrial/Storage Units	South Tyneside	1.5	03/08/2017	03/05/2018	Duplicate
112	Road (Widening)	Newcastle-Upon-Tyne	75.0	07/08/2017	04/02/2019	Duplicate

Appendix D. **Significant Glenigan projects in the North East**

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

Appendix Table 17: Significant projects in the North east listed in the Glenigan data

WLC ID	Description	Local Authority	Value (£m)	Construction Value	Start Date	End Date	Project Type
North East 658	HVDC Electrical Interconnector	Blyth Valley	2000.0	500.0	08/09/2017	09/09/2022	Infrastructure
North East 127	Civil Engineering and Infrastructure Works	Sunderland	1118.5	1118.5	15/08/2016	17/08/2020	Infrastructure
North East 46	Building Construction Works Framework	Gateshead	360.0	360.0	21/10/2014	21/10/2018	Public Non-housing, Private Commercial, Private Industrial
North East 222	Planned, Repairs, Maintenance and Specialist Services Contractor Framework	North Tyneside	298.3	298.3	01/09/2016	01/09/2020	New housing
North East 592	Road (Upgrading)	Northumberland	290.0	290.0	12/02/2018	12/02/2020	Infrastructure
North East 602	Road (Dualling)	Northumberland	250.0	250.0	01/06/2020	30/05/2022	Infrastructure
North East 485	Bridge	Sunderland	235.2	235.2	07/09/2015	09/04/2018	Infrastructure
North East 670	Water Projects	Durham City	200.0	180.0	01/04/2010	01/07/2018	Infrastructure
North East 662	Contractors Framework	Durham City	183.1	164.8	01/04/2011	01/07/2019	Infrastructure
North East 421	Housing Refurbishment Framework	North Tyneside	179.0	179.0	07/01/2013	07/01/2017	Housing R&M
North East 673	Housing Refurbishment Framework	Newcastle-Upon-Tyne	170.0	170.0	09/09/2013	09/09/2017	Housing R&M
North East 675	Housing Refurbishment Framework	Durham City	160.0	160.0	03/07/2013	03/06/2017	Housing R&M
North East 666	Water Distribution Pipelines	Durham City	155.9	140.3	01/04/2015	01/04/2020	Infrastructure
North East 657	Major Works Framework	Newcastle-Upon-Tyne	150.3	150.3	03/10/2016	05/10/2020	Public Non-housing
North East 679	Minor Works Framework	Durham City	148.0	148.0	12/12/2016	14/12/2020	Public Non-housing
North East 680	Flyover	Newcastle-Upon-Tyne	140.0	140.0	02/08/2016	29/03/2019	Infrastructure
North East 669	Energy Efficiency Improvement Services	Newcastle-Upon-Tyne	113.1	113.1	26/07/2013	26/07/2021	Housing R&M
North East 505	20,000 Housing (Refurbishment)	Gateshead	110.0	110.0	01/04/2012	03/04/2017	Housing R&M
North East 681	Domestic Properties (Refurbishment)	Sedgefield	109.0	109.0	21/11/2016	23/11/2026	Housing R&M

WLC ID	Description	Local Authority	Value (£m)	Construction Value	Start Date	End Date	Project Type
North East 101	Building Construction Work Framework	Gateshead	100.0	100.0	01/01/2014	01/01/2018	Public Non-housing, Private Commercial, Private Industrial, New housing
North East 684	Housing Framework	Newcastle-Upon-Tyne	100.0	100.0	25/02/2013	25/02/2017	New housing
North East 682	2 Colleges & Student Accommodation Development	Durham City	100.0	100.0	03/04/2017	01/01/2019	Public Non-housing
North East 523	119 Houses	Northumberland	90.0	90.0	05/10/2015	05/10/2019	New housing, Private Commercial
North East 693	Housing Delivery Partnership Framework	Newcastle-Upon-Tyne	82.0	82.0	16/06/2014	11/06/2018	New housing
North East 687	School	Durham City	77.2	77.2	09/02/2015	04/02/2019	Public Non-housing
North East 695	126 Student Accommodation/Hotel/Commercial Units	Newcastle-Upon-Tyne	75.0	75.0	03/10/2016	16/07/2018	Public Non-housing, Private Commercial, Private Industrial
North East 696	12 Flats/Student Accommodation & 2 Offices/1 Hotel	Newcastle-Upon-Tyne	71.0	71.0	21/11/2016	18/12/2017	New housing, Private Commercial
North East 698	Student Accommodation & Sports Centre Extension	Newcastle-Upon-Tyne	68.1	68.1	14/11/2016	12/11/2018	Public Non-housing
North East 699	Road (Widening)	Newcastle-Upon-Tyne	60.0	60.0	02/07/2018	02/07/2020	Infrastructure
North East 703	Student Accommodation	Newcastle-Upon-Tyne	50.0	50.0	04/01/2016	25/08/2017	Public Non-housing, Private Commercial
North East 706	Faculty of Science, Agriculture & Engineering Building	Newcastle-Upon-Tyne	50.0	50.0	21/11/2016	27/08/2018	Public Non-housing
North East 637	Road (Widening)	South Tyneside	50.0	50.0	13/03/2017	10/09/2018	Infrastructure
North East 708	University Urban Sciences Building	Newcastle-Upon-Tyne	45.0	45.0	23/11/2015	22/07/2017	Public Non-housing, Private Commercial

WLC ID	Description	Local Authority	Value (£m)	Construction Value	Start Date	End Date	Project Type
North East 639	750 Residential Units/2 Commercial Units	North Tyneside	43.4	43.4	01/08/2016	25/08/2017	New housing, Private Commercial, Public Non-housing
North East 29	206 Homes/Office/Training/Leisure/Restaurant/Retail Units	Sunderland	40.0	40.0	03/04/2017	05/04/2019	Private Commercial, New housing
North East 712	Water Treatment Works (Upgrade)	Newcastle-Upon-Tyne	40.0	36.0	04/04/2016	01/04/2019	Infrastructure
North East 169	Office Building	Northumberland	38.0	38.0	11/11/2016	19/12/2019	Private Commercial, Infrastructure
North East 543	392 Houses & 12 Flats (New/Conversion)	Northumberland	30.3	30.3	07/11/2016	08/12/2017	New housing
North East 720	Bypass	Alnwick	30.0	30.0	23/03/2015	16/12/2016	Infrastructure
North East 245	177 Houses & 24 Flats/21 Luxury Houses	South Tyneside	30.0	30.0	04/11/2013	04/03/2017	New housing
North East 722	360 Houses	Durham County	27.0	27.0	13/02/2017	09/04/2018	New housing
North East 766	Multi Storey Car Park	Newcastle-Upon-Tyne	26.1	26.1	27/02/2017	26/02/2018	Infrastructure
North East 443	335 Houses	South Tyneside	25.1	25.1	18/01/2017	14/02/2018	New housing
North East 724	Street Lighting	Castle Morpeth	25.0	25.0	13/03/2017	16/03/2020	Infrastructure
North East 623	396 Houses/Flats/Bungalows	Northumberland	24.4	24.4	05/10/2015	02/10/2017	New housing
North East 742	50 Student Flats & 4 Shop/Restaurant/Bar/Cafe Units (New/Alteration)	Newcastle-Upon-Tyne	23.4	23.4	01/02/2016	18/09/2017	New housing, Private Commercial
North East 730	256 Houses/21 Bungalows/17 Flats/14 Supported Living Units	Newcastle-Upon-Tyne	23.1	23.1	19/10/2015	14/11/2016	New housing
North East 347	Paint Shop Building (New/Extension)	Sunderland	22.6	22.6	10/04/2017	16/10/2017	Private Industrial
North East 49	291 Houses	South Tyneside	21.8	21.8	21/11/2016	18/12/2017	New housing
North East 734	334 Student Flats & 1 Retail Unit	Durham County	20.8	20.8	13/02/2017	26/03/2018	Infrastructure, New housing, Private

WLC ID	Description	Local Authority	Value (£m)	Construction Value	Start Date	End Date	Project Type
							Commercial
North East 735	Student Accommodation & Shopping Centre (New/Extension)	Durham County	20.7	20.7	13/03/2017	23/04/2018	Private Commercial, Public Non-housing
North East 736	364 Student Flats (New/Extension)	Durham County	20.5	20.5	06/02/2017	19/03/2018	Public Non-housing
North East 738	Student Accommodation (Conversion/Extension)	Durham County	20.1	20.1	26/10/2015	30/06/2017	Public Non-housing
North East 740	Office & Laboratory Buildings	Newcastle-Upon-Tyne	20.0	20.0	27/02/2017	27/08/2018	Private Commercial
North East 346	132 Houses	Northumberland	19.8	19.8	01/07/2017	01/08/2018	New housing, Infrastructure
North East 591	257 Houses & 1 Temporary Sales Cabin	Gateshead	19.4	19.4	02/02/2015	09/06/2017	New housing, Private Industrial
North East 744	Mixed Use Development	Durham County	18.9	18.9	26/05/2015	26/05/2017	Infrastructure
North East 746	409 Student Flats	Newcastle-Upon-Tyne	18.8	18.8	01/04/2016	01/06/2017	Public Non-housing
North East 749	75 Student Accommodation Flats	Newcastle-Upon-Tyne	17.0	17.0	14/11/2016	14/12/2017	Public Non-housing
North East 619	255 Houses	Northumberland	16.1	16.1	04/01/2017	04/10/2018	New housing
North East 753	Hospital (Extension)	Newcastle-Upon-Tyne	16.0	16.0	06/02/2017	06/11/2017	Public Non-housing
North East 53	Manufacturing Facility	Sunderland	15.8	15.8	27/06/2016	09/06/2017	Private Industrial
North East 611	250 Houses	Northumberland	15.8	15.8	09/03/2015	05/12/2016	New housing
North East 759	Student Accommodation Building	Durham County	15.0	15.0	16/05/2016	11/08/2017	Private Industrial, Public Non-housing
North East 40	200 Houses	North Tyneside	15.0	15.0	05/12/2016	01/01/2018	New housing
North East 761	Distribution & Warehouse Unit	Durham County	14.4	14.4	06/03/2017	11/09/2017	Private Industrial
North East 55	172 Houses/12Flats & 8 Bungalows	Northumberland	14.4	14.4	08/08/2017	04/09/2018	New housing
North East 6	Student Development	Gateshead	14.4	14.4	04/01/2017	04/02/2018	Public Non-housing

WLC ID	Description	Local Authority	Value (£m)	Construction Value	Start Date	End Date	Project Type
North East 762	280 Flats & 1 Shop/Cafe Unit	Newcastle-Upon-Tyne	14.1	14.1	06/02/2017	05/03/2018	New housing, Private Commercial, Infrastructure
North East 663	50,000 Houses (Improvements)	Durham City	13.9	13.9	31/05/2012	31/05/2019	Housing R&M
North East 246	Sewage Treatment Works (Extension)	North Tyneside	13.7	12.3	18/04/2016	29/09/2017	Infrastructure
North East 462	5 Retail/Restaurant/Fast Food/Community/Leisure Centre Units	North Tyneside	12.0	12.0	31/08/2016	20/12/2017	Private Commercial
North East 456	Castle (Refurbishment)	County Durham	12.0	12.0	01/08/2017	01/12/2018	Public Non-housing
North East 77	Framework Agreement for Roofing Contractors	Sunderland	11.6	11.6	01/08/2016	01/08/2017	Housing R&M
North East 780	149 Houses/Bungalows (Alterations)	Newcastle-Upon-Tyne	11.2	11.2	13/03/2017	09/04/2018	Housing R&M, Infrastructure
North East 781	86 Houses & 62 Bungalows	Durham County	11.1	11.1	03/07/2017	30/07/2018	New housing
North East 88	147 Houses	Gateshead	11.0	11.0	05/06/2017	27/07/2018	New housing
North East 794	Research Centre	Newcastle-Upon-Tyne	10.0	10.0	05/12/2016	12/06/2017	Public Non-housing
North East 678	Rail Renewals Programme	Newcastle-Upon-Tyne	9.9	7.9	01/08/2014	01/08/2017	Infrastructure
North East 20	Leisure and Entertainment Facility & Restaurant	North Tyneside	9.6	9.6	06/02/2017	18/09/2017	Private Commercial
North East 283	Recycling Centre (Extension)	South Tyneside	8.8	8.8	13/02/2017	20/11/2017	Infrastructure
North East 806	Shopping Centre	Durham County	8.0	8.0	05/09/2016	05/09/2017	Private Commercial
North East 810	Basketball Stadium	Newcastle-Upon-Tyne	7.7	7.7	25/11/2016	25/06/2017	Public Non-housing, Private Commercial
North East 16	Highway & Infrastructure Works	Sunderland	7.6	7.6	13/06/2016	03/11/2016	Infrastructure
North East 677	Regional Planned Works Contract	Newcastle-Upon-Tyne	6.9	6.9	01/04/2014	01/04/2024	Housing R&M
North East 328	80 Flats/Commercial Units	North Tyneside	6.8	6.8	27/06/2016	28/04/2017	New housing

WLC ID	Description	Local Authority	Value (£m)	Construction Value	Start Date	End Date	Project Type
North East 92	Transport Interchange Development	South Tyneside	6.7	6.7	08/05/2017	22/01/2018	Infrastructure, Public Non-housing, Private Commercial
North East 832	Recycling Facility	Durham County	6.4	6.4	13/02/2017	20/11/2017	Infrastructure
North East 99	Surface Water Run Off Storage Area	North Tyneside	6.0	6.0	11/05/2017	15/02/2018	Public Non-housing
North East 395	Office Head Quarters Building	Sunderland	6.0	6.0	06/02/2017	06/11/2017	Private Commercial
North East 310	Synagogue/Church	Gateshead	6.0	6.0	27/02/2017	11/12/2017	Public Non-housing
North East 322	School (New/Extension)	Northumberland	5.9	5.9	14/11/2016	07/08/2017	Public Non-housing
North East 153	54 Houses/20 Bungalows & 7 Luxury Houses	Northumberland	5.7	5.7	03/04/2017	06/10/2017	New housing
North East 848	Waste Transfer Station	Durham County	5.3	5.3	29/02/2016	21/10/2016	Infrastructure, Private Commercial
North East 852	2 Warehouse/Distribution Buildings	Durham County	5.2	5.2	07/08/2017	12/02/2018	Private Industrial
North East 713	Solid Wall Insulation Framework	Newcastle-Upon-Tyne	1.1	1.1	16/12/2015	18/12/2019	Housing R&M

Appendix E. Region employer operates in, compared with working in

Appendix Table 18: Region/nation employer operates in, compared with region/nation working in currently

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

