

**Coast to Capital Local Enterprise Partnership**

**Skills 360 Board**

**Construction Skills Spotlight**

**Research Project**

November 2021

A large, curved building under construction with a yellow scissor lift and workers. The building has multiple levels with large windows and a curved facade. A yellow scissor lift is positioned in front of the building, with two workers on it. The ground is dirt and there are some construction materials and barriers. The sky is overcast.

**genecon**  
making sense of place economics

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# Coast to Capital – Construction Skills Spotlight Research Project

## 1. Introduction

The construction sector forms a significant and growing sector in the Coast to Capital area both in terms of activity and employment. This growth is forecast to continue over the next decade bringing increased demand for skilled labour. There are also important shifts anticipated in the nature of this employment and skills demand over the following 10 years, these are largely driven by:

- Changes to the way construction projects are delivered, with the increasing use of modern construction techniques and the adoption of new technologies; and,
- Legislative and policy drivers that are placing significant and new requirements on construction projects, such as ‘Net Zero’ targets to reduce carbon emissions and environmental protection and enhancement legislation that secures a net gain to the biosphere.

This report provides research and analysis that details the likely future occupational growth in the Coast to Capital area driven by major construction schemes and programmes planned during the next 10 years. It also provides a clear set of recommendations to the Coast to Capital Skills 360 Board on the need to broker relationships between the education and skills organisations and the construction companies and agencies responsible for major construction programmes to develop proposals that address significant skills issues identified through the research.

The original focus of the research was to analyse the occupational demand emanating from 16-20 major construction schemes and programmes of work that will be delivered over the next 10 years. As the research progressed it became clear that only a small number of stakeholders were able to provide this information at the level of occupational detail required to enable robust results to be derived from the data collection exercise undertaken. However, stakeholders were largely able to articulate the scale of their investment programmes in the Coast to Capital area and highlight the current issues they face relating to occupational and skills demand and the future issues they anticipate. Interviews with key construction stakeholders, including major construction firms and organisations commissioning major programmes of work, therefore form an important part of our analysis.

**Chapter 2** of the report presents a snapshot of the construction sector workforce and skills issues in the Coast to Capital area. It highlights the recent and forecast growth trajectory of the sector and the impact of this on the occupational profile of the workforce.

**Chapter 3** builds on this profile of the sector and develops a detailed picture of workforce and occupational skills demand that is likely to emerge in the Coast to Capital area during the next 10 years. It brings together the broad industry picture of future occupational demand in the UK construction sector and the factors driving this demand and assesses how these changes are likely to manifest within the Coast to Capital area via analysis of interviews and data from major local construction stakeholders involved in the delivery of major schemes and programmes of work spanning housing, office, commercial and infrastructure.

**Chapter 4** presents a number of strategic recommendations and actions that flow from the analysis for local stakeholders including construction firms and commissioning organisations, Higher and Further Education Institutions and construction training organisations to focus on. Collaboration to align effort and investment into skills development is an imperative in order to respond to the significant skills and workforce development priorities and challenges that lie ahead during the next

decade. All stakeholders interviewed were very positively engaged and keen to play a significant role to shape the future skills landscape in the Coast to Capital area.

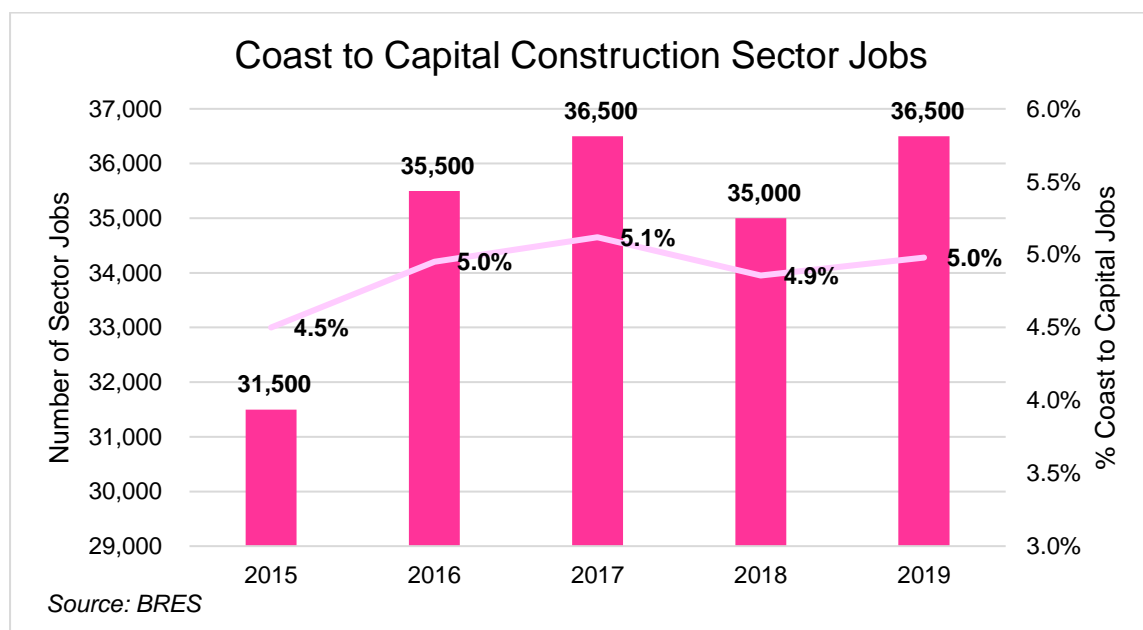
## 2. The Construction Sector in The Coast to Capital area

### 2.1 Introduction

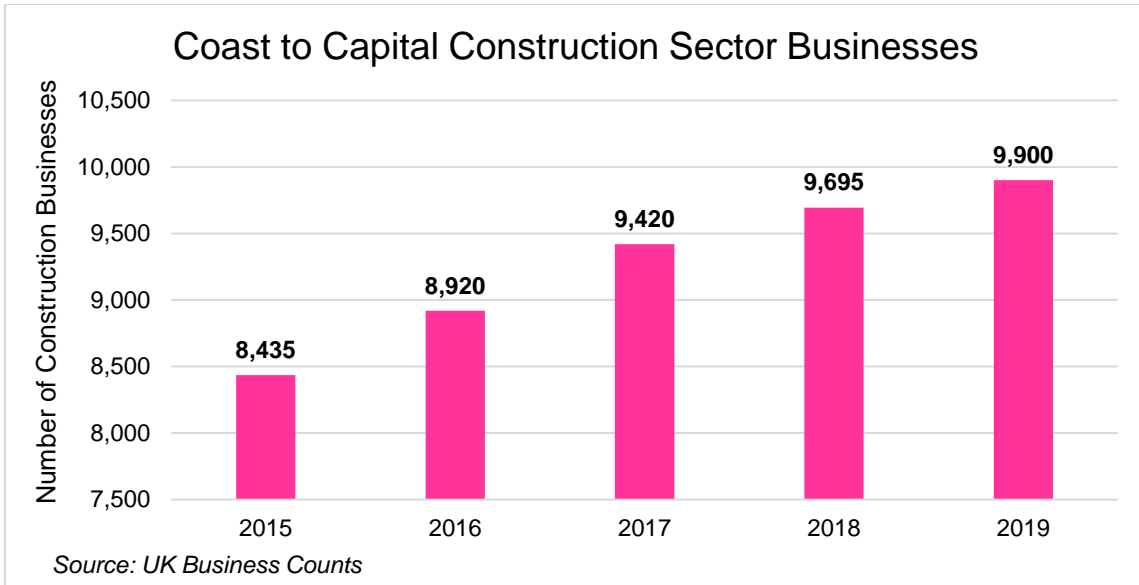
This chapter provides an overview of the construction sector in the Coast to Capital LEP area at the present time. The most recent data highlights a growing sector that is forecast continued employment growth. Housing and infrastructure activity are identified as the main drivers of employment growth

The latest intelligence relating to the Coast to Capital construction sector is available from a number of sources, some of which only provide data before the COVID-19 pandemic and others that provide more up to date analysis and illustrate some of the effects of the pandemic on the sector.

In 2019 the construction sector employed 36,500 people. This equates to 1 in 20 of all jobs (5%) in the Coast to Capital LEP area.



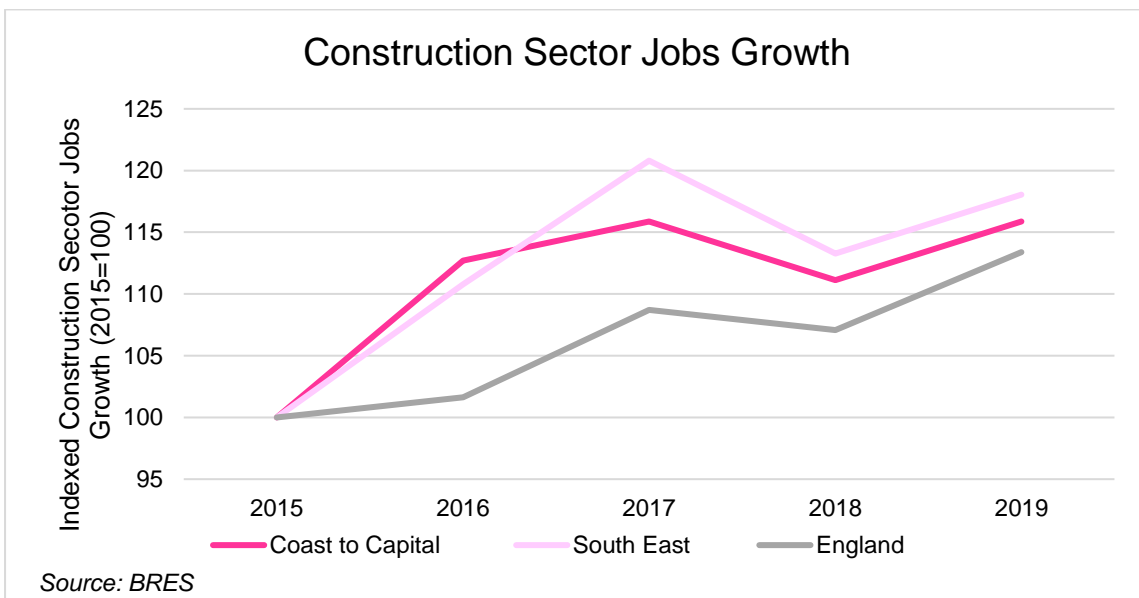
This recent growth in construction jobs has coincided with a growth in the number of businesses in the sector. Between 2015 and 2019 the number of construction businesses in Coast to Capital grew by 17% to 9,900. The majority of those 9,900 businesses were micro businesses (employing fewer than 10 people), with 420 (4%) employing ten or more people, and roughly 50 employing 50 or more (0.5%).



## 2.2 Employment Growth Trends

Employment in the sector grew by 16% between 2015 to 2019. This growth broadly mirrors trends in the South East and England (+18%) over this period with significant growth between 2015 and 2017 and a fluctuating picture in the following three years. National growth in this period was 13% reflecting the relatively strong growth of the South East region.

Businesses in the construction sector itself in Coast to Capital employed 36,500 people in 2019<sup>1</sup>; the corresponding figure for the South East region was 235,600 people. This represents 5.0% of total employment in the LEP area that year, in line with the national average and slightly below the South East average (5.4%). The proportion has remained relatively constant since 2016. 235,600



Employment growth is forecast to continue over the next 5 years<sup>2</sup>. Regional output growth of 4.4% will be mainly driven by private housing and infrastructure growth. Over the next five years 16,750

<sup>1</sup> The total number of jobs employed by construction businesses in Coast to Capital is available from the Business Register and Employment Survey (BRES) 2019.

<sup>2</sup> The Construction Skills Network Labour Market Intelligence Report 5-year Outlook (2021-25) – South East

net-new construction workers will be required across the South East Region. Given Coast to Capital's current share of regional construction employment this will equate to an increased demand for 2,600 new workers in the area.

The largest occupational increases are forecast in technical occupations and higher-level skills occupations with few lower skilled occupations set to grow. This growth picture reflects both the overall growth in activity and current trends in the sector, for example the increasing use of technology and off-site manufacturing. The relevance and implications of these issues over the next 10 years for the Coast to Capital area is discussed in detail in Chapter 3.

<b>Construction Industry Forecast 2021-2025 Jobs Increases</b>			
<b>Occupation</b>	<b>South East</b>	<b>% Increase</b>	<b>Coast to Capital Estimate</b>
Other construction professionals and technical staff	3,000	7.6%	465
Non-construction professional, technical, IT and other office-based staff	2,000	3.2%	310
Wood trades and interior fit-out	1,200	3.6%	186
Building envelope specialists	1,200	7.5%	186
Electrical trades and installation	1,200	5.7%	186
Surveyors	1,200	11.5%	186
Labourers nec*	1,100	4.9%	170
Other construction process managers	900	3.2%	139
Architects	700	13.4%	108

Source: CSN 2021 and GENECON Estimates  
\*not elsewhere classified

## 2.3 Geographical Distribution of Employment within the Coast to Capital Area

### Local Authority Construction Jobs

The distribution of construction employment is not uniform across the LEP area. The sector provides a relatively high share of the jobs within the East Surrey local authorities, whereas in Brighton and Hove and Crawley (Coast to Capital's two largest local authorities in terms of total jobs) construction businesses provide a notably smaller proportion of jobs than average across Coast to Capital. This pattern is a workplace measure of employment and is due to the mix of employers located within each authority, rather than any pattern of construction activity demand.

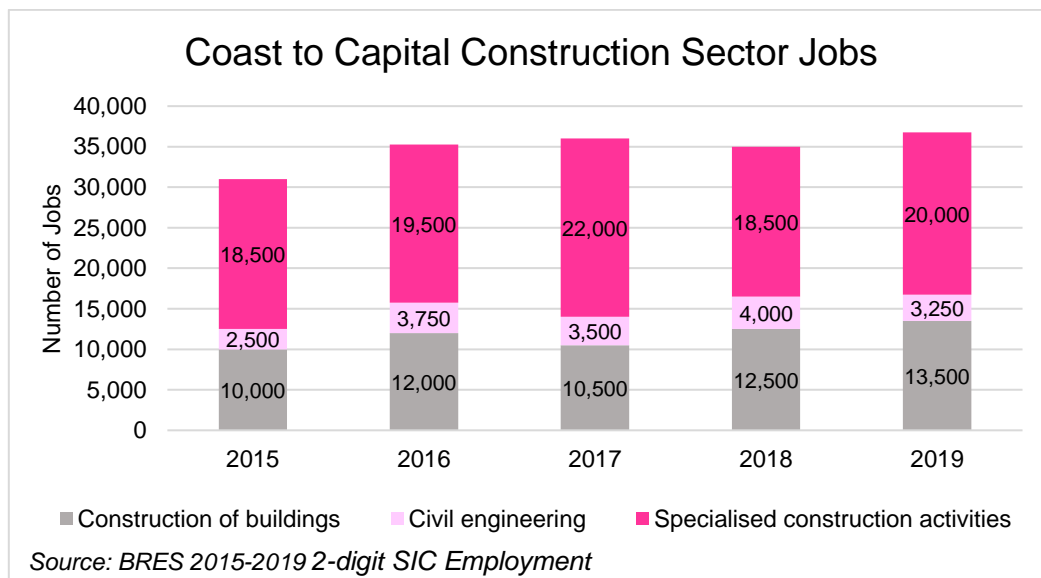
**Coast to Capital Construction Sector Employment by Local Authority**

Local Authority	Construction Sector Jobs	Construction Sector % local jobs
Adur	1,250	5.9%
Arun	2,750	5.6%
Brighton and Hove	4,500	3.1%
Chichester	3,000	4.6%
Crawley	3,250	3.4%
Epsom and Ewell	1,750	5.6%
Horsham	3,500	5.9%
Mid Sussex	3,500	5.6%
<b>Mole Valley</b>	<b>3,000</b>	<b>6.2%</b>
<b>Reigate and Banstead</b>	<b>5,000</b>	<b>7.1%</b>
<b>Tandridge</b>	<b>3,750</b>	<b>11.2%</b>
Worthing	1,500	3.0%

Source: BRES 2019 (Bold – Construction sector Jobs >6% of Local Authority jobs)

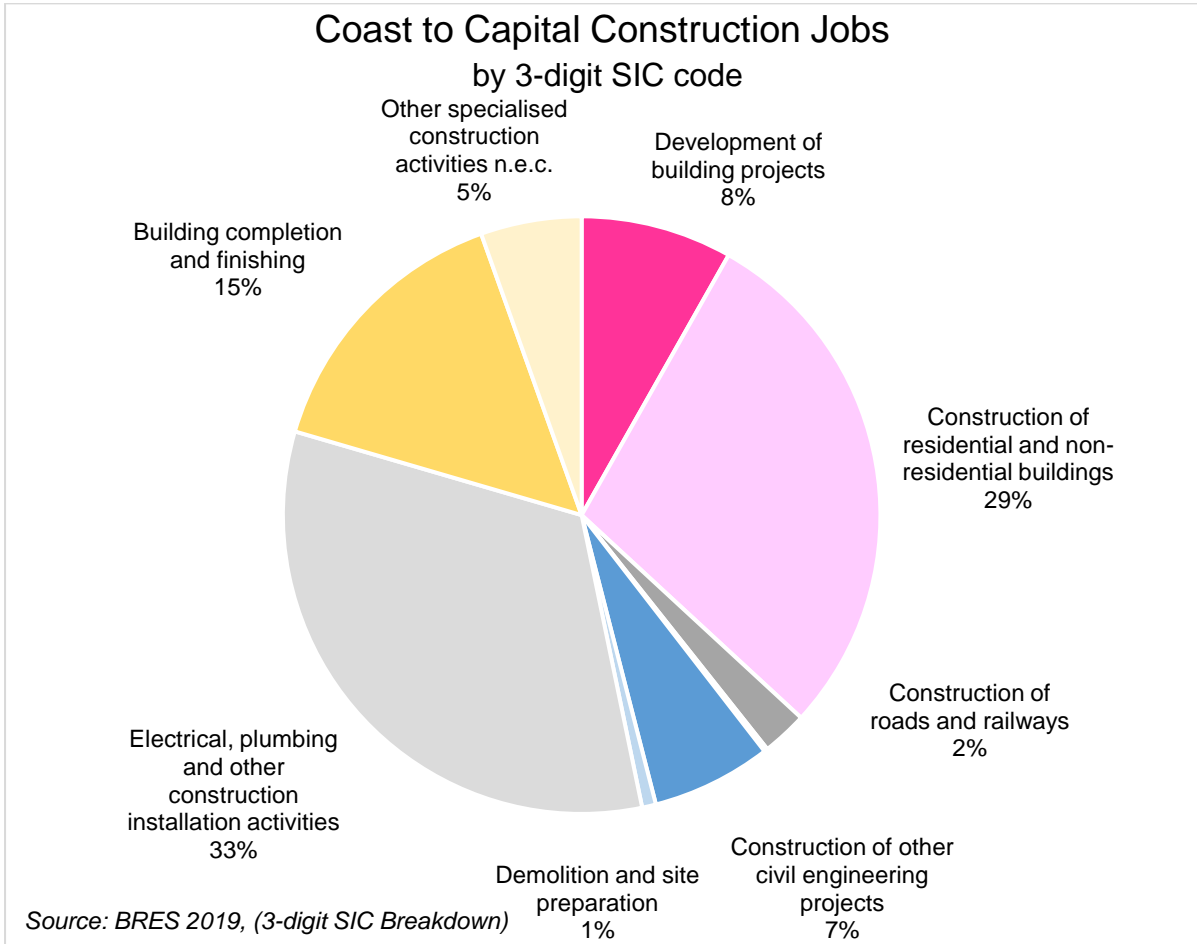
**2.4 Detailed Construction Industry Breakdown**

Since 2015 employment growth is evident all parts of the sector - Specialised construction activities, Civil Engineering and the Construction of buildings have all shown fluctuations in employment but all show broadly similar levels of growth.





12,000 (33%) employees in the Coast to Capital construction sector work in Electrical, plumbing and other construction installation firms, making it the largest 3-digit SIC construction sector in terms of employment. This mirrors South East and national proportions.



In terms of the more detailed (5-digit SIC) industry employment the Construction of Domestic Buildings, Electrical Installation and Plumbing, heat and air conditioning firms form a major proportion of employment in the sector in the Coast to Capital area.

<b>Coast to Capital Detailed Construction Industry Jobs Breakdown</b>	
<b>5-digit SIC Industry</b>	<b>Number of employees</b>
Construction of domestic buildings	8,500
Electrical installation	6,500
Plumbing, heat and air-conditioning installation	5,000
Development of building projects	3,000
Construction of other civil engineering projects nec	2,250
Construction of commercial buildings	2,125
Joinery installation	1,750
Other building completion and finishing	1,750
Specialised construction activities (other than scaffold erection) nec	1,000
Painting	850
Other construction installation	800
Floor and wall covering	550
Roofing activities	550
Construction of roads and motorways	500
Scaffold erection	450
Construction of railways and underground railways	375
Plastering	325
Glazing	325

*Source: BRES 2019*

Employment Growth in large firms (those employing more than 250 people) between 2015 and 2019 in the Coast to Capital area shows significant increases across a broad range of construction activity. The data reveals that the largest 5-digit sectors have experienced the largest absolute increase in jobs between 2015 and 2019.

In terms of high-volume employment increases, the Construction of domestic buildings constitutes almost a quarter jobs in construction industry jobs in Coast to Capital (23%) and increased by almost one third between 2015 and 2019.

Infrastructure focused firms have shown strong employment growth with rail and water firms showing high percentage increases in their workforce. This may reflect new firms moving into the area and an increase in major projects driving growth within the Coast to Capital area.

This analysis also shows the large number of jobs opportunities for electricians and plumbers.

<b>Largest job number increases 2015-2019 – Coast to Capital</b>		
<b>5-digit SIC Industry</b>	<b>% Increase</b>	<b>Absolute Increase</b>
Construction of domestic buildings	31%	2,000
Electrical installation	37%	1,750
Plumbing, heat and air-conditioning installation	33%	1,250
Development of building projects	33%	750
Construction of commercial buildings	55%	750
Construction of other civil engineering projects nec	20%	375
Construction of railways and underground railways	1,150%	345
Other construction installation	23%	150
Construction of roads and motorways	25%	100
Construction of water projects	300%	75
Demolition	63%	50
Plastering	18%	50
Floor and wall covering	10%	50

*Source: BRES 2019*

## 2.5 Occupational Demand

EMSI analysis provides an estimate of the number of jobs in construction specific occupations in Coast to Capital. This differs from the data available from BRES as it counts people not working in construction specific firms but in construction related occupations (e.g. surveyors), and does not count those employed in construction firms not doing construction specific roles (e.g. HR in a building firm).

This analysis estimates that there were 27,700 people are employed in construction occupations in Coast to Capital in 2021.

<b>Coast to Capital Jobs by Construction Occupation, 2021</b>		
<b>Occupations (4-digit SOC code)</b>	<b>Number of Jobs</b>	<b>Proportion of construction jobs</b>
Production Managers and Directors in Construction	3,647	13%
Plumbers and Heating and Ventilating Engineers	3,037	11%
Elementary Construction Occupations	2,776	10%
Construction and Building Trades n.e.c.	2,109	8%
Carpenters and Joiners	1,915	7%
Construction Operatives n.e.c.	1,729	6%
Construction Project Managers and Related Professionals	1,697	6%
Civil Engineers	1,453	5%
Chartered Surveyors	1,406	5%
Quantity Surveyors	980	4%
Construction and Building Trades Supervisors	969	3%
Painters and Decorators	887	3%
Bricklayers and Masons	691	2%
Architects	616	2%
Glaziers, Window Fabricators and Fitters	545	2%
Town Planning Officers	470	2%
Building and Civil Engineering Technicians	432	2%
Architectural and Town Planning Technicians	406	1%
Scaffolders, Stagers and Riggers	330	1%
Roofers, Roof Tilers and Slaters	315	1%
Rail Construction and Maintenance Operatives	265	1%
Production Managers and Directors in Mining and Energy	258	1%
Plasterers	249	1%
Road Construction Operatives	204	1%
Floorers and Wall Tilers	159	1%
Chartered Architectural Technologists	90	<1%
Steel Erectors	78	<1%

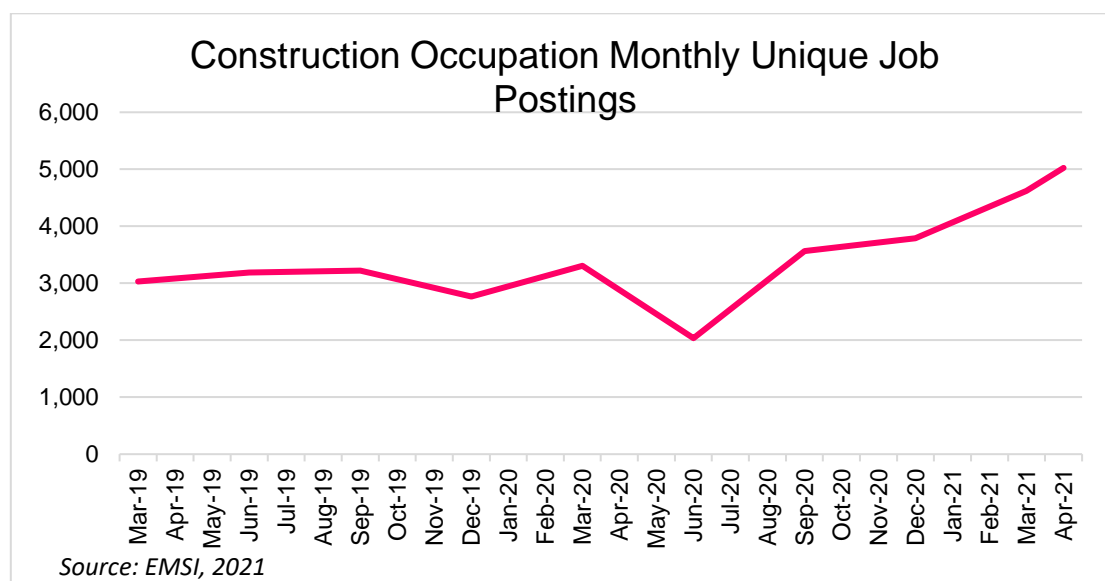
*Source: EMSI 2021*

There is good evidence that demand for construction labour in the Coast to Capital area is increasing. This is likely to mean that the labour market is, or will soon, tighten as demand from employers increases. Whilst there is an obvious impact on the recent pattern of demand, stemming from the disruption caused by the pandemic, an overall upwards trend in demand is clear.

EMSI gathers data on the number of individual job postings by geography and occupation. This indicates the level of demand from employers for certain occupations. High numbers of postings can be a function of the labour market ‘churn’ created from relatively large occupational groups, but they can also be an indication of occupations that employers are finding it difficult to fill vacancies.

Between March 2019 and March 2020 there were approximately 3,000 job postings per month in Coast to Capital in construction occupations. Subsequent labour demand fell in spring 2020 as the UK suffered the first COVID-19 ‘lockdown’ and rebounded quickly with postings reaching 3,500 per month by September 2020 and over 5,000 in April 2021. This sharp post-lockdown increase reflects the fact that the UK government encouraged the construction sector to remain active after this period, which is a stark contrast to other sectors of the economy.

### Job Postings



The evidence from EMSI also reveals that this growth in job postings is uneven across occupational groups. Higher level skill occupations are clearly in demand.

Largest increase Job Postings from March 2019 - April 2021 by construction occupation			
Occupation (4-digit SOC)	Proportion of construction jobs 2021	Increase in unique postings	% Increase
Plumbers and heating and ventilating engineers	11%	488	249%
Civil engineers	5%	345	89%
Production managers and directors in construction	1%	188	64%
Construction operatives n.e.c.	6%	140	47%
Chartered surveyors	5%	135	74%

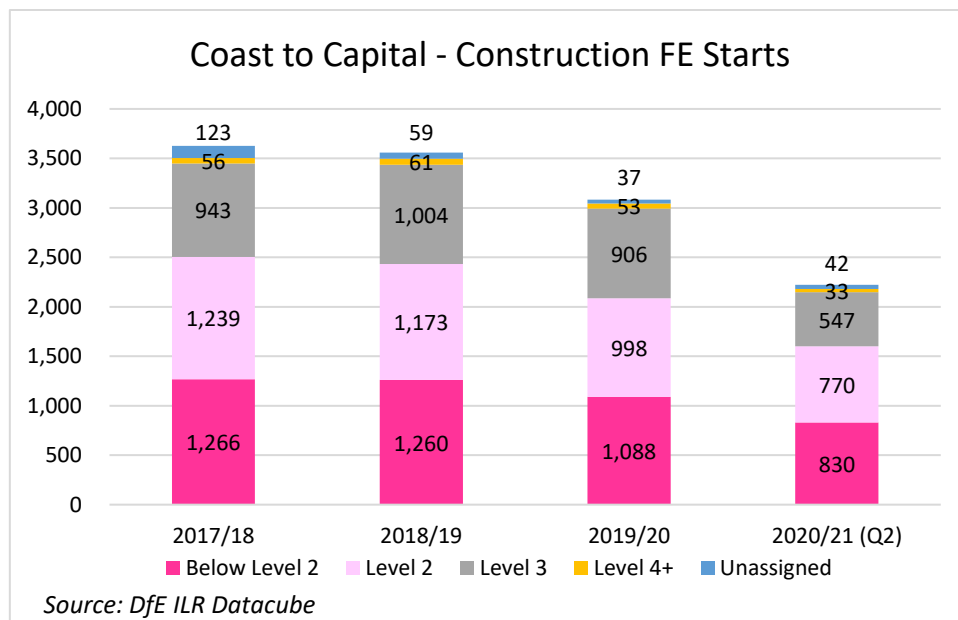
Source: EMSI 2021

## 2.6 Further Education

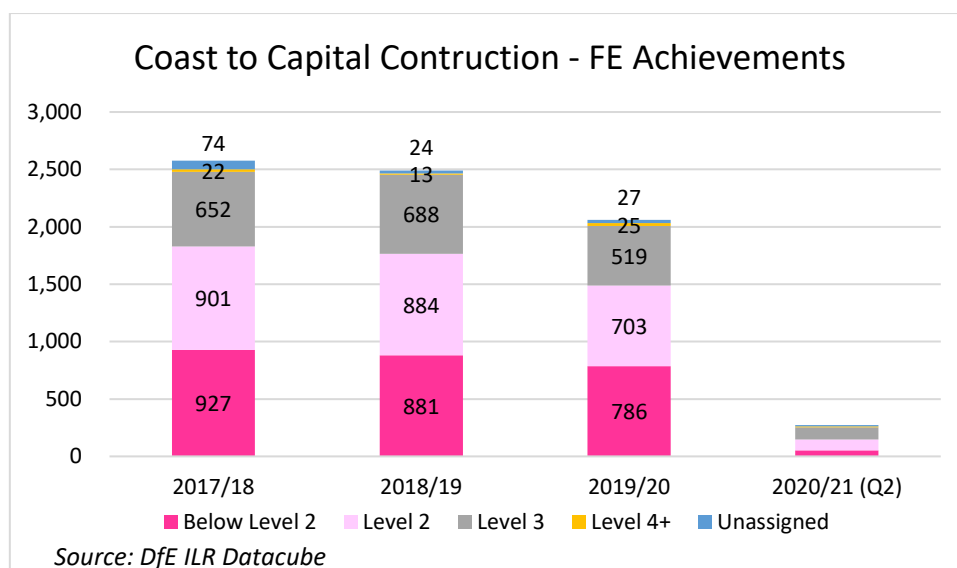
Data from the Department for Education (DfE) shows that the total number of starts in construction related Further Education Learning Aims (individual modules/courses) at providers in Coast to Capital fell from 3,600 in 2017/18 to 3,100 in 2019/20.

The majority of these starts are at NVQ level 2 (equivalent to GCSEs grades 9-4) or below. Just under a third of starts are at level 3 (equivalent to A-Levels), with only a very small proportion at Level 4 (equivalent to foundation degree) or higher.

Whilst the Covid-19 pandemic is likely to impact the 2020/21 FE starts there is a significant decline between 2018/19 and 2019/20 following a much smaller decline between 2017/18 and 2019/20. Whilst changing cohort sizes and course changes can affect FE starts from one year to the next the concern is that trend for starts appears to be downwards, with Level 2 and Below Level 2 starts shrinking the most. Covid-19 starts in 2021 are particularly low and whilst this mirrors national trends addressing any shortfall of supply to the local construction sector is important.



Achievement data shows that on average every FE start leads to 0.7 achievements. The data for 2021/22 achievements is not complete due to course still being ongoing at the time the data was recorded.

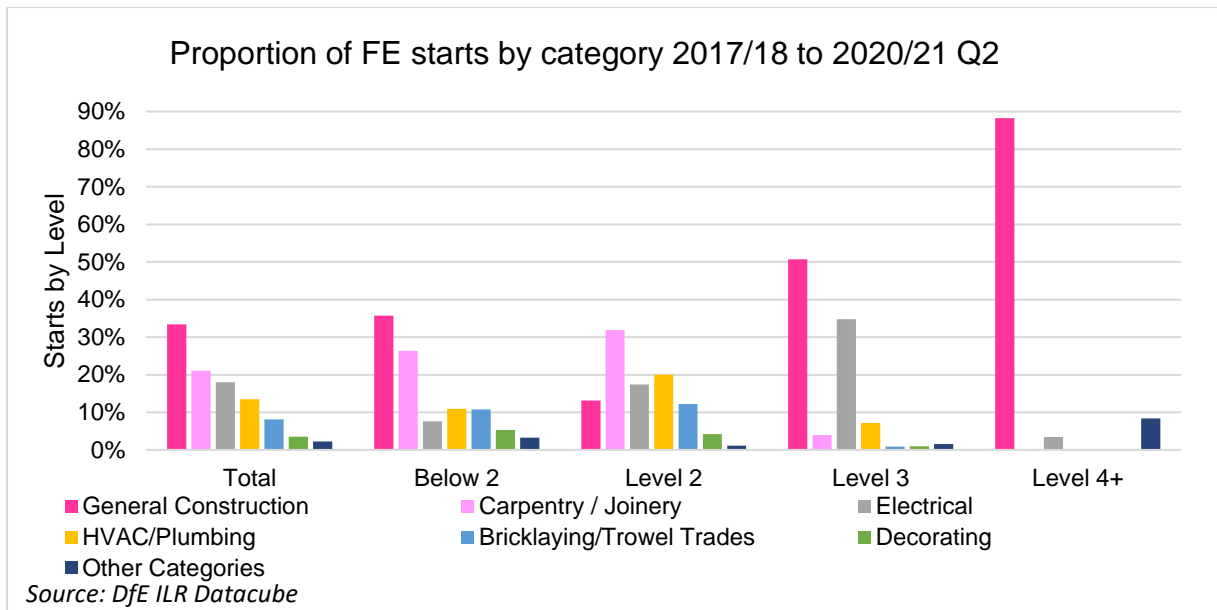


By subject area FE starts represent a range of construction related subjects. The most commonly started learning aims are non-regulated level 3 building and construction courses, followed by more specific level 2 and lower aims.

Ten most common FE construction starts 2017/18 to 2021/22 Q2 – Coast to Capital		
Aim Description	Level	Total Starts
Building and Construction (non-regulated provision*)	Level 3	1,474
Diploma in Electrical Installations (Buildings and Structures)	Level 2	728
Diploma in Plumbing Studies	Below 2	540
Diploma in Site Carpentry	Level 2	537
	Below 2	529
Diploma in Plumbing Studies	Below 2	395
Award in the Requirements for Electrical Installations BS767:2018	Level 3	386
Electrotechnical Qualification	Level 3	376
Building and Construction (non-regulated provision*)	Level 2	365
Diploma in Electrical Installation	Below 2	339

Source: DfE ILR Datacube  
\*Learning that does not lead to a qualification accredited by an awarding organisation regulated by Ofqual

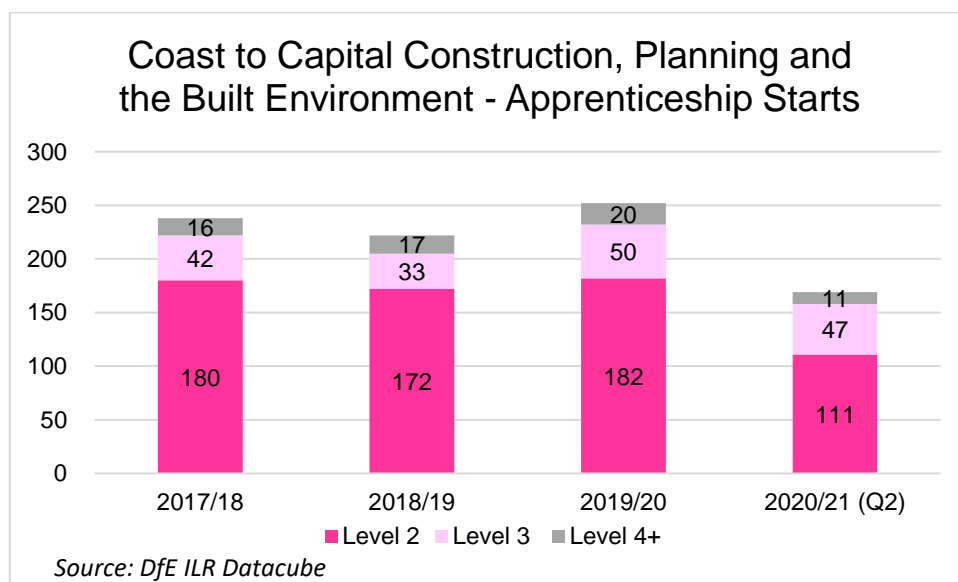
Analysis to categorise the nearly 200 different aims into 13 broad categories (General/Other Construction; Carpentry / Joinery; Electrical; Heating, Ventilation & Air-Conditioning (HVAC)/Plumbing; Bricklaying/trowel trades; Decorating; Health and Safety; Plastering; Planning/Surveying; Architecture; Civil engineering; Roofing; and Scaffolding) finds that 98% of total starts since 2017/18 were in the first six of these categories.



General construction aims represent a third of the total starts in the period, and the majority of the starts at level 3 and above. One fifth of all starts are in carpentry and joinery, these are particularly concentrated at level 2 and below, as are HVAC and plumbing and bricklaying starts. Conversely electrical focussed starts represent more than a third of the starts at level 3, compared just 18% overall.

### Apprenticeships

The level of enrolments in construction, planning and the built environment apprenticeships has been fairly constant since 2017/18. DfE data shows there were between 222 and 252 Construction, Planning and the Built Environment apprenticeship starts per annum over the last full three years.



The number of “construction skills” apprenticeship starts has fallen over recent years, with an increasing number of starts being in carpentry and joinery, plumbing and bricklaying.

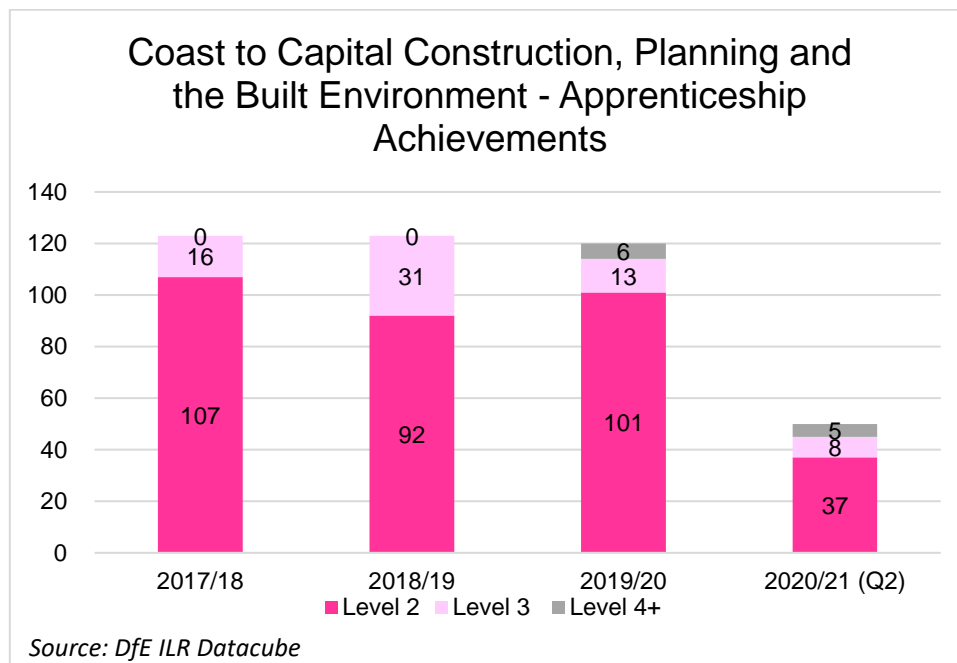


**Coast to Capital Apprenticeship Starts - Construction, Planning and the Built Environment Breakdown by Description since 2017/18**

Title	2017/18	2018/19	2019/20	2020/21, Q2	Total
Construction Skills	205	170	55	<10	435
Carpentry and Joinery	0	10	115	75	200
Plumbing and Domestic Heating Technician	0	<10	10	35	50
Bricklayer	0	0	15	20	35
Construction Management	15	15	<10	0	35
Property Maintenance Operative	<10	10	<10	<10	35
Maintenance and Operations Engineering Technician	<10	<10	<10	<10	20
Advanced Carpentry and Joinery	0	0	15	<10	15
Surveying Technician	<10	<10	<10	<10	10
Civil Engineer (degree)	0	0	<10	<10	<10

Source: DfE ILR Datacube  
(Figures rounded to ensure confidentiality)

There were between 92 and 107 Construction, Planning and the Built Environment achievements per year over the last full three years, given the profile of starts in 2017/18 and 2018/19 the majority (96 of 416) total achievements have been in construction skills.



### **3. The Demand and Supply of Skilled Labour in the Coast to Capital Area**

#### **3.1 Introduction**

This section builds on the profile of the sector detailed in Chapter 2 and develops a more detailed picture of workforce and occupational skills demand that is likely to emerge in the Coast to Capital area during the next 10 years. It brings together the broad industry picture of future occupational demand in the UK construction sector and the factors driving this demand and assesses how these changes are likely to manifest within the Coast to Capital area.

The section includes analysis of interviews and data from major construction stakeholders in the Coast to Capital area involved in the delivery of major schemes and programmes of work spanning housing, office, commercial and infrastructure to build a picture of the likely workforce and skills demand that will flow from them. Whilst these schemes show only a partial picture of the overall construction activity that is likely to take place in the area, due to their size they provide a good starting point for identifying and planning skills investment priorities.

Interviews with stakeholders covered the main drivers of workforce and skills demand changes and the potential pinch-points in the supply of labour and skills employers and commissioners anticipate at this point in time and how they are approaching or planning for these challenges.

#### **3.2 Stakeholder Occupational Demand from Major Schemes and Work Programmes**

The stakeholder interviews undertaken for the research explored the specific future occupational and skills demand expected from major schemes in progress or planned for delivery in the Coast to Capital area during the next 10 years. Collectively the schemes represent £636m of construction activity and 3,119 jobs per annum<sup>3</sup>. Appendix 1 includes a table of these major schemes and their value and the predicted annual employment demand for each one.

Whilst this modelling of the workforce is based only a partial picture of the construction activity that will be delivered in the Coast to Capital area over the next 10 years the scale of the activity makes it a helpful view of the changing nature of occupational skills. Stakeholder interviews highlighted a number of occupations where they are already having difficulties recruiting skilled labour. They also pinpointed a number of important drivers of change in the construction sector that will undoubtedly affect future skills demand in the Coast to Capital area over the next 10 years. To a great extent these reflect broad trends identified by other construction sector skills reports.

Research by the Construction Industry Training Board in 2017 identified a forward pipeline of 696 major construction projects totalling an estimated £12.2bn in the Coast to Capital area; 150 of these projects accounted for £10.2bn (84%) of this figure. 24% of these projects were housing developments and 48% infrastructure projects. The research estimated the demand for labour from these major projects at 36,150 people and a further 44,050 people needed to deliver other construction work in the area in the same year. 2018 was used as the base year for these workforce

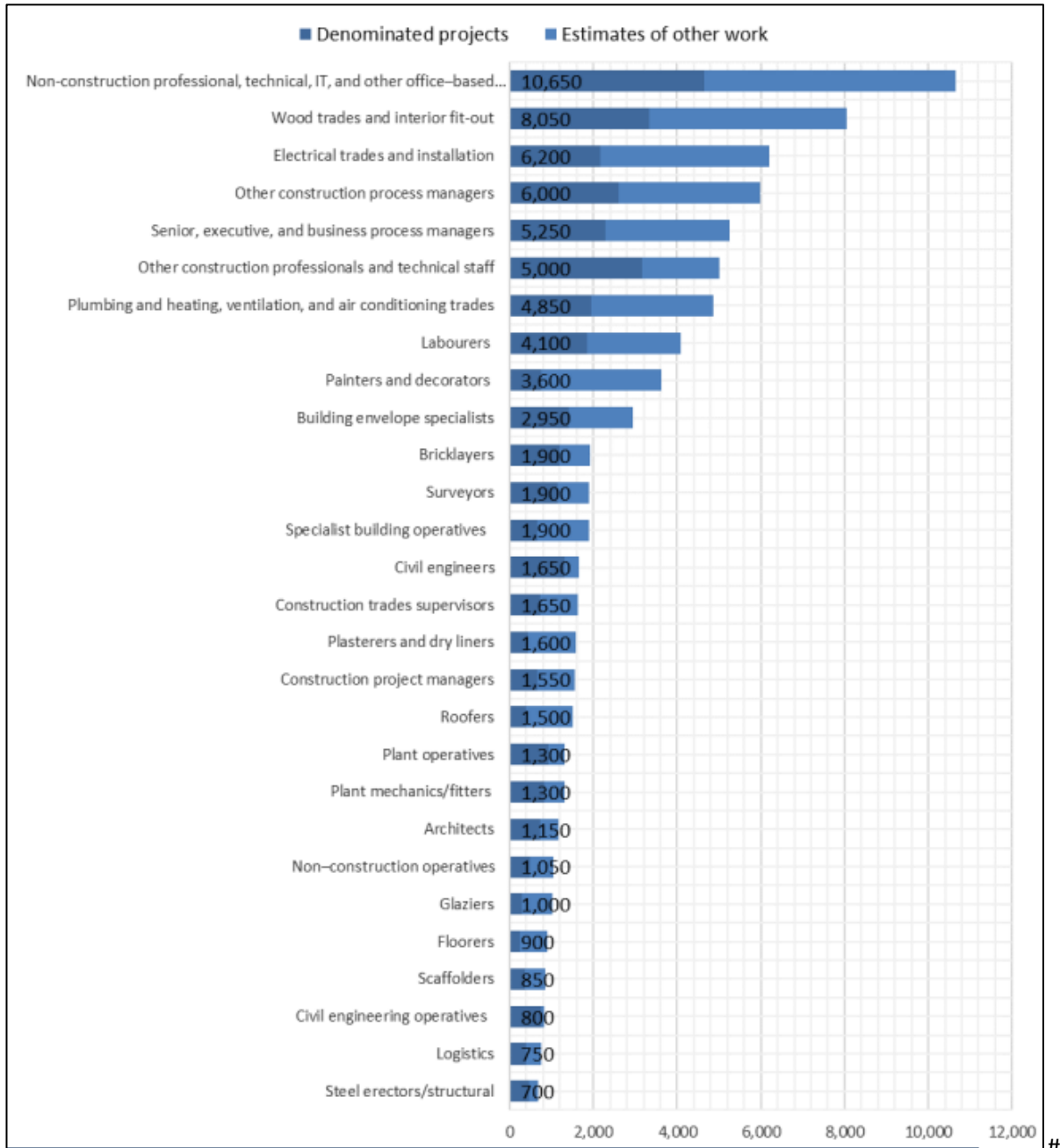
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<sup>3</sup> Workforce estimates are a combination of stakeholder provided figures and estimates derived from a workforce model developed by a local stakeholder to model a typical project in the Coast to Capital area. Many stakeholders interviewed found it difficult to provide a detailed breakdown of the workforce that will deliver their schemes, mainly because they have not yet undertaken a commissioning or workforce planning exercise.

estimates as this provided the most accurate picture of the volume and value of activity in a typical year from the available data.

The research provided the occupational breakdown predicted for 2018. This is shown in the following chart. The estimates are broadly in line with the employment data from EMSI presented in section 2.4 in terms of the relative size of the occupational groupings, although the category 'Non construction professional, technical, IT and other office based staff' is an amalgamation of different SOC categories which are separate in the EMSI data.

**Estimated Construction Labour Demand in the Coast to Capital area (2018)**



Source: CITB

The overall workforce size in the CITB<sup>4</sup> research is way above the official BRES workforce figure of 36,500 people working in the Construction sector the Coast to Capital LEP area discussed in Chapter 2. However, the CITB estimates are for the workforce needed to deliver the estimated volume of construction activity reflect the fact that this labour demand will be only partially met by workers from the Coast to Capital area as firms delivering the projects will draw from their existing workforce and recruit from the surrounding areas too. That said, overall workforce demand is high and expected to grow in the future. Therefore the broad message for Coast to Capital stakeholders is that focusing on developing the pipeline of skilled entrants to the construction sector is a fairly safe investment. Skilled workers entering the local and regional labour market for the construction sector are very much in demand at present and this is likely to remain the case over the following 10 years. The remainder of this section explores the key drivers of future demand that local stakeholders identify as important. It also outlines the specific occupational issues related to these changes where stakeholders raised them.

### 3.2.1 Skills for Net Zero

*“There is an urgent need for change across multiple interconnected areas if the construction sector is to decarbonise. The challenge is to define and scale up best practice rapidly so that it is applied to every new build and refurbishment project by 2025.”<sup>5</sup>*

The drive to ‘Net Zero’ carbon emissions is rapidly increasing in significance given the growing importance of climate change within public policy. The UK Government’s climate change target is to reduce emissions by 78% by 2035 (compared to 1990 levels)<sup>6</sup>.

In 2020 the Government released a 10-point plan to create a ‘Green Industrial Revolution’. Almost all 10 points are infrastructure and buildings related:

- Point 1: Advancing offshore wind
- Point 2: Driving the growth of low carbon hydrogen
- Point 3: Delivering new and advanced nuclear power
- Point 4: Accelerating the shift to zero emission vehicles
- Point 5: Green public transport, cycling and walking
- Point 6: Jet zero and green ships
- Point 7: Greener buildings
- Point 8: Investing in carbon capture, usage and storage
- Point 9: Protecting our natural environment
- Point 10: Green finance and innovation

The Government is planning £12bn investment in the plan and expects circa three times that will be invested by the private sector; it predicts 250,000 green jobs will be created from the investment.

Much of the mitigation of climate change and achieving Net Zero targets set by public agencies (and a growing proportion of the private sector) therefore requires a physical change response delivered by the construction sector. This ranges from new infrastructure to power homes and transport, with electricity driven by the move away from fossil fuels to the retrofit of homes with sustainable heat

<sup>4</sup> Construction Labour & Skills analysis for the Coast to Capital LEP Area

[https://www.citb.co.uk/media/hzjk4asw/coast\\_to\\_capital\\_lep\\_area\\_april2018.pdf](https://www.citb.co.uk/media/hzjk4asw/coast_to_capital_lep_area_april2018.pdf)

<sup>5</sup> Decarbonising construction: building a new net zero industry, Royal Academy of Engineering, 2021

<sup>6</sup> <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>

sources. The impact of the Net Zero on construction sector skills demand is therefore likely to be very significant.

### **Net Zero Occupational Demand**

Net Zero is a catch-all cross-sector term for reducing carbon and/or offsetting carbon emissions as part of the drive to mitigate climate change. In terms of implications for the construction sector it relates both to construction companies directly, i.e. in how they operate as businesses in terms of their carbon footprint, and in terms of the designs and methods used in the construction process. These two are interlinked but it is the delivery of construction activity where the drive to Net Zero will have most impact on skills demand over the next 10 years.

The CITB Net Zero Report (March 2021) estimates that 350,000 new roles will be created nationally by 2028, including retrofitting of new buildings and other net zero projects. Specific roles expected to be in demand are project managers (86,000), plumbers and Heating, Ventilation & Air-Conditioning (HVAC) workers (59,000) and building envelope specialists (27,000). Clearly these forecasts are based on current trends and available evidence at the time of reporting and this is one area of demand that is subject to major policy and legislative change in response to the climate emergency.

Through the project consultations it is clear that Net Zero is an increasingly significant current and future driver of skills demand for Coast to Capital stakeholders and there are concerns regarding how to meet what is likely to be a significant increase in skills demand over the next decade.

The **Environment Agency** has committed to Net Zero by 2030. This requires all construction activities to create 50% less carbon than at present. Net Zero is viewed as a priority skills gap over the next 6 years with £500m investment in infrastructure schemes that deliver Net Zero solutions in the South East region and £100m currently planned within the Coast to Capital area.

*“We are hitting a real blind spot on finding the skills let alone experience in embedding cutting edge low carbon technology into our designs.”*

*“From a skills perspective, we are seeing a dramatic lack of knowledge in low-carbon technology.”*

In terms of workforce skills needs, this mostly translates to higher-level skills of designers and consultants to deliver innovative technological solutions, including 3-D printing of rocks for flood and tidal defenses, the removal of plastics from the supply chain and the creation of a circular economy for plastics.

New and existing housing stock is also a driver of Net Zero skills needs both nationally and in the Coast to Capital area.

**Homes England** is the executive agency of the government’s Department for Levelling Up, Housing and Communities (DLUHC). They are delivering significant housing programmes in the Coast to Capital area over and beyond the next 10 years and are working to a new ‘Future Homes Standard’ to accelerate progress to Net Zero. Significant investment in schemes incorporating ground-source and air-source heat pump technology are therefore planned by the agency as an integral aspect of new homes delivery in the Coast to Capital area. Accompanying infrastructure investment is also planned, with upgrades to electricity capacity to meet future home and transport needs.

Homes England view the installation and maintenance of ground-source and air-source heat pumps, solar and wind power as major drivers of increasing the demand for HVAC occupations over the following 10 years and beyond.

This is essentially the start of a major drive to heat and ventilate homes without the use of fossil fuels that will very likely become a requirement placed on the whole new-build housing (and other parts of the construction sector) sector by 2025. There is currently a DLUHC consultation in progress regarding the roll-out of this Future Buildings Standard:

*“Our aim is that buildings constructed to the Future Buildings Standard will be capable of becoming carbon neutral over time as the electricity grid and heat networks decarbonise...*

*... We believe that developers will typically deploy heat pumps and heat networks to deliver the low carbon heating requirement of the Future Buildings Standard where practical.”*

A further driver of labour and occupational skills demand is the retrofit of existing homes to meet Net Zero targets. A recent parliamentary Environmental Audit Committee Report<sup>8</sup> identifies that over 10 million owner occupied homes and over three million private rented homes in England will need upgrading to a minimum Energy Performance Certificate (EPC) ‘C’ rating by 2035 to hit Government targets.

Whilst this drive to Net Zero affects all housing stock, social housing providers have a requirement to meet new energy standards by 2035 and Net Zero by 2050. One fifth of local authorities have committed to achieving Net Zero in their area by 2030 making action to decarbonise all housing stock a priority, starting with their own housing stock.

**Net Zero Collective** are a Coast to Capital stakeholder working with social housing providers in the area to help plan and scope the decarbonisation of their housing stock.

The Coast to Capital area has a stock of circa 87,000<sup>9</sup> homes in the social rented sector. A third of these homes are in local authority ownership and two thirds owned by Private Registered Providers (mainly Housing Associations). To decarbonise these 87,000 homes by 2050 would mean undertaking 1,812 retrofits per annum for the remaining 48 years to 2040 at an estimated cost of circa £1.5bn (the UK wide estimate for the social rent sector to decarbonise its stock by 2050 is £104bn<sup>10</sup>) and since Coast to Capital Net Zero Collective estimate that a model of 5 full time equivalent (FTE) workers working for 6 days on each property, this would place a total worker requirement of 209 additional workers required now, just to retrofit the existing social housing stock.

In addition to this social housing stock there are 601,511 privately owned homes in the Coast to Capital area<sup>11</sup>, the vast majority of which are also likely to require retrofitting to decarbonise them by 2050. If all these homes were decarbonised it would mean undertaking 12,531 retrofits per annum and 1,446 workers. These figures are based on teams of 5 FTE workers per retrofit installation (4 specialists; and 1-2 lower skilled labourers).

Retrofitting existing homes is not for the fainthearted. On an individual property level, it is a complex, uncertain and costly process. Existing homes, particularly older homes that are least

<sup>7</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/956037/Future\\_Buildings\\_Standard\\_consultation\\_document.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/956037/Future_Buildings_Standard_consultation_document.pdf)

<sup>8</sup> <https://publications.parliament.uk/pa/cm5802/cmselect/cmenvaud/135/13502.htm>

<sup>9</sup> GENECON estimates based on: Private registered provider social housing stock in England – stock profile 2019-2020; and, Local Authority Housing Statistics dataset, England 2019-20: Section A - Dwelling Stock (MLUHC)

<sup>10</sup> <https://www.insidehousing.co.uk/insight/insight/the-cost-of-net-zero-social-landlords-decarbonisation-plans-revealed-68497>

<sup>11</sup> Table 100 Dwelling stock: Number of Dwellings by Tenure and district: England; 2020, DLUHC

energy efficient, may have been subjected to major renovations and adaptations. Each requires a unique set of insulation measures and other heating or ventilation upgrades which will require careful design and skilled, quality-controlled installation if energy and carbon savings are to be fully realised.

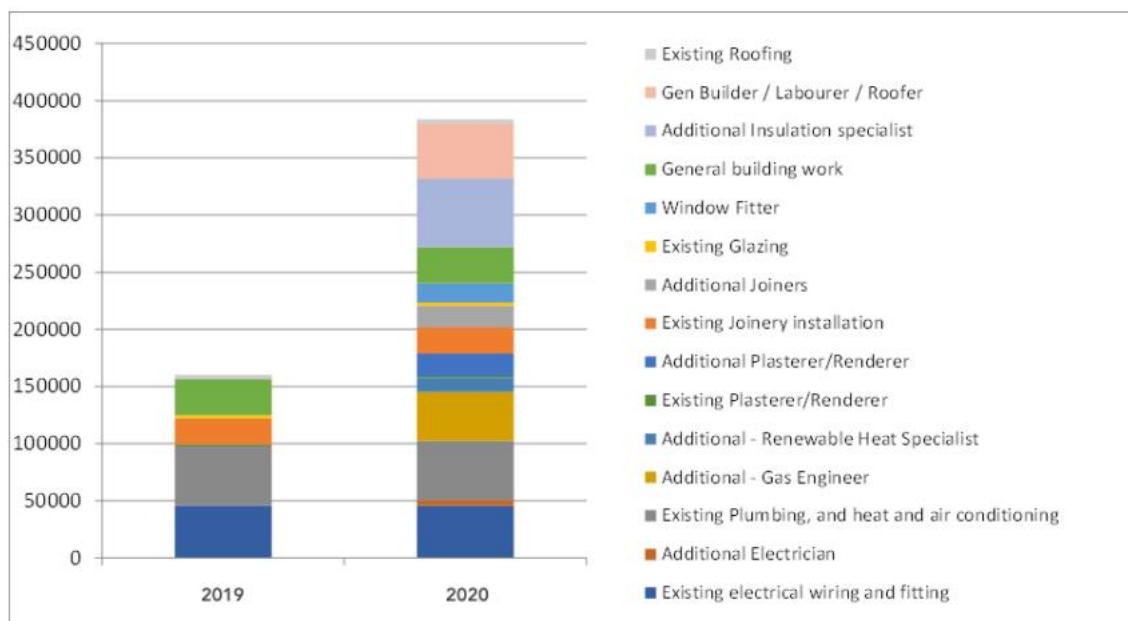
The mix of occupations needed will thus vary by project but given the move away from gas for heating homes, skilled HVAC occupations (already in high demand and short supply) will be important growth occupations to fit and maintain air and ground source heating (and eventually hydrogen boilers). It is likely that demand for design, planning and coordination roles for retrofit (Level 5) will also increase. Alongside these higher level skill occupations, a whole host of existing and new retrofit-specific trades will be required.

Recent analysis by Parity Projects<sup>12</sup> tested 2,400 retrofit options (at current market prices) on the UK housing stock to estimate the occupational workforce demand that reaching Energy Performance Certificate (EPC) 'C' standards across the UK by 2030 brings. The analysis identifies a need to increase the Net Zero domestic refurbishment workforce by 139% to cover the additional work.

*"...assuming that all work starts this year. i.e. we instantly need 223,387 more tradespeople [in the UK]."*

The analysis also provides a useful breakdown of the relative proportions of occupations likely to be required across the workforce to meet the challenges of retrofitting housing to achieve Net Zero.

#### Workforce change required to deliver domestic refurbishment to the EPC 'C' Standard in the UK



Source: Parity Projects

The Royal Institute of Chartered Surveyors (RICS) believes that Government should support the construction industry by putting knowledge of new standards and techniques at the heart of Apprenticeships and T-Levels:

<sup>12</sup> <https://parityprojects.com/net-zero-housing-workforce/>

*“...mandating that all construction and built environment related Apprenticeships and T-levels assess the apprentices understanding of sustainability and mitigation of environmental impact.”*

Research for National Grid<sup>13</sup> highlights the need to inspire young people from all backgrounds, to study STEM subjects at A level and beyond as a gateway to Net Zero careers. The research estimates that over the next ten years, the UK needs circa 480,000 physics A-level qualifications and 1.2m maths A level qualifications to maintain a strong workforce pipeline up to 2030.

### 3.2.2 Environmental & Biodiversity Skills

Biodiversity net gain will be another important policy driver of future labour and skills demand in the Coast to Capital area over the next 10 years.

Biodiversity net gain is a set of principles that impact on construction projects from early stage planning onwards to deliver measurable improvements in biodiversity through actions to enhance the natural environment and habitats – usually within or surrounding a site, or via off-setting where this is more appropriate.

The Government’s forthcoming Environment Bill is expected to pass in early 2022. This will convey a legal requirement for developers to achieve an overall increase in biodiversity of +10% compared to an undeveloped site via ongoing conditions in planning approvals. These legislative drivers are likely to increase demand in construction related environmental occupations that Coast to Capital stakeholders already signal to be in short supply.

This mandated biodiversity net gain is set out in the Environment Bill<sup>14</sup> and via amendments to the Town & Country Planning Act (TCPA). The Environment Bill includes the following:

- Minimum 10% gain required calculated using Biodiversity Metric & approval of net gain plan
- Habitat secured for at least 30 years via obligations/ conservation covenant
- Habitat can be delivered on-site, off-site or via statutory biodiversity credits
- There will be a national register for net gain delivery sites
- The mitigation hierarchy still applies of avoidance, mitigation and compensation for biodiversity loss
- Will also apply to Nationally Significant Infrastructure Projects (NSIPs)
- Does not apply to marine development
- Does not change existing legal environmental and wildlife protections

Whilst there are exemptions from mandatory biodiversity net gain it is clear that most large developments will need to include plans and actions to deliver the requirement. Exemptions are likely to be:

- major infrastructure projects and marine sites (these are likely to require separate specialist approaches);
- certain urban brownfield sites, if they don’t contain protected or priority habitats (e.g. open mosaic habitat) or ‘face genuine viability difficulties’;

<sup>13</sup> <https://www.nationalgrid.com/document/126256/download>

<sup>14</sup> <https://www.gov.uk/government/publications/environment-bill-2020>



- smaller ‘minor’ development sites (fewer than 10 residential units or an area of less than 0.5 hectares) will be offered a more simplified requirement and potentially lower than 10% gain; and,
- building extension projects.

Balfour Beatty identify four key incentives of biodiversity net gain for the construction industry:

- The industry is the largest consumer of natural resources, using more than 400m tonnes of material each year<sup>15</sup>.
- Biodiversity loss is a key reason infrastructure projects are delayed or refused planning permission. Therefore, planning early for Net Gain and engaging stakeholders in delivery is more cost-effective and efficient.
- Failing to fully consider these issues pre- construction, can lead to protected species being harmed and result in punitive fines and significant reputational damage.
- The Net Gain concept provides the opportunity to generate significant benefits for communities living near these schemes, helping to gain local support and leave a genuine legacy in terms of outcomes such as improved air quality and reduced flood risk, etc.

Skills and expertise to deliver bio-diversity net gains of +10% (e.g. via re-wilding; restoring ancient woodland, habitat creation, natural flood defenses) is an essential aspect of schemes delivered by the **Environment Agency** in the Coast to Capital area. The organisation views these skills as largely missing in the workforce:

*“...there is a huge skills gap in nature and bio-diversity”.*

The Environment Agency are already concerned about this biodiversity skills gap and find it very difficult to find local contractors able to deliver small schemes, e.g. to maintain and upgrade older flood defenses. The increase in activity that biodiversity net gain legislation will demand requires higher level skills including more degree and post graduate level ecologists (who are in short supply). Town Planners in local authorities and the private sector who are specialists in environmental impact and biodiversity are also a likely employment growth area at degree level, although it may be that exiting professionals could be trained to meet some of the additional demand. The Chartered Institute of Ecology and Environmental Management (CIEEM) highlight the need for professional development of these professions to improve ecologist’s understanding of spatial planning and planner’s understanding of ecology and habitat protection.

Another local stakeholder **Surrey Wildlife Trust**<sup>16</sup> echo these views concerning higher level skills and predict that demand will be strong across the private and public sectors creating a massive capacity issue for planning, scoping and agreeing biodiversity net gain as part of the development process.

Surrey Wildlife Trust also highlight current and emerging shortages of skilled labour to deliver biodiversity net gain at a practical project level (whether onsite or offsite). Land-based skills are likely to increase in demand over the next 10 years with skills such as habitat management, green roofing, conservation, project delivery planning and evaluation, etc.

<sup>15</sup> <http://www.ukgbc.org/resources/key-topics/circular-economy/materials>

<sup>16</sup> Surrey Wildlife Trust one of 46 Wildlife Trusts working across the UK. The volunteer based charity cares for over 6,500ha of land for wildlife in Surrey and works with other organisations and landowners to protect and connect wildlife sites across the county..

*“Industry must improve its skills in conservation planning. Net Gain is not about minimising damage to wildlife or about the typical “shopping list” of species protected by law such as bats, great crested newts and dormice. We must get better at truly understanding all biodiversity affected by individual schemes, and by the combination of schemes within a landscape, as well as the linked social impacts of people’s use of nature.”*

Balfour Beatty

It is extremely difficult to provide an overall impact in terms of occupational employment demand in the Coast to Capital area over the next 10 years as each development will require a bespoke set of actions to deliver net gains. However, biodiversity net gain is clearly likely to be a significant area of activity growth that has not been adequately factored into current employment forecasts. Most occupations involved are also already in short supply which adds to the need for a response.

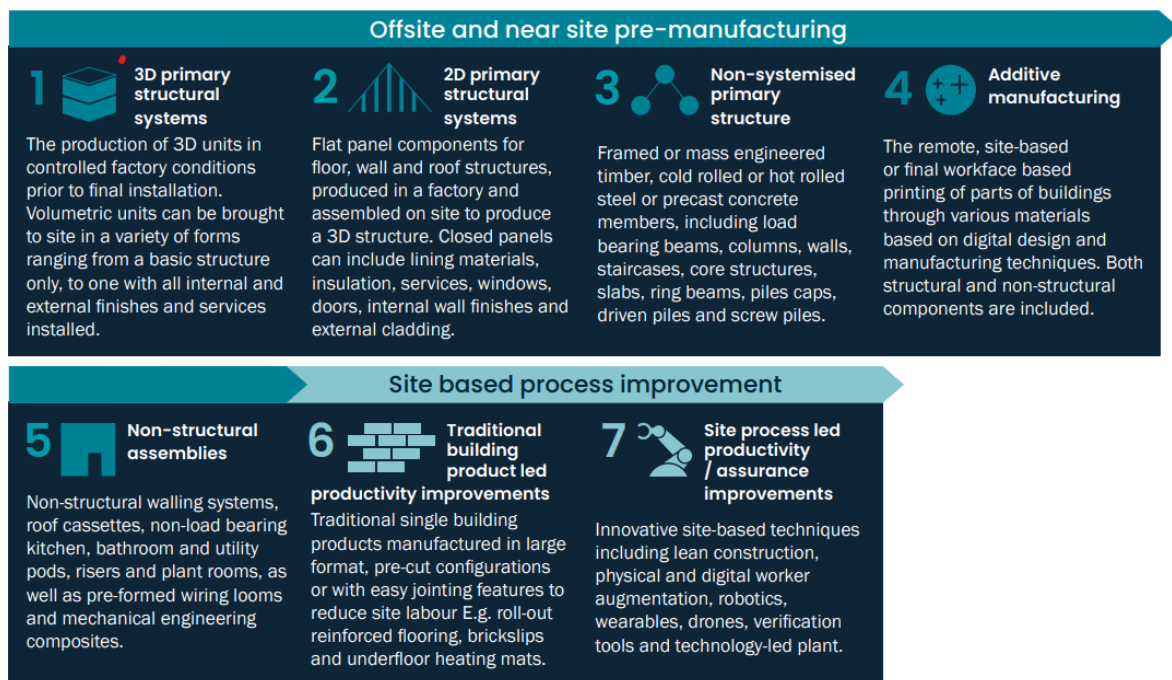
### **3.2.3 Skills for Offsite Manufacturing & Modern Methods of Construction**

Offsite manufacturing processes and techniques are already changing particular segments of the construction sector. Within the interviews conducted these changes are most apparent within housing construction, but this is not to say that other sectors are not switching to these techniques or planning to.

**Modern methods of construction (MMC) and offsite prefabrication** are reducing the time required onsite and increasing the pre-site planning phase and leading to quite radical changes to the skills required to complete a construction project. This is altering demand for skills and labour with:

- An increase in demand for office-based construction planning occupations with high digital skills content, e.g. construction design, project management, project planning and logistics skills are increasingly sought. Stakeholders cite approximately 50% of jobs on major schemes are now office-based.
- An increase in construction manufacturing-based occupations as pre-fabrication becomes prevalent. These roles are based at geographically fixed locations.
- Onsite demand for more multi-skilled workers to assemble the prefabricated modules with modern methods of construction (such as Metsec steel framing) becoming increasingly common. This is suppressing demand for unskilled labourers, although demand for these low skill roles is best described as a ‘flat and constant’ at present.
- Onsite office roles in planning, logistics and health & safety also increasing in demand.

The DLUHC definition of offsite and premanufacturing is shown below:



National House Builders Confederation (NHBC) research in 2018 found that 69% of residential property developers were delivering housing using advanced MMC, and 92 per cent had plans to expand its use.

Moving from traditional on-site only construction methods to incorporate off-site manufacturing as part of the delivery process is a key trend within the construction sector that stakeholders interviewed indicate will accelerate over the next 10 years.

Off-site construction techniques bring both challenges and opportunities for many stakeholders interviewed. These techniques deliver productivity gains with higher quality and lower costs achieved through more efficient and consistent production methods that are not prone to weather related issues often encountered in more traditional on-site construction.

*“There is a move to build as much as possible off-site due to low waste, fewer damages, lower risk, higher safety, higher productivity, etc. Modular methods provide the same set-up every time in an environment that doesn’t change due to weather.”*

*(BAM Construction Training)*

Off-site and modern methods of construction (MMC) are commonly used for smaller buildings, where elements of the building are still small enough to transport. Components such as floor, wall and roof sections are manufactured in a factory before being transferred to a site and assembled.

Off-site manufacturing and MMC is often cited by stakeholders as offering more attractive employment and career opportunities for construction workers. In theory, the productivity gains from MMC/off-site processes could lower the demand for both skilled and unskilled construction workers, however there was no indication from stakeholders that this is the case as the method is

viewed as a means of delivering more activity to meet increasing demand. Stakeholders indicate that the move to these techniques is changing the skills needed in the workforce with:

- more skilled workers (with more digital skills content) required in the design and planning phase as tasks and issues that were previously dealt with on-site during construction phase need to be completed earlier so the off-site manufacturing process can be completed;
- more multi-skilled workers needed during the off-site pre-fabrication stage rather than single trade skilled workers;
- low-skilled onsite workers needed to complete the build, but fewer of these workers required as the time required in this on-site phase has reduced significantly; and,
- more workers skilled in on and off-site logistics to safely transport pre-fabricated modules to each site and safely manoeuvre them when they reach the site.

CITB's 2019 forecasting work on off-site manufacturing skills requirements for housing construction echoes these changes and broadly indicates that (under a range of scenarios) labourers; construction trades supervisors; wood trades and interior fit out, bricklayers and glaziers are likely to see decreased demand as MMC/off-site techniques advance and become more prevalent with labourers most likely to be affected. There is therefore a clear need to upskill and multi-skill the current workforce as well as supply new entrants who are multi-skilled and prepared for MMC/off-site working.

Homes England are very active in parts of the Coast to Capital area with two long-term major housing expansion sites in Horsham and Burgess Hill, as well as other significant housing investment sites. They have identified a need to develop an off-site manufacturing facility in the area in conjunction with construction partners to ensure development milestones are achieved.

Off-site manufacturing sites provide jobs with consistent location and working conditions, widening the appeal to include a broader demographic whilst reducing waste and build time. However, the skills they require are quite different to those needed for conventional construction: both within the factory and on site.

Brighton City Council skills team has highlighted the need to develop the skills supply for MMC and off-site construction and suggests a local off-site training centre in the greater Brighton area (there is no room in Brighton for this). This centre needs to include/deliver steel structure construction skills training (e.g. Metsec<sup>17</sup>).

### 3.2.4 Technological Advancement & Digital Skills

*“The sustainable construction industry of tomorrow will demand digitally literate, multi-skilled, diverse and highly trained installation and assembly practitioners capable of operating in different environments, and technically proficient professionals capable of managing product integration and complex logistics aligned with the ability to collaborate, and to coordinate both site installation technicians and facility-based manufacturing.”<sup>18</sup>*

Digital skills and skills for new technology are highlighted by most stakeholders as growing in importance and generating a need for upskilling and multi-skilling the construction workforce. Stakeholders view digital skills as part of the move to a more detailed pre-construction phase

<sup>17</sup> <https://www.metsec.com/>

<sup>18</sup> Construction Learning Council Future Skills Report (June 2019)

including the design, planning and management of schemes, as well as on-site logistics and progress monitoring.

Whilst the impact of technology on overall workforce size may be relatively limited due to the productivity gains such technology brings, it represents a shift in the workforce to higher skills, including the creation and use of increasingly complex software such as Artificial Intelligence. Adoption of digital and manufacturing technology could create up to 90,000 skilled jobs in the UK related to the digital design of buildings.<sup>17</sup>

*“Increasing digitisation will drive new roles in the sector through increased use of technology and new tasks that stem from this technology. New tech such as Drone Surveying, remote GPS Bulldozers and site simulators to drive safety are current examples of tech that is changing sites so that there are more workers in the site office than outside.”*

BAM Construction Training

Stakeholders highlight the potential acceleration and expansion of the use of new and emerging technologies over the next 10 years, particularly new machinery for on-site delivery of construction activity. Examples include: GPS-guided machines that are autonomous or semi-autonomous (such as bulldozers for levelling sites) that can theoretically work 24/7; and, hybrid machines that perform more than one function, e.g. a machine that can be transformed from a Cherry Picker into a Forklift and into a Crane. Also in the pipeline but thought to be perhaps 5 years away from wide deployment, are electric vehicles for sites. Charging time requirements and battery capacity are currently limiting their use.

Overall, the next 10 years is likely to see major changes in the use of technology deployed on sites to increase productivity. However, it is also likely that these machines will replace mainly lower-skilled and unskilled workers and will drive demand for higher skilled roles to programme, operate and maintain the new machines.

Increased digitisation therefore needs careful consideration by construction firms. Software is increasingly complex and developers need to retrain, upskill or recruit of employees to effectively integrate it into their delivery. At present the skills response to this appears to be patchy, e.g. the majority of newly developed Apprenticeship standards do not include the digital elements

## 4 Conclusions & Recommendations

### 4.1 Introduction

Predicting detailed occupational change across a 10 year period is evidently difficult to do with pinpoint accuracy. The Covid-19 pandemic has illustrated how external shocks to the economy can impact quickly and significantly. However, employment growth in the construction sector in the Coast to Capital area has been strong in recent years and nothing in the conversations with stakeholders indicated anything but a strong demand picture with key pinch-points that need to be addressed to increase the flow of skilled labour to the sector. Nationally employment in the sector returned to pre-pandemic levels in June 2021 with a number of existing and rapidly emerging workforce issues present that have not altered dramatically in their nature and trajectory.

On a very broad level, demand for construction workers is currently high in the Coast to Capital area and, taking into account the scale of growth in the past five years (+16%), the five year employment forecast for the south east region (+4.4%), an ageing workforce, post-Brexit changes to the UK immigration system and the scale of investment planned by the major stakeholders in the area, it is difficult to perceive a fall in this demand picture in the medium or longer-term at this point in time.

The well documented aging of the UK construction workforce is a is creating both labour and skills shortages as many workers hired in the 1980's during a construction boom continue to leave the workforce. Responding to this issue by increasing the volume of labour and skills supply remains a challenge.

There is currently an additional short-term challenge of strong competition for labour and especially for skilled workers from other sectors. Recent post-Brexit changes to the UK immigration system are tightening the UK labour market with direct and indirect impacts on the availability of labour for the construction sector.

### 4.2 Next Steps

The stakeholders interviewed as part of this research provided a more detailed picture of the labour and skills issues they face. They are operating in an environment where creating a skilled workforce to deliver their future projects and work programmes forms an ongoing task, with action required on a number of common fronts. Broad stakeholder collaboration via **local 'Theme Groups'** that focus on a relatively tight set of future priorities discussed in this report would appear to be a sensible mechanism to shape actions that address current and future skills issues:

#### **Group 1: Modern methods of construction and offsite prefabrication skills**

In the Coast to Capital area a stakeholder group focusing on offsite prefabrication is of particular interest to those involved in housing delivery (as prefabrication lends itself well to the housing sector). Modern methods of construction more broadly applies to housing and other parts of the construction sector, including industrial and commercial property developments, and the skills issues are very closely linked. The stakeholder group should therefore be broader than just housing related stakeholders.

There is very likely an opportunity for this group to collaborate on the development of offsite manufacturing facility (or facilities) in the Coast to Capital area during the next few years. Given the scale and long timeframe for the housing and related infrastructure schemes planned, or already

progressing in the area, some stakeholders are very keen to develop such facilities quickly, including skills delivery as an integral aspect. In addition, a CITB funded Onsite Experience Hub.<sup>19</sup> is already in place. These hubs enable the development of employment and site-ready people from local communities and offer an opportunity to expand to the local workforce.

## **Group 2: Skills for Net Zero**

Achieving Net Zero is a growing imperative across the economy and Coast to Capital construction stakeholders highlight the almost certain and significant impact of Net Zero targets on labour and skills demand within the sector over the next ten years. The social rent housing sector alone is likely to demand approximately 209 additional skilled workers to decarbonise their existing stock. Adding the additional demand from new housing, retrofitting private housing and other developments makes developing a local plan to deliver skills for Net Zero a priority.

Skills require to deliver Net Zero is diverse, comprising specialist technical roles with high-level skills (e.g. advanced engineering, software development, digital technology, etc.) as well as skilled trades including electricians, plumbers and HVAC job roles, which are all already in short supply.

This group of stakeholders should comprise employers and HE and FE stakeholders within the skills system focused on finding ways of collaborating to address these significant skills and labour shortage issues. We suggest the agenda for the group should include:

- Seizing the opportunity that the Strategic Development Fund (SDF) in Sussex brings to merge the work of the Coast to Capital Home Decarbonisation Academy Pilot with the Decarbonisation Academy Centres of Excellence. The SDF includes plans and funding for five Centres of Excellence with the work being led by East Sussex College.
- Supporting the delivery of the Local Skills Improvement Plan to help set a local agenda for skills development.
- How to attract and train workers from other sectors for low carbon jobs. An immediate focus could include former aviation and travel sector workers in the Gatwick catchment area, where funding for courses for retraining may be available via the government's Community Renewal Fund and the forthcoming Shared Prosperity Fund.
- How to attract people from a diverse range of backgrounds to train and secure jobs in the low carbon sector.

## **Group 3 - Skills for Environment and Biodiversity**

Construction industry stakeholders, education and skills providers, Third Sector organisations (including Wildlife Trusts) and Local Planning Authorities in the Coast to Capital area need to increase their dialogue and collaboration around the skills needed to meet the challenges biodiversity net gain will very soon present. Key stakeholders commissioning infrastructure projects and other construction projects are already aware that the higher-level planning and design skills and intermediate project delivery-focused skills are already in short supply before imminent legislative changes take effect.

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<sup>19</sup> <https://www.citb.co.uk/levy-grants-and-funding/commissioning/the-onsite-experience-commission/onsite-experience-hubs-england/>

Working collaboratively is likely to bring benefits such as:

- Finding innovative opportunities and solutions to meeting biodiversity net gain requirements.
- Identifying strategic approaches to skills and workforce development issues faced by stakeholders.
- How to attract and train workers from other sectors for low carbon jobs. An immediate focus could include former aviation and travel sector workers in the Gatwick catchment area, where funding for courses for retraining may be available via the government's Community Renewal Fund and the forthcoming Shared Prosperity Fund.
- How to attract people from a diverse range of backgrounds to train and secure jobs in the low carbon sector.

#### 4.3 Cross Cutting Themes

There are likely to be overlaps between Theme Groups in terms of the skills issues discussed. However, one cross cutting issue stands that out in importance is the well documented nationwide issue of improving the image of the construction sector to encourage more young people to build careers in the construction industry.

*“Fundamentally we have an image problem. Traditionally our sector has been thought of as being for men and requiring physical work on site. That image is changing, but too slowly. We need to demonstrate that the roles in our sector are very diverse, often involving skills that you would not think of as being needed.”*

James Wates (Wates Group)

Stakeholders interviewed highlight many of the issues with the sector's image that are reported nationally to be putting young people off choosing a career in the sector, e.g. the perception of a 'dirty' industry with hard physical labour, unsocial hours and working away from home. These views echo the seminal Farmer Review of the construction sector 'Modernise or Die' which predicted a 20-25% decline in the available construction workforce within a decade, due to the industry being viewed as outdated.

Stakeholders are keen to stress that this is improving given the changes to the nature of construction jobs and the innovation in new technologies that is in progress but admit that a concerted effort is required to alter this image and attract young people in greater numbers. However, the image challenge ahead is brought sharply into focus when one considers the poor mental health of people working in the construction sector compared to other sectors of the economy. Figures from Caledonian University show that people working in the construction industry were three times more likely to take their own lives in 2019 than those working outside it.<sup>20</sup>

On the positive side local stakeholders are optimistic there are a growing set of opportunities that can be used to change young people's views of construction careers:

- The increase in STEM-based careers, careers focused on tackling the climate emergency and protecting and enhancing the natural environment are all 'hooks' that could be used to market construction careers to young people. Research shows that nearly two thirds of

<sup>20</sup> <https://www.gcu.ac.uk/theuniversity/universitynews/2021-mentalhealthofconstructionworkers/>



young people are aware of the climate emergency but only one third perceive that the construction industry is a place where they can work to combat it.<sup>21</sup>

- The move to prefabrication, MMCs, the increasing use of digital technology and growing use of other technologies are offering 'cleaner' career opportunities in the construction sector that are less disruptive to lifestyles and more interesting to young people.

There is clearly much to be discussed here and these are industry-wide issues that are not exclusive to the Coast to Capital area. However, there is acute awareness among local stakeholders that local actions to improve this situation are required. These could include discussions regarding joint actions to :

1. Market modern careers to young people with a particular emphasis on technology and opportunities to enter a career that help address the climate emergency and in language that they understand.
2. Create clear pathways for young people to achieve qualifications.
3. Improve the diversity and inclusiveness of construction sector to increase the proportion of female entrants and entrants from disabled and BAME backgrounds.

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<sup>21</sup>Construction as a Career of Choice for Young People  
<https://insights.morgansindallconstruction.com/story/are-we-gen-z-ready/page/4/3>

## Appendix 1: Major Construction Schemes in the Coast to Capital area over the next 10 years

The following table and chart present the data collected via stakeholder interviews undertaken for the research. These interviews explored the specific future occupational and skills demand expected from major schemes in progress or planned for delivery in the Coast to Capital area during the next 10 years. Collectively the schemes represent £636m of construction activity and 3,119 jobs per annum.

Scheme / Programme	Timescale	Value	Description	Workforce Size Estimate*	Workforce Demand and Skills Issues												
<p><b>Gatwick Northern Runway proposal</b></p> <table border="1"> <tr> <td>Consultation phase</td> <td>Sep 2021</td> </tr> <tr> <td>Development Consent Order</td> <td>Mid 2022</td> </tr> <tr> <td>Consent expected</td> <td>2024</td> </tr> <tr> <td>Scheme design</td> <td>2022-2024</td> </tr> <tr> <td>Construction phase</td> <td>2024/25 to 2028</td> </tr> <tr> <td>Runway opens</td> <td>2028</td> </tr> </table>	Consultation phase	Sep 2021	Development Consent Order	Mid 2022	Consent expected	2024	Scheme design	2022-2024	Construction phase	2024/25 to 2028	Runway opens	2028	2021-2028	<p>£250m-£300m p.a. (construction phase)</p> <p>Current spend is circa £36m p.a. (during pandemic)</p>	<p><b>Scheme outline:</b> Major project to move/expand the Northern runway.</p> <p><b>Construction activity to include:</b> Infrastructure (80%) - including runway changes; adding a new pier; car parking, cargo shed area works and road changes. Pier 6 will involve off-site manufacturing. There is a need to explore whether this could be done locally with Bognor Regis mentioned as a potential location.</p> <p>Commercial (20%): Offices (airport related) and 3 new hotels on the Gatwick site.</p>	1,466 per annum*	<p>Gatwick are keen for the local supply chain to 'gear-up' for the project. "We need to know what their ambition is to upskill the workforce."</p> <p>Gatwick has a network of education providers they are working with to build awareness of the scheme in the light of a 5 to 10-year delivery period.</p>
Consultation phase	Sep 2021																
Development Consent Order	Mid 2022																
Consent expected	2024																
Scheme design	2022-2024																
Construction phase	2024/25 to 2028																
Runway opens	2028																
<b>Brighton Regeneration Scheme</b>	2022-2025	£70m (construction phase)	Key regeneration site being delivered by a private sector construction firm.	37 in design phase (Year 1) Average of 349 p.a. during 3 year construction phase.**	<p><b>Specific Occupational Issues</b> Anticipated skills shortage occupations:</p> <ul style="list-style-type: none"> <li>• Dry Liners</li> <li>• Plasterers</li> <li>• Carpenters &amp; joiners</li> <li>• Electricians</li> <li>• Plumbers</li> </ul>												

<p><b>Environment Agency - 6 Year Programme</b></p>	<p>2021-2027</p>	<p>£100m in Coast to Capital planned over the next 6 years</p>	<p>Investment projects planned:</p> <p>£30-£40m standalone investment in flood defenses, etc. in Littlehampton.</p> <p>£40m investment in Selsey seafront as part of a large regeneration scheme.</p> <p>£30m investment In Brighton seafront</p> <p>£40m - Worthing seafront (potential scheme)</p> <p>Also discussing a major project with Solent LEP around Carbon storage.</p>	<p>81 per annum*</p>	<p><b>Specific Occupational Issues</b></p> <ul style="list-style-type: none"> <li>• Engineering professional/technical occupations.</li> <li>• Skills to deliver Net Zero</li> </ul> <p>Internally the Environment Agency is not struggling to recruit but the construction supply chain is experiencing significant difficulties with increases in demand for high-level engineering professional and technical occupations. This is presenting as both skills and labour shortages.</p> <p><i>“There is a general shortage on labour in the professional arena. From a skills perspective, we are seeing a dramatic lack of knowledge in low-carbon technology”</i></p>
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<p><b>Homes England</b> Horsham - West of Ifield</p>	<p>2023-2038</p>	<p>3,250 homes = circa £1bn delivered over 10 years</p> <p>Education infrastructure = £300m (Delivered over 3 years)</p>	<p>Homes England acting as Master Developer for the delivery of major housing expansion. The whole masterplan includes 10,000 homes and associated infrastructure with a 30 to 50-year timescale for completion.</p> <p>Stage 1 of Horsham – West of Ifield is 3,250 homes with a 2023/24 start and delivery over 10-15 years. Investment value of the 3,250 homes is based on an estimated average build cost of £332,000/house<sup>22</sup></p> <p>The Masterplan also includes delivery of a £300m DfE Net Zero Schools scheme.</p>	<p>978 per annum*</p>	<p>No detail available</p>
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<sup>22</sup> <https://urbanistarchitecture.co.uk/cost-to-build-a-house-uk/> Genecon estimate of £332,000 cost per house derived from RICS square metre cost estimates and a median build cost across different types of housing. Actual housing mix will vary; this will impact on the accuracy of these estimates.

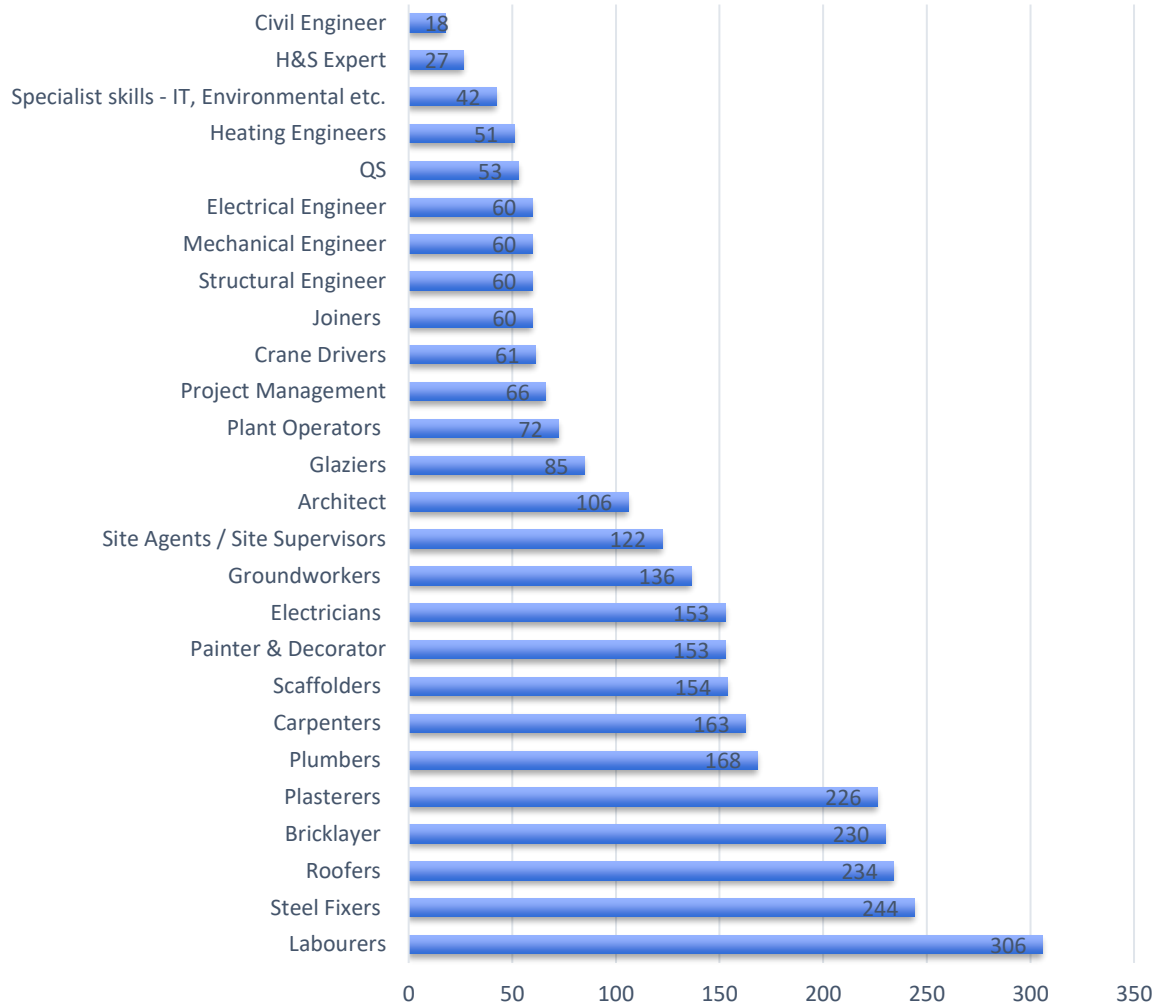
<b>Homes England</b> Burgess Hill – Northern Arc	2021-2035	2,333 homes = Circa £775m  Infrastructure = £43m	Homes England acting as Master Developer to deliver a masterplan that includes 3,500 homes, infrastructure, education, leisure, etc. over a 15-year period.  Investment value if the 2,333 homes likely in the next 10 years is based on an estimated average build cost of £332,000/house. <sup>19</sup>  £20m infrastructure and £23m road improvement scheme will create a central spine across the site and release parcels of land to progress the masterplan.	400 per annum*	No detail available
<b>Network Rail</b> Crawley Station Enhancement Project	2021-2022	£7-8m	Enhancement works to Crawley Station. Further property development planned beyond 2022	39 per annum**	None anticipated
<b>Network Rail</b> Brighton Main Line Mobile Connectivity Project	2021-2023	Confidential	Brighton Main Line – Victoria and London Bridge via East Croydon to Brighton	Not provided	None anticipated

\* Stakeholder model estimate

\*\* Interviewee data

The workforce size estimates are a combination of stakeholder provided figures and estimates derived from a workforce model developed by a local stakeholder to model a typical project in the Coast to Capital area. Many stakeholders interviewed found it difficult to provide a detailed breakdown of the workforce that will deliver their schemes, mainly because they have not yet undertaken a commissioning or workforce planning exercise. The following chart has therefore not been included in the main report as it is modelled on too few schemes to provide sufficiently robust estimates. It is included for information only.

## Annual Employment Demand - Stakeholder Model



## **Appendix 2: List of Stakeholder Organisations who participated in the research**

Staff from the organisations contributed their time and resources to this research. Our thanks go to all those who helped.

- Network Rail
- Southern Water
- Gatwick Airport
- Highways England
- The Environment Agency
- Homes England
- Transport for the South East
- Brighton and Hove City Council
- Wilmott Dixon
- BAM Construction Training
- WSP
- Morgan Sindall
- Net Zero Collective
- Arcadis
- Thakeham Group
- CITB