

Cambridgeshire

CONSTRUCTION and the BUILT ENVIRONMENT

(subsequently referred to as Construction)



Leading learning and skills

Targeting the sectors vital to the economy of Cambridgeshire

Introduction

This paper outlines the workforce dynamics and skills and training issues in key sectors in the Cambridgeshire economy.

The paper sets out:

- The demographics of the workforce
- The skills and qualifications profile of the workforce
- The likely demand for and supply of new skills and workers, now and in the future
- The local business drivers

Definition of the Sector:

There are two Sector Skills Councils for the sector:

- **Construction Skills (CITB)** – sector activity includes infrastructure, public sector (e.g. schools, hospitals), and industrial buildings
- **Summit Skills** (heating, ventilation, refrigeration, plumbing and electro-technical)

Construction in the Cambridgeshire economy

The majority of establishments 95% are ‘micro businesses’ employing between 1 and 10 people. This accounts for around 8,000 of the workforce out of a total of 17,400 for the sector¹.

According to the same source, there is a male/female ratio of 75% to 25% and 85% of workers are full time employees.

Nevertheless, the proportion of the construction workforce in micro businesses is significantly higher than the proportion of workers in the same type of establishments in the economy as a whole.

The importance of micro businesses in the construction sector has implications for workforce development initiatives. Historically, stakeholders have found it difficult to encourage owners and managers of establishments of this kind to engage in workforce development or their own lifelong learning. This is unfortunate in that

¹ Annual Business Inquiry 2005

some micro businesses may grow to be significant employers in the future. However, the reality for many small and micro businesses is that they cannot provide cover for people engaged in learning away from the workplace and this time represents lost income in addition to the direct costs of the training.

Key messages for Cambridgeshire

- Construction is an important sector in the Cambridgeshire economy both in terms of economic output and employment. Ensuring an adequate supply of new skilled entrants to the workforce will be key to the future development of the sector
- Self employment and employment in micro businesses are much more common in construction than many other sectors
- The self employed and micro businesses are generally difficult to engage in learning and the structure of the industry represents a significant challenge for ensuring learning provision is responsive to local needs

The National and Regional Context

Background

Employing over two million workers nationally, the construction sector underpins all other UK industries and public services.

Construction is a fragmented industry with heavy reliance on a sub contracted workforce of small and medium sized enterprises employed on a short term, project by project basis. The sector has seen sustained growth over the last 10 years, with both output and total employment increasing by around 30% during this time.

In the East of England region, the construction industry accounts for 8% of total employment, with around 150,000 employees. There are approximately 34,500 businesses, with almost 94% employing 10 or fewer people.

The age distribution of the workforce in the East of England is similar to the national picture, with the highest proportion (60%) aged between 25 and 44. A further 30% of the workforce is aged 50+².

According to the sector, the East of England needs an average of nearly 15,000 fully skilled new entrants each year between 2006 and 2010 to ensure delivery of the regions' major housing, health, education and infrastructure projects, in addition to the demand brought about by 2012 Olympics³.

Key drivers of change

The construction sector is heavily dependent on confidence in the general economy and is often characterised by cyclical swings between high peaks and low troughs of business activity. Businesses tend to lay off staff during periods of economic downturn while struggling to recruit during periods of growth.

² Source: ABI 2005

³ Source: Construction Skills

As well as leading to skill shortages, this situation perpetuates the image of construction as a sector unable to offer job security, making it unattractive to young people with the aptitude to develop the technical and managerial skills necessary to take the sector forward. Problems caused by the cyclical nature of the sector have been exacerbated by some employers failing to take skills shortages seriously and attributing them to factors beyond their control.

Construction Skills also suggest that the market for prefabricated buildings is expected to show continued growth in the coming years, mainly due to the benefits of increased productivity, levels of consistency, improved waste reduction and economies of scale.

The move to pre-assembly will have significant implications on future skill requirements. In particular, construction and site manager's employees in the construction workforce could see a need for better IT, communication, collaboration, planning, quality control and general business skills. However, for some crafts workers the move to pre-fabrication could reduce the level of skills required.

The concentration of Olympics and related projects in the South and East of England continues to ensure that, while all regions are expected to see some growth between 2007 and 2011, the highest levels of demand will be in the Southern regions. Continuing the trend started in 2006, Greater London, the South East and the East of England should have increased their share of total construction output from 38.4% (2005) to 41.1% by 2011.

The Olympics is one of the catalysts for the shift in industry growth from North to South in the coming years. It will be interesting to see if this trend continues beyond 2011, when the Olympic build programme will be largely complete. Construction in the capital is most likely to be buoyed by major infrastructure projects and major developments such as Thames Gateway, long after the 2012 Olympics.

Construction employment in the region is projected to reach around 307,000 by 2011 representing 10.8% of the UK total. Trade jobs in the East of England should increase by 14.6% between 2007 and 2011, whereas professional jobs are only set to rise by 3.4%.

The East of England is expected to require an additional 10,160 construction employees on average each year, of which 1,540 are for electrical trades and installation and a further 1,140 are for wood trades and interior fit-out. The largest proportionate increases are predicted to be in bricklayers and building envelope specialists⁴, each needing to recruit 7.5% of their 2007 base each year to meet anticipated demand.

⁴ Façade systems have become increasingly sophisticated to meet emerging stream of aesthetic and performance requirements. Seamless integration of the total building 'envelope' has become fundamental to the success of the building project and accounts for a large percentage of the total project costs.

Workforce development priorities

A perennial issue for many employers is attracting competent young people to join the sector. For many, construction has an image of hard work, and poor prospects for progression. Also, the sector has a significant under representation of both women and ethnic minorities compared with other industries. There is also a recognised problem of a low skill equilibrium within the sector, where employers look for cheap, low skill labour to keep costs down, and individuals do not receive the opportunities to improve their skills. The skill levels of construction staff (excluding the architectural and engineering activities sub sector) are still relatively low and skill gaps remain an issue within the sector, particularly for managers and within skilled trades.

Reviewing the wide range of skills and roles that will be required to build the UK in the next five years, the highest increases in employment will be seen in trade skills such as bricklayers and building envelope specialists, such as cladders and roofers, (both 14%), painters and decorators and scaffolders (both 13%) and wood trades workers (11%).

There is also likely to be a significant requirement for professionals and managers to enter the industry. Over 32% of the recruits forecast for the next five years are needed to fill roles as construction managers, architects and technical staff, or as senior executives, business process managers or office based and technical/IT recruits.

The areas with employment growth rates of over 10% between 2007-2011 are, generally, the same as those with the highest output growth rates: Greater London, Northern Ireland, the East of England and the South East. Almost 42% of all the recruits required to fulfil construction demand UK wide will be needed for work in London and the South and East regions.

Despite, or possibly as a consequence of, initiatives to improve the recruitment of new entrants into the industry, there remains an issue with capacity. The most pressing workforce development needs over the next 3–5 years for the sector will be:

- Ensuring a sufficient supply of skilled new entrants to the workforce
- Encouraging SME's to engage in workforce development
- Planning for sustainable learning provision in the event of future changes in the level of demand

Strengths

- An important and growing sector in the Cambridgeshire economy
- A wide range of employment opportunities in many skilled areas
- Sector Skills Councils that are well established

Weaknesses

- Cyclical nature of the sector leading to fluctuations in demand for construction workers
- A traditional perception of the industry as offering poor working conditions, unexciting work and little prospect of career progression, although perceptions are changing

Opportunities

- Significant infrastructure and housing developments planned in and around Cambridgeshire
- Industry wide support for a fully qualified workforce based on improved skills assessment, and greater encouragement for workers to gain qualifications
- Potential recruitment of skilled workers from Eastern Europe and the European Union accession countries
- Train to Gain and Skills Pledge

Threats

- Competition for skilled workers
- Significant numbers of self employed and small business managers, who are often more difficult to engage in a learning culture than managers in larger businesses
- High levels of over subscribed education and training programmes within the sector

The importance of micro businesses in the construction sector has implications for workforce development initiatives. Historically, stakeholders have found it difficult to encourage owners and managers of establishments of this kind to engage in workforce development or their own lifelong learning. However, the reality for many small and micro businesses is that they cannot provide cover for people engaged in learning away from the workplace and this time represents lost income in addition to the direct costs of the training.

The Current Workforce

Key messages

- There are conflicting messages about the extent of construction recruitment difficulties in Essex and the East of England
- However, there is some consensus that there is an unmet demand for skilled new entrants and an under representation of 16–24 year olds in the workforce (approximately 14% of the Cambridgeshire workforce is in this age group⁵)
- A further 24% of the workforce is aged over 50, and this proportion increases for managers and senior officials and the self employed. This does highlight a need for employers in the sector to engage in succession planning not just in terms of recruiting young people but in ensuring there are development routes for existing skilled trade workers to replace more experienced staff when they retire
- The sector continues to be dominated by male labour and encouraging more women into the construction workforce would significantly expand the potential pool of labour. This will require significant changes to the culture and working practices of the sector. ConstructionSkills is working to develop practices to redress the balance
- Skills gaps in the existing workforce are numerically most important in skilled trades and there is a need to ensure that workers in these occupations continue to update their skills

⁵ Source: Labour Force Survey 2006

- Managerial skills gaps are also widespread and management training provision for the existing work force needs to be extended
- Learning provision for the construction sector needs to reflect growth and ensure a sustainable supply of skills in periods of stability or decline
- Evidence from Construction Skills suggests that retention rates can be improved if a basic skills assessment is carried out prior to acceptance
- The increasing quantity of applicants for Apprenticeship positions and the current lack of employer placements imply that there is a need to encourage employers to help meet the demand for placements

The Construction Sector

Table 1: Number of businesses in Cambridgeshire

Employer Size band	Construction Skills	Summit Skills
Number of employees	number	number
1-10	3260	750
11-49	140	~
50-199	~	-
200 +	~	
Total	3430	790

Source: Annual Business Inquiry, 2005

~ Figures suppressed for reasons of confidentiality

Table 2: Number of employees in construction

Number of Employees in Construction		
LLSC	Construction Skills (Construction)	Summit Skills (Building Services Engineering)
Cambridgeshire	14,644	2,761
Total EoE	128,200	24,400

Source: Annual Business Inquiry, 2005

Table 3: Number of employees in Cambridgeshire by gender

Employees by Gender	Construction Skills	Summit Skills
Male	11,179	2,235
Female	3,465	526
Total	14,644	2,761

Source: Annual Business Inquiry, 2005

Table 4: Number of part time/full time employees in Cambridgeshire

Employees Part time/Full time	Construction Skills	Summit Skills
Full Time	12,711	2,386
Part Time	1,933	375
Total	14,644	2,761

Source: Annual Business Inquiry, 2005

Table 5: Number of businesses in Construction Skills by employee size in Cambridgeshire

Employer Size	Cambridgeshire
Number of employees	number
1-4	6,265
5-10	2,085
11-24	2,265
25-49	1,734
50-99	2,620
100+	2,436
Total	17,405

Source: Annual Business Inquiry, 2005

Skills shortages and gaps

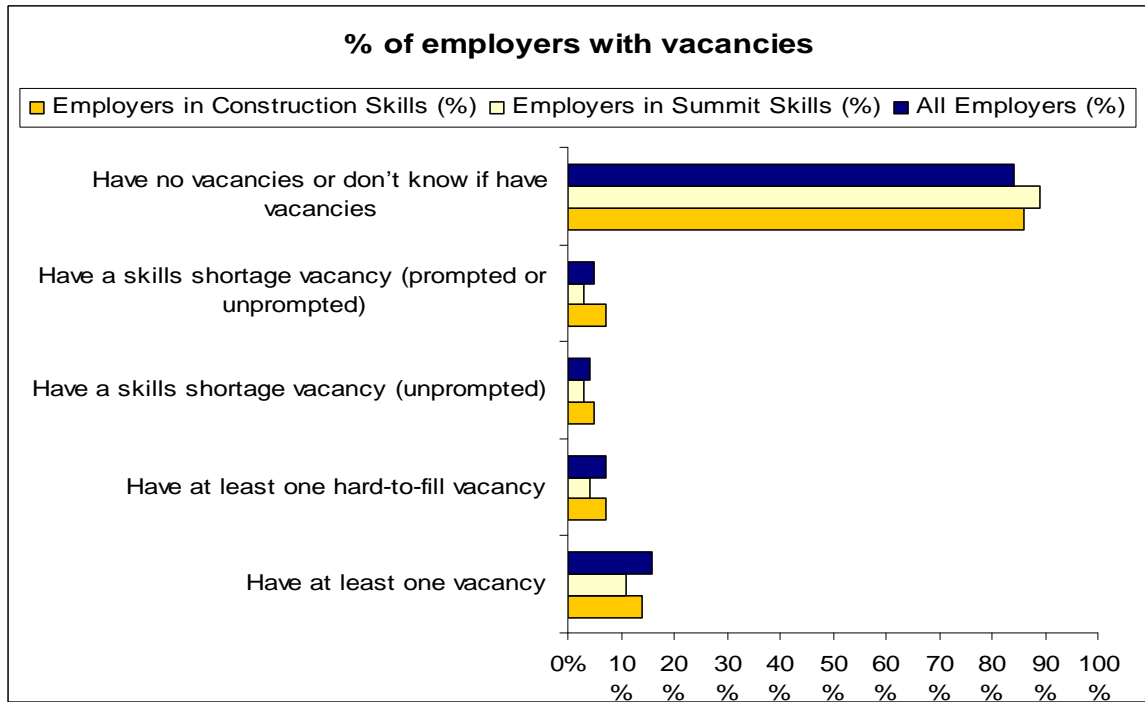
The National Employer Skills Survey (NESS) offers some insight into the sectors skills shortages (a lack of suitably skilled people in the labour market) and skills gaps (skills deficiencies in the existing workforce). It is important to note that the NESS does not include the self employed or businesses with only one employee. NESS data is regionally based and cannot be brought down to local level with any degree of certainty of information.

Table 6: Skills Gaps

Formal assessment of whether individual employees have gaps in their skills			
	Employers in Construction Skills	Employers in Summit Skills	All Employers
Yes	41%	48%	54%
No	58%	51%	44%
Don't know	1%	1%	2%

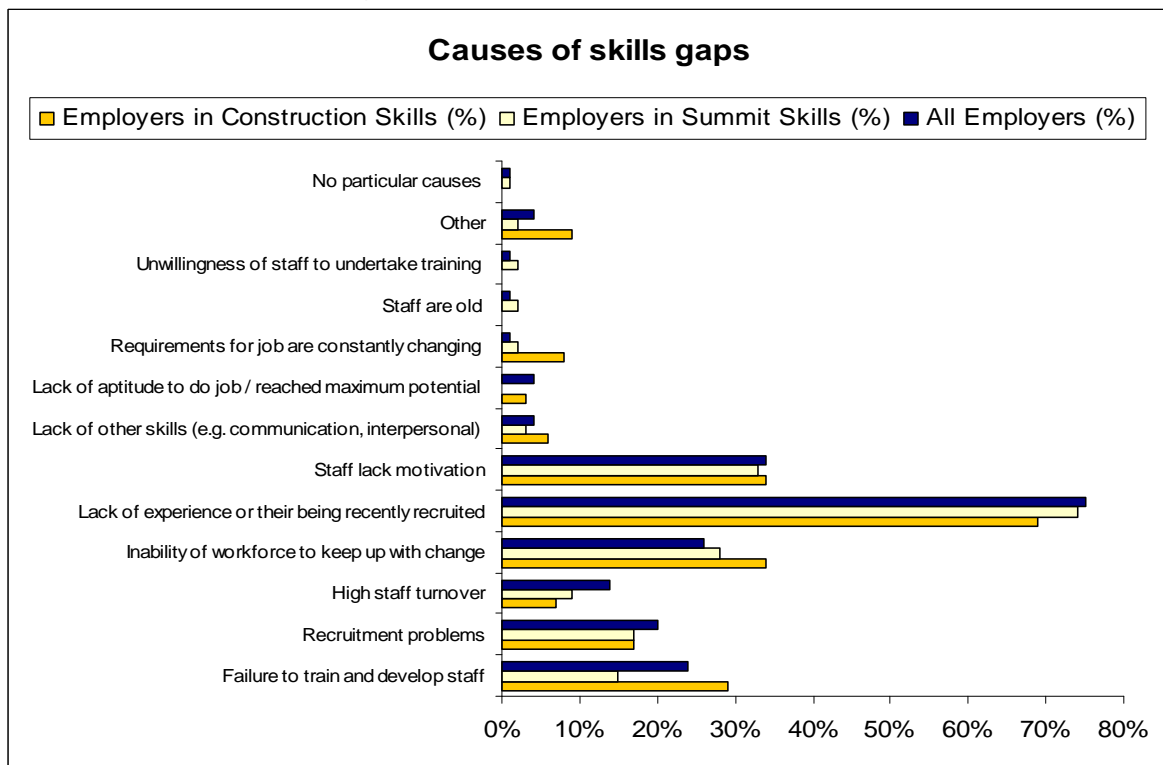
Source: National Employer Skills Survey, 2005

Chart 1: Percentage of employers with vacancies



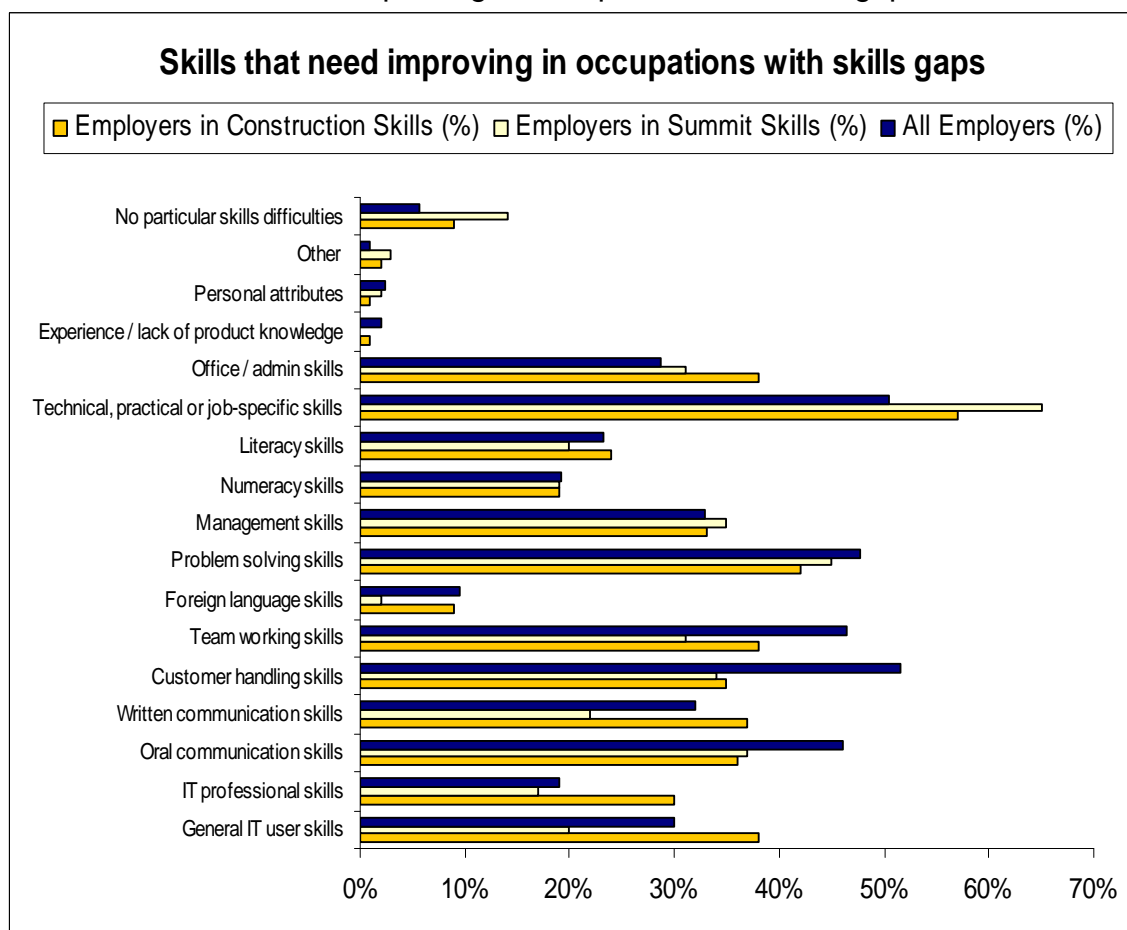
Source: National Employer Skills Survey, 2005

Chart 2: Causes of skills gaps



Source: National Employer Skills Survey, 2005

Chart 3: Skills that need improving in occupations with skills gaps



Source: National Employer Skills Survey, 2005

Changing working practices

While skilled trades remain the key area of demand for future skills, there is a greater emphasis on more generic attributes, such as communication and team working skills. Several programmes have emerged from Constructing.

Excellence, including the Construction Best Practice Programme, which focuses on the transformation of management and business practices, and Movement for Innovation, which is based around establishing key performance indicators relating to project management and productivity; these programmes emphasise the increasing demand for managers and for people with project management skills, who are better equipped to drive the industry forward. There is also a forecast increase in professional staff, which, although they remain a small minority in the industry, will help to improve the general skills profile of the workforce.

Employment Forecasts

According to network forecasts, the East of England needs on average just under 15,000 fully skilled new entrants each year between 2006 and 2010 to ensure delivery of the region's major housing, health, education and infrastructure projects, as can be seen in Table 7:

Table 7: Construction Skills employments needs between 2006 - 2010

2006-2010 East of England Construction Skills Employment Needs	2006	2010	Average Annual Requirement 2006/2010
Managers	23,450	27,870	1,780
Clerical	25,610	29,700	1,850
Engineering, IT & other Professionals	17,170	20,360	1,140
Technical	6,220	7,330	580
Wood trades	19,790	24,430	1,610
Bricklayers	9,640	12,130	930
Painters/Decorators	14,030	16,320	530
Plasterers	4,960	5,830	270
Roofers	4,280	5,230	330
Floorers	3,000	3,590	<10
Glaziers	3,460	3,870	140
Other specialists	5,480	6,590	330
Scaffolders	2,650	3,220	230
Plant ops	5,620	6,700	330
Plant mechanics	1,420	1,630	150
Steel erectors	1,000	1,220	100
General operatives	10,810	12,740	550
Maintenance	770	1,170	30
Electricians	27,360	32,700	2,080
Plumbers	12,530	15,060	610
Logistics	1,580	1,940	90
Other civil engineering	3,770	4,630	220
Architects	31,420	32,690	710
Total	265,420	314,880	14,590

Source: CITB-Construction-Skills East - *No information available for Summit Skills*

Supply Data

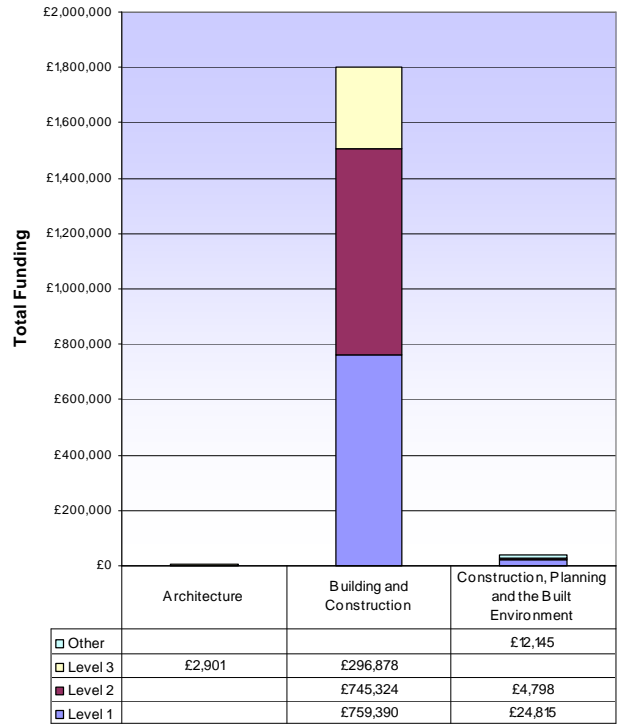
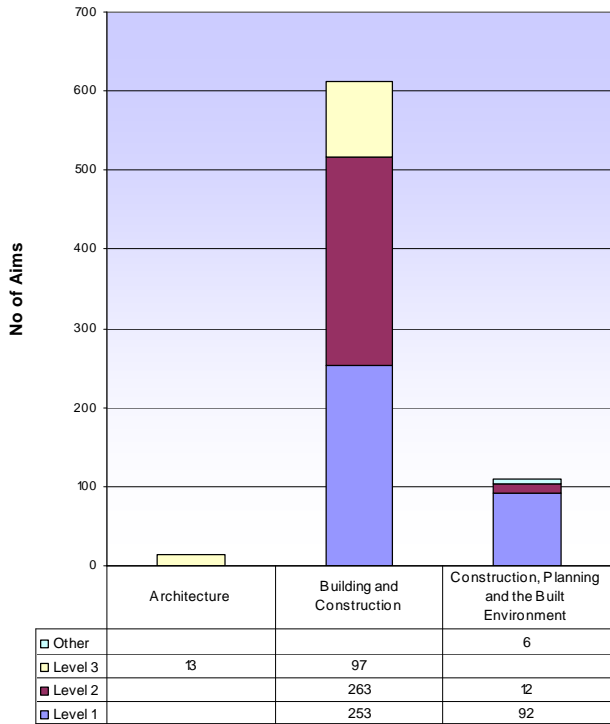
LSC Funded WBL Provision

Table 8: LSC funded WBL provision

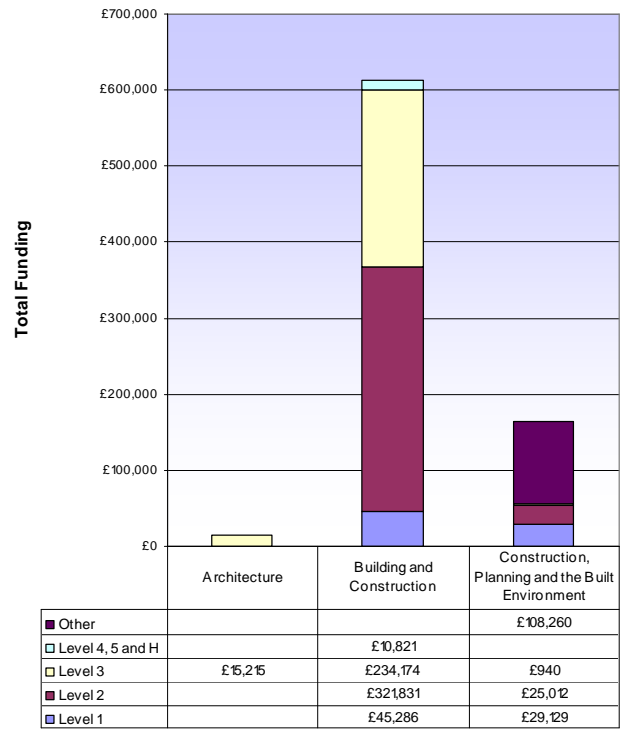
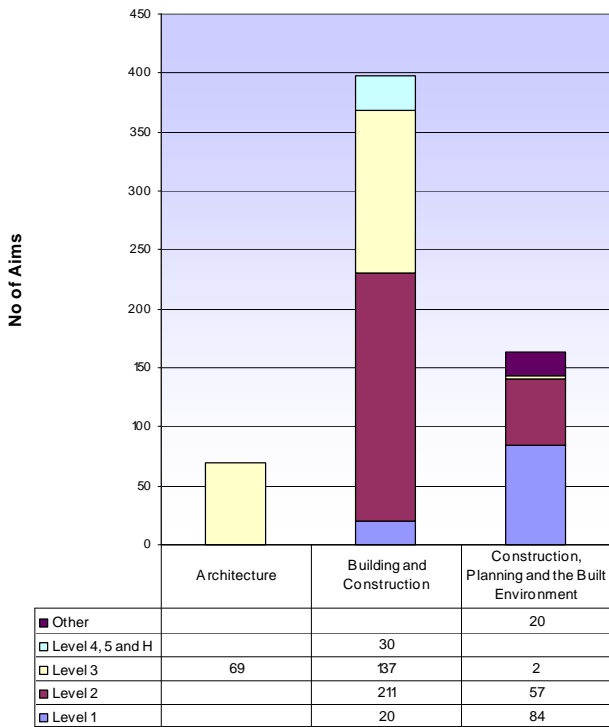
Programme Group	Average in Learning		
	2004/5	2005/6	2006/7
Advanced Apprenticeship	153	116	103
Apprenticeship	319	369	357
NVQ Programme	7	-	-

Source: Sharepoint

FE provision 16-18 2005/2006



FE provision 19+ 2005/2006



Key Findings and Conclusions

Construction output in the East of England was worth £8.1 bn in 2005 and this is forecast to grow at an annual average rate of 3.5% between 2007 and 2011⁶.

Infrastructure and public housing are set to be the fastest growing sectors and total construction output growth is forecast to be above the UK average.

An increase of 27% in total construction employment is forecast between 2005 and 2011. To meet this demand, after taking into account of those entering and leaving the industry, it is estimated that the East of England requires in the region of 15,000 construction workers each year - with electrical trades and installation having the largest annual requirement.

Key Findings:

Major projects include Gateways, Olympics, housing health, education and infrastructure projects.

Small businesses and the self employed are difficult to engage in learning and the structure of the industry represents a significant challenge for ensuring learning provision is responsive to local needs.

Sector has a relatively low qualifications base, around 56,000 unqualified workers in east of England as a whole.

Need to recruit qualified managers, with average annual regional requirement approximately 1,750 between 2006 and 2010 regionally.

The sector has very high levels of small businesses and self employed workers.

The sector workforce is predominantly male and has a low representation of BME workers.

There is under representation of young people (16-24) in the workforce but is average in its employment of older workers.

Recommended Priorities for Workforce Development

To ensure a sufficient supply of skilled new entrants to the workforce: reassess and review working practices with schools and partners to identify clear pathways into construction employment; such as via Construction academy; Apprenticeships; Train to Gain.

Encourage employers to engage in workforce development: via Train to Gain; Skills Pledge;

Encourage management training.

Improve supply of information on available training.

Work with Sector Skills Councils to ensure quality provision.

⁶ Construction Skills Network LMI 2007-2011

Plan for sustainable learning provision in the event of future changes in the level of demand.

Increase capacity to deliver learning provision for those who may be considering careers in the sector and there is a need to explore ways to expand provision.

Encourage more construction employers to offer apprenticeship placements to meet growing demand.

Foundation Degree programmes for the sector.

Ensuring an adequate supply of skilled new entrants to the workforce

Replacement demands

Ageing workforce

Male/female split

Ethnicity

Career option for young people

Qualification levels –unskilled/skilled and management

Flexible working patterns

Encouraging SME's to engage in workforce development

Radical approaches

T2G

SSC pushing for skilled workforce

Construction Skills On site Assessment and Training scheme (OSAT)

Develop list of preferred suppliers for others to use that meet skills and other professional or legal requirements

More flexible, bite-size provision to be developed

Encourage managers to plan for succession both for themselves and for the workforce as a whole

Development routes for existing workers to gain experience and higher level craft skills

Planning for sustainable learning provision

The cyclical nature of employment change in the construction industry poses some unique problems for learning provision. It could be argued that under current funding regimes for Further Education and Work Based Learning there is a significant time lag.

As the sector grows there will be an undersupply of skilled new entrants and when (or if) it begins to contract there will be an oversupply. This can be further exacerbated by the time taken for market signals to reach young people deciding on career and training options.

This raises significant issues for colleges relying primarily on the number of applicants when deciding to expand provision. In addition, it could be the case that if the industry were to contract in the future it might lead to an over reaction on the supply side. Many FE and WBL courses are based on minimum numbers of enrolments.

If a declining demand is spread across many courses, it seems likely that a large proportion of them may fail to have enough enrolments. This is inefficient and costly, many construction courses require specialist plant and teaching equipment and it takes time to develop programmes and train the trainers.

Appendix

Definition of Sector			
Sector Skills Council	Sector activity	SIC Codes - Description	
Construction Skills www.constructionskills.net	House building, infrastructure, public sector (incl. schools, & hospitals), industrial buildings	4532	Insulation work activities
		4534	Other building installation
		451	Site preparation
		452	Building of complete construction or parts thereof; civil engineering
		454	Building completion
		455	Renting of construction or demolition equipment with operator
		742	Architectural and engineering activities and related technical consultancy
Summit Skills www.summitskills.org.uk	Heating, ventilating, Electro-technical, Refrigeration, plumbing	4531	Installation of electrical wiring/fittings
		4533	Plumbing
		5272	Repair of electrical household goods
		31.1	Manufacture of electric motors
		31.6	Manufacture of other electrical equipment (not classified elsewhere)
		33.3	Manufacture of industrial process control equipment

Source: The Sector Skills Almanac UK 2007 (Skills For Business)

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