Training and the Built Environment Report

2012

constructionskills

Introduction

ConstructionSkills, the Sector Skills Council for the construction industry, is a partnership that delivers truly UK-wide policies and strategies that take account of the full breadth of the industry and its training, education and development needs. ConstructionSkills 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.**

To achieve this, ConstructionSkills, need to deliver the Sector Skills Agreement (SSA) that has been developed and agreed with stakeholders across government, industry and education[1]. The priorities identified are;

Leadership Challenge
Providing industry leadership on skills and leadership training for employers ➢ Working with industry champions, employers and their representative bodies, professional bodies, trade unions, delivery partners, clients, other SSCs and related bodies to raise commitment and investment in skills ➢ Leveraging our authoritative research data to influence Government policy on industry's behalf ➢ Understanding and addressing employers' leadership and management needs ➢ Developing standards to progress the Fairness, Inclusion and Respect agenda
Productivity Challenge
Supporting employer and industry competitiveness ➢ Qualifying the workforce, upskilling existing workers to raise qualification levels and increase effectiveness ➢ Improve health, safety and welfare awareness and behaviours, and levels of competence on site ➢ Understanding and addressing employers' business skills needs in an environment where there is an expectation of achieving more for less cost ➢ Establishing macro and micro level productivity benchmarks for the industry ➢ Understanding the potential impact of Building Information Modelling on the industry and facilitating the skills that supports its widespread adoption

[1]CITB-ConstructionSkills, Sector Skills Agreement, http://www.cskills.org/aboutus/sectorskillscouncil/agreement/index.aspx.

Low Carbon Challenge

Supporting the industry's future skills needs

- Building knowledge on industry's future skills needs and translating this into practical solutions
- Working in partnership across the UK, Professional and Built Environment sectors on low carbon issues, to maximise influence over policy and funding for relevant skills

Employer Engagement Challenge

Recognising and responding to skills needs

- Promoting the benefits of investing in training and development
- Diagnosing skills needs and providing signposting solutions
- Extending our reach – particularly with SMEs, consultancies and trade bodies, and through working with employer groups

Recruitment and Retention Challenge

Keeping the pipeline of talent flowing

- Promoting and delivering apprenticeships and pathways, influencing the construction-related curriculum, and supporting undergraduates in conjunction with stakeholders
- Improving access to information , advice and guidance on qualifications and careers to potential recruits and their influencers, including the development of e-enabled solutions
- Researching methods to give confidence to our employers about 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 across the learning lifecycle through the supply of efficient, affordable and quality provision
- Using our authoritative understanding of skills provision to influence funding decisions
- Developing innovative ways of interacting with schools, colleges, and universities aimed at stimulating interest in careers in the built environment

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. ConstructionSkills undertake 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 complete picture of training in the built environment.

The main sections of the report are:

Section 1: Trainee Numbers Survey 2011/2012 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-ConstructionSkills' own managing agency and those entering other formal certificated training at craft and technical level.

The Trainee Numbers Survey collects data on the number of first year trainees starting construction and built environment courses by qualification and by qualification level. This data is then translated into 19 occupational groups taken from the Construction Skills Network[2] (CSN). The translation of the first year trainee data from qualification to occupational groups allows us to examine the potential supply from training for these occupational groups and also enables comparison with the CSN employment forecast which is covered in Section 2.

Section 2: Forecasted Demand for Craft and Technical Construction Training 2012–2016 analyses this training data alongside the CSN projected demand for skilled construction workers over the forecast period 2012–2016, in order to assess the adequacy of current training provision in terms of quantity.

Section 3: Construction Training Capacity 2011/2012 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 2010/2011.

[2] Construction Skills Network, Blueprint for UK Construction Skills 2012 to 2016
http://www.cskills.org/sectorskills/csn/csnoutputs/outputsuk.aspx

Summary

- The number of first year trainees for 2011/2012 is the lowest seen in 20 years at just over 23,000.
- For the fifth year running the largest occupations in terms of absolute numbers are wood trades and bricklayers.
- Half of first year trainees in 2011/2012 are commencing a Level 2 qualification followed by a further 28% undertaking Level 1 qualifications.
- The proportion of trainees starting work-based training has decreased further this year to just 32%.
- The proportion of trainees starting Level 3 S/NVQ's has increased for the first time in 3 years.
- The proportion of trainees starting Level 2 and Level 3 apprenticeships has almost returned to the pre-recession level with 58% of all Level 2 and Level 3 trainees undertaking an apprenticeship.
- 55% of all first year trainees are aged under 18; continuing a trend seen over the last five years.
- For the first time in 8 years the proportion of female first year trainees has increased from 3% to 4%.
- When analysing predicted demand and the amount of training taking place there are insufficient trainees on Level 2 and Level 3 S/NVQ's to meet predicted demand in all of the main trades. Only when VRQ training is included does the supply match the demand.
- For the skilled manual trades the average ratio of starters to applicants is 1.2.
- The most over-subscribed trades are wood trades and interior fit-out and bricklayers, both having 1.3 applicants per starter.
- Funding issues and employment opportunities were highlighted by training providers as key constraints on expanding their training provision.
- In 2010/2011 24,300 students started higher education courses in construction and the built environment, over half of these students were starting a first degree.
- Of construction and built environment degree courses, building courses were the most popular subject for higher education qualifications, accounting for 31% of all enrolments.
- Student enrolments on construction and the built environment first degree courses fell by 10% in 2010/2011.
- 48% of all female first degree construction and built environment students were studying towards a qualification in Architecture.
- The proportion of first degree construction and built environment students from an ethnic minority has continued to increase rising to 21% in 2010/2011.

Section 1: Trainee Numbers Survey 2011/2012

Section 1 examines the data obtained from the 2011/2012 Trainee Numbers Survey conducted by ConstructionSkills, and includes analysis of this year's data as well as reviewing data collected in previous years, enabling the identification of any trends or patterns. The survey, conducted on a voluntary self-completion basis, is repeated annually and covers colleges, private training providers and construction industry training centres across Great Britain. The survey collects data on the number of first year trainees starting construction and the built environment courses by qualification and qualification level.

The results of the Trainee Numbers Survey are examined in the following sub-sections;

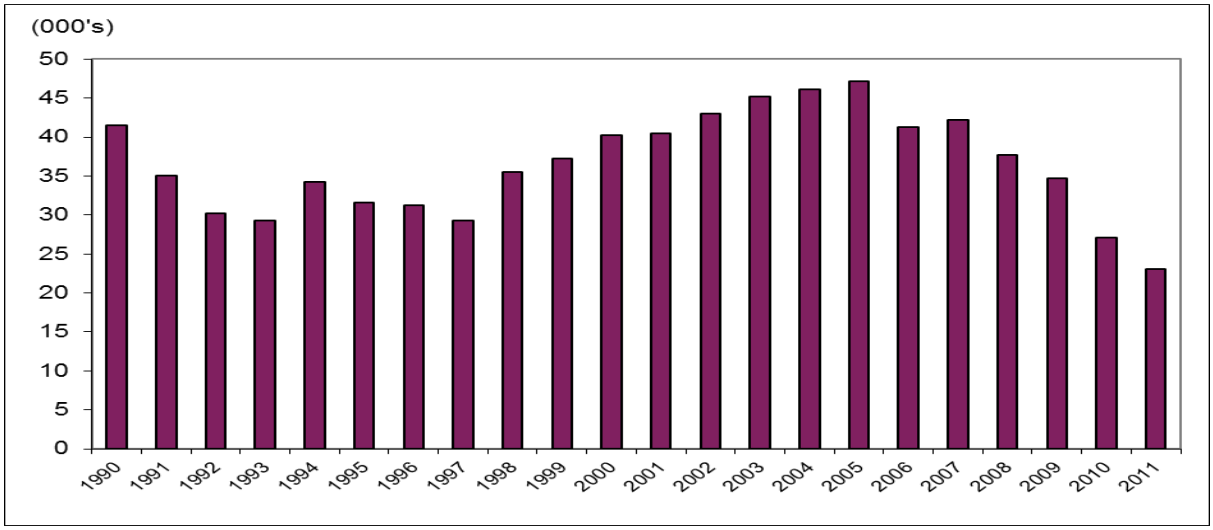
1.1 The national picture of trainee numbers
1.2 Training by occupation – looking at trainee numbers by occupational groupings
1.3 Training by qualification level
1.4 Geographical analysis
1.5 Trainee progression prospects
1.6 Mode of study – S/NVQ versus Diploma/Certificates
1.7 Apprenticeships – looking at the numbers of trainees starting apprenticeships
1.8 First year trainee characteristics; analysis by age, gender & ethnic minority.

1.1 The national picture

Chart 1 shows the numbers of first year trainees starting construction and the built environment courses from 1990 to 2011 across Great Britain. The number of first-year trainees has continued to fall over the last four years and is now just over 23,000, the lowest level seen over the past two decades.

The impact of the economy on training can be seen in Chart 1 which shows that during the recession of the early nineties (1990-1993) numbers of first year trainees fell by 12,000. The effects of the current recession (2008 - present) are even clearer with first year trainee numbers reducing by 19,000 over the last four years, and with the likelihood of the current economic downturn lasting longer than the nineties recession the decline in trainee numbers is likely to continue.

Chart 1 – Numbers of first-year trainees 1990–2011 (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.

1.2 Training by occupation

This sub-section analyses the first year construction and built environment trainee numbers data according to the 19 occupational groups used by the Construction Skills Network[3]. This data is obtained by taking the qualification data collected by the Trainee Numbers Survey and translating the qualifications into the 19 occupational groups used by the CSN. This data provides the potential supply of trainees for specific occupational groups (see Table 1), and enables comparison with the CSN employment forecast which is covered in Section 2.

Table 1 shows the number of first year trainees starting construction and the built environment courses across Great Britain for the year 2011/2012 by occupational group.

Table 1 – Numbers of first-year trainees 2011/2012 (Great Britain)

	Under 18		Over 18		
Occupation	**Male**	**Female**	**Male**	**Female**	**Total**
Construction managers	*<50*	*0*	*342*	*<50*	***358***
Wood trades and interior fit-out	*4,891*	*<50*	*2,116*	*<50*	***7,093***
Bricklayers	*3,213*	*<50*	*1,192*	*<50*	***4,451***
Painters and decorators	*1,290*	*156*	*528*	*110*	***2,084***
Plasterers and dry liners	*1,025*	*< 50*	*668*	*19*	***1,721***
Roofers	*125*	*<50*	*163*	*<50*	***290***
Floorers	*95*	*<50*	*131*	*<50*	***233***
Glaziers	*<50*	*0*	*<50*	*0*	***<50***
Specialist Building operatives nec*	*110*	*<50*	*126*	*<50*	***243***
Scaffolders	*80*	*0*	*443*	*0*	***523***
Plant operatives	*93*	*0*	*1,363*	*<50*	***1,476***
Plant mechanics/fitters	*81*	*<50*	*175*	*<50*	***270***
Steel erectors/structural	*0*	*0*	*<50*	*0*	***<50***
Logistics	*0*	*0*	*0*	*0*	***0***
Civil engineering operatives nec*	*891*	*<50*	*774*	*21*	***1,710***
Civil engineers	*68*	*<50*	*298*	*<50*	***444***
Other construction professionals and technical staff	*441*	*<50*	*1,253*	*107*	***1,836***
Architects	*<50*	*<50*	*178*	*<50*	***240***
Surveyors	*<50*	*52*	*116*	*<50*	***188***
Total	**12,432**	**426**	**9,889**	**438**	**23,185**

Note: The occupational groups were extended in 2009/2010 to bring them in-line with the occupations used in the Construction Skills Network. Please see Section 2 for more information on the Construction Skills Network.
*nec = not elsewhere classified

Between 2010/2011 and 2011/2012 the majority of occupations have seen a further decline in the number of first year trainees. Wood trades and interior fit out and bricklayers have experienced the largest decline in first year trainee numbers with both occupational groups experiencing a decline of over 1,200 since last year; however they still remain the largest occupational groups. In contrast small increases in first year trainee numbers are seen by four groups; construction managers; plasterers and dry liners; roofers and civil engineers.

[3] Construction Skills Network, Blueprint for UK Construction Skills 2012 to 2016
http://www.cskills.org/sectorskills/csn/csnoutputs/outputsuk.aspx

Table 2 shows the top ten occupational groups in terms of absolute numbers of first year trainees starting training in those occupations in descending order for 2011/2012. The table also shows the number of trainees in each occupational group over the last 4 years for comparison.

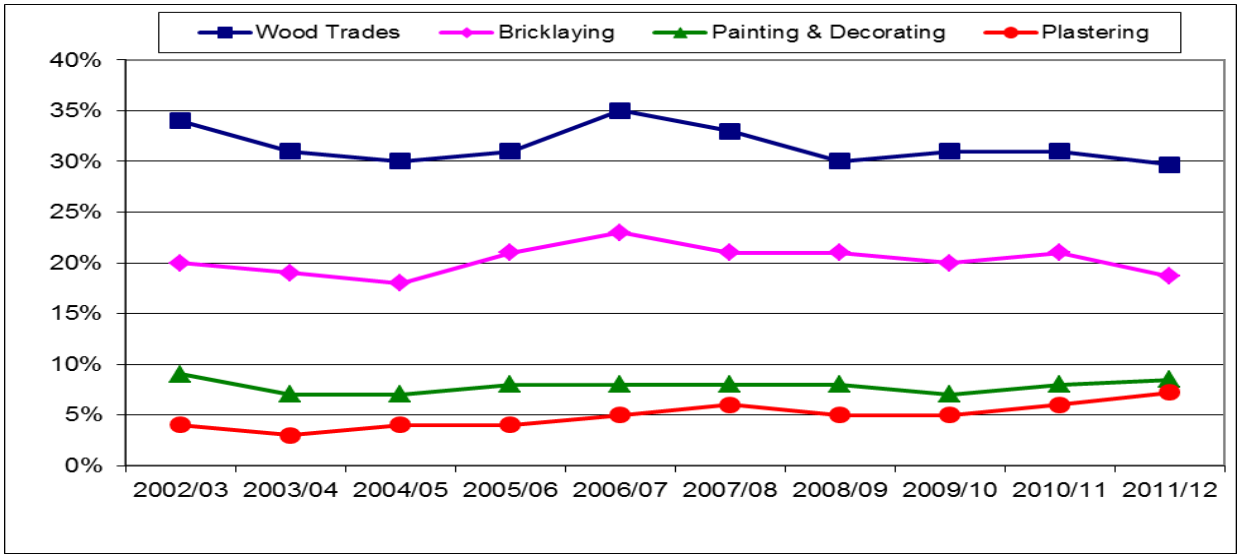
Table 2 – Comparison of first-year trainee numbers in the top ten occupational groups (by volume) 2007/2008 to 2011/2012 (Great Britain)

Occupations	2011/2012	2010/2011	2009/2010	2008/2009	2007/2008
Wood trades	7093	8357	10758	11491	13743
Bricklayers	4451	5712	7168	7778	8949
Construction managers, professionals & technical staff	3066	3553	4057	4254	3899
Painters and decorators	2084	2252	2428	3006	3453
Plasterers and dry liners	1721	1710	1940	1979	2407
Civil engineering operatives	1710	1920	1809	2248	2062
Plant operatives	1476	1905	3847	4461	4746
Scaffolders	523	528	502	681	1055
Plant mechanics/fitters	270	294	409	505	511
Specialist building operatives	243	376	1110	441	451

Table 2 demonstrates that since 2007/2008 wood trades and bricklayers continue to have the highest numbers of first year trainees, although as a proportion of all first year trainees the proportion of trainees in wood trades and bricklaying has declined slightly since last year, as shown in Chart 2. Since 2005/2006 wood trades, bricklayers, construction managers, professionals and technical staff and painters and decorators have consistently been in the top 5 in terms of numbers of first year trainees.

Chart 2 looks specifically at the four main building craft occupations and the proportions they represent of all first-year trainees over a ten year period – 2002/2003 to 2011/2012. The proportional share across the four occupations has been relatively constant with wood trades continuing to have the highest proportion of all first year trainees (34% on average), followed by bricklayers (20% on average), painters and decorators (9% on average) and plasterers (4% on average).

Chart 2 – Proportion of all first-year trainees in the main Building Craft Occupations 2002–2012 (Great Britain)



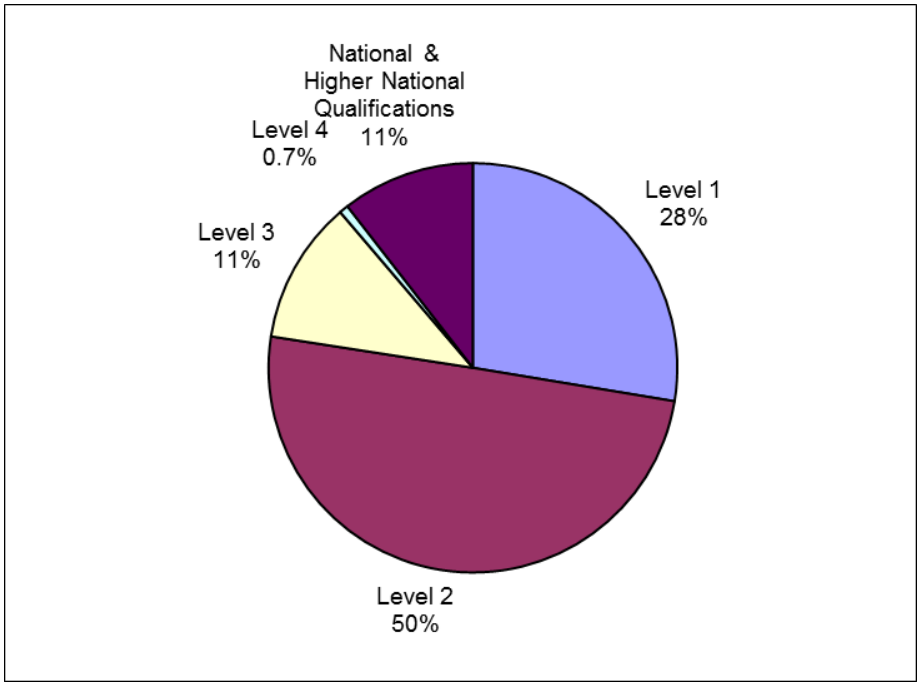
1.3 Training by qualification

Section 1.3 analyses the data collected by the Trainee Numbers Survey on first year trainees starting construction and the built environment qualifications in Great Britain at each of the following levels:

- Level 1[4]
- Level 2[5]
- Level 3[6]
- Level 4[7]
- National & Higher National Qualifications[8]

The proportions of first year trainees that are undertaking a construction and the built environment qualification at each of the above qualification levels across Great Britain is shown in Chart 3.

Chart 3 – First-year trainees undertaking a qualification by qualification level 2011/2012 (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.

Over the last three years there has been little change in the proportions of first year trainees undertaking training at each level, with the majority (around 50%) of all first year trainees across Great Britain undertaking Level 2 qualifications, around a quarter (28%) undertaking Level 1 qualifications and the remainder commencing higher level qualifications.

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

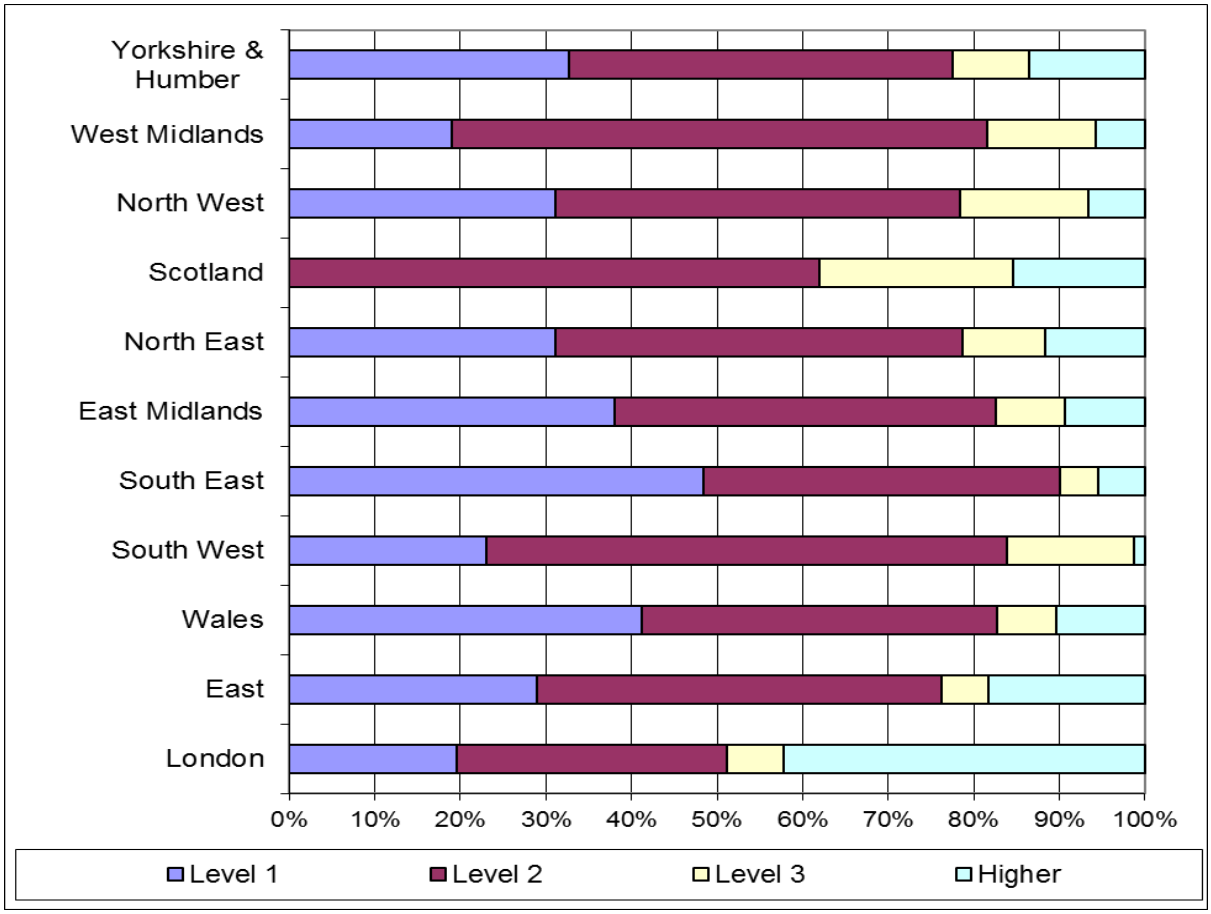
1.4 Geographical considerations

As mentioned at the beginning of the report, the number of first-year trainees is collected from colleges, private training providers and construction industry training centres across Great Britain. This data is then analysed by the numbers of first year trainees in the training establishments within each English region, Scotland and Wales.

Chart 4 shows the proportions of first year trainees at each qualification level by region/nation. It is clear from the chart that there are some significant differences in the proportions of first year trainees at each qualification level across the regions and nations.

When looking at the English regions the majority have the highest proportion of trainees on Level 2 qualifications, followed by Level 1, Level 3 and Higher qualifications. However, Greater London has a much greater proportion of trainees starting a Higher Level qualification at 42% compared to the Great Britain (GB) average of 11%. Wales and the South East (48% and 41% respectively), have higher proportions of trainees undertaking Level 1 qualifications than the GB average of 28%. Scotland varies considerably having no trainees starting Level 1 qualifications and higher proportions of trainees starting Level 2 and Level 3 qualifications.

Chart 4– First-year trainees by level of qualification and geographical area: 2011/2012 (Great Britain)



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

As last year the regions with the highest proportion of all first year trainees are Yorkshire & Humber 18%, the West Midlands 15% and the North West at 12%, and the regions/nations with the lowest proportions are London 2%, Wales 5%, and the East 5%.

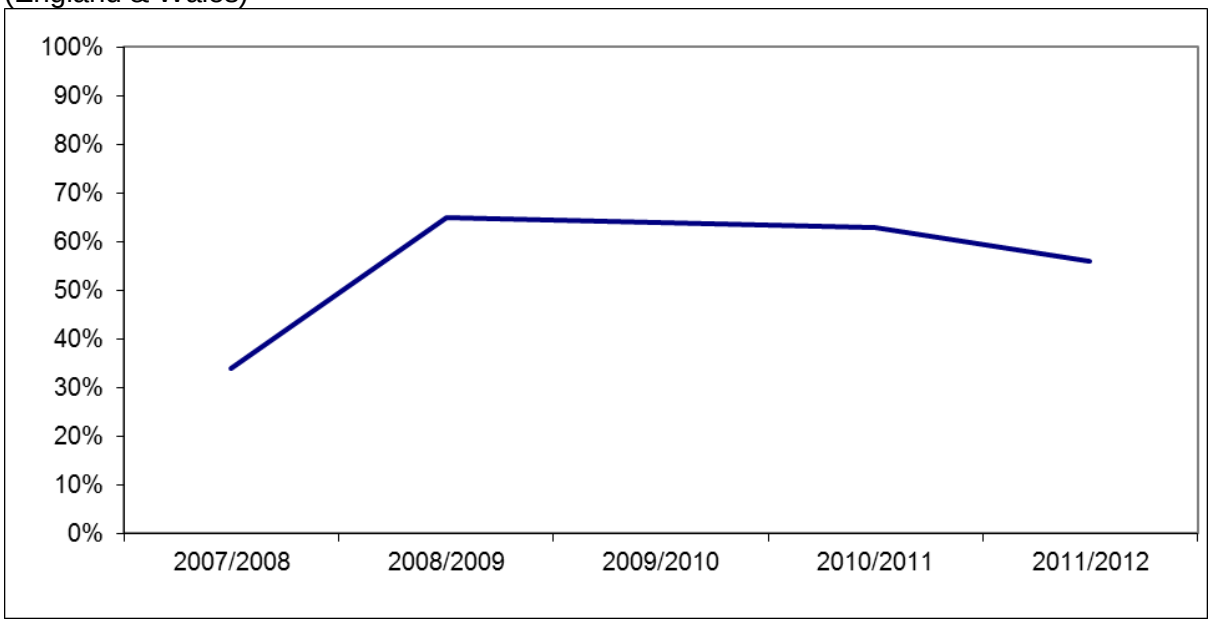
1.5 Trainee Progression

To obtain an insight into the movement of trainees from Level 1 qualifications, the survey has traditionally collected data on the progression of individuals from both Level 1 S/NVQ's and Level 1 Diplomas/Certificates. This is achieved by asking how many of the Level 1 students (for both S/NVQ's and Diplomas/Certificates) are expected to progress to a Level 2 qualification. However, over the last two years the data received for number of trainees starting a Level 1 S/NVQ has decreased to such an extent that the progression data for this group is not robust enough for meaningful analysis.

The decline seen in the take-up of Level 1 qualifications since 2008 is supported by the decrease of workers in the construction industry who state that they have a level 1 qualification (dropping from 29% in 2008 to 23% in 2010)[9]. This may be a reflection that the industry sees Level 1 qualifications as being purely entry level qualifications and not proof of competency.

Chart 5 shows that following a dramatic increase of 34% between 2007/2008 and 2008/2009 the proportion of first year trainees expected to progress to a Level 2 qualification has remained relatively constant decreasing gradually over the past four years. In 2011/2012 nearly two-thirds (56%) of individuals undertaking Level 1 Diploma/Certificates in England and Wales were expected to progress to a Level 2 qualification.

Chart 5 – Expected progression of trainees from Level 1 Diploma/Certificates 2007-2011 (England & Wales)



Note: Diplomas/Construction Awards are not available in Scotland.

[9] ConstructionSkills, Sector Skills Assessments, 2011/2012

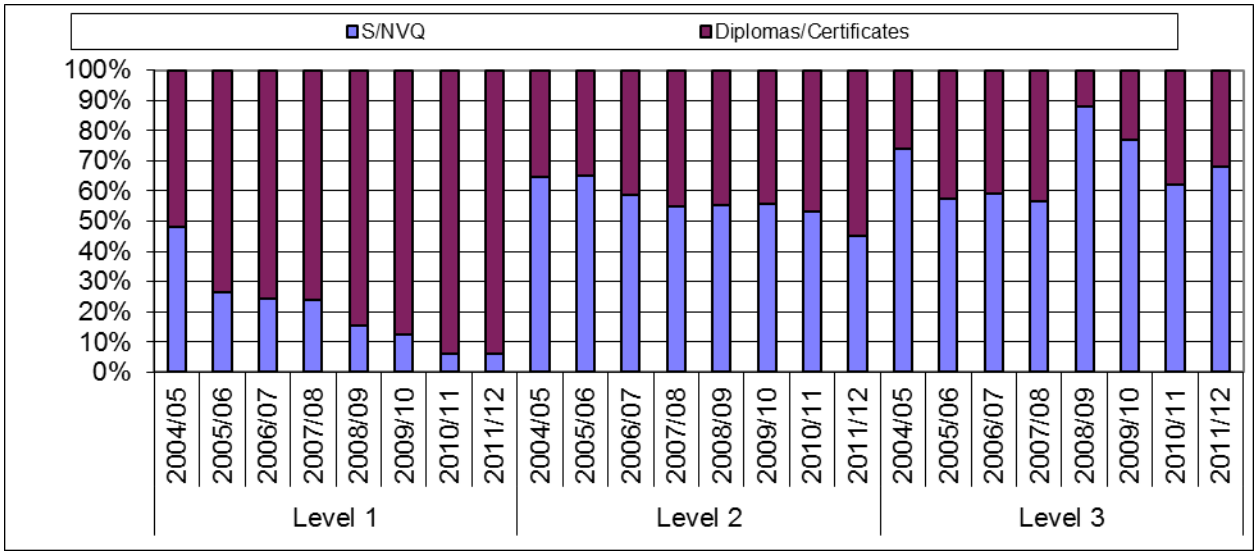
1.6 Mode of Study

As mentioned at the beginning of Section 1 the Trainee Numbers Survey collects first year trainee data by qualification type as well as qualification level, this sub-section examines first year trainees commencing a Level 1,2 or 3 S/NVQ or Diploma/Certificate in construction craft training.

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. There are three levels of Diplomas/Certificates in-line with the NVQ system – Level 1, Level 2 and Level 3.

Across England and Wales in 2011/2012 there are 18,508 trainees undertaking construction craft training, of these trainees 12,648 (or 68%) are studying for a Diploma/Certificate as opposed to an S/NVQ, this proportion has more than doubled since 2003/2004 when it was just 30%. Consequently only 32% of this year's first year trainees are undertaking work-based training (S/NVQ's), the lowest level seen over the period since this data has been collected.

Chart 6 – Proportion of first-year trainees split by work-based training 2004/2005 to 2011/2012 (Craft training in England and Wales)



Note: Diplomas/Certificates are not available in Scotland, therefore all data for work-based training excludes Scottish trainee figures.

Level 1 qualifications have by far the highest proportion of trainees undertaking Diplomas/Certificates at 94%, compared to 55% at Level 2 and 32% at Level 3. This year's figures demonstrate a continuation of the decline in popularity of Level 1 S/NVQs with a further drop in the number of trainees studying towards this level of qualification. The proportion of S/NVQs at Level 2 has fallen for the first time this year having remained reasonably static between 2007/2008 and 2010/2011. This year has also seen an increase in the proportion of trainees studying toward Level 3 S/NVQs after a three year decline.

It should be noted that this survey is always undertaken at the beginning of the academic year, therefore, the 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.

1.7 Apprentices

The Trainee Numbers Survey also asks how many of the trainees recorded are working towards an Apprenticeship and this data is analysed here.

Although there is a further decrease in the number of trainees undertaking apprenticeship training this year to just 3,703, (compared to 9,877 in 2006/07), the rate of decline is slowing (in 2009/10 the number of apprenticeships had dropped by 2,251, this year the decrease was just 645).

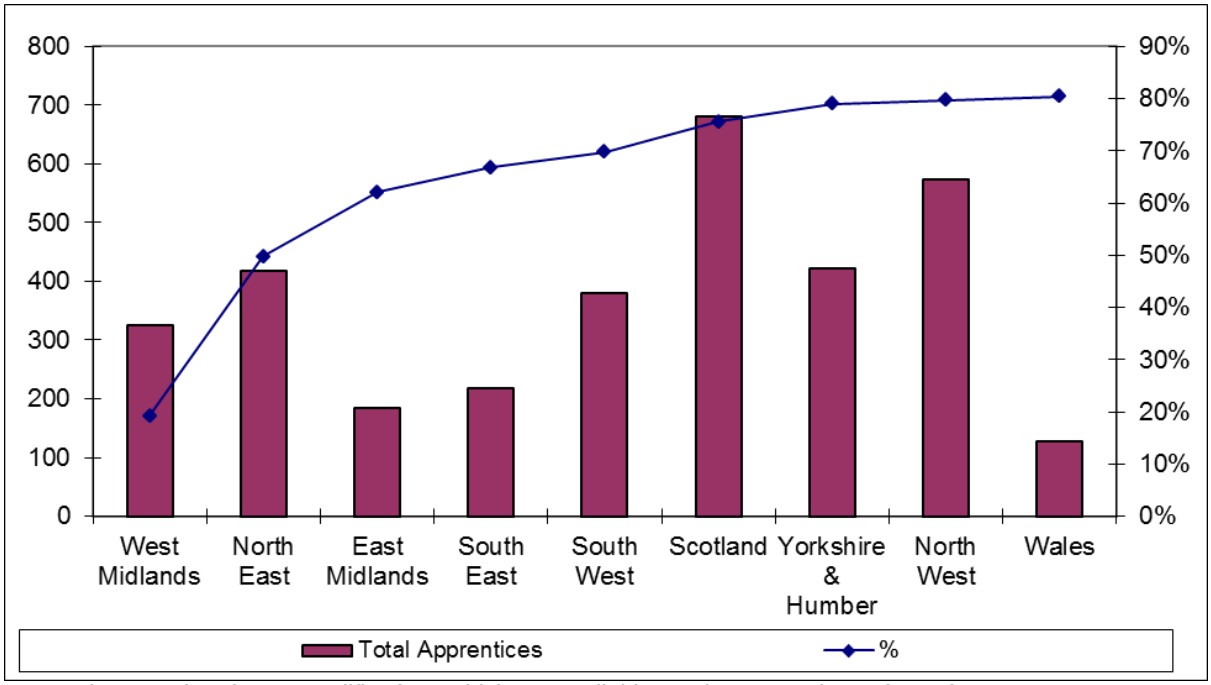
Of the 3,703 apprentices 2,608 of them are undertaking Level 2 apprenticeships (70%) and the remaining 1,095 are undertaking Level 3 apprenticeships. Overall 58% of the trainees undertaking a Level 2 or Level 3 qualification are on an apprenticeship programme.

Chart 7 shows the number and proportions of first year trainees following an apprenticeship programme across England, Scotland and Wales and demonstrates that there is a wide variation in both the number of apprentices and the proportion of trainees undertaking apprenticeships. The West Midlands is the region with the lowest proportion of its trainees undertaking apprenticeships at just 19% (as has been the case since 2008/2009) and Wales has the highest at 81% remaining in the top three regions/nations over the last three years.

When looking at all apprenticeships Scotland has the highest share at 18% of all apprentices across GB, whilst Wales has the lowest proportion at just 3%.

Scotland also has the highest number of Level 3 apprentices at 440, which is 40% of all Level 3 apprentices, reflecting a preference for Level 3 qualifications in Scotland.

Chart 7 – Number and proportion of first-year trainees following an apprenticeship programme by area 2011/2012 (Great Britain: S/NVQ Level 2 and Level 3)

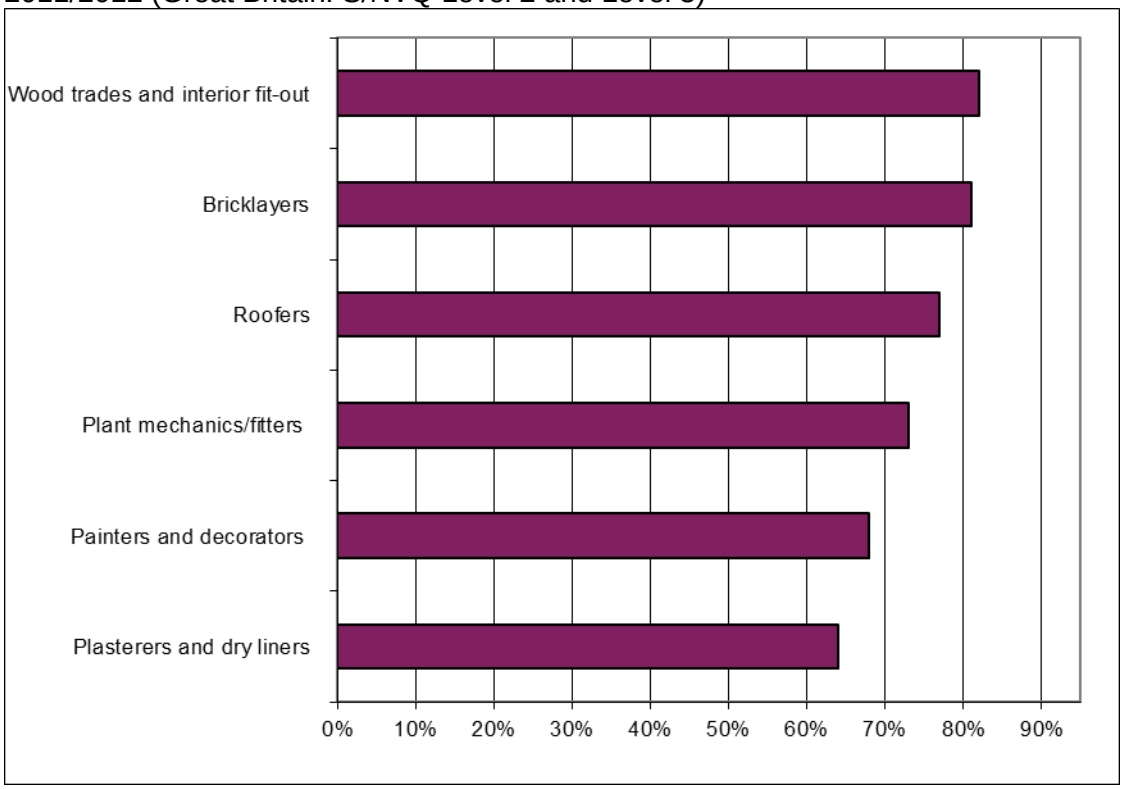


Note: Chart 7 only refers to qualifications which are available at S/NVQ Level 2 and Level 3. London and the East have been excluded from the chart due to very small base sizes.

When analysing the number of apprenticeships by occupation it is not surprising that the highest overall numbers are seen in wood trades (1,771) and bricklaying (652) as these occupations have the highest overall numbers of first year trainees, see Chart 8.

The majority of apprenticeships (78%) are undertaken in the four main building craft trades (wood trades, bricklaying, painting and decorating and plastering and dry lining), which has been a consistent trend since 2005/06, although this year the percentage has dropped below 80% for the first time.

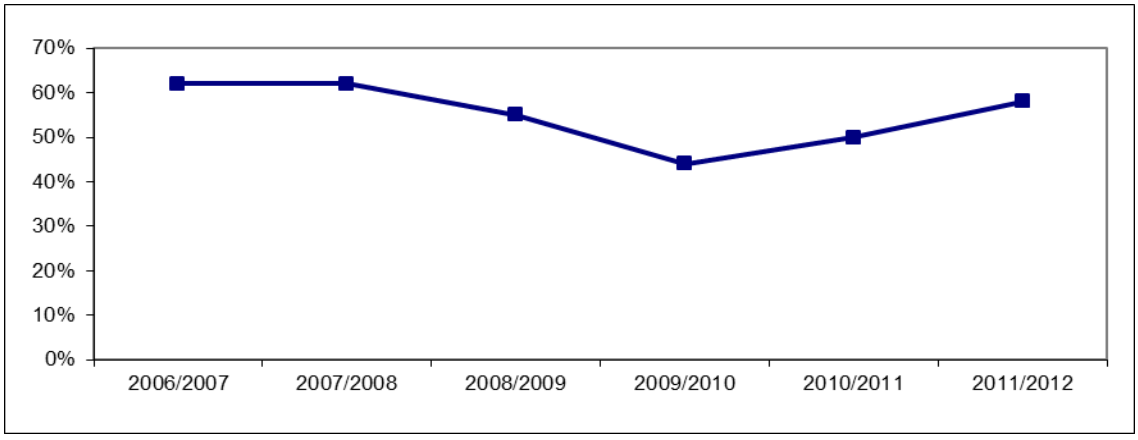
Chart 8 – Proportion of first-year trainees following an apprenticeship programme by occupation 2011/2012 (Great Britain: S/NVQ Level 2 and Level 3)



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

As chart 9 shows, at the beginning of the recession in 2008 the number of apprentices as a proportion of trainees declined reaching a low of 44% in 2009/10 and in 2011/12 is now close to the pre-recession level with 58% of all first year trainees following an apprenticeship programme.

Chart 9– Proportion of first-year trainees following an apprenticeship programme 2006-2011 (Great Britain S/NVQ Level 2 and Level 3)



The sustained levels of trainees undertaking apprenticeship programmes seen in the Trainee Numbers Survey are supported by the findings of the 2011 Training and Skills in the Construction Sector Report[10] which surveyed 1,207 construction establishments found that the number of employers stating they had an apprentice had increased, 13% of respondents had increased the number of apprentices/trainees recruited and almost half of employers with apprentices had not changed the number of apprentices recruited as a result of the recession.

The increase in apprentices as a proportion of trainees seen in recent years may also be a result of the UK Government giving significant publicity during this time to promote apprenticeship schemes and their benefits to businesses, in addition to providing significant sums of money including an incentive of £1,500 for small firms when hiring their first 16-24 year old apprentice.[11] Further to this in May 2011 the UK Government announced that over the next four years it will fund up to 250,000 more apprenticeships.[12] The Welsh Government is also continuing to support apprenticeships having recently announced funding of £896,000 for 40 engineering and 30 construction apprenticeships in North West Wales[13].

[10] ConstructionSkills, Training & Skills in the Construction Sector, 2011 (http://www.cskills.org/sectorskills/researchfromssc/skills_needs_survey.aspx)
[11] http://www.bis.gov.uk/news/topstories/2012/Feb/apprenticeships-government-funding
[12] http://www.is4profit.com/small-business-news/20110530-government-funding-boost-to-apprenticeships.html
[13] http://wales.gov.uk/newsroom/businessandeconomy/2012/6532929/?lang=en

1.8 First-year trainee characteristics

In addition to collecting data on the type of training new entrants start each academic year, the Trainee Numbers Survey also captures first-year trainee characteristics as defined by their age, gender and ethnic minority.

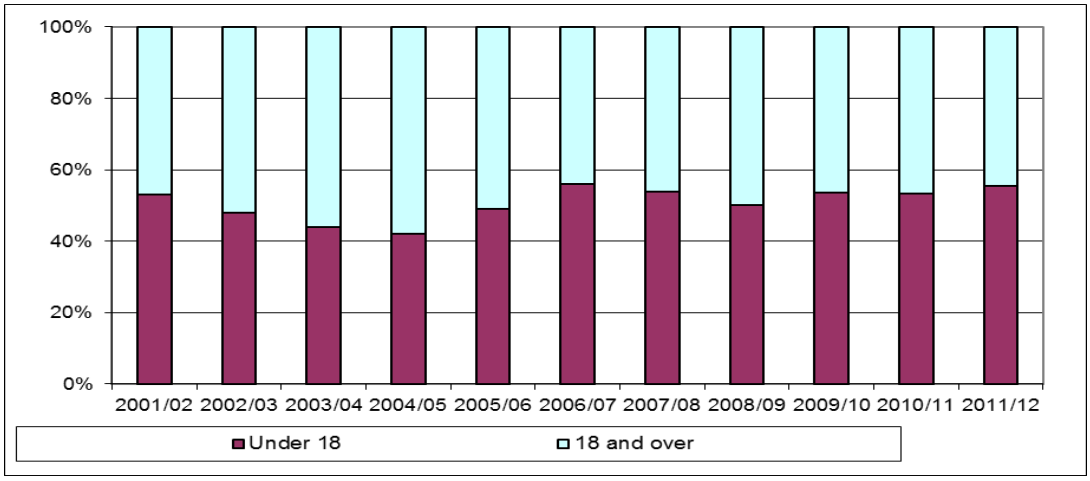
1.8.1 Age

The survey asks respondents to breakdown the number of starters undertaking each qualification into two broad age categories:

- Under 18 years
- 18 years and over.

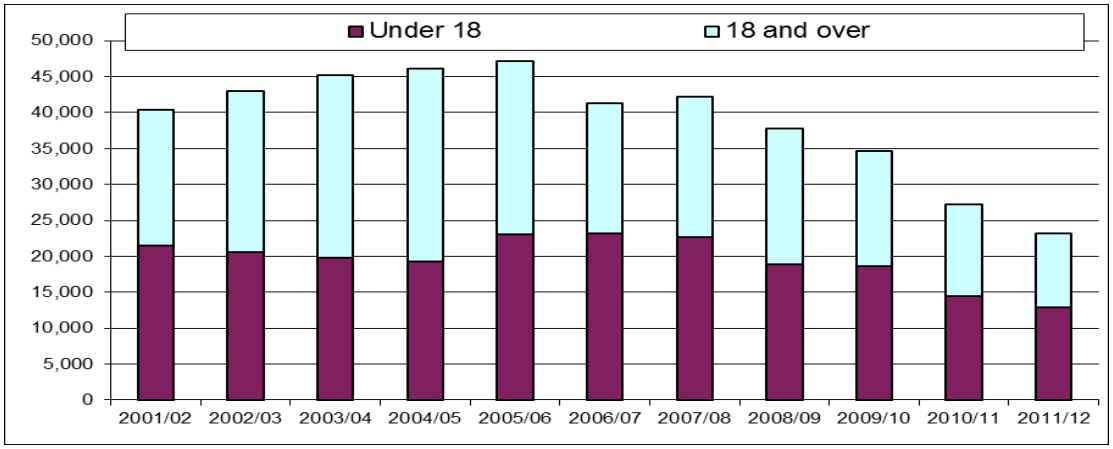
Over the past decade the proportional split between trainees aged under 18 and those aged 18 and over has averaged a 50/50 split, as shown in Chart 10. However, since 2006/2007 there has been a slightly higher proportion of trainees aged under 18 years, which remains the case in 2011/2012 where the split is 55/45.

Chart 10 - Age of first-year trainees as a proportion of total 2001–2011 (Great Britain)



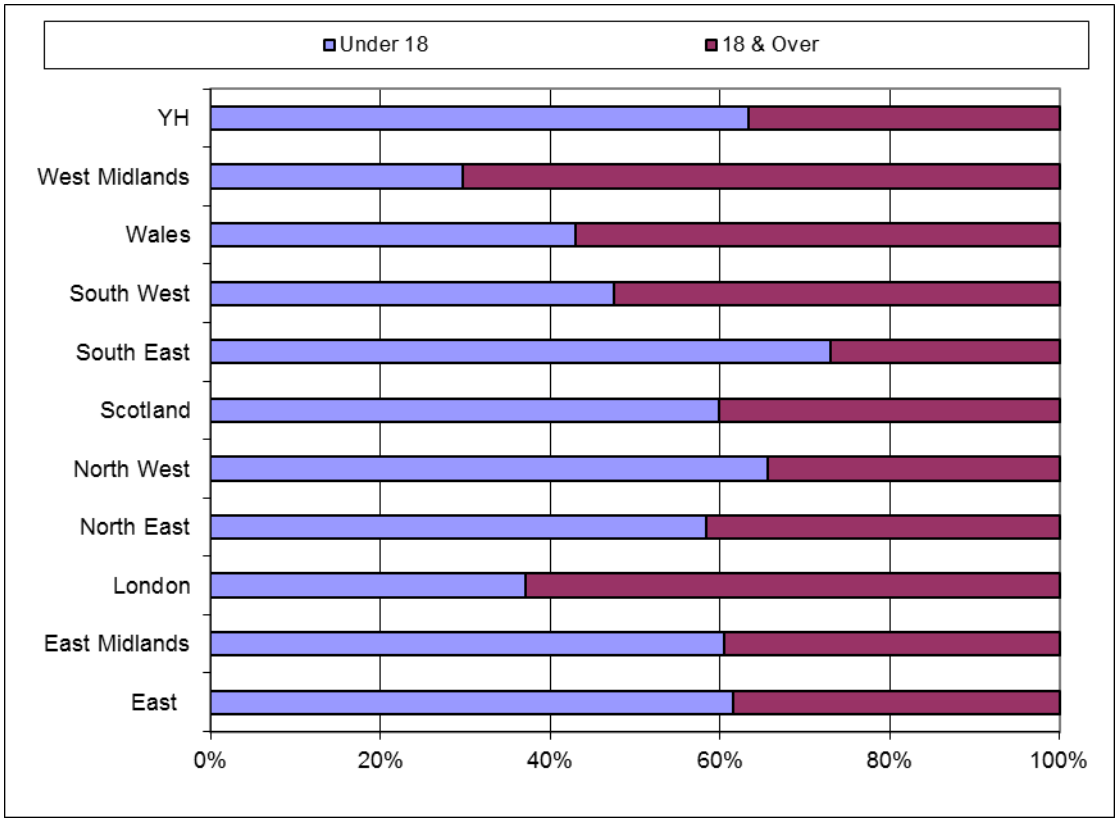
If we look at the actual numbers of trainees (see Chart 11), we can see that there has been a decrease in numbers of trainees in both age groups since 2007/2008, however the decline seen in numbers of first year trainees aged 18 and over is more pronounced than the decline in those under 18.

Chart 11 – Numbers of trainees by age 2001 – 2011 (Great Britain)



When looking at the age profile across the regions and nations the South East has the highest proportion of under 18 year olds at 73%, and the West Midlands has the lowest proportion at just 30%. Overall there is generally a 55/45 split of trainees under 18 and those aged 18 and over, respectively.

Chart 12 – Age of first-year trainees by geographical area 2011/2012 (Great Britain)



1.8.2 Gender

In addition to asking respondents to break down the number of starters for each qualification by age group the survey also asks for numbers within the age group split by gender. The number of first-year trainees broken down by gender is shown in Table 3.

Table 3 – Number of first-year trainees broken down by gender and age 2011/2012 (Great Britain)

Under 18 years		18 years and over		Total	
Male	**Female**	**Male**	**Female**	**Male**	**Female**
12,432	426	9,889	438	22,321	864
54%	2%	43%	2%	96%	4%

Table 3 shows that in the academic year 2011/2012 there were 864 (4%) female starters compared to 22,321 (96%) males. After 8 years during which the proportion of female first year trainees was 3% the proportion has increased to 4% this year for the first time, as shown in Chart 13.

The proportion of women entering construction training is lower than their representation within the construction workforce where they currently account for 13% of employment in Great Britain[14]. However, the majority of these women are working in non-manual trades (95%).

[14] Labour Force Survey, 4 quarter average to Spring 2011 (SIC45) Great Britain

Currently only 1% of the manual construction workforce is female compared to 28% of the non-manual workforce.

Chart 13 – Female first-year trainees as a proportion of the total number of first-year trainees 1999–2011(Great Britain)

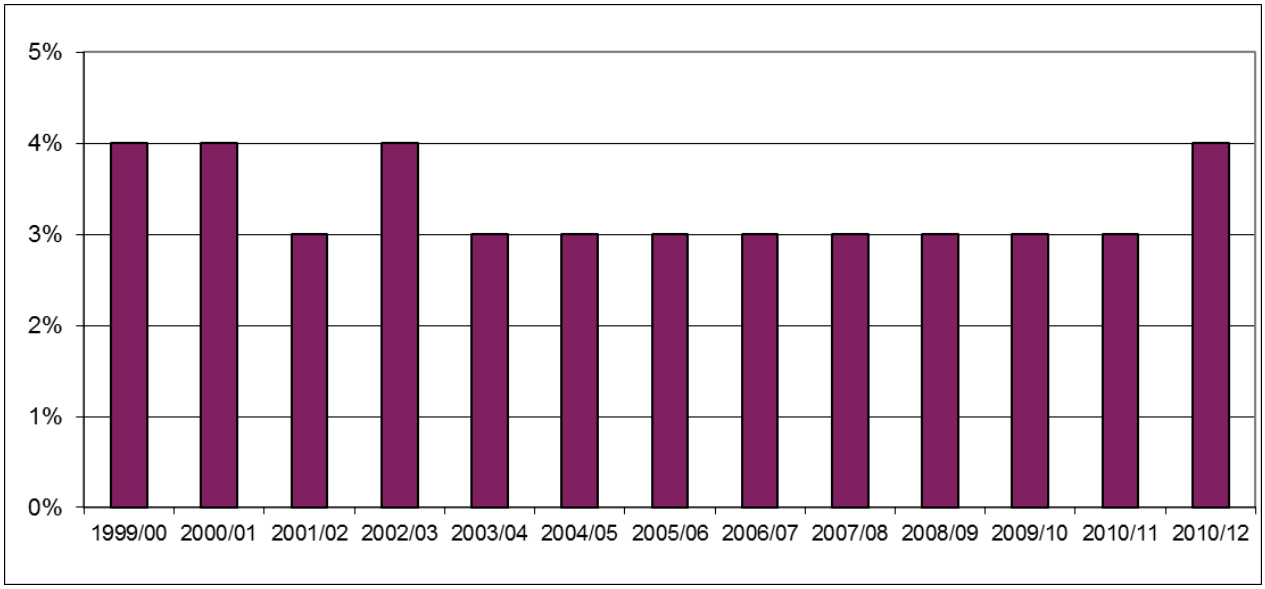


Table 4 shows the distribution of female first year trainees across the regions and nations. The table shows that, as was the case last year, Scotland and Yorkshire and Humber have the highest proportions of female first year trainees with both at 18% and the South West has the lowest proportion at only 2%.

Table 4 – Proportion of first year trainees broken down by gender and region/nation 2011/2012 (Great Britain)

	Male	Female
East	5%	4%
East Midlands	8%	11%
London	2%	5%
North East	9%	6%
North West	13%	9%
Scotland	10%	18%
South East	8%	9%
South West	7%	2%
Wales	5%	9%
West Midlands	15%	9%
Yorkshire and Humber	18%	18%
Great Britain	**96%**	**4%**

The majority of female first year trainees are studying towards a professional qualification accounting for 13% of all starters on these qualifications, continuing a trend seen since 2002/2003. Indeed 37% of all trainees studying to be a surveyor are females, followed by 18% for civil engineering and 17% of architects.

These findings are consistent with the representation of females in the construction workforce shown in the Labour Force Survey (Spring 2011) employment by occupation data which

highlights that females are more likely to be employed in a professional occupation, for example 19% of Architects and 12% of building and civil engineering technicians are women. [15]

In terms of craft occupations the highest number of female trainees is seen in painting and decorating (266 of the 864 females) accounting for 30% of all female trainees.

It is also interesting to note that of the 864 female first year trainees captured by the survey this year only 1 of them is studying toward a Level 4 qualification.

1.8.3 Ethnic minorities

The Trainee Numbers Survey collects data on the ethnic minority of first year trainees by asking respondents to indicate for each qualification level how many of the trainees are from an ethnic minority and the results are analysed here.

The number of first-year trainees who are from an ethnic minority has increased in 2011/2012 and stands at 1,332 or 6% of the total. As Chart 14 shows the proportion of ethnic minorities has been rather changeable over the last decade, fluctuating between 4% and 7% with an average of 6% over the 10 year period.

Chart 14 – Ethnic minority first-year trainees as a proportion of all first-year trainees 2002-2011 (Great Britain)

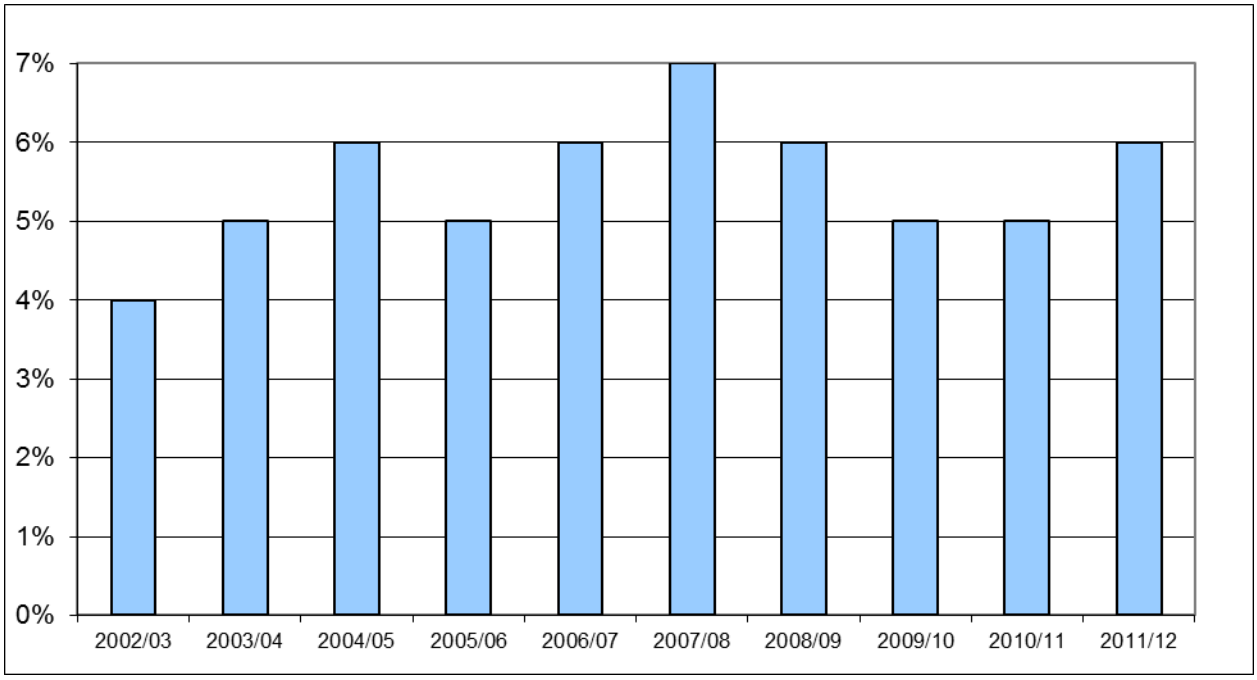
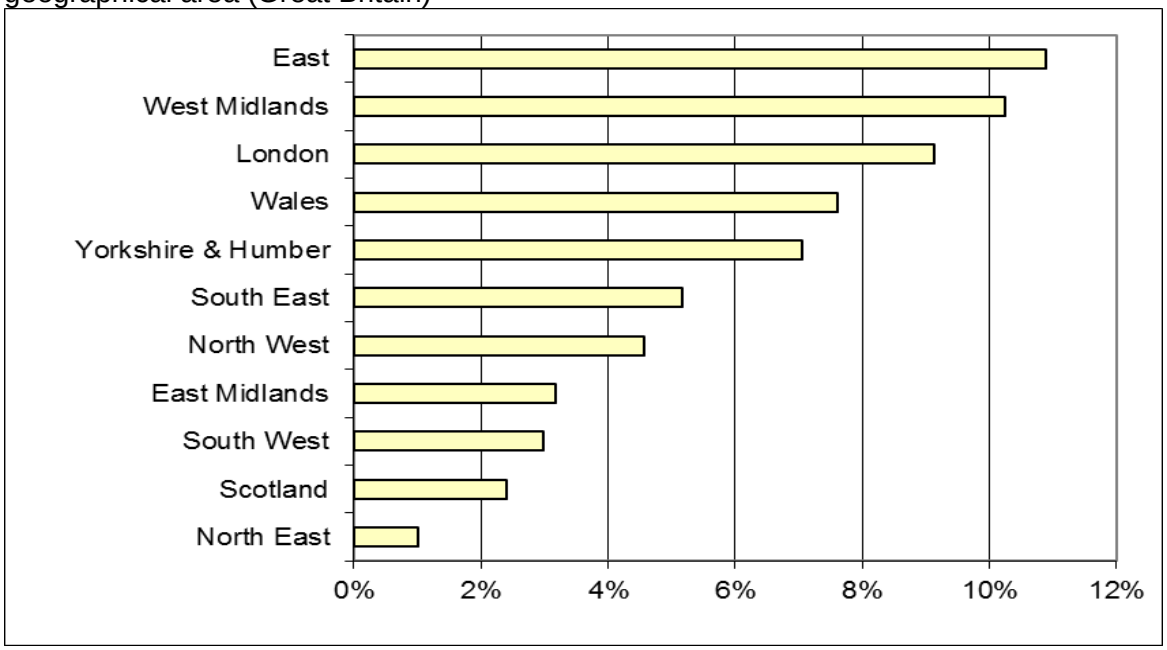


Chart 15 shows that there is great variation regarding the distribution of ethnic minority trainees across the regions and nations. For the last 10 years London has had the highest proportion of ethnic minority trainees, however this proportion has been decreasing annually and this year is no exception, having declined from 11% last year to 9% this year. In contrast to this there are three regions/nations showing a significant increase in the proportion of ethnic minority trainees when compared to last year, Wales has increased by 6% and both the West Midlands and East of England have increased by 4%.

[15] Labour Force Survey, 4 quarter average Spring 2011 Great Britain

Chart 15 – Ethnic minority first-year trainees as proportion of all first-year trainees by geographical area (Great Britain)



Section 2: Forecasted Demand for Craft and Technical Construction Training 2012–2016

ConstructionSkills, through the Construction Skills Network[16], 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 5 (by geographical area) and Table 6 (by construction trades).

Table 5 shows that in terms of the skilled manual trades the North West is the region/nation with the greatest employment demand for the period 2012-2016 and the West Midlands has the lowest employment demand for these trades over the time period.

Table 5 – Requirement for skilled manual trades by geographical area (Great Britain)

	Total employment		Average annual requirement**
	2012	2016	2012-2016
East	89,480	89,050	2,780
East Midlands	60,930	57,500	1,260
London	122,090	115,780	1,250
North East	37,570	39,500	1,950
North West	91,220	90,400	4,610
Scotland	90,620	100,600	2,920
South East	126,160	129,730	1,710
South West	75,970	83,940	2,660
Wales	47,840	52,490	1,640
West Midlands	77,530	74,030	460
Yorkshire & Humber	80,580	81,240	1,360
Total	**899,990**	**914,260**	**22,600**

Source: ConstructionSkills Employment Model, 2012

Notes: Table 5 is a subset of the table that appears in Blueprint for UK Construction Skills 2012-2016 report. It covers only the skilled manual trades and excludes managers, clerical staff, technical staff and professional occupations.
**The Average Annual Requirement (AAR) 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 AAR 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.[17]

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

[16] Construction Skills Network, Blueprint for UK Construction Skills 2012 to 2016 http://www.cskills.org/sectorskills/csn/csnoutputs/outputsuk.aspx
[17] Construction Skills Network, Blueprint for UK Construction Skills 2012 to 2016, CSN Explained http://www.cskills.org/sectorskills/csn/csnoutputs/outputsuk.aspx

Table 6 shows that the industry needs to recruit 22,600 new entrants annually in each of the next five years in order to meet demand for the occupations listed. 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.

Table 6 – Requirement for skilled manual trades in the construction trades (Great Britain)

	Forecast		Average annual requirement** 2012-2016
	2012	2016	
Main trades			
Wood trades and interior fit-out	254,240	269,900	3,210
Bricklayers	63,150	59,440	2,420
Building envelope specialists	92,800	97,970	350
Painters and decorators	113,160	109,870	2,260
Plasterers and dry liners	47,470	49,420	2,360
Main trades total	**570,820**	**586,600**	**10,600**
Roofers	37,910	38,810	920
Floorers	32,620	33,000	1,450
Glaziers	27,260	25,930	1,670
Specialist building operatives nec*	53,320	51,350	1,290
Specialist building trades total	**151,110**	**149,090**	**5,330**
Scaffolders	19,860	20,030	880
Plant operatives	40,840	41,930	2,390
Plant mechanics/fitters	36,000	33,390	960
Steel erectors/structural	28,290	28,590	820
Civil engineering operatives nec*	53,070	54,630	1,620
Civil engineers total	**178,060**	**178,570**	**6,670**
Total	**899,990**	**914,260**	**22,600**

Source: ConstructionSkills Employment Model, 2012

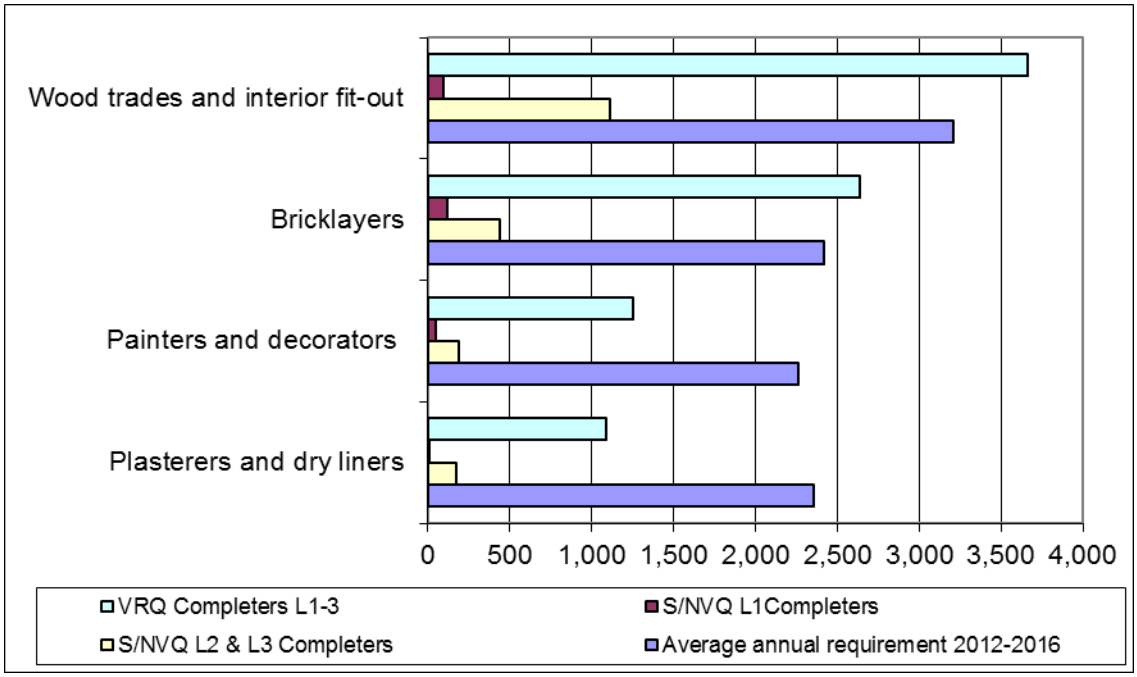
Note: Table 6 is a subset of the table that appears in Blueprint for UK Construction Skills 2012-2016 report. It covers only the skilled manual trades and excludes managers, clerical staff, technical staff and professional occupations.
* nec = not elsewhere classified.
**The Average Annual Requirement (AAR) 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 AAR 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.[18]

The most marked changes in AAR between the 2011-2015 forecast and the 2012-2016 forecast are in wood trades and interior fit out whose AAR has fallen from 5,920 to 3,210 and civil engineering operatives nec whose AAR has increased from 380 to 1,620. The changes in the predicted AAR for these occupational groups may be as a result of major projects or programmes of work which have been brought forward to try and kick start the construction industry since the previous forecast was produced.

Charts 16 and 17 compare the AAR for skilled manual trades against the expected number of successful completers from the 2011/12 intake of trainees.

[18] Construction Skills Network, Blueprint for UK Construction Skills 2012 to 2016, CSN Explained http://www.cskills.org/sectorskills/csn/csnoutputs/outputsuk.aspx

Chart 16 – Average annual requirement for main construction trades (2012-2016) and expected successful learner outcomes from the 2011/12 trainee intake. (Great Britain)



Source: Construction Skills Network Model 2012 ConstructionSkills Trainee Numbers Survey 2011/2012; Data Service 2010/2011

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 2012 and 2016. The remaining three 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.

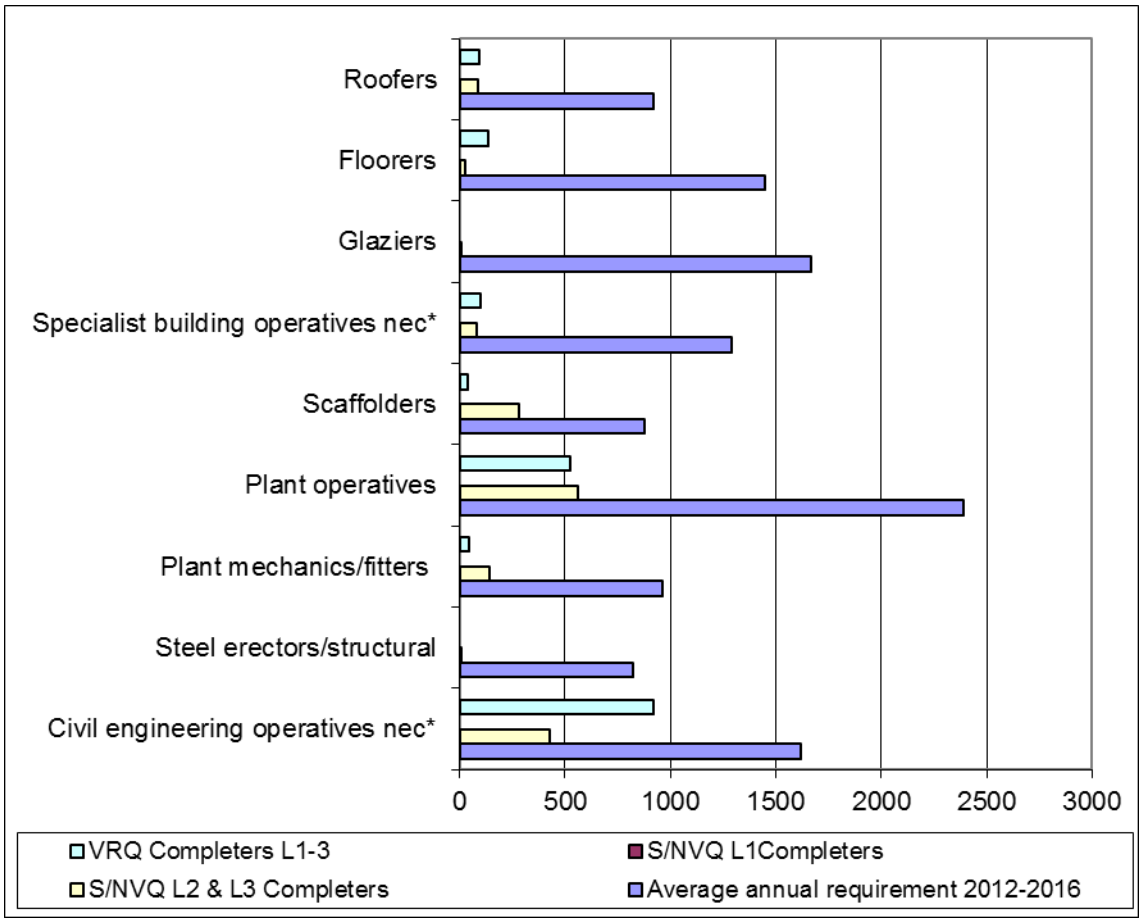
It is very clear from Chart 16 that there are insufficient trainees on Level 2 and Level 3 S/NVQ qualifications to meet predicted demand in all of the main trades, indeed even if we include Level 1 S/NVQ trainees (whom are not considered by the industry to be sufficiently competent), demand is still not being met.

The top bar of Chart 16 gives the expected number of completers on Vocational Related Qualifications (VRQs), akin to S/NVQ Level 1 qualifications these are not considered sufficient to meet the needs of the industry, but do, in conjunction with S/NVQ Level 1 qualifications, provide a route into training which gives employers some flexibility in making up the short-fall in future years.

Chart 16 clearly demonstrates that when it comes to training in the main construction trades VRQ's are extremely popular. If we combine the number of trainees who have completed S/NVQ's and those who have completed VRQ's it shows that there is an oversupply of trainees in bricklaying and wood trades. However, the amount of training being undertaken in painting and decorating and plastering and dry-lining across all qualification levels is still insufficient to meet the demand for these occupations over the next five years.

Since 2009/2010 the main construction trades have accounted for around three quarters of all manual occupation training with the remaining quarter undertaking training in the specialist building and civil engineering occupations and this year is no exception with proportions of 76% and 24% respectively.

Chart 17 – Average annual requirement for specialist construction trades and civil engineers (2012-2016) and expected successful learner outcomes from the 2011/12 trainee intake. (Great Britain)



Source: Construction Skills Network Model 2012 ConstructionSkills Trainee Numbers Survey 2011/2012; Data Service 2010/2011

The situation regarding training in the specialist construction trades and civil engineering occupations is similar to that of the main construction trades, currently training levels for each occupation are not sufficient to meet the predicted demand.

Civil engineering is the only group approaching something like the level of training required to meet demand (at 83%). In addition to this the AAR figure represents the demand in construction only; whereas for some of these occupations it has been proven that large numbers will enter employment in another industry, for example plant operatives; approximately 79% of those currently in training in this occupation will enter employment in another industry (e.g. agriculture, manufacturing, mining and quarrying)[19].

As is the case with the main construction trades even if all levels and types of training are combined they still prove that levels of training in each occupational area fall considerably short of the predicted demand. This shortfall appears to be greatest for steel erectors and glaziers where formal training at Further Education colleges and private training providers only meets 1% of the predicted demand for these occupations.

[19] Experian, Construction Skills Network, 1st Round Presentation 2009.

Section 3: Construction Training Capacity 2011/2012

In recent years the construction industry has trained insufficient people to meet the demand for trained workers. The resultant shortfall has been 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 (with only 5% of employers reporting hard to fill vacancies in 2011 compared to 29% in 2009)[20], in the short-term in the main trades although it is still a very real problem in the specialist and civil engineering occupations. 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 when the 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

Table 7 shows that in 2011/2012 there were just over 18,000 applicants for approximately 15,000 places on construction courses in the skilled manual trades (a significant drop from 2010/2011 when there were 33,000 applicants for 23,500 places). In terms of the ratio of applicants per starter this has fallen from 1.4 in 2010/11 to 1.2 in 2011/12. The decline in applicant numbers and starters may be a reflection of the double dip recession being experienced by the construction industry and negative publicity around construction and career prospects in the industry.

Table 7 – Applicants and starters to skilled manual trade courses 2011/2012 (Great Britain)

	Applicants	Starts	*Applicants per starter*
Wood trades and interior fit-out	6,921	5,300	*1.3*
Bricklayers	4,618	3,475	*1.3*
Painters and decorators	1,626	1,357	*1.2*
Plasterers and dry Liners	1,608	1,367	*1.2*
Main trades total	**14,773**	**11,499**	***1.3***
Roofers	**232**	**204**	*1.1*
Floorers	**127**	**120**	*1.1*
Glaziers	**12**	**12**	*1.0*
Specialist building operatives nec*	**300**	**287**	*1.0*
Specialist building trades total	**671**	**623**	***1.1***
Scaffolders	**491**	**491**	*1.0*
Plant operatives	**618**	**666**	*0.9*
Plant mechanics/fitters	**223**	**227**	*1.0*
Steel erectors/structural	**-**	**-**	-
Civil engineering operatives nec*	**1,695**	**1,469**	*1.2*
Civil engineering trades	**3,027**	**2,853**	***1.1***
	18,471	**14,975**	***1.2***

Source: ConstructionSkills Trainee Numbers Survey 2011/2012

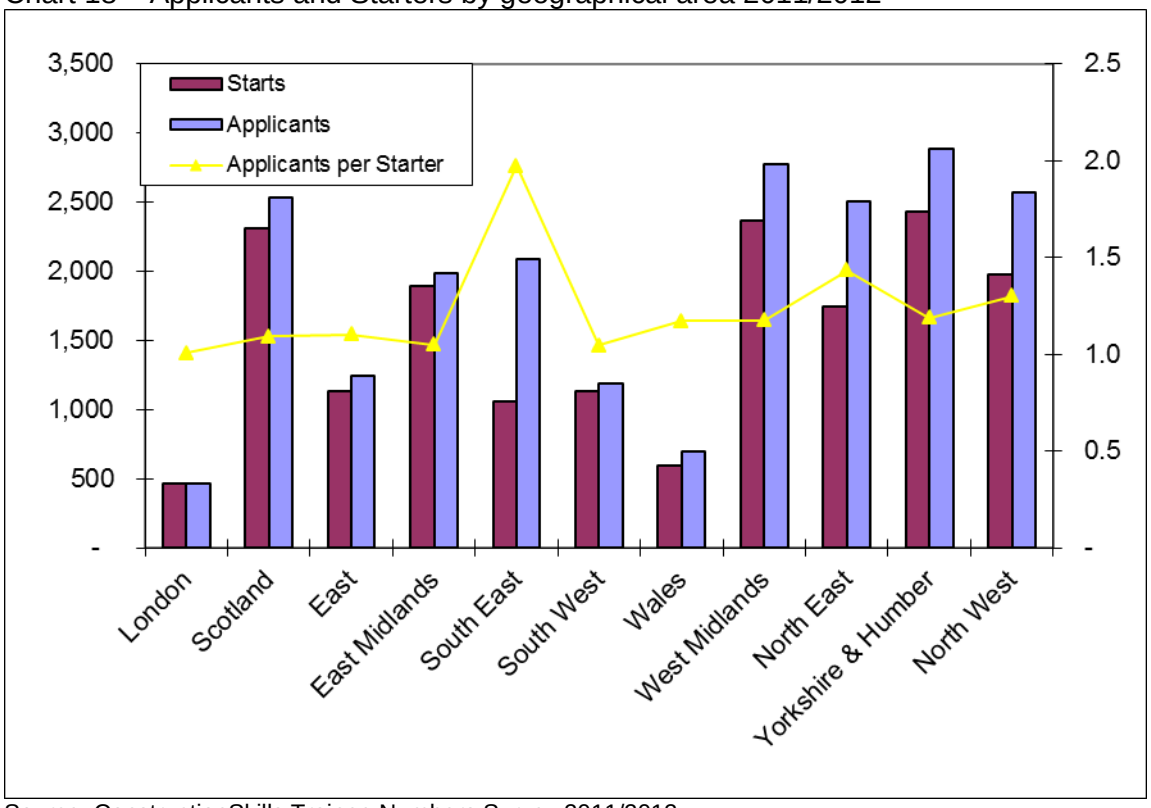
[20] ConstructionSkills, Training and Skills in the Construction Sector, 2011 (http://www.cskills.org/sectorskills/researchfromssc/skills_needs_survey.aspx)

Table 7 shows a clear difference between the main trades and specialist and civil engineering trades with the majority of specialist and civil engineering trades having a lower ratio of applicants per starter, meaning that many of the applicants for these trades started a course. This pattern is one that has been consistent in both 2009/10 and 2010/11.

3.2 Applicants by geographical area

Chart 18 shows the training capacity for the skilled manual trades by geographical region/nation, the regions/nations with the highest number of applicants and starters are the West Midlands and Yorkshire & Humber, while London remains the region with the least applicants. In contrast to this the region/nation with the highest applicant to starter ratio is the South East with 2 applicants per starter. These trends are consistent with those seen in 2010/11 and 2009/10.

Chart 18 – Applicants and Starters by geographical area 2011/2012



Source: ConstructionSkills Trainee Numbers Survey 2011/2012

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

3.3 Capacity Expansion Constraints

Respondents to the survey were also asked to detail any limitations to expanding their provision at each qualification level and this information may help to explain the drop in trainee numbers experienced this year (overall there were 117 responses).

The following four key themes are evident from the verbatim responses:

- Recession/Budgets/Funding availability/accessibility
- Employment related issues – finding placements/sponsors
- Space available for training facilities or within existing facilities
- Staffing/resource issues.

However 20% of respondents to the question of capacity limitations (across all qualification levels) stated that there were no limitations to expanding their provision.

The most prevalent capacity restraints listed against Level 1 to Level 3 qualifications were employment related issues (25%) followed by funding related issues (14%). This is not surprising given that the majority of responses were listed against S/NVQ qualifications, which require an employer placement and these have become increasingly difficult to obtain during the economic downturn with firms going out of business or not having a secure enough workload to take on apprentices[21].

Availability and accessibility of funding available for employers to train further compounds this problem. This is corroborated by the findings of the Training and Skills in the Construction Sector (2011)[22] research mentioned earlier where 21% of employers listed funding issues as the main barrier to providing training.

Fewer responses were provided when looking at Level 4 plus qualifications but of all the barriers mentioned against Level 4 qualifications employment issues remain at the top accounting for 25% of responses.

[21] ConstructionSkills, Training and Skills in the Construction Sector, 2011 (http://www.cskills.org/sectorskills/researchfromssc/skills_needs_survey.aspx)
[22] ConstructionSkills, Training and Skills in the Construction Sector, 2011 (http://www.cskills.org/sectorskills/researchfromssc/skills_needs_survey.aspx)

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.[23]

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 2010/2011 while Trainee Numbers Survey figures refer to 2011/2012; 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 8 shows the number of starters on construction and the built environment courses at higher education institutions split by qualification level and subject area. In 2010/2011 the total number of starters was 24,300 a drop of nearly 4,000 since 2009/2010 (28,070). Over half of all students starting a qualification were on a first degree course (53%) and a further quarter commenced postgraduate degree courses (26%), the remaining 5% started a foundation degree and 15% began other undergraduate courses. These proportions have remained largely unchanged since 2008/2009.

Table 8 – Student enrolments on built environment courses by subject and qualification aim 2010/2011 (United Kingdom)

	Other Undergraduate	Foundation Degree	First Degree	Postgraduate Degree	Totals
Civil engineering	624	215	3,610	1,569	6,017
Architecture	572	66	3,765	1,744	6,147
Building	1,621	840	4,030	1,067	7,557
Landscape design	95	66	251	211	622
Planning (urban, rural & regional)	451	146	1,214	1,617	3,429
Others in architecture, building & planning	236	0	113	179	528
Totals	**3,598**	**1,332**	**12,983**	**6,387**	**24,300**

Source: HESA 2010/2011

Building courses were the most popular with students, accounting for 63% of all foundation degrees and 45% of those undertaking other undergraduate level courses.

However, students on postgraduate degree courses were more evenly split across the subjects with civil engineering and planning both at 25% and architecture only just coming out on top at 27%.

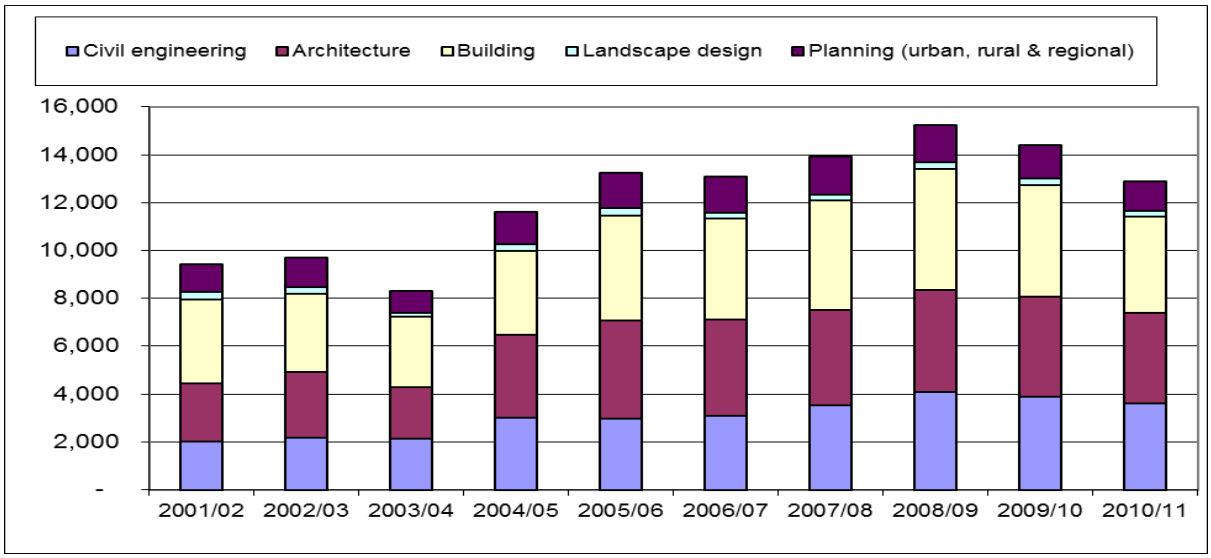
[23] For more information see www.hesa.ac.uk

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. For the first three years levels of students commencing first degree courses remained at just under 10,000, since 2004/2005 numbers of first degree students generally increased to peak in 2008/2009 at just over 15,000. Numbers fell slightly in 2009/2010 followed by a steeper decline in 2010/2011 to 12,900, representing a 10% drop in numbers.

Chart 19 – Student enrolments on first degrees in built environment by subject 2001 - 2010 (United Kingdom)



Source: HESA 2010/2011

It is interesting to note that in 2006 university tuition fees in England were increased from £1,000 to £3,000 and although first degree numbers dipped slightly that year numbers increased over the next two years, reflecting a pattern seen with all degree courses not just those in construction[24].

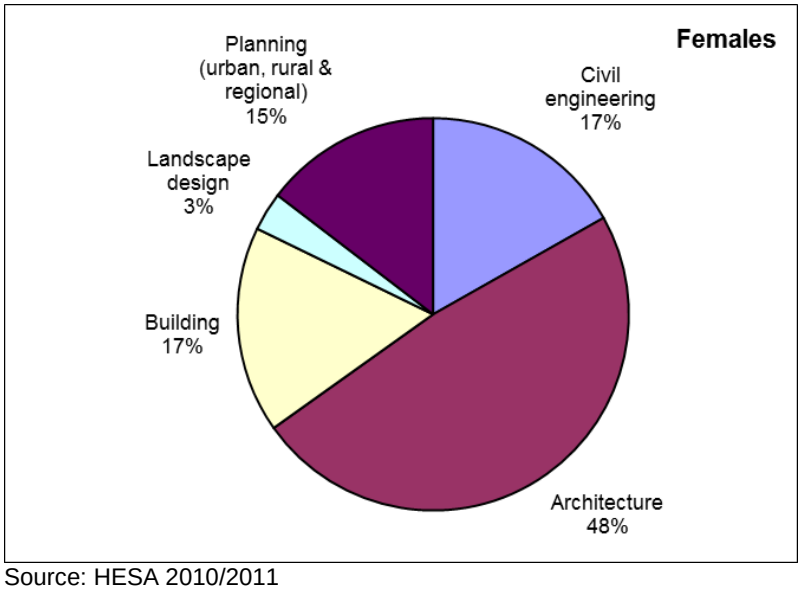
Since the government reduced funding going to universities in the October 2010 Comprehensive Spending Review[25] a further increase in university tuition fees was agreed, which would take effect from September 2012, allowing universities in England to increase their fees to £6,000 with the potential to further increase them to £9,000. During 2012 changes have also been made to the university fees in the devolved nations, however with the exception of English students they do not affect those studying in their home nation[26]. These changes have already had an impact with enrolments between June 2011 and June 2012 reported by the University College Application Service (UCAS)[27] to have decreased by 10% in England, 2.1% in Scotland, and 2.9% in Wales.

Charts 20 and 21 show the proportions of males and females recorded for each of the construction and built environment courses. For the past seven years the gender split of first year degree students has remained at roughly one quarter female and three quarters male. Since 2004/2005 architecture has been the most popular course with female students (45% on

[24] http://www.guardian.co.uk/education/2011/oct/24/university-applicants-drop-tuition-fees
[25] http://www.bbc.co.uk/news/education-11677862
[26] http://www.bbc.co.uk/news/education-19182000
[27] http://www.bbc.co.uk/news/education-19182000

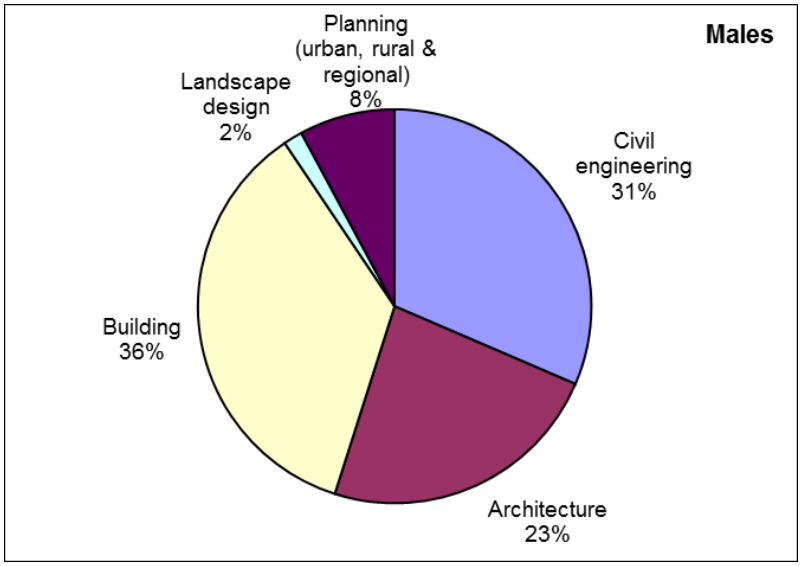
average during this period), and building was the most popular with the male students (36% on average).

Chart 20 – Females enrolling on built environment courses by subject 2010/2011 (United Kingdom)



Source: HESA 2010/2011

Chart 21 – Males enrolling on built environment courses by subject 2010/2011 (United Kingdom)



Source: HESA 2010/2011

HESA also collect data on ethnic origin and over the period 2005/2006 to 2010/2011 the proportion of undergraduates from an ethnic minority has been increasing very gradually each year from 15% of trainees in 2005/2006 to 21% at the end of the period. For the last two academic years the Black or Black British – African ethnic minority group has accounted for almost a quarter of all ethnic minorities.

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 23% and 21% respectively at degree level.

Conclusion

The construction industry has been particularly hard hit by the current recession across all sectors and it is clear that training levels in the industry have been affected as they have been in previous recessions. Formal construction training has continued to decrease as a result of the prolonged economic downturn with first year trainee numbers dropping by 19,000 since 2007 which is a greater decline than that seen in the recession of the early nineties.

Higher education enrolments for construction and the built environment courses have also been affected by the recession showing a decline of nearly 4,000 between 2009/10 and 2010/11. This decline reflects that seen across all subjects where enrolments between June 2011 and June 2012 are reported by the University College Application Service (UCAS) to have decreased by 10% in England, 2.1% in Scotland and 2.9% in Wales. Higher education enrolments have also been affected by significant cuts in government funding to universities and colleges and subsequent changes to tuition fees across the nations which came into effect in 2012, the most significant of which being the increase in fees for English students[28].

The UK government has continued to actively promote apprenticeship schemes and their benefits to employers and industry and continues to provide financial incentives for businesses to take on apprentices and in 2011 the UK government pledged to fund up to 250,000 more apprenticeships[29]. This may explain why the Trainee Numbers Survey found that the proportion of trainees undertaking an apprenticeship has increased for the second year running and has almost returned to the level seen before the start of the recession. ConstructionSkills research has also found that many employers across the UK are maintaining their apprenticeship numbers and the number of employers stating that they have an apprentice has also increased since 2009[30].

The economic climate remains the most significant driver behind the trend for lower levels of all training. The ConstructionSkills' Employer Panel[31] from October 2011 found that the recession has impacted on the amount of training and the way it is delivered as well as on the availability of apprenticeships with two thirds of employers stating that there are more people who want to become an apprentice than there are positions available due to a lack of work placements.

The lack of work placements has also affected trainee numbers with increasing numbers of trainees commencing VRQ qualifications which do not require any proof of working on site, this year 68% of all starters on construction craft training courses were studying for a Diploma or Certificate. As the industry generally doesn't consider VRQ qualifications as making people work ready this could be a problem when demand for skilled workers starts to increase.

The latest construction forecasts[32]predict another tough year for construction with output expected to fall by 3%. This is attributed to the continuing economic uncertainty plaguing the UK economy over recent years. Construction employment will decline in the early part of the forecast period (2012-2013), but will start to grow again in 2014. The annual average requirement for employment during the forecast period is 46,000 with employment predicted to reach almost 2.6 million by 2016. Therefore it is imperative that the industry continues to train to ensure that there are enough skilled and qualified workers.

Whilst 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.

[28] http://www.bbc.co.uk/news/education-19182000
[29] http://www.is4profit.com/small-business-news/20110530-government-funding-boost-to-apprenticeships.html
[30] ConstructionSkills, Training & Skills in the Construction Sector, 2011
[31] ConstructionSkills, Employer Panel Wave 11, October 2011
[32] Construction Skills Network, Blueprint for UK construction skills 2012 to 2016

Appendix

Figure 1 – First-year trainees by geographical area 2011/2012 (Great Britain)

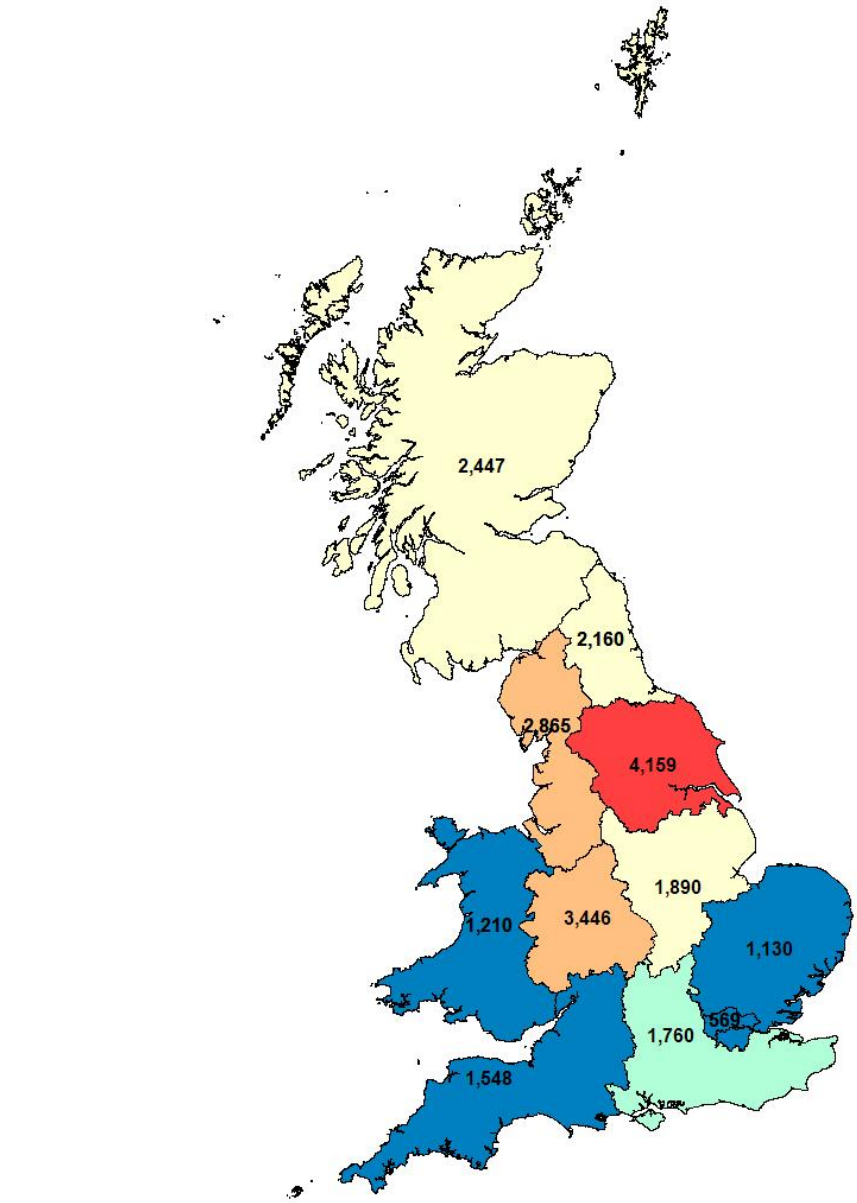


Figure 2 – Forecasted annual average requirement for skilled manual trade workers by geographical area 2012-2016 (Great Britain)

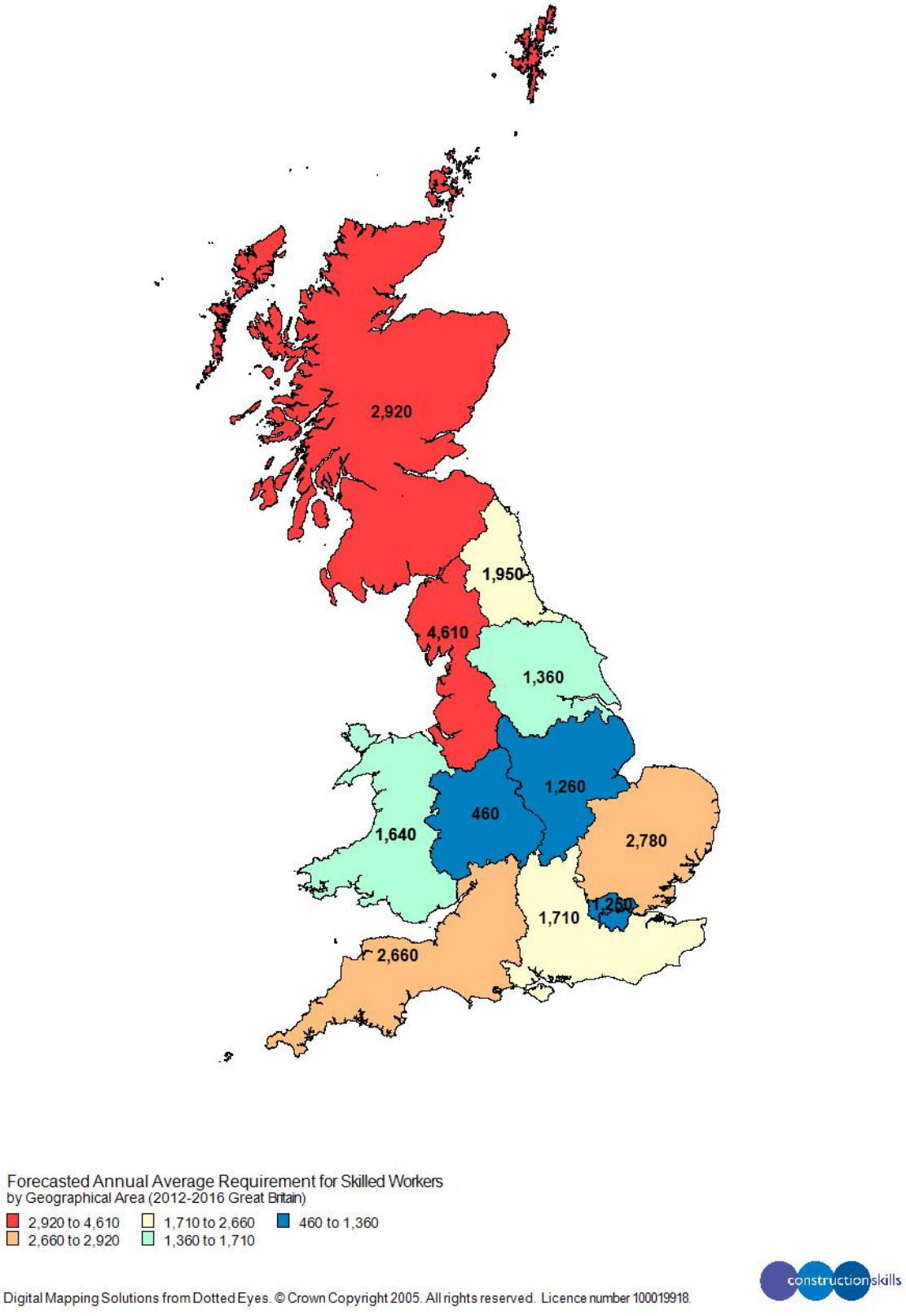


Figure 3 – Applicants to construction courses in the skilled manual trades by geographical area 2011/2012 (Great Britain)