Construction Skills Network

Wales

Labour Market Intelligence 2006

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Contents

This document provides labour market intelligence for Wales and also includes national UK data. Similar reports have been produced for the nine English regions and for Scotland and Northern Ireland. These reports are all available upon request from ConstructionSkills.

The document replaces the Skills Foresight Report that was previously published annually for Wales. This new Labour Market Intelligence Report links into the work of the Construction Skills Network.

For information on the numbers of people currently entering construction training, as well as workload and recruitment difficulties being experienced by the industry, this report should be read in conjunction with the CITB-ConstructionSkills Trainee Numbers Survey and Employers' Skills Needs Survey Reports.

Future papers and briefings that reconcile the employment forecasts with the results from these other ConstructionSkills surveys will be published through the Network. Similarly, the Network will produce discussion papers that compare the differences between the Construction Skills Network forecasts with those published from other sources.

A glossary of terms used in this document is provided in Appendix I. Supplementary information, including the CITB-ConstructionSkills Employer's Skills Needs Survey and Trainee Numbers Survey, is available on the ConstructionSkills website at:

www.constructionskills.net

Extra resources for members of the Construction Skills Network are available at:

www.constructionskills.net/csn/membersarea

1 The headlines

- Across the UK, total employment in the construction industry is expected to rise by approximately 250,000 to 2.8 million during the forecast period (2006–2010).
- Total employment in the industry in Wales is expected to increase by approximately 12% during the forecast period.
- The combined Average Annual Requirement for SIC 45[*] (Construction) and 74.2[*] (Architects & Technical Engineers) in Wales is 5,870 between 2006 and 2010. Over the same period the annual average requirement for SIC 45 alone is 5,230.
- Following the national trend, Wood Trades is forecast to have the largest Average Annual Requirement in Wales at 950. Nationally, the Average Annual Requirement in Wood Trades is 11,090. Out of SIC 45 occupations, the second greatest requirement in Wales will be for Managers, although at just 470 this is significantly lower than Wood Trades.
- Construction output in Wales has recorded strong growth for the past three years, following two years of decline. Real output growth peaked at 15% in 2003, which was particularly impressive as it followed a 10% rise in 2002. Over the forecast period total real construction output is expected to perform fairly strongly with year-on-year growth forecast in both new and Repair & Maintenance (R&M) work from 2006.
- In Wales, the star performance between 2006 and 2010 is likely to come from the commercial sub-sector which is forecast to rise by 5.9% on average each year. Public and private housing output is expected to fare less well and moderate annual average declines are forecast for both sub-sectors at 1.7% and 1.1%, respectively.
- The period from 2002 to 2004 was highly successful for the Welsh economy. Gross Value Added (GVA) outpaced UK average growth by a wide margin, culminating in a 4.3% rise in 2004. Activity in the service sector boomed, closing the gap on an area where Wales has lagged in the past. In 2005 the Welsh economy experienced a marked slowdown in service sector growth and manufacturing fell into recession. However, this is expected to be just a temporary blip and over the long term, further expansion in services and above average growth in manufacturing means that Wales will once again perform slightly ahead of the UK average.

[*] For definitions and a list of SIC Codes covered by ConstructionSkills see Appendices I and IV

2 Introduction

Background

CITB-ConstructionSkills, CIC and CITB(NI) are working in partnership as the Sector Skills Council (SSC) for Construction. The **Construction Skills Network**, launched in 2005, represents a radical change in the way that ConstructionSkills will collect and produce information on the future employment and training needs of the industry. The model generates forecasts of recruitment and training requirements within the industry for a range of trades and will provide a crucial foundation on which to plan for future skills needs and target investment.

The Construction Skills Network functions at both national and regional levels, comprising a National Group, 12 Observatory groups, a redesigned model and a Technical Reference Group. The Observatories consist of key stakeholders invited from industry, government, education and other SSCs who can contribute local knowledge of the industry and views on training, skills, recruitment, qualifications and policy. An Observatory group currently operates in each of the nine English regions and also in Wales, Scotland and Northern Ireland (in the context of the model, Wales, Scotland and Northern Ireland are hereafter referred to as “regions”). The input of the members of the Construction Skills Network is fundamental to the forecasting process and the contributions made to date have been invaluable.

The model approach

The new model approach relies on a combination of primary research and views from the Construction Skills Network to facilitate it. National UK data were used as the basis for the assumptions that augment the model, which was then adjusted with the assistance of the Observatories and National Group.

Each “region” has a separate model (although all models are inter-related due to labour movements) and, in addition, there is one national UK model that acts as a constraint to the “regional” models and enables best use to be made of the most robust data (which is available at the national level). Each model considers the skilled trades within the industry as well as the professionals.

The models work by forecasting demand and supply of skilled workers separately. The difference between demand and supply forms the employment requirement.

The forecast **total employment** levels are derived from expectations about construction output and productivity. Essentially this is based on the question "How many people will be needed to produce forecast output, given the assumptions made about productivity?".

The **Average Annual Requirement** is a gross requirement which takes into account the dynamic factors that influence all of the flows into and out of construction employment**,** such as movement to and from other industries, migration, sickness, and retirement. Young trainees are not included in the flows. Therefore, the Average Annual Requirement 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. How the Average Annual Requirement is fulfilled can range from training the indigenous population to recruiting already skilled labour from overseas and will vary across the UK. At present the model does not separately forecast the numbers requiring “top-up” training although data are being collected and these figures may be included in future publications.

Demand is based upon the results of discussion groups comprising industry experts, an econometric model of construction output and a set of integrated models relating to wider “regional” economic performance. The model is dynamic and reflects the general UK economic climate at any point in time. To generate the labour demand, the model makes use of a set of specific statistics for each major type of work (labour coefficients) that determine the employment, by trade, needed to produce the predicted levels of construction output.

The labour supply for each type of trade or profession is based upon the previous years’ supply (the total stock of employment) combined with flows into and out of the labour market.

The key leakages (outflows) that need to be considered are:

- transfers to other industries
- international/domestic OUT migration
- permanent retirements (including permanently sick)
- outflow to temporarily sick and home duties.

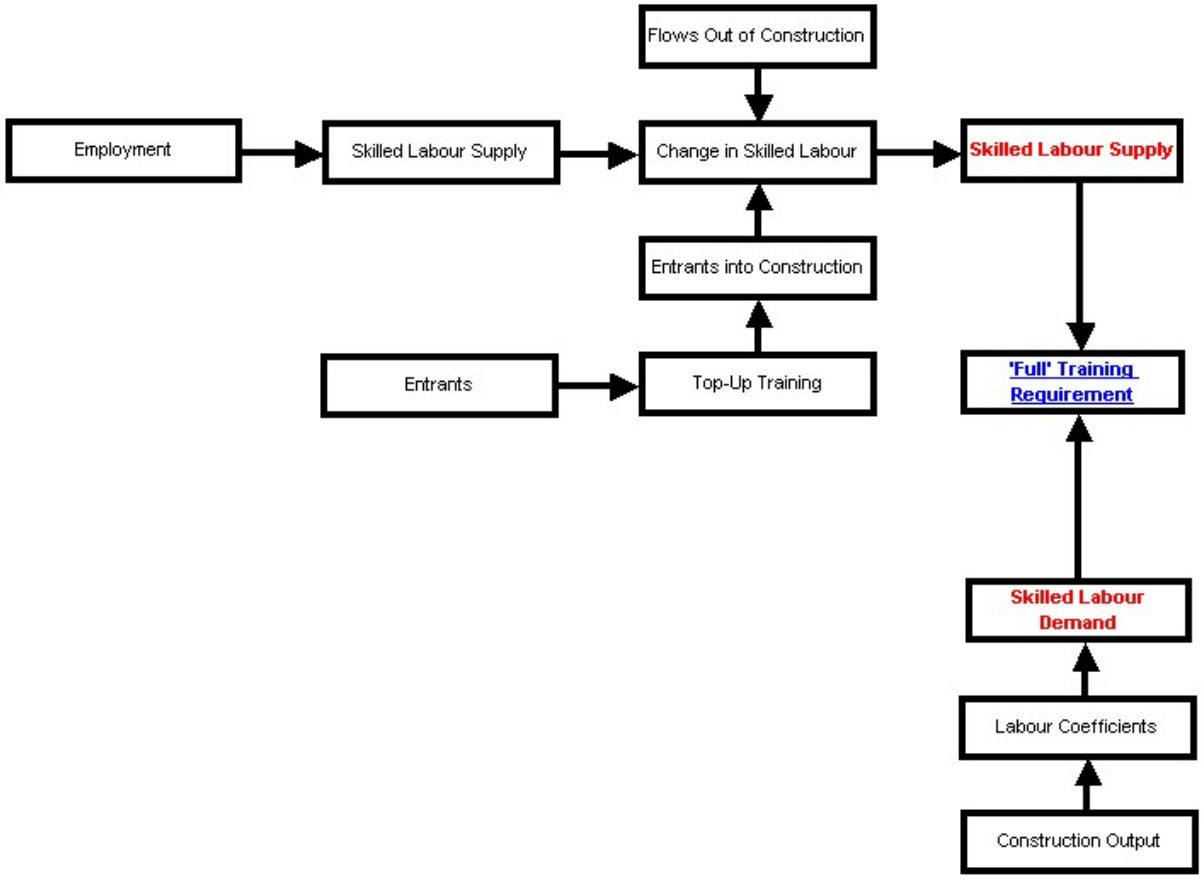
The main reason for outflow is likely to be transfer to other industries.

Flows into the labour market include:

- transfers in from other industries
- international/domestic IN migration
- inflow from temporarily sick and home duties.

New entrants (e.g. young trainees attached to formal training programmes) are not included in the flows of the labour market but are derived from the forecasted Average Annual Requirement for employment. The most significant inflow is likely to be from other industries. A summary of the model components is shown in Figure 1.

Figure 1
Model flowchart



The flows into the market are not merely the counterbalancing figures for the flows out of the market, because those people flowing into the market are likely to require some form of training. It is likely that this training will merely be to top-up their skills, rather than full training. The model recognises two distinct types of training as an input: Top-up training and Full training.

3 The current situation

Economic overview

Wales accounts for approximately 3.8% of the UK economy as a whole in terms of GVA. In 2005, Wales contributed £37.7bn in GVA (in 2002 prices). Structurally, manufacturing is an important component of the economy, accounting for 18% of GVA compared to the 16% UK average. Collectively, the service sector also features strongly comparative to the UK market as a whole, accounting for 28% of the Welsh economy compared to just 23% for the UK economy. It is therefore somewhat surprising that financial & business services accounts for just 17% of GVA in Wales compared to the UK average of 25%. Other services is by far the largest component of Welsh GVA, predominantly consisting of public sector work.

Wales is home to 5% of the UK population. GVA per capita in Wales is quite low at £12,800 when compared to the UK average of £17,258.

Economic performance and expectations

The macroeconomic forecasts for Wales are summarised in Table 1.

- The period from 2002 to 2004 was highly successful for the Welsh economy. GVA outpaced UK average growth by a wide margin, culminating in a 4.3% rise in 2004. Activity in the service sector boomed, closing the gap in an area where Wales has lagged in the past. In 2005, the Welsh economy experienced a marked slowdown in service sector growth and manufacturing fell into recession. However, this is expected to be just a temporary blip and over the long term, further expansion in services and above average growth in manufacturing means that Wales will once again perform slightly ahead of the UK average.
- Improved prospects in private sector services will help strengthen labour market performance over the next two years. Further job losses in manufacturing are expected to be outweighed by gains in non-manufacturing industries. Employment levels are forecast to rise by 0.4% in 2006–2007, in line with the UK average. Expansion at this pace will not prevent the ILO unemployment rate climbing to 4.9% of the workforce by 2007, but this remains slightly below the UK average.
- Consumer spending growth is forecast to remain the strongest in the UK. Incomes weathered the 2005 recession well. Confidence is maintained by the revival in employment in 2006. In addition, Wales has one of the least onerous debt burdens throughout the whole of the UK. Spending is expected to grow by 2.4 and 2% in the next two years and, thereafter, remain in line with the national average.

Table 1
Macroeconomic forecasts for Wales

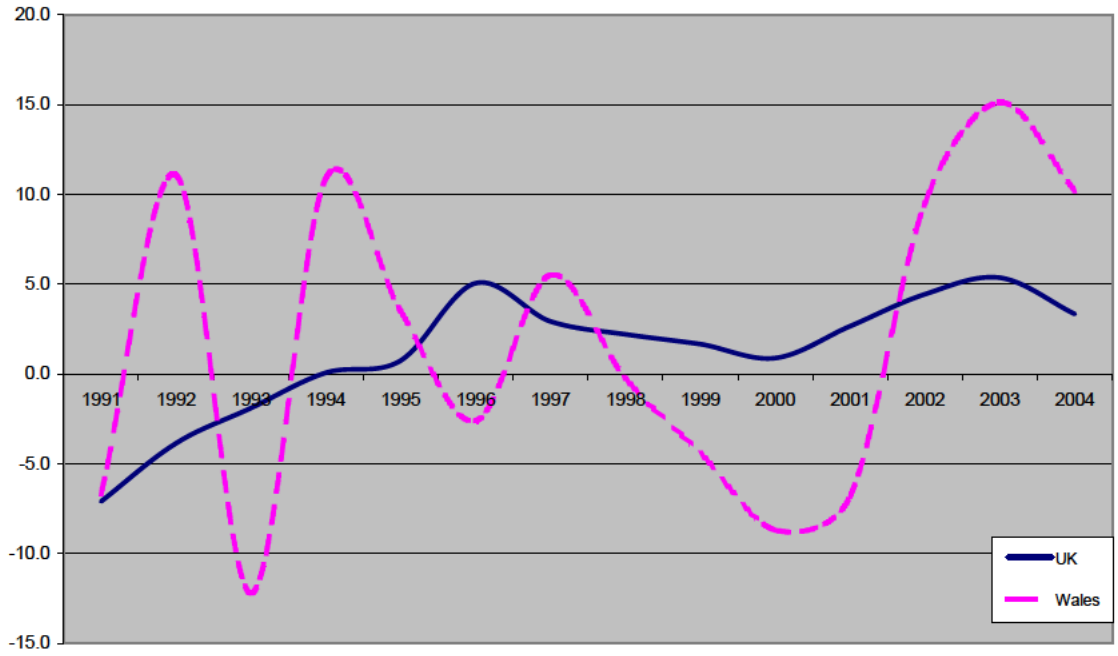
EXPERIAN BUSINESS STRATEGIES FORECASTS FOR WALES						
						% change (except unemployment)
	2005	2006	2007	2008	2009	2010
Gross Value Added	-0.5	2.0	2.9	2.8	2.8	2.9
Total employment	0.0	0.4	0.4	0.6	0.5	0.6
Unemployment rate (ILO)	4.5	4.8	4.9	5.0	5.1	5.2
Real household disposable income	2.4	2.0	2.0	2.4	2.6	2.7

Source: Experian.

Construction output for Wales – Historical overview

- The annual percentage change in construction in Wales compared to the UK as a whole is shown in Figure 2. Construction output in Wales has recorded strong growth for the past three years, following two years of decline. Real output growth peaked at 15% in 2003, which was particularly impressive as it followed a 10% rise in 2002.
- To date, current price data are available for the first three quarters of 2005 and, while output remains high, further growth appears to have stalled. Current priced output in the first three quarters of 2005 was on a par with the first three quarters of 2004. After allowing for inflation it is likely that Wales will experience a contraction in construction output in 2005.
- Private housing has been a star performer in the Welsh construction industry in recent years. Output in this sub-sector has risen by over 120% since the turn of the century and increased by 25% in 2004. However, in the first three quarters of 2005 output trailed the first three quarters of 2004 by 1%.
- Equally strong growth was recorded in industrial and infrastructure construction over the first three quarters of 2005. Both sub-sectors expanded by roughly 40% in the first three quarters of 2004, increasing by a higher magnitude than any other sub-sectors. Buoyant growth in the first three quarters of 2005 built upon a strong expansion in 2004, when infrastructure output rose by 35% and industrial by a slightly lesser but still robust 18%.
- In other sub-sections the first three quarters of 2005 were considerably less rosy. Public output, housing and non-residential, and commercial (on the private side) all declined. However, these declines come on the back of rapid growth over the past couple of years in all three sub-sectors and as such continue to indicate a relatively high level of activity.

Figure 2
Construction output percentage change: UK vs. Wales



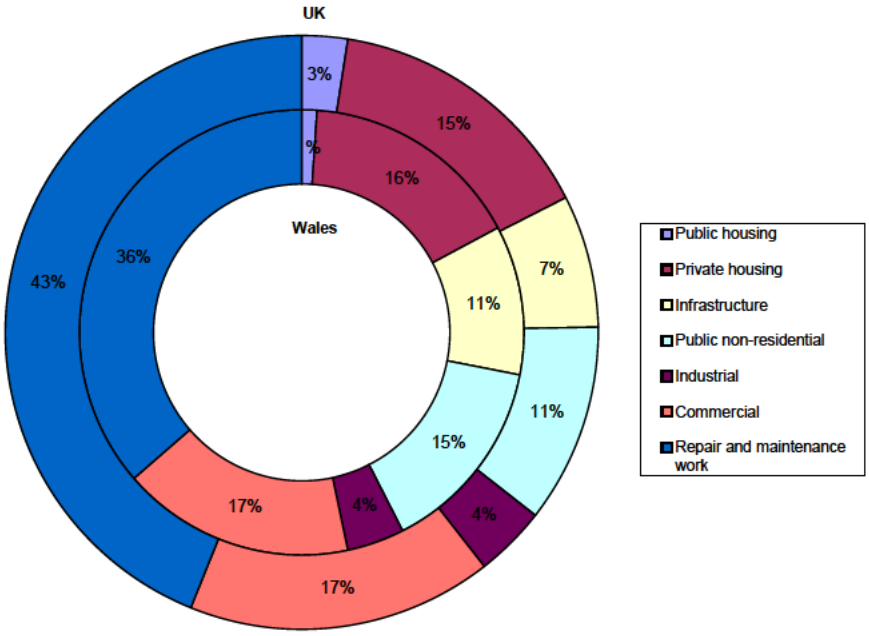
Notes: Except for Northern Ireland, output data for the English regions, Wales, and Scotland are supplied by the Department of Trade and Industry (DTI) on a current price basis. Thus national deflators produced by the DTI have been used to deflate to a 2000 constant price basis, i.e. the effects of inflation have been stripped out.

Source: DTI, Department of Finance and Personnel Northern Ireland (DFPNI), Experian.

Structure of the construction industry

Figure 3 shows the sectoral structure of the Welsh construction industry compared with the UK as a whole. Most notable is the country's proportionally smaller reliance on the R&M sub-sector. This accounts for just 36% of all construction activity in Wales compared to 43% in the UK as a whole. The commercial and industrial sub-sectors are exactly representative of UK construction and the private housing sub-sector has a marginally greater share. The Welsh industry's reliance on the infrastructure and public non-residential sub-sectors is 3% greater than for the UK as a whole, the latter possibly reflecting increased capital funding in the education sector.

Figure 3
Construction output by main sub-sector: UK vs. Wales, 2004

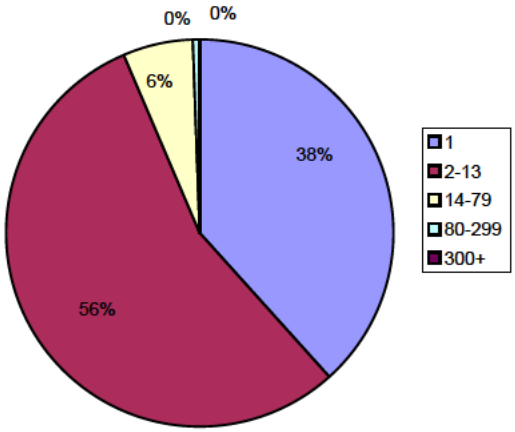


Source: DTI, DFPNI, Experian.

Figure 4 demonstrates that the construction companies in Wales are predominantly small, with approximately 94% of them employing less than 13 workers. Only 6% of construction firms employ between 14 and 79 employees. Companies that employ more than 80 people are very scarce, accounting for less than 1% of the total number of firms.

Figure 4
Percentage of construction companies by size, 2004

Employees	3rd Quarter 2004	%
1	3103	38.2
2-13	4490	55.3
14-79	477	5.9
80-299	39	0.5
300+	5	0.1
Total	8114	100



* Note: One employee indicates one person working for the company

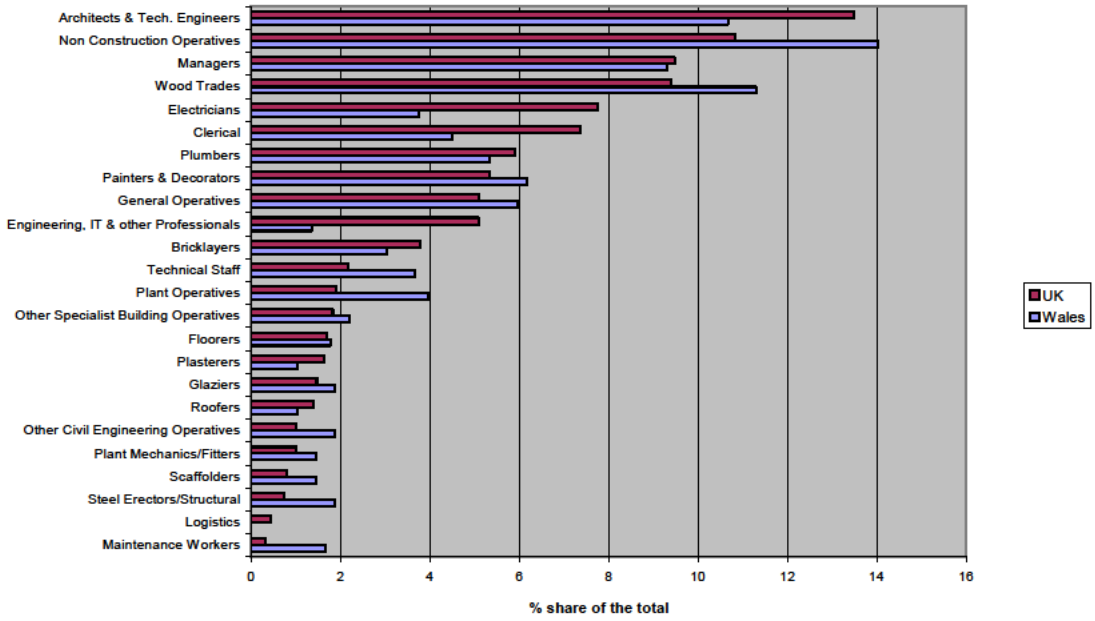
Source: DTI.

Construction employment

Figure 5 demonstrates that employment by occupation in Wales differs from employment across the UK as a whole. Notable characteristics are the comparatively small share of total industry employment taken by Architects & Technical Engineers (which includes all SIC 74.2 occupations), Electricians*, Engineering, IT & Other Professionals, and Clerical. Non-Construction Operatives, Wood Trades, Painters & Decorators, General Operatives, Technical Staff and Plant Operatives are among the over-represented occupations in Wales compared to the rest of the UK.

Figure 5

Employment by occupation, UK vs. Wales: 2005



Source: Construction Skills Network Model, 2006.

* For the ConstructionSkills and SummitSkills sector footprints see Appendix IV

4 The outlook for construction

New construction orders – Historical overview

In this section, comparison is made with GB rather than the UK, owing to the fact that official orders data for Northern Ireland are not available. The data shown in Table 2 indicate that since 2002, growth in new construction orders in Wales has been robust. The rate of increase peaked at 36% in 2002 after declining by 5% in 2001. Buoyant growth throughout 2005 raised orders by a further 30%, the second strongest rate this decade, to a record £2.2bn (in current prices). From 2000, new work orders have risen substantially by over 100%.

Infrastructure performed exceptionally well throughout 2005. The first half of the year was particularly good, up 249% from the first half of 2004. Orders were more subdued during the second half but continued to compare favourably to the corresponding period of 2004. Over the year as a whole orders were 204% higher than in 2004. There is no doubt that this performance played a major role in the strength of total Welsh construction orders in 2005.

While orders growth in the housing sub-sector failed to rival the exceptional increases seen in the infrastructure sub-sector, it was nevertheless robust. Growth in public housing orders has been intermittent of late with a strong annual rise in one year being followed immediately by an equally large decline. Public housing orders were good in 2005, rising by 83% from 2004. Private housing orders grew at a somewhat more subdued rate of 16%. However, this compared favourably with several other areas of the UK that are feeling the pinch from a slower and less certain housing market.

Industrial sub-sector orders were relatively strong in 2005 after stagnating at a low level between 2000 and 2002. Since then, strong annual growth has raised current priced orders back on a par with their pre-2000 level, although once inflation is allowed to enter the equation this becomes questionable. In 2004, orders rose by 49%. However, the rate of increase slowed to just 9% in 2005.

Public non-housing orders have been volatile over the past eight years, decreasing by 32% in 1999 and increasing by 92% in 2002. More recently a declining trend has begun to dominate and orders in the sub-sector fell in both 2004 and 2005 by 19% and 10% respectively.

Nationally, new work orders rose strongly in 2004, increasing by 15%. With the exception of infrastructure and public non-housing, all sub-sectors saw their orders rise over the year. The rate of increase slowed slightly in 2005 to 11%, due mainly to a sharp slowdown in the growth of the private housing sub-sector. In contrast to 2004, orders in the public non-housing sub-sector increased robustly, by 48% in 2005. Commercial orders were similarly buoyant over the year, also rising by 48%. Infrastructure orders failed to recover in 2005 and declined by a further 9%.

Table 2
New work orders for Wales, 1999–2005

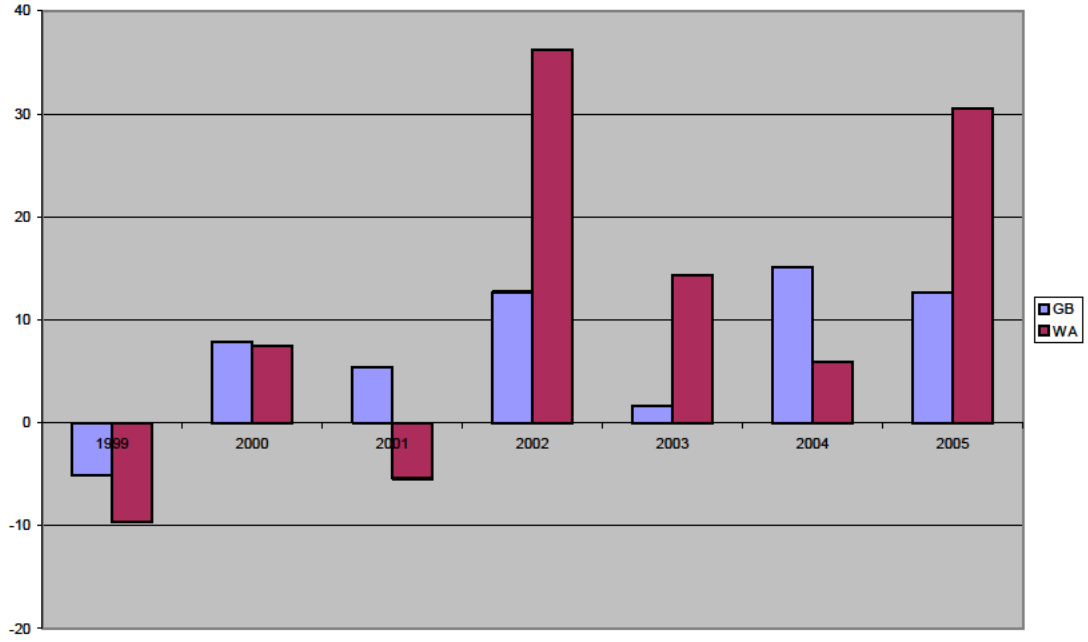
							£ million/*annual % change*
	1999	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Public housing	42	56	24	33	48	29	53
	-16	*33*	*-57*	*38*	*45*	*-40*	*83*
Private housing	215	247	306	352	486	535	619
	-2	*15*	*24*	*15*	*38*	*10*	*16*
Infrastructure	257	294	164	255	152	194	589
	7	*14*	*-44*	*55*	*-40*	*28*	*204*
Public non-housing	102	110	178	341	407	328	296
	-32	*8*	*62*	*92*	*19*	*-19*	*-10*
Industrial	139	83	82	82	99	148	162
	-1	*-40*	*-1*	*0*	*21*	*49*	*9*
Commercial	240	277	255	313	380	432	456
	-19	*15*	*-8*	*23*	*21*	*14*	*6*
All new work	**994**	**1068**	**1010**	**1376**	**1573**	**1666**	**2174**
	-10	*7*	*-5*	*36*	*14*	*6*	*30*

Source: DTI.

Figure 6 shows that new orders growth tends to be more volatile in Wales than across GB as a whole, and does not always follow the same trends. On two occasions new orders growth in Wales broke away from the GB trend, recording a decline against a national increase. 2002 was a particularly good year for Wales, outperforming GB by over 20%.

Figure 6
New orders: GB vs. Wales, 1999–2004

Annual % change



Source: DTI.

Construction output – forecasts

Real total construction output for Wales is summarised in Table 3.

- Over the forecast period, total construction output is expected to perform fairly strongly with year-on-year growth forecast in both new and R&M work from 2006. All new work is forecast to rise by an annual average of 2.7%[*], while the R&M sub-sector is expected to fare slightly better with a 3.9% annual average rise forecast.

- To 2010 the commercial sub-sector is expected to enjoy the strongest growth with a substantial 5.9% annual average increase forecast. Work in the retail sector should be a key driver of growth with a number of sizeable schemes in the pipeline in Cardiff, Newport, Swansea, and Camarthen, which should help to keep output in the sector buoyant over the medium term.

- An estimated decline in public non-residential output in 2005 is forecast to be compounded by a further 6% fall in 2006. If Welsh Health Estates proceed with plans to roll out around £220m of work under a ProCure 21 partnering programme, then the sub-sector should return to growth in 2007. Overall, annual average compound growth is forecast to be in the region of 4%.

- Public and private housing are both forecast to record an overall decline over the coming years. Public housing recently lost its position as the largest component of local authority capital expenditure and its share of the total is expected to have fallen from 31% in 2003/04 to 25% in 2005/06, although the budget is due to grow in absolute terms.

- Private housing construction is expected to suffer from a lacklustre housing market. While modest house price growth is forecast, a return to the soaring prices seen in the early part of the century is unlikely and will encourage developers to be increasingly selective in their development choices.

- Modest annual average growth is forecast in both the infrastructure and industrial sub-sectors. Infrastructure activity is likely to be driven by road and energy projects, such as the new power plant at Port Talbot. However, once the current round of projects are completed, the outlook for the sub-sector is much gloomier, particularly as water and sewerage work is budgeted to peak in 2005/06 and then decline to 2009/10.

- Industrial construction output has been working its way back up after a historic low in 2002. Another good year of growth was expected in 2005 on the back of the level of speculative developments currently on site but thereafter growth is likely to be moderate.

[*] The annual average growth in construction output is not simply an average of the percentages shown in Tables 3 or 4. It is a Compound Average Growth Rate, i.e. it is the rate at which output would grow each year if it increased steadily year-on-year over the forecast period. It is calculated by taking the nth root of the total percentage growth rate, where n is the number of years in the period being considered.

Table 3
Wales construction output by sub-sector, 2004–2010

	Annual% change						
	2004	2005	2006	2007	2008	2009	2010
Public housing	-6%	-8%	17%	7%	-2%	-5%	-6%
Private housing	13%	-6%	-1%	5%	-1%	-4%	-4%
Infrastructure	36%	10%	12%	12%	-1%	-1%	-2%
Public non-housing	-1%	-13%	-6%	6%	1%	4%	4%
Industrial	20%	19%	-5%	2%	0%	1%	2%
Commercial	25%	-10%	8%	8%	7%	4%	4%
All new work	**16%**	**-4%**	**3%**	**7%**	**2%**	**1%**	**1%**
R&M	2%	6%	10%	8%	3%	2%	2%
Total Work	**10%**	**-1%**	**5%**	**8%**	**2%**	**1%**	**1%**

Source: Experian.

Table 4 shows the total construction output and employment over the period 1998–2010. Real construction output in Wales is forecast to increase by 19% from 2004 to 2010. This is primarily driven by the strong growth rates experienced in 2006 and 2007. Over the same period the forecast increase for the UK is 14%. Total employment is forecast to grow at a rate of just 8% during the period 2004 to 2010.

Table 4
Total construction output and employment, Wales: 1998–2010

	Year	Total Output Growth Rate %	Total Output £m 2001 prices	Total Employment (direct and indirect) 000s
Actual	1998	-0.3	3058	82
	1999	-4.4	2923	87
	2000	-8.7	2669	93
	2001	-6.8	2487	96
	2002	9.5	2724	96
	2003	15.1	3136	108
	2004	10.2	3456	105
Forecast	2005	-0.3	3446	96
	2006	5.4	3633	101
	2007	7.7	3914	107
	2008	2.4	4009	109
	2009	1.3	4061	111
	2010	1.4	4117	113

Source: Experian, Construction Skills Network Model, 2006.

5 Construction industry employment requirements

Table 5 and Figure 7 show total employment levels and Average Annual Requirements for the UK, Wales, and the Education & Learning Wales (ELWa) areas in order to highlight where the greatest requirements are, and also for the purpose of comparison.

The tables include data relating to Plumbers[*] and Electricians. As part of SIC 45, Plumbers and Electricians working in contracting are an integral part of the construction process. However, it is recognised by ConstructionSkills that SummitSkills has responsibility for these occupations across a range of SIC Codes (SIC 45.31 and 45.33). Thus, outputs from the Construction Skills Network Model relating to these two occupations have been passed to SummitSkills for their analysis but have been included here for completeness.

The figures for the Average Annual Requirement are based upon the net balance of inflows and outflows, and cover replacement and expansion of the industry.

The national UK forecasts

The average annual gross employment requirement across the UK over the period 2006 to 2010 is estimated at 87,000, including all occupations in SIC 74.2 and in SIC 45 with the exception of Non-construction Operatives (Table 5). Non-construction Operatives captures all of the other elements involved in construction as defined by SIC 74.2 and SIC 45, outside of the main occupations listed in the following charts and tables. The Average Annual Requirement for Non-construction Operatives is not shown because the activities covered by this group are too diverse.

Total employment is forecast to rise by 246,760 to 2.8 million between 2006 and 2010.

- At 11,090 Wood Trades is likely to have the highest Average Annual Requirement going forward (Table 5).
- Three out of the four occupations with the highest Average Annual Requirement from 2006 to 2010 are focused on management and organisation, namely Managers, Architects & Technical Engineers (SIC 74.2) and Clerical (Table 5).
- The Average Annual Requirement for Electricians, Plumbers, Engineering, IT & Other Professionals and Bricklayers is also expected to be high (Table 5).
- At the other end of the scale, the Average Annual Requirement for Scaffolders and Logistics is significantly lower at just 900 and 580 respectively (Table 5).
- Nationally, the professionals working within architectural and engineering activities and related technical consultancy (SIC 74.2) (Architects & Technical Engineers) take the largest share of total employment with an estimated 340,450 employed in 2006, rising to 354,270 by 2010. Second in line is Managers with 235,400 in 2006, increasing to 258,520 by 2010. Particularly strong demand for Wood Trades between 2006 and 2010 should make this the second largest occupation in employment terms by 2010 (Table 5 and Figure 7).
- Whilst the forecasts for an increase in total employment for **Maintenance Workers** are shown in Table 5, the Average Annual Requirement has been excluded. The model is currently forecasting a low requirement for this group compared to other occupations. Further research is being undertaken on the factors influencing this result and the Average Annual Requirement will be published when this work has been completed.

Please note that all of the Average Annual Requirements presented in this section are employment requirements and not necessarily training requirements. Recruiting from other industries with a similar skills base or employing skilled migrant labour could mean the actual training requirement is lower.

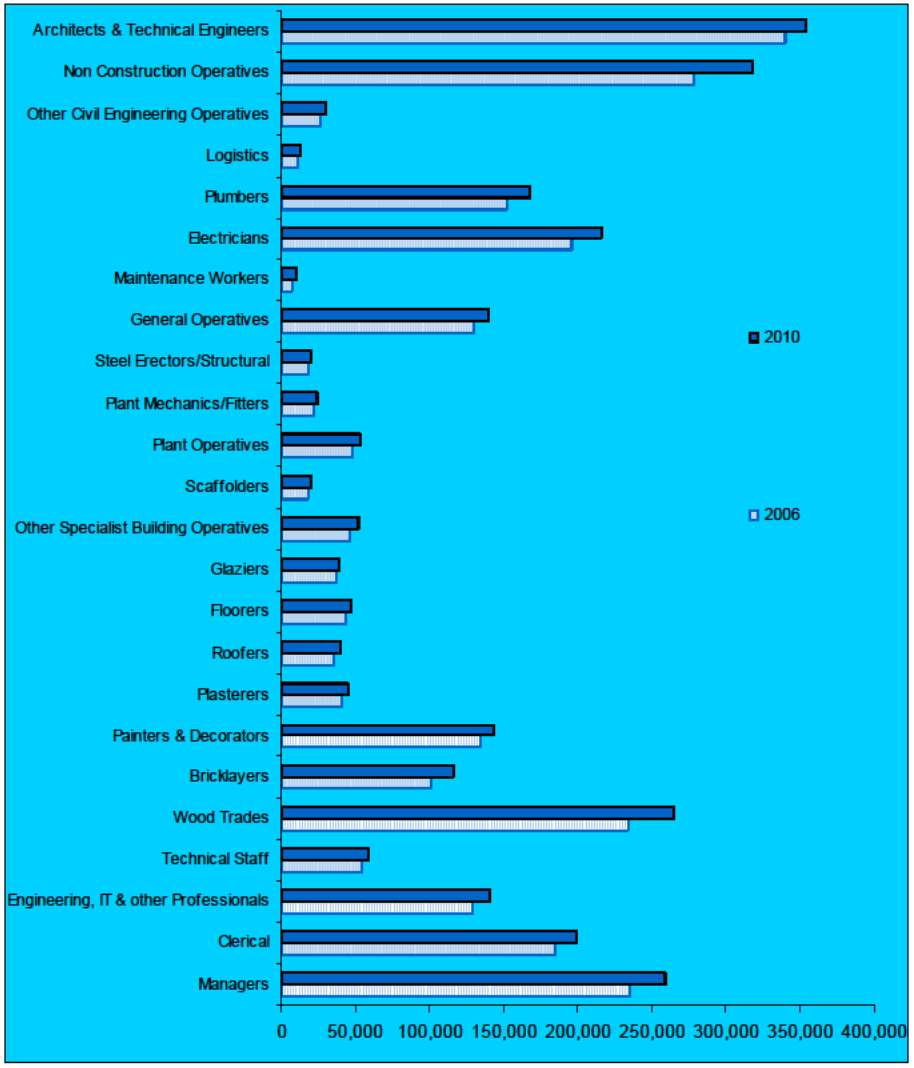
[*] For the ConstructionSkills and SummitSkills sector footprints see Appendix IV

Table 5
UK
Total employment and Average Annual Requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	235,400	258,520	10,530
Clerical	185,270	198,600	8,610
Engineering, IT & other Professionals	129,320	140,890	4,790
Technical Staff	54,280	59,260	3,260
Wood Trades	233,790	265,290	11,090
Bricklayers	101,290	116,220	4,730
Painters & Decorators	133,640	143,430	3,620
Plasterers	41,060	44,930	1,780
Roofers	35,110	39,720	1,750
Floorers	42,670	46,840	1,510
Glaziers	36,660	38,660	990
Other Specialist Building Operatives	46,250	51,520	2,370
Scaffolders	17,700	19,870	900
Plant Operatives	48,200	52,750	1,780
Plant Mechanics/Fitters	22,200	24,060	1,920
Steel Erectors/Structural	17,570	19,760	1,150
General Operatives	130,320	139,950	1,510
Maintenance Workers	6,750	9,550	*
Electricians	196,400	216,240	8,130
Plumbers	152,450	167,810	5,330
Logistics	10,980	12,600	580
Other Civil Engineering Operatives	26,240	30,110	1,390
Non Construction Operatives	277,900	317,810	
Total (SIC 45)	2,181,450	2,414,390	77,720
Architects & Technical Engineers	340,450	354,270	9,280
Total (SIC 45 & 74.2)	2,521,900	2,768,660	87,000

Source: Construction Skills Network Model, 2006; Experian.
Note: Numbers are rounded to the nearest ten and may not sum to the total.
** See text for note on Maintenance Workers*

Figure 7
UK
Total employment by occupation: 2006–2010



Source: Construction Skills Network Model, 2006; Experian.
Note: No bar indicates less than 1,000

The employment forecasts for Wales

Table 6 and Figure 8 outline the forecast employment and Average Annual Requirement for 24 companies within the Welsh construction industry between 2006 and 2010.

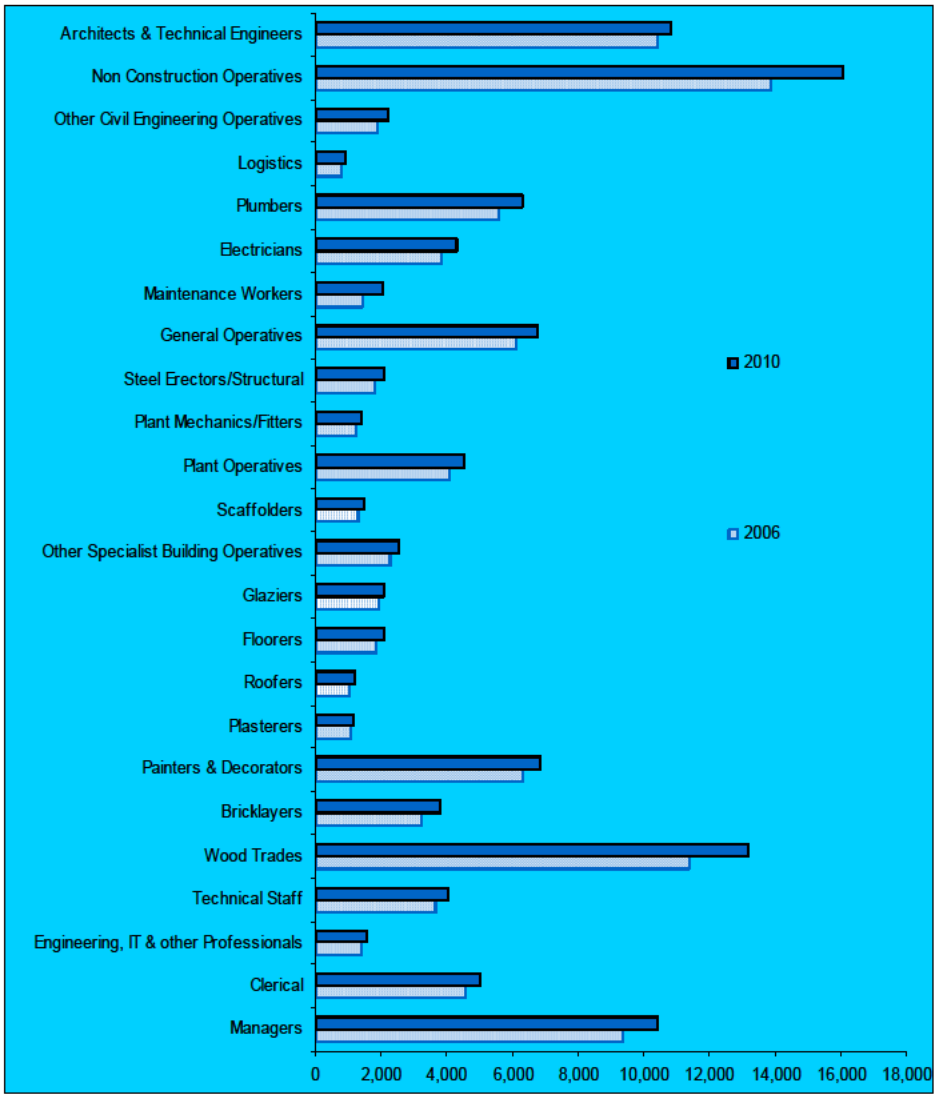
- Total employment in the Welsh construction industry is forecast to increase by 12,300 between 2006 and 2010.
- An Average Annual Requirement of approximately 5,870 across both SIC 45 and SIC 74.2 is forecast.
- The greatest Average Annual Requirement will come from Wood Trades with an estimated requirement of 950. Employment in Wood Trades is forecast to rise by 1,800 over the 2006 to 2010 period.
- Wood Trades is the occupation likely to be the largest requirement in the UK as a whole, and Wales is reflective of the wider national picture in this instance.
- In Wales, Managers also have quite a large Average Annual Requirement estimated at 470. Employment of Managers is expected to increase by 1,100 over the 2006-2010 forecast period.
- Glaziers and Maintenance workers are the occupations with the least annual average requirement out of all the occupations at just 50 for each of them.
- Roofers and Plasterers also have a low annual average requirement estimated at just 60 each year over the forecast period.

Table 6
Wales
Total employment and Average Annual Requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	9,360	10,430	470
Clerical	4,580	4,980	380
Engineering, IT & other Professionals	1,410	1,560	290
Technical Staff	3,640	4,020	340
Wood Trades	11,400	13,210	950
Bricklayers	3,250	3,810	260
Painters & Decorators	6,310	6,870	250
Plasterers	1,050	1,140	60
Roofers	1,030	1,200	60
Floorers	1,860	2,080	160
Glaziers	1,940	2,090	50
Other Specialist Building Operatives	2,280	2,560	160
Scaffolders	1,310	1,480	100
Plant Operatives	4,050	4,550	290
Plant Mechanics/Fitters	1,240	1,370	140
Steel Erectors/Structural	1,810	2,060	150
General Operatives	6,100	6,750	290
Maintenance Workers	1,440	2,040	50
Electricians	3,850	4,310	270
Plumbers	5,610	6,290	240
Logistics	800	940	80
Other Civil Engineering Operatives	1,920	2,240	190
Non Construction Operatives	13,900	16,050	
Total (SIC 45)	90,140	102,030	5,230
Architects & Technical Engineers	10,400	10,820	640
Total (SIC 45 & 74.2)	100,540	112,850	5,870

Source: Construction Skills Network Model, 2006; Experian.
Note: Numbers are rounded to the nearest ten and may not sum to the total.

Figure 8
Wales
Total employment by occupation: 2006–2010



Source: Construction Skills Network Model, 2006; Experian.
Note: No bar indicates less than 1,000.

The following charts give an indication of employment and requirement by occupation for the ELWa areas in Wales. The areas and populations being looked at are considerably smaller than those reported in Table 6 and Figure 8 for Wales and the data available at this level are less robust. Construction employment and future requirements on this level are created as ratios of the data for the whole of Wales and as such the results that are presented should be treated with a significant degree of caution. ConstructionSkills is currently working with Observatory members and other partners and stakeholders to review research to improve the robustness of these data.

Table 7
South East Wales
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	3,780	4,130	190
Clerical	1,850	1,970	150
Engineering, IT & other Professionals	570	620	110
Technical Staff	1,470	1,590	140
Wood Trades	4,600	5,230	380
Bricklayers	1,310	1,510	100
Painters & Decorators	2,550	2,720	100
Plasterers	420	450	20
Roofers	420	470	20
Floorers	750	820	60
Glaziers	780	830	20
Other Specialist Building Operatives	920	1,010	60
Scaffolders	530	590	40
Plant Operatives	1,640	1,800	110
Plant Mechanics/Fitters	500	540	60
Steel Erectors/Structural	730	820	60
General Operatives	2,460	2,670	110
Maintenance Workers	580	810	20
Electricians	1,550	1,710	110
Plumbers	2,260	2,490	100
Logistics	320	370	<10
Other Civil Engineering Operatives	780	890	10
Non Construction Operatives	5,610	6,350	<10
Total (SIC 45)	36,380	40,390	1,970
Architects & Technical Engineers	4,190	4,280	250
Total (SIC 45 & 74.2)	40,570	44,670	2,220

Source: Construction Skills Network Model, 2006; Experian.
Note: Numbers are rounded to the nearest ten and may not sum to the total.

Table 8
Mid-Wales
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	1,040	1,190	50
Clerical	510	570	40
Engineering, IT & other Professionals	160	180	30
Technical Staff	410	460	40
Wood Trades	1,270	1,510	110
Bricklayers	360	440	30
Painters & Decorators	700	790	30
Plasterers	120	130	<10
Roofers	120	140	<10
Floorers	210	240	20
Glaziers	220	240	<10
Other Specialist Building Operatives	250	290	20
Scaffolders	150	170	10
Plant Operatives	450	520	30
Plant Mechanics/Fitters	140	160	20
Steel Erectors/Structural	200	240	20
General Operatives	680	770	30
Maintenance Workers	160	230	<10
Electricians	430	490	30
Plumbers	630	720	30
Logistics	90	110	<10
Other Civil Engineering Operatives	210	260	<10
Non Construction Operatives	1,550	1,840	<10
Total (SIC 45)	10,060	11,690	540
Architects & Technical Engineers	1,160	1,240	70
Total (SIC 45 & 74.2)	11,220	12,930	610

Source: Construction Skills Network Model, 2006; Experian.
Note: Numbers are rounded to the nearest ten and may not sum to the total.

Table 9
North Wales
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	1,870	2,120	100
Clerical	920	1,010	80
Engineering, IT & other Professionals	280	320	60
Technical Staff	730	820	70
Wood Trades	2,280	2,690	190
Bricklayers	650	770	50
Painters & Decorators	1,260	1,400	50
Plasterers	210	230	10
Roofers	210	240	10
Floorers	370	420	30
Glaziers	390	430	<10
Other Specialist Building Operatives	460	520	30
Scaffolders	260	300	20
Plant Operatives	810	920	60
Plant Mechanics/Fitters	250	280	30
Steel Erectors/Structural	360	420	30
General Operatives	1,220	1,370	60
Maintenance Workers	290	420	10
Electricians	770	880	50
Plumbers	1,120	1,280	50
Logistics	160	190	<10
Other Civil Engineering Operatives	380	460	<10
Non Construction Operatives	2,780	3,260	<10
Total (SIC 45)	18,030	20,750	990
Architects & Technical Engineers	2,080	2,200	130
Total (SIC 45 & 74.2)	20,110	22,950	1,120

Source: Construction Skills Network Model, 2006; Experian.
Note: Numbers are rounded to the nearest ten and may not sum to the total.

Table 10
South West Wales
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	2,670	2,990	130
Clerical	1,310	1,430	110
Engineering, IT & other Professionals	400	450	80
Technical Staff	1,040	1,150	100
Wood Trades	3,250	3,780	270
Bricklayers	930	1,090	80
Painters & Decorators	1,800	1,970	70
Plasterers	300	330	20
Roofers	290	340	20
Floorers	530	600	40
Glaziers	550	600	10
Other Specialist Building Operatives	650	730	50
Scaffolders	370	420	30
Plant Operatives	1,160	1,300	80
Plant Mechanics/Fitters	350	390	40
Steel Erectors/Structural	510	590	40
General Operatives	1,740	1,930	80
Maintenance Workers	410	580	10
Electricians	1,100	1,240	80
Plumbers	1,600	1,800	70
Logistics	230	270	<10
Other Civil Engineering Operatives	550	640	10
Non Construction Operatives	3,960	4,600	<10
Total (SIC 45)	25,700	29,220	1,420
Architects & Technical Engineers	2,970	3,100	180
Total (SIC 45 & 74.2)	28,670	32,320	1,600

Source: Construction Skills Network Model, 2006; Experian.
Note: Numbers are rounded to the nearest ten and may not sum to the total.

Appendix I – Glossary of terms

Demand – construction **output,** vacancies, and a set of **labour coefficients** to translate demand for workers to labour requirements by trade. Demand is calculated using DTI and DFP output data. Vacancy data are usually taken from the National Employers Skills Survey (NESS) from the Department for Education and Skills (DfES).

GDP – Gross Domestic Product – total market value of all final goods and services produced. A measure of national income. GDP = **GVA** + taxes on products – subsidies on products

GVA – Gross Value Added – total output minus the value of inputs used in the production process. GVA measures the contribution of the economy as a difference between gross output and intermediate outputs.

Labour coefficients – the labour inputs required for various types of construction activity. The number of workers of each occupation/trade to produce £1m of output in each sub-sector.

LFS – Labour Force Survey – a UK household sample survey which collects information on employment, unemployment, flows between sectors and training, from around 53,000 households each quarter (>100,000 people).

LMI – Labour Market Information – data that are quantitative (numerical) or qualitative (insights and perceptions) on workers, employers, wages, conditions of work, etc.

LMI – Labour Market Intelligence – labour market information analysed.

Macroeconomics – the study of an economy on a national level, including total employment, investment, imports, exports, production and consumption.

ONS – Office for National Statistics – official statistics on economy, population and society at national UK and local level.

Output – total value of all goods and services produced in an economy.

Productivity – output per employee

SIC Codes – Standard Industrial Classification Codes – from the UK Standard Industrial Classification of Economic Activities produced by the **ONS**.

ConstructionSkills is responsible for SIC 45 Construction and SIC 74.2 Architectural and Engineering activities and related technical consultancy.

ConstructionSkills shares an interest with SummitSkills in SIC 45.31 Installation of wiring and fittings and SIC 45.33 Plumbing. AssetSkills has a peripheral interest in SIC 74.2.

SOC Codes – Standard Occupational Classification Codes

Supply – the total stock of employment in a period of time plus the flows into and out of the labour market. Supply is usually calculated from **LFS** data.

Appendix II – Note on Logistics and Other Civil Engineering Operatives

In this initial run of the Construction Skills Network Model, the categories Logistics and Other Civil Engineering Operatives are derived from the category Other Civil Engineering Operatives to take account of the different employment requirements within each category.

Logistics consists of labour within construction that deals with transportation, handling and storage.

Other Civil Engineering Operatives consists of workers within construction that deals directly with construction work itself, for instance labourers and operatives in road and rail construction. This is a part of ongoing research.

Appendix III – Data sources – Construction Skills Network Model

- Accession Monitoring Report – Home Office
- Analysis of Construction Industry Employment using the British Household Panel Survey – CITB-ConstructionSkills
- British Household Panel Survey – Institute for Social and Economic Research (University of Essex)
- Building the Future: Skills Training in Construction and Building Services Engineering
- Construction Apprentices' Survey – CITB-ConstructionSkills
- Construction Forecasts – Experian
- Construction Skills Foresight Report – CITB-ConstructionSkills
- Construction Skills Report – Learning & Skills Councils (England)
- Construction Statistics Annual – DTI
- Employer Panel Consultation – CITB-ConstructionSkills
- Employers' Skills Needs Survey – CITB-ConstructionSkills
- Foresight, Regional construction forecasts – Experian
- Investment Strategy for Northern Ireland – Strategic Investment Board
- Labour Force Survey – ONS
- International Passenger Survey – ONS
- Measuring the Competitiveness of UK Construction – DTI
- National Employer Skills Survey – LSC, SSDA, & DfES
- Northern Ireland Census of Employment
- Northern Ireland Construction Bulletin – DFPNI
- Occupational Skills Survey 2003 – CITB-ConstructionSkills
- Quarterly output and New orders bulletin – DTI
- Skills Needs Analysis – ConstructionSkills
- Trainee Numbers Survey 2004/05 – CITB-ConstructionSkills
- Travel Trends – ONS
- Workforce Mobility and Skills in the UK Construction Sector – ConstructionSkills, ECITB, SEEDA, DTI

Appendix IV – Footprints for Built Environment SSCs

The table summarises the SIC codes covered by ConstructionSkills.

	SIC Code	Description
ConstructionSkills	45.1	Site preparation
	45.2	Building of complete construction or parts; civil engineering
	45.3	Building installations (except 45.31 and 45.33 which are covered by SummitSkills)
	45.4	Building completion
	45.5	Renting of construction or demolition equipment with operator
	74.2**	Architectural and engineering activities and related technical consultancy

*** AssetSkills has a peripheral interest in SIC 74.2*

The sector footprints for the other SSCs covering the Built Environment:

SummitSkills
Footprint **–** Plumbing, Heating, Ventilation, Air Conditioning, Refrigeration and Electrotechnical.
Coverage – Building Services Engineering.

AssetSkills
Footprint – Property Services, Housing, Facilities Management, Cleaning
Coverage – Property, Housing and Land Managers, Chartered Surveyors, Estimators, Valuers, Home Inspectors, Estate Agents and Auctioneers (property and chattels), Caretakers, Mobile and machine operatives, Window Cleaners, Road Sweepers, Cleaners, Domestics, Facilities Managers.

Energy & Utility Skills
Footprint – Electricity, Gas (including gas installers), Water and Waste Management
Coverage – Electricity generation and distribution; Gas transmission, distribution and appliance installation and maintenance; Water collection, purification and distribution; Waste water collection and processing; Waste Management.

At national level, ConstructionSkills and SummitSkills are in discussions to determine the most appropriate way of working together on forecasting employment requirements for trades/occupations where there is overlap between the two SSCs.

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CITB-ConstructionSkills, CIC & CITB(NI) are working in partnership as the Sector Skills Council for Construction