

Construction Skills Network

Yorkshire & Humber

Labour Market Intelligence
2006

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This document provides labour market intelligence for Yorkshire and Humber and also includes national UK data. Similar reports have been produced for the other English regions and for Scotland, Wales 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 Yorkshire and Humber. 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 Employers' 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 Yorkshire and Humber construction industry is expected to increase by approximately 6% during the forecast period.
- In Yorkshire and Humber the average annual employment requirement for SIC 45* (Construction) is 5,250. An Average Annual Requirement in Architects & Technical Engineers (SIC 74.2*) of 900 means that the annual requirement for both SIC 45 and 74.2 combined is 6,150.
- The greatest Average Annual Requirement in Yorkshire and Humber will be for Architects & Technical Engineers, with 900 employees needed annually between 2006 and 2010. Nationally, the greatest requirement will come from Wood Trades (11,090). In Yorkshire and Humber this occupation has the second highest requirement at 640.
- Construction output in Yorkshire and Humber has been rising since 2000, increasing by a substantial 32.5% over this period (constant 2001 prices). This equates to an 8.1% rise in annual average terms. The latest official data (in current prices) suggests that growth has slowed to a more steady rate, with all work output in the first three quarters of 2005 up 3.1% on the same period of 2004.
- Construction output in the region is forecast to grow year-on-year to 2010, after an estimated decline in 2005. In annual terms growth should average 1.8%. The strongest year is expected to be 2008, with an expected growth of 3.0%.
- In 2006, private housing, infrastructure and public non-residential are set to be the weakest sub-sectors in Yorkshire and Humber, with declines in output expected for all three sub-sectors.
- Beyond 2005, the commercial sub-sector is forecast to see the strongest growth in the region, rising by 3.7% on average each year to 2010. The outlook for the housing and infrastructure sub-sectors is less encouraging. Overall, private housing output growth is likely to suffer from a slowdown in the housing market, although output should remain reasonably high in spite of this. A continued decline is forecast for the infrastructure sub-sector but the rate of this decline should slow down.
- In terms of economic growth, the region is unlikely to perform as strongly going forward as it has in the recent past. In 2006, Gross Value Added (GVA) is forecast to rise by 2.4%, a little below the national average of 2.6%. When compared to 2004 this slowdown is apparent. In 2004 the Yorkshire and Humber economy expanded faster than any other UK region, rising by 4.9% compared to a national increase of 3%.

* For definitions and a list of SIC Codes covered by ConstructionSkills see Appendices I & 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 (note that 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 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 should 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.

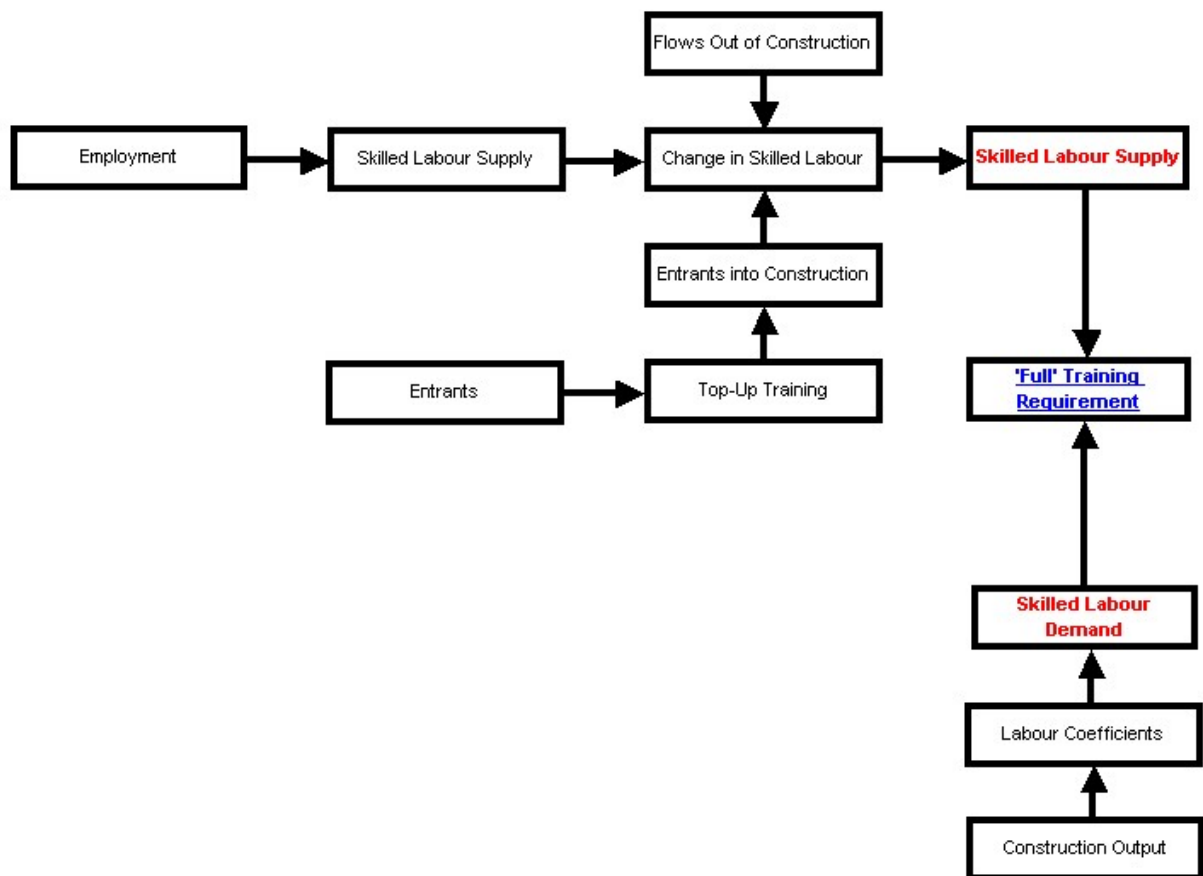
The main reason for outflow is likely to be transfer to other industries.

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

Yorkshire and Humber is the ninth largest regional economy in the UK. In 2005, Gross Value Added (GVA) was estimated at £73.3bn (in 2002 prices), accounting for 7.3% of UK GVA. Structurally, the Yorkshire and Humber economy is more highly geared towards manufacturing than the national average, with manufacturing accounting for 21% of regional output compared to 16% nationally.

Approximately 8.4% of the UK population lives in the Yorkshire and Humber region. GVA per capita, providing an indication of the region's standard of living, is below the UK average, at £14,560 compared to £17,258 nationally. However, average gross weekly earnings in Autumn 2005 were estimated at £411 in Yorkshire and Humber compared to £466 nationally.

Economic performance and expectations

The macroeconomic forecasts for Yorkshire and Humber are summarised in Table 1.

- Yorkshire and Humber has enjoyed buoyant output growth in recent years, outperforming the national rate between 2000 and 2004. GVA growth in the region averaged 3.6% a year during this period, well ahead of the UK rate of 2.3%. This is in contrast to the long term trend which has seen the region in relative decline. The transformation largely reflects exceptionally strong expansion in financial and business services. Over the next two years output growth is forecast to match the national performance following a marked slowdown in 2005.
- Weaker economic growth was reflected in the labour market. Employment creation was slower in 2005 at approximately 0.8%, although this remained above the UK average. More moderate employment growth and the continued expansion of the region's working population are driving up the unemployment rate. In recent quarters, the ILO measure has fluctuated at around 4.7% of the workforce, close to the UK mean.
- Disposable incomes grew by 3.3% in 2004, the strongest rise nationally. While growth is expected to slow down this year, it remains well above the rate in any other part of the UK except Northern Ireland. This is supporting consumer spending in the region which has averaged almost 5% annually over the past three years.

Table 1
Macroeconomic forecasts for Yorkshire and Humber

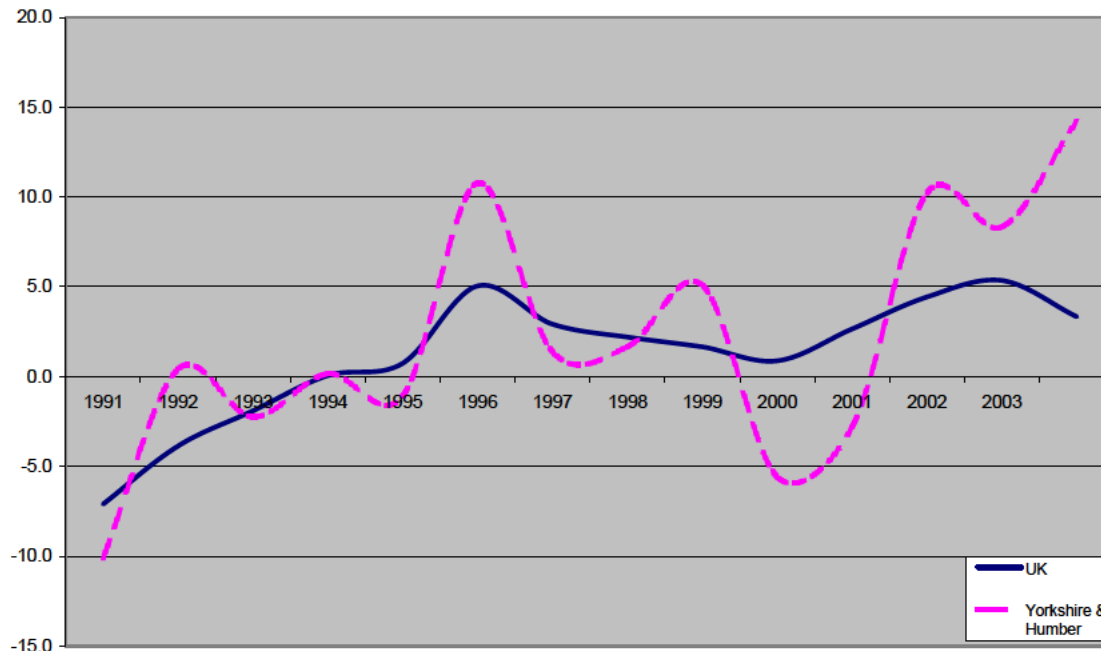
EXPERIAN BUSINESS STRATEGIES FORECASTS FOR YORKSHIRE AND HUMBER						
	% change (except unemployment)					
	2005	2006	2007	2008	2009	2010
Gross Value Added	2.1	2.4	2.5	2.4	2.4	2.4
Total employment	0.8	1.0	0.8	0.6	0.4	0.2
Unemployment rate (ILO)	4.7	4.7	4.3	3.9	3.7	3.6
Real household disposable income	2.8	2.4	2.1	2.3	2.6	2.6

Source: Experian.

Construction output for Yorkshire and Humber – Historical overview

- The annual percentage change in construction output within Yorkshire and Humber compared to the UK as a whole is shown in Figure 2.
- For the past ten years construction output growth in Yorkshire and Humber has remained positive except for a minor blip in 2001 (Figure 2). In 2002 the construction industry recovered and output returned to growth. Growth peaked in the second quarter of 2004, at 24%. Generally the region has experienced sustained growth over a long and relatively uninterrupted time period.
- Public non-housing output growth has performed very strongly in the past two years. Double-digit expansion has been a characteristic since 2002. Growth was particularly strong in 2004 when output increased by 40%. Output in the first three quarters of 2005 was similarly buoyant, up by 19% from the first three quarters of 2004.
- Industrial activity in Yorkshire and Humber can only be described as robust in 2003 and 2004, with output rising by 34% and 28% respectively. The rate of increase slowed to 11% over the first three quarters of 2005, although growth remained strong relative to increases in most other sectors.
- Infrastructure has not performed quite as well as the other sub-sectors and has really struggled in the past three years. Annual declines in output have been consistently reported since 2003 and the latest figures only indicate a slight improvement in the sub-sector's performance. Over the first three quarters of 2005 infrastructure output recovered, climbing by 6%. However, this failed to compensate for the 19% decline recorded in 2004.

Figure 2
Construction output percentage change: UK vs. Yorkshire and Humber



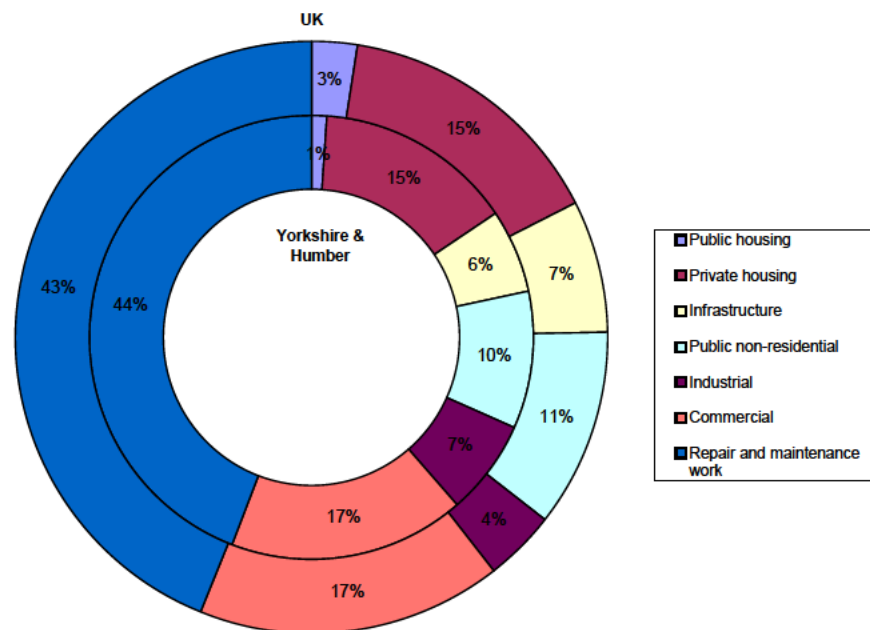
Notes: Except for Northern Ireland, output data for the English regions, Wales, and Scotland are supplied by the Department of Trade and Industry (DTI) on a current price basis. Thus national deflators produced by the DTI have been used to deflate to a 2000 constant price basis, i.e. the effects of inflation 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 Yorkshire and Humber's construction industry when compared with the UK as a whole. The region appears to be very representative of the structure of the construction industry in the UK, showing very little variation in the proportions of each sub-sector. Most sub-sectors, if not identical, differ by just 1 or 2%. The only substantial difference is in the industrial sub-sector. Yorkshire and Humber's favourable central location and good transport links make it an ideal location for warehouses and distribution centres. Over recent years several large companies have opted to consolidate their distribution networks, from which industrial construction in Yorkshire and Humber has benefited.

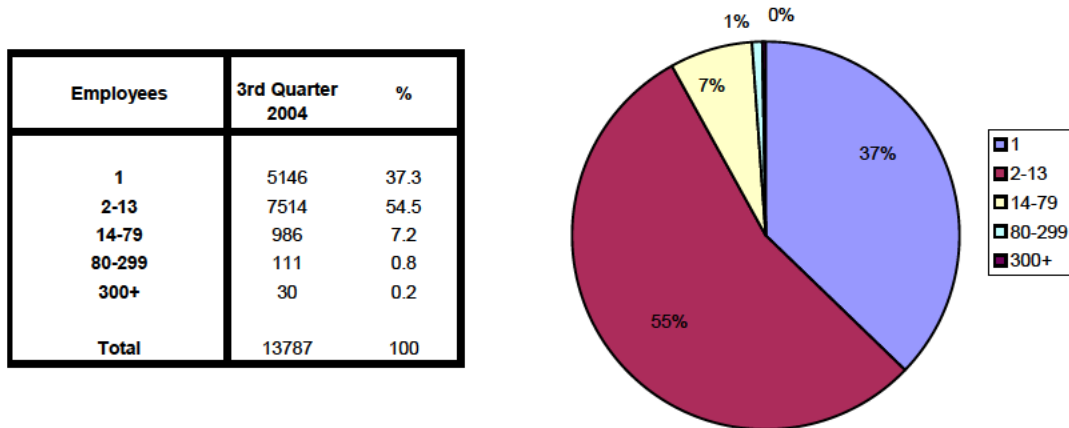
Figure 3
Construction output by main sub-sector: UK vs. Yorkshire and Humber, 2004



Source: DTI, DFPNI, Experian.

Figure 4 demonstrates that construction companies in Yorkshire and Humber are predominantly small, with approximately 92% of firms employing less than 13 employees. The majority of firms employ between two and 13 employees, with only 7% of construction firms employing between 14 and 79 employees. Only 1% of firms employ more than 80 workers and construction companies with more than 300 employees are relatively rare.

Figure 4
Percentage of construction companies by size, 2004



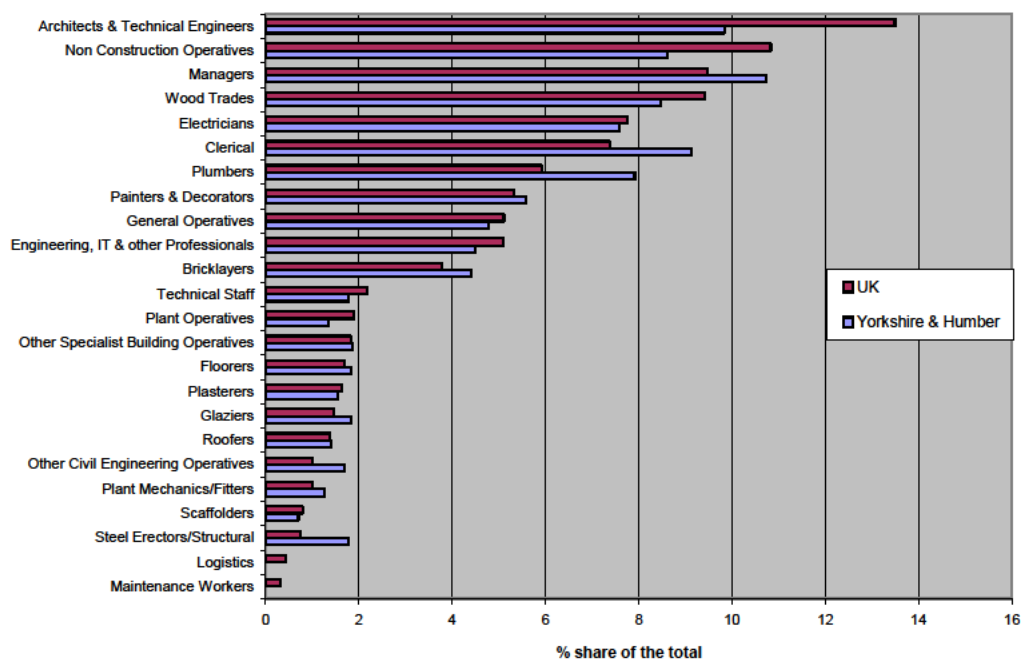
* Note: One employee indicates one person working for the company
 Source: DTI.

Construction employment

As indicated in Figure 5, employment by occupation in the region is roughly in line with the national picture. The majority of occupations appear to be very close to the UK averages. The most significant difference is the under-representation of Architects & Technical Engineers, by about 4%. This group includes all SIC 74.2 occupations.

Employment of Non-construction Operatives in the region also trails employment across the UK. In contrast, the proportion of Managers, Plumbers and Clerical occupations in the region is greater than in the UK as a whole. The share of employment within Maintenance Workers and Logistics occupations was marginal in the region.

Figure 5
Employment by occupation, UK vs. Yorkshire and Humber: 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.

Table 2 shows that new work orders rose strongly between 2001 and 2004, recording double-digit growth year-on-year. In 2005 orders were 67% higher than they were in 2000. The rate of growth peaked at 26% in 2003 and has been slowing ever since. Such rapid increases proved unsustainable in 2004 and orders plateaued at a high level.

Infrastructure saw one of the strongest rises in orders in 2005, up by 54% to £386m, in current prices, after two years of heavy decline. This was the second best performance out of all the sub-sectors for this quarter, beaten only by public housing, which grew by 120%. This is very impressive but when absolute value is considered infrastructure accounts for nearly three times more than public housing in Yorkshire and Humber.

The change in orders in the public non-housing sub-sector has been volatile over the past two years. A 24% decline in 2005 immediately followed a 55% increase in 2004. In value terms however, orders remained significantly higher in 2005 than 2003. The strength of the sub-sector since 2000 is due to increased government funding in health and education.

All other sub-sectors had disappointing growth rates throughout 2005 with the final quarter being particularly poor. Orders in the industrial sub-sector fell by 7%, while current priced commercial and private housing sub-sectors orders showed little change from 2004.

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 the Yorkshire and Humber, 1999–2005

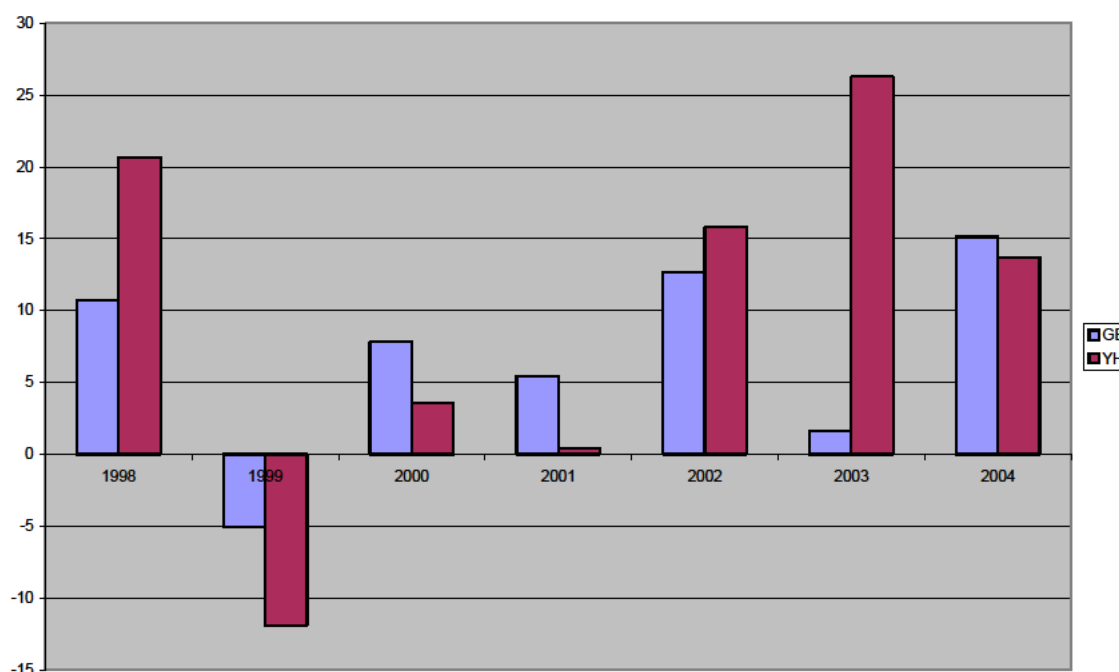
	£ million/annual % change						
	1999	2000	2001	2002	2003	2004	2005
Public housing	83	69	48	56	52	61	134
	32	-17	-30	17	-7	17	120
Private housing	444	445	435	612	894	1026	1026
	-12	0	-2	41	46	15	0
Infrastructure	385	476	439	459	395	250	386
	-27	24	-8	5	-14	-37	54
Public non-housing	190	329	310	350	492	762	579
	-28	73	-6	13	41	55	-24
Industrial	264	233	225	233	321	424	395
	-4	-12	-3	4	38	32	-7
Commercial	644	529	633	707	901	951	945
	0	-18	20	12	27	6	-1
All new work	2009	2081	2089	2419	3055	3474	3466
	-12	4	0	16	26	14	0

Source: DTI.

Figure 6 shows that new orders growth in Yorkshire and Humber tends to be more volatile than GB as a whole. Yorkshire and Humber has consistently followed the national trend since 1998 and in a couple of instances has outperformed GB by a wide margin. In 1998 Yorkshire and Humber new orders growth was 10% higher than GB as a whole. Similarly, in 2003, new orders were 25% higher in Yorkshire and Humber.

Figure 6
New orders: GB vs. Yorkshire and Humber, 1998–2004

Annual % change



Source: DTI.

Construction output – forecasts

Real construction output for Yorkshire and Humber is summarised in Table 3.

- In 2004 output rose by a robust 14%. In contrast, output in 2005 is estimated to have decreased, albeit by a marginal 1%. This is expected to be an isolated fall and from 2006 the region is expected to grow moderately but consistently over the forecast period. Annual average growth[†] should be in the region of 1.8%.
- To 2010 the commercial sub-sector should enjoy the strongest growth, with annual average increases forecast at 3.7%, and 2008 forecast to be a particularly strong year. The projection of growth in the housing sectors is less positive however, with both public and private housing sub-sectors actually predicted to encounter an annual average decline to 2010. Public housing is expected to show strong growth during 2005 to 2007, followed by three years of consecutive declining output. In absolute terms, public housing output is expected to fall by 5.3% between 2006 and 2010, at an average annual rate of 1.3%.

[†] 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.

- The repair and maintenance (R&M) sub-sector is expected to expand at a relatively robust rate over the forecast period, with annual average rises of 2.5% forecast. In 2006 and 2007, R&M is forecast to have particularly strong years, with output rising by 7% and 4% respectively.
- Over the short term the outlook is fairly pessimistic for the public non-housing sub-sector. An estimated growth of 5% in 2005 is expected to be followed by a 6% contraction in 2006. Beyond 2006 output should recover and growth should average around 2.9% each year between 2006 and 2010.
- Robust expansion in industrial construction in the region is unlikely to continue. However, across the forecast period, marginal growth is forecast while output essentially plateaus at a high level.

Table 3
Yorkshire and Humber construction output by sub-sector, 2004–2010

	Annual % change						
	2004	2005	2006	2007	2008	2009	2010
Public housing	9%	60%	9%	10%	-3%	-5%	-6%
Private housing	25%	-5%	-1%	2%	5%	-5%	-6%
Infrastructure	-19%	-1%	-2%	-3%	-1%	-1%	-2%
Public non-housing	40%	5%	-6%	2%	1%	4%	4%
Industrial	29%	8%	1%	-2%	0%	1%	2%
Commercial	15%	-9%	2%	0%	8%	3%	3%
All new work	17%	-1%	-1%	1%	4%	0%	0%
R&M	11%	0%	7%	4%	2%	2%	2%
Total Work	14%	-1%	3%	2%	3%	1%	1%

Source: Experian.

Table 4 shows the total construction output and employment over the period 1998–2010. Real construction output in Yorkshire and Humber is set to be 9.7% higher in 2010 than in 2004. A marginal decline in 2005 will be compensated for by year-on-year growth from 2006. Over the same period the forecast increase for the UK is set to be 14%. Total employment is also forecast to grow by just above 9% between 2004 and 2010.

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

	Year	Total Output Growth Rate %	Total Output £m 2001 prices	Total Employment (direct and indirect) 000s
Actual	1998	1.7	5585	153
	1999	5.1	5870	163
	2000	-5.6	5542	167
	2001	-2.8	5387	194
	2002	10.2	5937	174
	2003	8.3	6432	198
	2004	14.2	7345	203
Forecast	2005	-0.5	7305	214
	2006	2.6	7496	209
	2007	2.3	7668	211
	2008	2.9	7889	216
	2009	1.0	7967	219
	2010	1.2	8059	222

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, region, and Learning and Skills Council (LSC) 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.

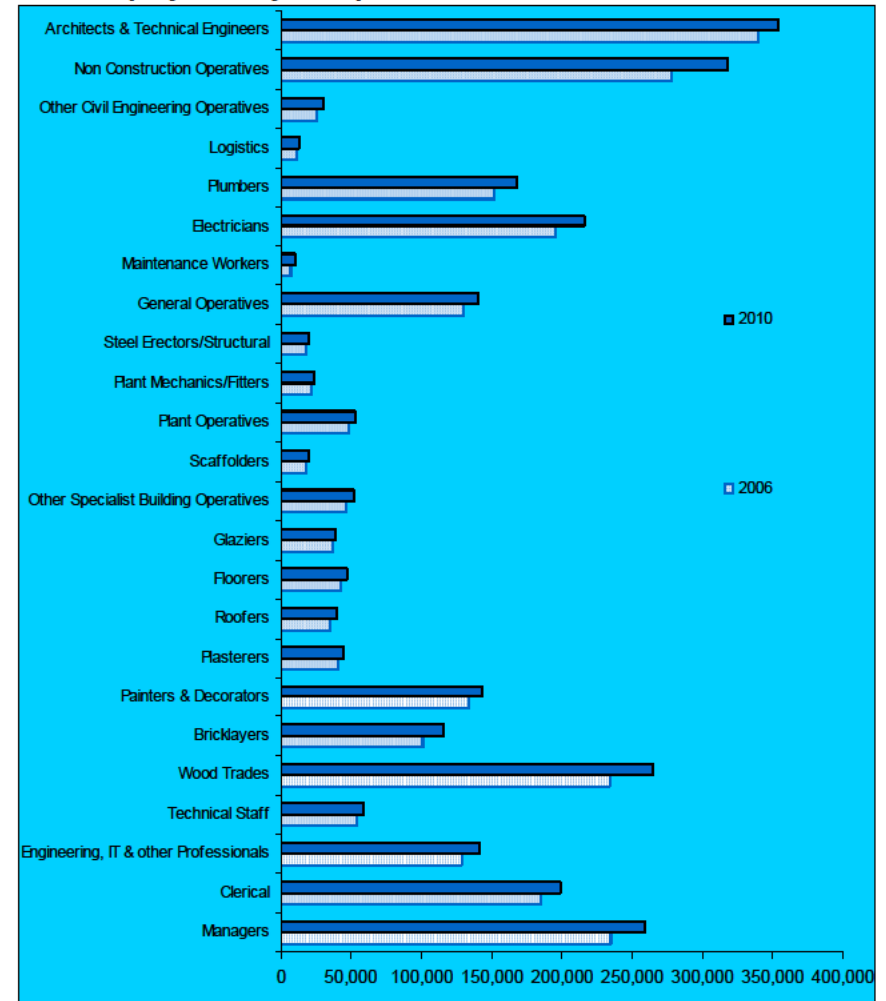
* For the ConstructionSkills and SummitSkills sector footprints see Appendix IV

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 Yorkshire and Humber forecasts

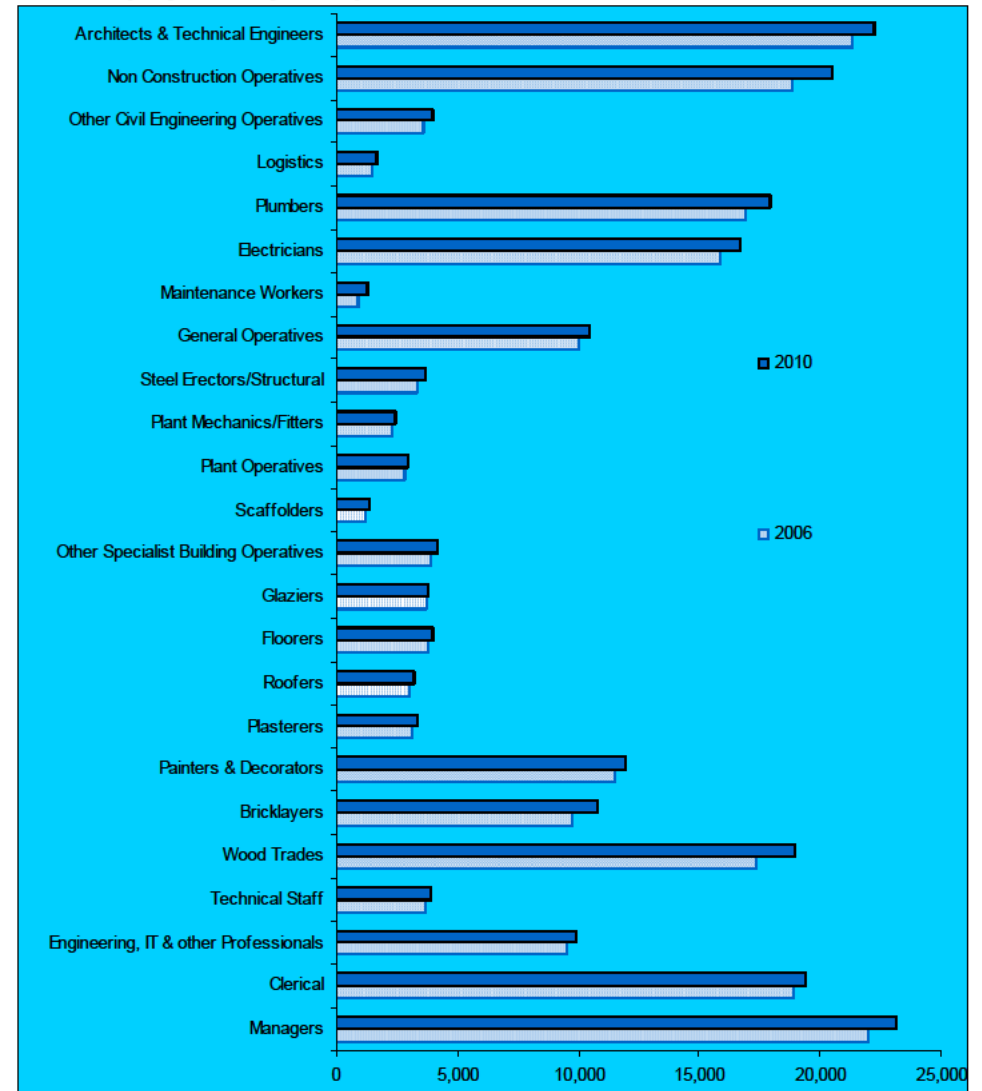
- Total employment in Yorkshire and Humber's construction industry is forecast to increase by 12,750 between 2006 and 2010 (Table 6).
- The region has an average annual employment requirement of 6,150 across both SIC 45 and SIC 74.2 (Table 6 and Figure 8).
- The greatest Average Annual Requirement in Yorkshire and Humber will come from Architects & Technical Engineers (SIC 74.2) with an estimated requirement of 900.
- Wood Trades, the occupation likely to have the largest requirement nationally, has the second largest Average Annual Requirement in Yorkshire and Humber at 640 (Table 6).
- Clerical occupations also feature highly in the requirements for this region, estimated at 510 each year for the period 2006 to 2010.
- In terms of Average Annual Requirements, Floorers, Glaziers, Scaffolders, General Operatives, Maintenance Workers, and Logistics are all at the lower end of the scale, with less than 100 new employees required annually.

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

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	22,010	23,110	440
Clerical	18,890	19,420	510
Engineering, IT & other Professionals	9,480	9,900	260
Technical Staff	3,690	3,890	110
Wood Trades	17,350	18,960	640
Bricklayers	9,750	10,800	420
Painters & Decorators	11,530	11,980	290
Plasterers	3,170	3,310	110
Roofers	3,000	3,240	110
Floorers	3,780	3,980	60
Glaziers	3,730	3,790	70
Other Specialist Building Operatives	3,930	4,200	360
Scaffolders	1,220	1,320	<10
Plant Operatives	2,830	2,980	160
Plant Mechanics/Fitters	2,320	2,460	220
Steel Erectors/Structural	3,370	3,660	350
General Operatives	10,010	10,470	<10
Maintenance Workers	930	1,290	<10
Electricians	15,870	16,730	620
Plumbers	16,930	17,950	310
Logistics	1,510	1,670	60
Other Civil Engineering Operatives	3,620	3,980	150
Non Construction Operatives	18,800	20,510	
Total (SIC 45)	187,720	199,600	5,250
Architects & Technical Engineers	21,340	22,210	900
Total (SIC 45 & 74.2)	209,060	221,810	6,150

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

Figure 8
Yorkshire and Humber
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 LSC areas of Yorkshire and Humber. The areas and populations being looked at are considerably smaller than those reported in Table 6 and Figure 8 for Yorkshire and Humber 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 Yorkshire and Humber 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 regional research to improve the robustness of these data.

Table 7
North Yorkshire
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	3,350	3,420	60
Clerical	2,880	2,870	80
Engineering, IT & other Professionals	1,450	1,460	40
Technical Staff	560	570	20
Wood Trades	2,640	2,800	90
Bricklayers	1,490	1,600	60
Painters & Decorators	1,760	1,770	40
Plasterers	480	490	20
Roofers	460	480	20
Floorers	580	590	<10
Glaziers	570	560	10
Other Specialist Building Operatives	600	620	50
Scaffolders	190	190	<10
Plant Operatives	430	440	20
Plant Mechanics/Fitters	350	360	30
Steel Erectors/Structural	510	540	50
General Operatives	1,530	1,550	<10
Maintenance Workers	140	190	<10
Electricians	2,420	2,470	90
Plumbers	2,580	2,650	50
Logistics	350	380	<10
Other Civil Engineering Operatives	430	460	<10
Non Construction Operatives	2,870	3,030	<10
Total (SIC 45)	28,620	29,490	730
Architects & Technical Engineers	3,250	3,280	130
Total (SIC 45 & 74.2)	31,870	32,770	860

Source: Construction Skills Network Model, 2006; Experian.

Note: Numbers are rounded to the nearest ten and may not sum to the total.

Table 8
West Yorkshire
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	8,610	9,100	170
Clerical	7,390	7,640	200
Engineering, IT & other Professionals	3,710	3,900	100
Technical Staff	1,440	1,530	40
Wood Trades	6,790	7,460	250
Bricklayers	3,820	4,250	160
Painters & Decorators	4,510	4,720	120
Plasterers	1,240	1,300	40
Roofers	1,170	1,280	40
Floorers	1,480	1,570	30
Glaziers	1,460	1,490	30
Other Specialist Building Operatives	1,540	1,650	140
Scaffolders	480	520	<10
Plant Operatives	1,110	1,170	60
Plant Mechanics/Fitters	910	970	90
Steel Erectors/Structural	1,320	1,440	140
General Operatives	3,920	4,120	<10
Maintenance Workers	360	510	<10
Electricians	6,210	6,590	240
Plumbers	6,630	7,060	120
Logistics	900	1,000	<10
Other Civil Engineering Operatives	1,100	1,220	<10
Non Construction Operatives	7,360	8,070	<10
Total (SIC 45)	73,460	78,560	1,970
Architects & Technical Engineers	8,350	8,740	350
Total (SIC 45 & 74.2)	81,810	87,300	2,320

Source: Construction Skills Network Model, 2006; Experian.

Note: Numbers are rounded to the nearest ten and may not sum to the total.

Table 9
South Yorkshire
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	6,260	6,670	130
Clerical	5,370	5,600	150
Engineering, IT & other Professionals	2,700	2,860	80
Technical Staff	1,050	1,120	30
Wood Trades	4,930	5,470	180
Bricklayers	2,770	3,120	120
Painters & Decorators	3,280	3,460	80
Plasterers	900	950	30
Roofers	850	940	30
Floorers	1,070	1,150	20
Glaziers	1,060	1,090	20
Other Specialist Building Operatives	1,120	1,210	100
Scaffolders	350	380	<10
Plant Operatives	800	860	50
Plant Mechanics/Fitters	660	710	60
Steel Erectors/Structural	960	1,060	100
General Operatives	2,850	3,020	<10
Maintenance Workers	270	370	<10
Electricians	4,510	4,830	180
Plumbers	4,820	5,180	90
Logistics	660	730	<10
Other Civil Engineering Operatives	800	900	<10
Non Construction Operatives	5,350	5,920	<10
Total (SIC 45)	53,390	57,600	1,450
Architects & Technical Engineers	6,070	6,410	260
Total (SIC 45 & 74.2)	59,460	64,010	1,710

Source: Construction Skills Network Model, 2006; Experian.

Note: Numbers are rounded to the nearest ten and may not sum to the total.

Table 10
Humberside
Total employment and annual requirement by occupation: 2006–2010

	Employment		Average Annual Requirement
	2006	2010	2006-2010
Managers	3,780	3,930	70
Clerical	3,250	3,300	90
Engineering, IT & other Professionals	1,630	1,680	40
Technical Staff	630	660	20
Wood Trades	2,980	3,230	110
Bricklayers	1,680	1,840	70
Painters & Decorators	1,980	2,040	50
Plasterers	540	560	20
Roofers	510	550	20
Floorers	650	680	10
Glaziers	640	640	10
Other Specialist Building Operatives	680	720	60
Scaffolders	210	220	<10
Plant Operatives	490	510	30
Plant Mechanics/Fitters	400	420	40
Steel Erectors/Structural	580	620	60
General Operatives	1,720	1,780	<10
Maintenance Workers	160	220	<10
Electricians	2,730	2,850	100
Plumbers	2,910	3,050	50
Logistics	400	430	<10
Other Civil Engineering Operatives	480	530	<10
Non Construction Operatives	3,230	3,490	<10
Total (SIC 45)	32,260	33,950	850
Architects & Technical Engineers	3,670	3,780	150
Total (SIC 45 & 74.2)	35,930	37,730	1,000

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. $GDP = GVA + \text{taxes on products} - \text{subsidies on products}$

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

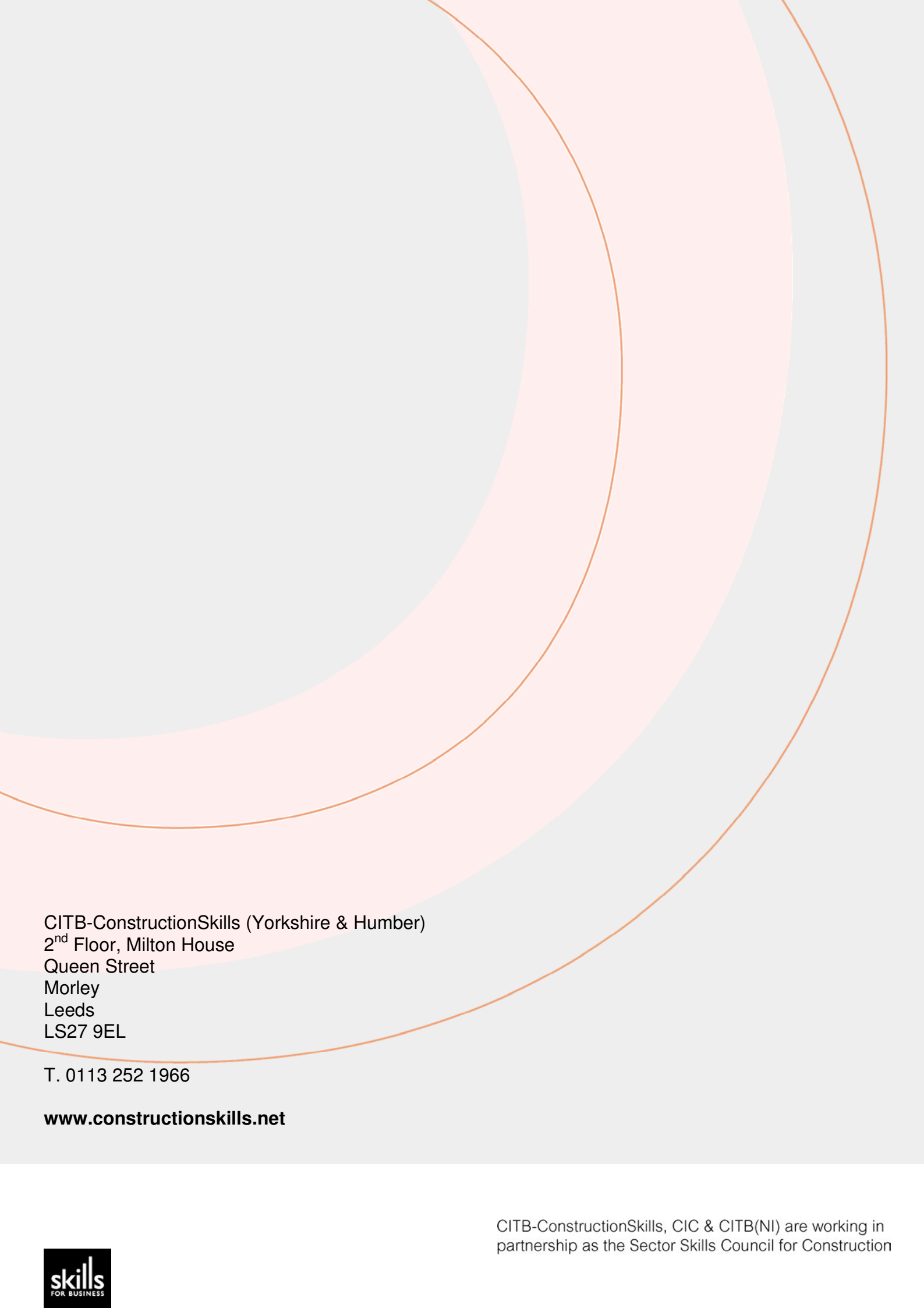
Coverage – Property, Housing and Land Managers, Chartered Surveyors, Estimators, Valuers, Home Inspectors, Estate Agents and Auctioneers (property and chattels), Caretakers, Mobile and Machine Operatives, Window Cleaners, Road Sweepers, Cleaners, Domestic, Facilities Managers.

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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