Sheffield City Region
Construction Labour and Skills Research

Final report

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First draft	25 May 16	
Version 9	13 June 16	
Version 10	1 August 16	Additions to recommendations
Version 11	4 November 16	Minor amendments from SCR Combined Authority

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1.   Introduction

This report uses the most reliable and trusted data available to present a picture of:

a)   The anticipated demand for construction for the Sheffield City Region up to 2020 [Section 3].

b)   The available supply of construction skills and training capacity as well as other factors that influence the construction workforce [Sections 4 & 5].

c)   An assessment of the gap between demand and supply [Section 6].

d)   A set of observations and recommendations for Sheffield City Region Combined Authority to review [Section 7].

This report and associated appendices represent a significant amount of reading. For a summary understanding, the suggested priority sections are: 3, 6 and 7.

1.1.   Background

The Sheffield City Region Combined Authority (SCR CA) is working with CITB to create a construction strategy and action plan, along with a "*Right Training Strategy*" pilot to help address the skills challenges the construction industry and training providers are facing across the Sheffield City Region.

This report is the one step in the creation of an evidence base that will help inform decision making and enable the creation and execution of wider construction and skills strategies. It should be used to facilitate conversations across the Sheffield City Region and with other agencies, employers and providers.

CITB and Sheffield City Region agreed what this research should inform and how. This report provides the concluded research that identifies current and emerging skills needs and makes recommendations on strategies and actions to ensure the Sheffield City Region has a construction workforce that is fit for purpose.

1.1.1.   Referendum result

The data used in producing this report, the commentary, conclusions and recommendations were all made before the result of the Referendum was known. So no consideration of the implications of the UK's leaving the European Union has been made.

1.1.2.   Demand for construction skills

Of 28 groups listed, those construction occupations showing the greatest peak annual demand are:

1.   Wood trades and interior fit-out (with a known peak demand of 3,350 people)

2.   Construction professional & technical staff (2,400)

3.   Construction process managers (2,350)

4.   Labourers (2,250)

5.   Plumbing and heating, ventilation and air conditioning trades (2,000)

6.   Electrical trades (1,950)

7.   Building envelope Specialists (1,500)

These are for the known projects listed in the Glenigan database so demand will be further increased from non-specified projects. There is also significant demand for "non-construction professionals (excl. managers)" that provide the off-site back room supporting functions.

The most significant project types, in their anticipated demand for labour, from known projects over the five years, will be (Table 5):

1. Private Commercial (36.1%)

2. New housing (29.4%)

3. Infrastructure (19.1%)

The labour demand arising from known projects appears to be at a peak in 2016 at 35,350 people, while inclusion of projected growth moves the peak to 2018 and 35,850 people. When estimates of other construction (i.e. sub £250,000 projects plus repair and maintenance) the total construction labour demand peak for the area in 2016 is 53,300 workers.

1.1.3. Supply

There are estimated to be just over 64,000 construction workers in the Sheffield City Region with half of those located based in the Sheffield and Doncaster local authority areas. In comparison with the demand for workers, this suggests that an imminent total shortage of workers is unlikely and that Sheffield City Region is more likely to be 'exporting' workers to neighbouring areas.

The growth in the workforce in the Sheffield City Region appears to have lagged behind the Yorkshire and Humber Region for each of the past four years, though where there has been growth this has tended to employment in micro businesses.

1.1.4. Skills shortages and growth

The impression gained from the available evidence is that Sheffield City Region is not facing a significant immediate skills shortage. In fact the impression gained is that the flow of workers is more likely to be from Sheffield City Region to its neighbours.

The Sheffield City Region appears, in construction terms, not to be growing as strongly at the Yorkshire and Humber region. Sheffield City Region now makes up a smaller proportion of Regional construction employment compared with 2011.

1.2. The Sheffield City Region Executive Delivery Plan 2016/17

The Sheffield City Region's Executive Delivery Plan states the goal of creating 70,000 jobs in the City Region over the next ten years and transforming the local economy to ensure that it is a key driver of the Northern Powerhouse.

The Sheffield City Region has targets for investment and development of local transport infrastructure from which is seeks to extract maximum local economic and social value and is also helping shape the "*Transport for the North*" strategy.

Sheffield City Region investment is aiming to deliver a number of outputs that in some cases align closely with this report including:

- Seeking to enhance skills through training that benefits individuals and businesses;

- Engagement with local businesses;

- Commercial and housing development.

The LEP has secured £350 million of Growth Deal funding and through a multi-year £255m programme of investment, is seeking to achieve a number of goals including the development of infrastructure to support "2,955 jobs, including 1,529 construction jobs".

Relevant objectives of the Executive Delivery Plan (extracts):

1c   *To agree and implement an SCR Apprenticeship strategy by summer 2016 in order to manage the transition in proposed national reforms and maximise Apprenticeship growth in SCR.*

1d   *To agree and implement an SCR careers strategy by summer 2016 in order to create a more coherent offer of careers activity across the city region in order to create an evidence base for future devolution asks in this field.*

4   *…to include an ABR recommendation for a full review of all 16-18 and 19+ curriculum to be commissioned by summer 2016 alongside the implementation of wider ABR recommendations. This will be used to inform a 16-18 FE education and skills plan developed by autumn 2016, Local Authority plans for school sixth forms, on-going devolution of the Unified Adult Education Budget and to influence specialisation investments made in the city region e.g. skills capital.*

10c   *Supporting RMBC in the deployment of £1.5m of funds to support the re-training of staff affected by TATA redundancies, within local supply chains throughout 2016/17.*

12   *To ensure SCR has the training infrastructure required to support the immediate needs of business and learners in line with SEP priorities in addition to development of the future infrastructure required to realise SEP growth objectives.*

12a   *Operationalise skills capital programme, commencing delivery of a range of schemes including North Nottingham College and the National Rail College – Doncaster Campus.*

1.3.   CITB's remit

- Assisting in ensuring that the further education offer for construction employers fits their needs – improving the quality, relevance and impact of the most significant providers of initial training, re-skilling and up-skilling.
- Sharing labour market intelligence – creating a 'bespoke evidence base' where required.
- Improving employability with a focus on ensuring that young people aged 16 to 24 have the best opportunity to get a job locally and are work-ready.
- Supporting business-provider collaboration.

The wider construction strategy created by Sheffield City Region and CITB will seek to ensure that a continuing supply of appropriately qualified local people is available to meet the desired skills and employment outcomes. This strategy will be informed by the development of an evidence base that will provide information to support decision making and help ensure that the vision and objectives of Sheffield City Region's skills plan are achieved.

1.4.   High Speed 2 (HS2) and the One North Transport Plan

The HS2 route passes through the Sheffield City Region, with a station initially proposed at the Sheffield Meadowhall interchange. However in July 2016, HS2 Ltd proposed a revision to the route

near Sheffield in response to debate among local stakeholders, to consider how High Speed 2 might better serve Sheffield and the surrounding region.

HS2 Ltd's revised approach envisages rerouting the high speed line further east than originally proposed, following the M18 motorway between Rotherham and Doncaster. A spur would be constructed south of Chesterfield to connect HS2 to the existing Midland Main Line, which would be electrified by the time the second phase of HS2 is due to open allowing HS2 services to reach the existing Sheffield city centre station.

Adapting the South Yorkshire route also aligns with emerging plans for Northern Powerhouse Rail (High Speed 3). HS2 Ltd says that a further connecting line north of Sheffield would allow northbound trains to re-join the HS2 route, to Leeds and the East Coast Main line.

The revised alignment would reduce the cost of the second phase by an estimated £1bn.

This is likely to have an impact on the demand for skills. However, due to the lack of certainty surrounding these projects, they are not included in the research for, and estimates in, this report.

One of the two locations for the new National College for High Speed Rail (NCHSR) is Doncaster; due to open in September 2017.

Separately, the 'One North Transport Plan' published in August 2014 outlined proposals that included incremental rail infrastructure improvements including a new high speed trans-Pennine route (termed High Speed 3) plus an earlier integration with HS2 to bring forward construction of the Leeds to Sheffield section of High Speed 2.

In July 2015, HM Treasury published *Fixing the Foundations*, committing government to establishing TfN as a statutory body responsible for defining transport policies and investment priorities for part of the North of England.

Initial proposals are being assessed with a view to further development but include new high speed rails links from Liverpool, via Manchester to Sheffield; to Hull and using the HS2 connection with the East Coast Main Line; consideration is also given to extending a new high speed line as far north as Newcastle.

In March 2016 the National Infrastructure Commission (NIC) recommended bringing forward proposals for the High Speed 3 rail line and proposed collaboration between Transport for the North (TfN) and HS2 Ltd.

1.4.1. High Speed Rail Forecasting

As at summer 2016 there is little publicly available information that allows for good forecasting of the implication of the construction of high speed rail infrastructure. And the timescales are still so distant that detailed planning and planning applications are unavailable from which to draw to make indicative forecasts.

An interview with HS2 was published in Construction News in November 2014 in which it indicated a need for a monthly average total construction workforce of around 11,500 workers during construction with a peak construction workforce of more than 22,000. While many of these workers will need more traditional construction skills the expectation is for there to be skills gaps for modern construction methodologies. The interview reports an expectation that half the workforce will need skills at NVQ level 3 or above (where at the time of writing the estimate was for 80% of workers to be trained to NVQ level 2) suggesting that there is a need for upskilling of construction workers.

To some extent, HS2 is attempting to address these potential gaps with the creation of the new National College for High Speed Rail (NCHSR).

LINK – The article can be read at the Construction News website.

1.4.2. Context

The anticipated peak workforce for High Speed 2 is likely to be active across the anticipated route rather than be concentrated at a single geographic point at a moment in time. Particular centres of activity are likely to be around specific infrastructure challenges (such as tunnels and viaducts) as well as at the major centres of construction such as terminus and interchange stations.

Work on phase two will take place across four English regions: The North West; The West Midlands; Yorkshire & Humber; the East Midlands.

Yorkshire & Humber has a known construction workforce of 194,000 and the East Midlands of 164,000. So the total peak demand for workers for HS2, estimated at about 22,000 is approximately six per cent of the two regions' construction workforce.

While HS2 is likely to have an impact on demand, training needs and associated factors there is no suggestion, at this very early stage, that it will have a significant negative impact by drawing workers away from other projects. Rather, it is likely to present opportunities for which there should be ample time to plan, as better data about the route and specific construction elements becomes available.

2. Demand analysis methodology

2.1. Introduction

Labour demand depends on the expected value and type of construction activity within a defined geographical area. This commission involves a mixture of projects with different types of work (e.g. housing, infrastructure) happening at different times. Our analysis derives as complete a picture as possible of the type and timings of projects within an area. Once this has been determined the labour demand for each project is estimated using our Labour Forecasting Tool (LFT). The forecasts draw on the following sources of data:

- **Labour Forecasting Tool:** CITB's Labour Forecasting Tool is an online application that can forecast labour needs for a range of construction projects. The LFT forecasts monthly skills and employment needs from knowledge of the 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.

- **Glenigan Pipeline:** Glenigan produces a pipeline of forthcoming projects within each local authority in the UK. These are collated to allow contractors to identify leads and to carry out construction market analysis.

- **National Infrastructure Plan Pipeline (NIPP):** The Infrastructure and Projects Authority (formerly Infrastructure UK and Major Projects Authority) compiles a pipeline of UK infrastructure projects and the associated annual public and private investment. The Spring 2016 NIPP includes details of the annual spend on each of around 600 projects and programmes valued at some £426bn to 2020 and beyond.

2.2. About labour forecasting

Our award winning Labour Forecasting Tool (LFT) is used to develop a profile of estimated labour requirements in the LEP area by creating a bottom-up approach to skills forecasting which aggregates the employment from individual projects to create an area-wide profile. The Labour Forecasting Tool can predict labour requirements (i.e. number of operatives and managers) on a month-by-month and trade-by-trade basis given no more than the type of project, its value or gross floor area where appropriate, its location and its start and end dates. The LFT produces an indication of the total construction labour demand arising for that project in each of the 28 occupations listed in Appendix A. The results are presented at the trade, craft and professional levels. The labour for the project may or may not come from the immediate vicinity. For some occupations (e.g. professionals) the labour may come from another part of the country. The question of supply is addressed in subsequent parts of the report.

The LFT has a number of models to which each project is assigned. There are seven standard models covering:

- New Housing

- Public Non-residential

- Private Commercial

- Private Industrial

- Infrastructure

- Housing Repair & Maintenance

- Non-housing Repair & Maintenance

Infrastructure is disaggregated into twelve more detailed models covering project types such as road, rail and water projects.

The output from the LFT is shown in two ways:

Total person years by occupation: the total person years for each occupation required for the project. This output takes no account of the project duration which has been given in the original data. For instance if the total person years were 50, this means that if the project lasts for one year there would be 50 people employed for one year; if it lasted for two years then there would be an average of 25 people employed each year.

Total person years per year: the total number of people required each year.

The Construction Skills Network (CSN) forecasts labour requirements for the next five years. For consistency we have presented the demand forecasts for the five-year period 2015-20 used in the CSN model. Labour demand figures have been rounded to the nearest 50.

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 will likely be smoothed by local contracting markets. In light of that we have presented the average workforce during the year of the peak.

2.3. Pipeline analysis

To allow the labour demand to be estimated by the LFT we first need to determine the pipeline of work in an area.

2.3.1. Analysis of the Glenigan pipeline

Our principal source of pipeline data is provided by Glenigan. The Glenigan data provides details of planning applications from local authorities supplement by Glenigan with additional project-specific data. The Glenigan pipeline does not identify every single project in an area as some small projects (typically but not exclusively those less than £250,000 in value) and predominantly those which do not require a planning application (including repair and maintenance) are not included.

We have used the Mean Value Theorem to simplify the analysis of the Glenigan pipeline. This states that most information is obtained for least effort simply by considering only those projects whose annual construction spend is higher than the mean. This approach is used to identify the significant projects that account for the largest amount of expenditure. Typically, around 20% of the projects account for about 80% of the value of the pipeline. These are the projects that we refer to as the significant projects.

Project values (£m) given in the Glenigan pipeline are the total value of construction and engineering works. The scope of this study is limited to the construction sector and for infrastructure projects 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 can be seen in Table 1. The construction/engineering proportions have been validated through work we have undertaken for other clients.

An initial review of the projects in the pipeline is carried out to ensure that only projects that have (a) a defined value and (b) defined start and end dates are considered in the analysis. Projects with

missing data risk skewing the definition of the pipeline and so this initial review eliminates anomalies and we believe improves the reliability of assumptions made based on the known pipeline.

The following input data is used to produce the forecasts from the Glenigan pipeline:

- The value of each project provided in the Glenigan pipeline for all projects excluding infrastructure.

- For infrastructure projects, the value used is a percentage of the value in the Glenigan pipeline, representing the construction portion of the value, excluding engineering construction.

- Start and end dates of each project provided in the Glenigan pipeline.

- For the significant projects, the project descriptions in the database enable us to assign each project to the most appropriate project type (each type is driven by a different underlying model) to be run through the LFT. 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 within a single project, e.g. mixed developments comprising housing, commercial and industrial.

- For the rest of the projects (i.e. non-significant), the default project type allocation as defined in the Glenigan pipeline is applied, except for the infrastructure projects which are individually allocated to the most appropriate type from the available LFT infrastructure types.

Table 1: Proportion of total value related to construction

Infrastructure type	Sub-type	Construction value as a proportion of total value
Flooding	Flooding	90%
Transport	Bridges	100%
	Road Tunnel	100%
	Roads	100%
	Air Traffic Control	100%
	Airports	100%
	Ports	90%
	Stations (Underground/Network rail)	80%
	Mixed Rail	55%
	Electrification	35%
	Underground/DLR (not incl. Stations)	35%
	Rail maintenance	10%
	Trams	55%
	Contactless Ticketing	20%
Water	Water/Wastewater Treatment Works	90%
Communications	Broadband/Digital infrastructure	20%
Energy	Photovoltaics	80%
	Generation (Biomass)	50%
	Generation (Energy from Waste)	50%
	Generation (Nuclear)	50%
	Undefined Electricity Generation	40%
	Generation (Fossil fuel)	25%
	Generation (Renewables - Offshore)	20%
	Generation (Renewables - Onshore)	10%
	Gas Transmission/distribution	30%
	Electricity transmission/distribution	25%
	Interconnectors	20%
	Nuclear Decommissioning	60%
	Smart Meters	0%
	Oil and Gas	10%
Mining	Mining	80%
General infrastructure	General infrastructure	100%

2.3.2. Supplementing with the NIPP data

The NIPP data is examined to identify infrastructure projects or programmes of work taking place in the areas analysed that are not included in the Glenigan database. The NIPP data can be broken down into expenditure in each fiscal year. The construction cost is calculated from the total cost reported in the NIPP using the percentages in Table 1. Projects in the Glenigan dataset and the NIPP are combined (ensuring that there is no double counting) to create a known pipeline for the area.

2.3.3. Dealing with "cliff edges" in pipelines

The data from the known projects presents a picture of the forthcoming projects. As the time horizon extends there is less clarity on what is planned. For instance, in some cases a small number of projects are due to complete in the 2020s. The small workload shown by the demand profile is highly unlikely to reflect the total amount of work that will take place at that time. It is almost certain that there will be additional projects that come on stream at that time which have not yet been considered. To overcome this "activity gap" the peak has, therefore, been projected forwards and backcast to create a more likely scenario of the ongoing workforce. The employment growth rate used to backcast and project forward is based on the CSN employment forecast for the whole region under consideration.

2.4. Allowing for projects beyond the known pipeline

The known pipeline has two characteristics which prevent the results from providing the entire labour demand profile for the area:

- It does not record all smaller projects (roughly those of less than £250,000 value).

- It records mainly new build projects with only a small amount of repair and maintenance works included.

These two issues could cause the estimate of labour demand to be lower than it should be. In response to these issues, the following steps are undertaken to provide an estimate of the total labour demand across a region.

1. Only the new build projects arising from the known pipeline are run through the LFT, excluding any repair and maintenance work.

2. To estimate the full amount of new build work not captured in the known pipeline we compare the total known pipeline new build spend in the region where the area analysed is located with the output estimates for the CSN for the peak year. Where an area spans multiple regions we compare the sum of the relevant regions. This allows us to estimate the new build spend for the entire region not included in the known pipeline and hence the factor to be applied to the corresponding output for the area under consideration. In some cases the value of work in the known pipeline is higher than the CSN output forecast. In that case we assume that the known pipeline has captured the full extent of new build activity occurring within the area analysed during the peak year.

The new build spend not included in the known pipeline (calculated in the previous step) is assigned to the project types which reflect the mix of works recorded in the known pipeline for the area. A separate item is created for each project type (e.g. general infrastructure, housing) and assigned a value proportional to the contribution of each type within the known pipeline.

To calculate the R&M elements of work taking place within the LEP, the CSN output data is used to calculate the ratio of R&M to new build work in the entire region. We assumed this ratio to be constant throughout the region.

The LFT is used to calculate the labour demand profile based on the values of different types of work estimated above.

Labour demand for the peak year is then projected forward and backcast throughout the period of analysis. For this process we use the construction employment growth factors applied previously to the known projects.

2.5. Calculating total labour demand

The steps outlined above are used to produce the total construction labour demand generated by adding allowances for R&M and small new build projects to the data included in Glenigan.

3. A view of demand

3.1. Introduction

This section provides an estimate of the labour demand that construction investment will create across the Sheffield City Region over the period 2016-2020. The Sheffield City Region comprises the local authority districts of Barnsley, Bassetlaw, Bolsover, Chesterfield, Derbyshire Dales, Doncaster, North East Derbyshire, Rotherham and Sheffield.

As outlined in the methodology section the demand analysis was carried out in two stages:

- The first stage comprised analysis and processing of the known pipeline to create a snapshot in time of the labour demand arising in the area from the currently recorded projects supplemented with additional data from the NIPP. This combination of the Glenigan pipeline supplemented with additional information provides a set of projects which constitute the "known pipeline".

- Secondly, an estimate of the additional projects not included in the known pipeline is produced using the approach described in section 2.4.

3.2. Pipeline of known projects

3.2.1. Glenigan pipeline analysis

The initial review of the Glenigan database resulted in the removal of one project due to missing values and 45 projects due to missing dates. Also excluded were nine projects which were clearly identified as duplicates and one consultancy project. A full set of the projects which were omitted from the analysis is provided in Appendix B.

The Mean Value Theorem was applied to the remainder of the pipeline to identify the significant projects in the LEP area. The process identified 153 significant projects accounting for more than 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 2 shows the number of significant projects within the 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 2015 prices, the base price used in the Glenigan database.

Table 2: Breakdown of the significant project and total values in the LEP, as captured in Glenigan[1]

	Sheffield City Region
Total number of projects in pipeline	735
Construction spend (£m – 2015 values)	5,440
Number of significant projects in pipeline	153
Construction spend in significant projects (£m – 2015 values)	4,150
Percentage of construction spend in significant projects	76.3%

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[1] 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.

Appendix C provides a full breakdown of the significant projects and their construction values. The peak year for the spend profile is 2016. The location of the significant projects within the Sheffield City Region can be seen in Figure 1. The radius of the markers is in proportion to the value of the work taking place.
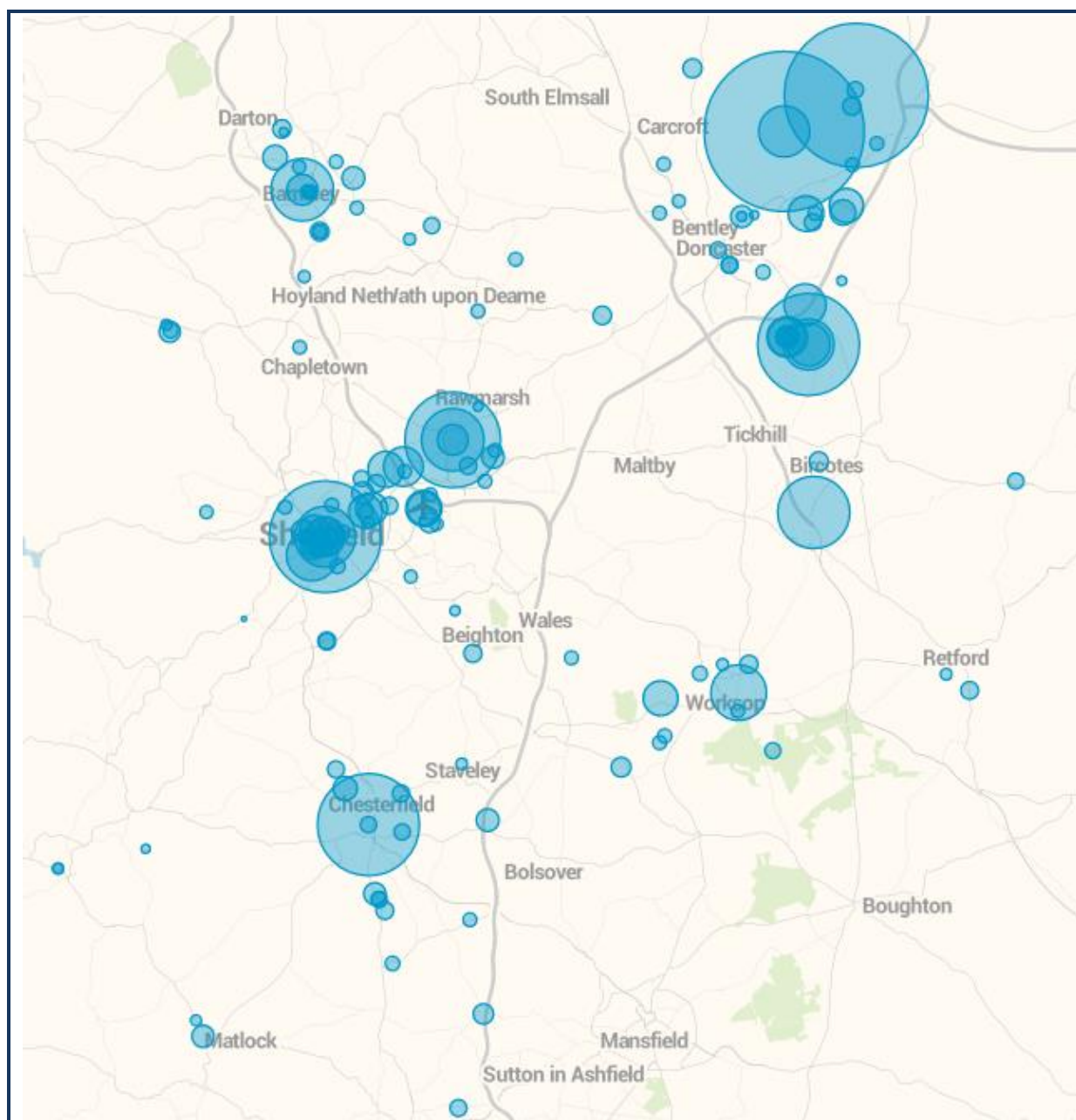
Figure 1: The significant projects in Glenigan used in this analysis

3.2.2. Supplementing the known pipeline

To supplement the data in Glenigan, the National Infrastructure Plan Pipeline was analysed to identify elements of work taking place within the LEP. Some projects in the NIPP can be clearly allocated as taking place within the LEP. However, some projects or programmes are allocated at a regional or national level, rather than at the LEP level. In these cases we assigned an element of the work to the LEP in proportion to the LEP population (e.g. if a scheme included a variety of works in Yorkshire and the Humber, then the proportion of spend used is proportional to the LEP's percentage of the Yorkshire and the Humber Region's population).

Table 3 shows the total construction value of projects in the NIPP during the period 2016-2020.

Table 3: Construction spend in 2016-2020 (from the NIPP)

	NIPP Construction spend in 2016-2020 (2015 values - £m)
Total NIPP	**1,199.3**

3.2.3. Total known pipeline spend by project type

This section provides an overview of the construction spend (£m at 2015 values) for the peak year of 2016 in the Sheffield City Region broken down by project type, based on the projects included in the Glenigan pipeline and the NIPP.

Table 4 shows the construction spend for each project type. It is clear that housing accounts for 30% of the spend, infrastructure for almost 24%, private commercial for 21% and public non-residential for around 11%. Private industrial accounts just below 9%. Non-housing R&M accounts for less 4%, while housing R&M accounts for 3%.

Table 4: Construction spend by project type in 2016 (total known pipeline)

Project type	Construction spend in 2016 (2015 values - £m)	% of total
New Housing	659.7	30.0%
Infrastructure	520.5	23.6%
Private Commercial	466.2	21.2%
Public Non-residential	233.9	10.6%
Private Industrial	188.5	8.6%
Non-housing R&M	75.6	3.4%
Housing R&M	57.2	2.6%
Total	**2,201.6**	**100.0%**

Table 5 shows the infrastructure construction spend in the total known pipeline in 2016 by sub-sector. Roads account for slightly over 30% of the spend, with water and wastewater treatment works following at 18% and photovoltaics at 12%. The other infrastructure subsectors account for less than 7% of the spend each.

Table 5: Construction spend per infrastructure sub sector in 2016 (total known pipeline)

Infrastructure sub-type	Construction spend in 2016 (2015 values - £m)	% of total
Roads	161.1	30.9%
Water/Wastewater Treatment Works	95.3	18.3%
Photovoltaics	62.9	12.1%
Biomass	33.5	6.4%
Flooding	32.0	6.1%
Trams	26.5	5.1%
Stations (Underground/Network rail)	23.1	4.4%
General Infrastructure	23.0	4.4%
Undefined Energy	18.8	3.6%
Gas Transmission/distribution	12.0	2.3%
Airports	7.5	1.4%
Mixed Rail (Track, stations, E&P etc.)	7.4	1.4%
Electricity Transmission/distribution	5.3	1.0%
Generation (Energy from Waste)	3.4	0.7%
Digital Infrastructure	3.2	0.6%
Bridges	2.4	0.5%
Mining	2.4	0.5%
Broadband	0.7	0.1%
Total	**520.5**	**100.0%**

3.2.4. Total known pipeline labour demand

Based on the analysis of the total known pipeline this section presents the labour demand arising within the Sheffield City Region.

Figure 2 shows the construction labour demand arising from the known pipeline including an allowance for the projected growth. As noted in the methodology section the drop off and indeed the ramp up of projects from the analysis of a pipeline is somewhat artificial and is depicted by the solid blue area. The shaded blue area indicates the labour demand arising from the other work which may not be included in the pipeline of known work.

The labour demand arising from known projects peaks in 2016 at 35,350 people, while inclusion of projected growth moves the peak to 2018 and 35,850 people.

For the peak year in Glenigan of 2016 we have shown a detailed breakdown by each of the 28 occupational groups for which the forecast has been produced. These are shown in Figure 3.

- The occupation making up most of the demand in 2016 is "non-construction professionals (excl. managers)" with a demand of 4,500 people.

The estimates of labour demand for the trades occupations for 2016 are as follows.

- The trade occupation for which the demand is highest is "wood trades and interior fit-out", peaking at 3,350 people;

- "labourers" create a demand of 2,250 people;

- "plumbing and heating, ventilation and air conditioning trades" follow with 2,000 people;

- all other trades have a demand of fewer than 2,000 people each.

Sheffield City Region Combined Authority have access to the LFT beyond the duration of this commission, so they can update all the assumptions regarding the pipeline projects - including project duration and value - as and when more specific information becomes available.

Construction labour demand from known projects
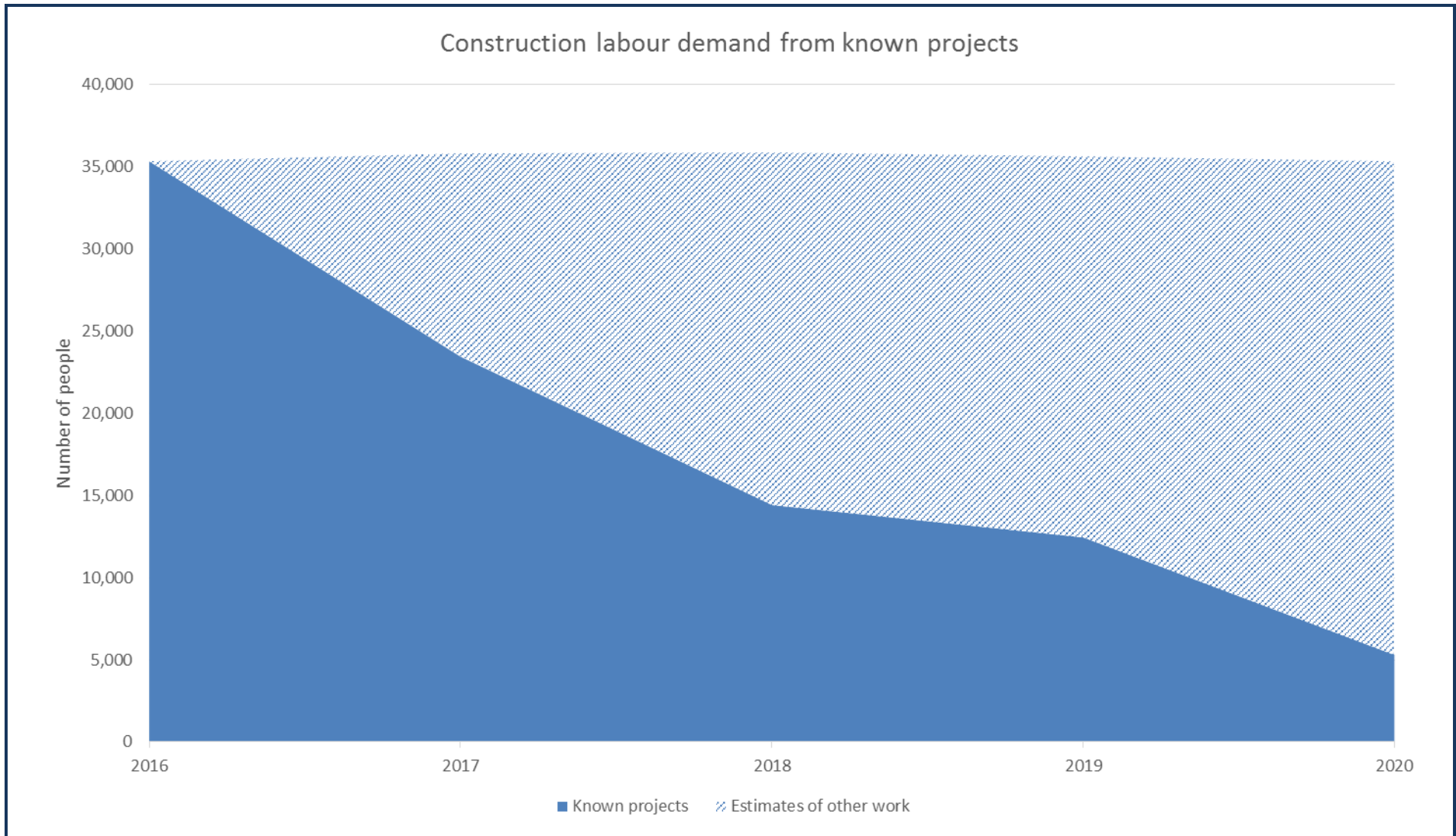
Figure 2: Construction labour demand arising from the known projects for the Sheffield City Region, including projected growth

Known projects construction labour demand: Sheffield City Region - 2016

Occupation	Demand
Non-construction professional, technical, IT, and other office–based staff (excl. managers)	4,500
Wood trades and interior fit-out	3,350
Other construction professionals and technical staff	2,400
Other construction process managers	2,350
Labourers	2,250
Senior, executive, and business process managers	2,150
Plumbing and heating, ventilation, and air conditioning trades	2,000
Electrical trades and installation	1,950
Building envelope specialists	1,500
Painters and decorators	1,250
Civil engineers	1,200
Non–construction operatives	1,000
Surveyors	950
Bricklayers	950
Specialist building operatives	850
Plant operatives	700
Construction trades supervisors	700
Plasterers and dry liners	700
Roofers	650
Construction project managers	550
Plant mechanics/fitters	500
Civil engineering operatives	500
Architects	450
Steel erectors/structural	450
Glaziers	400
Logistics	400
Scaffolders	350
Floorers	300

Figure 3: Construction labour demand arising from the known projects by occupation in the peak year

3.2.5. Breakdown of labour demand by project type

The labour demand has been calculated from the spend in each project type. In this section we have considered the total labour demand for the LEP, shown in Table 6. Around 36% of the labour demand arises from the private commercial sector and a further 29% from the new build housing. Infrastructure makes up 19% of the total demand and public non-housing 9%. Private industrial is 1%. Repair and maintenance works make up 6% of the labour demand, roughly equally split between housing and non-housing R&M.

Table 6: Known projects construction labour demand

Year	New Housing	Infrastructure	Public Non-housing	Private Industrial	Private Commercial	Housing R&M	Non-housing R&M	Total
2016	13,000	6,350	5,500	950	6,800	1,000	1,700	35,300
2017	9,150	3,350	2,500	100	6,600	1,100	650	23,450
2018	2,100	2,600	0	0	9,200	450	0	14,350
2019	1,750	2,550	0	0	8,000	100	0	12,400
2020	650	2,500	0	0	2,150	0	0	5,300
Total	26,650	17,350	8,000	1,050	32,750	2,650	2,350	90,800
% over period 2016-2020	29.4%	19.1%	8.8%	1.2%	36.1%	2.9%	2.6%	100.0%
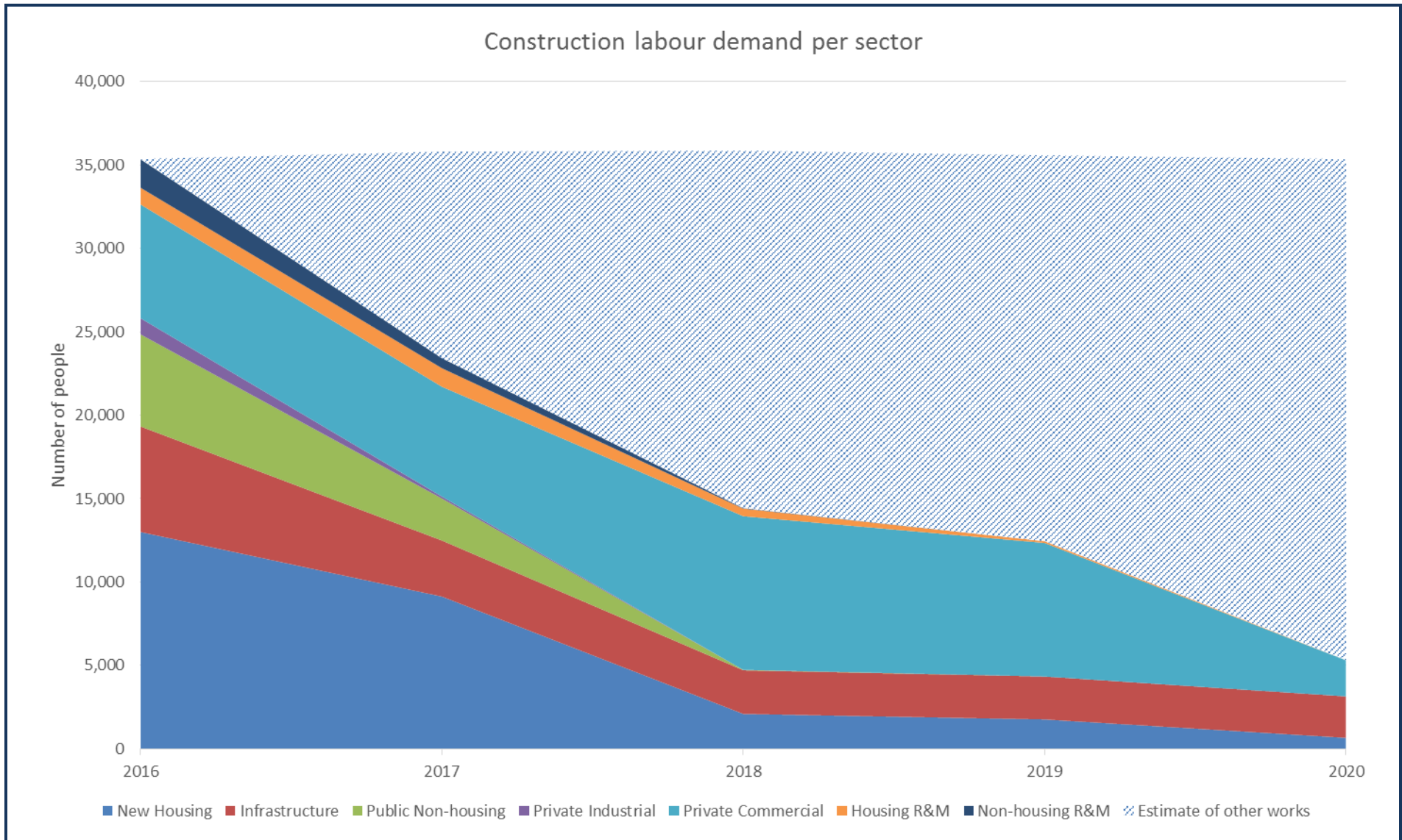
Figure 4: Labour demand by project type

3.3.   Total estimate of labour demand

As outlined in the methodology the known pipeline may not include smaller projects or repair and maintenance work. This section shows the outcomes of the analysis of the total construction labour demand with an employment growth rate included. In this case, the known projects estimate for the region was greater than the CSN forecast for the region and it was therefore assumed that the known pipeline has captured all of the new build activity. This output is shown in Figure 5. The solid blue area shows the labour demand arising from the known projects including R&M and peaks at 35,350 people in 2016, dropping to 5,300 people in 2020.

The expectation is that, were we to take repeated regular samples of the Glenigan database and re-run the Labour Forecasting Tool analysis we would find that the peak (in the blue area) would move at approximately the same level drawing an approximately horizontal blue line. As peak demand increased or decreased slightly this theoretical line might move up and down slightly. Experience gives us confidence that unless there is a major shock (such as economic recession) this peak demand rarely moves violently but may gradually move up or down. However based on the available evidence the expectation is that peak demand will increase slightly for 2017 and 2018. This is appears as a slight upward curve on the peak profile.

When small projects and R&M work are included, the construction labour demand in 2016 rises to 53,300 in 2016. When future growth is taken into account, demand peaks in 2018 at 53,300. The red shaded area shows the likely total labour demand arising from estimates of other future work.
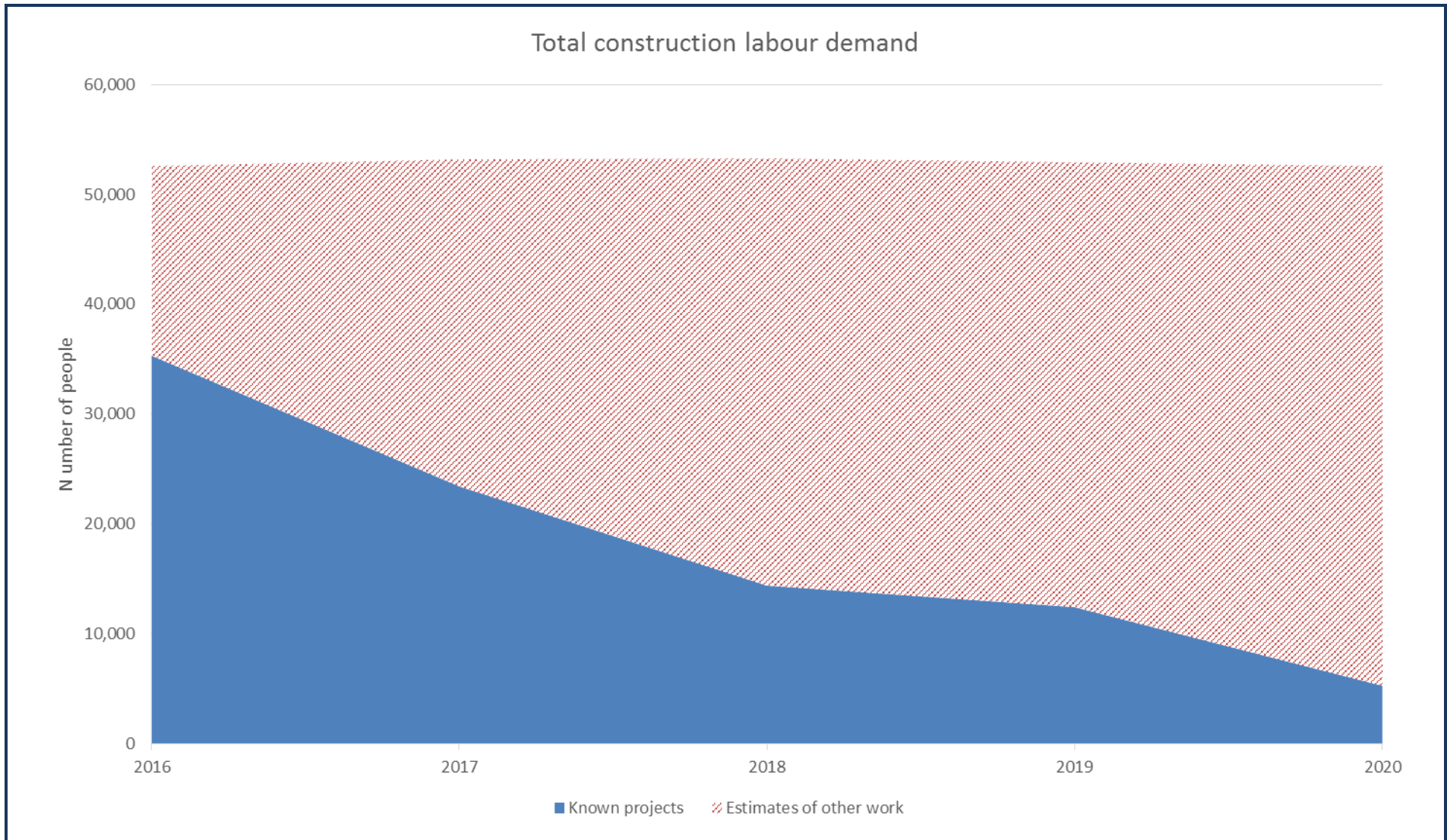
Figure 5: Total construction labour demand including estimates for both R&M and projects not in the known pipeline

3.4. Neighbouring areas

This section provides an overview of the large projects and related developments and frameworks which are current or are scheduled to begin within the next five years in the local authorities in close proximity to the Sheffield City Region, namely Amber Valley, Ashfield, East Riding of Yorkshire, East Staffordshire, High Peak, Kirklees, Mansfield, Newark and Sherwood, North Lincolnshire, Selby, South Derbyshire, Staffordshire Moorlands, Wakefield and West Lindsey. The Mean Value Theorem was applied to the total set of projects taking place within the areas listed above to identify the 20 most significant projects measured by their average annual spend in Glenigan. These projects were outside the scope of the current research and have thus not been included in the Analysis. Table 7 presents the spend profiles of these projects. Values are shown in 2015 prices as provided in the Glenigan database.

3.5. Implications of individual projects not going ahead

Appendix C provides a breakdown of the significant projects and their construction values.

The largest individual project listed is valued at £428 million for which a main contractor has been announced and appears to be proceeding. There are only seven projects (of 188) listed as being valued at £100million or more. The average mean value of those significant 188 projects is £22million with 42 projects valued greater than that mean average.

The known construction pipeline for the five years assessed is estimated at £5,440million so a variation of £100million represents only 1.8% of the known pipeline; A variation equal to the average mean project of £22million represents 0.4% of the known pipeline. When the unallocated projects are taken into consideration the total value of construction over the five years is likely to be significantly more than double the stated known pipeline value.

This means that the implication of a single large project or multiple average projects being cancelled is insignificant.

The Labour Forecasting Tool (LFT) was not designed to offer project-specific forecasts and any one project can vary from what is considered a typical norm. However, should it be required Sheffield City Region Combined Authority can use its access to the LFT to turn off or on specific for an indication of how this might impact the region.

Table 7: Significant projects in neighbouring areas

Number	Description	Local Authority	Value (£m 2015 values)	Start Date	End Date	Project Type
1	Offshore Wind Farm	East Riding of Yorkshire	1,200.0	01/04/2017	01/04/2022	Generation (Renewables - Offshore)
2	YORbuild East Area Contractor Framework	East Riding of Yorkshire	800.0	04/01/2010	04/11/2015	Public Non-housing
3	YORbuild2 East Area Contractors Framework	East Riding of Yorkshire	680.0	02/11/2015	02/11/2021	Public Non-housing
4	Town Centre Development	Mansfield	476.4	25/07/2016	07/03/2017	Private Commercial
5	Biomass Conversion Plan	Selby	350.0	17/07/2017	16/07/2018	Biomass
6	Offshore Wind Farm	East Riding of Yorkshire	300.0	11/09/2017	11/09/2020	Generation (Renewables - Offshore)
7	Combine Cycle Gas Turbine Power Station	Wakefield	300.0	25/04/2016	26/08/2019	Undefined Energy
8	Rail Freight Development	South Derbyshire	248.3	12/09/2016	12/09/2019	Private Industrial
9	Offshore Wind Farm	East Riding of Yorkshire	180.0	14/12/2015	14/12/2017	Generation (Renewables - Offshore)
10	Offshore Wind Farm	East Riding of Yorkshire	180.0	14/12/2015	14/12/2017	Generation (Renewables - Offshore)
11	Distribution Units	Wakefield	138.7	04/02/2016	16/08/2016	Private Industrial
12	1800 Residential Units & Commercial Units	Ashfield	135.0	28/02/2016	27/03/2017	New Housing
13	Cinema, Hotel, & Retail	East Riding of Yorkshire	120.0	19/06/2014	10/12/2015	Private Commercial
14	3,000 Homes & Commercial Units	North Lincolnshire	108.5	15/04/2016	15/07/2019	New Housing
15	813 Residential & Commercial Units	East Riding of Yorkshire	100.0	11/08/2014	11/10/2017	Private Commercial
16	Renewable Energy Plant	North Lincolnshire	80.0	12/05/2014	09/05/2016	Generation (Energy from Waste)
17	Waste Management Facility	Wakefield	72.0	29/07/2013	29/09/2015	WTW/WWTW
18	Waste to Energy	Newark and Sherwood	63.0	09/05/2016	06/11/2017	WTW/WWTW
19	Power Station	Wakefield	60.0	11/05/2016	12/02/2017	Undefined Energy
20	750 Residential Units & 1 Commercial/Community Unit	Mansfield	56.3	27/02/2016	26/03/2017	New Housing

3.6.   Summary of demand

- The analysis of the labour demand arising from the construction spend in the Sheffield City Region area peaks at around 53,300 people in 2018, taking account of estimates of other work in addition to the known pipeline of projects.

- Around 36% of the known new build projects' demand arises from private commercial developments. Another 29% is classified as new build housing and 19% as infrastructure. Public non-residential follows with roughly 9% while private industrial accounts for 1% of the new build construction labour demand.

- The known pipeline R&M labour demand accounts for 6% of the total demand, roughly equally split between housing and non-housing R&M works.

- During 2016, the peak year of the Glenigan pipeline demand, the most labour-intensive occupation group in the known pipeline is "non-construction professional, technical, IT and other office–based staff" with an average annual demand of 4,500 people.

- The labour demand for the trade occupations in the known pipeline for the peak year of 2016 are as follows:

  - The trade occupation for which demand is highest is "wood trades and interior fit-out", peaking at 3,350 people;

  - "labourers" then follow with about 2,250 people demanded;

  - "plumbing and heating, ventilation and air conditioning trades" rank third, with a demand of 2,000 people;

  - all other trades result in a demand of fewer than 2,000 people each.

4.   A picture of supply

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

The first element of this section takes a view on the current employment levels for the Sheffield City Region and how this relates to overall employment across a wider area. Sheffield City Region covers areas that are in the East Midlands and Yorkshire and Humber Regions. However the majority of comparisons have been made against Yorkshire and Humber. This appears to be the fairest reference points as it accounts for the majority of the LEP's make up in terms of: numbers of businesses and workforce, population and economic activity. Data from CITB's Construction Skills Network is used along with official Government sources.

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

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

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

4.1.   Main points

- Within the LEP over half of the workforce is located within Sheffield (31%) and Doncaster (22%) local authority areas.

- Current construction workforce within the LEP is estimated at just over 64,000 workers.

- Construction employment in SCR is approximately 33% of the size of Y&H's workforce. However, within SCR, 72% of the construction workforce is located within YH areas and 28% is located with EM areas.

- However while recent employment trends tend to show a workforce levels increasing across Yorkshire and Humber, there has been less of an increase within Sheffield City Region

- Over 100 training providers delivered construction-relevant FE courses within the area over the last three years, however there are ten main providers delivering over 80% of provision

- There has been a noticeable increase in the number of learners on construction training within the LEP, particularly in the Chesterfield area.

4.2.   Existing workforce

Recent trends: Workforce & Businesses:
- Sheffield City Region workforce not growing as strongly as Yorkshire and Humber
- Increase in the number of Micro sized businesses
- Less growth in self-employment

An analysis of the Annual Population Survey[2] shows that the LEP accounts for around 25% of construction employment in Yorkshire and Humber and around 9% of construction employment in the East Midlands. (Not to be confused with the comparison figures in 4.1 above). Table 8 applies these percentage shares across the CSN occupational breakdown for both areas to give an estimate of total employment at occupational and industry level in Sheffield City Region.   For comparison Yorkshire and Humber region has been included.

While the Yorkshire and Humber construction workforce showed an increase in employment in recent years, with strong growth between 2013 and 2014, growth in the Sheffield City Region has been slower. In real terms, the number of construction workers within Sheffield City Region has remained static across the last three years after a significant drop in 2011/12. Ref: Figure 6
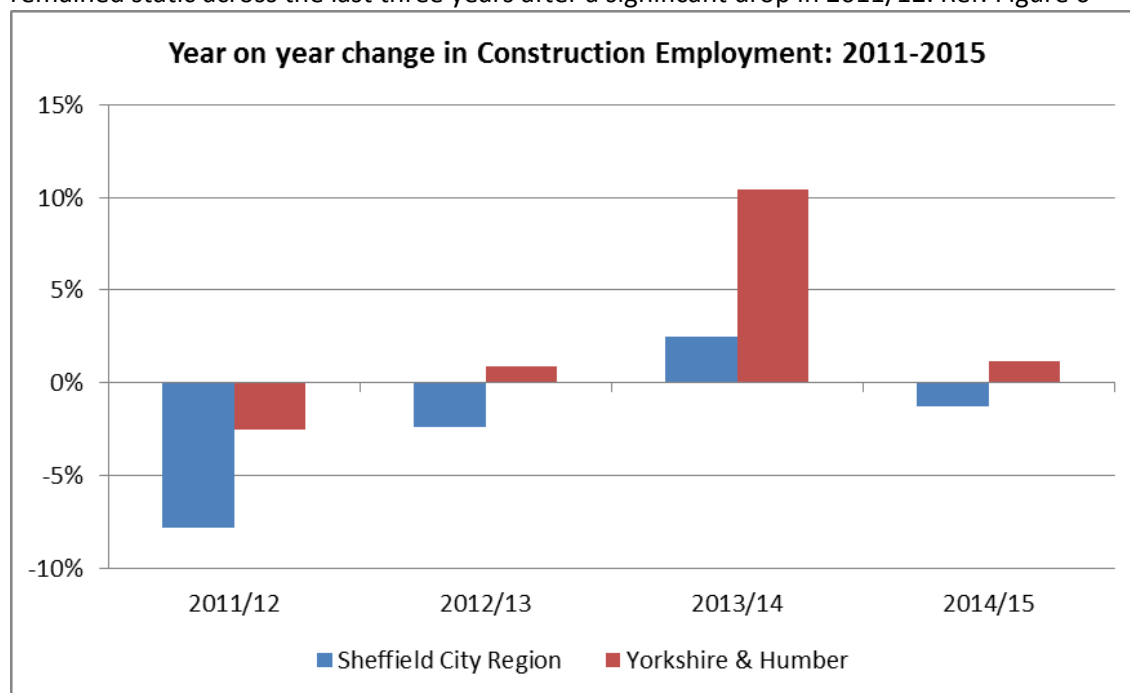
Figure 6: Year on Year change in Construction Employment (APS Workplace Analysis 2015)

In contrast to the workforce details, the number of construction businesses within Sheffield City Region has increased from a 32% share of all construction businesses across Yorkshire and Humber in 2011 to a 34% share in 2015. In actual numbers, the increase in percentage business share represents over 550 more businesses in 2015, which is a 9% rise since 2011. Across the rest of Yorkshire and Humber area there was only an increase of around 320 businesses over the same time period.

Figure 7 shows the distribution of construction businesses within Sheffield City Region, and Figure 8 shows the distribution of the construction workforce. While there are similar patterns with Sheffield and Doncaster being the two main areas, there are also some slight differences.

Comparing business to workforce distribution indicates that areas such as Bassetlaw and North East Derbyshire, have higher shares of businesses compared to workforce and are therefore likely to have more micro and small sized firms. Whereas more large and medium sized firms are likely to be located within the Sheffield and Doncaster areas.

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[2] ONS/NOMIS (2015) Annual Population Survey workplace analysis by industry Jan-Dec 2015.
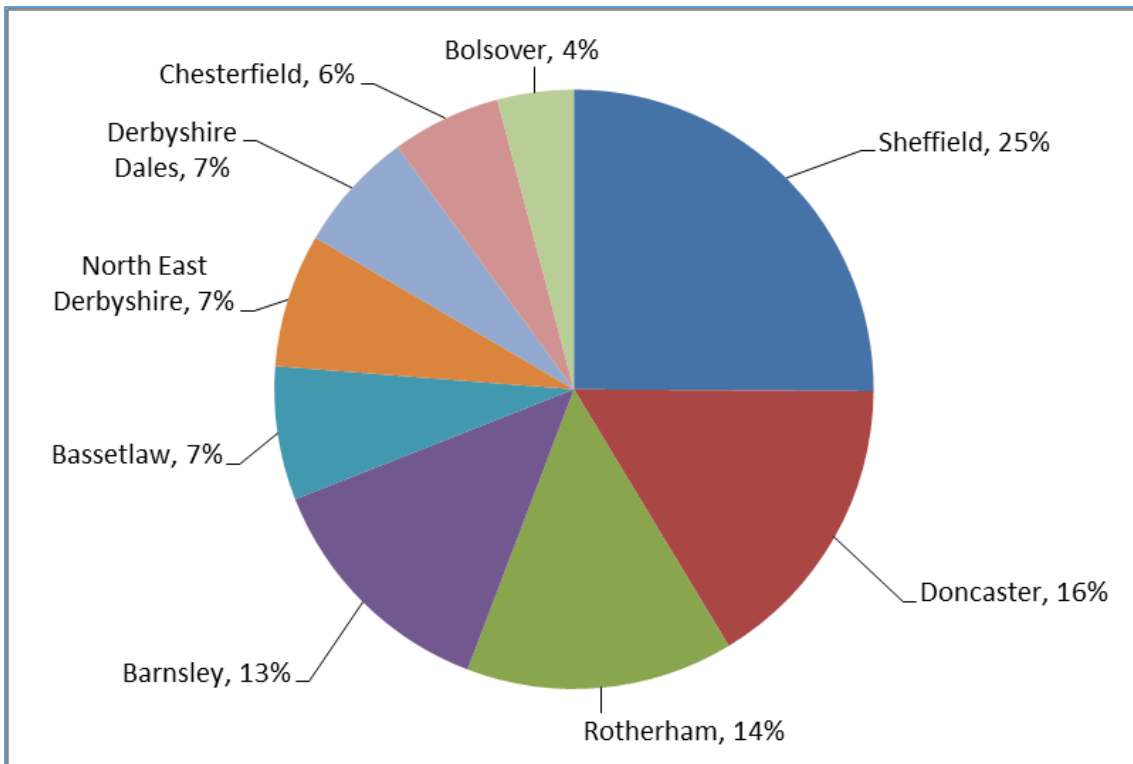
Figure 7: Distribution of construction businesses within Sheffield City Region (UK Business Count, NOMIS 2015)

Although construction employment hasn't grown as strongly in recent years, between 2011 and 2015 there is a broadly consistent pattern in construction workforce distribution across the LEP, with the main areas being Sheffield and Doncaster, ref Figure 8 .
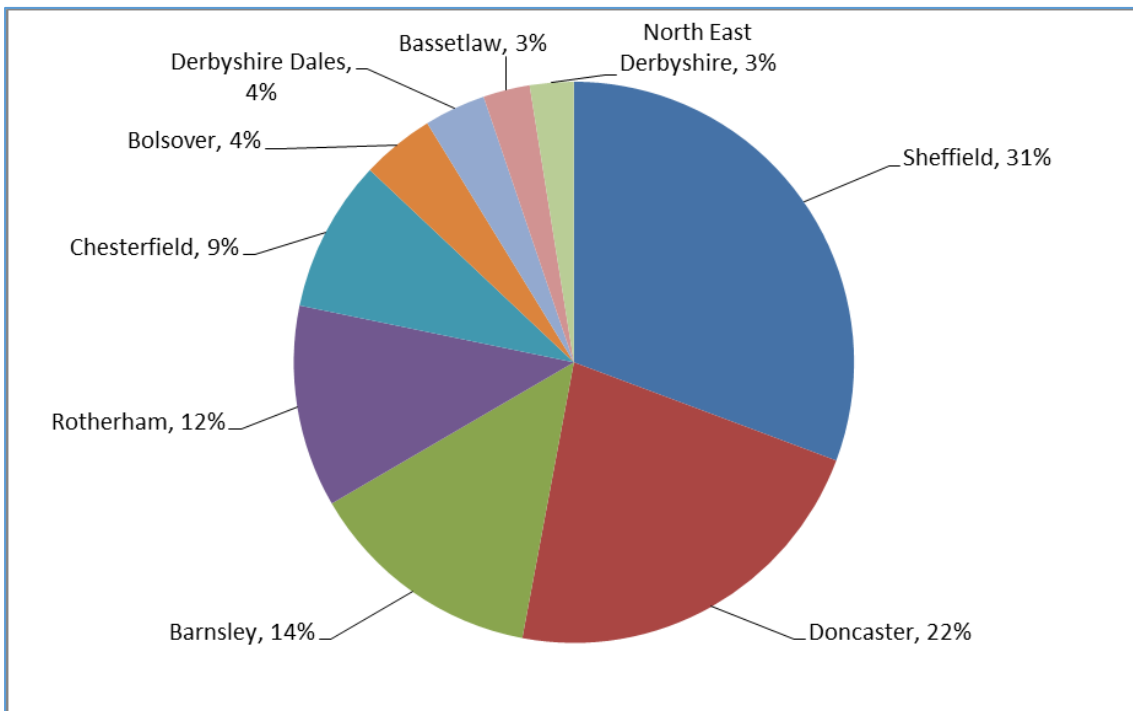
Figure 8: Construction employment by area within Sheffield City Region (2015, NOMIS)

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 GB construction workforce being self-employed. This pattern is similar to what is seen with the Sheffield City Region, however across the wider Yorkshire and Humber area there has been a noticeable increase in self-employment, which has risen from 36% in 2011 up to 42% in 2015 – an overall increase of over 17,000 workers. It is this rise in self-employment that is the main driver behind the increase in the overall Yorkshire and Humber construction workforce.

When it comes to business size (excluding self-employment), the distribution of companies across Sheffield City Region is very close to the pattern seen across Yorkshire and Humber, with the majority of construction companies being micro sized, i.e. fewer than 10 employees – shown in

Figure 9.
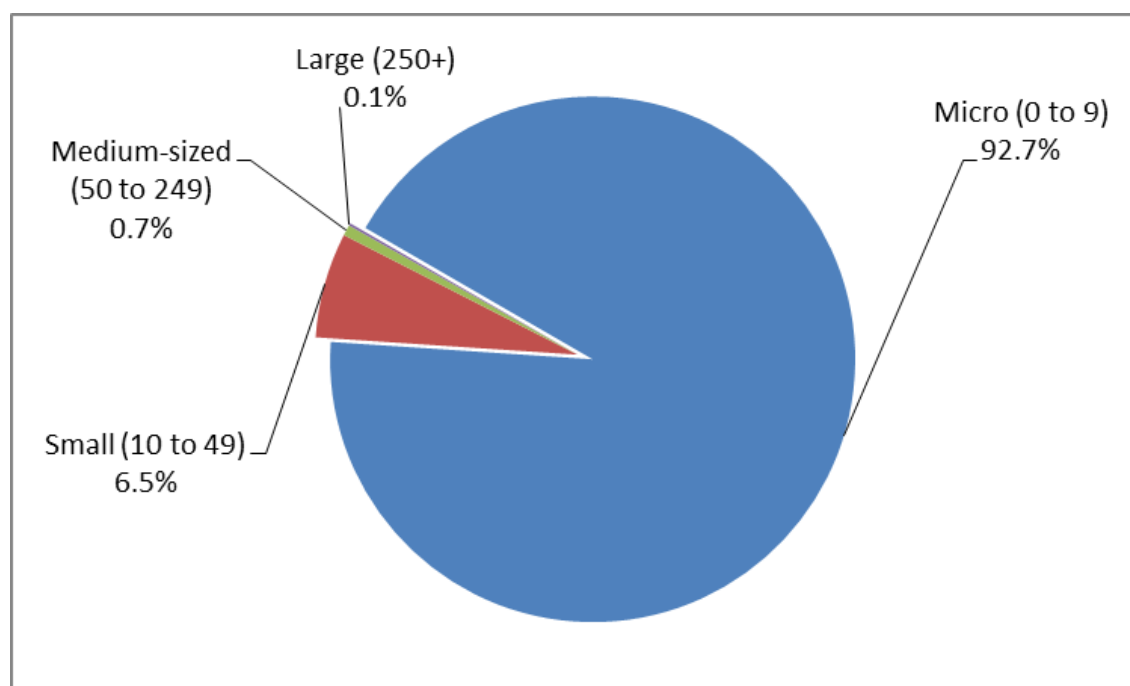
Figure 9: Size of Construction Businesses (UK Business Count, NOMIS 2015)

For Yorkshire and Humber 92% of all construction businesses are Micro sized, whereas for Sheffield City Region it is slightly higher at nearly 93%. However this overall pattern masks the fact that the growth in construction businesses within the Sheffield City Region has been due to an increase in the number of Micro sized companies, which has grown at twice the rate when compared to Yorkshire and Humber (10% growth in Sheffield City Region vs 5% Yorkshire and Humber growth since 2011).

These factors point to a slight difference happening in recent trends for the make-up of the construction workforce and businesses within the Sheffield City Region, when compared to Yorkshire and Humber. This may mean clients and or main contractors having to engage with a slightly wider pool of micro sized sub-contractors when working on future projects.

It is also worth noting that the shares of construction employment and business seen between Sheffield City Region and the Yorkshire and Humber Region, are similar to the patterns when looking across total employment or businesses. Sheffield City Region would compare to:

- 31% of all employment across Yorkshire and Humber (total workforce),

- And 30% of all businesses in Yorkshire and Humber (all sectors).

Figure 9 shows a view by region, indicating that medium and large employers employ proportionately more people. A significant proportion of the workforce will still be either self-employed or work for small and micro employers and it is expected that pattern for Sheffield City Region will be similar to the main regional view.
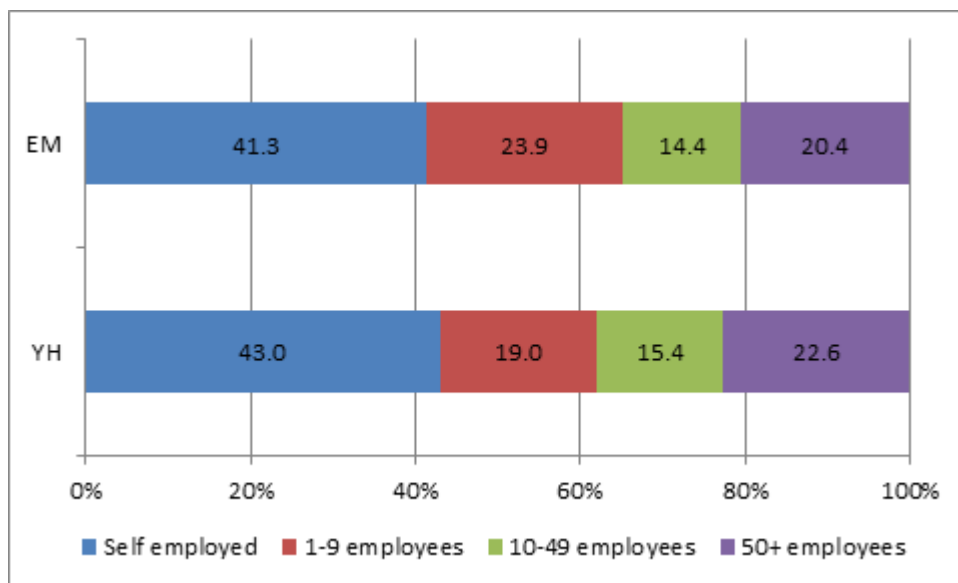
Figure 10: % of current workforce

i.e. in EM 41% self-employed and 20% employed by companies with more than 50 employees.

Table 8: Construction occupational breakdown, 2015 (Source Experian & CITB)

Occupation	Sheffield City Region	Yorkshire & Humber
Non-construction professional, technical, IT, and other office-based staff	8,317	25,320
Wood trades and interior fit-out	5,861	17,532
Electrical trades and installation	5,120	15,393
Other construction process managers	4,936	14,144
Senior, executive, and business process managers	4,425	13,296
Other construction professionals and technical staff	4,151	13,114
Plumbing and HVAC Trades	4,045	12,529
Labourers nec*	2,742	8,243
Building envelope specialists	2,565	7,072
Painters and decorators	2,166	6,172
Surveyors	1,869	5,697
Plasterers	1,863	5,747
Bricklayers	1,799	5,722
Specialist building operatives nec*	1,510	3,494
Roofers	1,466	5,292
Civil engineers	1,312	3,691
Non–construction operatives	1,256	4,072
Plant mechanics/fitters	1,208	3,423
Construction trades supervisors	1,141	3,983
Civil engineering operatives nec*	1,134	3,799
Construction project managers	1,015	3,211
Glaziers	916	2,581
Steel erectors/structural fabrication	806	2,622
Floorers	749	2,411
Plant operatives	698	1,450
Scaffolders	628	2,408
Logistics	396	1,115
Architects	204	572
Total	64,298	**194,107**

4.3.   Training provision

Sheffield City Region has:
- Over 80% of learner volumes covered by ten main providers
- Training across the full range of construction occupations
- Good levels of competence qualifications achievements linked to Construction managers; Building envelope specialists and Floorers

However there is a noticeable shift in provision that appears to have occurred over the last three years:
- There has been a large increase in learner volumes (starts and achievements) particularly within the Chesterfield area.

CITB analysis of Skills Funding Agency Individualised Learner Records from 2012-13 through to 2014/15 academic years for construction learners shows that:
- In scale, Sheffield City Region's construction related training is nearly 40% of that for Yorkshire and Humber.
- There has been a noticeable drop in the number of publicly funded learners starting across Yorkshire and Humber (-15% from 2012/13 to 2014/15), however over the same period there has been a significant increase within Sheffield City Region (+18%)
- The reason for the difference is :
  - Although apprenticeships have increased, it is not as strong as seen across Yorkshire and Humber (+29% compared to +35%)
  - While there has been a noticeable drop in other Education and Training learner starts, within Sheffield City Region there has been an increase (+5% compared to -31%).
  - These changes point to Construction Training within Sheffield City Region to be balanced slightly more towards what would be classed as "Knowledge" or theory based provision rather than the "Competence" based qualifications that are generally looked for by construction employers.
  - Looking at the location of provision, the increases appear to have been driven by learners volumes in Chesterfield and to a lesser extent, Bassetlaw and North East Derbyshire

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

Figure 11 looks at qualification achievements over the last three years for the identified competence based qualifications, comparing achievement volumes against the overall pattern with Yorkshire and Humber. From this analysis there looks to be patterns for particular occupations.

[The information shown in Figure 11 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.]

Figure 11: Competence qualification achievement in Sheffield City Region as a % of total achievements in Yorkshire and Humber (all qualification levels).

Construction Occupations	2012-13	2013-14	2014-15	Total Achievements	Total
Grand Total	**37%**	**34%**	**44%**	**6,900**	**38%**
Main Occupations					
Plant operatives	42%	35%	45%	2,290	40%
Wood trades and interior fit-out	27%	28%	35%	820	30%
Plumbing and HVAC Trades	21%	26%	32%	500	27%
Civil engineering operatives nec*	39%	66%	81%	470	67%
Specialist building operatives nec*	36%	26%	67%	310	42%
Plasterers and dry liners	40%	49%	69%	280	51%
Occupations to monitor					
Bricklayers	30%	25%	34%	390	30%
Electrical trades and installation	22%	21%	26%	260	23%
Construction Trades Supervisors	56%	38%	39%	160	49%
Painters and decorators	34%	25%	39%	230	32%
Occupations with good provision					
Construction managers	93%	11%	59%	240	75%
Building envelope specialists	36%	113%	72%	330	75%
Floorers	60%	93%	144%	290	101%
Low Overall Learner Volumes					
Glaziers	22%	19%	28%	120	25%
Roofers	21%	24%	27%	70	24%
Steel erectors/structural	0%	65%	66%	50	64%
Plant mechanics/fitters	9%	19%	50%	50	24%
Scaffolders	21%	24%	17%	>25	20%

*nec – not elsewhere classified
Note: Total achievements are across the period 2012-2013 to 2014-15 and have been rounded to the nearest 10.

The majority of the achievements referred to in Figure 11 are at Level 2 (over 80%), with a smaller proportion at Level 3 (about 17%) and a small minority at Level 4 and above.

The percentage comparison with Yorkshire and Humber is used as a device to demonstrate the provision of training in Sheffield City Region by occupations relative to one another to gauge where provision is relatively high or low relatively high provision is highlighted in green; relatively low provision is highlighted in pink.

There are a group of **occupations that account for the main training volumes**, which is consistent of the overall training pattern seen in Yorkshire and Humber. These are:

- Plant operatives
- Wood trades and interior fit-out
- Plumbing and HVAC Trades
- Civil engineering operatives nec*
- Specialist building 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 operator and specialist building operative, 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; electrical trades and installation; construction trades supervisors and painters and decorators, the share of training happening within the LEP is slightly lower than would be expected. It is possible that individuals within the Sheffield City Region 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 construction managers; building envelope specialists and floorers. If 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. While 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 over 100 different providers have delivered training with the Sheffield City Region, however there is a consistent pattern with over 80% of training being delivered by a core network of providers.

The main providers located within the LEP, in volume order, are:
- Chesterfield College
- Sheffield College
- Doncaster College
- North Nottinghamshire College
- Barnsley College
- Rotherham College Of Arts And Technology

The other main providers are:
- Sheffield City Council is identified as a provider
- CITB – which operates across England in liaison with existing college providers as well as some direct delivery
- West Nottinghamshire College– which although not located within the LEP is very close to the area covered
- Manchester College – although obviously some distance away from the LEP, Manchester College does appear to deliver training across a wide geographic area.

The typical profile of many geographic areas is that a relatively small group of FE colleges deliver 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

However, unlike the more stable patterns seen in recent years for the construction workforce and businesses, within the LEP, there has been a shift in balance of provision location. In 2012/13 the share of training provision was consistent with the workforce, i.e. in 2012/13, around 70% of Sheffield City Region training was undertaken in local authorities located in the Yorkshire and Humber region – where 70% of the SCR's population lives.

And slightly less than 30% of training was undertaken in East Midlands local authorities where about 30% of the population lives..

Over the last couple of years this balance has changed and at the end of 2014/15 there had been a significant movement of training provision to authorities in the East Midlands:

- 58% in Yorkshire and Humber areas
- 42% in East Midlands areas.

Note: a similar pattern appears when looking at either unique learner starts or achievements in each academic year.

Given the stability shown in other areas, this is a very significant change to training provision that is being driven by increasing learner volumes within the Chesterfield local authority, which is illustrated by the detail in Figure 12 below. North East Derbyshire is also identified as having a large percentage increase, however in learner volumes the increase is a lot smaller.

Local Authority	2012-13	2013-14	2014-15	% Net change
Barnsley	1059	986	853	-19%
Bassetlaw	548	772	831	52%
Bolsover	190	124	58	-69%
Chesterfield	662	1677	1972	198%
Derbyshire Dales	400	395	326	-19%
Doncaster	1201	1334	1298	8%
North East Derbyshire	130	136	376	189%
Rotherham	1254	1294	1180	-6%
Sheffield	1625	1727	1500	-8%
SCR TOTAL	7069	8445	8394	19%

Figure 12: Unique Learner starts by area, construction subjects, all levels (Source: CITB/SFA)

As a whole, Sheffield City Region is showing an increase in the number of construction learner starts of almost +19% across the three year period, at a time when both the Yorkshire and Humber and East Midlands regions are showing a decline. For Yorkshire and Humber it is a drop of -15%, while for the East Midlands it is slightly lower at -9%.

Within the main programmes of learning being undertaken, Sheffield City Region colleges have been successful at attracting learners to more college-based construction education and training courses, as well as being increasing apprenticeships. While the college based courses are an important progression route for learners, construction employers tend to have a preference for practical or competence based skills, and this has not grown to the same extent as the college-based training.

4.3.1. Additional Training Analysis

There appears to be a difference in the mix of training that is delivered by the main providers. For some, the focus is on what we would class as main qualifications recognised within the Ofqual database, for example:

- Level 2 NVQ Diploma in Wood Occupations (Construction) (QCF)
- Level 2 Diploma in Bricklaying (Construction) (QCF)
- Level 2 Diploma in Site Carpentry (Construction) (QCF)
- Diploma in Plumbing Foundation (QCF)
- Level 3 Diploma in Site Carpentry (Construction) (QCF)

These are regarded as the main qualifications linked to competence card schemes.

However some providers also deliver what we've categorised as *Additional Learning*, which is training that, in Ofqual terms, may not be a full regulated qualification. This type of training can be wide ranging in its nature. Some of examples are:

- Preparing and Operating Boom-type Mobile Elevating Work Platforms (MEWPs) in the Workplace.
- Non-regulated provision, Level 2, Building and Construction.
- Establishing Work Area Protection and Safety in the Workplace.
- Erecting and Dismantling Access/Working Platforms in the Workplace.

Main Training Provider	Additional Learning	Main Qualifications
A	82%	18%
B	64%	36%
C	62%	38%
D	35%	65%
E	30%	70%
F	24%	76%
G	17%	83%
H	6%	94%
I	6%	94%
J	0%	100%

The main colleges differ in their curricula from those that concentrate on additional learning (A) to those with a balanced varied offer to "J" that only offers main qualifications.

5.   Mobility of the workforce

Construction workforces are fluid by nature and this section of the report will look at findings from the recent 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 Yorkshire and Humber[3] will be analysed in order to understand how this might impact on future training interventions and the supply of job opportunities for local people.

5.1.1.   Main points

- More than a third of all Yorkshire and Humber construction workers have worked in the industry for at least 20 years (36%). A total of nearly two thirds have done so for 10+ years (63%).

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

- Within Yorkshire and Humber, the average (mean) distance from workers' current residence (taking into account temporary residences) to their current site was 19 miles.

- Three quarters of all construction workers in Yorkshire and Humber are confident that when they finish this job they will get a job that allows them to travel from their permanent home to work on a daily basis (78%).

- Overall more than half of all construction workers have only worked on one project type (55%).

- Just under half of construction workers say they definitely will be working in the industry (45%) and a further four in ten think it is very or quite likely (40%).

5.1.2.   Work history

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

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

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

5.1.3.   Worker origins

Workers were asked which region/nation they were living in just before they got their first job in construction in the UK. Overall seven in ten of all construction workers in Yorkshire and the Humber (71%) were interviewed in the same region in which they were living in when they started their construction career.

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[3] CITB (2015) Workforce Mobility and Skills in the UK Construction Sector – Yorkshire and the Humber

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

5.1.4. 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 1 in 7 construction workers in Yorkshire and Humber travelling into the region for work from another region in which their current residence is based (which includes those travelling to/from work from a neighbouring region).

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

Workers in Yorkshire and Humber were asked to indicate the furthest distance they have worked from their permanent or current home in the last 12 months. Figure 13 shows that more than half have worked more than 50 miles away from their permanent home (53%), with more than a quarter that have worked between 51 and 100 miles away (27%). Workers based in Yorkshire and Humber were amongst those most likely to have travelled more than 100 miles from their permanent home to work in the last 12 months.
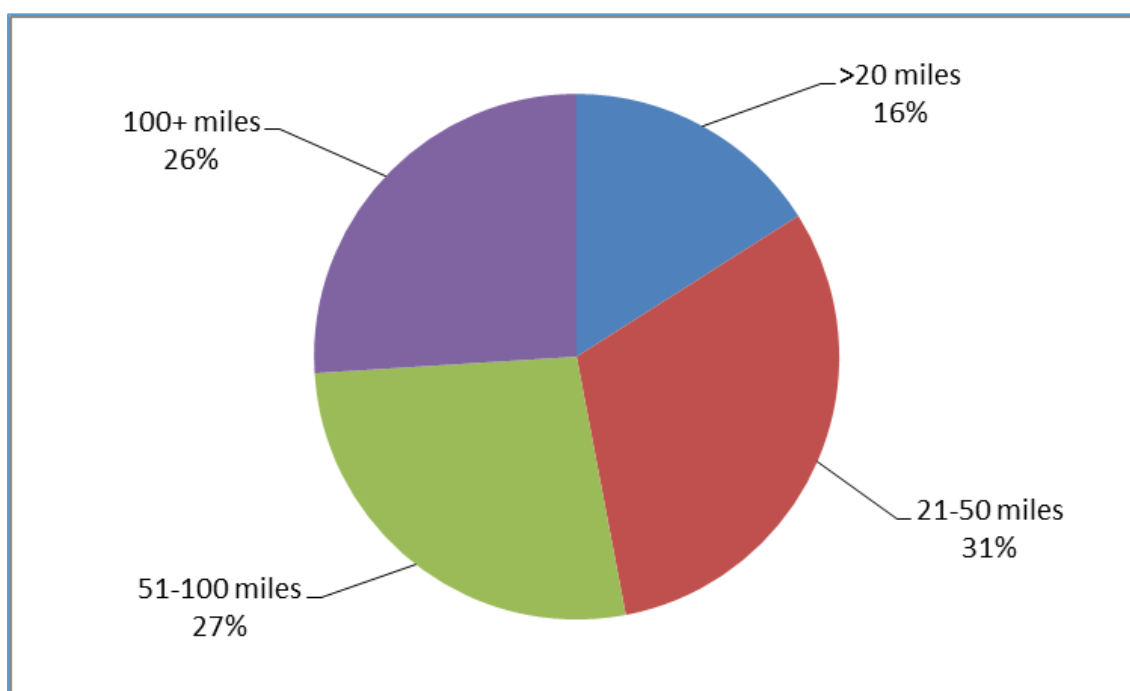
Figure 13: Furthest distance worked in past 12 months (CITB, 2015)

However, the average (mean) distance from workers' current residence (taking into account temporary residences) to their current site was 19 miles for Yorkshire and Humber, slightly less that the UK average of 22 miles. This indicates that although workers can travel some distance to work, it is likely to be intermittent.

5.1.5. Site duration and change

In order to get a measure of workplace stability, workers were asked to indicate how long in total they expect to work at that specific site during this phase.

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

Three quarters of all construction workers in Yorkshire and Humber are confident that when they finish this job they will get a job that allows them to travel from their permanent home to work on a daily basis (78%).

5.1.6. Sub-sector and sector mobility

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

Compared with 2012 there has been a significant increase in the proportion of construction workers that have been working on new housing within Yorkshire and the Humber; up from 61% to 85%. For all other types of projects the proportion of construction has reduced.

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

5.1.7. Leaving the sector

In order to assess the potential outflow from the sector in the next five years (led by worker preference), all workers were asked how likely it is that in 5 years' time they will still want to be working in construction. Within Yorkshire and Humber, just under half the construction workers say they definitely will be (45%); a further four in ten think it is very or quite likely (40%).

Excluding those aged 60 and over (as those over 60 may be assumed to be considering retirement in the next 5 years): 47% believe they will definitely want to be working in the construction sector, 28% believe it is very likely they will want to be working in the construction sector and 12% believe it is quite likely they will want to be working in the construction sector. Only 6% think on any level that they will not want to be working in the construction sector in 5 years' time which is less than in 2012 (7%).

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

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

6.   Demand against supply

6.1.   Main points

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

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 (Figure 14, unpublished) 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.
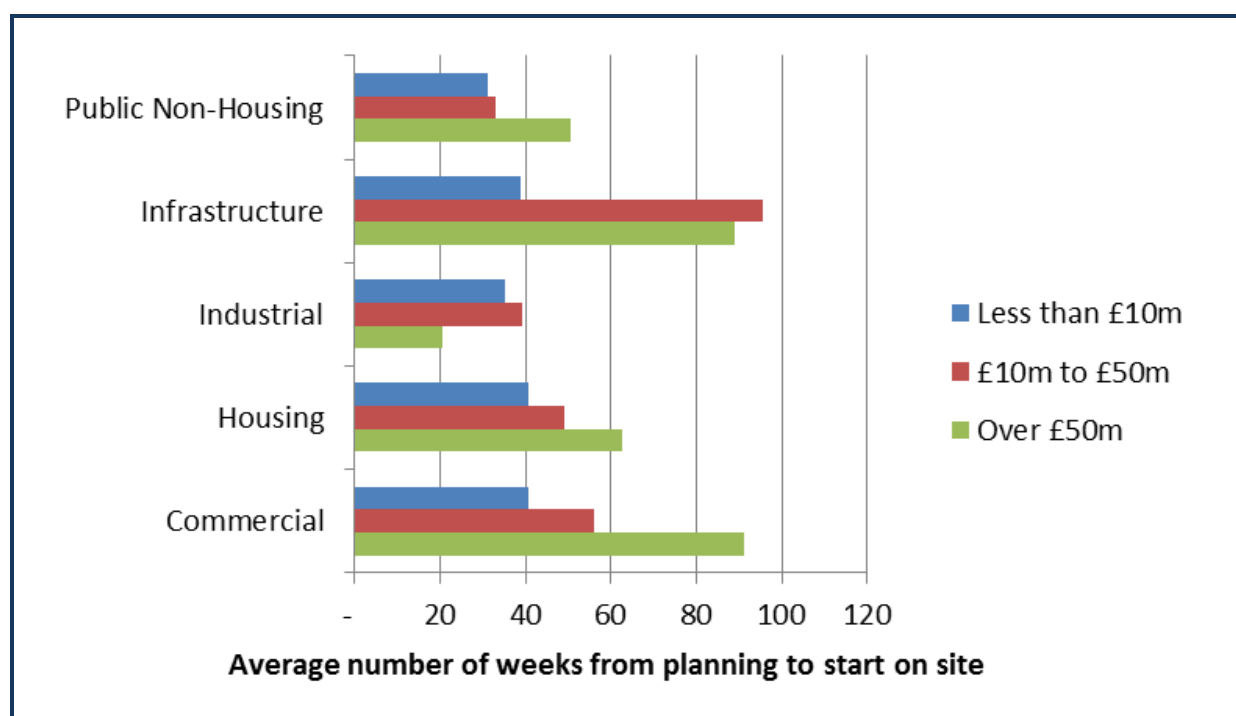
Figure 14: Average number of weeks from planning to work on site, UK 2010-2013 (Source: UKCG/Glenigan)

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 Yorkshire and The Humber indicate that it accounts for 36% of yearly construction output[4].

Also, while different types of projects can be categorised by their type of build, such as housing, commercial and 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 different sectors. For example, evidence from the 2015 Mobility research[5] shows that occupations such as plasterers and banksmen/bankspersons 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 building projects.

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[4] CITB(2016) Construction Skills Network – Yorkshire and the Humber
[5] CITB(2015) Workforce Mobility and Skills in the UK Construction Sector – Yorkshire & The Humber

6.2.   Gap Analysis

With current construction employment estimated in the Sheffield City Region at just over 64,000, the identified demand forecast from projects in Glenigan accounts for 55% of employment in 2016 before reducing as the identified project visibility decreases. Ref: Table 9. The percentages shown in Table 9 should be considered in relation to one another rather than providing an absolute and accurate value for any potential gap.

Table 9: Occupational breakdown of demand for Sheffield City Region against current employment (Source CITB/WLC)

Occupations	2015 LEP Employment	2016 demand as a % of 2015 Employment
Senior, executive, and business process managers	4,425	48%
Construction Project Managers	1,015	56%
Other construction process managers	4,936	48%
Non-construction professional, technical, IT, and other office–based staff (excl. managers)	8,317	54%
Construction Trades Supervisors	1,141	62%
Wood trades and interior fit-out	5,861	57%
Bricklayers	1,799	52%
Building envelope specialists	2,565	58%
Painters and decorators	2,166	57%
Plasterers and dry Liners	1,863	36%
Roofers	1,466	45%
Floorers	749	39%
Glaziers	916	45%
Specialist building operatives nec*	1,510	57%
Scaffolders	628	54%
Plant operatives	**698**	**102%**
Plant mechanics/fitters	1,208	42%
Steel erectors/structural	806	56%
Labourers nec*	**2,742**	**82%**
Electrical trades and installation	5,120	38%
Plumbing and HVAC trades	4,045	50%
Logistics	**396**	**101%**
Civil engineering operatives nec*	1,134	44%
Non–construction operatives	**1,256**	**78%**
Civil engineers	**1,312**	**92%**
Other construction professionals and technical staff	4,151	58%
Surveyors	1,869	51%
Total	**64,298**	**55%**

Note: nec: not elsewhere classified*

HVAC: Heating, ventilation and air-conditioning.

Architects are excluded from Table 9 and subsequent analysis because excess local demand will likely be met by national and possibly international supply.

Table 9 shows that there are some possible disparities where demand either outstrips or matches the current employment estimates for a number of occupations. These are:

- Plant operatives

- Logistics

- Civil Engineers

For each of these occupations, 2016 demand is either matching or exceeding current employment, along with average employment in 2017 and 2018 being significantly higher than the average for all occupations in those years.

There are also some additional occupations which might experience slightly less demand pressure, these are:

- Labourers

- Painters and decorators

- Non-construction operatives

They are also showing some slightly higher demand figures, however not consistently across 2016-2018.

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

6.2.1. Construction specific occupations

Demand for **Civil engineers** is a reflection of the wider UK shortage[6]. Additionally as a professionally qualified occupation which tends to require degree qualifications, there will be at least 3 years of education and training before becoming qualified. It is therefore highly likely that the short-term demand increase identified would require workers to be drawn into Sheffield City Region from the wider region and possibly beyond.

While the skill requirement for **Labourers** may not be as high as trades such as carpentry, roofing and the like, some use it as a way of gaining construction experience. The risk here is the number required and for them to be able to work safely on construction sites. Wage rates tend to limit mobility in these roles, so labour supply is likely to be focused on the number of candidates from within Sheffield City Region that are willing to take up labouring roles.

Although **Painting and decorating** is a construction specific occupation, it is on the cusp of being identified as an occupation with potential demand pressure in 2017.

6.2.2. 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.

Plant 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 Yorkshire and Humber area. It is however one of the occupations where there high levels of training taking place, both in Sheffield City Region and beyond, which indicates a potentially wider pool of workers to draw upon.

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

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[6] Migration Advisory Committee (MAC) Shortage Occupation List 2015

As noted earlier, there will be other work carried out in the Sheffield City Region which will not have been captured in the demand analysis. There will be additional workers required for projects that are less than £250,000 along with 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 over 53,000 between 2016 and 2018.

This is quite a static level of future work that would account for around 83% of current employment, which indicates that future employment demand will be more focused on replacing the current workforce levels and equipping them with appropriate skills, rather than an overall increase in demand.

6.3.   Gap Analysis – Long Term

When looking at the longer term past 2016/2017, the amount of known work in the LEP area decreases and there will also be work, such as R&M, that is not identified in the analysis. 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 Yorkshire and Humber CSN 2016-2020 report can be used, bearing in mind that Sheffield City Region has consistently related to around 30% of regional employment in recent years. With this relative share, it is likely that Sheffield City Region will face similar long term demands.

The CSN 2016-2020 ARR is consistent with the analysis in identifying a requirement for:

- Plant operatives

- Logistics

- Civil Engineers

For both Plant operatives and Logistics the ARR is a significant share compared to current employment (above 10%), which again follows the pattern of the earlier analysis. This emphasises a potential short term and long term gap for these occupations.

The CSN 2016-2020 ARR does however identify some other occupations with an occupational requirement, either as actual volumes or as a percentage of current employment. These occupations are:

- Non-construction office based staff (volume)

- Wood trades (volume)

- Roofers (% of employment)

- Floorers (% of employment)

- Scaffolders (% of employment)

The non-construction office based staff are likely to have skills that can be transferred over a range of industries and therefore a wider pool of potential recruitment to draw from.

Wood trades will be identified in volume terms because it has high employment levels, accounting for 9% of all regional construction employment.

For Roofers, Scaffolders and Floorers, the ARR as a percentage of current employment is above the regional average, which indicates a potential occupational pressure to meet forecasted demand.

With these five occupations the ARR will be picking up the long term trend across the region, covering both new work and R&M. Although this may seem to be different to the gap analysis based

on the Glengian details, it will be picking up the full range of work that is forecast to happen and the slightly different view would also reflect occupations that would be more involved with R&M work.

6.4.   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 plant operatives, logistics and civil engineering skills as being in demand, with the analysis also identifying specialist building operatives.

As covered earlier, logistics skills 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 Sheffield City Region. With the wider impacts on both of these occupations, a training needs analysis specific to Sheffield City Region is unlikely to give credible views.

Sheffield City Region, like the wider area, already delivers a significant volume of plant operative training and there is also training taking place for the likes of specialist building operatives. Within plant operative and specialist building occupations, 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
- More positive trends in the delivery of knowledge/theory based qualifications when compared to trends across the wider area.

However:

- There are occupations, such as bricklaying and electricians, where the levels of competence based training appears to be slightly low,
- There is a shift in where training provision has been provided that isn't consistent with workforce or business distribution, indicating some success on the part of some colleges at attracting large numbers of learners to their courses.

Education and training within the LEP appears to be moving towards delivery of more "knowledge and theory" based qualifications where it is the practical, competence based training that employers at a national level have often previously expressed a preference for.

7.   Conclusions and recommendations

7.1.   Summary of concluding remarks

The Glenigan data indicates that construction labour demand in Sheffield City Region peaks during 2016. However, the tail-off beyond this point is unlikely to represent an actual drop off in construction activity but will probably be filled by projects that have not yet been identified.

Figures available from Glenigan, do not capture all of the construction activity – omitting information from sub £250,000 projects and repair and maintenance. To project forward an apparent cliff-edge in construction activity, we have produced an indication of how construction in the region (Yorkshire and the Humber) as a whole is forecast to change over the next five years and then extrapolated this information to provide indications for the LEP, which makes up 30% of Yorkshire and Humber. This shows a constantly increasing construction spend and activity.

7.2.   Recommendations

Recommendation 1

Skills strategy: pipeline identification, planning and exploitation

Review and develop, as appropriate, the Sheffield City Region construction skills strategy to ensure that any gap between demand and skills provision for high demand or priority professions and trades does not become a problem and ensuring that there is sufficient local provision for high demand occupations.

- Some local authority areas within Sheffield City Region have demonstrated significant success in increasing training provision. This may mean that the Sheffield City Region has, and has already started exploiting, an opportunity to become a skills and training provider for a larger geographic area.

- Longer term projections and the development of scenarios may enable an assessment of the potential impacts of major initiatives that may skew demand. In particular, the arrival of High Speed rail and the potential of the 'One North Transport Plan' represent major opportunities that will create employment opportunities and have positive economic implications. The National College for High Speed Rail will be co-located in Doncaster.

Recommendation 2

Reskilling and upskilling construction workers and those from other sectors

A holistic construction skills plan may also benefit from identifying cross-sectoral occupational impacts on labour requirements and opportunities. For example, predicted trends for a decline in manufacturing employment may create opportunities for reskilling and upskilling to fill gaps in construction occupations.

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 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 levels one and two. However the relatively positive profile of the Sheffield City Region in relation to the skills and workforce gap and training provision may mean Sheffield City Region has 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 or draw in trainees from a wider area.

Recommendation 3

Identify potential partners within the Sheffield City Region area; share analysis with them and engage them in contributing to building collaborative holistic plans.

Local construction businesses; major employers; local authorities; those responsible for managing infrastructure (transport and utilities); construction training providers, local stakeholders and influencers should be engaged and encouraged to input to the development of the construction skills strategy. This will develop early buy-in and a sense of shared ownership of the challenges, priorities and solutions. (However it may also require collaboration and compromise.)

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 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. 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. However there are also opportunities to engage with private training providers to align their offering with the whole curriculum.

b. In the longer term there may also be opportunities for Sheffield City Region to work with those colleges that offer Higher Education qualifications and Universities to consider how Sheffield City Region can become a hub for attracting, training and retaining advanced and 'future' skills – for example that may be in high demand for High Speed Rail and as projects utilise developing technology (e.g. BIM). See recommendation 8.

c. Sheffield City region appears not to be facing significant total skills gaps for specific high demand occupations. However, 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 pump-prime training interventions.

d. A common complaint of construction employers is that new starters are not often enough 'site ready' so a curriculum might including working with employers to enhance new starters' site readiness and behaviours.

Recommendation 5

Outreach – build a more positive image of construction with young people and increase recruitment through new entrance points, career changes and reskilling.

Construction is sometimes associated with negative and inaccurate stereotypes that deter potential recruits, with education choices and career decisions often influenced in school With an anticipated long term demand for some skills, the potential exists for an outreach programme that goes out to schools to correct negative perceptions, build a positive image and 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 carers 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, discover career opportunities, access an experience/encounter with employers from school engagement via the Construction Ambassador scheme to work experience placements.

There is an opportunity for Sheffield City Region to maximise the usage of this employer led initiative to raise engagement between the local employers, educators and individuals from all backgrounds.

Local programmes have already been run with some success within the regions and so this represents a starting point on which to build.

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.

[We believe that Sheffield City Council already has its own model for this in place. And the CITB NSAfC Client Based Approach, which is employer led, provides guidance that can support construction clients planning or procuring construction.]

Recommendation 7

Procurement and supply opportunities to be co-ordinated through the Combined Authority 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 region. 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 region.

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 region 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 Sheffield City Region Combined Authority and or local authorities could put in place a contract to share such data with local firms.

Recommendation 8

Establish Sheffield City Region as a hub for higher level skills

– And develop a plan that establishes this as one of the regions' unique selling points

Sheffield City Region may have the opportunity to develop a profile as a hub for higher level, niche and future skills. 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 to exploit that centre of excellence would also require a sophisticated and holistic communication plan or integration with existing communication planning.

Sheffield City Region is known as a centre for engineering and so starts from a good foundation. Without an immediate critical total shortage for construction skills, the region is in a better position that neighbouring areas to invest in future high value skills.

> *Sheffield Hallam: is highly regarded for courses including: Maths, Planning, Housing & Regeneration and Engineering. It is also praised for provision of vocational courses and course design aligned to employer requirements.as well as for its relationships with professional bodies and with business and industry leaders.*

> *The University of Sheffield is highly regarded for courses including: Civil Engineering, Mechanical Engineering, Architecture, Landscape and Town and Regional Planning, with many courses offering a year in industry.*

> *The Advanced Manufacturing Research Centre is based in Rotherham and one of the two new campuses of the National College for High Speed Rail is based in Doncaster.*

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.

Sheffield City Region Construction Labour Research

Technical Appendices

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Approved by: CITB
Date: August 2016

Table of contents

Appendix A.   **Occupational definitions**

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

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

1 Senior, executive, and business process managers

(1115) Chief executives and senior officials

(1131) Financial managers and directors

(1132) Marketing and sales directors

(1133) Purchasing managers and directors

(1135) Human resource managers and directors

(1251) Property, housing and estate managers

(1136) Information technology and telecommunications directors

(2150) Research and development managers

(1162) Managers and directors in storage and warehousing

(1259) Managers and proprietors in other services nec

(1139) Functional managers and directors nec

(2133) IT specialist managers

(2134) IT project and programme managers

(3538) Financial accounts managers

(3545) Sales accounts and business development managers

2 Construction project managers

(2436) Construction project managers and related professionals

3 Other construction process managers

(1121) Production managers and directors in manufacturing

(1122) Production managers and directors in construction

(1161) Managers and directors in transport and distribution

(1255) Waste disposal and environmental services managers

(3567) Health and safety officers

(3550) Conservation and environmental associate professionals

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

(3131) IT operations technicians

(3132) IT user support technicians

(3534) Finance and investment analysts and advisers

(3535) Taxation experts

(3537) Financial and accounting technicians

(3563) Vocational and industrial trainers and instructors

(3539) Business and related associate professionals nec

(3520) Legal associate professionals

(3565) Inspectors of standards and regulations

(2136) Programmers and software development professionals

(2139) Information technology and telecommunications professionals nec

(3544) Estate agents and auctioneers

(2413) Solicitors

(2419) Legal professionals nec

(2421) Chartered and certified accountants

(2424) Business and financial project management professionals

(2423) Management consultants and business analysts

(4216) Receptionists

(4217) Typists and related keyboard occupations

(3542) Business sales executives

(4122) Book-keepers, payroll managers and wages clerks

(4131) Records clerks and assistants

(4133) Stock control clerks and assistants

(7213) Telephonists

(7214) Communication operators

(4215) Personal assistants and other secretaries

(7111) Sales and retail assistants

(7113) Telephone salespersons

(3541) Buyers and procurement officers

(3562) Human resources and industrial relations officers

(4121) Credit controllers

(4214) Company secretaries

(7129) Sales related occupations nec

(7211) Call and contact centre occupations

(7219) Customer service occupations nec

(9219) Elementary administration occupations nec

(2111) Chemical scientists

(2112) Biological scientists and biochemists

(2113) Physical scientists

(3111) Laboratory technicians

(3421) Graphic designers

(2463) Environmental health professionals

(2135) IT business analysts, architects and systems designers

(2141) Conservation professionals

(2142) Environment professionals

(2425) Actuaries, economists and statisticians

(2426) Business and related research professionals

(4124) Finance officers

(4129) Financial administrative occupations nec
(4138) Human resources administrative occupations
(4151) Sales administrators
(4159) Other administrative occupations nec
(4162) Office supervisors
(7130) Sales supervisors
(7220) Customer service managers and supervisors
(4161) Office managers

5 Construction trades supervisors

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

6 Wood trades and interior fit-out

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

7 Bricklayers

(5312) Bricklayers and masons

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, stagers 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 B.   Glenigan projects removed and their corresponding local authorities

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

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type	Reason for omission
1	Residential Units	Bassetlaw		01/01/2016	28/01/2017	Private Commercial	Missing values
2	Retail Development	Sheffield	0.3			Private Commercial	Missing dates
3	3 Retail Units	Doncaster	0.3			Private Commercial	Missing dates
4	School (Extension)	Rotherham	0.4			Public Non-housing	Missing dates
5	Public House (Extension)	Rotherham	0.4			Private Commercial	Missing dates
6	Car Showroom/Display Area	Sheffield	0.4			Private Commercial	Missing dates
7	Convenience Store	Sheffield	0.4			Private Commercial	Missing dates
8	10 Flats	Sheffield	0.5			New Housing	Missing dates
9	School (Extension)	Rotherham	0.5			Public Non-housing	Missing dates
10	11 Flats (Conversion/Extension)	Doncaster	0.6			New Housing	Missing dates
11	12 Flats	Rotherham	0.6			New Housing	Missing dates
12	Department Store (Alterations)	Rotherham	0.7	11/05/2016		Private Commercial	Missing dates
13	14 Flats	Sheffield	0.7			New Housing	Missing dates
14	Hospital (Refurbishment)	Sheffield	0.8			Public Non-housing	Missing dates
15	13 Houses	Sheffield	1.0			New Housing	Missing dates
16	13 Houses	Derbyshire Dales	1.0			New Housing	Missing dates
17	17 Student Flats (Conversion)	Sheffield	1.0			New Housing	Missing dates
18	8 Houses & 6 Luxury Houses	Sheffield	1.0			New Housing	Missing dates
19	Hotel (Extension)	Bassetlaw	1.0			Private Commercial	Missing dates
20	Retail Development	Doncaster	1.0			Private Commercial	Missing dates
21	14 Houses	Doncaster	1.0			New Housing	Missing dates
22	14 Houses	Sheffield	1.1			New Housing	Missing dates
23	Office & Police Station Building	Bolsover	1.2			Private Commercial	Missing dates
24	Holiday Homes/Leisure Facilities	Derbyshire Dales	1.2			Private Commercial	Missing dates
25	12 Houses & 5 Flats (New/Conversion)	Barnsley	1.3			New Housing	Missing dates
26	Industrial Unit	Barnsley	1.3			Private Industrial	Missing dates

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type	Reason for omission
27	20 Houses	Derbyshire Dales	1.5			New Housing	Missing dates
28	Visitor Centre	Doncaster	1.5			Public Non-housing	Missing dates
29	28 Houses	Doncaster	1.9			New Housing	Missing dates
30	Bypass	Chesterfield	2.0			Infrastructure	Missing dates
31	42 Flats & 1 Shop/Restaurant/Cafe/Financial Services	Sheffield	2.2			New Housing	Missing dates
32	34 Houses/Bungalows/Flats (New/Conversion)	North East Derbyshire	2.6			New Housing	Missing dates
33	48 Houses	Bolsover	2.8			New Housing	Missing dates
34	Solar Farm	Derbyshire Dales	3.0			Infrastructure	Missing dates
35	Multi Storey Car Park (Refurbishment)	Rotherham	3.0			Infrastructure	Missing dates
36	50 Residential Units	North East Derbyshire	3.4			Private Commercial	Missing dates
37	16176 Solar Photovoltaic Panels	Bassetlaw	5.0			Infrastructure	Missing dates
38	57 Houses/12 Flats & 8 Bungalows	North East Derbyshire	5.1			New Housing	Missing dates
39	90 Houses	Chesterfield	6.8			New Housing	Missing dates
40	Car Park Works	Rotherham	7.0			Infrastructure	Missing dates
41	149 Houses	Bolsover	11.2			New Housing	Missing dates
42	186 Student Flats/Offices	Sheffield	20.0			New Housing	Missing dates
43	325 Houses/Bungalows	Barnsley	24.4			New Housing	Missing dates
44	375 Houses & 1 Public House	Doncaster	28.2			New Housing	Missing dates
45	175 Student Accommodation & 5 Commercial Units	Sheffield	30.5			New Housing	Missing dates
46	510 Houses/40 Flats & 1 Restaurant/Commercial Units	North East Derbyshire	41.3			New Housing	Missing dates
47	Consultancy Framework	Doncaster	1.0	01/04/2015	01/04/2019	New Housing	Consultancy
48	11 Flats (Alterations)	Doncaster	0.6	19/02/2016	18/03/2017	New Housing	Duplicate of 15171894
49	19 Flats	Doncaster	1.0	05/11/2016	03/12/2017	New Housing	Duplicate of 15293309
50	20 Flats	Sheffield	1.0	15/04/2016	13/05/2017	New Housing	Duplicate of 15048830
51	15 Houses	North East Derbyshire	1.1	10/09/2016	08/10/2017	New Housing	Duplicate of 14215281
52	Supermarket	Rotherham	1.4	07/12/2015	30/05/2016	Private Commercial	Duplicate of 13391091

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type	Reason for omission
53	20 Residential Units (Alterations)	Doncaster	1.5	29/04/2016	27/05/2017	New Housing	Duplicate of 15168111
54	Housing Central Heating Programme	Barnsley	5.0	12/10/2015	14/03/2016	New Housing	Duplicate of 14348856
55	Solar Farm	North East Derbyshire	5.0	11/07/2016	11/11/2016	Infrastructure	Duplicate of 15200115
56	20,000 Solar Photovoltaic Panels	Bolsover	5.6	17/10/2016	17/04/2017	Infrastructure	Duplicate of 15294659

Appendix C. **Significant Glenigan projects and corresponding local authorities**

This section provides a list of all the significant projects analysed, organised by the local authority within which they occur. The projects appear in the following as they were put into the LFT, broken down into different elements and areas, when required, i.e. if a mixed project was broken down into new housing and private commercial, both elements are included here, each with its corresponding construction value. For this reason, there 208 entries appearing in the following table, as opposed to 146 significant projects identified in Glenigan.

The naming scheme functions as such:

- The prefix "Sheffield City Region" has been added to all projects.

- The projects stemming from the NIPP have been further suffixed with NIPP.

- The number following that is just an increasing number for distinction purposes.

- The next character denotes the breakdown into different project types, if applicable. The letters a, b, c etc. are arbitrarily assigned for distinction purposes.

- The letters P, R, C, I have been used to demote elements of broken down mixed-use projects (e.g. Public non-housing, Residential etc.).

- The name of the project as it appears in the Glenigan pipeline or the NIPP.

- The type of the project appears next, determining which LFT model was used.

- In the case of non-infrastructure projects, a suffix denotes whether the project in question is a new project or repair and maintenance works, to determine which specific LFT model is used. Infrastructure projects are treated as new construction.

- In the case of non-infrastructure projects, the last suffix denotes the duration of the project (short =< 12 months, medium = 12-24 months, long => 24 months), which determines the labour profile of individual coefficients).

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type
1	Sheffield City Region 120 - 84 Houses & 42 Flats - New housing - New - medium	Rotherham	9.5	25/09/2016	23/10/2017	Housing
2	Sheffield City Region 121 - Rail College - Public Non-housing - New - medium	Doncaster	10.0	25/09/2016	23/10/2017	Public Non-residential
3	Sheffield City Region 122a - 139 Houses & 8 Flats - New housing - New - medium	Doncaster	5.5	25/09/2016	23/10/2017	Housing
4	Sheffield City Region 122b - 139 Houses & 8 Flats - New housing - New - medium	Doncaster	5.5	25/09/2016	23/10/2017	General Infrastructure
5	Sheffield City Region 123 - 170 Houses - New housing - New - medium	Doncaster	12.8	25/09/2016	23/10/2017	Housing
6	Sheffield City Region 124 - 250 Houses - New housing - New - medium	Bolsover	15.0	25/09/2016	23/10/2017	Housing
7	Sheffield City Region 128a - Retail/Residential & Office Development - Private Commercial - New - long	Sheffield	52.0	25/09/2016	23/10/2017	Housing
8	Sheffield City Region 128b - Retail/Residential & Office Development - Private Commercial - New - long	Sheffield	428.0	25/09/2016	23/10/2017	Private Commercial
9	Sheffield City Region 131 - Demolition - Non-housing R&M - R&M - short	Sheffield	1.0	25/09/2016	23/10/2017	General Infrastructure
10	Sheffield City Region 137 - 25 Houses - New housing - New - short	Barnsley	3.0	25/09/2016	23/10/2017	Housing
11	Sheffield City Region 140 - Research Centre (Extension) - Public Non-housing - New - medium	Rotherham	16.0	25/09/2016	23/10/2017	General Infrastructure
12	Sheffield City Region 141 - Advanced Manufacturing & Research Centre - Private Industrial - New - medium	Rotherham	43.0	25/09/2016	23/10/2017	Private Industrial
13	Sheffield City Region 159 - 6 Supermarket/Shops/Restaurant/Cafe Units - Private Commercial - New - short	Sheffield	4.0	25/09/2016	23/10/2017	Private Commercial
14	Sheffield City Region 163 - Industrial Unit - Private Industrial - New - short	Barnsley	6.5	25/09/2016	23/10/2017	Private Industrial
15	Sheffield City Region 164 - School (Extension/Alterations) - Public Non-housing - New - medium	Sheffield	7.0	25/09/2016	23/10/2017	Public Non-residential
16	Sheffield City Region 165 - 75 Houses & Flats - New housing - New - short	Sheffield	8.0	25/09/2016	23/10/2017	Housing
17	Sheffield City Region 166 - Employment Development - Private Industrial - New - short	Bassetlaw	10.0	25/09/2016	23/10/2017	Private Industrial
18	Sheffield City Region 167 - School - Public Non-housing - New - medium	Bassetlaw	14.0	25/09/2016	23/10/2017	Public Non-residential
19	Sheffield City Region 169 - Rail Terminal Development - Stations (Underground/Network rail)	Doncaster	16.0	25/09/2016	23/10/2017	Stations (Underground/Network rail)
20	Sheffield City Region 17 - Investigation & Custody Centre - Public Non-housing - New - short	Sheffield	11.4	25/09/2016	23/10/2017	Public Non-residential
21	Sheffield City Region 170 - Infrastructure Works - General Infrastructure	Doncaster	21.0	25/09/2016	23/10/2017	General Infrastructure
22	Sheffield City Region 171 - Industrial Building - Private Industrial - New - short	Bolsover	46.7	25/09/2016	23/10/2017	Private Industrial
23	Sheffield City Region 18 - Distribution Centre - Private Industrial - New - short	Doncaster	45.0	25/09/2016	23/10/2017	Private Industrial
24	Sheffield City Region 191 - 174 Houses - New housing - New - medium	Barnsley	13.1	25/09/2016	23/10/2017	Housing
25	Sheffield City Region 212 - Office & Retail - Private Commercial - New - medium	Sheffield	10.0	25/09/2016	23/10/2017	Private Commercial
26	Sheffield City Region 213 - University Building - Public Non-housing - New - medium	Sheffield	25.0	25/09/2016	23/10/2017	Public Non-residential
27	Sheffield City Region 242 - 90 Residential Units - New housing - New - medium	Bassetlaw	6.8	25/09/2016	23/10/2017	Housing

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type
28	Sheffield City Region 243 - 3 Employment Units - Private Commercial - New - short	Barnsley	7.7	25/09/2016	23/10/2017	Private Commercial
29	Sheffield City Region 244a - 170 Flats & 1 Commercial Unit - New housing - New - medium	Sheffield	4.3	25/09/2016	23/10/2017	Housing
30	Sheffield City Region 244b - 170 Flats & 1 Commercial Unit - New housing - New - medium	Sheffield	4.3	25/09/2016	23/10/2017	Private Commercial
31	Sheffield City Region 246 - Rail Works - Mixed Rail (Track, stations, E&P etc)	Sheffield	5.5	25/09/2016	23/10/2017	Mixed Rail (Track, stations, E&P etc.)
32	Sheffield City Region 247a - 220 Houses & 32 Offices/1 Restaurant/1 Pub - New housing - New - medium	Derbyshire Dales	10.8	25/09/2016	23/10/2017	Housing
33	Sheffield City Region 247b - 220 Houses & 32 Offices/1 Restaurant/1 Pub - New housing - New - medium	Derbyshire Dales	0.5	25/09/2016	23/10/2017	Public Non-residential
34	Sheffield City Region 247c - 220 Houses & 32 Offices/1 Restaurant/1 Pub - New housing - New - medium	Derbyshire Dales	7.8	25/09/2016	23/10/2017	Private Commercial
35	Sheffield City Region 271a - 105 Houses - New housing - New - medium	North East Derbyshire	3.9	25/09/2016	23/10/2017	Housing
36	Sheffield City Region 271b - 105 Houses - New housing - New - medium	North East Derbyshire	3.9	25/09/2016	23/10/2017	General Infrastructure
37	Sheffield City Region 272a - 124 Houses/12 Flats & 1 Retail Unit - New housing - New - medium	North East Derbyshire	2.6	25/09/2016	23/10/2017	Housing
38	Sheffield City Region 272b - 124 Houses/12 Flats & 1 Retail Unit - New housing - New - medium	North East Derbyshire	2.6	25/09/2016	23/10/2017	Private Commercial
39	Sheffield City Region 272c - 124 Houses/12 Flats & 1 Retail Unit - Roads	North East Derbyshire	2.6	25/09/2016	23/10/2017	Roads
40	Sheffield City Region 272d - 124 Houses/12 Flats & 1 Retail Unit - New housing - New - medium	North East Derbyshire	2.6	25/09/2016	23/10/2017	General Infrastructure
41	Sheffield City Region 273a - 159 Houses & 1 Retail Unit - New housing - New - medium	North East Derbyshire	6.0	25/09/2016	23/10/2017	Housing
42	Sheffield City Region 273b - 159 Houses & 1 Retail Unit - New housing - New - medium	North East Derbyshire	6.0	25/09/2016	23/10/2017	Private Commercial
43	Sheffield City Region 274 - 320 Residential Units - New housing - New - long	Rotherham	19.3	25/09/2016	23/10/2017	Housing
44	Sheffield City Region 287 - Hotel - Private Commercial - New - short	Derbyshire Dales	4.5	25/09/2016	23/10/2017	Private Commercial
45	Sheffield City Region 288 - Community Centre & Offices (Extension/Alterations) - Public Non-housing - New - short	Chesterfield	5.0	25/09/2016	23/10/2017	Private Commercial
46	Sheffield City Region 290 - Rail Replacement - Mixed Rail (Track, stations, E&P etc)	Rotherham	5.5	25/09/2016	23/10/2017	Mixed Rail (Track, stations, E&P etc.)
47	Sheffield City Region 291a - 9 Employment/Commercial Development - Private Industrial - New - short	Barnsley	0.8	25/09/2016	23/10/2017	Private Commercial
48	Sheffield City Region 291b - 9 Employment/Commercial Development - Private Industrial - New - short	Barnsley	11.2	25/09/2016	23/10/2017	Private Industrial
49	Sheffield City Region 291c - 9 Employment/Commercial Development - Private Industrial - New - short	Barnsley	1.6	25/09/2016	23/10/2017	Public Non-Residential
50	Sheffield City Region 292 - Distribution Centre - Private Commercial - New - short	Doncaster	25.0	25/09/2016	23/10/2017	Private Industrial
51	Sheffield City Region 311 - Hotel & Restaurant/Leisure Units - Private Commercial - New - short	Derbyshire Dales	4.1	25/09/2016	23/10/2017	Private Commercial
52	Sheffield City Region 314 - University (Extension/Alterations) - Public Non-housing - New - short	Sheffield	5.4	25/09/2016	23/10/2017	Public Non-residential
53	Sheffield City Region 315 - 89 Houses - New housing - New - medium	Rotherham	6.7	25/09/2016	23/10/2017	Housing
54	Sheffield City Region 316 - School - Public Non-housing - New - short	Sheffield	7.2	25/09/2016	23/10/2017	Public Non-residential

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type
55	Sheffield City Region 317 - School - Public Non-housing - New - short	Sheffield	7.2	25/09/2016	23/10/2017	Public Non-residential
56	Sheffield City Region 318 - 96 Houses - New housing - New - medium	Doncaster	7.2	25/09/2016	23/10/2017	Housing
57	Sheffield City Region 319 - School - Public Non-housing - New - short	Rotherham	7.2	25/09/2016	23/10/2017	Public Non-residential
58	Sheffield City Region 320 - School - Public Non-housing - New - short	Rotherham	7.2	25/09/2016	23/10/2017	Public Non-residential
59	Sheffield City Region 321 - School - Public Non-housing - New - short	Rotherham	7.2	25/09/2016	23/10/2017	Public Non-residential
60	Sheffield City Region 322 - School - Public Non-housing - New - short	Rotherham	7.2	25/09/2016	23/10/2017	Public Non-residential
61	Sheffield City Region 323 - School - Public Non-housing - New - short	Rotherham	7.2	25/09/2016	23/10/2017	Public Non-residential
62	Sheffield City Region 324 - Energy Recovery Facility - Generation (Energy from Waste)	North East Derbyshire	4.0	25/09/2016	23/10/2017	Generation (Energy from Waste)
63	Sheffield City Region 326a - 35 Houses/5 Retail Units & 1 Supermarket - Private Commercial - New - medium	Barnsley	5.0	25/09/2016	23/10/2017	Housing
64	Sheffield City Region 326b - 35 Houses/5 Retail Units & 1 Supermarket - Private Commercial - New - medium	Barnsley	5.0	25/09/2016	23/10/2017	Private Commercial
65	Sheffield City Region 327 - Railway Station (Refurbishment) - Stations (Underground/Network rail)	Doncaster	8.0	25/09/2016	23/10/2017	Stations (Underground/Network rail)
66	Sheffield City Region 328 - Hospital (Extension/Refurbishment) - Public Non-housing - New - medium	North East Derbyshire	10.0	25/09/2016	23/10/2017	Public Non-residential
67	Sheffield City Region 329 - 145 Houses - New housing - New - medium	Bolsover	10.9	25/09/2016	23/10/2017	Housing
68	Sheffield City Region 330 - 8 Industrial & Storage/Distribution units - Private Industrial - New - short	Doncaster	18.9	25/09/2016	23/10/2017	Private Industrial
69	Sheffield City Region 331 - Tram Train Scheme - Trams	Sheffield	33.0	25/09/2016	23/10/2017	Trams
70	Sheffield City Region 334 - School - Public Non-housing - New - short	Doncaster	7.2	25/09/2016	23/10/2017	Public Non-residential
71	Sheffield City Region 335 - School - Public Non-housing - New - short	Doncaster	7.2	25/09/2016	23/10/2017	Public Non-residential
72	Sheffield City Region 336 - School - Public Non-housing - New - short	Doncaster	7.2	25/09/2016	23/10/2017	Public Non-residential
73	Sheffield City Region 337 - School - Public Non-housing - New - short	Doncaster	7.2	25/09/2016	23/10/2017	Public Non-residential
74	Sheffield City Region 338 - School - Public Non-housing - New - short	North East Derbyshire	7.2	25/09/2016	23/10/2017	Public Non-residential
75	Sheffield City Region 339a - 100 Houses & 1 Community/Leisure Centre - New housing - New - medium	Bolsover	3.8	25/09/2016	23/10/2017	Housing
76	Sheffield City Region 339b - 100 Houses & 1 Community/Leisure Centre - New housing - New - medium	Bolsover	3.8	25/09/2016	23/10/2017	Public Non-residential
77	Sheffield City Region 355a - 8 Restaurant/Cafe/Takeaway Units & 1 Warehouse - Private Industrial - New - short	Doncaster	1.2	25/09/2016	23/10/2017	Private Commercial
78	Sheffield City Region 355b - 8 Restaurant/Cafe/Takeaway Units & 1 Warehouse - Private Industrial - New - short	Doncaster	1.8	25/09/2016	23/10/2017	Private Industrial
79	Sheffield City Region 361 - Leisure Facility - Public Non-housing - New - short	Sheffield	7.0	25/09/2016	23/10/2017	Private Commercial
80	Sheffield City Region 363a - 4 Commercial Units - Private Industrial - New - medium	Sheffield	8.6	25/09/2016	23/10/2017	Private Commercial
81	Sheffield City Region 363b - 4 Commercial Units - Private Industrial - New - medium	Sheffield	8.6	25/09/2016	23/10/2017	Private Industrial

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type
82	Sheffield City Region 364a - Office & Distribution Hub - Private Commercial - New - short	Doncaster	31.4	25/09/2016	23/10/2017	Private Industrial
83	Sheffield City Region 364b - Office & Distribution Hub - Private Commercial - New - short	Doncaster	31.4	25/09/2016	23/10/2017	General Infrastructure
84	Sheffield City Region 393 - Flood Defence - Flooding	Sheffield	10.8	25/09/2016	23/10/2017	Flooding
85	Sheffield City Region 394 - 300 Houses - New housing - New - medium	Chesterfield	22.5	25/09/2016	23/10/2017	Housing
86	Sheffield City Region 396a - Commercial Development - Private Commercial - New - short	Rotherham	16.7	25/09/2016	23/10/2017	Public Non-residential
87	Sheffield City Region 396b - Commercial Development - Private Commercial - New - short	Rotherham	16.7	25/09/2016	23/10/2017	Private Commercial
88	Sheffield City Region 396c - Commercial Development - Private Commercial - New - short	Rotherham	16.7	25/09/2016	23/10/2017	Private Industrial
89	Sheffield City Region 398 - Motorway (Improvements) - Roads	Sheffield	142.1	25/09/2016	23/10/2017	Roads
90	Sheffield City Region 401a - Inland Port Development - Private Commercial - New - long	Doncaster	200.0	25/09/2016	23/10/2017	Private Industrial
91	Sheffield City Region 401b - Inland Port Development - Private Commercial - New - long	Doncaster	200.0	25/09/2016	23/10/2017	General Infrastructure
92	Sheffield City Region 412a - Industrial/Warehouse Unit - Private Industrial - New - short	North East Derbyshire	1.6	25/09/2016	23/10/2017	Private Commercial
93	Sheffield City Region 412b - Industrial/Warehouse Unit - Private Industrial - New - short	North East Derbyshire	1.6	25/09/2016	23/10/2017	Private Industrial
94	Sheffield City Region 415 - School - Public Non-housing - New - short	Doncaster	6.5	25/09/2016	23/10/2017	Public Non-residential
95	Sheffield City Region 416a - Commercial Development - Private Industrial - New - short	Barnsley	3.5	25/09/2016	23/10/2017	Private Commercial
96	Sheffield City Region 416b - Commercial Development - Private Industrial - New - short	Barnsley	3.5	25/09/2016	23/10/2017	Public Non-Residential
97	Sheffield City Region 436 - 88 Houses - New housing - New - medium	Sheffield	6.6	25/09/2016	23/10/2017	Housing
98	Sheffield City Region 437 - 97 Residential Units - New housing - New - medium	Doncaster	7.3	25/09/2016	23/10/2017	Housing
99	Sheffield City Region 439 - Football Ground (Extension) - Public Non-housing - New - short	Sheffield	9.6	25/09/2016	23/10/2017	Public Non-residential
100	Sheffield City Region 440a - 177 Houses - New housing - New - medium	Doncaster	6.6	25/09/2016	23/10/2017	Housing
101	Sheffield City Region 440b - 177 Houses - New housing - New - medium	Doncaster	6.6	25/09/2016	23/10/2017	Private Commercial
102	Sheffield City Region 441 - Stadium/Offices/Hotel/Indoor Arena & Research Centre - Public Non-housing - New - short	Sheffield	44.3	25/09/2016	23/10/2017	Public Non-residential
103	Sheffield City Region 444 - High Pressure Pipeline - Gas Transmission/distribution	Doncaster	30.0	25/09/2016	23/10/2017	Gas Transmission/distribution
104	Sheffield City Region 467a - 5 Industrial/Storage Units - Private Industrial - New - short	Doncaster	1.9	25/09/2016	23/10/2017	Private Commercial
105	Sheffield City Region 467b - 5 Industrial/Storage Units - Private Industrial - New - short	Doncaster	1.9	25/09/2016	23/10/2017	Private Industrial
106	Sheffield City Region 468 - 3 Supermarket/Leisure & Medical Centre Units - Private Commercial - New - short	Sheffield	4.5	25/09/2016	23/10/2017	Private Commercial
107	Sheffield City Region 469 - 51 Dwellings - New housing - New - short	Sheffield	5.0	25/09/2016	23/10/2017	Housing
108	Sheffield City Region 470 - Industrial Unit - Private Industrial - New - short	Barnsley	6.0	25/09/2016	23/10/2017	Private Industrial
109	Sheffield City Region 472 - Office (Extension/Alterations) - Private Commercial - New - short	Sheffield	7.8	25/09/2016	23/10/2017	Private Commercial

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type
110	Sheffield City Region 473 - 105 Houses - New housing - New - medium	Doncaster	7.9	25/09/2016	23/10/2017	Housing
111	Sheffield City Region 474a - 182 Flats, Nursery & Offices - Housing R&M - R&M - medium	Sheffield	6.7	25/09/2016	23/10/2017	Housing
112	Sheffield City Region 474b - 182 Flats, Nursery & Offices - Housing R&M - R&M - medium	Sheffield	6.7	25/09/2016	23/10/2017	Public Non-residential
113	Sheffield City Region 474c - 182 Flats, Nursery & Offices - Housing R&M - R&M - medium	Sheffield	6.7	25/09/2016	23/10/2017	Private Commercial
114	Sheffield City Region 475 - Cinema & Shopping Complex - Private Commercial - New - medium	Sheffield	25.0	25/09/2016	23/10/2017	Private Commercial
115	Sheffield City Region 512 - 122 Houses - New housing - New - medium	Sheffield	9.2	25/09/2016	23/10/2017	Housing
116	Sheffield City Region 513 - 146 Houses - New housing - New - medium	Chesterfield	11.0	25/09/2016	23/10/2017	Housing
117	Sheffield City Region 514 - 192 Student Flats - Public Non-housing - New - medium	Sheffield	19.5	25/09/2016	23/10/2017	Public Non-residential
118	Sheffield City Region 52 - Storage Building (Extension/Alterations) - Private Industrial - New - short	Bassetlaw	5.4	25/09/2016	23/10/2017	Private Industrial
119	Sheffield City Region 530 - 198 Residential Units - New housing - New - medium	Bassetlaw	12.1	25/09/2016	23/10/2017	Housing
120	Sheffield City Region 547 - Amphitheatre - Private Commercial - New - short	Doncaster	3.6	25/09/2016	23/10/2017	Private Commercial
121	Sheffield City Region 54a - Employment Unit - Private Industrial - New - short	Barnsley	11.3	25/09/2016	23/10/2017	Private Commercial
122	Sheffield City Region 54b - Employment Unit - Private Industrial - New - short	Barnsley	11.3	25/09/2016	23/10/2017	Private Industrial
123	Sheffield City Region 551 - Care Centre - Public Non-housing - New - short	Sheffield	6.4	25/09/2016	23/10/2017	Private Commercial
124	Sheffield City Region 552 - 83 Houses & 9 Flats - New housing - New - medium	Sheffield	8.5	25/09/2016	23/10/2017	Housing
125	Sheffield City Region 553 - Care Home - Public Non-housing - New - medium	Bassetlaw	12.6	25/09/2016	23/10/2017	Private Commercial
126	Sheffield City Region 557 - Residential (Pitched Roofing) 2014-2019 - Housing R&M - R&M - long	Sheffield	57.0	25/09/2016	23/10/2017	Housing
127	Sheffield City Region 56 - Supermarket (Conversion/Alterations) - Non-housing R&M - R&M - short	Barnsley	6.9	25/09/2016	23/10/2017	Private Commercial
128	Sheffield City Region 57 - College Building - Public Non-housing - New - short	Sheffield	7.7	25/09/2016	23/10/2017	Public Non-residential
129	Sheffield City Region 574 - Historic House (Refurbishment) - Non-housing R&M - R&M - short	Derbyshire Dales	3.0	25/09/2016	23/10/2017	Housing
130	Sheffield City Region 579 - School - Public Non-housing - New - medium	Rotherham	11.3	25/09/2016	23/10/2017	Public Non-residential
131	Sheffield City Region 58 - 153 Houses - New housing - New - medium	Bolsover	11.5	25/09/2016	23/10/2017	Housing
132	Sheffield City Region 580 - 2 Office Buildings - Private Commercial - New - short	Sheffield	18.3	25/09/2016	23/10/2017	Private Commercial
133	Sheffield City Region 581a - Distribution & Office Centre - Private Commercial - New - short	Doncaster	28.7	25/09/2016	23/10/2017	Private Industrial
134	Sheffield City Region 581b - Distribution & Office Centre - Private Commercial - New - short	Doncaster	28.7	25/09/2016	23/10/2017	General Infrastructure
135	Sheffield City Region 59 - 250 Houses/Bungalows - New housing - New - medium	North East Derbyshire	18.8	25/09/2016	23/10/2017	Housing
136	Sheffield City Region 606a - 90 Houses/5 Bungalows & 3 Industrial Units - New housing - New - medium	Bolsover	3.7	25/09/2016	23/10/2017	Housing
137	Sheffield City Region 606b - 90 Houses/5 Bungalows & 3 Industrial Units - New housing - New - medium	Bolsover	3.7	25/09/2016	23/10/2017	Private Commercial

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type
138	Sheffield City Region 607 - 111 Houses - New housing - New - medium	Bassetlaw	8.3	25/09/2016	23/10/2017	Housing
139	Sheffield City Region 608 - 129 Holiday Lodges - Private Commercial - New - medium	Bassetlaw	9.7	25/09/2016	23/10/2017	Private Commercial
140	Sheffield City Region 609 - Light Industrial/Offices/Warehouse Development - Private Industrial - New - medium	Doncaster	11.2	25/09/2016	23/10/2017	Private Industrial
141	Sheffield City Region 60a - Retail & Restaurant/Cafe/Pubs/Cinema/Library Units - Private Commercial - New - short	Barnsley	18.4	25/09/2016	23/10/2017	Private Commercial
142	Sheffield City Region 60b - Retail & Restaurant/Cafe/Pubs/Cinema/Library Units - Private Commercial - New - short	Barnsley	18.4	25/09/2016	23/10/2017	Private Industrial
143	Sheffield City Region 610 - 198 Houses/Employment Units - New housing - New - medium	Bassetlaw	14.9	25/09/2016	23/10/2017	Housing
144	Sheffield City Region 611 - Car Showroom/Warehouse & Industrial Works (Alterations) - Non-housing R&M - R&M - medium	Sheffield	19.1	25/09/2016	23/10/2017	Private Industrial
145	Sheffield City Region 612a - Industrial Warehouse Unit - Private Industrial - New - medium	North East Derbyshire	19.3	25/09/2016	23/10/2017	Private Commercial
146	Sheffield City Region 612b - Industrial Warehouse Unit - Private Industrial - New - medium	North East Derbyshire	0.7	25/09/2016	23/10/2017	Private Industrial
147	Sheffield City Region 613 - Student Flats - Public Non-housing - New - medium	Sheffield	32.0	25/09/2016	23/10/2017	Housing
148	Sheffield City Region 614 - Biomass Energy Development - Biomass	Rotherham	75.0	25/09/2016	23/10/2017	Biomass
149	Sheffield City Region 615a - 1208 Residential/Commercial Units - New housing - New - long	Doncaster	33.3	25/09/2016	23/10/2017	Housing
150	Sheffield City Region 615b - 1208 Residential/Commercial Units - New housing - New - long	Doncaster	33.3	25/09/2016	23/10/2017	Public Non-residential
151	Sheffield City Region 615c - 1208 Residential/Commercial Units - New housing - New - long	Doncaster	33.3	25/09/2016	23/10/2017	Private Commercial
152	Sheffield City Region 618a - 900 Residential, School & Commercial Units - New housing - New - long	Doncaster	22.5	25/09/2016	23/10/2017	Housing
153	Sheffield City Region 618b - 900 Residential, School & Commercial Units - New housing - New - long	Doncaster	22.5	25/09/2016	23/10/2017	Public Non-residential
154	Sheffield City Region 618c - 900 Residential, School & Commercial Units - New housing - New - long	Doncaster	22.5	25/09/2016	23/10/2017	Private Commercial
155	Sheffield City Region 65 - 198 Houses - New housing - New - long	Barnsley	20.0	25/09/2016	23/10/2017	Housing
156	Sheffield City Region 652 - Manufacturing Unit - Private Industrial - New - short	Barnsley	5.2	25/09/2016	23/10/2017	Private Industrial
157	Sheffield City Region 653 - University - Non-housing R&M - R&M - short	Chesterfield	10.0	25/09/2016	23/10/2017	Public Non-residential
158	Sheffield City Region 654 - Tennis Centre (Extension/Alterations) - Private Commercial - New - medium	Sheffield	12.5	25/09/2016	23/10/2017	Private Commercial
159	Sheffield City Region 674 - 115 Houses/Townhouses & Bungalows - New housing - New - medium	Derbyshire Dales	8.6	25/09/2016	23/10/2017	Housing
160	Sheffield City Region 675 - 107 Houses & 93 Town Houses - New housing - New - medium	Sheffield	12.5	25/09/2016	23/10/2017	Housing
161	Sheffield City Region 676 - 170 Residential Units - New housing - New - medium	Bolsover	15.9	25/09/2016	23/10/2017	Housing
162	Sheffield City Region 678 - 650 Residential Units & 1 School - New housing - New - medium	Doncaster	48.8	25/09/2016	23/10/2017	Housing
163	Sheffield City Region 683 - Theme Park - Private Commercial - New - medium	Rotherham	37.0	25/09/2016	23/10/2017	Private Commercial
164	Sheffield City Region 685a - Employment Park - Private Commercial - New - long	Bassetlaw	100.0	25/09/2016	23/10/2017	Private Commercial
165	Sheffield City Region 685b - Employment Park - Private Commercial - New - long	Bassetlaw	100.0	25/09/2016	23/10/2017	Private Industrial

Number	Description	Local Authority	Value (£m)	Start Date	End Date	Project Type
166	Sheffield City Region 686 - Leisure & Tourist Resort - Private Commercial - New - long	Chesterfield	400.0	25/09/2016	23/10/2017	Private Commercial
167	Sheffield City Region 687a - 3,100 Homes - New housing - New - long	Doncaster	77.5	25/09/2016	23/10/2017	Housing
168	Sheffield City Region 687b - 3,100 Homes - New housing - New - long	Doncaster	77.5	25/09/2016	23/10/2017	Private Commercial
169	Sheffield City Region 687c - 3,100 Homes - New housing - New - long	Doncaster	77.5	25/09/2016	23/10/2017	Public Non-residential
170	Sheffield City Region 708 - Industrial/Research Building - Private Industrial - New - short	Rotherham	3.4	25/09/2016	23/10/2017	Private Industrial
171	Sheffield City Region 710 - Factory - Private Industrial - New - short	Bassetlaw	5.0	25/09/2016	23/10/2017	Private Industrial
172	Sheffield City Region 711 - Cinema/Restaurant (Extension/Alterations) - Private Commercial - New - short	Barnsley	6.8	25/09/2016	23/10/2017	Private Commercial
173	Sheffield City Region 712 - 150 Residential Units - New housing - New - medium	Chesterfield	11.3	25/09/2016	23/10/2017	Housing
174	Sheffield City Region 739 - 94 Houses & 1 Bungalow - New housing - New - medium	Barnsley	7.1	25/09/2016	23/10/2017	Housing
175	Sheffield City Region 740a - 97 Houses - New housing - New - medium	Barnsley	3.6	25/09/2016	23/10/2017	Housing
176	Sheffield City Region 740b - 97 Houses - New housing - New - medium	Barnsley	3.6	25/09/2016	23/10/2017	Private Commercial
177	Sheffield City Region 741 - 145 Houses & 25 Flats - New housing - New - medium	Doncaster	10.4	25/09/2016	23/10/2017	Housing
178	Sheffield City Region 742 - 224 Houses & 3 Flats - New housing - New - medium	Doncaster	14.1	25/09/2016	23/10/2017	Housing
179	Sheffield City Region 743 - Shopping Centre - Non-housing R&M - R&M - medium	Sheffield	50.0	25/09/2016	23/10/2017	Private Commercial
180	Sheffield City Region 744a - 432 Student Flats/14 Flats & 15 Commercial Units - Public Non-housing - New - medium	Sheffield	33.3	25/09/2016	23/10/2017	Housing
181	Sheffield City Region 744b - 432 Student Flats/14 Flats & 15 Commercial Units - Public Non-housing - New - medium	Sheffield	33.3	25/09/2016	23/10/2017	Private Commercial
182	Sheffield City Region 744c - 432 Student Flats/14 Flats & 15 Commercial Units - Public Non-housing - New - medium	Sheffield	33.3	25/09/2016	23/10/2017	Private Industrial
183	Sheffield City Region 90 - 89 Houses - New housing - New - medium	Barnsley	6.7	25/09/2016	23/10/2017	Housing
184	Sheffield City Region 91 - 110 Residential Units - New housing - New - medium	Sheffield	8.3	25/09/2016	23/10/2017	Housing
185	Sheffield City Region 92 - 111 Houses/12 Bungalows & 8 Flats - New housing - New - medium	Derbyshire Dales	9.8	25/09/2016	23/10/2017	Housing
186	Sheffield City Region 93 - Distribution & Office Units - Private Commercial - New - medium	Doncaster	15.0	25/09/2016	23/10/2017	Private Commercial
187	Sheffield City Region 94 - 300 Houses & 12 Flats - New housing - New - medium	Barnsley	23.4	25/09/2016	23/10/2017	Housing
188	Sheffield City Region 95 - Sport, Technology & Education Facility - Public Non-housing - New - medium	Sheffield	40.0	25/09/2016	23/10/2017	Public Non-residential

Appendix D.   Region/nation employer operates in, compared with region/nation working in currently

Appendix Table 1: Region/nation employer operates in, compared with region/nation working in currently

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

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

Base: All respondents,
*denotes less than 0.5%a

# Appendix E.   Alternative presentation of tables & information in the main report

Option B – Employment by main group and number

Occupation	Sheffield City Region	Yorkshire & Humber
Other construction process managers	4,936	14,144
Senior, executive, and business process managers	4,425	13,296
Other construction professionals and technical staff	4,151	13,114
Surveyors	1,869	5,697
Civil engineers	1,312	3,691
Construction trades supervisors	1,141	3,983
Construction project managers	1,015	3,211
Architects	204	572
Wood trades and interior fit-out	5,861	17,532
Electrical trades and installation	5,120	15,393
Plumbing and HVAC Trades	4,045	12,529
Labourers nec*	2,742	8,243
Building envelope specialists	2,565	7,072
Painters and decorators	2,166	6,172
Plasterers	1,863	5,747
Bricklayers	1,799	5,722
Specialist building operatives nec*	1,510	3,494
Roofers	1,466	5,292
Plant mechanics/fitters	1,208	3,423
Civil engineering operatives nec*	1,134	3,799
Glaziers	916	2,581
Steel erectors/structural fabrication	806	2,622
Floorers	749	2,411
Plant operatives	698	1,450
Scaffolders	628	2,408
Logistics	396	1,115
Non-construction professional, technical, IT, and other office-based staff	8,317	25,320
Non–construction operatives	1,256	4,072
Total	**64,298**	**194,107**

Key

Manager/Professional occupations
Skilled Trades
Office based staff

Distribution of construction workforce within Sheffield City Region
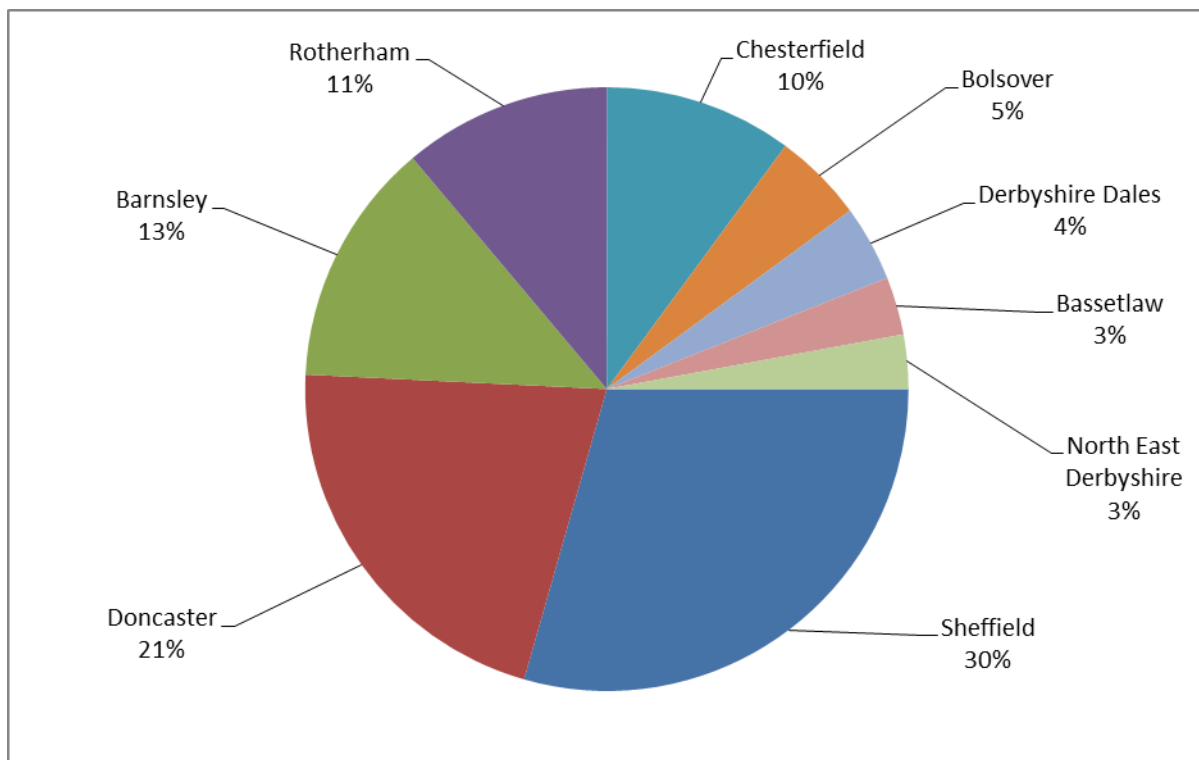
Comparison of construction employment with LEP to wider Regional views.

Area	Jan-Dec 2015
Bassetlaw	1.1%
Bolsover	1.7%
Chesterfield	3.5%
Derbyshire Dales	1.4%
North East Derbyshire	1.0%
Total of East Midlands	8.6%

Barnsley	4.5%
Doncaster	7.4%
Rotherham	3.8%
Sheffield	10.1%
Total of Yorkshire and Humber	25.9%