

# Deep Dive: 10 Construction

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**FINAL REPORT**

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## Executive Summary

### Context

- The global construction market is facing major transformation as businesses continue to respond to the challenges of the economic crisis since 2008, begin to shift to green and sustainable construction, and seek to take advantage of the opportunities provided by the digital economy. The competitiveness and readiness of the UK construction sector will be crucial if the UK is to take advantage of these opportunities.
- As well as being a significant employer in Greater Manchester (GM) in its own right, the Construction sector also supports and facilitates growth across other sectors within the economy. While public sector infrastructure investment has been a major foundation of growth in the sector, private investment is expected to lead growth in future, in particular opportunities linked to major new housing development; and new transport infrastructure.
- Construction employs around 54,000 people in GM and generates Gross Value Added (GVA) of £3bn. GM has strengths in a number of areas, including: electrical and construction installation (16,200 employees); construction of residential and non-residential buildings (12,500 employees) and civil engineering (8,900). There are 9,200 companies in the conurbation, many of which are micro-size firms, and the industry also makes considerable use of self-employed sub-contractors to increase capacity.
- The Construction sector delivers a much larger impact than its employment figures alone would suggest. The Montague Report in 2012 reported that for every £1m of housing output 12 jobs are supported, seven directly and five indirectly. While for every £1 invested in construction, £2.60 is generated elsewhere in the supply chain.
- Construction firms are located across the conurbation, with particular concentrations in the regional centre, Trafford Park, Bolton and Wigan. Employment is similarly spread within firms registered around the conurbation, although on a day-to-day basis, a large proportion of actual employment activity is on-site.

### The Growth Opportunity

- If GM is to deliver its growth ambitions, high levels of construction will be required to deliver the housing and employment identified. Moving from building between 3,000 to 5,000 new homes per annum as has been the case in recent history to over 10,000 will require a significant scaling up of activity in the construction sector.
- Major infrastructure development, including new, road and rail projects; and major new developments (such as Port Salford/Western Gateway and Airport City) will provide new opportunities for the construction industry and its supply chain. The scale of this activity will increase considerably as HS2, HS3 and other Northern Powerhouse proposals are taken forward.

- The wider benefits of construction are likely to increase as the use of innovative approaches to construction (e.g. digital modelling of building and material survey), new materials (e.g. concrete textile sheeting) and off-site construction (e.g. pre- and modular builds) and increase opportunities for GM companies to become involved in manufacturing materials and products for the industry. These opportunities link to the development of GM's Low Carbon and Environmental Goods and Services sector.
- Overall, Construction employment will increase considerably as the conurbation's economy grows. The baseline forecast for GM suggests an additional 19,000 jobs in the construction sector by 2035, adding an additional £1.7bn to the economy. The core Accelerated Growth Scenario for GM suggests a higher net increase of 22,400 jobs between 2015 and 2035 growing at a stronger average growth rate of 1.2%pa, and adding £2.0bn to GM's economy by 2035.
- The Baseline Forecast and Accelerated Growth Scenario both highlight that companies in GM will have to compete for labour when there will be a high level of demand nationally for the same type of skills, potentially leading to further skills shortages in a sector that is already struggling to attract and retain skilled workers.

### Key Challenges

- The office and industrial premises market has been slow to recover from the recession and a lack of pre-lets in GM – required by many financial institutions to release funds for construction – has made it difficult to secure new development in many parts of the conurbation, as has the ability of many companies to afford rental levels of new property which justify commercial investment by developers. Another risk, with a direct impact on construction, is the ability of any conurbation to provide the scale and quality of residential and employment land needed to maintain a consistently high level of development over a sustained period.
- The recent report, *North West High Speed Rail Skills Strategy & Implementation Plan* suggests a marked increase in demand for engineering and construction skills will add to demand from other parts of the construction industry leading to potential labour shortages. The report suggests LEPs across the Northern Powerhouse should work collaboratively to address the skills challenges faced by the industry.
- The Royal Institute of Chartered Surveyors' Q4 2015 Construction Industry Survey highlights severe skills shortages in specific occupations, with particular problems finding experienced bricklayers and quantity surveyors. The UKCES National Employers Skills Survey also suggests that the sector is held back from reaching its full potential by staff not being fully proficient in their current roles. These problems are compounded by the fact that many firms are micro-size (employing less than ten people) and sole traders. Sector research by New Economy suggests many firms regard themselves as "too small to be

able to afford to train staff internally”, and four-fifths of companies in the sector in GM have no formal training budget at all.<sup>1</sup>

- The Apprenticeship Levy, which the government will introduce from April 2017, with the aim of encouraging more employers to support apprenticeships, will not impact firms with payroll costs of under £3m a year (or £250,000 a month) - implying many construction firms are likely to be exempt (recent estimates suggest about 700 construction firms nationally will pay the levy) . This differs from the current situation whereby the threshold for firms to pay the levy of the Construction Industry Training Board was £80,000. However, irrespective of whether they pay the levy, construction firms of all sizes are likely to be affected by the government’s wider apprenticeship reforms.
- An ageing workforce also means that industry will increasingly have to look for new sources of labour. The Greater Manchester Chamber of Commerce estimates that by 2020 around 19% of the workforce will be of retirement age.<sup>2</sup> At the same time both the rail industry and manufacturing are facing a similar challenge in terms of an ageing workforce and retirement. Many former skilled workers appear to have left the industry during the last down-turn and specialist skilled trades are in short supply. Employment & Skills Agreements in the construction industry could become standard to support skills development in the sector, in relation to Council developer activity, procurement of construction services, and also private sector commercial developments

## Spatial Considerations

- The Construction sector is a key facilitator supporting growth of other sectors and the wider economy. In addition to housing provision across the conurbation, spatially, growth will be linked to development of key projects and sites including major schemes such as: the Northern Hub, HS2/HS3, Airport City, the Western Gateway, Salford Quays and City Centre Salford among others. The significant growth in housing and employment expected in the regional centre means that it will be a key location for construction activity. The location of these sites will not necessarily be linked to the location of employees and businesses given the nature of the sector.
- As the construction industry is spread across the conurbation in terms of businesses and jobs, it is likely that any future growth in existing firms will impact across most of GM, and in particular where there are existing strengths, including in Wigan, Salford, parts of Tameside and Trafford, and Bolton. Ensuring that GM businesses have the skills and expertise to be able to maximise the potential of the residential, commercial and infrastructure demand over the next two decades is critical. A key opportunity and challenge is to ensure that GM residents are at the forefront of benefitting from the jobs that construction activity will generate in the city region over the next 20 years.

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<sup>1</sup> New Economy, 2013, The Construction Sector in Greater Manchester: Overview of Skills Issues.  
<http://neweconomymanchester.com/downloads/2657-Construction-pdf>

<sup>2</sup> Greater Manchester Chamber of Commerce, March 2015: Greater Manchester Construction Sector Pipeline Analysis.  
<http://gmchamber-stage.s3.amazonaws.com/attachments/930/original.pdf>

# 1 Introduction

- 1.1 This report is one of a series of sector ‘Deep Dive’ reports. It was commissioned by the Greater Manchester Combined Authority (GMCA) as part of Greater Manchester’s economic evidence base, and in particular, to inform the development of the Greater Manchester Spatial Framework (GMSF). The report is part of a wide ranging analysis of the economic issues and opportunities across GM. The evidence is at a greater degree of granularity than has ever been done before for any industry sector in GM.
- 1.2 The deep dive research comprises the following reports:
- **Part 1: Research summary:** Providing an overview of the key issues affecting productivity and participation in GM, including demographic structures and labour market profiles. It also includes an assessment of the key factors that are expected to drive economic change in the global, UK and GM economies in the coming decades. It summarises the key findings from each of the sector chapters.
  - **Part 2: Sector deep dive reports:** Covering the following key sectors: Manufacturing; Business, Finance and Professional Services; Digital & Creative; Health/Social Care and Health Innovation; Low Carbon and Environmental Goods and Services; Logistics; Retail and Wholesale Distribution; Hospitality, Tourism and Sport; and Construction.
- 1.3 For each sector, the analysis covers:
- Current make-up of the sector, covering the size, scale and relative importance to GM and geographic footprint, not constrained to administrative boundaries<sup>3</sup>;
  - Recent growth rates and growth potential (using forecasts by Oxford Economics);
  - The location of critical assets and institutions across GM;
  - Market opportunities and threats for the sector, including long-term trends which will shape the future scale, needs and location of the sector; and
  - The spatial considerations of accelerated levels of growth in the sector.
- 1.4 The Deep Dive research has been produced by New Economy, with Deloitte supporting at the scoping stage and Ekosgen reviewing the outputs and providing independent quality assurance. The work has been developed drawing on input from both the public and the private sectors. Workshops have been held with Chief Executives and local authority officers in each GM district to check and challenge the evidence presented; to assess how it fits with local plans and to draw out the GM wide implications of the research. Consultation has also been undertaken with experts from a wide range of public and private partners including the Manchester Growth Company, GM’s universities, TfGM, GM Chamber, pro-Manchester, Manchester Airport, NHS North West and LEP and BLC members to provide further input and challenge to the evidence presented. The work also draws upon and feeds into the findings of the Northern Powerhouse Independent Economic Review.

<sup>3</sup> The data provided in the sector deep dive series of reports is used to support the understanding of the major trends within the sector and to set the context of the sector against the wider economy and UK.

## 2 Definitions

2.1 The Construction sector covered in this report includes the following elements:

- **Building Construction:** relating to the development and construction of residential and non-residential buildings. Examples of Building Construction businesses in GM include: Seddon Solutions, P Casey Group, Watson, Wates Group and Forrest Ltd.
- **Civil Engineering:** including construction of infrastructure projects, such as roads, railways, utility projects and other civil engineering projects. Examples of Civil Engineering businesses in GM include: AMEC, URS Civil Engineers, Sir Robert McAlpine, and T&T.
- **Other Specialised Construction Activities:** including other construction activities such as demolition, electrical installation and plumbing. Examples of Specialised Construction businesses in GM include: Walter Forshaw Demolition Ltd, William Hare Group Steelworks, and Carillion Construction.

2.2 The specific Standard Industrial Classification codes used in the data analysis are as follows:

SIC Code(s)	Description
<b>41 Building Construction</b>	Development of building projects Construction of residential and non-residential buildings
<b>42 Civil Engineering</b>	Construction of roads and railways Construction of utility projects Construction of other civil engineering projects
<b>43 Specialised Construction</b>	Demolition and site preparation Electrical, plumbing and other construction installation activities Building completion and finishing Other specialised construction activities.

## 3 Significance

- 3.1 The UK Construction industry, despite a challenging recession, remains among the strongest in the world and is also a major deliverer of key Government infrastructure programmes.<sup>4</sup> Areas of expertise that the UK is known for globally include architecture, quantity surveying, design and engineering. The UK has a strong presence in major mechanical and civil engineering projects across the globe.
- 3.2 In GM, the construction sector contributes £3bn GVA to the economy and 54,000 people were employed within the sector in 2013 and a further 25,000 estimated in self-employment.<sup>5</sup> While the sector's growth rates and employment numbers are not as significant as those seen in other sectors in GM, such as the Financial and Professional Services sector, the Construction sector facilitates growth within other sectors by supporting and delivering new development.
- 3.3 GM has strengths in civil engineering and architecture, as well as being in a prime position to bring further innovation into the sector given its academic and business expertise in the areas of engineering, mathematics and digital technologies, which are all critical to the growth of the sector.
- 3.4 There are broadly three elements of demand in the Construction industry, categorised as follows:
- **Residential demand:** The August 2016 Greater Manchester Spatial Framework (GMSF) Growth Option sets out that, based on the employment and population increase forecast in the accelerated growth scenario, at least an additional 225,000 homes will be needed to accommodate growth over the next twenty years (Objectively Assessed Housing Need for GM results in a net dwelling requirement of 11,281 annually between 2015 and 2035<sup>6</sup>).
  - **Commercial demand** in GM includes demand for retail and warehousing units, as well as new office developments and the refurbishment of 'secondary' offices. Jones Lang Salle reported that £1bn was invested in office space in Manchester in 2014, alongside £907m in retail property in the North West.<sup>7</sup> Furthermore, demand for office space seems to be increasing, as reports suggest that the supply of commercial property in Manchester (vs demand) is at its lowest level since 2007.<sup>8</sup>
  - The likely spatial patterns of growth identified in all other Deep Dive sector reports highlight that there will be construction opportunities across all GM, driving demand for local labour and also opportunities for local contractors. Increased demand for office space in the regional centre also means that some firms could be priced out, driving demand for new builds and refurbishment in other locations across all of GM.

<sup>4</sup> Department for Business, Innovation & Skills (2013): Construction 2025: Strategy

<sup>5</sup> Self-employed estimated from the difference in GMFM between the sector's total employment less employees

<sup>6</sup> [https://www.greatermanchester-ca.gov.uk/meetings/meeting/289/joint\\_gmcaagma\\_executive\\_board](https://www.greatermanchester-ca.gov.uk/meetings/meeting/289/joint_gmcaagma_executive_board)

<sup>7</sup> Jones Lang LaSalle (2015): North West Property Market in 2014/15

<sup>8</sup> Colliers (2015): Manchester Office Snapshot July 2015

<sup>8</sup> Jones Lang LaSalle (2015): North West Property Market in 2014/15

- **Infrastructure** is the third main area of demand within the Construction industry. The Government has set out its Infrastructure Strategy, which includes an Infrastructure Pipeline of works from 2015/16 onwards, worth £321bn nationally. In the North West, there are 76 projects in the pipeline, which accounts for almost 20% of the national total. In GM, for example, the Smart Motorways programme will update the M60 and M62 motorways. Other projects in the North West include a mixture of transport, energy and flood defence programmes that could provide opportunities for the Construction sector.<sup>9</sup>

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<sup>9</sup> HM Treasury (2015): Policy paper: National Infrastructure Pipeline factsheet July 2015; and HM Treasury (2015): National Infrastructure Plan for Skills

## 4 Businesses and Employment

- 4.1 The Construction sector was worth £78.5bn to the UK economy in 2013. Of this £5.8bn was in the North West and £3bn from GM. The sector is the sixth largest in terms of contribution to total GVA output within GM. Despite significant decline in output during the recession, construction began to grow again as the economy recovered. Research highlights that new project starts in GM for the period 2013 to 2017 are worth a total of £11.1bn with £5.6bn of this coming from housing developments.<sup>10</sup>
- 4.2 In 2014, there were 266,100 construction firms across the UK. 13.9% of which were based in London, 9.5% in the North West and 3.5% in GM (or 9,215 businesses). Construction accounted for just under 54,000 employees (and a further 25,000 self-employed) in GM in 2013, just over a third (36.2%) of North West construction jobs, and 4.2% of the Great Britain total. Productivity in the sector stands at £37,000 per worker and is one of GM's most productive sectors relative to the UK average but still falls below the UK average.

**Figure 1: Construction key sector statistics<sup>11</sup>**

Construction		GVA	Employment	Businesses
GM	Level 2013 (businesses 2014)	£3bn	54,000	9,215
	Change (% per annum, 2010 to 2013/14)	-1.1%	-2.5%	-1.1%
GB/ UK	Level 2013 (businesses 2014)	£78.5bn	1,294,000	266,100
	Change (% per annum, 2010 to 2013/14)	-1.4%	-0.9%	-0.5%

Latest data 2013 for employment and GVA, and 2014 for businesses

**Figure 2: GVA per person employed in Construction, 2013**

Construction	GVA per person employed	
	GM	UK
Total	£37,000	£38,200

Source: Oxford Economics, Greater Manchester Forecasting Model<sup>12</sup>

- 4.3 The total number of construction businesses fell by 420 in GM between 2010 and 2014. The Construction of Buildings subsector saw a decrease of 265, Civil Engineering decreased by 85 businesses, and the number Specialised Construction firms fell by 70. In terms of employment, the total number of Construction employees fell by 4,300 from 2010 to 2013. However, this masks increases in employment in other subsectors, for example in Other Civil Engineering.

<sup>10</sup> Greater Manchester Chamber of Commerce (2015): Greater Manchester Construction Sector Pipeline Analysis <http://gmchamber-stage.s3.amazonaws.com/attachments/930/original.pdf>

<sup>11</sup> Latest data 2013 for employment and GVA, and 2014 for the number of businesses

<sup>12</sup> GMFM employment figures may differ from Business Register & Employment Survey data elsewhere in this report

**Figure 3: Construction Sector Key Metrics, GM 2010 to 2014**

Industry	Businesses		Employment		
	2014	Change 2010-2014	2014	Change 2010-2014	
<b>Construction of Buildings</b>	Development of building projects	1,160	-155	4,500	-100
	Residential and non-residential buildings	1,260	-110	12,500	600
<b>Civil Engineering</b>	Construction of roads and railways	145	5	900	-1,600
	Construction of utility projects	35	25	600	-400
	Other civil engineering projects	525	-115	7,400	2,500
<b>Specialised Construction Activities</b>	Demolition and site preparation	155	35	600	-1,600
	Electrical, plumbing and installation	2,840	105	16,200	1,200
	Building completion and finishing	2,205	-180	4,700	-5,700
	Other specialised construction	885	-30	6,400	700
<b>Total</b>		<b>9,215</b>	<b>-420</b>	<b>53,900</b>	<b>-4,300</b>

Source: Inter-Departmental Business Register, and ONS Business Register & Employment Survey

**Figure 4: Construction sector key metrics**

	Business Size Band by number of employees				Comments
	Micro (0- 9)	Small (10- 49)	Medium (50- 249)	Large (250+)	
<b>Construction</b>	90.1%	8.4%	1.3%	0.2%	Vast majority of businesses in GM are micro-size firms, along with some SMEs

Source: Inter-Departmental Business Register

- 4.4 The Construction sector's location quotient – a measure of employment concentration within the local economy compared with the national average – suggests that GM was similar to the national average in 2013, with a LQ of 0.98. However, across GM, construction employment has higher location quotients in Wigan, Trafford, Salford and Manchester. There are also smaller pockets in Bolton, Oldham, Rochdale and Tameside. For example, within Rochdale there are three times the national average employed in Civil Engineering.

**Figure 5: Location quotient of Construction, 2013**

SIC	Description	LQ	Employment
41	Construction of buildings	1.09	17,000
42	Civil engineering	1.05	8,900
43	Specialised construction activities	0.90	27,900
<b>All</b>	<b>Location Quotient for all Construction</b>	<b>0.98</b>	<b>53,900</b>

Source: ONS Business Register & Employment Survey (Data may not sum due to rounding)

- 4.5 Closely related to the Construction sector are associated professional services such as civil engineering, architectural services and other construction management consultancy which are concentrated in the centre of Manchester, an outlying cluster in Stockport and outside GM in Warrington and parts of North Cheshire.

Figure 6: Construction businesses in Greater Manchester, 2014

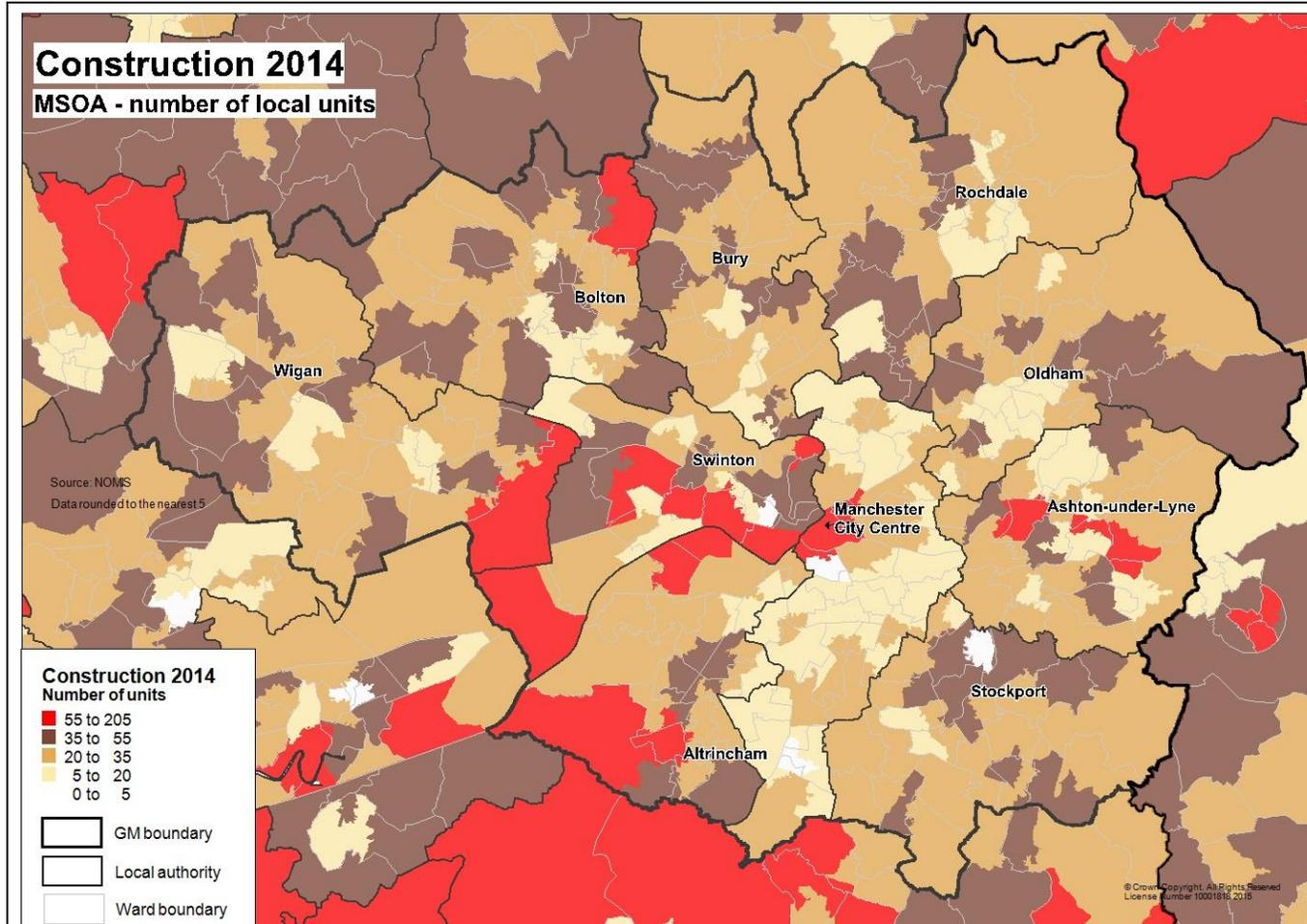


Figure 6 shows that Construction businesses are spread throughout the GM. The greatest numbers of firms are found in Bolton, Stockport and Wigan, and the fewest in Bury and Rochdale.

The map shows that Construction industry businesses are clustered around the regional centre, and out into Worsley and Cadishead areas of Salford.

Other clusters of firms are found in Wigan (Astley), North Bolton (Harwood/Bradshaw), Trafford (Altrincham and Dunham), and Tameside (Taunton and Hollins).

Source: Inter-Departmental Business Register

Figure 7: Construction Employment – Level in 2013

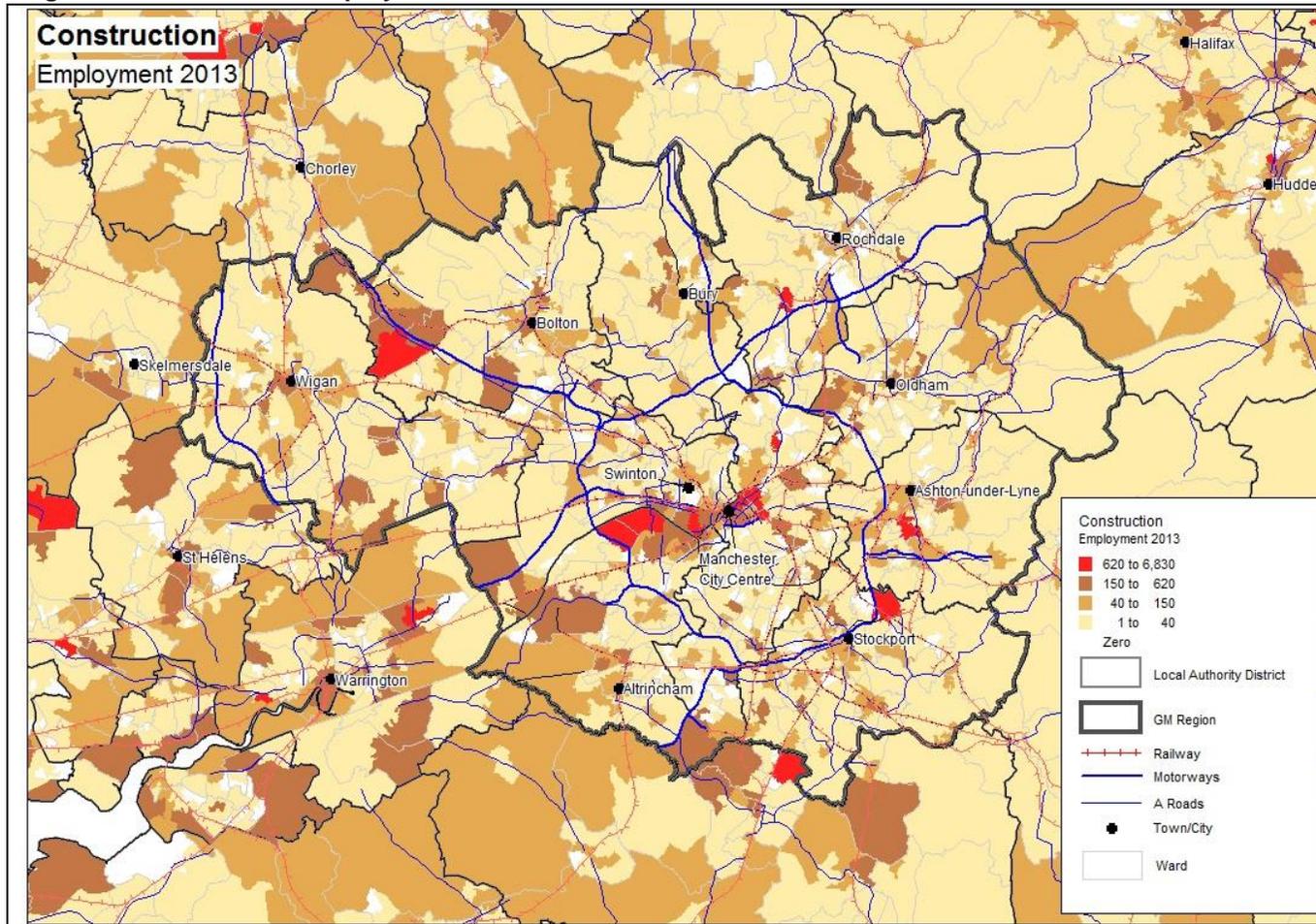


Figure 7 highlights that there are clusters of Construction employment within the City Centre particularly to the East towards Oldham and North around Harpurhey, and around Trafford Park.

Other clusters of Construction employment are found in Stockport (Bredbury), Tameside (Hyde), Bolton (Westhoughton), and Wigan and Leigh (Golbourne).

It is important to note that the map shows where the jobs are registered and not the construction sites where actual work may be taking place.

Source: ONS Business Register & Employment Survey

- 4.6 Figure 8 shows that, on average, the number of Construction businesses fell in Great Britain by 2.1% between 2010 and 2014, equating to 5,760 fewer businesses. This reduction was mirrored in both the North West (-6.1%) and GM (-4.4%). In GM, seven out of 10 districts witnessed falls in the number of Construction businesses. However, Manchester, Salford and Tameside all saw a net increase.

**Figure 8: Number of business in Construction, 2010 to 2014**

	Business Numbers			Change 2010 to 2014	
	2010	2014	2014 (%)	No.	%
Bolton	1,130	1,040	11.3%	-90	-8.0%
Bury	735	690	7.5%	-45	-6.1%
Manchester	960	995	10.8%	35	3.6%
Oldham	890	830	9.0%	-60	-6.7%
Rochdale	755	695	7.5%	-60	-7.9%
Salford	865	925	10.0%	60	6.9%
Stockport	1,255	1,160	12.6%	-95	-7.6%
Tameside	770	775	8.4%	5	0.6%
Trafford	990	925	10.0%	-65	-6.6%
Wigan	1,285	1,180	12.8%	-105	-8.2%
<b>Greater Manchester</b>	<b>9,635</b>	<b>9,215</b>	<b>100.0%</b>	<b>-420</b>	<b>-4.4%</b>
North West	26,970	25,330	-	-1640	-6.1%
London	33,020	37,075	-	4055	12.3%
Great Britain	271,860	266,100	-	-5760	-2.1%

Source: Inter-Departmental Business Register (Data may not sum due to rounding and note caution in interpreting change figures as data is for a short time period)

- 4.7 Figure 9 shows that Construction employment fell by 37,500 employees (2.8%) on average in Great Britain between 2010 and 2013. In GM, the sector contracted by 4,200 employees (7.2%) over the same period. The largest fall in employment was in Stockport (-1,300) and Trafford (-1,000). By contrast Manchester, Oldham and Salford all saw growth in Construction employment. Manchester also had the highest number employed in the Construction in GM, totalling 7,500 in 2013.

Figure 9: Employment in Construction, 2010 to 2013

	Employment			Change 2010 to 2013		Proportion of district employment (2013)
	2010	2013	2013 (%)	No.	%	
Bolton	6,300	5,600	10.4%	-700	-11.1%	5.3%
Bury	3,100	2,900	5.4%	-200	-6.5%	4.4%
Manchester	7,100	7,500	13.9%	400	5.6%	2.2%
Oldham	4,600	4,800	8.9%	200	4.3%	6.4%
Rochdale	5,100	4,500	8.3%	-600	-11.8%	6.3%
Salford	6,300	6,500	12.0%	200	3.2%	5.3%
Stockport	6,800	5,500	10.2%	-1,300	-19.1%	4.6%
Tameside	3,500	3,500	6.5%	0	0.0%	5.2%
Trafford	7,700	6,700	12.4%	-1,000	-13.0%	4.8%
Wigan	7,500	6,600	12.2%	-900	-12.0%	6.7%
<b>GM</b>	<b>58,200</b>	<b>54,000</b>	<b>100.0%</b>	<b>-4,200</b>	<b>-7.2%</b>	<b>4.5%</b>
North West	150,500	149,000	-	-1,500	-1.0%	4.8%
London	147,300	152,700	-	5,400	3.7%	3.2%
Great Britain	1,331,500	1,294,000	-	-37,500	-2.8%	4.6%

Source: Business Register & Employment Survey (Data may not sum due to rounding and note caution in interpreting change figures as data is for a short time period)

## 5 Skills

- 5.1 The average productivity levels in GM’s construction firms falls behind the UK average. The ability to succeed in continuously driving improvement in productivity is highly dependent on access to the best engineers, managers and technicians with the right skill sets.
- 5.2 The analysis shows the current qualification profile of the resident construction workforce based on survey data for the North West of England and UK. Survey data on specific sectors, jobs and qualifications is not accurate for smaller areas. The following section then provides skills forecasts produced by Oxford Economics and gives an indication of the qualification levels that the sector will need over the next 20 years.

### Current Trends

**Figure 10: Highest level of qualification held by people working in construction, 2015**

Notional level of highest qualification	Location	
	NW	UK
Level 4+	21.4%	22.2%
Level 3	20.3%	21.7%
Trade Apprenticeships	12.5%	13.6%
Level 2	17.3%	15.1%
Below Level 2	10.6%	10.9%
Other Qualifications	11.9%	9.1%
No Qualifications	6.0%	7.3%

Source: Quarterly Labour Force Survey, January-March 2015 (Data may not sum due to rounding)

- 5.3 Figure 10 shows that broadly, the qualification profile in the North West is similar to that of the UK as a whole. Those qualified to Level 4 and above in the North West (which includes higher education qualifications, such as a foundation degree, and the more traditional Bachelor degree) account for just over a fifth (21.4%) of resident employees, compared to 22.2% on average in the UK. The gap equates to 1,700 additional graduate jobs within the region, and given that GM employs 36% of the sector in the region, suggests that GM could account for 600 of these graduate jobs.
- 5.4 New Economy has undertaken analysis of the supply and demand relationship for construction-related apprenticeships. The construction sector may be a traditional apprenticeship sector, but it does appear to have further scope for growing its apprenticeships relative to the job opportunities. Apprenticeship conversion from advanced to higher is low. New Economy research suggests that there were only eight higher level construction framework starts, when Level 4+ jobs are increasingly regarded as essential for construction sector innovation.

## Future trends

- 5.5 Skills forecasts from Oxford Economics have identified expansion demand (in terms of new jobs which will be created over the next two decades) and replacement demand (measuring workforce churn).
- 5.6 Under the central Accelerated Growth Scenario for GM, the number of new jobs that will be created in the sector is estimated at 27,200 over the next two decades.<sup>13</sup> There will also be demand to replace the existing workforce that are leaving the sector due to retirement. Replacement forecasts suggest this equates to 7,400 jobs per annum up to 2035, and almost a third of these (30%) will be at :Level 3 and above in 2035. Replacement demand also offers entry level jobs, with one fifth of these jobs at Level 2.<sup>14</sup>

**Figure 11: Qualification breakdown in the Construction sector, 2035**

Qualification level	Proportion of sector
NVQ 4+	29.2%
NVQ 3	17.4%
NVQ 2	22.8%
NVQ 1	6.1%
Other	11.2%
No Qualifications	13.3%

Source: Oxford Economics (Data may not sum due to rounding)

## Skills Challenges

**Figure 12: Skills challenges in the construction sector**

Skills Challenge	Explanation
<b>Hard to fill vacancies and technical skills shortages</b>	<ul style="list-style-type: none"> <li>Up to 40% of businesses in the UK construction sector report hard to fill vacancies. The main skills shortages are for bricklayers and quantity surveyors.</li> <li>Shortages compounded by people not completing full formal qualifications.</li> </ul>
<b>Skills mismatches between labour supply and demand</b>	<ul style="list-style-type: none"> <li>Evidence suggests an oversupply of people in GM qualifying as scaffolders, plasterers, dry liners, compared with demand, and an undersupply of floorers and electricians.</li> </ul>
<b>Skills gaps and workforce development</b>	<ul style="list-style-type: none"> <li>The UK Construction sector is held back from reaching its full potential by the current workforce not being fully proficient in their roles – in particular, skills gaps in dry-lining, joining, and construction engineering.</li> <li>Many firms are too small to be able to afford to train staff internally. Four-fifths of construction companies in GM reported having no formal training budget at all.</li> </ul>

- 5.7 **Hard-to-fill vacancies and skills shortages:** The Greater Manchester Chamber of Commerce estimates that by 2020 around 19% of the workforce will be of retirement age, putting pressure on employers to fill vacancies.<sup>15</sup> According to the UK Commission for Employment and Skills (UKCES), high levels of hard-to-fill vacancies and Skills-Shortage Vacancies (where employers find it hard to recruit the people with the specific

<sup>13</sup> Growth forecast is based on the Greater Manchester Forecasting Model, detailed later in this report

<sup>14</sup> See Future Growth section for detailed description of Greater Manchester growth scenarios

<sup>15</sup> Greater Manchester Chamber of Commerce (March 2015): GM Construction Sector Pipeline Analysis

skills they need) are commonplace within the Construction sector. The National Employers Skills Survey highlights that two-fifths (40%) of UK construction firms report hard-to-fill vacancies, compared with 23% across all the economy. The main skills shortages highlighted by employers (in the UKCES survey, and by the Royal Institute of Chartered Surveyors' Construction) are bricklayers, and quantity surveyors. The UKCES study also highlights that shortages are caused by people not fully completing formal qualifications.<sup>16 17</sup>

**5.8 Skills mismatches between labour supply and demand:** Greater Manchester Chamber of Commerce, in its 'pipeline analysis' of the Construction sector<sup>18</sup>, states that there is a mismatch between labour demand, training and formal qualifications. For example, it is anticipated that between 2015 and 2018, demand in the North West Construction industry will require over 400 newly trained bricklayers each year. However, more than three times this number (1,500) will complete training as bricklayers annually, and of these, only 300 will qualify with industry standard National Vocational Qualifications (NVQs). The study also shows that approximately double the required number of scaffolders, plasterers and dry liners will qualify each year. Meanwhile, significant shortfalls will be seen in floorers and electricians.

**5.9 Skills gaps and workforce development:** The National Employers Skills Survey highlights that the UK Construction sector is held back from reaching its full potential by the current workforce not being fully proficient in their roles<sup>19</sup>. In GM, one in five Construction companies report skills gaps – where staff were not fully proficient in their roles – mostly in joining, and construction engineering. Despite the demand for skilled staff, survey research by New Economy on skills in the Construction sector highlights that many firms feel that they are too small to be able to fund training for staff internally, and four-fifths of companies in the sector in GM have no formal training budget at all.<sup>20</sup>

<sup>21</sup> Where training is provided, it is mostly up to Level 2, leaving a shortfall in higher levels of training.<sup>22</sup>

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<sup>16</sup> UCES (2012): Construction, Building Services Engineering and Planning: Sector Skills Assessment 2012

<sup>17</sup> Royal Institute of Chartered Surveyors (2015): RICS UK Construction Market Survey Q4

<sup>18</sup> Greater Manchester Chamber of Commerce (March 2015): GM Construction Sector Pipeline Analysis.

<sup>19</sup> UCES (2012): Construction, Building Services Engineering and Planning: Sector Skills Assessment 2012

<sup>20</sup> New Economy (2013): The Construction Sector in Greater Manchester: Overview of Skills Issues

<sup>21</sup> Currently, firms with payroll costs of over £80,000 are liable to pay a training levy applied by the Construction Industry Training Board. At the time of writing, the CITB levy is consulting on the future of the levy in the light of the government's proposed Apprenticeship Levy, to be introduced from April 2017."

<sup>22</sup> Ibid

## 6 Key Research Assets

6.1 The following section highlights the key research assets in relation to the Construction sector. Assets have been identified based on their role in supporting jobs and/or GVA growth for GM now and in the future. It is not intended to be definitive and it excludes details of the many Construction sector organisations and professional support networks that exist across GM which also have a key role to play in supporting growth and attracting investment. In summary the list of assets detailed in this section includes the following:

- The Centre for Built Environment Sustainability and Transformation - University of Salford
- Inclusive and Sustainable Environments Research Group - University of Bolton
- Manchester School of Architecture
- The Triangulum Project
- CityVerve

6.2 **The Centre for Built Environment Sustainability and Transformation - University of Salford:** The Centre for Built Environment Sustainability and Transformation is recognised globally, with a multi-disciplinary team addressing socio-technical problems around informatics, innovation and energy consumption in the built environment. The Centre includes three research groups:

- **Applied Buildings and Energy Research Group (ABERG):** established to address concerns surrounding energy use in buildings focusing on monitoring, energy demand, human behaviour and designing and delivering effective solutions to improve the performance of buildings. ABERG houses a unique testing facility, the Energy House, the only full-scale building in an environmental chamber in Europe, and the only full-scale brick-built test facility in a controlled environment in the world. There are plans for Energy House 2 which will be a global hub for whole building testing and the centrepiece of one of the University's Industry Collaboration Zones – which will provide spaces for industry and academia to engage in joint enterprise, research and teaching.
- **Research Centre for Construction and Property Management and Economics:** promotes research in construction management at strategic, tactical and operational levels and is used to inform industry best practice as well as government bodies.
- **Construction and Property Management Research Group:** research focusing on issues encountered during conception, procurement, project execution, facilities management and end of life activities for the Built Environment.

6.3 **Inclusive and Sustainable Environments Research Group, University of Bolton:** Focusing on the Built Environment, key areas of specialism include Building Structures and Materials, Computational Mechanics, Construction Management, Drainage and Groundwater, Facilities Management, Housing Management and Maintenance,

Pedagogy in the Built Environment, Project Management, Structural Engineering and Modelling Sustainable Construction and Development.

- 6.4 **Manchester School of Architecture (MSA):** MSA is a collaboration between the University of Manchester and Manchester Metropolitan University, with research specialisms including urban design, urban development, ecological and landscape design and the conservation and management of historic environments.
- 6.5 **Triangulum Project, University of Manchester:** Triangulum is one of three European Smart Cities and Communities Lighthouse Projects, set to demonstrate, disseminate and replicate solutions and frameworks for Europe's future smart cities. The Triangulum flagships cities, Eindhoven, Stavanger and Manchester combine interdisciplinary experience and the expertise of 22 partners from industry, research and municipalities.
- 6.6 **CityVerve:** An innovative project in Manchester aimed at improving the services for its residents has been chosen as the winner of a £10m Government-led technology competition. The CityVerve Project aims to test better services using the Internet of Things (IoT) technology, including improvements to the built environment including for example plans for talkative bus stops, which let bus operators know when commuters are waiting, and a network of sensors in parks and along commuter routes to encourage people to do more physical activity. . It already has 22 multi-sector partners, and will demonstrate a smart city at scale, aiming to provide a replicable model for other cities in the UK and beyond.

## 7 Growth Potential

### Forecasts for growth

- 7.1 A number of economic scenarios have been developed to assess the growth potential of the sector in GM over the next twenty years. The baseline forecast for GM sets out the likely growth pattern based on a continuation of past trends and is derived from the Greater Manchester Forecasting Model (GMFM).<sup>23</sup> It is a ‘policy neutral’ forecast as it assumes that policy will be as effective in the future as it has been in the past. The latest GMFM baseline (GMFM 2015) is more pessimistic than the previous iteration of GMFM, reflecting a weaker UK growth profile even before the result of the EU referendum. It sees GM grow at a faster rate than the NW economy at 2.3% year on year, which is in line with the UK average.
- 7.2 To inform the development of the GMSF, an updated Accelerated Growth Scenario (AGS-2015) has been developed based upon improved sector growth performance alongside higher population growth. This scenario is predicated upon GM playing a leading role in the development of the Northern Powerhouse and achieving the ambitions laid out by the UK Government within its NW Long Term Economic Plan.<sup>24</sup>
- 7.3 The baseline forecast for GM suggests an extra 19,000 jobs by 2035, or a growth rate of 1.1%pa. This equates to an additional £1.7bn in the economy by 2035. The core Accelerated Growth Scenario (AGS-2015) suggests that the number of additional jobs could be higher, growing by 22,400 employees from 2015 to 2035. There will also be demand to replace the existing workforce that are leaving the sector due to retirements. Under the AGS, the sector would grow at 2.3% pa and add a further £2bn GVA to GM’s economy by 2035.

**Figure 13: Construction- baseline and accelerated growth forecast**

	Net increase 1995 to 2015		GMFM Baseline 2015 to 2035		AGS- 2015 2015 to 2035	
	Difference	% CAGR	Difference	% CAGR	Difference	% CAGR
<b>Jobs</b>	7,500	0.5	19,000	1.1	22,400	1.3
<b>GVA</b>	£0.6bn	0.8	£1.7bn	2.0	£2.0bn	2.3

Source: Oxford Forecasting.

<sup>23</sup> Oxford Economics

<sup>24</sup> UK Government (2015): Long Term Economic Plan for the North West

## Opportunities

**Figure 14:** Opportunities in the Construction industry in Greater Manchester

Opportunity	Activity
<b>Residential Development</b>	<ul style="list-style-type: none"> <li>GMCA ambition of 10,000 new homes, and potential scenarios outlined in the GMSF Winter 2015/16 options consultation, provide opportunities for the construction sector (10,350 under option 2 of the GMSF Winter 2015/16 options consultation).</li> </ul>
<b>New technology and raising productivity</b>	<ul style="list-style-type: none"> <li>Building Information Modelling will lead to cost savings and greener construction.</li> <li>Modern Methods of Construction (MMCs) are a new opportunity for the sector.</li> </ul>
<b>Supply chain opportunities from infrastructure projects</b>	<ul style="list-style-type: none"> <li>Major infrastructure projects such as Northern Hub, Port Salford and Airport City can generate opportunities for growth in the region.</li> <li>Investment in high speed infrastructure represents a huge opportunity for the construction sector in the North West and GM.</li> </ul>

- 7.4 Residential development:** Residential development is a key driver in increasing jobs and economic output. The Montague Report in 2012 identified the importance of residential construction, noting that for every £1m of housing output 12 jobs are supported, seven directly and five indirectly. While for every £1 invested in the construction industry £2.60 is generated elsewhere in the supply chain. The expected increase in residential development will be a key opportunity in GM for the construction industry and local employment. However, the Building Construction and Development sector faces considerable challenges in upscaling to deliver significant estimated growth.
- 7.5** GM is looking to deliver significant growth in residential development in all types of housing. The August 2016 Greater Manchester Spatial Framework (GMSF) Growth Option sets out that, based on the employment and population increase forecast in the accelerated growth scenario, at least an additional 225,000 homes will be needed to accommodate growth over the next twenty years (Objectively Assessed Housing Need for GM results in a net dwelling requirement of 11,281 annually between 2015 and 2035<sup>25</sup>). This will require a substantial increase in construction activity to deliver a step-change in house building.
- 7.6** The scale of the challenging in meeting housing requirements is already starting to see new investment come to GM. For example, dedicated funding to support housing delivery is now available through the GM Housing Investment Fund which will support an additional 15,000 homes to be delivered over the next ten years through the £300m recyclable fund. Manchester City Council in a joint venture with Abu Dhabi United Group has agreed a programme which will see the delivery of over 6,000 homes in Manchester before 2018.
- 7.7 New Technology, sustainability and raising productivity:** The Construction industry is undergoing widespread change as a result of new methods and technologies. For example, the Cabinet Office recently announced Construction sector savings of £804m

<sup>25</sup> [https://www.greatermanchester-ca.gov.uk/meetings/meeting/289/joint\\_gmcaagma\\_executive\\_board](https://www.greatermanchester-ca.gov.uk/meetings/meeting/289/joint_gmcaagma_executive_board)

in 2013/14 due to the requirement for Building Information Management to be used on all public projects. BIM involves the latest digital technology in the design, and construction of buildings, providing effective management information for the lifecycle of the project, and ensuring that all aspects of design and construction are integrated effectively to produce the most effective end product.<sup>26</sup>

- 7.8 From 2016, the government will make BIM usage mandatory on all public projects. There is also a growing shift in the industry towards greener methods, which BIM can contribute towards. As a large contributor to the UK's greenhouse emissions, the Construction sector has had to respond to government proposals to cut national emissions.
- 7.9 There are several opportunities for GM linked to the Smart Cities initiative. In March 2015, Manchester signed a Memorandum of Understanding with Wuhan in China to collaborate to find smart cities solutions including the integration of digital technologies to improve the design and operation of buildings.<sup>27</sup> Furthermore, the fact that in December 2015 Manchester was announced as the UK's Internet of Things city provides an opportunity for technologies to intersect with the built environment.<sup>28</sup>
- 7.10 The construction industry has seen significant increases in productivity. Offsite Construction now accounts for £1.5bn of the UK's Construction industry.<sup>29</sup> It is a key factor in delivering the Government's Construction 2020 strategy. In GM, there are opportunities for expansion of off-site production. For example, the Modular Allianz Project is a consortium of north-west housing associations led by Manchester City Council which is aimed at driving higher uptake of offsite manufacturing by pooling demand to create a 500-home programme.<sup>30</sup> There are major opportunities from these developments cutting across digital, manufacturing and logistics sectors.
- 7.11 **Supply Chain Opportunities: Major Infrastructure Projects:** In the coming years other infrastructural projects include the development of the Northern Hub, Port Salford Freight Terminal, HS2/HS3, Airport City, and development in Carrington.
- 7.12 Investment in High Speed Rail has the potential to create many job opportunities for the region, which the construction industry in GM is well placed to capitalise upon. A recent report produced for New Economy found that opportunities include:
- Significant immediate demand for rail skills arising from current investment and replacement demand of an ageing workforce equating to at least 1,000 in the North.
  - It is estimated that the North West could see between 8,400 and 21,000 job opportunities connected with high speed rail (HS2 Phase 2 and TransNorth (HS3)).

<sup>26</sup> HM Government (2012): Government and industry in partnership: Building Information Modelling

<sup>27</sup> HM Government (March 2015): British presence in Wuhan to further enhance links with China

<sup>28</sup> Manchester City Council, Manchester announced as UK's Internet of Things (IoT) City Demonstrator: <http://www.manchester.gov.uk/news/article/7343/manchester-announced-as-uk-s-internet-of-things-iot-city-demonstrator-and-awarded-10m-investment>

<sup>29</sup> Source: [http://www.buildoffsite.com/content/uploads/2015/06/Building\\_Offsite\\_An\\_Introduction.pdf](http://www.buildoffsite.com/content/uploads/2015/06/Building_Offsite_An_Introduction.pdf)

<sup>30</sup> Construction Manager (October 2015): NW Housing Associations pool demand to drive offsite manufacturing

- Nationally, almost 6,000 apprenticeships (3,000 each from HS2 Phase 2 and TransNorth) are estimated to be created of which 32% of jobs created are likely to require skills of Level 4 and above.<sup>31</sup>

## Threats

- 7.13 Availability of skills:** The sector faces a key challenge regarding how to meet rising demand for labour, while at the same time addressing skills issues, in particular an ageing workforce, and fewer young people doing apprenticeships. This has meant that the industry has increasingly had to look to migrant labour in recent years. National Skills Survey highlight that two-fifths (40%) of vacancies in the sector across England are classed as hard-to-fill (as opposed to 23% across the economy as a whole), and one fifth of GM's employers report skills gaps within their workforce in the 2014 GM business Survey.<sup>32</sup>

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<sup>31</sup> Atkins and New Economy (2015): North West High Speed Rail Skills Strategy & Implementation Plan

<sup>32</sup> New Economy (2013): Construction in Greater Manchester - An overview of skills issues.

## 8 Spatial Considerations

- 8.1 The Construction sector is a key facilitator supporting growth of other sectors and the wider economy. In addition to housing provision across the conurbation, and development of commercial property, particularly in the regional centre, spatially, growth will be linked to development of key projects and sites including major schemes such as the Northern Hub, HS2/HS3, the Western Gateway, Airport City, Salford Quays and City Centre Salford among others. The significant growth in housing and employment expected in the regional centre means that it will be a key location for construction activity. The location of these sites will not necessarily be linked to the location of employees and businesses given the nature of the sector.
- 8.2 As the construction industry is spread across the conurbation in terms of businesses and jobs, it is likely that any future growth in existing firms will impact across most of GM, and in particular where there are existing strengths, including in Wigan, Salford, parts of Tameside and Trafford, and Bolton. Ensuring that GM businesses have the skills and expertise to be able to maximise the potential of the residential, commercial and infrastructure demand over the next two decades is critical. A key opportunity and challenge is to ensure that GM residents are at the forefront of benefitting from the jobs that construction activity will generate in the city region over the next 20 years.