

Construction Skills Network

North West

Labour Market Intelligence
2006

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This document provides labour market intelligence for the North West 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 previously published annually for the North West. 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 North West construction industry is expected to increase by approximately 5% during the forecast period.
- In the North West the Average Annual Requirement during the forecast period is 7,300. This figure is across both SIC 45 (Construction) and SIC 74.2 (Architects & Technical Engineers).
- In the North West, Managers will have the greatest Average Annual Requirement at 1,180. Nationally, the greatest requirement will come from Wood Trades but the North West Average Annual Requirement in this occupation will only be 710.
- In annual terms, construction output has recorded double-digit growth for the past three years in the North West, which has been rising continually since 1993. However, the latest official data suggest that the outlook for 2005 is less optimistic.
- From 2006, while construction output is forecast to grow year-on-year to 2010 in the North West, the rate of increase will be slower than in recent years rising by an annual average of 1.6%. A decline of 7% is forecast for 2005 on the back of some retrenchment in government spending and a pessimistic outlook for the infrastructure sub-sector.
- In the North West, the commercial sub-sector is forecast to be the star performer over the forecast period, rising by 4.3% on average each year. In contrast, the outlook for both the public and private housing sub-sectors is less positive. Overall, private housing output is likely to be constrained by a slower and more uncertain housing market with public output suffering from the increasing fragility of public finances.
- Vigorous economic expansion seen in the early part of the century stalled in 2004 as output growth in the North West eased and the region once again under-performed the UK as a whole. To 2010, the North West's economy is forecast to grow by 12% compared to a national increase of 14%. A recovery in manufacturing and sustained growth in financial and business services will have an effect, as will expansion in transport and communications.

¹ 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 to 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 upon 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 that takes into account the dynamic factors influencing 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.

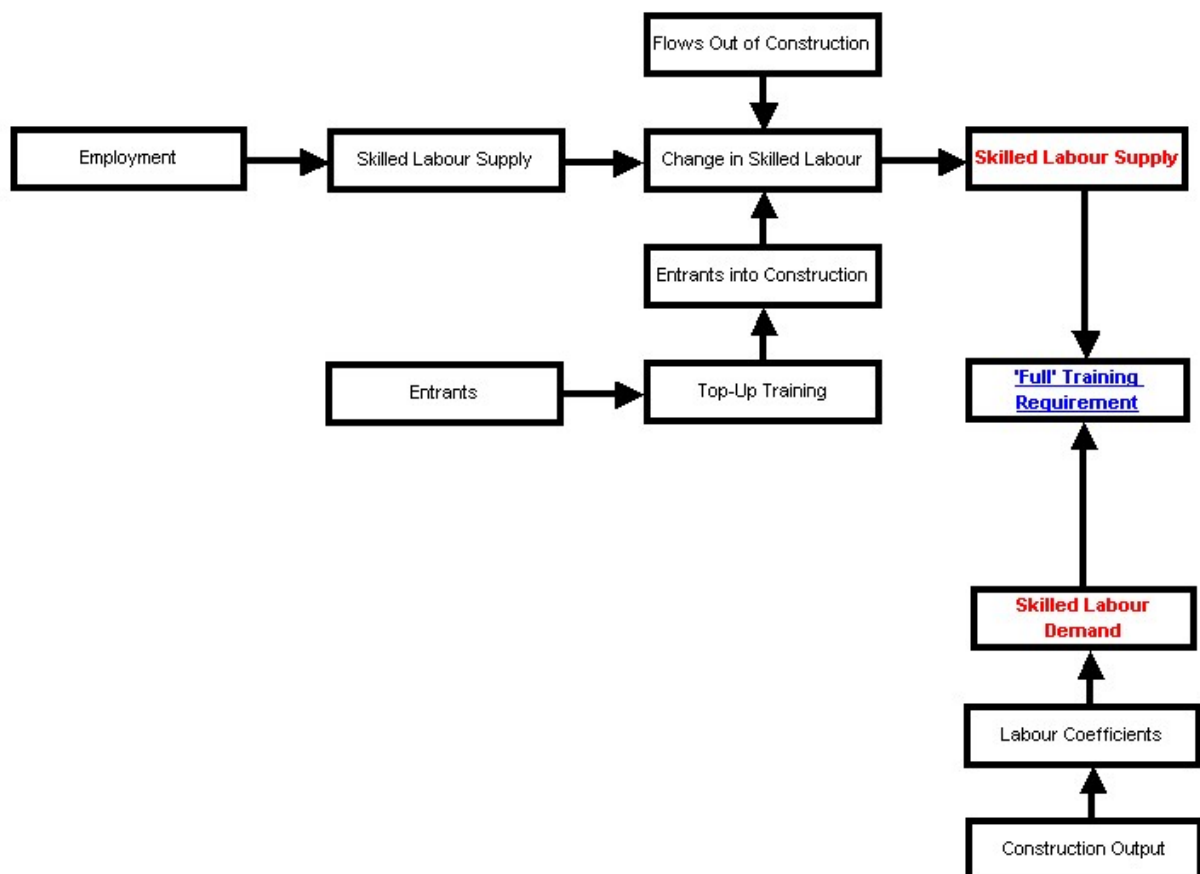
The main reason for outflow is likely to be transfer to other industries.

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

The North West is the third largest regional economy in the UK. In 2005, Gross Value Added (GVA) is estimated at £99.8bn (in 2002 prices), accounting for 10% of UK GVA. Structurally the North West economy is more highly geared towards manufacturing than the national average, with manufacturing accounting for 21% of regional output compared to 16% nationally.

Approximately 11% of the UK population is located in the North West. GVA per capita, providing an indication of the region's standard of living, is below the UK average, at £14,940 compared to £17,258. Officially, average gross weekly earnings in Autumn 2005 were estimated at £428 in the North West compared to £466 nationally.

Economic performance and expectations

The macroeconomic forecasts for the North West are summarised in Table 1.

- Vigorous economic expansion seen in the early part of the century stalled in 2004 as output growth in the North West eased and the region once again under-performed the UK as a whole. GVA rose by 2.3% in 2004, falling well short of 3% growth nationally. Under performance compared to the UK continued in 2005 and is forecast to be a characteristic over the medium term. To 2010 the North West's economy is forecast to grow by 12% compared to a national increase of 14%. Year-on-year growth is forecast to accelerate in 2006 and 2007, although rates will remain subdued compared to the early years of this decade. A recovery in manufacturing and sustained growth in financial and business services will have an effect, as will expansion in transport and communications.
- Little change is expected in total employment over the coming years. This is in contrast to the early part of the decade when robust expansion in financial and business services generated many new employment opportunities and propelled total employment upwards. Initially in 2006, total employment is expected to nudge marginally downwards. In 2007 and 2008, slight but steady upward movement is forecast, with 0.2% annual growth expected in both years. The remainder of the forecast period is then set to be stagnant.
- Real household disposable income growth in the North West will struggle to keep pace as the national picture improves. While reasonably steady year-on-year increases are expected, an acceleration in real income accumulation is unlikely. Growth of 1.7% in 2006 rising to 2.3% by 2010 is expected.

Table 1
Macroeconomic forecasts for the North West

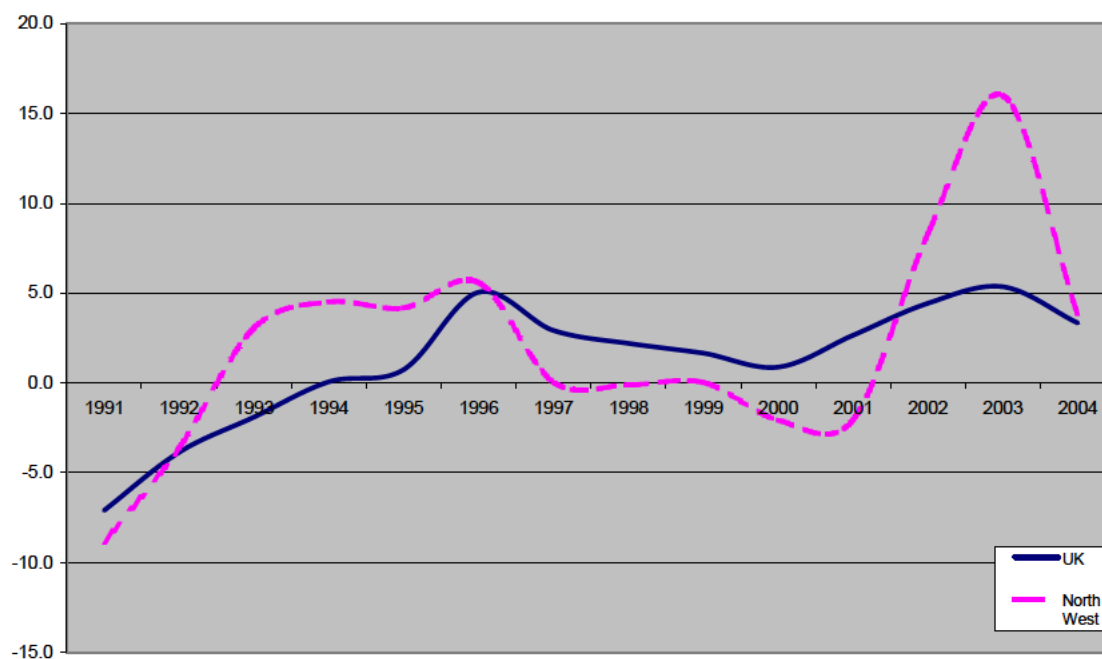
| EXPERIAN BUSINESS STRATEGIES FORECASTS FOR THE NORTH WEST | | | | | | |
|---|--------------------------------|------|------|------|------|------|
| | % change (except unemployment) | | | | | |
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Gross Value Added | 1.3 | 2.0 | 2.4 | 2.3 | 2.4 | 2.5 |
| Total employment | 0.6 | -0.1 | 0.2 | 0.2 | 0.0 | 0.0 |
| Unemployment rate (ILO) | 4.5 | 4.6 | 4.5 | 4.5 | 4.5 | 4.7 |
| Real household disposable income | 2.0 | 1.7 | 2.0 | 2.2 | 2.3 | 2.3 |

Source: Experian.

Construction output in the North West – Historical overview

- The annual percentage change in construction output in the North West compared to the UK as a whole is shown in Figure 2.
- Construction output has recorded strong growth for the past three years in the North West. However, the latest official data present a more cautious picture about the current state of the industry. After rising by 15% over the first three quarters of 2004, current price output growth slowed considerably in the first three quarters of 2005, up 2% from 2004 (Figure 2).
- Vigorous growth in the housing sector was a notable feature of 2004. Output data for the first three quarters suggest this trend did not continue in 2005, at least on the public side. After rising by a robust 36% in 2004, public housing plummeted in 2005 falling by 36%. Private housing output has so far been unaffected by a slower housing market. Private housing output grew by a further 11% over the first three quarters of 2005.
- The only other sub-sector to expand, albeit marginally, in the first three quarters of 2005 was the commercial sub-sector, in which output rose by just 1%.
- Elsewhere, output in the North West was disappointing in the first three quarters of 2005. Output in infrastructure and public non-residential sub-sectors dropped substantially, both falling by 18%. Industrial's 14% decline was less severe but contributed to a 6% fall in total new work.

Figure 2
Construction output percentage change: UK vs. North West



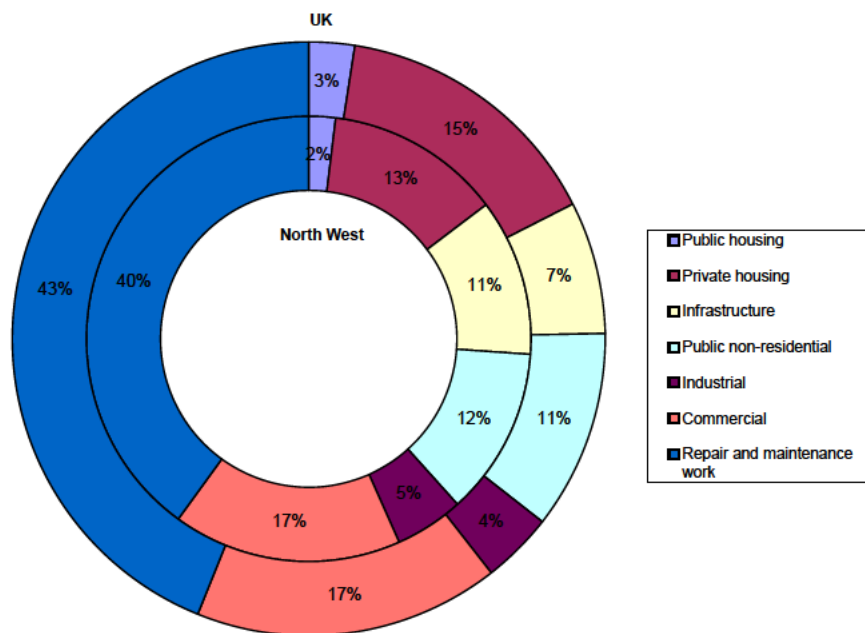
Notes: Except for Northern Ireland, output data for the English regions, Wales, and Scotland are supplied by the Department of Trade and Industry (DTI) on a current price basis. Thus national deflators produced by the DTI have been used to deflate to a 2000 constant price basis, i.e. the effects of inflation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

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

Structure of the construction industry

Figure 3 shows sectoral structure of the North West construction industry when compared to the UK as a whole. The most notable difference is the region's proportionally smaller reliance on repair and maintenance (R&M) activity. Widespread regeneration, both necessity-driven after the Manchester bombings and success-driven as the region's main urban hubs (namely Manchester and Liverpool), have prospered. The result of this is that the industry's focus has tended to err towards new work rather than R&M. Despite rapid house price increases and greater funding for social housing, the share of output in public and private housing trails the national average. In terms of commercial construction, the region matches the national picture but has a slight edge in infrastructure work.

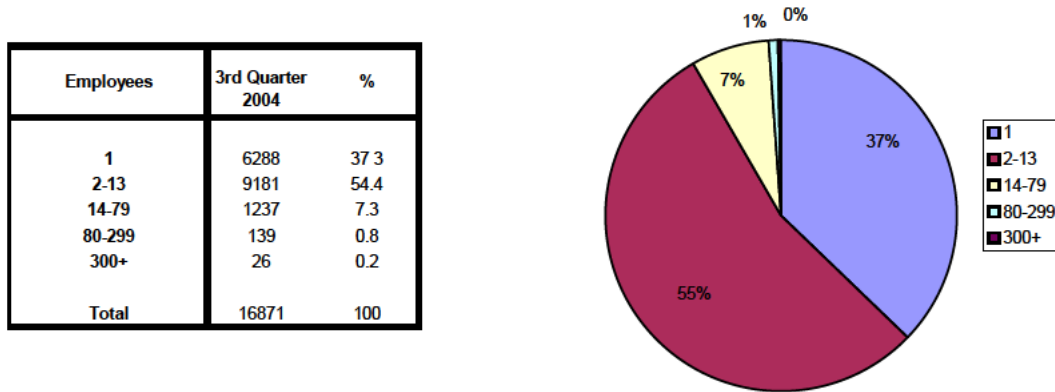
Figure 3
Construction output by main sub-sector: UK vs. North West, 2004



Source: DTI, DFPNI, Experian.

Figure 4 demonstrates that construction companies in the North West are predominantly small. Over 91% of firms in the region have less than 13 employees and only 1% of firms employ in excess of 80 people. The majority of firms (approximately 54%) employ between 2 and 13 employees.

Figure 4
Percentage of construction companies by size, 2004



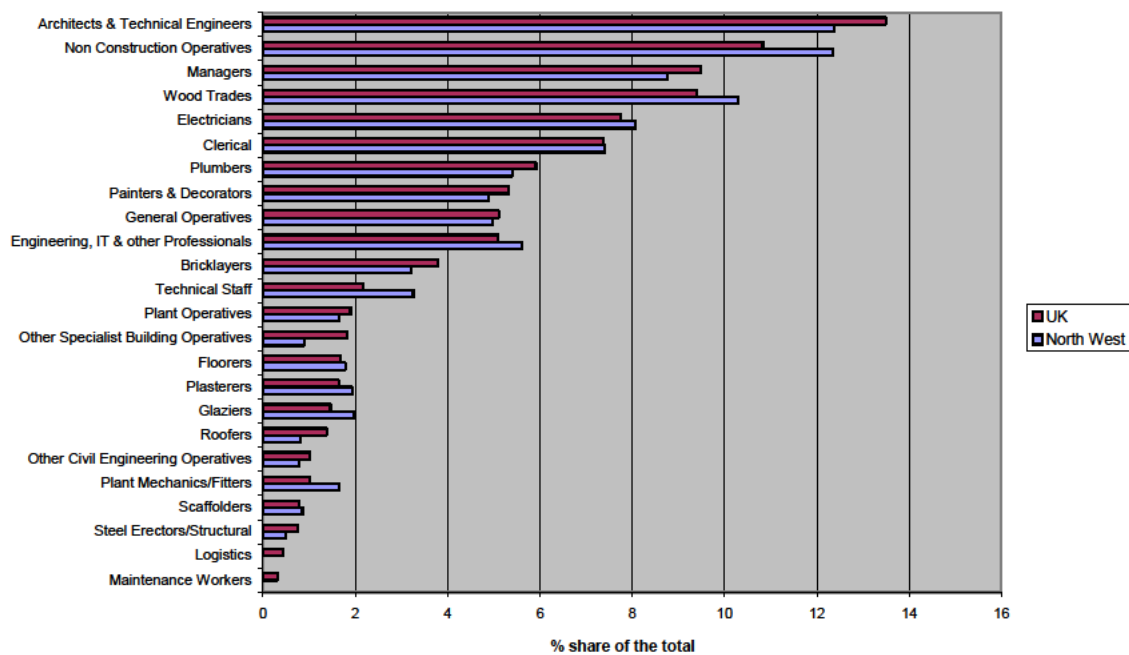
* Note: One employee indicates one person working for the company

Source: DTI.

Construction employment

Employment by occupation in the North West roughly follows the UK as a whole (Figure 5). Architects & Technical Engineers (which includes all SIC 74.2 occupations) is the largest occupational group in the region, accounting for 12% of the total, with Steel Erectors/Structural accounting for just 1%. The region has proportionally greater employment in Non-construction Operatives, Wood Trades, Engineering, IT & Other Professionals, Technical Staff, Electricians, Glaziers and Plant Mechanics/Fitters occupations compared to the UK. However, proportionally less Plumbers*, Bricklayers, Managers and Other Specialist Building Operatives are employed. However, where differences between occupational shares in the North West and UK occur, they tend to be marginal.

Figure 5
Employment by occupation, UK vs. North West: 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 since 2000 growth in construction orders in the North West has been strong. Double-digit growth between 2001 and 2003 helped propel orders upwards by 69% from 2000 to 2004. While annual growth could not be sustained in 2004 with construction orders dipping marginally by 1%, they remained relatively high at £4.3bn (in current prices). A return to relatively strong growth was seen in 2005 as total new work orders once again recorded a double-digit rise. Orders in the fourth quarter made a significant contribution to 2005's recovery, up nearly 40% when compared to the fourth quarter of 2004.

In contrast to 2003 the private sector dominated in 2004 with growth in private sector orders compensating for a fall on the public side. Robust growth was recorded in private housing and commercial, increasing by 14% and 13% respectively over 2004. Other sub-sectors in the region fared less well. The most substantial decline was in infrastructure, which fell by 32%. Smaller declines occurred in public housing, 7%, and public non-housing, 3%.

A public sector decline in 2004 was short lived with public non-housing orders recovering reasonably strongly in 2005. An increase of 9% raised orders to above their 2003 level (in current prices). The strongest recovery was in infrastructure. Two consecutive years of decline was followed by a robust 25% rise in 2005, although even this failed to return the sub-sector to a level comparable with 2002. In contrast, commercial orders declined by 9% and public housing by 26% over the year.

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 in 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 North West, 1999–2005

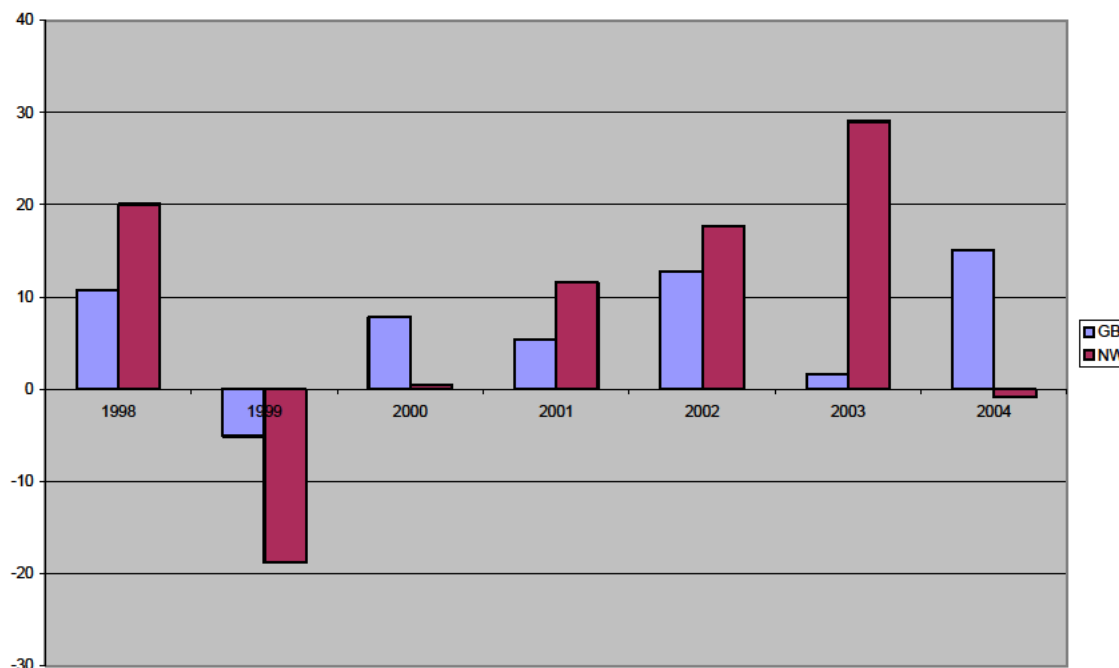
| | £ million/annual % change | | | | | | |
|---------------------|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| Public housing | 104 | 94 | 123 | 78 | 129 | 120 | 89 |
| | 5 | -10 | 31 | -37 | 65 | -7 | -26 |
| Private housing | 598 | 641 | 758 | 799 | 1011 | 1152 | 1544 |
| | -11 | 7 | 18 | 5 | 27 | 14 | 34 |
| Infrastructure | 427 | 356 | 452 | 789 | 780 | 527 | 660 |
| | -39 | -17 | 27 | 75 | -1 | -32 | 25 |
| Public non-housing | 336 | 366 | 390 | 482 | 767 | 741 | 811 |
| | 4 | 9 | 7 | 24 | 59 | -3 | 9 |
| Industrial | 295 | 360 | 321 | 252 | 384 | 317 | 379 |
| | -24 | 22 | -11 | -21 | 52 | -17 | 20 |
| Commercial | 809 | 766 | 838 | 987 | 1303 | 1478 | 1347 |
| | -18 | -5 | 9 | 18 | 32 | 13 | -9 |
| All new work | 2569 | 2582 | 2881 | 3389 | 4373 | 4334 | 4830 |
| | -19 | 1 | 12 | 18 | 29 | -1 | 11 |

Source: DTI.

Figure 6 shows that new orders growth tends to be more volatile in the North West than across GB as a whole. The region significantly under-performed GB in 1999 and consistently over-performed GB between 2001 and 2003. Notably in 2004, the North West recorded a marginal decline.

Figure 6
New orders: GB vs. North West, 1998–2004

Annual % change



Source: DTI.

Construction output - forecasts

Real construction output for the North West is summarised in Table 3.

- Construction output in the North West is expected to fare reasonably well going forward, especially considering the strength of orders growth over the past few years.
- To 2010 the commercial sub-sector should enjoy the strongest growth with average annual increases forecast at 4.3%. Liverpool's impending reign as European Capital of Culture in 2008 is likely to attract new commercial development to the city. More importantly, Liverpool acts as a catalyst for regeneration schemes currently in progress and in the pipeline.
- The outlook for growth in the housing sector is less optimistic, although in volume terms activity will still remain high. From 2008, both the public and private housing sub-sectors are expected to decline year-on-year. Public housing output is estimated to have dropped by a surprising 31% in 2005 because increased funding was slow to translate into increased output. The sectoral outlook for 2006 and 2007 is somewhat improved as heightened output is realised. On the private side a slower housing market is likely to encourage developers to err on the side of caution when undertaking new development.

* 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 n th root of the total percentage growth rate, where n is the number of years in the period being considered.

- Increased freight traffic at Manchester airport and reasonably good transport links to the rest of the country should provide an overall boost to industrial construction over the forecast period. As a continuing government priority, the public non-housing sub-sector is also expected to fare comparatively well with average annual growth of 2.7% forecast. Outside of the housing sectors, infrastructure is likely to be the only other sub-sector to record a negative annual average growth rate, albeit marginally at just 0.6%.

Table 3
North West construction output growth by sub-sector, 2004–2010

| | Annual % change | | | | | | |
|--------------------|-----------------|------|------|------|------|------|------|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Public housing | 26% | -31% | 8% | 9% | -2% | -5% | -6% |
| Private housing | 8% | 6% | -2% | 4% | -1% | -4% | -4% |
| Infrastructure | -5% | -16% | 6% | 2% | -1% | -1% | -2% |
| Public non-housing | 32% | -23% | 3% | 1% | 1% | 4% | 4% |
| Industrial | 6% | -14% | 8% | -1% | 0% | 1% | 2% |
| Commercial | -6% | -1% | -2% | 2% | 7% | 4% | 4% |
| All new work | 5% | -9% | 2% | 2% | 2% | 1% | 1% |
| R&M | 2% | 12% | 2% | 0% | 3% | 2% | 2% |
| Total Work | 4% | -1% | 2% | 1% | 2% | 1% | 1% |

Source: Experian.

Table 4 shows the total construction output and employment over the period 1998–2010. Real construction output in the North West is set to be just 1% higher in 2010 than in 2004, due primarily to the 7% fall in output forecast for 2005. Over the same period the forecast increase for the UK is 14%. Total employment in the region is forecast to grow more robustly with an increase of 16% forecast to 2010.

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

| | Year | Total Output Growth Rate % | Total Output £m 2001 prices | Total Employment (direct and indirect) 000s |
|----------|------|----------------------------|-----------------------------|---|
| Actual | 1998 | -0.1 | 7332 | 219 |
| | 1999 | 0.0 | 7334 | 229 |
| | 2000 | -2.1 | 7182 | 227 |
| | 2001 | -2.1 | 7035 | 242 |
| | 2002 | 8.3 | 7620 | 250 |
| | 2003 | 16.0 | 8839 | 256 |
| | 2004 | 3.8 | 9172 | 257 |
| Forecast | 2005 | -6.9 | 8537 | 280 |
| | 2006 | 1.8 | 8690 | 283 |
| | 2007 | 1.4 | 8813 | 285 |
| | 2008 | 2.4 | 9026 | 291 |
| | 2009 | 1.3 | 9142 | 294 |
| | 2010 | 1.4 | 9268 | 298 |

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 are 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 ConstructionSkills and SummitSkills sector footprints see Appendix IV

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

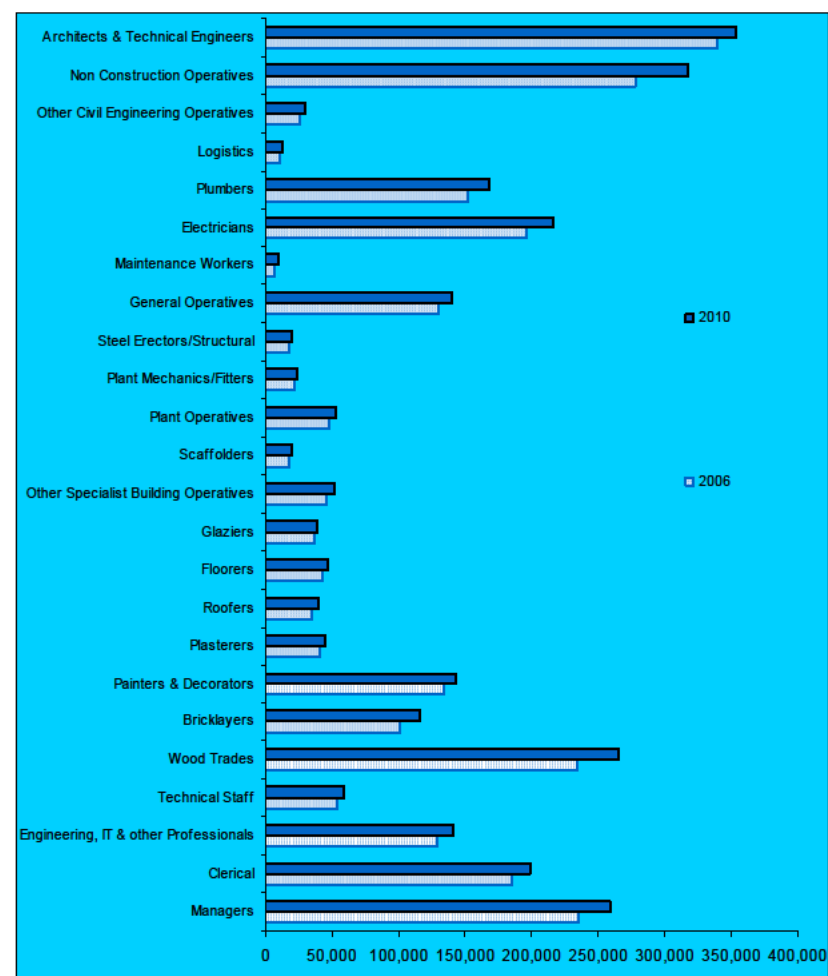
| | Employment | | Average Annual Requirement |
|--|------------------|------------------|----------------------------|
| | 2006 | 2010 | 2006-2010 |
| Managers | 235,400 | 258,520 | 10,530 |
| Clerical | 185,270 | 198,600 | 8,610 |
| Engineering, IT & other Professionals | 129,320 | 140,890 | 4,790 |
| 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 North West employment forecasts

Table 6 and Figure 8 outline the forecast employment and Average Annual Requirement for 24 occupations within the North West construction industry between 2006 to 2010.

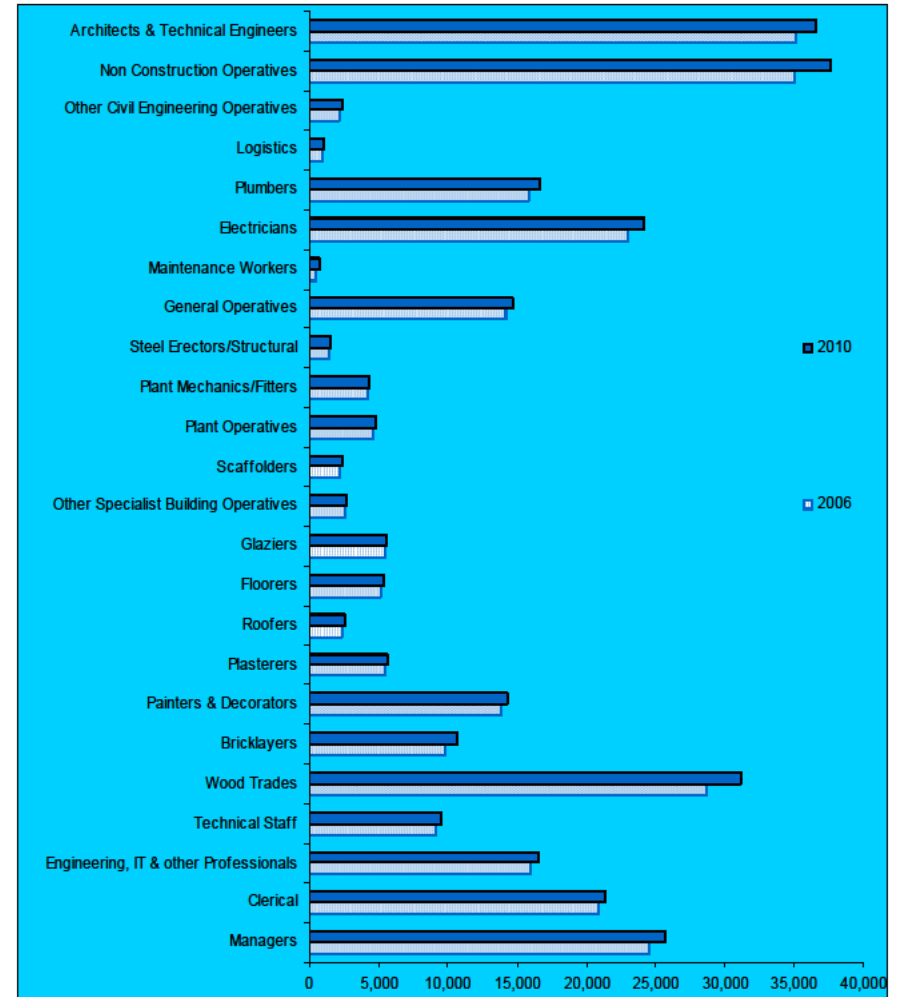
- Total employment in the North West is expected to increase by 15,080 during the forecast period.
- An Average Annual Requirement of 7,300 across both SIC 45 and SIC 74.2 is forecast (Table 6 and Figure 8).
- The greatest Average Annual Requirement will come from Managers with an estimated requirement of 1,180. Employment of Managers is forecast to rise by 1,110 over the 2006 to 2010 period (Table 6).
- Wood Trades, the occupation likely to have the largest requirement nationally, has the third largest Average Annual Requirement in the North West at 710 (Table 6).
- The Average Annual Requirement for four occupations, namely Scaffolders, Steel Erectors/Structural, Maintenance Workers and Logistics is likely to be below 50 (Table 6).
- Following the national trend, the North West's requirement for Clerical, Electricians and Architects & Technical Engineers (SIC 74.2) is at the higher end of the scale (Table 6).
- Technical Staff, Roofers, Other Specialist Building Operatives, Plant Operatives, General Operatives and Other Civil Engineering Operatives all have an Average Annual Requirement of around 100 (Table 6).

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

| | Employment | | Average Annual Requirement |
|--|----------------|----------------|----------------------------|
| | 2006 | 2010 | 2006-2010 |
| Managers | 24,570 | 25,680 | 1,180 |
| Clerical | 20,900 | 21,350 | 630 |
| Engineering, IT & other Professionals | 15,980 | 16,590 | 230 |
| Technical Staff | 9,120 | 9,530 | 140 |
| Wood Trades | 28,690 | 31,150 | 710 |
| Bricklayers | 9,720 | 10,690 | 410 |
| Painters & Decorators | 13,840 | 14,250 | 380 |
| Plasterers | 5,450 | 5,680 | 180 |
| Roofers | 2,330 | 2,530 | 100 |
| Floorers | 5,140 | 5,380 | 200 |
| Glaziers | 5,500 | 5,570 | 320 |
| Other Specialist Building Operatives | 2,520 | 2,680 | 150 |
| Scaffolders | 2,190 | 2,340 | 40 |
| Plant Operatives | 4,590 | 4,850 | 130 |
| Plant Mechanics/Fitters | 4,170 | 4,370 | 280 |
| Steel Erectors/Structural | 1,450 | 1,560 | <10 |
| General Operatives | 14,140 | 14,680 | 90 |
| Maintenance Workers | 550 | 760 | <10 |
| Electricians | 23,020 | 24,130 | 830 |
| Plumbers | 15,820 | 16,680 | 580 |
| Logistics | 900 | 990 | 30 |
| Other Civil Engineering Operatives | 2,150 | 2,380 | 80 |
| Non Construction Operatives | 35,100 | 37,670 | |
| Total (SIC 45) | 247,840 | 261,490 | 6,690 |
| Architects & Technical Engineers | 35,150 | 36,580 | 610 |
| Total (SIC 45 & 74.2) | 282,990 | 298,070 | 7,300 |

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

Figure 8
North West
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 in the North West. The areas and populations being looked at are considerably smaller than those on a regional level and the data available at this sub-regional level are less robust. Construction employment and future requirements on a sub-regional level are created as ratios of the regional data 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
Cumbria
Total employment and annual requirement by occupation: 2006–2010

| | Employment | | Average Annual Requirement |
|--|---------------|---------------|----------------------------|
| | 2006 | 2010 | 2006-2010 |
| Managers | 1,650 | 1,650 | 80 |
| Clerical | 1,400 | 1,370 | 40 |
| Engineering, IT & other Professionals | 1,070 | 1,070 | 20 |
| Technical Staff | 610 | 610 | <10 |
| Wood Trades | 1,930 | 2,010 | 50 |
| Bricklayers | 650 | 690 | 30 |
| Painters & Decorators | 930 | 920 | 20 |
| Plasterers | 370 | 370 | 10 |
| Roofers | 160 | 160 | <10 |
| Floorers | 350 | 350 | 10 |
| Glaziers | 370 | 360 | 20 |
| Other Specialist Building Operatives | 170 | 170 | <10 |
| Scaffolders | 150 | 150 | <10 |
| Plant Operatives | 310 | 310 | <10 |
| Plant Mechanics/Fitters | 280 | 280 | 20 |
| Steel Erectors/Structural | 100 | 100 | <10 |
| General Operatives | 950 | 950 | <10 |
| Maintenance Workers | 40 | 50 | <10 |
| Electricians | 1,550 | 1,550 | 50 |
| Plumbers | 1,060 | 1,070 | 40 |
| Logistics | 70 | 80 | <10 |
| Other Civil Engineering Operatives | 130 | 140 | <10 |
| Non Construction Operatives | 2,360 | 2,430 | <10 |
| Total (SIC 45) | 16,660 | 16,840 | 390 |
| Architects & Technical Engineers | 2,360 | 2,360 | 40 |
| Total (SIC 45 & 74.2) | 19,020 | 19,200 | 430 |

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

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

| | Employment | | Average Annual Requirement |
|--|---------------|---------------|----------------------------|
| | 2006 | 2010 | 2006-2010 |
| Managers | 6,080 | 6,580 | 300 |
| Clerical | 5,170 | 5,470 | 160 |
| Engineering, IT & other Professionals | 3,960 | 4,250 | 60 |
| Technical Staff | 2,260 | 2,440 | 40 |
| Wood Trades | 7,100 | 7,980 | 180 |
| Bricklayers | 2,410 | 2,740 | 110 |
| Painters & Decorators | 3,430 | 3,650 | 100 |
| Plasterers | 1,350 | 1,450 | 50 |
| Roofers | 580 | 650 | 20 |
| Floorers | 1,270 | 1,380 | 50 |
| Glaziers | 1,360 | 1,430 | 80 |
| Other Specialist Building Operatives | 620 | 690 | 40 |
| Scaffolders | 540 | 600 | <10 |
| Plant Operatives | 1,140 | 1,240 | 30 |
| Plant Mechanics/Fitters | 1,030 | 1,120 | 70 |
| Steel Erectors/Structural | 360 | 400 | <10 |
| General Operatives | 3,500 | 3,760 | 20 |
| Maintenance Workers | 140 | 190 | <10 |
| Electricians | 5,700 | 6,180 | 210 |
| Plumbers | 3,920 | 4,270 | 150 |
| Logistics | 270 | 310 | <10 |
| Other Civil Engineering Operatives | 490 | 560 | <10 |
| Non Construction Operatives | 8,690 | 9,650 | <10 |
| Total (SIC 45) | 61,370 | 66,990 | 1,670 |
| Architects & Technical Engineers | 8,700 | 9,370 | 160 |
| Total (SIC 45 & 74.2) | 70,070 | 76,360 | 1,830 |

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

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

| | Employment | | Average Annual Requirement |
|--|---------------|---------------|----------------------------|
| | 2006 | 2010 | 2006-2010 |
| Managers | 3,420 | 3,420 | 160 |
| Clerical | 2,910 | 2,850 | 80 |
| Engineering, IT & other Professionals | 2,230 | 2,210 | 30 |
| Technical Staff | 1,270 | 1,270 | 20 |
| Wood Trades | 4,000 | 4,150 | 90 |
| Bricklayers | 1,350 | 1,420 | 60 |
| Painters & Decorators | 1,930 | 1,900 | 50 |
| Plasterers | 760 | 760 | 20 |
| Roofers | 320 | 340 | 10 |
| Floorers | 720 | 720 | 30 |
| Glaziers | 770 | 740 | 40 |
| Other Specialist Building Operatives | 350 | 360 | 20 |
| Scaffolders | 310 | 310 | <10 |
| Plant Operatives | 640 | 650 | 20 |
| Plant Mechanics/Fitters | 580 | 580 | 40 |
| Steel Erectors/Structural | 200 | 210 | <10 |
| General Operatives | 1,970 | 1,960 | 10 |
| Maintenance Workers | 80 | 100 | <10 |
| Electricians | 3,210 | 3,220 | 110 |
| Plumbers | 2,200 | 2,220 | 80 |
| Logistics | 150 | 160 | <10 |
| Other Civil Engineering Operatives | 270 | 290 | <10 |
| Non Construction Operatives | 4,890 | 5,020 | <10 |
| Total (SIC 45) | 34,530 | 34,860 | 870 |
| Architects & Technical Engineers | 4,900 | 4,880 | 80 |
| Total (SIC 45 & 74.2) | 39,430 | 39,740 | 950 |

Source: Construction Skills Network Model, 2006; Experian.

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

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

| | Employment | | Average Annual Requirement |
|--|----------------|----------------|----------------------------|
| | 2006 | 2010 | 2006-2010 |
| Managers | 9,130 | 9,450 | 430 |
| Clerical | 7,770 | 7,850 | 230 |
| Engineering, IT & other Professionals | 5,940 | 6,100 | 90 |
| Technical Staff | 3,390 | 3,510 | 50 |
| Wood Trades | 10,660 | 11,460 | 260 |
| Bricklayers | 3,610 | 3,930 | 150 |
| Painters & Decorators | 5,140 | 5,240 | 140 |
| Plasterers | 2,030 | 2,090 | 70 |
| Roofers | 870 | 930 | 40 |
| Floorers | 1,910 | 1,980 | 70 |
| Glaziers | 2,040 | 2,050 | 120 |
| Other Specialist Building Operatives | 940 | 990 | 50 |
| Scaffolders | 810 | 860 | 10 |
| Plant Operatives | 1,710 | 1,780 | 50 |
| Plant Mechanics/Fitters | 1,550 | 1,610 | 100 |
| Steel Erectors/Structural | 540 | 570 | <10 |
| General Operatives | 5,260 | 5,400 | 30 |
| Maintenance Workers | 210 | 280 | <10 |
| Electricians | 8,560 | 8,880 | 310 |
| Plumbers | 5,880 | 6,140 | 220 |
| Logistics | 400 | 440 | <10 |
| Other Civil Engineering Operatives | 730 | 800 | <10 |
| Non Construction Operatives | 13,050 | 13,860 | <10 |
| Total (SIC 45) | 92,130 | 96,200 | 2,420 |
| Architects & Technical Engineers | 13,070 | 13,460 | 230 |
| Total (SIC 45 & 74.2) | 105,200 | 109,660 | 2,650 |

Source: Construction Skills Network Model, 2006; Experian.

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

Table 11
Cheshire & Warrington
Total employment and annual requirement by occupation: 2006–2010

| | Employment | | Average Annual Requirement |
|--|------------|--------|----------------------------|
| | 2006 | 2010 | 2006-2010 |
| Managers | 4,280 | 4,580 | 210 |
| Clerical | 3,640 | 3,810 | 110 |
| Engineering, IT & other Professionals | 2,790 | 2,960 | 40 |
| Technical Staff | 1,590 | 1,700 | 20 |
| Wood Trades | 5,000 | 5,550 | 130 |
| Bricklayers | 1,690 | 1,910 | 70 |
| Painters & Decorators | 2,410 | 2,540 | 70 |
| Plasterers | 950 | 1,010 | 30 |
| Roofers | 410 | 450 | 20 |
| Floorers | 900 | 960 | 40 |
| Glaziers | 960 | 990 | 60 |
| Other Specialist Building Operatives | 440 | 480 | 30 |
| Scaffolders | 380 | 420 | <10 |
| Plant Operatives | 800 | 860 | 20 |
| Plant Mechanics/Fitters | 730 | 780 | 50 |
| Steel Erectors/Structural | 250 | 280 | <10 |
| General Operatives | 2,460 | 2,620 | 20 |
| Maintenance Workers | 100 | 140 | <10 |
| Electricians | 4,010 | 4,300 | 150 |
| Plumbers | 2,760 | 2,970 | 100 |
| Logistics | 190 | 210 | <10 |
| Other Civil Engineering Operatives | 340 | 390 | <10 |
| Non Construction Operatives | 6,120 | 6,720 | <10 |
| Total (SIC 45) | 43,200 | 46,630 | 1,170 |
| Architects & Technical Engineers | 6,130 | 6,520 | 110 |
| Total (SIC 45 & 74.2) | 49,330 | 53,150 | 1,280 |

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

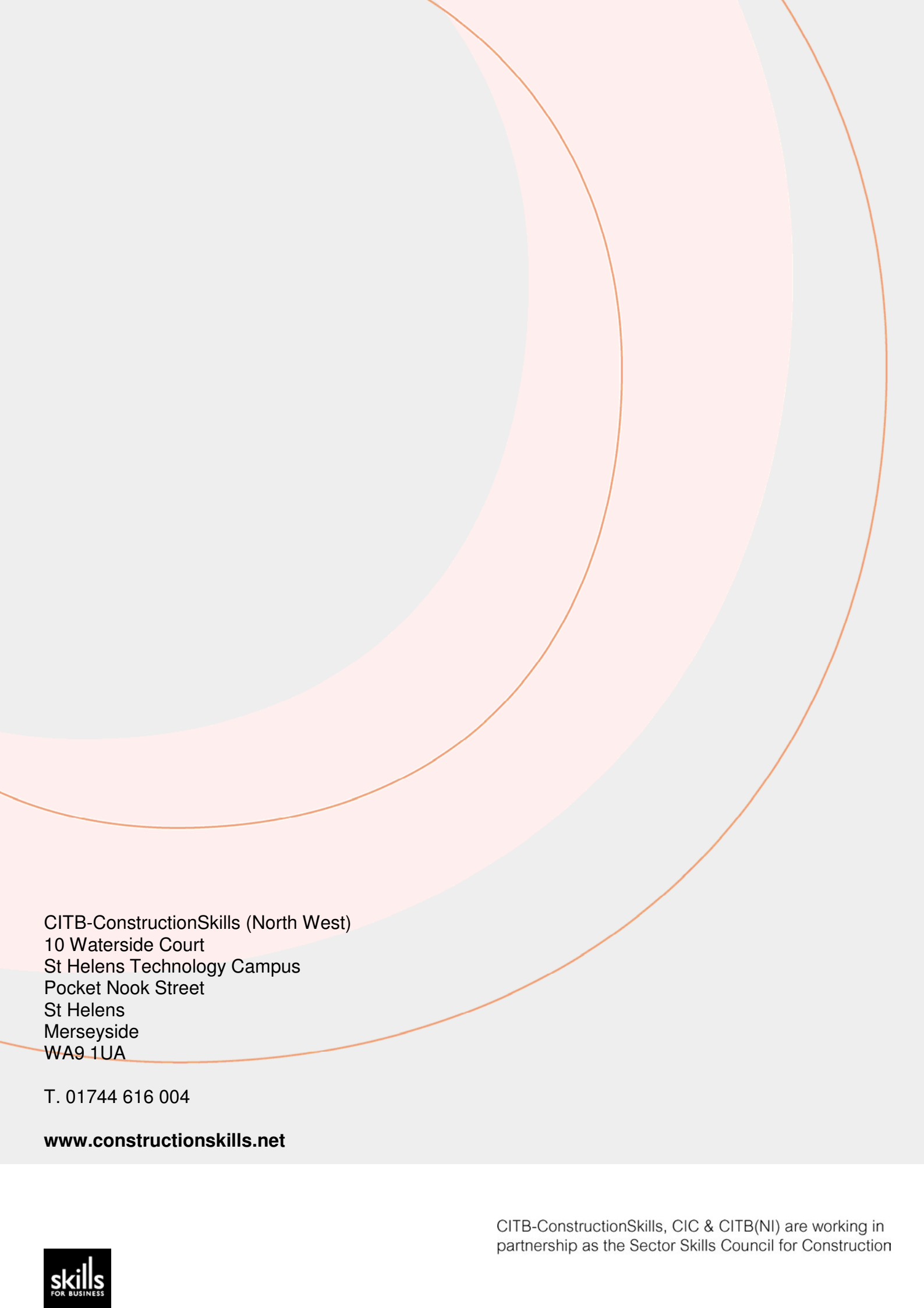
Coverage – Property, Housing and Land Managers, Chartered Surveyors, Estimators, Valuers, Home Inspectors, Estate Agents and Auctioneers (property and chattels), Caretakers, Mobile and Machine Operatives, Window Cleaners, Road Sweepers, Cleaners, Domestic, Facilities managers.

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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