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Training and the Built Environment 2014

April 2013

Introduction

CITB is the Construction Industry Training Board and is a partner in ConstructionSkills, the Sector Skills Council (SSC) for the UK construction industry. CITB's mission for the industry is to ensure **'right skills, right place, right time' for the construction industry in order to achieve a fully skilled and professional UK construction industry, working safely and delivering value.**

As a Sector Skills Council we work in partnership with employers, training providers, other stakeholders and government to address key skills issues in the construction industry. The series of formal agreements which define and shape this role together form the Sector Skills Agreement (SSA)[1].

Our priorities are decided by the challenges that the construction industry faces.

Leadership Challenge
Providing industry leadership on skills and leadership training for employers: ➢ Working across the industry to raise investment in skills ➢ Using our well-respected research data on future skills needs to influence Government policy ➢ Addressing employers' leadership and management needs ➢ Developing industry standards to improve Fairness, Inclusion and Respect
Productivity Challenge
➢ Helping our industry to compete ➢ Working to qualify experienced workers ➢ Improving health, safety and environment awareness and competence on site ➢ Helping employers' review their business skills needs and improve them cost-effectively ➢ Establishing productivity benchmarks for the industry ➢ Developing guidance on Building Information Modelling (BIM) and facilitating improved knowledge and skills for employers
Low Carbon Challenge
➢ Building knowledge on industry's future skills needs and sharing practical solutions ➢ Working to influence over policy and funding for low-carbon skills
Employer Engagement Challenge
➢ Promoting investment in training and development ➢ Diagnosing skills needs and identifying solutions ➢ Working with all types of employer groups to reach more businesses
Recruitment and Retention Challenge
➢ Keeping the pipeline of talent flowing ➢ Promoting and delivering apprenticeships ➢ Influencing the construction-related curriculum ➢ Working to support undergraduates ➢ Information, advice and guidance on qualifications and careers for potential recruits, parents, guardians and advisors ➢ Researching methods to increase employer confidence in the quality of training provision
Education and Training Challenge
➢ Working with providers to deliver 'right skills, right place, right time' ➢ Working with providers to ensure industry's current and future skills needs are met with efficient, affordable and high quality training ➢ Using our authoritative understanding of skills provision to influence government funding ➢ Developing innovative ways of working with schools, colleges, and universities to stimulate interest in careers in the built environment

[1] CITB, Sector Skills Agreement, http://www.citb.co.uk/about-us/who-we-are/our-role-construction-industry/

Research provides facts about the industry. These details then form the building blocks for change and improvements in performance for those who use and work in construction. CITB undertakes a regular programme of research that aims to identify the skills needed to improve the construction industry's competitiveness.

As part of the research programme, the **Training and the Built Environment Report** provides a picture of training in the built environment.

The main sections of the report are:

Section 1: CITB Trainee Numbers Survey 2013/14 presents data collected on a voluntary basis from colleges, private training providers and construction industry training centres across Great Britain on the number of people entering construction training. These include those coming through CITB's own managing agency and those entering other formal certificated training at craft and technical level.

Section 2: Forecasted Demand for Craft and Technical Construction Training 2014–2018 analyses this training data alongside the Construction Skills Network (CSN) projected demand for skilled construction workers over the forecast period 2014–2018, in order to assess the adequacy of current training provision in terms of quantity.

Section 3: Construction Training Capacity 2013/14 summarises the findings of the capacity questions from the Trainee Numbers Survey, which aims to determine the total capacity for skilled manual trades training that is currently available.

Section 4: Higher Education in the Built Environment presents data from the Higher Education Statistics Authority (HESA) on student enrolments on construction and the built environment degree courses in the academic year 2012/13.

Hereafter where reference is made to trainees or apprentices these are all individuals who are undertaking their first year of training courses in construction and the built environment only.

Section 1: CITB Trainee Numbers Survey 2013/2014

The annual CITB Trainee Numbers Survey of construction training providers across Great Britain collects data on the number of first year construction and the built environment trainees by qualification and qualification level.

1.1 The National Picture

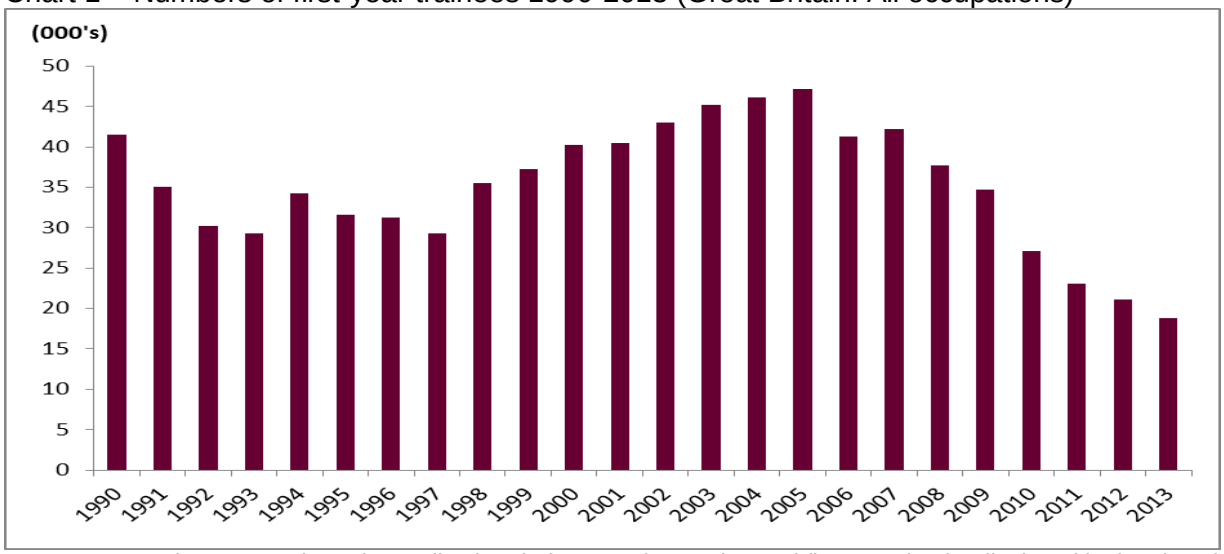
Chart 1 shows that the overall numbers of trainees has continued to decline since the beginning of the recession in 2008. It is also apparent that the current recession is deeper and more prolonged than that of the 1990's. At just under 19,000 the number of trainees is the lowest ever recorded.

After a very poor year in 2012 the performance of the construction industry has strengthened significantly during the course of 2013, led primarily but not exclusively by the private sectors. There is little doubt that the government's Help to Buy scheme has provided a major boost, not only to the private house building sector but also to the economy as a whole. After expansion of 0.3% in the first quarter of 2013, UK GDP grew by 0.7% in the second and 0.8% in the third. It is expected to have performed as least as well in the final quarter of the year.

Although the economic situation and the industry's prospects appear to be improving the Construction Skills Network forecast still predicts construction employment levels in 2018 will be 196,000 down on the pre-recession peak[2].

The fragmented nature of the construction industry means that changes tend to occur over the long-term; therefore it may take a while for training figures to recover.

Chart 1 – Numbers of first-year trainees 1990-2013 (Great Britain: All occupations)



Notes: Due to changes made to data collection during 2004/2005, the total first-year intake displayed in the chart for years 1999 onwards does not include trainees undertaking a mechanical engineering course.

Since 2010 some additional clarification instructions were added to the questionnaire in an effort to ensure that training undertaken by the existing workforce (such as upskilling via Train to Gain) is excluded from this survey.

[2] Construction Skills Network, Blueprint for UK Construction Skills 2014-2018, http://www.citb.co.uk/documents/research/csn%20reports%202014-2018/csn_national_interactive%20(new).pdf

1.2 Training by Occupation

By translating the data from qualifications to the occupational groups listed in the CSN we can examine the potential supply of trainees for specific occupational groups and compare them to the CSN employment forecast (section 2).

This year nine of the occupational groups have seen an increase in numbers, versus eight which have seen a decline. The biggest decreases are seen in wood trades (-832), bricklayers (-669), and plasterers (-575). The occupational groups with the biggest increases are specialist building operatives (+280) and painters and decorators (+123).

Table 1 – Trainee numbers 2013/14 (Great Britain)

	Under 18		Over 18		
Occupation	**Male**	**Female**	**Male**	**Female**	**Total**
Senior executive & business process managers	0	0	<50	0	**<50**
Construction Trades Supervisors	<50	<50	132	<50	**157**
Construction Project Managers	0	0	170	<50	**181**
Other Construction process managers	0	0	0	0	**0**
Non-construction professional, technical, IT, and other office-based staff	0	0	0	0	**0**
Wood trades and interior fit-out	*3,690*	*<50*	*2,084*	*71*	***5,893***
Bricklayers	*2,181*	*<50*	*1,128*	*<50*	***3,342***
Painters and decorators	*1,193*	*158*	*615*	*116*	***2,082***
Plasterers and dry liners	*825*	*<50*	*540*	*<50*	***1,389***
Roofers	*107*	*<50*	*117*	*0*	***225***
Floorers	*87*	*<50*	*115*	*<50*	***213***
Glaziers	*<50*	*0*	*<50*	*0*	***<50***
Specialist Building operatives nec*	*397*	*<50*	*429*	*<50*	***849***
Scaffolders	*62*	*<50*	*147*	*0*	***210***
Plant operatives	*76*	*<50*	*753*	*<50*	***834***
Plant mechanics/fitters	*105*	*0*	*319*	*<50*	***426***
Steel erectors/structural	*0*	*0*	*0*	*0*	***0***
Logistics	*0*	*0*	*0*	*0*	***0***
Civil engineering operatives nec*	*745*	*<50*	*667*	*<50*	***1,454***
Civil engineers	*54*	*<50*	*159*	*<50*	***272***
Other construction professionals and technical staff	*292*	*<50*	*807*	*62*	***1,193***
Architects	*<50*	*<50*	*<50*	*<50*	***<50***
Surveyors	*0*	*0*	*<50*	*<50*	***<50***
Total	**9,845**	**350**	**8,235**	**367**	**18,797**

*nec = not elsewhere classified

Although wood trades and bricklayers remain the largest occupational groups their numbers have been declining since 2008/09 (in line with overall training) as shown in Table 2. In contrast numbers of specialist building operatives have been increasing over recent years, although they are still well below their peak in 2009/2010.

The number of scaffolders has dropped considerably this year after remaining fairly static since 2009/2010; further investigation reveals that this is as a result of two training providers (one in the North East and one in the East Midlands) not responding this year having previously recorded high numbers of students in this occupation.

Table 2 – Comparison of trainee numbers in the top ten occupational groups (by volume) 2008/2009 to 2013/14 (Great Britain)

Occupations	2013/2014	2012/2013	2011/2012	2010/2011	2009/2010	2008/2009
Wood trades	5893	6725	7093	8357	10758	11491
Bricklayers	3313	3982	4451	5712	7168	7778
Painters and decorators	2082	1959	2084	2252	2428	3006
Construction managers, professionals & technical staff	1874	1942	3066	3553	4057	4254
Civil engineering operatives	1454	1583	1710	1920	1809	2248
Plasterers and dry liners	1389	1964	1721	1710	1940	1979
Specialist building operatives	849	569	243	376	1110	441
Plant operatives	834	1167	1476	1905	3847	4461
Plant mechanics/fitters	426	343	270	294	409	505
Scaffolders	210	503	523	528	502	681

Despite the drop in absolute numbers training, Chart 2 highlights how occupational groups have generally retained their share of training with the exception of plant operatives which have declined considerably over the last five years from 11% to 4%.

Chart 2 – Proportion of all trainees by top ten occupational groups 2009/10 to 2013/14 (Great Britain)

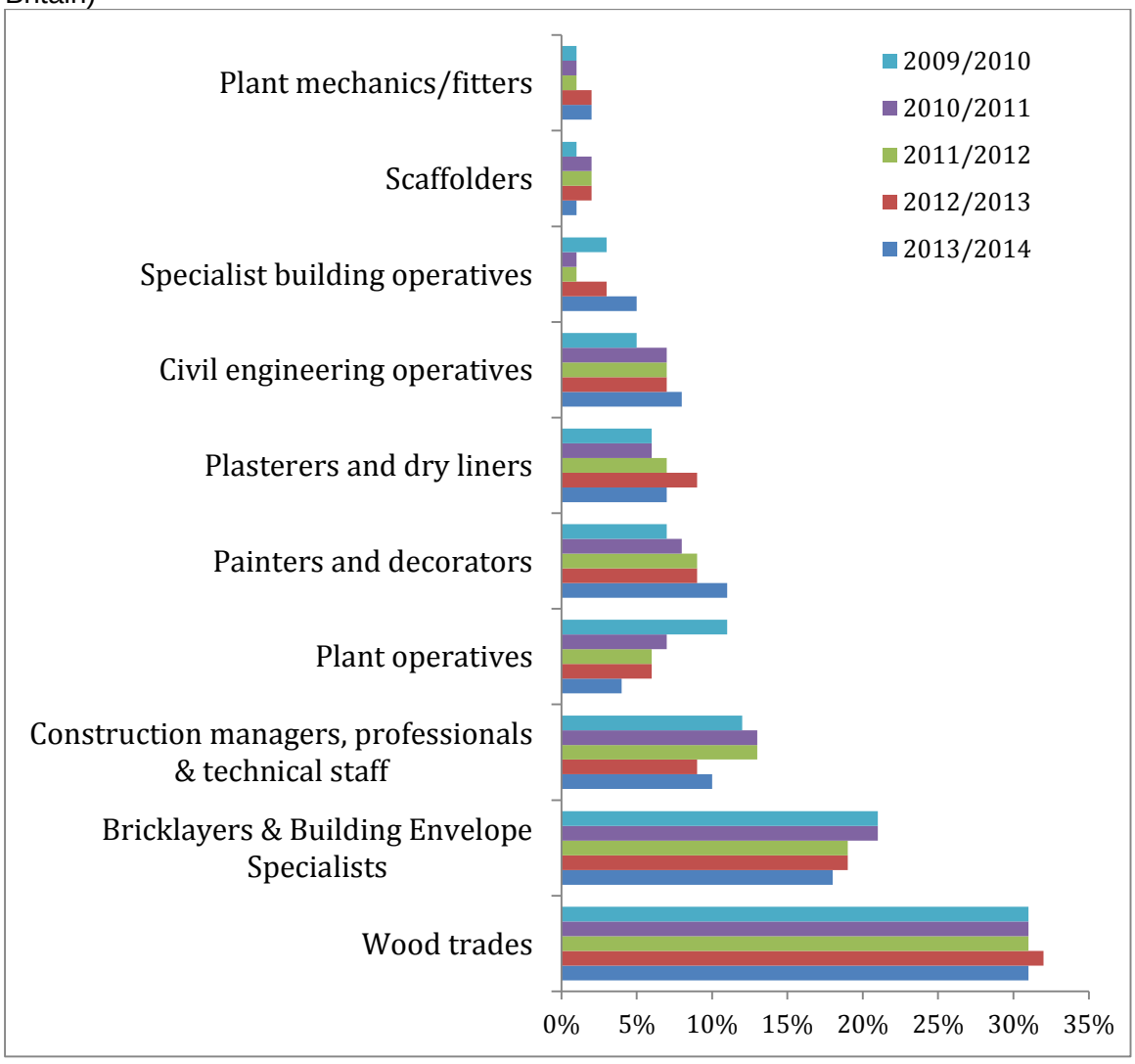
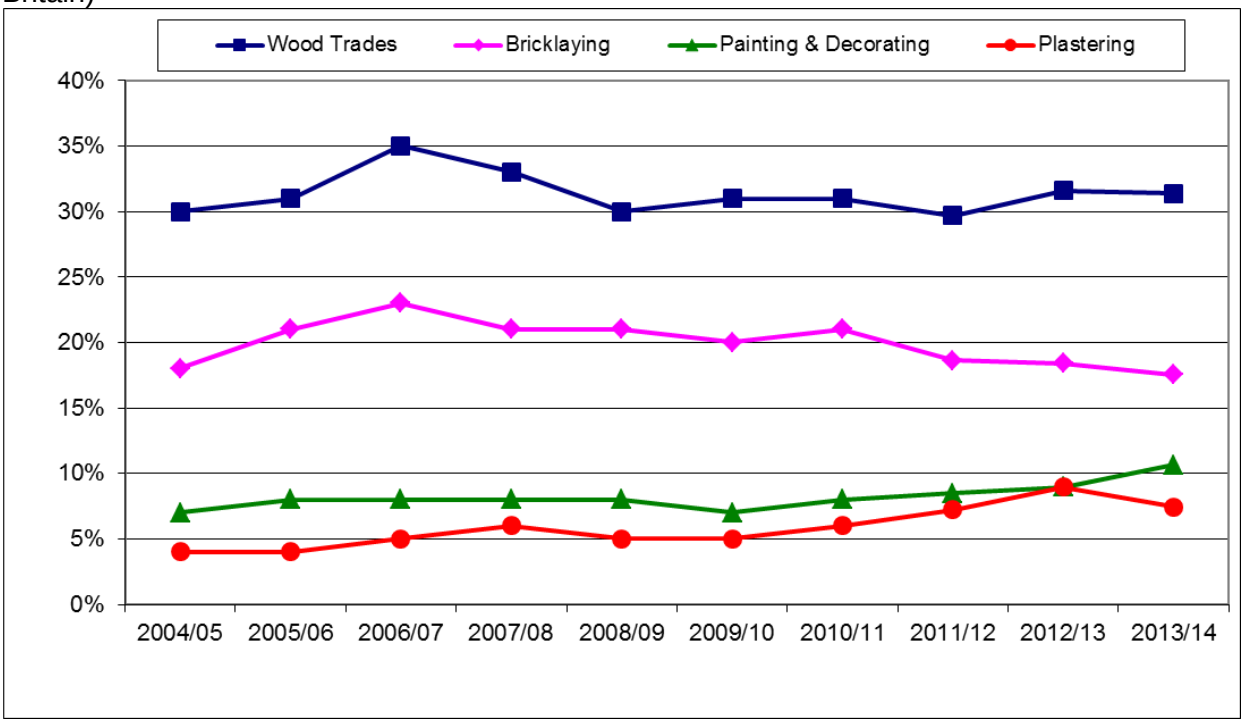


Chart 3 focuses on the four occupations which are defined as the main building craft occupations; wood trades, bricklaying, painting and decorating and plastering. The proportions of all four occupational groups have remained relatively stable over the last ten years (varying only by between 4 and 5 percent).

Painting and decorating is the occupational group with the most consistent proportions over the ten year period, in contrast to wood trades and bricklaying which have been comparatively more volatile.

Both wood and brick have returned to a share comparable to ten years ago whereas painting and plastering now have a higher share of training.

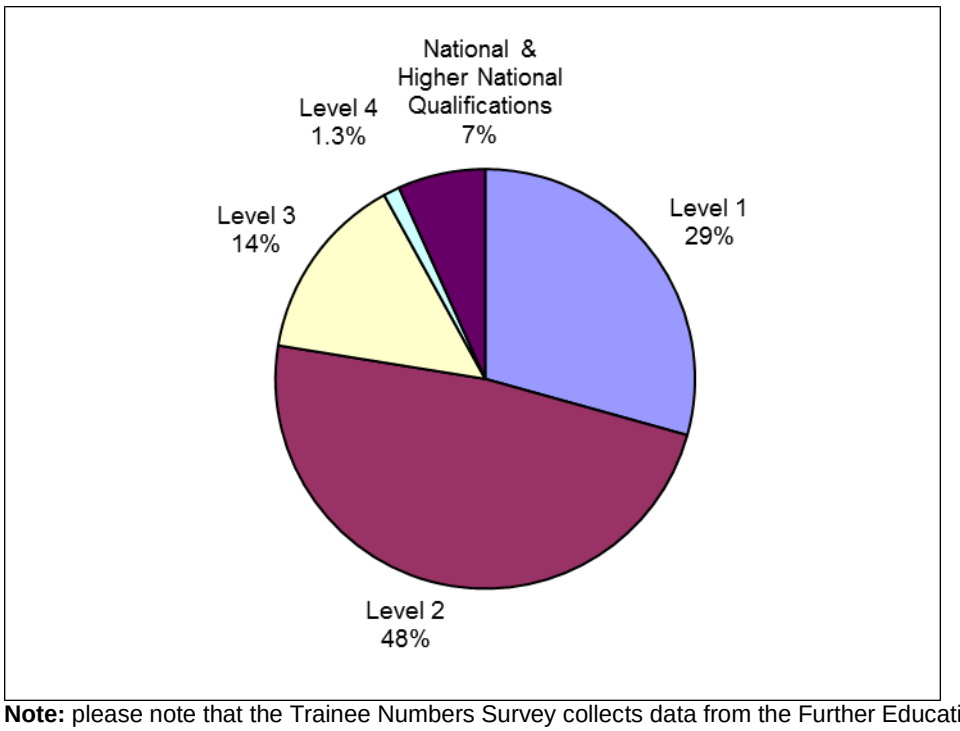
Chart 3 – Proportion of all trainees in the main Building Craft Occupations 2004-2014 (Great Britain)



1.3 Training by qualification

Analysis of trainee numbers by qualification level (Level 1[3], Level 2[4], Level 3[5], Level 4[6], National and Higher National Qualifications[7]) reveals that the majority of students are undertaking Level 2 qualifications (48%), and the smallest proportion are undertaking Level 4 courses (1.3%).

Chart 4 – Proportions of all trainees by qualification level 2013/14 (Great Britain)



Note: please note that the Trainee Numbers Survey collects data from the Further Education sector and higher level qualifications are also provided by Higher Education institutions. See Section 4 for more information.

This breakdown by qualification level has remained consistent over the past five years, with Levels 1, 2 and 3 having the largest share of training.

All qualification levels (with the exception of level 4) have experienced a decline in absolute numbers. Unsurprisingly given their share of the training, level 2 have experienced the largest decline (-1,485 trainees, or 14% less than last year).

[3] S/NVQ Level 1; Level 1 Certificate or Level 1 Diploma; equivalent VRQ courses
[4] S/NVQ Level 2; Level 2 Certificate or Level 2 Diploma; equivalent VRQ courses
[5] S/NVQ Level 3; Level 3 Certificate or Level 3 Diploma; equivalent VRQ courses
[6] S/NVQ Level 4; equivalent VRQ courses
[7] National Certificate/Diploma; Higher National Certificate/Diploma

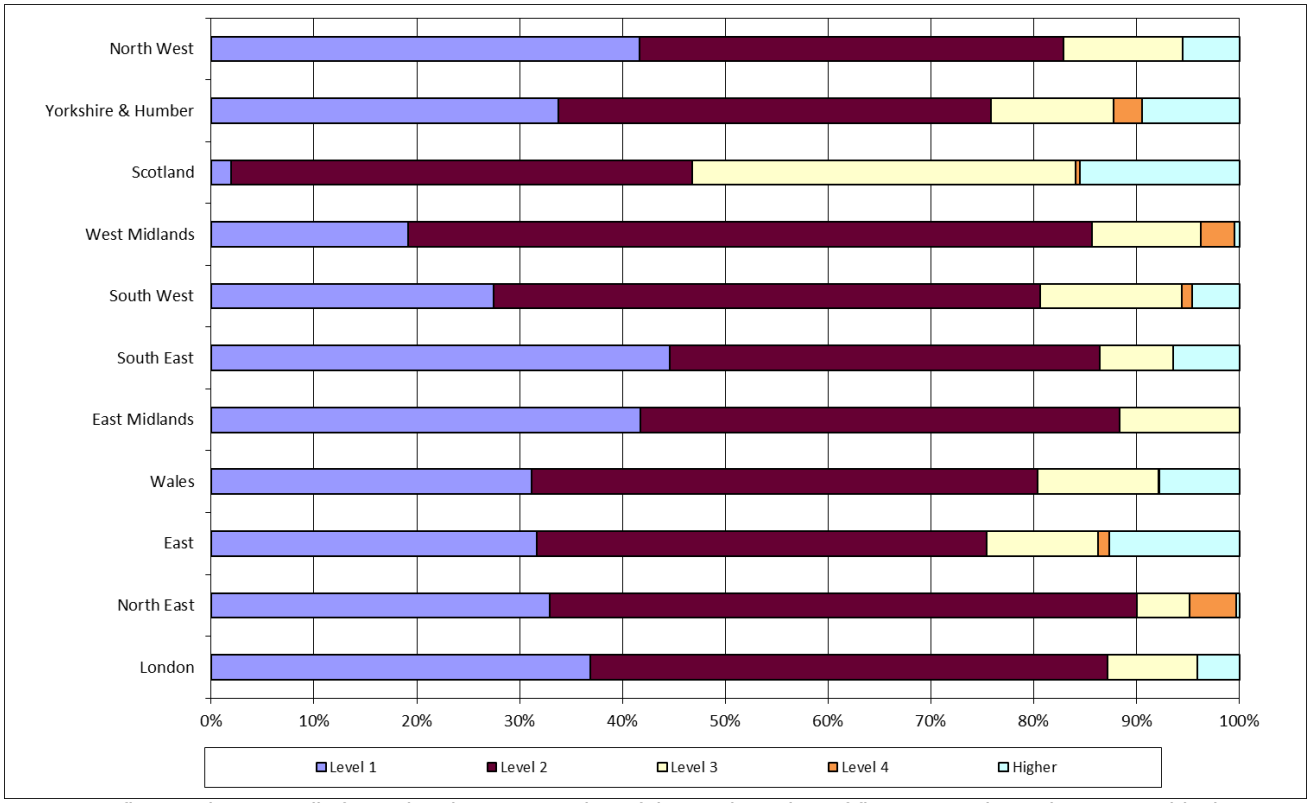
1.4 Geographical considerations

Data collected from training establishments across Great Britain is analysed below by region and devolved nation.

Chart 5 shows that there are some clear variations in the proportions of trainees at each qualification level across the regions and nations. Scotland differs from England and Wales by having the majority on level 2 and level 3 qualifications (85%) and the highest share of level 3 qualifications (37%). Whereas trainees in England and Wales are predominately undertaking level 1 and level 2 qualifications (average 83%).

The geographical profile of qualification levels has varied little over the years.

Chart 5 – Trainees by level of qualification and geographical area, 2013/14 (Great Britain)



Note: See figure 1 in Appendix for a visual representation of the total number of first-year trainees by geographical area.

In terms of proportions of overall trainees the regions with the highest share are Scotland, Yorkshire & Humber and North West (all 14%) In contrast London only has 3% of all trainees. This pattern has been has been consistent over recent years.

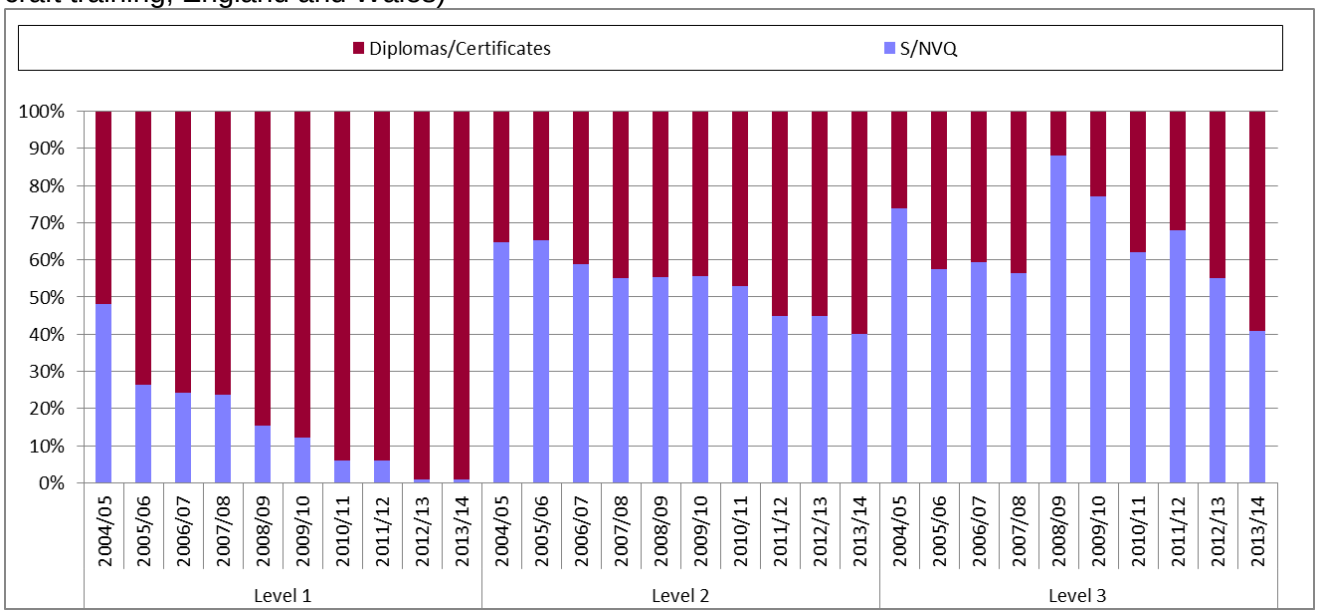
1.5 Qualification type

For construction craft occupations there are two types of qualification that can be undertaken; S/NVQ's and Diplomas/Certificates[8], both are available at Levels 1, 2 and 3. Diplomas/Certificates are qualifications for craft occupations that can be completed part-time or full-time, but they do not include any proof of work undertaken on site, as opposed to the S/NVQ framework, which requires on-site experience/assessment (an employer placement).

There are 15,112 trainees in England and Wales who are undertaking construction craft training; 26% are undertaking S/NVQ's whereas 74% are studying for a Diploma/Certificate. This proportion of students undertaking Diplomas/Certificates has been increasing annually since 2003/04.

Interestingly while the number starting training has fallen again this year the rate of decline in Diploma/Certificate training is considerably less (6%) than for those undertaking S/NVQs (26%). This may reflects the difficulty in obtaining work placements for students.

Chart 6 – Proportion of trainees split by work-based training 2004/05 to 2013/14 (construction craft training, England and Wales)



The proportion of both Level 1 and level 2 trainees undertaking Diplomas/Certificates has been increasing over the last decade, exceeding 70% of Level 1 trainees since 2005/06 - currently 99% of Level 1 trainees are on Diplomas/Certificates – and accounting for 60% of level 2 trainees this year. The trend for level 3 training courses appears to be more volatile, reaching its highest point of 59% in 2013/14.

NB. This survey is always undertaken at the beginning of the academic year, therefore numbers on Diplomas/Certificates may decrease as the year progresses and more trainees are placed with employers and move from a Diploma or Certificate into the relevant NVQ Level qualification.

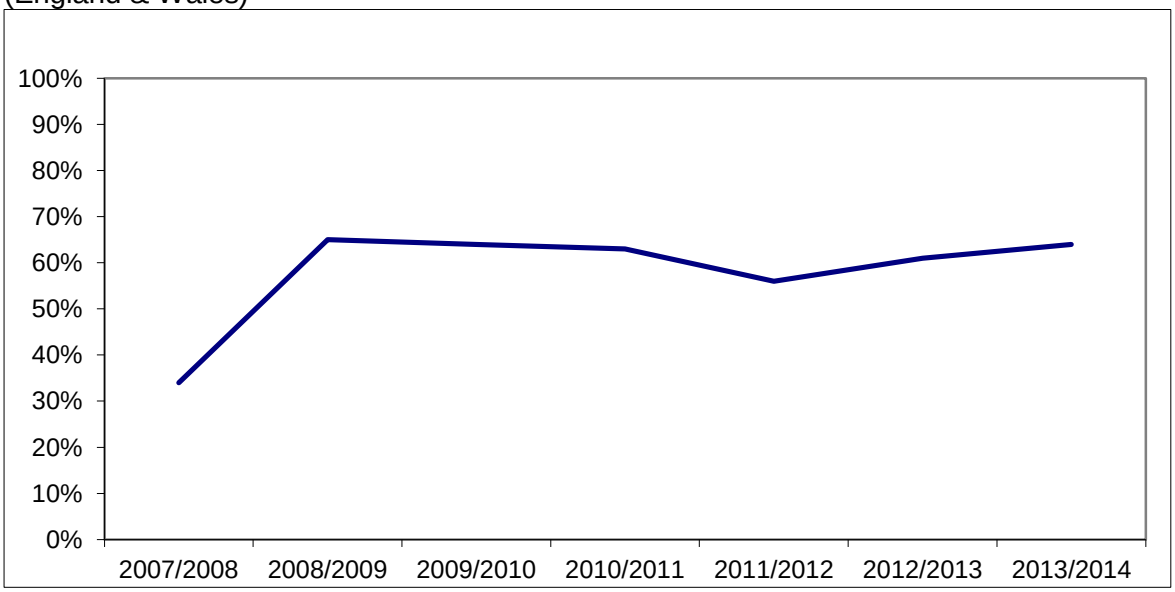
[8] All data for work based training excludes Scotland's trainee figures as Diplomas/Certificates are not available in Scotland.

1.6 Trainee Progression

In order to gain an insight into the progression of trainees the survey initially sought to examine how many students undertaking Level 1 qualifications (S/NVQ's and Diplomas/Certificates) were expected to progress to a Level 2 qualification. However over the last four years the data received on the number of trainees undertaking a Level 1 S/NVQ has decreased to a level that is not robust enough for meaningful analysis. Therefore the following analysis only concerns trainees who are on a level 1 Diploma/Certificate qualification.

Chart 7 shows that the percentage of trainees expected to progress to a Level 2 qualification in 2013/14 is consistent with the previous five years, at around 60%.

Chart 7 – Expected progression of trainees from Level 1 Diploma/Certificates 2007-2013 (England & Wales)



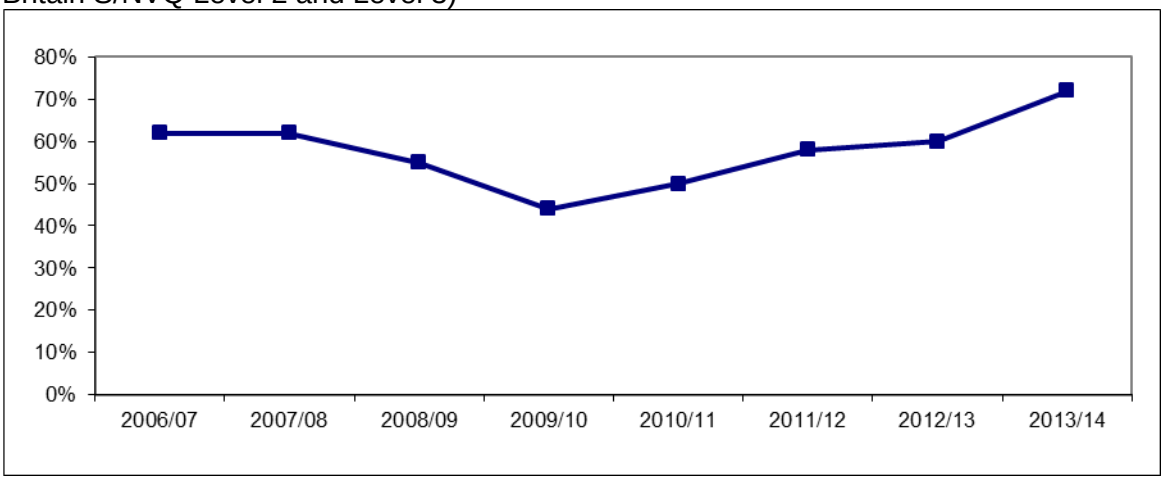
Note: Diplomas/Certificates are not available in Scotland

1.7 Apprentices

The share of trainees following an apprenticeship programme has increased this year, exceeding the pre-recession high of 62% to now stand at 72%.

Despite a fall in the overall number of trainees, and by extension the number of apprenticeships, the rate of decline has not been as steep for apprenticeships - trainees on level 2 and 3 qualifications feel be 13% compared to a 5% fall in apprentices.

Chart 8 – Proportion of trainees following an apprenticeship programme 2006-2013 (Great Britain S/NVQ Level 2 and Level 3)



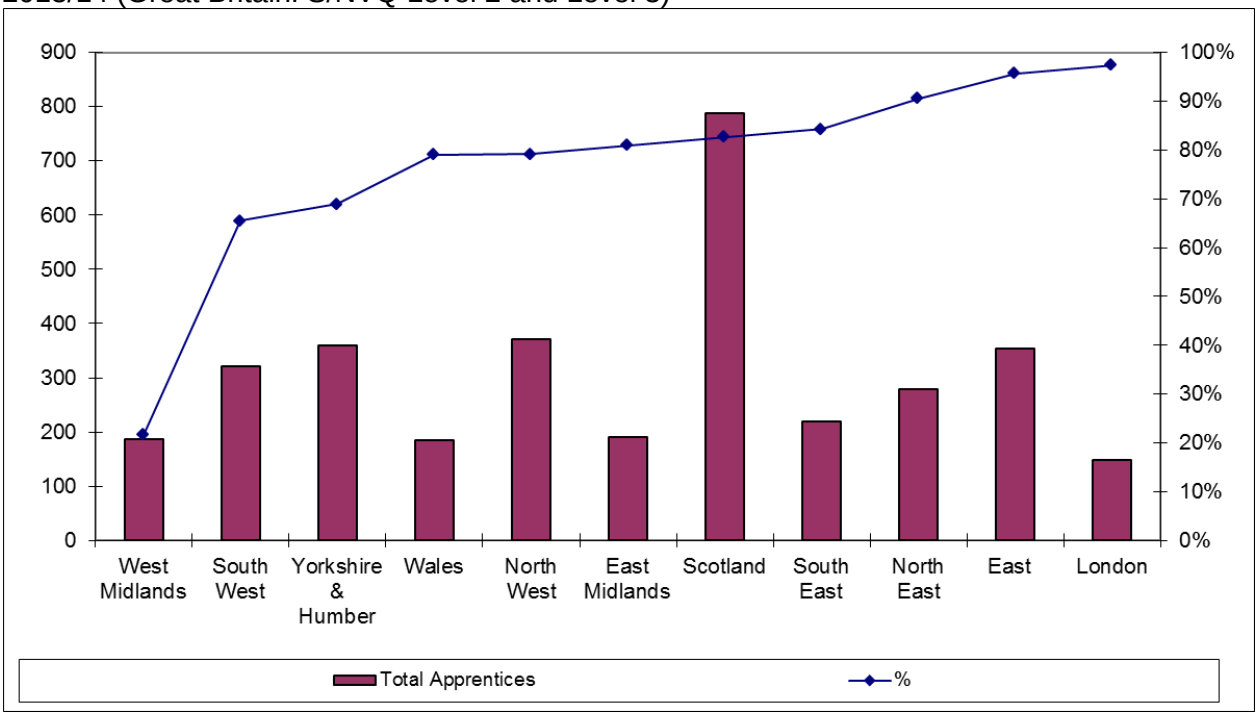
This year there are 2,361 Level 2 apprentices (69%) and 1,039 Level 3 apprentices (31%), these proportions have changed little in the past seven years.

There is wide variation in the numbers and proportions of apprentices across the English regions and devolved nations as shown in Chart 9. In terms of absolute numbers Scotland has by far the highest number of apprentices at 788 in 2013/14 and London has the lowest at just 148.

As a share of all apprentices, the top three regions/nations are; Scotland (23%), North West (11%) and Yorkshire & Humber (11%). This is the third year that Scotland has held the highest share of overall apprentices. At 61% Scotland also accounts for the highest proportion of Level 3 apprentices, as it has done since 2006/07.

For the last six years the West Midlands has had the lowest proportion of trainees undertaking apprenticeships. In 2013/14 just 22% of the regions trainees were following an apprenticeship.

Chart 9 – Number and proportion of trainees following an apprenticeship programme by area 2013/14 (Great Britain: S/NVQ Level 2 and Level 3)

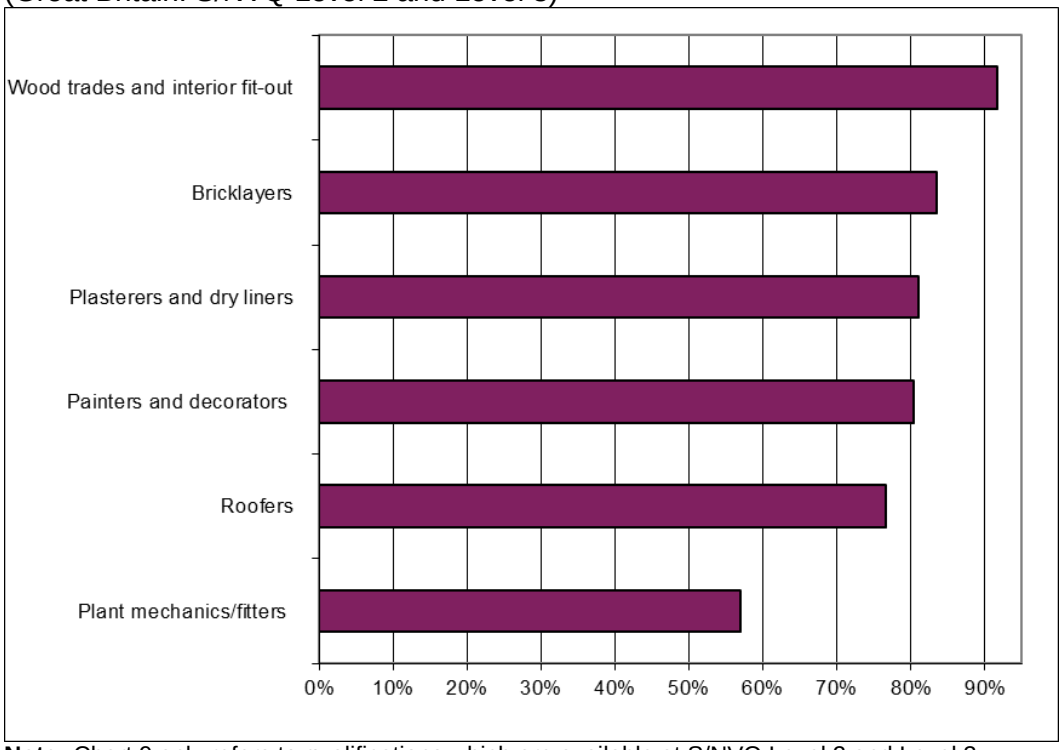


Note: Chart 8 only refers to qualifications which are available at S/NVQ Level 2 and Level 3.

Analysis of apprenticeship data by occupation, as shown in Chart 10 shows the highest proportions of apprentices are unsurprisingly in the occupations with the highest trainee numbers - wood trades (92%) and bricklaying (83%).

The four main building craft occupations have historically accounted for the majority of apprenticeships. This year 74% of all apprentices were training in these four occupations.

Chart 10 - Proportion of trainees following an apprenticeship programme by occupation 2013/14 (Great Britain: S/NVQ Level 2 and Level 3)



Note: Chart 9 only refers to qualifications which are available at S/NVQ Level 2 and Level 3.

1.8 First-year trainee characteristics

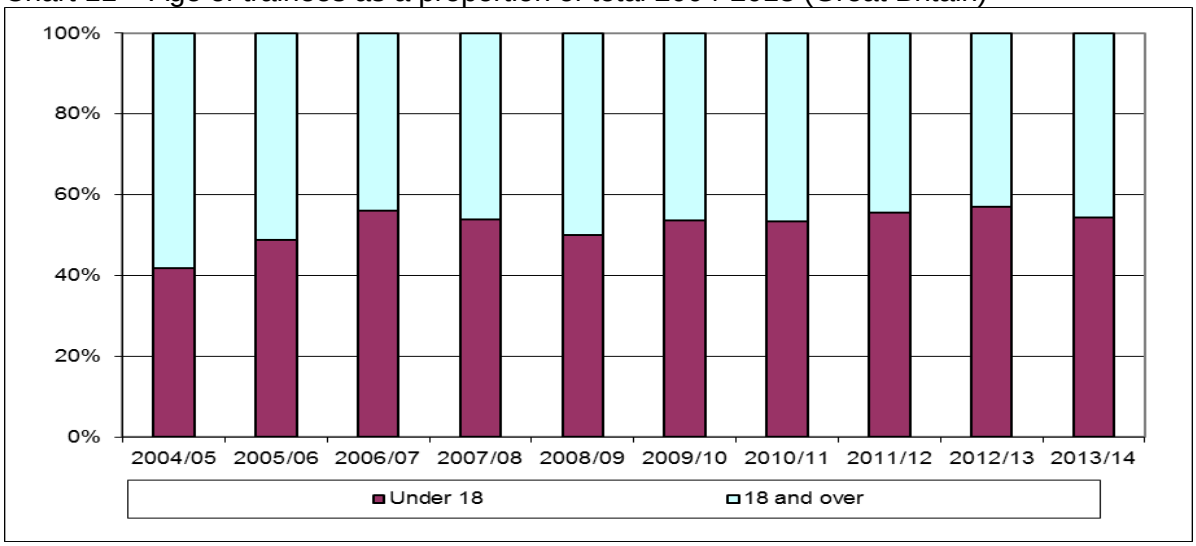
In order to get a picture of the characteristics of trainees the survey collects information on age, gender and ethnicity.

1.8.1 Age

The survey records trainee numbers in two groups; under 18 years and 18 years and over.

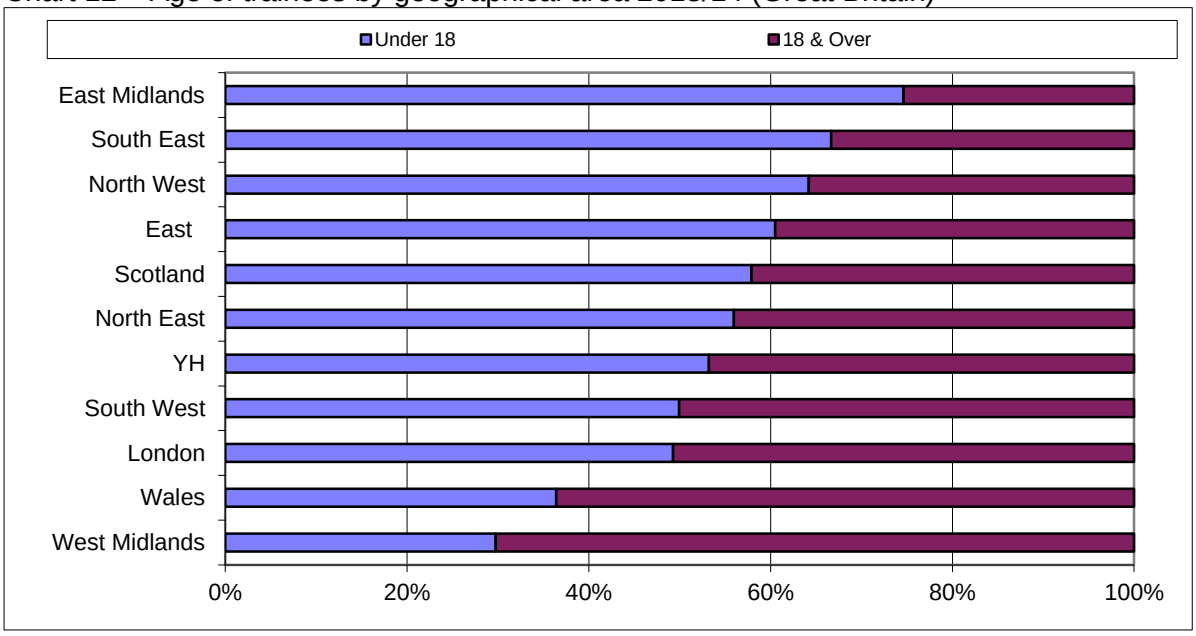
The proportion of trainees aged under 18 has changed little in the last ten years ranging from 42% (in 2004/05) to 54% (in 2013/14); averaging 52%. Since 2006/07 the proportion of trainees aged under 18 has remained above 50% making them the majority.

Chart 11 – Age of trainees as a proportion of total 2004-2013 (Great Britain)



Analysis of age group by geographical area reveals some variations between regions and nations compared to the findings for Great Britain. Interestingly the East Midlands has an above average share of trainees aged under 18 (75%) while the West Midlands has the opposite with 70% of adult trainees.

Chart 12 – Age of trainees by geographical area 2013/14 (Great Britain)



1.8.2 Gender

Table 3 shows a breakdown of the trainee numbers by age and gender. In 2013/14 4% of all trainees were female. This proportion has remained fairly static over the last 14 years, averaging 4% over this period.

Table 3 – Number of trainees broken down by gender and age 2013/14 (Great Britain)

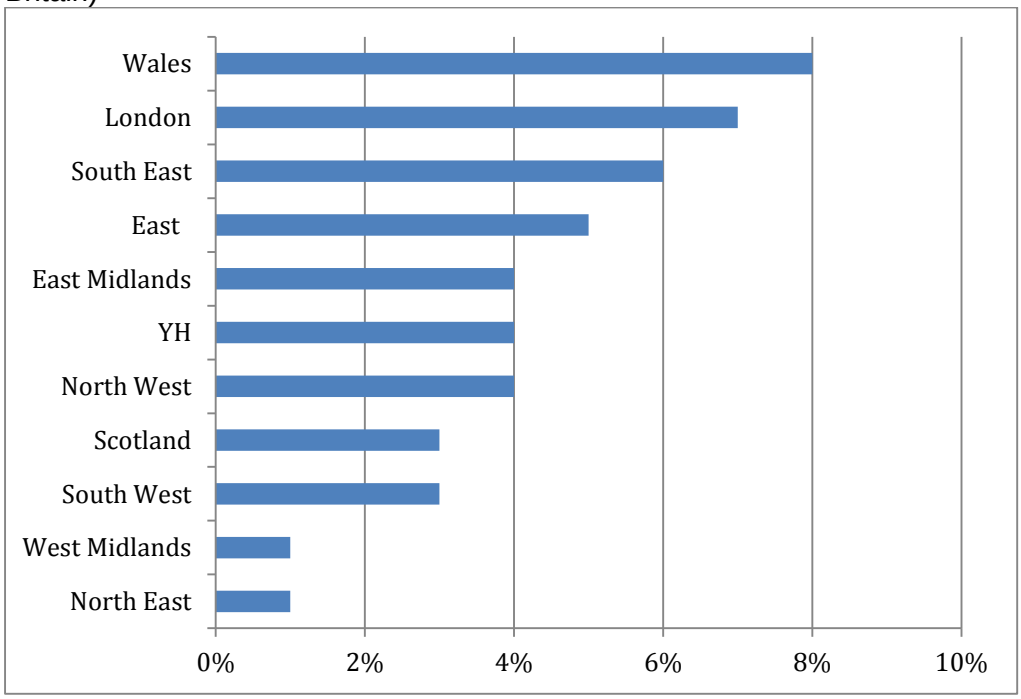
Under 18		18 & Over		Total	
Male	**Female**	**Male**	**Female**	**Male**	**Female**
9,845	350	8,235	367	18,080	717
52%	2%	44%	2%	96%	4%

This percentage is considerably lower than the current proportion of females in the construction workforce where they account for 13% of employment in Great Britain[9]. However the majority (95%) are employed in non-manual trades and just 1% of the manual construction workforce is female compared to 27% of the non-manual workforce.

Further analysis of the distribution of female trainees across the regions and nations reveals some big differences. The highest proportion of all female trainees is found in Wales (15%), closely followed by Yorkshire & Humber, Scotland and the North West all accounting for 13% each. The region with the lowest proportion of all female trainees is the North East at just 1%.

If we look at the proportions of females to males in each region/nation the majority are around the average of 4% females to 96% males, however in Wales 8% of trainees are female and in contrast just 1% of trainees in the North East are female.

Chart 13 – Females as a proportion of all training by geographical area 2013/2014 (Great Britain)



Analysis by occupation reveals that the majority of females are studying in the professional occupations; 22% of civil engineering and surveying trainees are female, followed by 17% of architects. In terms of the manual trades the majority (13%), of females are found to be studying painting and decorating, this occupational group also has the largest overall share of all female trainees at 38%.

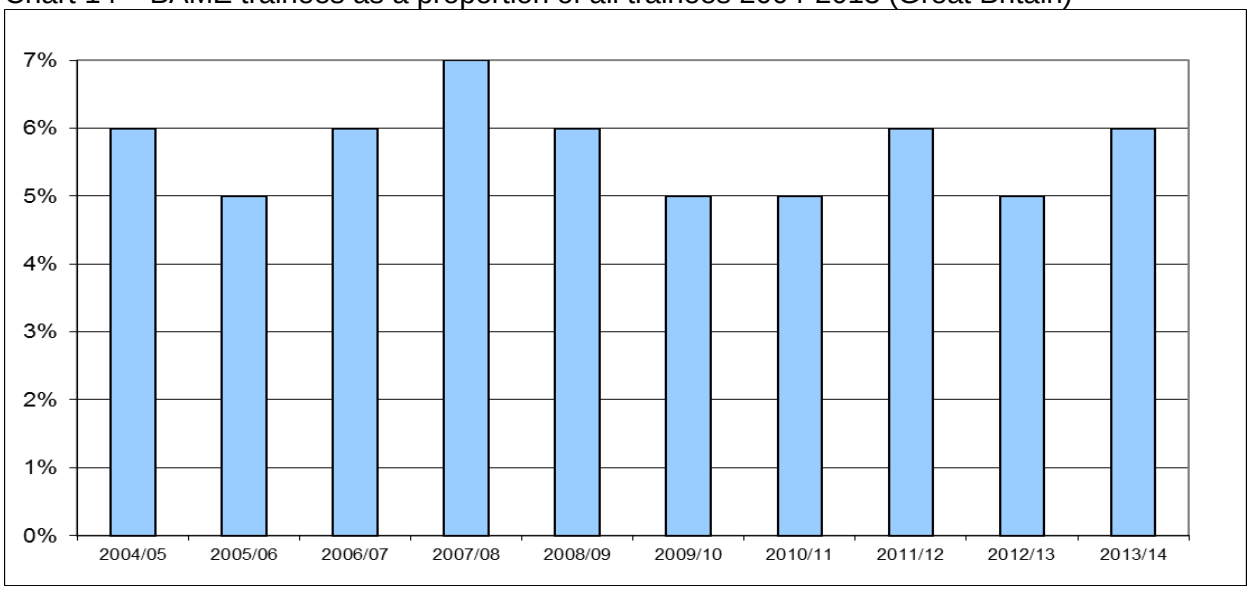
[9] Labour Force Survey, 4 quarter average to Spring 2013 (SIC45) UK

Latest data from the Labour Force Survey data (Spring 2013)[10] also shows that the highest proportions of females are found in professional occupations females make up 26% of architects and 17% of building and civil engineering technicians. In terms of the manual trades 3% of floorers and wall tillers are female and 2% of painter and decorators.

1.8.3 Ethnicity

In 2013/14 1,209 trainees are from a Black, Asian and minority ethnic (BAME) group, this equates to 6% of all trainees. Over the last ten years the average percentage of BAME is 5.8%.

Chart 14 – BAME trainees as a proportion of all trainees 2004-2013 (Great Britain)



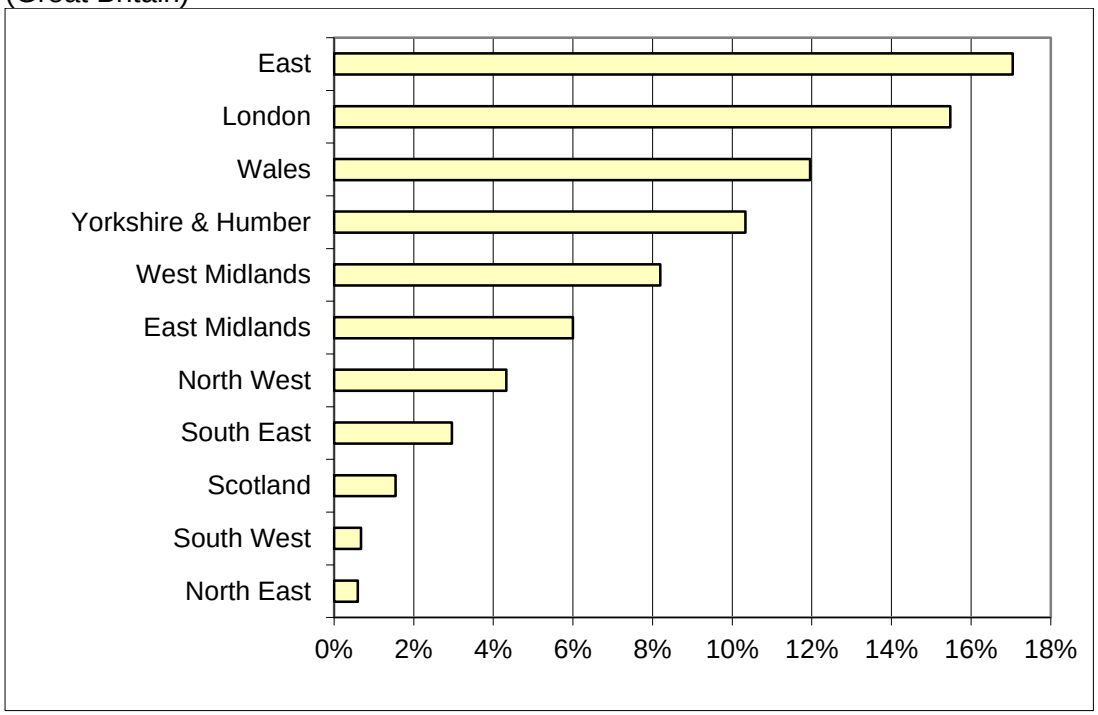
In the construction industry representation of individuals from BAME backgrounds has historically been very low; in 2013 it was recorded as 5.2%[11] a slight increase on the 5% recorded in 2012.

Looking at the proportions of BAME in each region and nation there are some big differences as shown in Chart 15. Proportions vary from just 1% of trainees in the North East and South West to 17% in the East of England.

The geographical area with the highest proportion of overall BAME trainees is the Yorkshire and Humber which accounts for 23% of all BAME trainees in contrast to the North East which accounts for less than 1% of all BAME trainees.

[10] Labour Force Survey, 4 quarter average Spring 2013 (SIC2007), UK
[11] Labour Force Survey, 4 quarter average Spring 2013, (SIC2007), UK

Chart 15 – BAME trainees as a proportion of all trainees by geographical area 2013/2014 (Great Britain)



Section 2: Forecasted Demand for Craft and Technical Construction Training 2014–2018

CITB, through the Construction Skills Network[2], publishes a forecast of the likely demand for skilled construction workers over the next five years. The forecast, which is made in partnership with Experian, uses data derived from foreseeable economic and industrial factors on employment. A subset of the current published forecasts is reproduced in the following two tables: Table 4 (by geographical area) and Table 5 (by construction trades).

Table 5 shows the requirement for skilled manual trades by area for Great Britain; the total annual recruitment requirement (ARR) for 2014-2018 is forecast to be 16,530 per year, higher than the figure from the 2013-2017 forecast of 15,440. The Midlands (both East and West) are forecast to have the lowest annual recruitment requirements with the greatest demand being in the North West.

Table 4 – Requirement for skilled manual trades by geographical area 2014-2018 (Great Britain)

	Total employment		Annual recruitment requirement**
	2014	2018	2014-2018
East	81,080	87,030	2,410
East Midlands	61,000	62,960	310
London	116,850	120,270	1,020
North East	34,640	36,260	1,230
North West	93,130	97,010	2,260
Scotland	70,310	73,560	2,320
South East	113,650	120,860	1,330
South West	89,590	93,500	1,570
Wales	43,480	46,700	1,490
West Midlands	58,920	57,710	120
Yorkshire & Humber	68,850	71,500	2,470
Total	**831,500**	**867,360**	**16,530**

Source: Construction Skills Network, 2014

Notes: Table 4 is a subset of the table that appears in Blueprint for UK Construction Skills 2014-2018 report. It covers only the skilled manual trades and excludes managers, clerical staff, technical staff and professional occupations.
**The Annual Recruitment Requirement (ARR) is a gross requirement that takes into account workforce flows into and out of construction, due to such factors such as movements between industries, migration, sickness, and retirement; it does not include the flow from training. The ARR provides an indication of the number of new employees that would need to be recruited into construction each year in order to realise forecast output.
ARR <50 excluded from analysis

See figure 2 in Appendix for a visual representation of the total number of first-year trainees by geographical area.

Table 5 shows the number of new entrants that the industry needs to recruit each year from 2014 – 2018 in order to meet the projected demand for each occupation.

The majority of occupations have seen an increase in their ARR with the largest increase forecast for painters and decorators (+1,560) conversely the largest decrease is predicted for plant operatives with an ARR 2,020 less than forecast last year. The overall increase in the projected ARR for the 2014 to 2018 period reflects the better prognosis for both output and employment across the construction industry.

Table 5 – Requirement for skilled manual trades in the construction trades 2014-2018 (Great Britain)

	Employment forecast		Annual Recruitment Requirement**
	2014	2018	2014-2018
Main trades			
Wood trades and interior fit-out	237,760	253,180	4,180
Bricklayers	58,430	58,900	1,570
Building envelope specialists	98,570	102,290	1,470
Painters and decorators	101,420	103,270	2,510
Plasterers and dry Liners	42,220	40,330	890
Main trades total	**538,400**	**557,970**	**10,620**
Specialist building trades			
Roofers	43,280	44,880	1,020
Floorers	27,130	27,540	450
Glaziers	28,720	29,100	720
Specialist building operatives nec*	49,990	50,810	570
Specialist building trades total	**149,120**	**152,330**	**2,760**
Civil engineers			
Scaffolders	22,920	25,170	560
Plant operatives	38,690	41,130	400
Plant mechanics/fitters	37,980	44,350	1,810
Steel erectors/structural	22,510	21,780	60
Civil engineering operatives nec*	21,880	24,630	320
Civil engineers total	**143,980**	**157,060**	**3,150**
Total	**831,500**	**867,360**	**16,530**

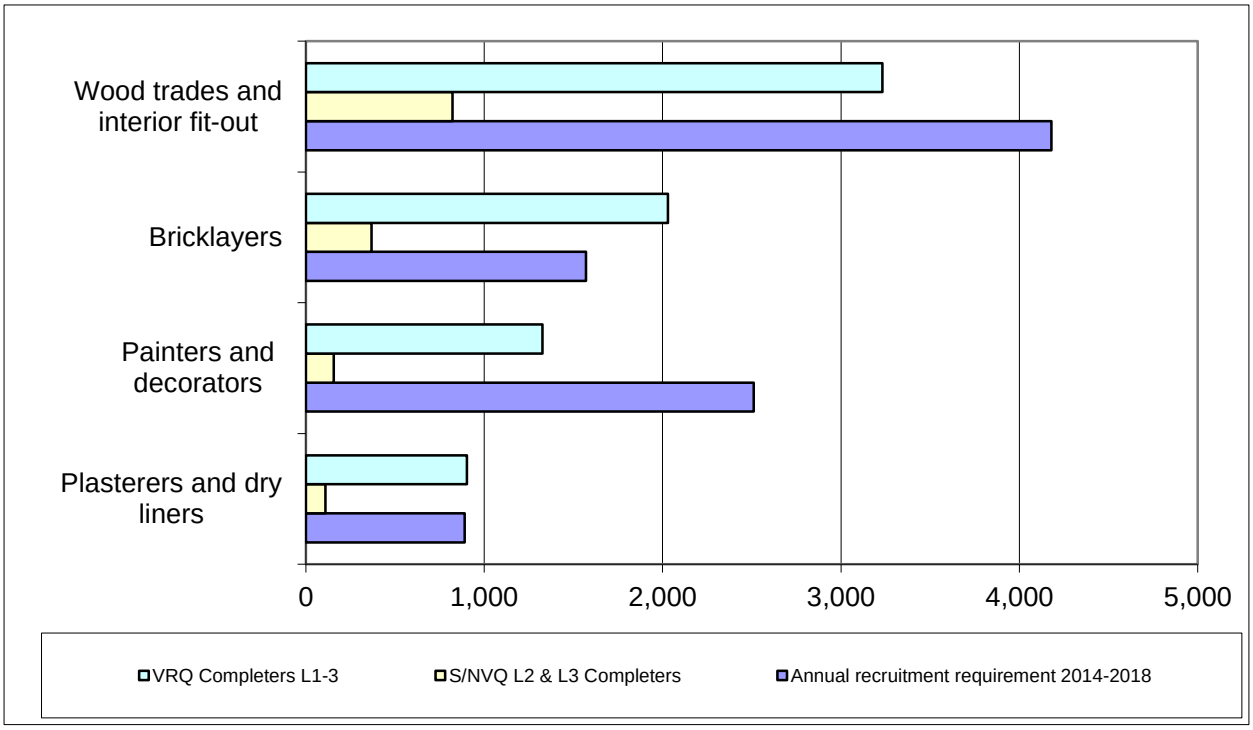
Source: Construction Skills Network, 2014

Note: Table 5 is a subset of the table that appears in Blueprint for UK Construction Skills 2014-2018 report. It covers only the skilled manual trades and excludes managers, clerical staff, technical staff and professional occupations.
* nec = not elsewhere classified.
**The Annual Recruitment Requirement (ARR) is a gross requirement that takes into account workforce flows into and out of construction, due to such factors such as movements between industries, migration, sickness, and retirement; it does not include the flow from training. The ARR provides an indication of the number of new employees that would need to be recruited into construction each year in order to realise forecast output
ARR <50 excluded from analysis

By analysing this projected demand, alongside the amount of training taking place in the industry, it is possible to assess the adequacy of current training provision in terms of quantity.

Charts 16 and 17 compare the ARR for skilled manual trades against the expected number of successful completers from the 2013/14 intake of trainees.

Chart 16 – Average recruitment requirement for main construction trades (2014-2018) and expected successful learner outcomes from the 2013/14 trainee intake. (Great Britain)



Source: Construction Skills Network 2014, CITB Trainee Numbers Survey 2013/2014; Data Service 2011/2012
Note: S/NVQ level 1 is not shown in the chart due to low numbers.

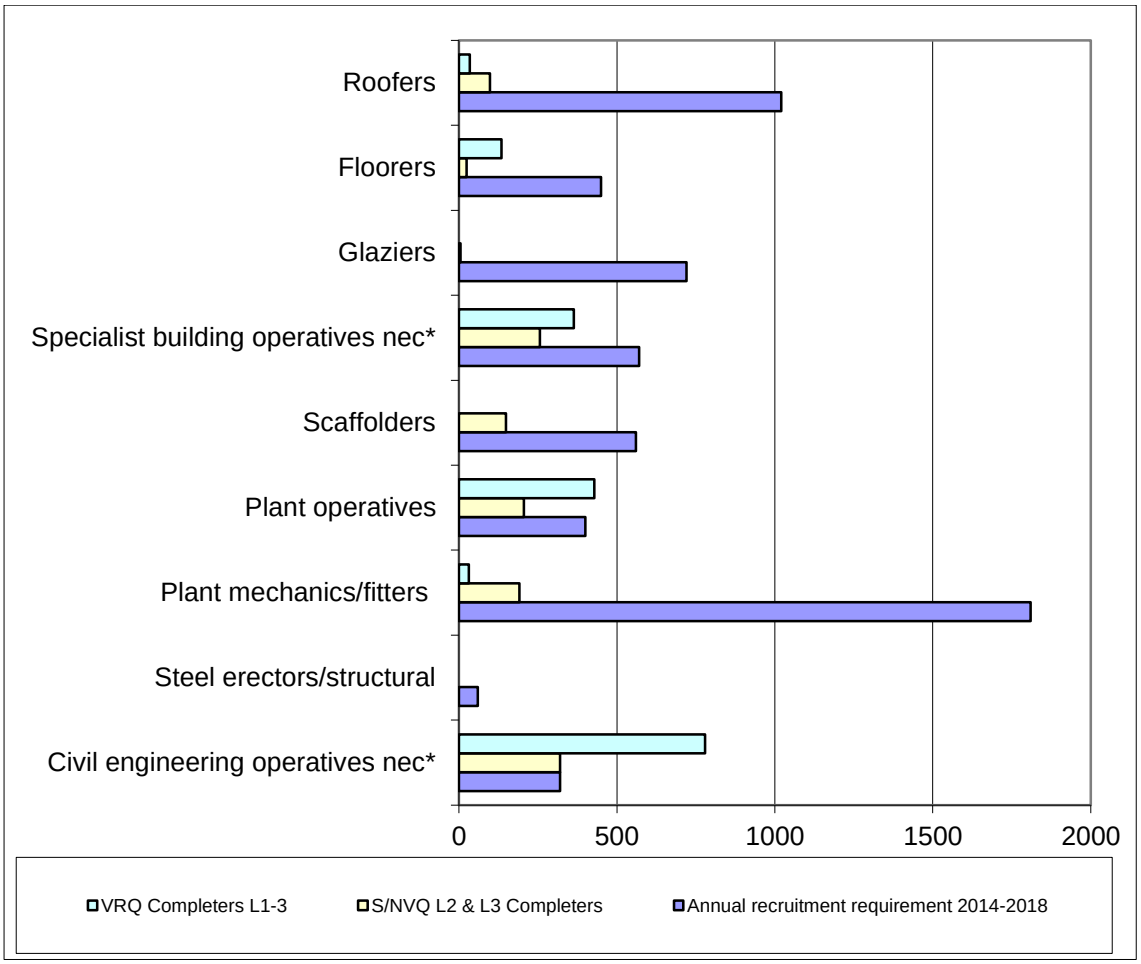
The bottom bar of the chart shows the average number of skilled workers that will be required to join the industry each year by occupation between 2014 and 2018. The remaining two bars show the expected number of completers across both S/NVQ and VRQ qualifications at Levels 1, 2 and 3. S/NVQ Level 2 and Level 3 completers are assumed to have been trained to a level where their skills are considered acceptable to work productively in the industry.

Chart 15 clearly shows that the numbers of trainees expected to complete Level 2 and Level 3 S/NVQ qualifications are insufficient to meet the predicted demand in all four occupational groups. Indeed the proportion of demand met by those completing these qualifications in the four occupations is less than a quarter.

It is apparent from this chart that Vocational Related Qualifications (VRQ's) account for the majority of supply. In fact it highlights that there exists an oversupply of potential trainees with VRQs in both Bricklaying and Plastering. However, it should be noted that whilst the industry does not consider individuals who have completed this type of training as sufficiently competent they do provide a route into training giving employers some flexibility for making up the short-fall in the near future.

A combination of both the VRQ and S/NVQ completers shows a slight under supply of Wood Trades (97%) but only just over half (59%) of the ARR being meet in painting and decorating.

Chart 17 – Average recruitment requirement for specialist construction trades and civil engineers (2014-2018) and expected successful learner outcomes from the 2013/14 trainee intake. (Great Britain)



Source: Construction Skills Network 2014, CITB Trainee Numbers Survey 2013/2014; Data Service 2011/2012
Note: S/NVQ level 1 is not shown in the chart due to low numbers.

With the exception of civil engineering operatives nec, the situation regarding training in the specialist construction trades and civil engineering occupations is similar to that of the main trades in respect of training numbers for Level 2 and Level 3 S/NVQ's not coming anywhere close to the predicted demand for these occupations. A combination of both VRQ and S/NVQ's highlights an oversupply in plant operatives and specialist building operatives. However the training levels are still not anywhere close to the predicted levels of demand for the remaining occupational groups.

Areas of particular concern may be glaziers and steel erectors/structural as the survey has recorded very small numbers coming through these occupations in recent years. Further investigation would be required to determine if this is representative and what the reasons for such low levels of trainees are.

Section 3: Construction Training Capacity 2013/2014

Prior to the recession the construction industry trained insufficient people to meet the demand for trained workers. The resultant shortfall was made up in various ways, for example by people working more hours, delaying retirement, or using skilled migrant workers. The current decline in construction employment has meant that the shortfall in construction training is less of an issue in the short-term. While training capacity is not at present a limit to training, it is still informative to look at the number of applicants to construction courses as a measure of interest in working in construction, and ultimately as a measure of the industry's ability to meet demand for skilled workers as economic circumstances improve.

This section summarises the findings of the capacity questions from the Trainee Numbers Survey. The results are based upon the responses of 137 training providers across Great Britain and applied to the overall results from the main survey. The data covers the skilled manual trades only.

3.1 Applicants by course

In 2013/14 there were approximately 18,500 applicants for approximately 15,000 places on skilled manual trade construction courses, as shown in Table 6. This is a slight decrease on last year's figures of just over 19,000 applicants and 16,000 starters; however the ratio of applicants per starter has remained the same at 1.2.

Table 6 – Applicants and starters to skilled manual trade courses 2013/2014 (Great Britain)

	Applicants	Starts	*Applicants per starter*
Wood trades and interior fit-out	6,947	5,561	*1.2*
Bricklayers	3,831	3,194	*1.2*
Painters and decorators	2,247	1,915	*1.2*
Plasterers and dry Liners	1,814	1,396	*1.3*
Main trades total	**14,839**	**12,066**	***1.2***
Roofers	245	225	*1.1*
Floorers	212	183	*1.2*
Glaziers	<50	<50	*1.0*
Specialist building operatives nec*	1,022	778	*1.3*
Specialist building trades total	**1,485**	**1,192**	***1.2***
Scaffolders	206	206	*1.0*
Plant operatives	698	698	*1.0*
Plant mechanics/fitters	430	426	*1.0*
Steel erectors/structural	0	0	-
Civil engineering operatives nec*	748	689	*1.1*
Civil engineering trades	**2,082**	**2,019**	***1.0***
	18,406	**15,277**	***1.2***

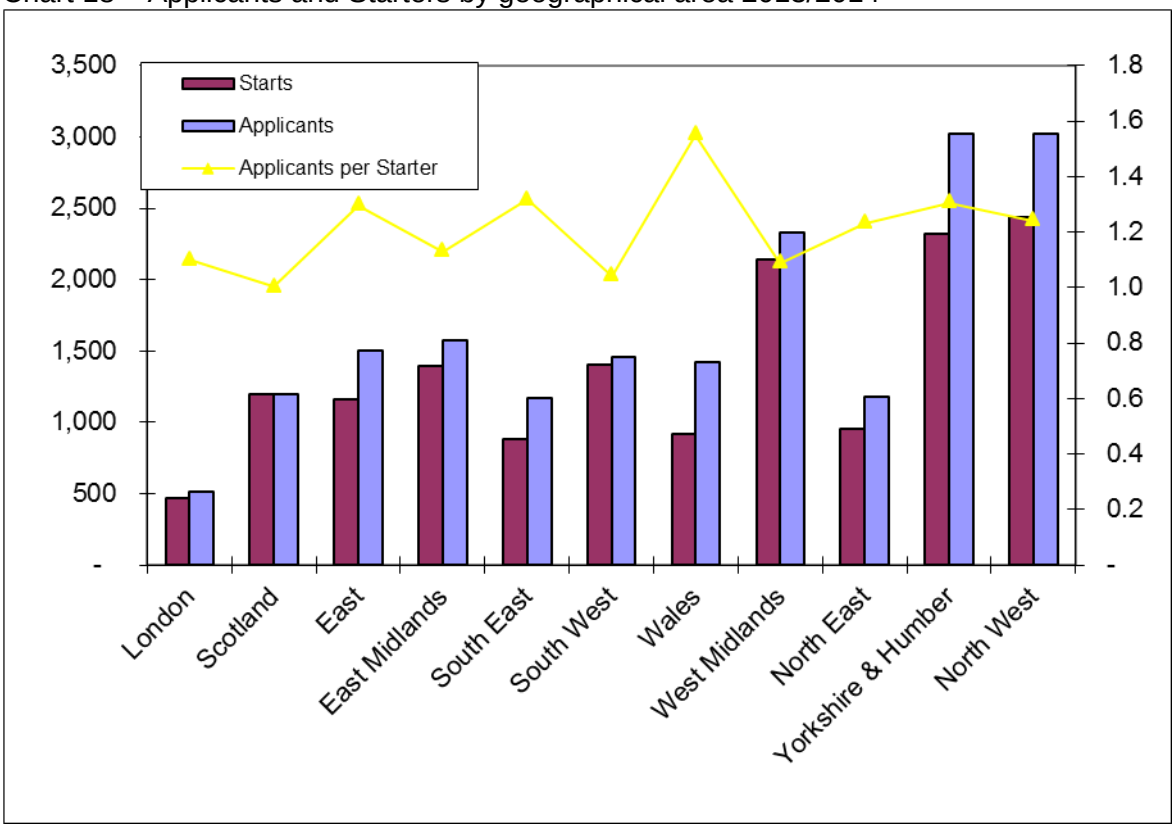
Table 6 also shows that the majority of specialist building and civil engineering trades have lower ratios of applicants per starter than the manual trades, which would mean that the majority of applicants for these trades started a course. This has been a consistent trend since 2009/10.

3.2 Applicants by geographical area

Analysis of skilled manual trades training capacity data by geographical area highlights wide variations in the numbers of starters, applicants and applicants per starter ration, as shown in Chart 18.

Yorkshire and Humber and the North West have both the highest number of applicants and highest number of starters and London has the least. In terms of the ratio of applicants to starters Wales has the highest ratio at 1.6 meaning that applicants in these regions have the most competition.

Chart 18 – Applicants and Starters by geographical area 2013/2014



Note: *See figure 3 in Appendix for a visual representation of the total number of first-year trainees by geographical area.*

Section 4: Higher Education in the Built Environment

Student enrolments on built environment courses

The Higher Education Statistics Agency (HESA) is the official agency for the collection, analysis and dissemination of quantitative information about higher education.[12]

This section contains data from HESA on student enrolments on construction and the built environment courses in higher education. By combining the HESA data in this section with the data from Section 1 on the number of trainees starting construction related vocational training courses the report provides a complete picture of training in the built environment.

However, it should be noted that the HESA data reproduced here is for the academic year 2012/2013 while Trainee Numbers Survey figures refer to 2013/2014; hence direct comparison is not advisable. Additionally HESA data covers the UK whereas the Trainee Numbers Survey is a measure of Further Education training across Great Britain.

Table 7 shows the number of starters on construction and the built environment courses at higher education institutions split by qualification level and subject area. 2012/2013 witnessed a further decline in the number of students enrolling on built environment courses just under 20,000, significantly lower than the 28,000 students recorded in 2009/2010.

The majority of enrolments are on first degree courses (55%), followed by 28% starting post graduate degree courses, 14% commencing other undergraduate courses and the remaining 3% starting foundation degrees. These proportions have remained broadly the same since 2009/2010.

Table 7 – Student enrolments on built environment courses by subject and qualification aim 2012/2013 (United Kingdom)

	Other Undergraduate	Foundation Degree	First Degree	Postgraduate Degree	Total
Civil engineering	1273	159	3311	1172	5,915
Architecture	340	123	3454	2139	6,057
Building	832	43	3020	953	4,847
Landscape design	64	316	182	141	703
Planning (urban, rural & regional)	133	23	829	1036	2,021
Others in architecture, building & planning	59	40	182	170	451
Totals	**2,701**	**704**	**10,978**	**5,610**	**19,993**

Source: HESA 2012/2013

The most popular courses overall were Civil Engineering and Architecture each accounting for 30% of all students. This represents a slight change on previous years when Building courses were the most popular.

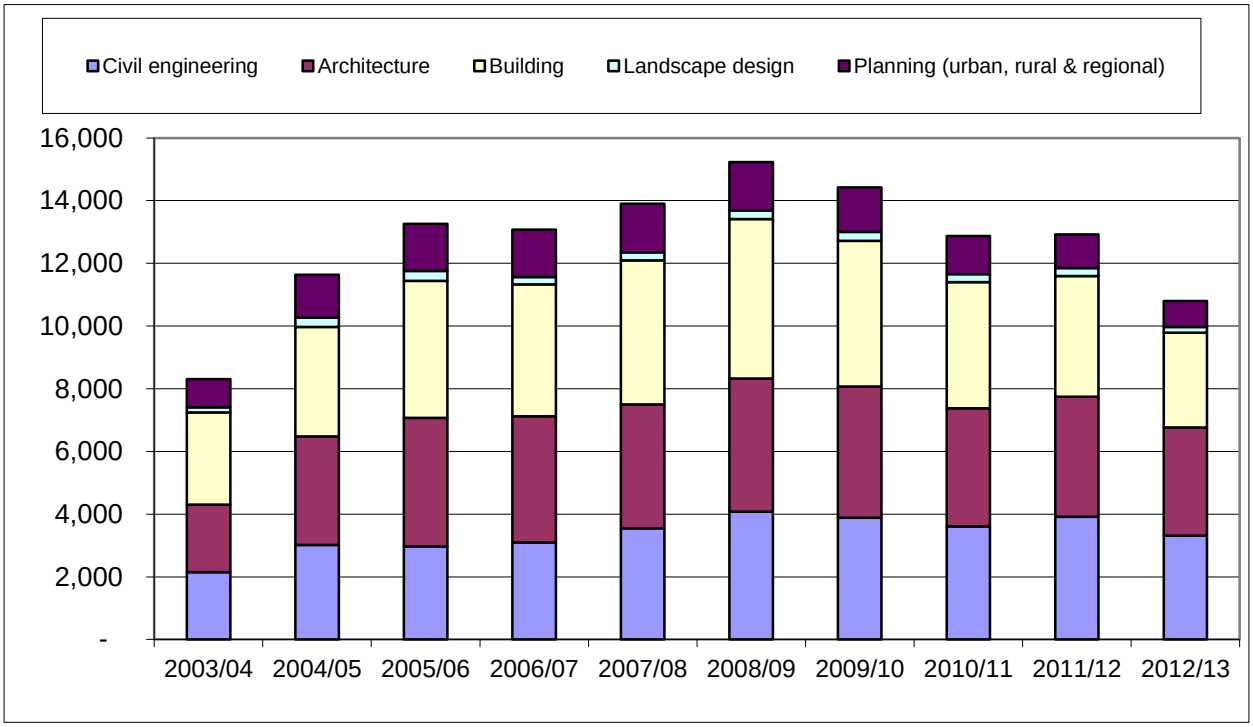
[12] For more information see www.hesa.ac.uk

4.1 First Degree

As First Degrees represent the largest share of higher education starters (in the HESA data) they are examined in more detail here.

Chart 19 shows the ten year trend of students starting construction and the built environment first degrees. Numbers of first year degree students increased year on year from 2003/2004 to a peak of just over 15,000 in 2008/2009. Between 2009/2010 and 2010/2011 there was a 10% decrease in numbers of first degree students, whilst 2011/2012 witnessed a slight increase in numbers to just under 13,000 the latest data however shows a significant decrease of 16% to approximately 10,800.

Chart 19 – Student enrolments on first degrees in built environment by subject 2003 - 2012 (United Kingdom)



Source: HESA 2012/2013

It is interesting to note that an increase in university tuition fees in England in 2006 had little effect on built environment first degree student numbers which increased over the next two years, reflecting a pattern seen with all degree courses not just those in construction[13].

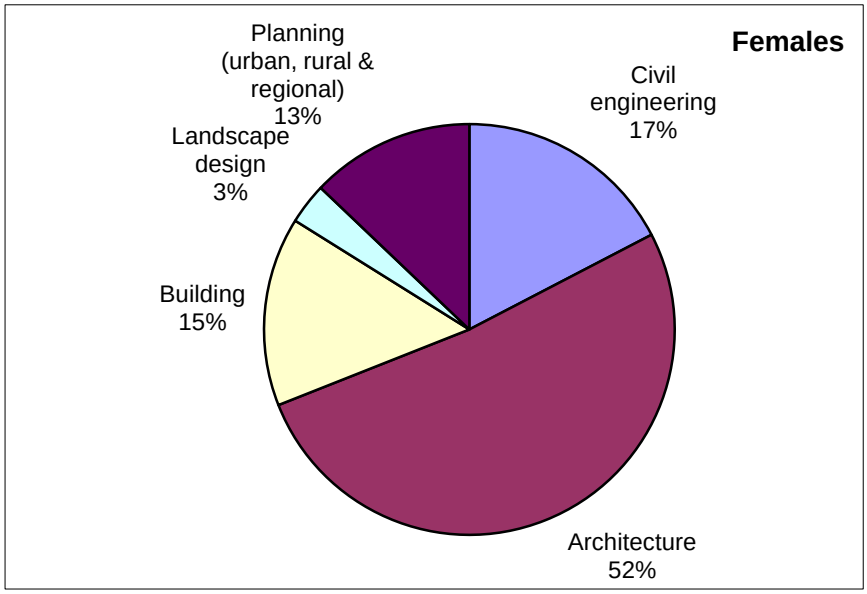
Further increases in university fees in England were implemented in September 2012 and these changes were reported to have impacted on applications between June 2011 and June 2012. In 2012 the University College Application Service (UCAS)[14] reported that student numbers had decreased by 10% in England, 2.1% in Scotland, and 2.9% in Wales. This decline could explain the reduction of built environment students on first degree courses seen in 2012/2013, which is shown in Chart 18, although undoubtedly the recession and the prospects for the construction industry during the past few years must have also had an bearing.

The gender split for first degree students has remained at around one quarter female and three quarters male since 2004/2005. Charts 19 and 20 show the proportions of males and females across each of the degree subjects. Over the last nine years architecture has consistently been the most popular course with female students, currently accounting for approximately half

[13] http://www.guardian.co.uk/education/2011/oct/24/university-applicants-drop-tuition-fees
[14] http://www.bbc.co.uk/news/education-19182000

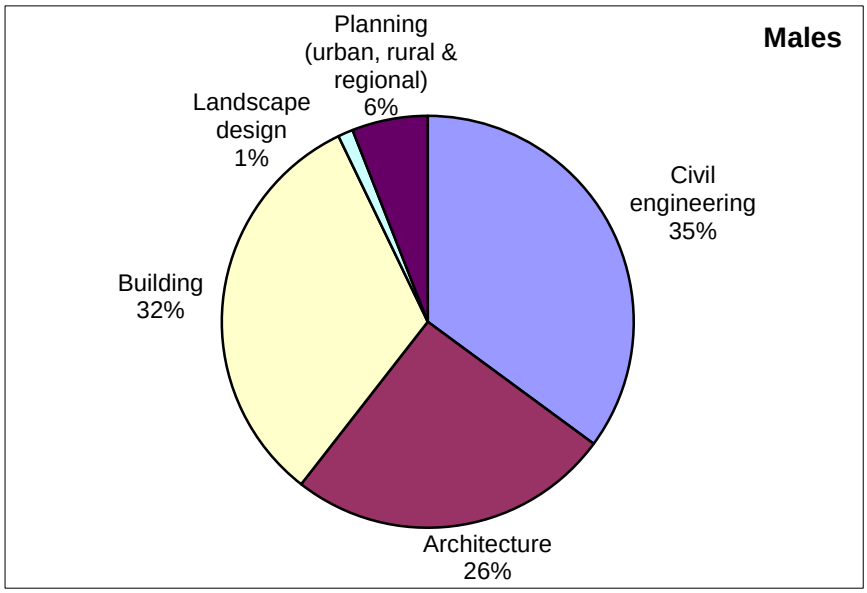
£52%) female students. The proportions of students (both male and female) across the subjects have changed very little since 2004/2005.

Chart 20 – Females enrolling on built environment courses by subject 2012/2013 (United Kingdom)



Source: HESA 2012/2013

Chart 21 – Males enrolling on built environment courses by subject 2012/2013 (United Kingdom)



Source: HESA 2012/2013

HESA also collect data on ethnic origin. Over the last nine years there has been a gradual increase in numbers of ethnic minority students enrolling in built environment first degrees, from 15% in 2005/2006 to 26% in 2012/2013.

The representation of both females and students from ethnic minorities is higher at degree level than it is at craft and technical training (see Section 1). The Trainee Numbers Survey reports that 4% of craft and technical trainees are female and 6% are from an ethnic minority, compared to 25% and 26% respectively at degree level.

Conclusion

Training and education in construction and the built environment has declined across both the Further Education (FE) sector and within Higher Education (HE) using the latest data available.

Undoubtedly the recession has contributed towards this decrease, but other factors may have also played a part; particularly in HE where the introduction of tuition fees has affected the number of applications.

This, it could be argued, has conversely had a positive impact on apprenticeships. Despite a fall in absolute numbers, the rate of decline in apprenticeships has been less steep than for overall training. In fact the proportion of trainees following an apprenticeship programme has increased to their highest share ever recorded in the survey.

Evidence suggests that increasing numbers are opting to learn on the job rather than incur the debt of a university course.[15]. In 2013 the National Apprenticeship Service quoted a 32% increase in demand compared to 2012 data, with a record number of applications being made for each apprenticeship vacancy in the UK[16].

Furthermore, two recent CITB surveys[17] have highlighted employer's commitment to apprenticeships. More than half (55%) of employers that currently have Apprentices, surveyed as part of the Skills & Training survey, considering it likely that they will take on new Apprentices in the next 12 months. While more than a quarter (27%) reported that the number of apprentices had increased during the previous 12 months, compared to only 13% reporting that the number had decreased.

The Employer Panel found that approximately a quarter (26%) of employers had taken on an apprentice in the previous 12 months, a further increase on the previous three waves (2013:20%; 2020:16%; 2011:14%). A similar proportion (25%) of firms were likely to take on apprentices in the next 12 months (5% said this was definite). The proportion is relatively consistent with wave 13 in 2013 (27%), but higher than in 2011 and 2012 (15% and 18% respectively). Additionally approximately half of Construction firms (49%) believe there are more people wanting to become apprentices than there are positions available across the industry.

A particularly important concern relating to the supply of potential new recruits is the unrelenting dominance of Certificates/Diplomas (VRQ qualifications) within FE, which have continued to rise at the expense of S/NVQ qualifications. These are knowledge-based qualifications which do not require proof of work experience; an intrinsic component of S/NVQ qualifications and are therefore not considered to provide the appropriate competency level favoured by the industry. Unfortunately the outcome of a large number of recruits entering the industry with only a VRQ qualification is a potential skills deficiency.

Essentially this skills deficiency could be two-fold – a skills shortage within the external labour market (the available pool of labour does not have the requisite skills and experience) and a skills gap within the internal workforce (they are recruited but not deemed as fully proficient) whereby the employer has to provide training and development to make up the shortfall).

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[15] Independent "The age of apprenticeships: Increasing numbers of high-flying students are shunning going to university " 15th August 2013
http://www.independent.co.uk/student/news/the-age-of-apprenticeships-increasing-numbers-of-highflying-students-are-shunning-going-to-university-8762342.html

[16] BBC "Apprenticeships attract 11 applications per vacancy" 31 May 2013 http://www.bbc.co.uk/news/education-22721432

[17] CITB Skills & Training in the Construction Industry 2014; CITB Employer Panel, Wave 14, December 2014

Ultimately as the construction industry continues to recover from recession and output returns to growth the industry will need to replace workers lost during the downturn. The overall fall of numbers entering training and education may therefore lead to a considerable gap between supply and demand. There is certainly already speculation of this in the press with numerous surveys[18] reporting difficulty in finding staff. Add to this the increasing popularity of VRQ qualifications and the potential impact on employers and thus the construction industry is not only a shortage of available workers but a potential skills crisis.

While the Trainee Numbers Survey does not provide a complete census of construction training within the further education sector, it is a valuable indicator of the wider situation.

[18] For instance, RICS Construction Market Survey

Appendix

Figure 1 – First-year trainees by geographical area 2013/2014 (Great Britain)

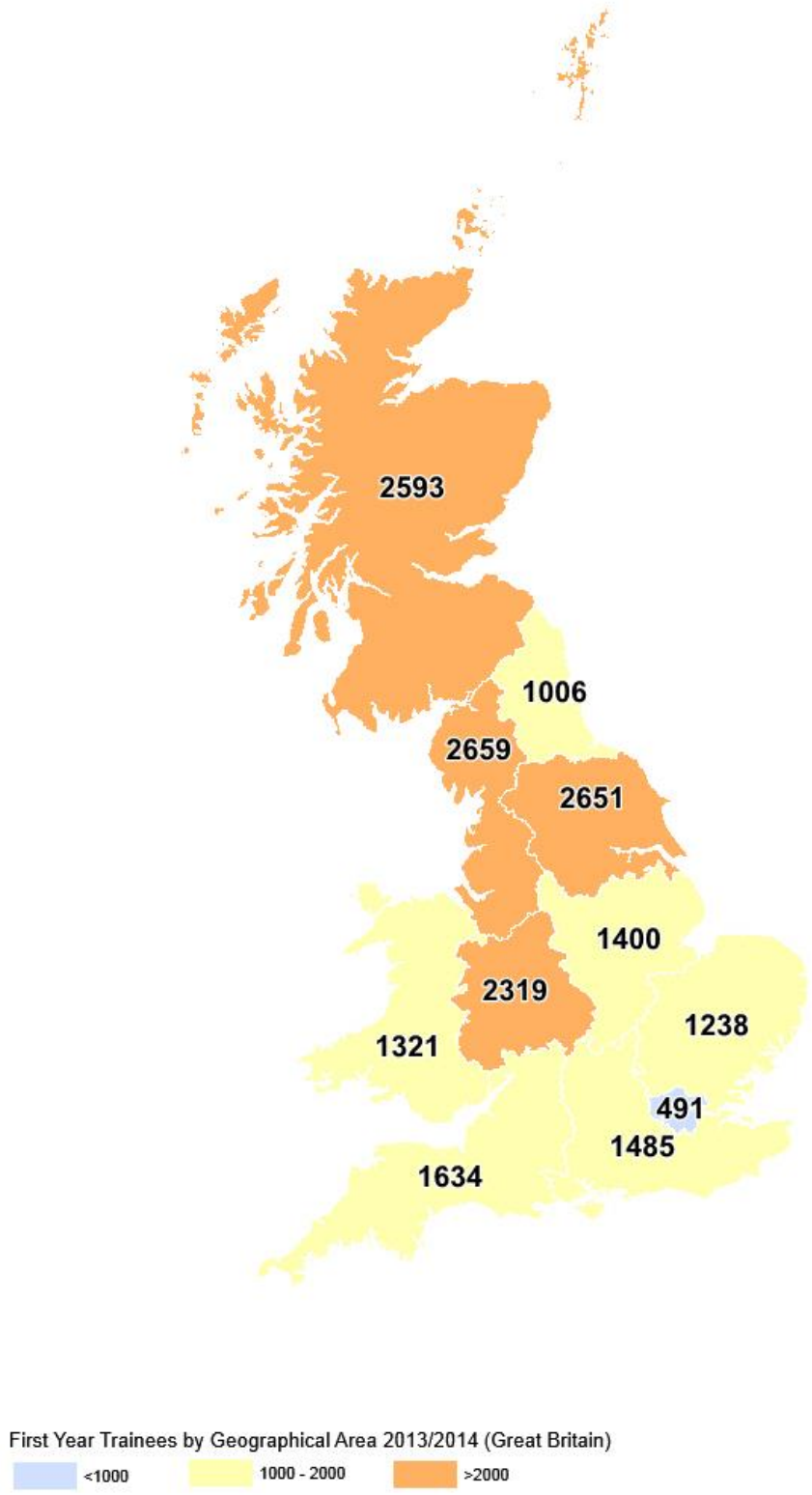

Figure 2 – Forecasted annual average requirement for skilled manual trade workers by geographical area 2014-2018 (Great Britain)

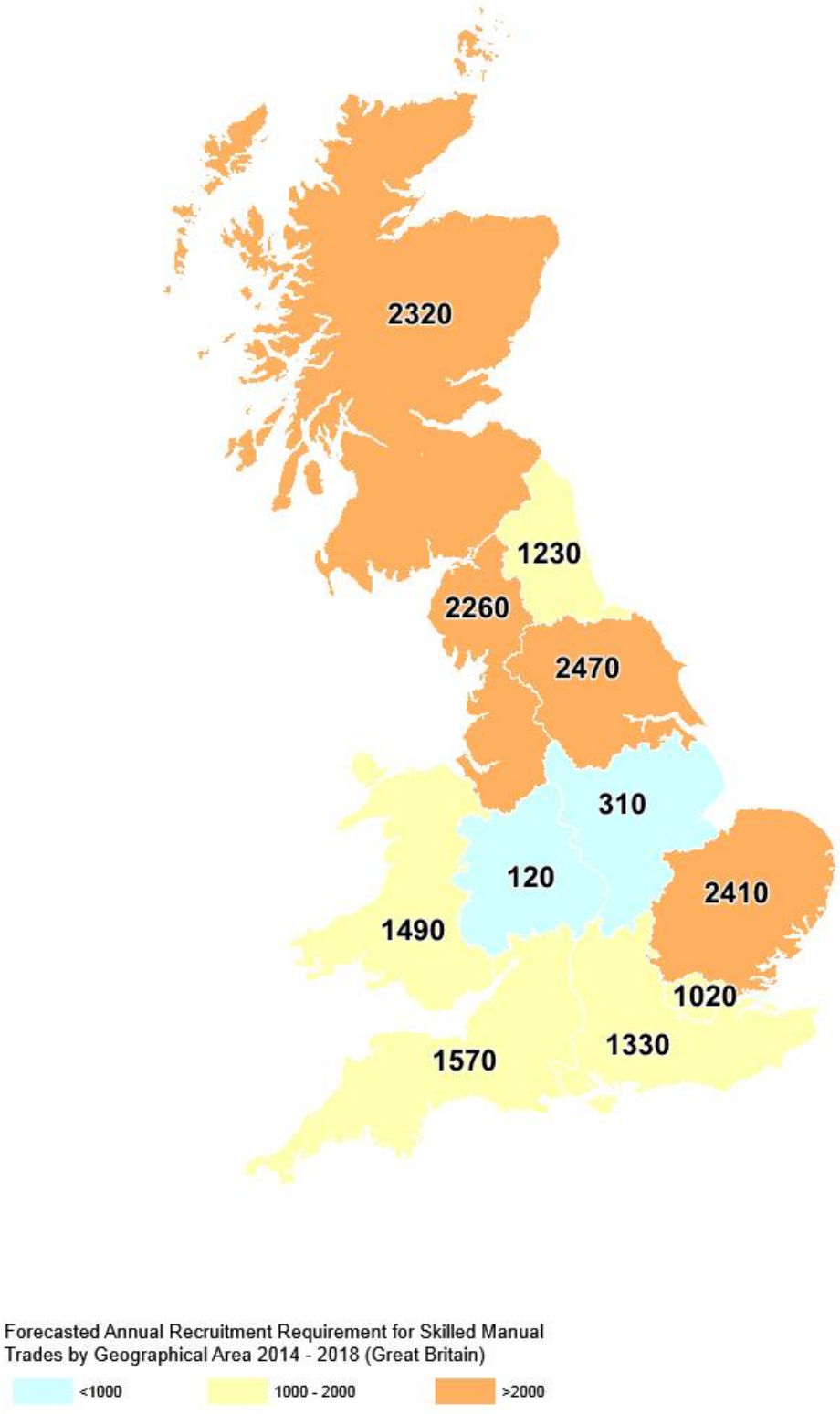

Figure 3 – Applicants to construction courses in the skilled manual trades by geographical area 2013/2014 (Great Britain)