

The background of the title section is a collage of images. On the left, there are stone steps leading up to a wall. On the right, there is a close-up of a colorful stained glass window with a diamond pattern. The text "TRADITIONAL BUILDING CRAFT SKILLS" is overlaid in large, white, bold, sans-serif capital letters.

TRADITIONAL BUILDING CRAFT SKILLS

Assessing the Need, Meeting the Challenge

SKILLS NEEDS
ANALYSIS OF
THE BUILT
HERITAGE SECTOR
IN SCOTLAND 2007



foreword

Scotland has a rich cultural heritage and its built historic landscape is intrinsic to the country's character, is an important reflection of its history and national identity and is a major attraction for visitors to the United Kingdom. However, traditional buildings are not merely a tourist attraction, but are an important part of our lives and a vibrant and relevant part of the built environment. This also contributes to our social, educational and environmental prosperity and economy.

It is not only the landmark buildings that we must preserve: the almost 500,000 pre-1919 buildings in Scotland are an essential physical resource and represent almost 20% of the total building stock. Repair, maintenance and improvement (RMI) also represents 41% of the construction industry total output and employs specialist trades which generate a lot of work for skilled trades/craftspeople. While we will always need new buildings we cannot simply demolish the old to make way for the new, and although sustainability is a well-worn phrase these days, what could be more sustainable than maintaining our older buildings by careful repair and regeneration – achieved through specialist skills and knowledge developed within the Scottish construction workforce?

The traditional building stock is under constant threat from natural weathering and decay and a lack of routine care and maintenance – to reverse this and ensure that these buildings remain usable and passed on to future generations requires great skill and knowledge from many different disciplines. Well-informed building conservation professionals are essential in specifying the use of traditional building materials and ensuring appropriate skilled contractors and sole traders undertake this work – but the most important skills are those of our trades/craftspeople: bricklayers, carpenters, lime-plasterers, stonemasons, etc.

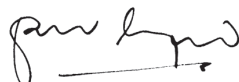
A shortage of skilled craftspeople throughout the UK has highlighted the need for strong action to prevent further erosion of our skills base. The formation of the National Heritage Training Group (NHTG) in 2002 was pivotal in shaping and coordinating the strategy to address these problems. Perhaps the most important action by this group was to commission skills mapping research in each of the four home countries – to fill information gaps on the scope, depth and breadth of labour and skills within this sector. As part of that process, this report is the first ever detailed labour and skills needs analysis of this sector of the construction industry in Scotland. We cannot highlight trends or make accurate forecasts, but have established a benchmark against which we can measure and quantify our progress.

In presenting the research findings, solutions and Skills Action Plan in one document we have assessed the need and suggested the way forward, but we now need concerted action by the Scottish Executive, Local Enterprise Areas, Scottish Funding Council, NHTG, Historic Scotland, ConstructionSkills, heritage organisations, contractors, public and private training providers and careers services to address this vital issue. We need to ensure that the decline in traditional building craft skills is halted and the key role of trades/craftspeople and traditional building materials – essential to maintain and conserve our buildings – is reinstated at the centre of our thinking and planning.

We ask you to help us to meet the challenge.



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contents

Acknowledgements	8
1. Executive Summary	9
1.1 Main Findings of the Report	
1.2 Conclusions	
1.3 Key Issues	
2. Introduction	19
2.1 Traditional Building Materials and Methods	
2.2 The Need for Traditional Building Skills	
2.3 Preserving Traditional Building Skills	
2.4 Repair and Maintenance Cluster	
2.5 Current Context	
2.6 Drivers for Traditional Building Skills in Scotland	
3. Research Objectives and Methodology	31
3.1 Research Objectives	
3.2 Research Methodology	
3.3 Quantitative Research	
3.4 Qualitative Research	
4. Demand for Traditional Building Craft Skills: Stockholders	37
4.1 Pre-1919 Buildings in Scotland	
4.2 Spending by Stockholders in this Survey	
4.3 Trades Required by Stockholders	
4.4 Stockholders with Direct Labour Workforces	
4.5 Future Workforce Demand	
4.6 Funding	
4.7 Conservation Projects and Conservation Officers	
4.8 Other Key Bodies	
4.9 Other Spend Indicators and Drivers	
5. Supply of Traditional Building Skills: Contractors and Sole Traders	49
5.1 The Construction Industry in Scotland	
5.2 The Survey Sample: Overview	
5.3 Trades and Work on Pre-1919 Buildings in the Survey Sample	
5.4 Workforce Management	
5.5 Skills Shortages and Skills Gaps	
5.6 Subcontracting	
5.7 Training	
5.8 The Use of Traditional Building Materials	
5.9 Career Progression	
5.10 The Regional Dimension	

6.	Manufacturers and Suppliers of Traditional Building Materials	73
6.1	Manufacture of Traditional Building Materials in Scotland	
6.2	Manufacturers and Suppliers: Key Activities in the Survey Sample	
6.3	Recruitment	
6.4	Training	
6.5	Manufacturing Processes and Methods	
6.6	Career Progression	
7.	Architects and Surveyors	83
7.1	Architects and Surveyors in Scotland	
7.2	Sample Group and Their Pre-1919 Work	
7.3	Geographic and Sectoral Spread of Work	
7.4	Work with Contractors and Views of Contractors' Skills	
7.5	Use of Traditional Building Materials	
7.6	Specification Writing	
7.7	Views on the Future of the Traditional Building Industry	
8.	Training Provision for Traditional Building Skills in Scotland	91
8.1	Construction Training Provision in Scotland	
8.2	Traditional Building Skills Training in Scotland: The Further Education Colleges	
8.3	Funding	
8.4	Training Places, Training Routes	
8.5	Other Training Centres and Initiatives	
9.	Conclusions and Recommendations	101
9.1	Traditional Building Skills: Spend, Demand and Supply	
9.2	Supply of Materials	
9.3	Recruitment to the Sector	
9.4	Training Provision	
9.5	Main Findings of the Report	
9.6	Key Recommendations	
10.	Skills Action Plan	107
11.	References	121

list of tables

Table 1	Quantitative Interviews by Region
Table 2	Qualitative Interviews by Region
Table 3	Stockholder Spending per Building in Previous 12 Months, by Type of Building
Table 4	Trades/craftspeople Required by Stockholders over Previous and Next 12 Months
Table 5	Demand for Additional Workers in the Traditional Building Sector in Scotland, 2006–2010
Table 6	Annual Additional Training Requirement within the Traditional Building Sector in Scotland, 2006–2010
Table 7	Trades/craftspeople Employed and Subcontracted by Contractors
Table 8	Membership of Trade Organisations among Contractors and Sole Traders
Table 9	First-Year Modern Apprentices by Trade in 39 Scottish FE Colleges, 2005

list of figures

- Figure 1 Diagram of the Construction Industry Repair & Maintenance Cluster
- Figure 2 Construction Output (at Current Prices) and Employment, Scotland, 1984–2005
- Figure 3 Construction Output by Sub-sector in the UK versus Scotland 2005
- Figure 4 Employment Status within ConstructionSkills Footprint, Scotland, 2005
- Figure 5 Employment in Small, Medium and Large Enterprises in Scotland by Industry Group 2004
- Figure 6 Qualification Levels of the Manual Construction Industry Workforce in the UK and Scotland 2005
- Figure 7 Age Profile of the Manual Construction Industry in the UK and Scotland 2005
- Figure 8 Employment by Occupation in the UK versus Scotland 2005
- Figure 9 Building Trades: Annual Average Required Intake Compared with Trained Output in Scotland 2006–2010
- Figure 10 Percentage of Companies by Size: National (Scotland) and Survey Figures
- Figure 11 Regional Distribution of Contractors and Sole Traders
- Figure 12 Percentage of Work on Pre-1919 Buildings by Contractors and Sole Traders
- Figure 13 Main Activity of Contractors and Sole Traders
- Figure 14 All Activities Undertaken by Contractors and Sole Traders
- Figure 15 Contractors' Main Activity by Amount of Pre-1919 Work
- Figure 16 Sole Traders' Main Activity by Amount of Pre-1919 Work
- Figure 17 Rural–Urban Share of Work, by Company Size
- Figure 18 Age Profile of Contractors' Workforce
- Figure 19 Recruitment Policies of Contractors by Company Size
- Figure 20 Contractors' Sources of Recruitment
- Figure 21 Contractors' Degree of Difficulty in Recruitment of Skilled Trades/craftspeople, by Trades
- Figure 22 Percentage of Contractors with Staff in Training by Company Size
- Figure 23 Additional Training Sources Used by Contractors and Sole Traders
- Figure 24 Contractors' and Sole Traders' Assessment of Training Needs
- Figure 25 Contractors' Assessment of Training Needs by Company Size
- Figure 26 Use of Traditional Building Materials by Contractors and Sole Traders
- Figure 27 Contractors' Use of Traditional Materials by Amount of Pre-1919 Building Work
- Figure 28 Sole Traders' Use of Traditional Materials by Amount of Pre-1919 Building Work
- Figure 29 Percentage of Traditional Materials of Scottish Origin
- Figure 30 Preferred Linkages for Career Progression among Contractors and Sole Traders
- Figure 31 Regional Distribution of Contractors by Company Size
- Figure 32 Percentage of Firms within the Proskills Footprint by Size in Scotland and the UK
- Figure 33 Materials Manufactured and Supplied
- Figure 34 Manufacturers' Sources of Recruitment
- Figure 35 Amount of All Training Provided In-House among Manufacturers
- Figure 36 Manufacturers' Assessment of Training Needs
- Figure 37 Percentage of Manufacturers' Materials from Scotland
- Figure 38 Traditional versus Modern Manufacturing Methods
- Figure 39 Percentage of Work on Pre-1919 Buildings by Architects and Surveyors
- Figure 40 Division of Work between Repair & Maintenance and Conservation & Restoration among Architects and Surveyors
- Figure 41 Urban–Rural Divide of Work among Architects and Surveyors
- Figure 42 Difficulty in Finding Suitable Contractors among Architects and Surveyors
- Figure 43 Percentage of Materials of Scottish Origin Used by Architects and Surveyors
- Figure 44 Professionals' Views of Contractors' Skills with Traditional Materials
- Figure 45 Preferred Linkages for Career Progression among Architects and Surveyors
- Figure 46 First-Year Trainees by Level of Qualification and Geographical Area, 2005/06 (Great Britain)

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EXECUTIVE SUMMARY

1

- 1.1 Main Findings of the Report
- 1.2 Conclusions
 - 1.2.1 Demand
 - 1.2.2 Skills Supply
 - 1.2.3 Contractors and Sole Traders
 - 1.2.4 Material Supply Chain
 - 1.2.5 Training Provision
- 1.3 Key Issues
 - 1.3.1 Strategic Vision
 - 1.3.2 Demand
 - 1.3.3 Recruitment and Career Development
 - 1.3.4 Training and Skills Development
 - 1.3.5 Standards and Accreditation

executive summary

This Skills Needs Analysis report is the first of its kind for the traditional building sector in Scotland. It complements the National Heritage Training Group report *Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge – Skills Needs Analysis of the Built Heritage Sector in England, 2005*. Similar research in Wales is due for publication in February 2007 and forthcoming research in Northern Ireland will complete a UK-wide assessment of existing skills and future training needs within this sector.

The purpose of the research was to:

- Analyse and quantify the size of the pre-1919 building stock in Scotland, as this produces the most demand for traditional building skills
- Assess existing traditional building skills levels and future needs, including identifying particular shortages and gaps within the workforce
- Include a smaller-scale assessment of manufacturers and suppliers of traditional building materials (stone, lime, timber, ferrous metals, etc) and building professionals working in the traditional building sector
- Identify training provision for traditional building skills
- Make recommendations to address identified problems and devise a skills action plan

The research included structured quantitative telephone interviews with:

- 354 contractors and sole traders
- 81 stockholders
- 50 manufacturers and suppliers of building materials
- 53 architects and 31 surveyors.

In-depth qualitative interviews were also carried out with a range of stakeholders, such as training providers, conservation officers, Building Preservation Trust managers, funding bodies and other organisations.

The key findings of this research were presented to a group of 71 delegates in Glasgow on 21 June 2006 composed of contractors, manufacturers, stockholders, building professionals, trade federations, professional associations, training providers, heritage organisations and public agencies. This consultation process greatly helped the Steering Group with the final Skills Action Plan (see Section 10).

The research findings are crucial to delivery of the NHTG Business Plan and the development of a 5–10-year Training Plan needed to influence the relevant Scottish government departments, their agencies and the whole sector regarding continued skills provision.



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1.1 Main Findings of the Report

	Demand	Skills Supply	Material Supply Chain	Contractors and Sole Traders	Training Provision
Facts	<p>446,000 pre-1919 buildings in Scotland including around 47,000 listed buildings</p> <p>Average spend on pre-1919 buildings of £2,438, but ranging from £1,250 for private owners to £23,772 among owners and custodians of listed buildings</p> <p>£1.2 billion annual spend on repair and maintenance on pre-1919 buildings - insufficient to ensure survival of Scotland's built heritage</p> <p>Rise in future spending is not certain and may not occur without intervention</p> <p>Good level of understanding exists among stockholders of the need for the use of traditional building materials and skills</p>	<p>Skilled trades/craftspeople are difficult to find, especially stonemasons</p> <p>4,740 additional workers needed in the traditional sector to meet expected demand from 2006 to 2010</p> <p>Stockholders reactive in terms of repair</p> <p>82% of stockholders were 'satisfied' or 'most satisfied' with completed work</p> <p>Skills shortage and skills and knowledge gaps exist within the traditional building sector</p> <p>Knowledge gaps are evident in specifications by architects and surveyors for traditional building work</p>	<p>The use of compatible building materials for conservation and repair is essential to ensure the health of the fabric of the buildings</p> <p>Less than 25% of materials used by traditional building materials manufacturers & suppliers is of Scottish origin</p> <p>Increased supply of materials is dependent upon increased demand</p> <p>Manufacturers and suppliers of traditional building materials reluctant to employ untrained staff</p> <p>Only 24% recruit apprentices, and incentives to train are seen as inadequate</p>	<p>Over 50% of the contractors have real difficulties with recruitment</p> <p>Only 26% of contractors engage inexperienced staff</p> <p>60% of contractors have staff in formal training; firms with 50–100 staff and over 500 are best in this respect; 100–500-sized firms have very low numbers in training</p> <p>Only 1 in 10 of the sole traders have staff in formal training and 73% undertake no training at all</p>	<p>New build drives the FE course content, to the detriment of traditional building skills training</p> <p>Disproportionately low number of available places on those courses which are most relevant to traditional building skills</p> <p>8,710 individuals require training in traditional building skills between 2006 and 2010</p> <p>Manufacturers and suppliers heavily reliant on in-house training</p> <p>65% of manufacturers and suppliers feel they need further training</p>
Reasons	<p>Culture of spending the bare minimum on the fabric of homeowners' properties is endemic</p> <p>Lack of incentives to maintain buildings</p> <p>As building stock increases with age, more conservation, repair and maintenance is required</p>	<p>Shortage of labour, skills and experience</p> <p>Specialists are sparse in some regions</p> <p>Poor image of construction industry and lack of knowledge of built heritage sector results in lack of applicants</p> <p>Insufficient training provision to meet demand across Scottish regions</p>	<p>Closure of quarries and widespread unavailability of traditional building materials</p> <p>Inadequate material supply chains</p> <p>Widespread ignorance in the industry of the need to use traditional materials</p>	<p>Existing training focused on new build</p> <p>Widespread perception that upskilling employees leads to reduced retention</p> <p>High level of travel for some apprentices to attend courses, especially in rural areas</p> <p>Perceived lack of incentives for employers to provide adequate training</p>	<p>Low uptake of add-on conservation units</p> <p>Training opportunities are sparse in some regions</p> <p>Lack of relevant training for manufacturers' & suppliers' employees</p> <p>Lack of appropriately skilled trainers to deliver traditional building skills courses which require a higher skills and knowledge content</p>
Solution	<p>SSLG Glasgow project to be extended to other cities/regions to refine assessment of demand</p> <p>More education required for stockholders on the need for sympathetic conservation and repair</p> <p>Create incentive structure to encourage or obligate regular maintenance by all stockholders</p>	<p>Government needs to create parity of esteem between academic and vocational training routes</p> <p>Reintroduce career progression for craft trades</p> <p>Address image issues of the construction industry and built heritage sector to improve recruitment</p> <p>Target skills gaps at regional and national level</p>	<p>Proposed reopening of small-scale stone quarrying</p> <p>Stimulate demand for native materials in new build and CRMI by raising awareness of the importance and benefits</p> <p>Problems within timber and ferrous metals supply chain need UK-wide solution</p> <p>Manufacturers and suppliers need to promote their products and good practice to architects, building surveyors, contractors and sole traders as part of CPD training</p>	<p>Educate employers on the benefits of training to their business</p> <p>Reinforce and extend need for accreditation of contractors and professionals working on historic buildings</p> <p>Develop flexible training routes to encourage uptake from all age groups and overcome geographic inhibitors</p>	<p>Strengthen conservation elements of training courses across the main craft trades and provide upskilling opportunities for existing trainers to support delivery</p> <p>Raise awareness of traditional building skills training routes to employers and contractors</p> <p>Address need for incentives or subsidies to support manufacturers' & suppliers' training needs</p>

conclusions

1.2.1 Demand

■ The Scottish construction industry¹ generates £12.0 billion² of turnover (at basic prices), and with an output of £9.35 billion³ (at current prices) this represents over 7.0% of the Scottish economy in terms of gross domestic product at basic prices (GVA)

■ The UK average output for repair, maintenance and improvement (RMI) is currently 43% of the total construction industry output, but this is 8% lower for Scotland: as the proportion of pre-1919 buildings is the same as for the remainder of the UK, this suggests that current repair and maintenance is insufficient to ensure the survival of the built heritage

■ Analysis undertaken as part of this research suggests that about a third of RMI consists of conservation, repair, maintenance and improvement (CRMI). On pre-1919 buildings: this equates to about £1.2 billion (at current prices)

■ The implications for future spending patterns are difficult to assess from this initial survey, but lack of maintenance due to neglect or budget constraints will inevitably lead to increased costs over time, and this usually increases when the need for further repair work is revealed

■ Greater spending by all types of stockholders would generate a short- to medium-term surge to accommodate the accumulated repair needs, but will then level off over time, although such an increase in spending is not certain

■ Stockholders react to repair needs as they arise and will not voluntarily change this behaviour to embrace a longer-term repair and maintenance regime

■ A large proportion of stockholders are satisfied with the level of work

completed by contractors and sole traders in this survey

■ All stockholders express concern for the future supply of skilled crafts/tradespeople, and this view is shared by those working in the conservation field

■ The great majority in this survey are in favour of a system of accreditation for craftspeople to work on pre-1919 buildings, and stockholders are prepared to pay a dividend to ensure high-quality work

■ The principal incentive for spending on pre-1919 buildings is availability of grants for listed buildings, and while initiatives such as the five City Heritage Trusts are intended to stimulate work in the repair and maintenance sector, the scope and funds for this are limited

■ In the absence of mandatory repair orders, it is doubtful how much of the present levels of spending will change for the majority of the pre-1919 building stock, which are privately owned dwellings

■ The Scottish Stone Liaison Group (SSLG) 2006 report *Safeguarding Glasgow's Stone-Built Heritage: Skills and Materials Requirements* suggests a considerable deficit of repair, conservation and restoration needs in Glasgow, and support for similar research is needed to establish the extent of the problem affecting pre-1919 buildings in Scotland

1.2.2 Skills Supply

■ The Scottish construction industry employs 200,700 people,⁴ which accounts for 8.2% of the total labour force in Scotland. About 153,000 are employees working within 42,740 enterprises,⁵ about a quarter of the workforce are self-employed. The self-employed currently account for 38% of the construction industry

workforce across the UK, and while this is considerably lower for Scotland it remains particularly high in the main craft trades (wood trades, bricklaying, plastering, and painting and decorating), where it averages 45% of the workforce

■ The built heritage sector is a subset of the main construction industry, and this research has determined that the estimated workforce in the last 12 months was 12,630

■ An estimated additional 4,740 workers are required in this sector between 2006 and 2010, with an additional training requirement for 8,710 which is above and beyond the present need to upskill the existing workforce that work on pre-1919 buildings

■ Stockholders experience delays and difficulties in obtaining the services of skilled crafts/tradespeople, especially stonemasons, roofers, plasterers, lead-workers and joiners; delays were particularly long in the Highlands and Islands, where specialist traditional building firms are scarce

■ Architects and building surveyors reported greater difficulties in finding adequately skilled contractors for traditional building projects than the new build sector, and stonemasons, traditional plasterers and lead-workers were especially difficult to find; regional differences within Scotland also apply, with 55% of architects and building surveyors practices in the Highlands and Islands reportedly having to wait over two months for contractors, compared to 16% in the central belt and 35% in the Borders, Dumfries and Galloway

■ A shortage of labour, skills and experience exists within the traditional building sector, and specialists are sparse in some regions

- The poor image of the construction industry and lack of knowledge of the built heritage sector results in a lack of applicants
- Improved knowledge and understanding of the supply and use of traditional building materials is required across the spectrum from architects and building surveyors to contractors, sole traders and training providers

1.2.3 Contractors and Sole Traders

- Contractors and sole traders carried out 35% and 40% respectively of their work on pre-1919 buildings, but of the 354 interviewed, there were only eight specialist firms (undertaking over 75% of their work on older buildings) in the Highlands and Islands region, 34 in the central belt and 4 in the Borders, Dumfries and Galloway

- Firms whose specialism is not appropriate to pre-1919 buildings are doing a substantial amount of this work: for example, 30% of brick specialists reported doing more than 50% of their work on this type of building

- While 53% of the firms felt it was difficult to recruit skilled crafts/tradespeople, only 12% reported outstanding vacancies unfilled for at least three months, which suggests there are no serious skills shortages in the industry as a whole, but not necessarily in the built heritage sector

- Almost 50% of contractors subcontract, but skills identified as being particularly weak in respect of work on pre-1919 buildings were plastering, plumbing (especially lead-work), stonemasonry, slating and traditional joinery

- Commitment to training is low, with only 26% of contractors reporting that they generally



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employed staff with no experience and in definite need of training, and suggest there is no adequate incentive to do so

- Interest in traditional skills training was extremely low, with only 25 contractors and 10 sole traders from the 354 interviewed expressing a desire for additional training in a traditional building skill

- Only 19.5% of contractors and

28% of sole traders used traditional building materials all of the time, although 83% of contractors and 68% of sole traders who worked 75% of their time on older buildings said they used these most or all of the time, but 27% and 17% of contractors and sole traders respectively did not know what percentage of the materials came from Scotland



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■ A clear progression ladder for craft trades was favoured by 70.5% of contractors and 71% of sole traders, reflecting a desire for more structure within the sector/industry than at present

1.2.4 Material Supply Chain

■ Availability and use of the correct materials are essential for the correct conservation and repair of traditional buildings, but increased supply of materials is dependent upon demand

■ The fabric of pre-1919 buildings in Scotland is largely stonemasonry and so the supply of this primary material from indigenous sources, and the knowledge of the skills required for stonemasonry and the routine use of lime mortars for bedding and pointing, is a key priority; this has

major implications for future demand and supply and the re-introduction of lime burning in Scotland

■ Reopening quarries that were the original source for historic buildings can be aligned to demand for stone in the new build sector, and planning authorities should specify the use of natural, native stone for all appropriate projects; small-scale, snatch quarrying for historic building purposes which has less environmental impact than aggregate extraction should also be investigated

■ Less than 25% of materials commonly used by materials manufacturers and suppliers in this survey were of Scottish origin, attributed to a combination of there being no adequate supply chains for Scottish materials, or a

lack of available suitable materials, especially glass, lime, stone and timber, which points to a serious shortcoming regarding compatible materials for preservation and maintenance of Scotland's pre-1919 building stock

■ Positive environmental aspects, whole-life costs and embodied energy associated with using traditional building materials merit greater attention

■ Manufacturers and suppliers of traditional building materials in this survey were all small-sized firms specialising in one key material with a direct employed labour force, rather than subcontracted

■ Recruitment and staff turnover is very low, but 59% reported that it was easy to recruit and only three out of 50 firms interviewed had outstanding vacancies of over three

months' duration, but when staff leave or retire they are not replaced and the skill is lost

- The reintroduction of career progression was favoured by 70% of the 50 manufacturers and suppliers in this survey

1.2.5 Training Provision

- The immediate interests of the new build sector of the construction industry drives the course content within FE colleges, resulting in under-provision of traditional building skills training and limited availability

- Increasing stonemasonry apprenticeships must be integrated with strengthening the conservation elements across all the main trades to ensure better uptake of add-on conservation units, together with development of an SVQ Level 3 Heritage Skills qualification, but considerable financial investment is required as capacity on stonemasonry courses is currently full

- Upskilling the current workforce requires alternative and more flexible forms of training provision, such as short courses by SLCT and ConstructionSkills OSAT (especially in remote rural areas) if this can combine more training with the assessment process

- Demand is the driver for funding of traditional building skills training: that is, clients/stockholders in need of building contractors who in turn require trained craftspeople; however, a step change in training provision will only occur by initiatives, such as Edinburgh City Council Safe Buildings Programme, to increase awareness of traditional building skills

- Increased training can be achieved by utilising existing FE colleges and trainers, and the

Scottish Conservation Forum for Education and Training has a potentially important role to play in developing the knowledge and skills of trainers in aspects of conservation, repair and maintenance

- The HLF Bursary Scheme for Masonry Conservation in Scotland and Northern Ireland and e-learning being developed by Learn Direct & Build are opportunities for improved training, skills and knowledge development, and the latter could provide a UK-wide virtual network linked to the development of traditional building skills centres

- A multi-skilled fabric maintenance technician is needed to work in this sector

- Future training provision will need to address the under-represented needs of the manufacturers and suppliers of traditional building materials, but requires cross-sector involvement between ConstructionSkills and Proskills (Sector Skills Council for Process and Manufacturing Sector)

- Improving understanding among stockholders, contractors and sole traders and building professionals regarding the sourcing, specifying and use of traditional building materials requires attention

- While building professionals are not the main concern of this research, enhancing traditional building skills training within their training, and where possible by sharing training with craftspeople, could form part of an integrated approach of reinforcing the critical knowledge base within the traditional building sector; again the Scottish Conservation Forum for Education and Training has a potentially important role to play in this respect

'The problem's as much to do with work ethic as skills aptitude among many of the young. I just had two young people in on work experience. They lasted two days and left complaining that the workshop is too cold.'

Key issues

The Skills Action Plan (see Section 10) is an integral part of an over-arching strategy aimed at providing a cohesive, sustainable long-term solution to the current skills shortages, skills and knowledge gaps and lack of adequate traditional building skills training provision that currently exists within Scotland. Effective change is only possible through a sector partnership between the Scottish Executive, Local Enterprise Companies (LEC), Scottish Funding Council, ConstructionSkills (Sector Skills Council for Construction), Proskills (Sector Skills Council for Process and Manufacturing Sector), Historic Scotland, the National Heritage Training Group, other heritage organisations, contractors, employers' groups and FE and private training providers in Scotland.

Three aspects are essential to underpin the Skills Action Plan:

1. Significant improvements in the amount and quality of traditional building skills training provision can be realised only within a 10-year timescale. An immediate start on strategic and tactical work to develop this is a matter of urgency, so that progress can be made and profited from in the shorter term
2. The Scottish Executive must recognise that traditional building skills and materials are a national

requirement, and it needs to address the current problems and accept its responsibility to provide appropriate relevant support and funding for labour and skills development in this sector

3. Historic Scotland as the lead agency within Scotland should work with the NHTG, as the UK-wide specialist skills development group for traditional building skills training and development, to coordinate and promote the work needed to deliver this Skills Action Plan

Sequencing to implement the measures proposed in the Skills Action Plan is essential, but many of the measures need to be pursued together to be mutually reinforcing. Concerted measures to address education and incentives for the demand side are needed, for example, but there is little merit in stimulating demand if there is an insufficiently skilled workforce to meet this.

The current skills deficit means that immediate action is required so that renewed investment in traditional building skills training can have a real impact on the labour market. The human and financial resources needed to promote and implement these initiatives must be carefully considered and developed – which requires the will of the construction industry and the Scottish Executive to take positive action.

Education is necessary to increase the demand to use skilled craftspeople and traditional building materials. While those interviewed for this research and those within building conservation suggest that building owners and other stockholders are becoming more aware of this, much still remains to be done on this issue.

Information alone is unlikely to make the majority of stockholders ensure that work is carried out correctly, and as the majority of stockholders spend the bare minimum on the fabric of their properties, incentives to create demand are necessary to encourage real and sustainable advances in the supply chain.

Demand must be matched with supply of appropriately skilled craftspeople, and as 33% of stockholders and between 33% and 50% of architects and building surveyors experience delays in obtaining skilled craftspeople (even when using an established circle of firms), greater training and upskilling is needed to match any increased demand.

1.3.1 Strategic Vision

NHTG, ConstructionSkills and Historic Scotland – through the Sector Skills Agreement (SSA), coordinate action and partnership involvement to tackle the issues identified in this report to improve skills training and development.

NHTG and Historic Scotland – develop an effective sector-wide communications and marketing strategy to raise awareness of the need for traditional building skills and materials.

Scottish Executive, Scottish Funding Council, NHTG and Historic Scotland – work together to plan and develop future training and skills needs across the traditional building sector spectrum, especially for career changers and upskilling.

ConstructionSkills and NHTG – liaise with Historic Scotland to influence curriculum changes to improve the repair, maintenance

and conservation content in mainstream construction courses and work together to develop integrated training and education for craftspeople, conservators and building professionals.

1.3.2 Demand

Scottish Executive and Historic Scotland – determine medium- and long-term demand for masonry repairs and conservation by supporting the extension of the SSLG Glasgow audit to other Scottish cities.

NHTG, Historic Scotland and SSLG – increase awareness by clients, property owners and agents, designers, specifiers, planning authorities and funding bodies regarding the use of suitably skilled and qualified contractors, craftspeople and materials for the conservation, repair and maintenance of historic buildings, underpinned by support for and promotion of the indigenous material supply chain.

Historic Scotland and NHTG – work towards market acceptance of building maintenance for pre-1919 buildings by incentive and obligation for property owners.

1.3.3 Recruitment and Career Development

ConstructionSkills, NHTG and Historic Scotland – improve awareness of traditional building crafts skills within the school curriculum, and promote the vocational route as a career pathway by dissemination of educational materials and by visits to and involvement with schools, with particular emphasis on interactive materials and by integrating this with

ConstructionSkills and Historic Scotland education programmes to maximise opportunities.

ConstructionSkills, NHTG and Historic Scotland – develop an appropriate strategy to improve information on and support for careers within the traditional buildings sector for schools, general construction and architecture courses.

ConstructionSkills, NHTG and Historic Scotland – encourage investment in training by contractors and promote the benefits of apprenticeships and up-skilling for this sector of the construction industry.

ConstructionSkills, NHTG and Historic Scotland – improve the image of the construction industry and traditional buildings sector, attract applicants with suitable skills and attitude, and create a more diverse workforce.

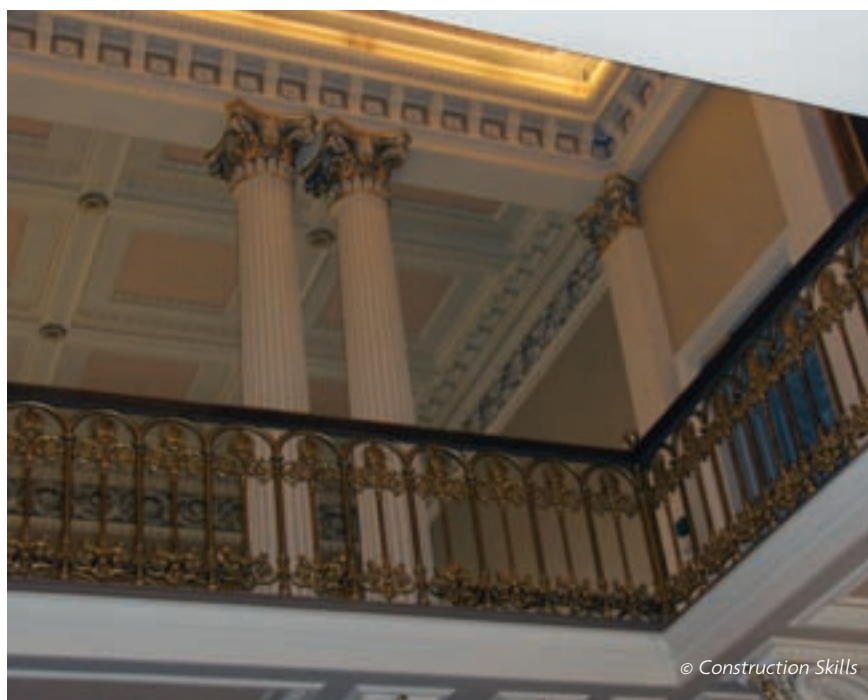
NHTG and Historic Scotland – respond to the desire for a career progression route within the sector

by implementing a mentoring scheme to ensure that more established trades/craftspeople pass on their knowledge and experience to less experienced practitioners, and ensure that qualifications and training are relevant, easier to access and valued within the sector.

1.3.4 Training and Skills Development

Scottish Executive and Scottish Funding Council – provide long-term funding opportunities for the conservation, repair and maintenance of historic buildings and training of craftspeople to ensure continuity in developing and training the workforce.

NHTG, Historic Scotland and Training Providers – develop a strategic approach that examines the current range of theoretical learning and practical skills for traditional building skills to ensure improved training and learning opportunities by utilising existing training provision. As necessary create new training



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delivery, such as Centres for Traditional Building Skills, linked to a country-wide strategy to meet the different needs of the three geographical regions within Scotland.

1.3.5 Standards and Accreditation

Historic Scotland, NHTG, Trade Federations and Trades Unions – develop a system of conservation accreditation for craftspeople by building upon and adapting advances made to date in England and in certain trades.

Royal Incorporation of Architects in Scotland (RIAS) and Historic Scotland – increase levels of understanding of traditional building skills and materials among building professions to ensure improvements in standards of specifications and schedules of works.

Historic Scotland – in conjunction with other funding bodies, government agencies, the trade federations and professional bodies devise a system to maintain quality standards within the traditional buildings sector.

Historic Scotland and the Scottish Lime Centre Trust – increase distribution of existing technical information to public and private stockholders, local authorities, building contractors, sole traders and training providers on the approach to and need for routine care and maintenance, and the use of traditional building materials.



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INTRODUCTION

2

- 2.1 Traditional Building Materials and Methods
 - 2.1.1 Stone
 - 2.1.2 Lime
 - 2.1.3 Timber
 - 2.1.4 Ferrous Metals
- 2.2 The Need for Traditional Building Skills
- 2.3 Preserving Traditional Building Skills
- 2.4 Repair and Maintenance Cluster
- 2.5 Current Context
- 2.6 Drivers for Traditional Building Skills in Scotland
 - 2.6.1 Scottish Enterprise Construction Skills Action Plan
 - 2.6.2 Scottish Stone Liaison Group Project
 - 2.6.3 Proskills Project on Traditional Quarrying Skills Needs
 - 2.6.4 City of Edinburgh Council Safe Buildings Initiative
 - 2.6.5 Report on Falling Masonry
 - 2.6.6 Historic Environment Advisory Council for Scotland
 - 2.6.7 Scottish Historic Environment Policy
 - 2.6.8 Heritage Lottery Fund Training Bursary Scheme
 - 2.6.9 Historic Scotland and ConstructionSkills Sector Skills Agreement

introduction

2.1 Traditional Building Materials and Methods

Scotland's built historic landscape is intrinsic to the country's character and a reflection of its history. Natural resources, that is, the materials found to hand, informed the design of the buildings and contributed to Scotland's rich variety of vernacular architecture. Prestigious buildings often reflected European architectural trends, and while these might have been built from materials transported large distances, their construction nonetheless depended on a clear understanding of how to convert natural materials into lasting structures.

While a large range of construction materials have been used in Scotland throughout the centuries, only a brief overview is presented here of the most relevant and of those with the most pressing issues affecting their production and use for the preservation of the historic building stock.

2.1.1 Stone

Archives reveal that approximately 10,000 quarry sites existed throughout Scotland and so towns and cities and most rural buildings of any size were built from locally quarried stone. The combination of stonemasonry skills, readily available material and the financial climate in the 18th and 19th centuries created a proliferation of fine stone buildings, and this contributed significantly to the wealth of the country. By the turn of the 20th century, circumstances had started to change and by the 1940s the indigenous stone industry was virtually abandoned in favour of newly developed modern materials.

There are currently only 5 active limestone, 19 sandstone and 25 granite and other igneous rock quarries, including those in occasional use, in Scotland.⁶ No slate quarries are in use today, although some experimental work on their potential reopening has recently been carried out in former quarries in the Ballachulish and Macduff slate-producing areas in the West and North East Highlands – both formerly major slate-producing areas in Scotland.

The report *A Future for Stone in Scotland* led to the creation of the Scottish Stone Liaison Group (SSLG), with the mission 'to ensure the availability of indigenous materials and skills for the care, maintenance and future of Scotland's built heritage.' One development arising from this was the reopening of the Cullalo quarry, Burntisland, on the north shore of the River Forth. Closed since the early 20th century, this quarry has recently provided stone from the original source for repair of St Giles Cathedral.

While most quarried stone is produced as aggregate, increased demand for stone in new buildings is a driver for modern dimensional stone quarrying and helps reopening quarries for use on historic buildings. Unlike quarrying for large hard rock aggregates, extraction of dimensional stone is carried out in a more controlled manner. Technological advances allow greater sensitivity in respect of the landscape and the environment, and this type of small-scale, short-run snatch quarrying could be reintroduced for important projects.

The BGS (www.bgs.ac.uk/mineralsuk/home.html) database of Scottish quarries is central to this operation, but extraction needs to be harnessed with demand and environmental issues. Stone is longer-lasting and requires less embodied energy to produce than many modern manufactured materials, and whole-life costing is a sustainability argument in favour of using natural stone.⁷ In this respect, planning authorities have an important role to play by specifying the use of natural stone for all appropriate projects, and this was considered a key driver for the natural stone industry from interviewees in this research.

2.1.2 Lime

Lime has been in use in Scotland since at least Roman times and probably much earlier.⁸ Its principal use in building is as a mortar. It is used externally for bedding and pointing stonework and rendering (harling), as well as lime-wash, and internally for plasterwork. The basic filling ingredients for lime mortars, such as sand and aggregates were usually sourced locally, with the exception of some major buildings which used the high quality material extracted from Charlestown in Fife. The properties of lime mortars used around Scotland therefore varied greatly, but use of lime declined and was increasingly replaced with modern Portland cements. The widespread use of lime in traditional masonry construction meant that in the past all stonemasons were well versed in the use of lime, which is no longer the case.

As there is no Scottish source of lime for mortars it is instead imported principally from continental Europe. Since these limes do not use Scottish components there is a low probability that the mix achieved will be the optimum for any

traditional stone buildings in Scotland. Remote areas of Scotland have rich lime deposits and declining populations who might benefit from the revival of local, small-scale lime production. The skills of lime-burning to produce quicklime have already been revived on a limited scale, and could be readily imparted to interested parties.

There is an urgent need to establish the routine use of lime mortars on both new and old stonemasonry to arrest the damage caused by cement repairs. This is necessary in terms of the cost of repair and maintenance and the higher energy demands needed to produce Portland cements

than for lime mortars. Based upon the number of pre-1919 buildings, the conversion of the relative weights of Portland cement and lime (cement is approximately 2½ times heavier) and the tonnage of lime and cement known to be used in the UK today, it is estimated that around 100,000 tonnes of bulk lime tonnage could be used each year. The current amount of lime actually used is a small fraction of this, approximately 15,000 tonnes.

In common with all materials, specifying and producing lime mortars requires skill, training, knowledge and understanding of the materials being used. However, the knowledge base, until recently

almost entirely lost, has been largely regained and is available for wider dissemination than at present. Scotland has been at the forefront of that revival (see Section 8.5.6).

2.1.3 Timber

Until the 19th century, the majority of buildings in Scotland were timber and earth, including virtually all those for the poorer sectors of society. Unfortunately, very few of these buildings have survived due to a combination of early 19th century legislation to prevent fires and, at the same time, changes to estate villages and other rural settlements which produced today's stone cottages and farm buildings.



© ConstructionSkills

Home-grown Scots pine and oak were widely used for building structures, particularly on smaller cruck frame buildings. Imported woods were also used as the material of preference for those wealthy enough to obtain them, including internal use in stone buildings. Today, the importance of the timber industry to historic

buildings relates primarily to non-structural interior work, such as floors, panelling, doors, staircases, balconies and window frames. The partial exception is structural repair of beamed roofing.

Surviving medieval structural woodwork is primarily oak, with a variety of woods used in other

periods; the diversity of imported woods grew over time until the end of the Edwardian era. The massive decline in timber stocks by the end of the First World War and the creation of the Forestry Commission saw the mass introduction of spruce as a fast-growing species. Strategic defensive concerns underpinned this emphasis upon quantity and set the tone for the overall style of forest management that has persisted.

Today, the situation is that both home-grown soft- and hardwood timber cannot compete on any significant scale with imported timber in either quality or cost.⁹ The hardwood sawmill industry today is composed of around 20 small and micro-sized enterprises, with limited capital investment. Higher-quality timber is usually sent to England as round logs for processing, with no added value being generated locally.

Suitable home-grown wood is simply not available (especially when the original was imported) so sourcing from appropriate international stocks is essential. This requires knowledge of historic trade routes and trading patterns, as well as those currently available varieties from international stocks. However, modern standards of timber quality sourced for the modern market often work against matching original woods. A twin approach is required to address the development of a knowledge base that enables a better understanding of international sources and related issues, and the adoption of long-term planting of hardwood species to improve the available quality for historic building repair.



© Historic Scotland

One indicator of the lack of skills for working with timber today in Scotland is that when major renovation work was undertaken on the Great Hall in Stirling Castle (completed in 1999) an English company was engaged to do the work on the roof beams. The immense joinery skills from the former ship building industry have been largely dissipated.

2.1.4 Ferrous Metals

By the late 19th century, Scotland was the world leader in the production of architectural ironwork, with over 200 firms in Glasgow alone. Specialist firms exported iron structures across the globe with much of this still found in India, Australia and South America. The processing of iron ore into cast iron and subsequently wrought iron was a relatively common industry. Scotland did not have the ornamental wrought iron tradition to the same extent as in England and Wales, but the manufacture and use of this material in construction was nevertheless widespread, with much notable 17th- and 18th-century ironwork still surviving.

The loss of skills in both world wars, coupled with a change in the aesthetics of design, had a radical impact on the iron industry, and there has been no commercial production of wrought iron in the UK since the 1960s. Its supply is now severely limited and one Yorkshire-based company claims to be the world's only supplier of wrought iron, but purely on the basis of recycled stocks.

The scarcity of existing stocks, and the prohibitive costs of producing the material from scratch, means that prices are considerably higher than

those of the modern equivalent mild steel. The variable quality of wrought iron, which also gives it some of its key characteristics, means that the specifier must have a good understanding of material performance and procurement issues.

With respect to cast iron, there are now only a handful of traditional iron foundries able to produce architectural cast ironwork of any quality. Also, a significant number of skills associated with the manufacture of castings are rapidly dying out. The most acute situation being most acute with pattern-making, ironfounders and blacksmiths. Ironworking traditions are now on a precipice in terms of the material supply chain, specification and craft skills. This, and the lack of research in relation to the durability over time of wrought iron compared to mild steel used in historic buildings, needs to be addressed.

2.2 The Need for Traditional Building Skills

The historic trends leading to the mass adoption of modern building materials and methods have created a dichotomy in the construction industry between its modern and traditional skill sets.

The traditional building sector is labour and skills intensive and requires more refined judgements than those commonly needed in the modern sector. By contrast, the modern construction industry is capital and technology intensive. Pre-assembly and related techniques reduce the higher on-site labour costs and involve increasingly different skill sets from those of the traditional sector. The direction of the modern construction industry reflects

global, economically driven trends that are unlikely to change in the foreseeable future.

This situation would not pose a problem for the preservation of historic buildings were it not for the fact that the traditional building sector is increasingly marginalised by the modern sector in terms of skills available among building professionals, trades/craftspeople and contractors, and within training provision.

Progress has been made to redress this in conservation circles, but this has not filtered into the main construction industry. At £1.2 billion, the repair and maintenance market for historic buildings in Scotland is considerable, but only a small proportion of that market is captured by specialist firms. These specialists possess the requisite skills and tend to work on higher-value projects, usually involving listed buildings. Most of the market is, however, covered by the main industry whose traditional skills base has been in decline for over 50 years. Money being misspent on poorly executed patch mortar repairs on older buildings is also storing up further expense for the future.

It is estimated that Edinburgh requires 34,000 new dwellings to meet the population growth between 2001 and 2015. This figure is based upon the assumption that the current housing stock is conserved, including all the Victorian tenements in the city, but the preservation of this is by no means certain. Another consideration is the problem of ensuring that repairs are carried out when there is multi-ownership of buildings such as tenements.



© Scottish Lime Centre Trust

Conservation and repair of historic buildings contributes directly to sustainability, and in the context of ever-pressing global environmental concerns this affects all human activity. Construction and preservation of traditional buildings and the skills necessary to conserve and repair these are integral to this process.

2.3 Preserving Traditional Building Skills

Traditional building skills are a Scottish national requirement, justified on maintenance, aesthetic, economic and environmental grounds. Enough stonemasons, roofers, joiners, metalworkers and other craftspeople are needed with the right skill sets, knowledge and understanding to repair, maintain, conserve and restore the historic building stock. Those skills do not exist in a vacuum, but rather as part of a market chain of supply and

demand that starts with stockholders of historic buildings.

If buildings are to receive optimum treatment then clients need three essential sets of information to inform their decision-making process: the requirements of the building, available traditional building materials and the requisite skills within the workforce. The source of that information is often a building professional (an architect or a surveyor) who must have conservation experience and access to skilled trades/craftspeople. Where the client or stockholder commissions work directly from a building contractor, there is an obvious need for them to possess this knowledge themselves. Easily accessible technical advice notes, such as the Inform leaflets by Historic Scotland (soon to be produced on CD-ROM) are an extremely

valuable resource for stockholders without conservation expertise.

Despite advances in general certification schemes, for example, the Construction Skills Certification Scheme (CSCS), stockholders are faced with a scarcity of information regarding traditional building skills levels among trades/craftspeople. This lack of knowledge or understanding of the conservation needs of their building means they are at risk of engaging trades/craftspeople who will do the work quickly and cheaply, but not necessarily using the correct methods or materials appropriate for the building.

Proper repair, maintenance, conservation or restoration requires a combination of an adequate supply chain of the right materials, the skills to use these properly and access to correct training. In the past, much training was passed on from generation to generation within family-based firms. However, these firms are increasingly rare, having either ceased trading, been bought by larger concerns, or developed into large companies working in new build construction. This has been driven by national and international trends or local factors such as the immense siphoning-off of skilled labour into the oil industry in the Highlands and Islands since the 1970s.

The demise of traditional skills training within firms has coincided with formal, college-based courses catering for the increasingly different skills required for the modern building industry.

The skills necessary to preserve Scotland's most significant historic

buildings, for example, Edinburgh Castle or Glasgow Cathedral, are not in danger of being lost. Historic Scotland and other heritage organisations exist to ensure that this does not happen, including training directly employed workforces for properties in care. What is at risk is the long-term well-being of the general historic building stock as it exists today.

2.4 Repair and Maintenance Cluster

As shown in Figure 1, the repair and maintenance sector of the construction industry can be divided into five distinct sub-sectors:

- *preservation, alteration, renovation, reparation and routine activities*

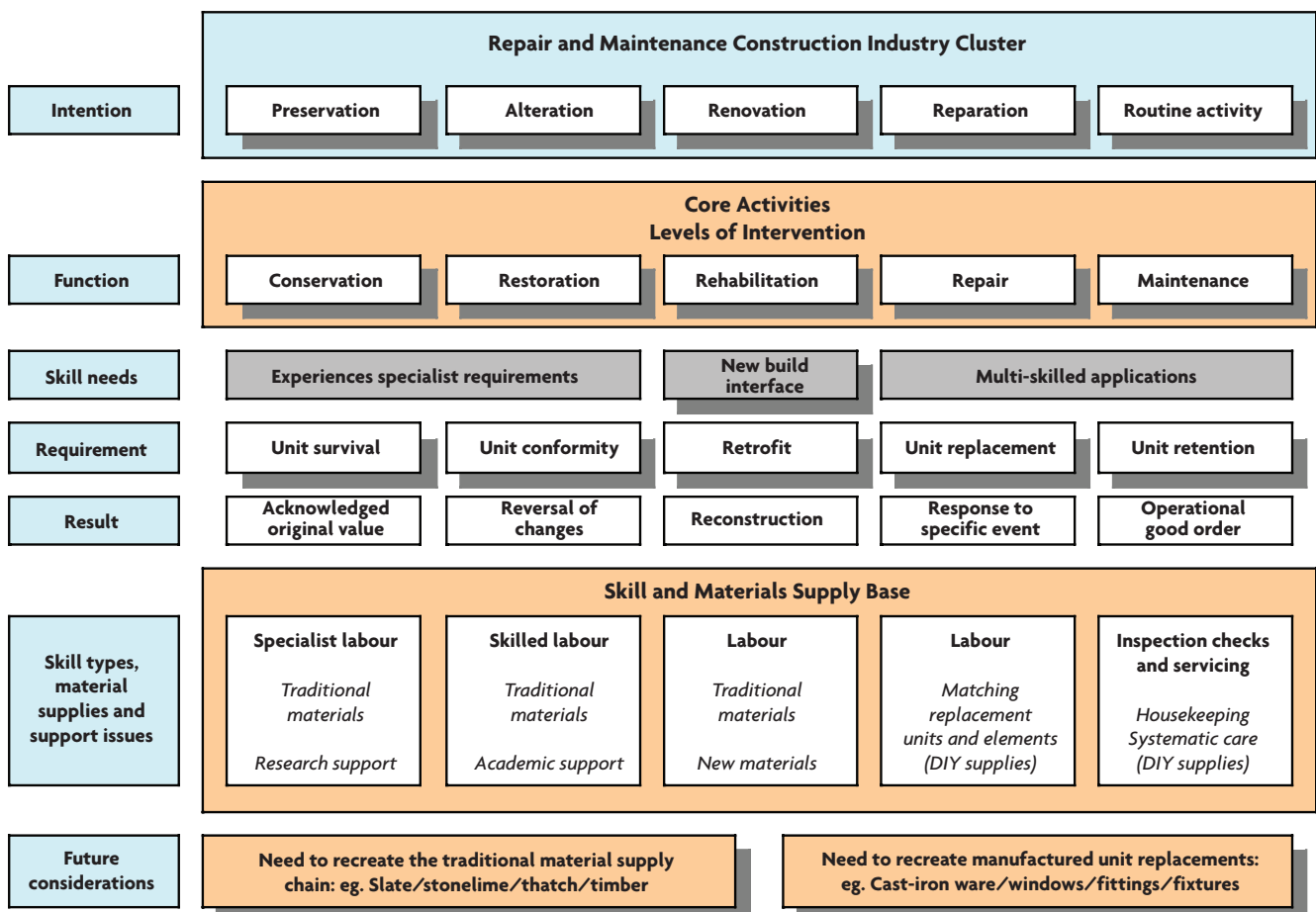
Rehabilitation, Restoration and Conservation

Rehabilitation of the existing building stock interfaces directly with new build construction industry activities and can be considered as the link between the traditional and modern sectors. While rehabilitation can involve retrofitting and the reconstruction of existing buildings, **restoration** focuses on the reversal of change. This requires a different form of specialism to ensure that the elements worked upon conform to their original intention and appearance. **Conservation** acknowledges the original value of what is being preserved and requires additional specialist expertise to ensure that the

element, building or structure survives as it has emerged from the past.

Rehabilitation means that the craft skills labour force has to deal with a mix of traditional and new materials. Restoration work, on the other hand, requires a skilled labour force accomplished in the use of traditional materials, but who may require additional theoretical knowledge to understand the scale and depth of the project. Conservation requires increasingly specialised skills, with an emphasis upon understanding traditional materials and repair techniques. This usually requires sound theoretical knowledge to inform and guide the practical work.

Figure 1 Diagram of the Construction Industry Repair & Maintenance Cluster





Repair and Maintenance

Repair is generally triggered by a particular need that has arisen and may often require the replacement of a specific element in a building. **Maintenance**, on the other hand, focuses on ensuring that individual elements or the overall fabric of the building is in good operational order. Increasingly experienced specialist requirements are needed through the restoration and conservation subsets. Multi-skilled activities are necessary in the repair and maintenance sub-sets, which has implications for education, training and a variety of support activities.

The existing craftspeople within the repair sub-sector need to understand the elements of the existing building they are working on. They may be required to replace matching units such as doors, windows and rainwater goods with ones fit for their purpose and function.

While maintenance involves degrees of housekeeping and systematic inspection and care, an additional skill set is required to ensure that those operating in the field have the ability to deal with the specific element they are maintaining.

Workforces

The majority of operatives working in the rehabilitation sector are likely to be employed in medium to large firms. Those involved in restoration and conservation tend to belong to the domain of the single specialist operator, particularly where specialist knowledge and expertise is required.

In the repair and maintenance subsets, increasingly specific skill sets are also required, but these are fundamentally different from conservation and restoration. These require a broader awareness of what problems and issues can be compounded or exacerbated if the building and its components are not properly repaired or maintained. So, this requires a broader knowledge of how the entire structure works and the multi-skilled practical ability to put what is necessary into practice.

Within repair and maintenance the situation is further confused with the growth of the do-it-yourself industry, which has encouraged home-owners to undertake many domestic repair and maintenance activities. In this large but generally unaccounted for associated sector, replacement units and elements that emulate the detailing of the original are used by the householder in the belief that they are undertaking value-for-money work that is sympathetic to the needs of the building. This is often not the case and can add significantly to the future repair and maintenance sectors' expenditure commitment.

Material Supply Chain

As the needs of conservation and restoration activities become more fully recognised, there is a requirement to source the original traditional buildings supply chain route to obtain the correct

materials. Specific processes demand natural materials such as slate, stone, lime, thatch and timber so that effective conservation and restoration work can be carried out, but these are frequently not available.

A similar requirement also emerges from repair and maintenance sub-set activities. If the work is to be cost-effective, there is a need to use appropriately manufactured replacement units such as cast ironware, windows, architectural fittings and fixtures designed to match the originals. Again, with changing technologies and an emphasis on new build activities, suppliers frequently no longer exist, or are in very short supply.

Awareness of Traditional Methods of Construction

The construction industry's repair and maintenance cluster contains a wide range of activities that has not been recognised by the new build industry sector for at least the past 50 years. There is also an absence of awareness of the need to protect the authenticity and value of traditionally constructed buildings. As these are a non-renewable source with historic, aesthetic and functional value, their uniqueness and high levels of embodied energy are consequently being put at considerable risk. In an ever more precarious situation, there is a need to retain the tried and tested technologies, knowledge, original skills and materials that went into their construction.

In general terms, the pre-1919 building stock is environmentally benign. Through performance-in-use – often well in excess of 100

years – they have more than demonstrated their sustainability. They have a highly economic life-cycle cost profile, which is currently under considerable threat due to the lack of understanding in the entire repair and maintenance cluster's activities. Renovation, restoration, extension and conversion of traditional buildings require the application of British Standards and this may create a threat to their well-being.

What is now needed is the development of strategic objectives involving industry, education and training providers, and clients to ensure sufficient future levels of traditional skills and materials exist within the construction industry. This applies particularly to meeting the needs of the historic building stock, but also relates to those required to construct new buildings using traditional methods and materials.

The traditional building sector is currently a very small sector of the construction industry, yet has the potential to draw on the resources of traditional skills and provide high-value stock as an asset for the future. The starting point for change is a generalised, public recognition of the multifaceted nature of the value of the historic building stock, and the measures required to safeguard its survival.

2.5 Current Context

Concern for the future of the historic building stock has been steadily growing since the 1990s. Research undertaken between 1996 and 1999 highlighted sector skill shortages, skills gaps and problems

'The change over the last thirty years has been quite dramatic. When I started I remember having long conversations with trades/ craftspeople on arcane features of traditional building, from purlins to architraves. They are long gone and those who have taken their place make mistakes in putting together simple sash and case windows.'

in training provision across the whole heritage sector, including building skills, which was collated in the report *Sustaining Our Living Heritage* (Heritage Lottery Fund 2000). The 1997 Historic Scotland report *A Future for Stone in Scotland* has already been referred to, but other UK reports which highlighted traditional building skills shortages were:

- *Power of Place* (English Heritage 2000)

- *The Historic Environment: A Force for our Future* (Department for Culture, Media and Sport [DCMS] and Department for Transport, Local Government and the Regions [DTLR] 2000)

- *Foresight Report* (ConstructionSkills 2002)

- *State of the Historic Environment* (English Heritage 2002)

As a result of these initiatives, the National Heritage Training Group (NHTG) was formally established in October 2002 through a memorandum of agreement between ConstructionSkills (Sector Skills Council) and English Heritage, which has since included Historic Scotland, Cadw in Wales and the Environment and Heritage Service (EHS) in Northern Ireland.

The NHTG is a specialist sector skills development group consisting of contractors, trade federations, trade unions, heritage bodies and training providers, with a UK-wide remit to develop and implement a cohesive strategy for training and skills provision to meet the demands of the built heritage sector. It has been fundamental in establishing and developing links with heritage bodies, government departments and training and conservation institutions.

The NHTG *Heritage Building Skills Report* (2003) provided an overview of the existing traditional building craft skills market and the findings of recent training and skills information surveys around the UK. It established that, while published data existed on the structure, labour markets and training provision within the construction industry, very little data existed relating directly to the built heritage sector and its then existing skills levels. Following this, the NHTG Business Plan, *Building on the Past: Training for the Future*, was launched on 29 October 2003. This identified three essential areas requiring immediate action:

- To develop and implement a formal structure to ensure a financially viable support mechanism to integrate the work of the NHTG with contractors, training providers and funders, the main sector clients and other key stakeholders

- To fill the current gaps in information necessary to develop a traditional building craft skills training plan by carrying out a detailed UK-wide survey to establish the regional and country variations in skill shortages and training provision

- To develop and implement a traditional building craft skills training plan

The third objective could only be fulfilled by the detailed skills mapping research in each country of the UK suggested in the second objective.

The report produced in England in 2005 *Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge*, of which this report is the direct Scottish equivalent, has since led to a number of initiatives. These include a *Training the Trainers*

programme to increase the skills and knowledge of conservation and restoration of FE college lecturers and to provide them with teaching support material. Traditional building skills groups in each of the nine English regions are being established to share ideas and best practice, and to respond to regional differences and create a national and regional training network.

2.6 Drivers for Traditional Building Skills in Scotland

The context for the present report is not only the NHTG research, but also developments in Scotland. In 2003 ConstructionSkills Inverness produced *Bridging the Gap: Meeting Construction Learning, Training and Skills Needs in the Highlands and Islands*. In the same year, the NHTG, Historic Scotland, SSLG and ConstructionSkills undertook a survey of companies that formed the basis of the report *Repair and Maintenance Skills in Scotland*, an initial overview which underlined the need for further detailed research.

2.6.1 Scottish Enterprise Construction Skills Action Plan

Prompted by reports of skills shortages in the construction industry, and the prospect of further rapid growth in construction activity in the Glasgow area in conjunction with the extension of the M74, a construction skills plan for Glasgow was drawn up in 2003. This five-year plan was quickly augmented and funds expanded to £35m to cover the full Scottish Enterprise network area.

In terms of traditional skills spending, one area of support has been for the Scottish Lime Centre Trust's establishment of stonemasonry training squads (see Section 8.5.6).

2.6.2 Scottish Stone Liaison Group Project

In 2004 and with the support of Scottish Enterprise, SSLG began an extensive skills project to determine the stonemasonry needs of the built heritage in the City of Glasgow and the replacement stone required over the next thirty years. It also aimed to quantify the actual numbers of stonemasons required to be trained to meet the anticipated future need, and the report findings were published in June 2006.¹⁰

2.6.3 Proskills Project on Traditional Quarrying Skills Needs

In 2005, Proskills (Sector Skills Council for the coatings, extractives, glass, building products and printing industries) began work to examine the skills needs involved in reopening traditional quarries. With guidance from the SSLG and support from Highlands and Islands Enterprise and Historic Scotland, this focused upon slate quarrying in the Ballachulish and Macduff areas. At the time of writing this work is set to go into a second phase to develop a model for local provision of skills.

2.6.4 City of Edinburgh Council Safe Buildings Initiative

In response to a fatality caused by falling masonry in Edinburgh in 2000, the Council has been active in seeking to prevent further such occurrences. Its work has included a building condition audit and a public information campaign to inform Edinburgh property owners how to assess the condition of their own buildings, to explain why regular checks and a building maintenance programme are essential, and to help private owners to get any necessary repairs done. Additionally, work has

centred on training and seminar events for the construction industry and local authorities from all around the UK.

2.6.5 Report on Falling Masonry

Deaths or serious injuries from falling masonry are the result of not just infrequent maintenance by homeowners but of inadequacies in areas such as workmanship, planning, design, quality control, site supervision and local authority inspection. Following a scoping study on falling masonry by the Construction Industry Council for Scotland in December 2003, the Scottish Building Standards Agency (SBSA) facilitated a working party, hosted by CIC Scotland and the Construction Licensing Executive, to address issues of quality of workmanship, design and specification in carrying out works to buildings and to make recommendations on the training and development of those undertaking these works. The resulting report, *Risks to Public Safety from Falling Masonry and Other Materials*, was published in autumn 2006.

SBSA has also commissioned SCOTCROSS, a pilot reporting mechanism for Scottish local authorities to record incidents of masonry and other materials falling from buildings. Designed in collaboration with the Scottish Association of Building Standards Managers (SABSM), the project reported in September 2006.

2.6.6 Historic Environment Advisory Council for Scotland (HEACS)

The Historic Environment Advisory Council for Scotland (HEACS) was established in 2003 to provide Scottish ministers with strategic advice on issues affecting the historic environment. A HEACS

‘The one-man-band cowboys out there with worthless pieces of paper will get away with murder. It’s the public’s fault too – they’ll go for the cheapest quote and then complain afterwards when they get a shoddy job. And that’s folk who’ll spend thirty grand on their cars. Large contractors are OK, they move in different circles, but it’s us small guys who are getting badly undermined by the “transit van man”

Working Group has recently been addressing the question of how to ensure the availability of adequate and appropriate traditional materials and professional and craft skills to meet the needs of the built heritage in Scotland. This report covers one of the five priority issues on which the Minister for Tourism, Culture and Sport asked HEACS for advice.

HEACS presented a Report and recommendations on the availability of adequate and appropriate traditional materials and professional and craft skills to meet the needs of the built heritage to the Minister for Tourism, Culture and Sport at the end of August 2006. This report represents a substantial amount of work by HEACS, and its recommendations will be given careful attention before the Minister formally replies to HEACS in due course.

2.6.7 Scottish Historic Environment Policy (SHEP)

Scottish Historic Environment Policy (SHEP) is a new series of documents that sets out Scottish ministers' strategic policies for the wider historic environment and provides greater policy direction for Historic Scotland. They are also intended to be relevant documents in the statutory planning, Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) processes. The SHEP series was the subject of a debate in the Scottish Parliament on 27 April 2006.

SHEP1 is the overarching policy statement for the historic environment and will provide a framework for more detailed strategic policies and operational policies that inform the day-to-day work of a range of organisations that have a role and interest in managing the historic environment.

These include the Scottish Executive, local authorities and the range of bodies that are accountable to Scottish ministers. The draft document contains significant statements about the availability of skills and materials for the maintenance and conservation of the historic environment.

SHEP1 and the subsequent documents in the series are intended to complement the Scottish Planning Policy series and other relevant Ministerial policy documents. SHEP was put out for consultation on 31 March 2006. The responses are currently being analysed and it is hoped that a final draft of SHEP1 will appear during 2007.

2.6.8 Heritage Lottery Fund Training Bursary Scheme

An important development for the future is the acquisition of a £1 million bursary fund from the Heritage Lottery Fund (HLF) by a partnership comprising Historic Scotland, the Scottish Lime Centre Trust, National Trust for Scotland, Edinburgh's Telford College, Glasgow Metropolitan College (formerly Glasgow College of Building and Printing) and the Mourne Heritage Trust (Northern Ireland). The £1m award will be matched by Historic Scotland funding over the four-year period from 2006 to 2010. This scheme will enhance current masonry training provision and, by bringing together and building upon the existing resources of the partner organisations, hopes to maximise the amount of multiplier effects from its approach.

2.6.9 Historic Scotland and ConstructionSkills Sector Skills Agreement

In March 2006, Historic Scotland

and ConstructionSkills signed a Sector Skills Agreement (SSA) designed to reflect the shared goals of both organisations in establishing sustainable strategies for training and skills development for traditional building crafts within the historic environment.

ConstructionSkills and Historic Scotland have worked together informally for several years to strengthen the relationship between new build and the heritage sector of the construction industry in Scotland. Repair and maintenance works account for 35% the Scottish construction industry, yet virtually all the industry is educated and trained in new build technologies. A challenge therefore exists to ensure that the construction industry is better prepared to carry out the full range of effective repair, maintenance and improvement (RMI) work. As conservation is part of the RMI sector of the construction industry, the link between these two organisations provides a mechanism for developing common strategies, new initiatives, and the exchange of research and information.

The main shared objective, however, is to address existing traditional building labour and skills shortages and to improve recruitment, training and career development for craftspeople working within the historic environment.

The SSA formalises the collaboration between both organisations towards these aims and will use the recommendations in Section 9 of this report and the Skills Action Plan in Section 10 to influence its future direction.

RESEARCH OBJECTIVES AND METHODOLOGY

3

- 3.1 Research Objectives
- 3.2 Research Methodology
- 3.3 Quantitative Research
- 3.4 Qualitative Research

research objectives and methodology

This section of the report describes the approach and methods adopted by the researchers to determine:

- The current and future demand for traditional building materials skills in using those materials
- Existing levels of skills and any gaps established through interviews with a range of stakeholders
- The existing and required number of craftspeople to meet the demand
- Existing training provision and the needs of the sector
- Current problems regarding skills provision and training and obstacles to change, obtained from qualitative interviews with those working in the sector

3.1 Research Objectives

The benchmarking NHTG report *Heritage Building Skills* of March 2003 recommended that action be taken 'to fill the information gaps preventing the development of a heritage sector skills plan'. Its conclusions were that the information gaps were so substantial that comprehensive skills mapping research was required, on a regional basis, within the UK.

In October 2003, the NHTG's three-year business plan, *Building on the Past: Training for the Future*, was published and included three strategic policy objectives:

1. Integrating relevant stakeholders within the NHTG.
2. Filling the information gaps to take the sector's skills and training issues forward.
3. Developing a five-year training plan for England, Northern Ireland, Scotland and Wales.

The work on the second recommendation began with the report produced in 2005 by the NHTG, *Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge*. This provided the first ever skills needs analysis of the built heritage sector in England and incorporated a five-year skills action plan. Steps to implement that action plan have since been developed on a regional basis within England.

The present NHTG report for Scotland complements the English skills needs analysis with the following objectives:

- Analyse and quantify the size of the pre-1919 building stock in Scotland to assess the demand for traditional building skills
- Assess and quantify existing traditional craft skills among contractors and sole traders to establish any particular skills shortages and skills gaps among the workforce
- Assess the material supply chain and related skills issues for traditional building materials of manufacturers and suppliers
- Assess the views and practices of architects and surveyors regarding the use of traditional building materials and craft skills issues
- Evaluate the current situation of identifying training provision for traditional building skills, and, as a result of this research
- Make recommendations to address any problems and devise a skills action plan.

The brief of this report mirrored that of the previous English study, but delivered a more substantial assessment of material supply chain issues and their attendant skills needs through its survey of manufacturers and suppliers of traditional building materials. The successful emphasis put on the use of traditional materials also led to a closer examination of the present situation from the

professionals' point of view, particularly issues regarding materials and skills specifications for traditional building projects.

The term 'traditional building skills' used in this report refers to the skills required for work undertaken on pre-1919 buildings, from large-scale conservation or restoration projects to routine repair and maintenance. The alternative 'heritage building skills' term, as in the NHTG *Heritage Building Skills* report, has not been used because it can be understood to be primarily concerned with major or listed buildings, whereas this survey concentrated on the regular repair and maintenance work required at times on pre-1919 buildings. This date conforms to the Scottish Housing Condition Survey (SHCS) date, which is the principal source of information on the building stock.

The researchers were required to ensure that the research fulfilled the following purposes:

- Fully take into account the extent of the conservation repair and maintenance market in Scotland
- Identify areas of recruitment difficulty and the location and skill gaps in training provision and the associated reasons
- Take into account the current and future skills and learning agenda, coupled with current and future developments in the traditional building and construction industry repair and maintenance sectors



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- Create an effective mechanism of consulting with, and evaluating the views of, employers, manufacturers, suppliers, training providers, clients and the relevant professions, and establish a database to help follow-up surveys
- Align with ConstructionSkills Sector Needs Analysis Reports on the construction industry

The researchers were also required by the NHTG to ensure that the findings and conclusions of the research would present the current situation to help analyse future trends and opportunities. This would assist further development of training and qualifications to meet the needs of the industry and inform the work with employers over the next 3 to 5 years.

3.2 Research Methodology

The skills needs analysis was commissioned by the NHTG in November 2005 and involved both primary (qualitative and quantitative) and secondary (desk) research.

To maintain consistency with the other UK home countries, the methodology for this report was closely guided by that used in the English research, with additional focus on the supply and manufacture of traditional building materials and the views of building professionals. This took into account the need for careful regard for the particular Scottish political, legal, geographical, educational and cultural context.

While secondary sources, such as the SHCS and ConstructionSkills data on the UK and Scottish construction industry, were used, the emphasis was on primary research. As this was the first ever analysis of this sector in Scotland, the main aim was to establish a clear picture of the current situation regarding traditional building skills. This was achieved through structured quantitative telephone interviews with key stakeholder groups, and in-depth face-to-face interviews with a broad range of key stakeholders.

Understanding the views of all the stakeholders and identifying commonalities and differences is vital to any project that seeks to have a positive impact on the future development of the sector

in question. This approach under-pinned this research and culminated in the consultation event with a range of stakeholders in Glasgow on 21 June 2006 and the Skills Action Plan (Section 10).

3.3 Quantitative Research

A series of standardised questionnaires were devised by the researchers, with guidance and input from the steering group, for each of the following four stakeholders:

- stockholders
- contractors and sole traders
- building materials manufacturers and suppliers
- architects and surveyors

The quantitative telephone survey of 569 individuals was carried out between 1 December 2005 and 20 January 2006, using trained interviewers and a standard format to ensure consistency of interviewing and recording that conformed to the code of conduct for researchers.¹¹

Telephone interviews ensured the right people were targeted to take part in the research, and that more insight was derived from the consultation via a series of open-ended questions.

Considering the scope of the research it was estimated that 600 quantitative interviews would be required to ensure robust and representative analysis. A sample size of 600 provides a reasonable level of statistical reliability (+/- 4.0% on a survey result of 50% based on 95% confidence levels). Such a sample size also allows for analysis by size and geography.

Geographical Boundaries

The survey was divided to cover the three natural geographic areas: the Highlands and Islands, the central belt and the Borders, Dumfries and Galloway. The division of the counties was as follows:

■ **Highland and Islands:** Aberdeenshire, Argyllshire, Banffshire, Bute, Caithness, Hebrides, Inverness-shire, Moray (Elgin and Nairn shires), Orkney Islands, Ross and Cromarty shires, Shetland Islands, Sutherland.

■ **Central Belt:** Angus, Ayrshire, Clackmannanshire, Dumbartonshire, East Lothian, Fife and Kinross shires, Kincardineshire, Lanarkshire, Mid-Lothian, Perthshire, Renfrewshire, Stirlingshire, West Lothian.

■ **Borders and Dumfries and Galloway:** Berwickshire, Dumfriesshire, Kirkcudbrightshire, Peebles-shire, Roxburghshire, Selkirkshire, Wigtownshire.

Population

The latest estimates show 0.9 million people in the Highlands and Islands, 3.9 million in the central belt and only 255,000 in the Borders, Dumfries and Galloway.¹² The 2004 gross value added (GVA) figures were: Highlands and Islands £14.8bn; central belt £60.7bn; and Borders, Dumfries and Galloway £2.9bn.¹³ If the north east (Aberdeenshire and Banffshire) is excluded, the Highland and Islands region has a population of 550,000 and a GVA of £4.2bn, making it comparable in GVA per capita terms with the Borders, Dumfries and Galloway.

These figures reflect the rural nature of the Highlands and Islands and Borders, Dumfries and Galloway, and the urban central belt. The different issues and challenges this presents to

traditional skills and training provision for contractors and sole traders in the three regions was included in the survey analysis. With the other stakeholder groups surveyed, the sample size did not allow for such analysis; care was taken, however, to ensure geographical representation across the regions within the survey.

Stockholders

Of the 81 stockholders, 32 were based in the Highlands and Islands, 36 in the central belt and 13 in the Borders, Dumfries and Galloway. These were selected with care to ensure inclusion of private owners (as with the English skills research) as well as those responsible for public and commercial properties. The principal sources for selecting the stockholders were from information from the NHTG Steering Group and internet research. The key focus with this group was to establish their average annual spending on their properties, with additional investigation of their experiences and practices with respect to contracting trades/craftspeople.

Contractors and Trades/craftspeople

The research objectives regarding the contractors and trades/craftspeople were to establish robust information on their recruitment, sub-contracting and training practices, as well as the extent of their use and understanding of traditional building materials in the context of work undertaken on pre-1919 buildings.

Of the 354 construction companies surveyed, 128 were sole traders. For the purposes of this report, the term 'sole trader' refers to individuals working alone without

Table 1: Quantitative Interviews by Region

Stakeholders	Number of Interviews			Total
	Highlands & Islands	Central Belt	Borders, Dumfries & Galloway	
Architects	13	31	9	53
Surveyors	7	16	8	31
Contractors	64	135	27	226
Sole Traders	40	67	21	128
Building Materials Manufacturers and Suppliers	11	35	4	50
Stockholders	32	36	13	81
Total	167	320	82	569

employees. A further 32 companies had up to two employees (the term defining sole trader in the English report), giving a total of 160 firms with 0–2 employees. The term ‘sole trader’ does not refer specifically to firms legally defined as such (i.e. with personal liability for their business).

Two hundred and sixty-eight firms were obtained from the CITB-ConstructionSkills Levy Register; 32 from Historic Scotland’s Building Conservation Register for Scotland (BCRS) and 54 from the internet and *Yellow Pages*. The latter source ensured coverage of the smallest, outlying firms, and ones which have not necessarily been subject to any previous survey.

It was a condition of the survey that the firms interviewed should have done some work on pre-1919 buildings in the previous 12 months. But unlike the English report which set a minimum of 10%, no ceiling was set on the percentage of their work on such buildings to qualify for this survey. The reasons for this were threefold:

- Firstly, however small the proportion of their work it might represent, if the company did

undertake work on older buildings then such work still demands the requisite traditional skill;

- Secondly, while those companies specialising in pre-1919 work could more reasonably be expected to have such skills, those who do not consider themselves specialists are liable to be undertaking work without the necessary traditional skill;

- Finally, even where work on pre-1919 stock makes up only a small proportion of their total work, the cumulative impact on these buildings (particularly in the case of larger companies) is nonetheless significant.

Manufacturers and Suppliers

Fifty building material manufacturers and suppliers were interviewed, but due to the diversity and complexity of this sector, the first challenge was to establish the main activities of the firms. A firm acting principally as a contractor may, for instance, also undertake manufacturing. Conversely, by installing what they have produced, a manufacturer may be classified as both a contractor and a supplier (known as turnkey operations).

Some firms, meanwhile, were suppliers but not manufacturers,

and were included in the survey in order to establish a picture of what materials were being used on pre-1919 buildings, and what kind of supply chain they might have. Also due to the diversity of activities within this group, quite extensive testing of the questionnaire was required to make it sufficiently broad and flexible, and yet precise enough to allow for adequate collection of information. This testing process also contributed to the qualitative dimension of the survey of the sector.

Eleven manufacturing/supply firms were located in the Highlands and Islands; 35 in the central belt; and four in the Borders, Dumfries and Galloway, reflecting the wide geographic spread of manufacturing firms in Scotland. The source of 28 firms was the BCRS manufacturers’ database, and the remainder located through extensive trawling of the internet and *Yellow Pages*. The small number of firms in the Borders, Dumfries and Galloway reflects the results of the search process.

Building Professionals

An important additional element of the research was to establish a

Table 2: Qualitative Interviews by Region

Stakeholders	Number of Interviews			Total
	Highlands & Islands	Central Belt	Borders, Dumfries & Galloway	
Architects/Surveyors	1	2	0	3
Conservation Officers	3	7	3	13
Contractors	1	2	0	3
Sole Traders	1	0	0	1
Building Materials Manufacturers and Suppliers	2	6	1	9
Professional Bodies/Trade Federations	1	6	0	7
Other Professionals	1	4	0	5
Training Providers	3	9	0	12
Stockholders	4	5	0	9
Grant-Aiding Bodies	2	3	0	5
Total	19	44	4	67

picture of the working practices of building professionals, especially architects and building surveyors, regarding pre-1919 buildings. While in general the onus for skills and training development in the construction industry rests with contractors, it is also essential to understand how their working practices and resultant skills needs are affected by the instructions they receive through professionals' specifications and oversight. Unless these instructions are sufficiently rigorous regarding the use of traditional building materials and methods where required, this can undermine the incentives for the contractors to work appropriately.

The 53 architects and 31 surveyors interviewed came from the BCRS database, but this did not mean that in practice they were all conservation specialists. Twenty were based in the Highlands and Islands (13 architects and 7 surveyors); 47 in the Central Belt (31 architects and 16 surveyors); and 17 in the Borders, Dumfries and Galloway (9 architects and 8 surveyors).

3.4 Qualitative Research

Qualitative research was undertaken throughout the research period, with further follow-up consultation of some individuals after an initial in-depth interview to inform the quantitative work.

Over half of the 65 people were interviewed in face-to-face meetings. While the initial group of those interviewed were suggested by the Steering Group, others were subsequently contacted on the recommendation of those first interviewees, thus spreading the range of individuals consulted. As well as being part of the stakeholder groups included in the quantitative research, the 65 people were also drawn from training providers, public and private conservation organisations, grant aiding bodies and other funders, policy makers, and trade and professional associations.

Initial identification of key areas of interest and concern informed

the design of the questionnaires used in the quantitative survey, and also directed further qualitative work. It was decided, for example, not to carry out a quantitative survey of training providers (as initially intended), because not enough traditional building skills training exists for this to be justified. Instead, efforts concentrated on a qualitative approach to understand current opportunities and constraints facing training providers.

DEMAND FOR TRADITIONAL BUILDING SKILLS: STOCKHOLDERS

4

- 4.1 Pre-1919 Buildings in Scotland
- 4.2 Spending by Stockholders in this Survey
- 4.3 Trades Required by Stockholders
- 4.4 Stockholders with Direct Labour Workforces
- 4.5 Future Workforce Demand
- 4.6 Funding
- 4.7 Conservation Projects and Conservation Officers
- 4.8 Other Key Bodies
 - 4.8.1 The National Trust for Scotland
 - 4.8.2 Building Preservation Trusts
 - 4.8.3 The Scottish Civic Trust
- 4.9 Other Spend Indicators and Drivers

demand: stockholders

This section of the report concentrates upon establishing the actual demand for traditional building skills. Data-sets were used from a number of sources to quantify the number of historic buildings (defined as being built before 1919) in Scotland. Stockholders of historic buildings, that is, public and commercial owners and private dwelling owners, were interviewed to establish the amount of money spent in the past 12 months and any predicted spend in the next 12 months

on conservation, repair or restoration. They were also asked which craftspeople or trades they had most used in the past 12 months and were most likely to use in the next 12 months. They were also asked about their level of satisfaction on the quality of work and waiting time of the work to be undertaken. The combined spend profile and specific skills used have been used to determine current and future requirements for traditional building skills in Scotland.

4.1 Pre-1919 Buildings in Scotland

The distinctive history and characteristics of the built landscape are fundamental to Scotland's identity. Historic structures range from brochs to castles, standing stones to abbeys, blackhouses to the sweeping Georgian crescents of Edinburgh's

New Town, and encompass tower houses, tenements, townhouses, tollbooths, crofts, bothies, doocots, manses, grand country houses and palaces and much besides.¹⁴ Extensive agricultural change in the eighteenth century meant that few farm buildings dating from earlier than 1750 survive. Those built since that period range from formally

planned home farms of large estates to simpler yet highly varied vernacular forms.

In Edinburgh, the tightly packed tall buildings of the Old Town, accessed by turnpike staircases, gave way to the tenements of the expanding city and this was replicated in other large urban centres. A history of warfare in much of the country led to considerable fortification, particularly in the Borders.

According to the Scottish Housing Conditions Survey (SHCS) of 2002, there are approximately 446,000 pre-1919 dwellings in Scotland, which represents 20% of the total dwelling stock – the same proportion of the total number of pre-1919 dwellings in England.

Calculations conducted in the course of preparing the 2005 NHTG Traditional Building Craft Skills Needs Analysis of the built heritage sector in England¹⁵ found that dwellings accounted for 89% of the total historic buildings stock, including all those with a non-residential function, whether commercial or for public use such as government offices and museums, libraries, etc. This proportion was found to be similar for all the nine English regions, and therefore the same proportion has been taken as an acceptable guide



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in the calculations for Scotland, resulting in an estimated total figure of 501,000 pre-1919 buildings.

Within this total are 47,000 listed buildings (including all those built before 1840 whose original character remains substantially intact). Later buildings are listed on the basis of their individual character and quality, such as good examples within a particular building type, or designed by a renowned architect, or associated with famous people or events. Building is defined broadly in the legislation and can include, for example, walls, fountains, bridges and bandstands.¹⁶ The great majority of listed buildings, therefore, were built before 1919, as were ancient monuments and World Heritage Sites.

Three categories of listed buildings exist:

- Category A, those of national or international importance, either architectural or historic and little altered, account for 8% of the total
- Category B, the largest group (60% of all listed buildings), consists of those whose importance is more regional or which would have been Category A, save for alterations
- Category C (32%) includes those of more local importance and which are lesser examples of any particular period or style.

The Need for Care and Maintenance

Whether listed or not, all buildings require maintenance, whatever their age, and naturally older buildings are likely to need somewhat more where they have not been adequately maintained.¹⁷ This does not mean that modern buildings are likely to be cheaper to maintain over time; indeed,

longevity had until the advent of whole-life costing been effectively factored out of much current new build calculations – it is not known whether these will survive in the way that pre-1919 buildings have. Currently, 20% of dwelling stock that is pre-1919 represents 40% of the patch repair bill for the entire building stock.¹⁸

The vast majority of surviving pre-1919 buildings in Scotland is built of stone, and an important factor is whether or not these have been subjected to cement-based repairs. By the 1970s, widespread use of cement-based mortar (plastic) repairs in the construction industry included the traditional sector to replace lime pointing and harling. The incompatibility of these repairs with porous stone accelerates decay, and a large amount of the danger from falling masonry can be attributed to these materials. The major stockholders were as likely as any other owner to use plastic repairs at that time. Another source of damage to masonry was the widespread cleaning undertaken in the same period, before it was realised how harmful the systems used were to the building fabric.

In conservation circles, these practices have ceased and much has been done in the last 10–15 years to improve the understanding of materials and revive the use of lime mortars. How far the use of cement still pervades the practices of those working on the repair of pre-1919 buildings has become, therefore, an issue of central importance. Although cement repairs are often unsightly, it is not simply a matter of aesthetics: rather, it is a crucial issue of protecting the fabric of the building and also saving considerable expense in the long term.

4.2 Spending by Stockholders within this Survey

In the absence of widespread compulsion upon owners to maintain their homes, most of the required work is reactive rather than preventative. How much is currently being spent on such work, beyond the figures which can be extrapolated from national statistics, was a key issue in the survey of stockholders.

Of the 81 stockholders interviewed, 22% owned or were responsible for private buildings and 45% commercial buildings; the remainder were in the public sector, principally local councils and churches, for example the Church of Scotland. The latter's building stock accounted for 3,000 of the total of 4,561 buildings reported in the survey. Excluding those large public stockholders, the average number of buildings per stockholder was 12. Most of the stockholders (90%) owned listed buildings.

The total amount reported having been spent on repair and maintenance work in the last 12 months was £10,211,900, with £907,900 on conservation and restoration, equalling a total of £11,119,800. However, as budgets were not divided in that way, many respondents were unable to provide a division of spending between these two categories, so this distinction should only be taken as a partial indicator of the two types of spending. Their projected spending for the next 12 months was £6,023,400, of which £5,389,900 was on repair and maintenance and £633,500 on conservation and restoration. This figure is much lower because many

respondents were unwilling to estimate a figure for their upcoming spend, but it does not necessarily mean that spending will be less over the next 12 months.

The total average spend per building in the last 12 months was £2,438 and the average figure allocated at the time of the survey for the next 12 months was £1,320. These figures however conceal a number of wide variations. Removing the Church of Scotland from the equation, the total spend over the last 12 months and projected for the next is £5,119,800 and £4,022,400 respectively: that is, £3,280 and £2,577 on average per building.

This reflects the low levels of spending the Church of Scotland is able to provide for its traditional churches, an average of £2,000 per building per year. Underlying this is the present situation of churches of all denominations, whose dwindling memberships mean diminishing funds and weakened ability to carry out repair and maintenance work, far less conservation and restoration projects. This is particularly acute for the Church of Scotland since the Church of Scotland (Property and Endowments) Act of 1925. Its properties are no longer considered to belong to their communities, but rather conveyed to its General Trustees with the rest of the organisation's financial assets.

Understandably, 'national heritage' is not at the top of their priorities and the management of the properties, with scarce funds and through the complex processes of the Church, has become 'simply an impossible task.'¹⁹ 'We're hanging by our fingernails' was the situation reported by a Church representative, and all too frequently repair of the buildings is not considered until the situation is critical.

The £6m the Church of Scotland currently spends consists of £2m in grants from Historic Scotland and the Heritage Lottery Fund and the rest contributed by its congregations.

Overall, spending by stockholders with non-listed buildings is higher than the average, at £8,740 per building spent in the last 12 months. This group was particularly unwilling to speculate on future spending figures, which is not surprising as this includes large Victorian hotels whose modern additions preclude listed status, but which nonetheless require significant amounts of work.

Among those stockholders with one listed building, the spend figure was £2,937,900. When the £1m spent on a prestigious public gallery was deducted, the average annual figure per building was £44,043; removing the four buildings which had had over £100,000 spent on them, the average annual spend per listed building was £23,772.

In the commercial sector, the total average annual spend per hotel (excluding the very largest) was £20,022. Including one spend figure of £500,000 on a large Perthshire hotel and another of £250,000 on a northern castle hotel, the hotel



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average annual spend rose to £84,563 per building. Within the private sector, but excluding commercially used buildings, the survey included four estates with 220 buildings among them. Their spending dropped sharply to just £1,250 per building over the year, although this does also reflect that it includes small cottages and farm buildings. There were no major differences in spending levels among the estates.

In the public sector, the situation with the five councils surveyed was that £588,000 was spent in the past 12 months on the 411 pre-1919 buildings they reported being responsible for, with an annual average of £1,430 per building. There were quite wide differences, however, with one council spending an annual average of £8,000 per building and another only £500. Rural councils predominately had lower spend than urban councils. The spending of a major university on its 300 buildings was £500,000 in the last year, or £1,666 per building; however, this was set to triple over the coming 12 months.

Public sector spending per building was an annual average of £5,480 (not including the gallery mentioned above), and by removing another building which had £50,000 spent on it in the previous year, the average annual spend decreases to £2,510. This is more representative of the general picture for the public sector surveyed. The difficulty of generalisation is, however, illustrated by the fact that the full range of spending was encountered among public buildings – from the £1 million on the gallery to just £200 spent on a museum on the west coast.

The findings for the adjusted average annual spending for the different building types are shown in Table 3.

Calculating average annual spending per building in a single survey is something of a random exercise. Size of the property portfolio and the willingness and ability of stockholders to undertake major work at any given time are all determining factors on spending levels. Another factor is whether or not the building has had any significant attention within a structured repair and maintenance cycle period: a relatively small expenditure in one year may reflect the fact that more has been invested in the recent past. Nonetheless, the presented figures are a broadly indicative guide for types of spending, albeit one which would benefit from repeat surveys over time.

The ability of stockholders to undertake work is also often affected by their eligibility for grants: 32% of those surveyed received grants towards their costs, thus reflecting the high number of listed buildings in the survey. The great majority of those grants came from Historic Scotland and 65% were subjected to quinquennial or conditional surveys, with 82% reporting that the grant funding was sufficient to cover all the work required in those surveys.

4.3 Trades Required by Stockholders

The stockholders required a wide range of trades/craftspeople in the 12 months prior to the survey (Table 4) but joiners, stonemasons and slaters were the trades most often needed.

‘Half the time we have to substantially increase the funding initially allocated to a building because it is found to be in worse shape than originally realised. One problem is certainly the damage done by previous cement repairs, particularly on bell towers and steeples, the most vulnerable parts of the buildings.’

Table 3 Stockholder Spending per Building in Previous 12 Months, by Type of Building

Sector*	Average annual spend per building
Private	£1,250
Commercial	£20,022
Religious**	£2,010
Public	£2,510
Listed	£23,772
Unlisted	£8,740
All survey sample	£2,438
All except religious buildings	£3,280

*The same proxies for private and commercial spend in the main text are used, that is, large estates for the private sector and hotels (except the largest) for the commercial sector. In the case of the private sector this was used to avoid the particularly large spending figures for stately homes, whose use is both private and commercial in cases where they are open to the public for some part of the year – which is often quite a limited period, thus further blurring their status, but these are included in the listed figure. For the commercial sector, hotels have been used because it proved impossible to collate figures from other types of commercial owners (large retailers or banks, for example) as they do not, understandably, keep separate records for spending on modern and older buildings.

**Includes the average annual spend for two other denominations in addition to the Church of Scotland.

As with overall spending figures, the lower numbers reporting a need for trades over the next 12 months reflect their uncertainty regarding what future work is required, rather than any actual likely decline in demand. This illustrates their reactive nature, rather than following a clear maintenance plan.

Locally based contractors were used by 94% of the stockholders, with only four of the sample survey reporting having acquired these from further afield. In general, they were satisfied with the quality of work undertaken, with 82% 'satisfied' or 'most satisfied', and rated the trades/craftspeople skills equally highly. This is reflected by 71% reporting always using the same trusted firms, and the rest, with a very few exceptions, employed these on the basis of their reputation. Only two individuals indicated that cost was the deciding factor in their choice

of trades/craftspeople. However, 32% experienced delays in starting work, largely due to a shortage of available skilled trades/craftspeople.

The craft trades reported as being particularly difficult to find suitably skilled people were (in descending order) stonemasonry, roofing, plastering, lead-work, and joinery. Stonemasons were the most mentioned, in some cases with additional reference to the particular scarcity of masons able to work with lime mortars.

The positive side of such concerns among the stockholders is that they reflect a knowledge of and insistence upon use of the correct, traditional building materials and methods. This is underlined by 75% saying that the trades/craftspeople used traditional materials 'on all counts' and the remaining 25% 'as much as possible'. No one expressed

uncertainty regarding what materials were being used; clearly they took an active and knowledgeable interest in the work undertaken.

Most respondents (78%) were in favour of a form of conservation accreditation for trades/craftspeople. The degree of sensitivity towards traditional building skills was further demonstrated by the response that they would be prepared, in all but two cases, to pay a higher fee for accredited trades/craftspeople. In many instances, this also reflects their difficulty in readily obtaining the services of trades/craftspeople and the widespread preference for using an established group. However, information to help inform stockholders as clients is currently scarce.

4.4 Stockholders with Direct Labour Workforces

Of the 81 stockholders, 17 had a directly employed workforce to maintain their pre-1919 buildings, employing a total of 256 workers. Large public bodies (four local councils and one university) accounted for 195 of these, so without these the average number of workers per stockholder comes down to five. Staff turnover was extremely low, with only one private stockholder, a large estate, reporting having recruited anyone in the previous 12 months. Without exception, they reported that they preferred to employ individuals in need of no training and only two (a council and a private estate) had any staff in training at the time of the survey.

This generalised lack of interest in training among those few

Table 4 Trades/craftspeople Required by Stockholders over Previous and Next 12 Months

Trades/craftspeople required	No. stockholders requiring trades	
	Previous 12 months	Next 12 months
Joiners	57	27
Stonemasons	44	28
Roofers (slate and tile)	44	24
Decorators/painters	31	23
Plasterers (lime)	22	12
Plumbers (lead-workers)	19	15
Plasterers (fibrous)	18	18
Glaziers	15	15
Other	12	8
Roofers (metal)	10	8
Timber preservers	10	8
Bricklayers	11	5
Steeplejacks	8	8
Drystone dykers	7	4
Electricians	7	7
Stone fixers	5	4
Tilers	5	4
Carvers	4	4
Gilders	4	4
Master glass painters	4	4
Blacksmiths	4	3
Cabinetmakers	4	3
Carpenters	4	3
Machinists	3	3
Roofer (thatch)	1	1

stockholders with direct workforces did not, however, reflect complacency or lack of interest in traditional skills. Both they and the rest of the stockholders expressed serious concern about the present situation. They were particularly worried about the future supply of traditionally trained trades/craftspeople, reflecting their experiences of growing difficulties in finding these and concern that there is a lack of incentives for more to enter the trades, still less access traditional training. Of the 81 stockholders interviewed, there were only three who reported no such difficulties or concern for the future.

4.5 Future Workforce Demand

Estimating the future workforce demand for traditionally skilled trades/craftspeople in Scotland is based upon the following:

1. The value of output in the conservation, repair, maintenance and improvement (CRM&I) sector, as a percentage of the overall output for repair and maintenance. As will be further explored in Section 5.3.1, this research found that 35% of the contractors, and 40% of the sole traders, work in this survey was on pre-1919 buildings, which is a proxy for the CRM&I sector, and 35% is used here as a conservative estimate

2. The changes to output over the forecast period (in this instance from 2006 to 2010). These forecasts are calculated for ConstructionSkills approximately every six months based on a number of economic indicators and industry trends captured and validated through a series of national and regional observatories.²⁰ As such, they are subject to some degree of fluctuation: the figures presented here reflect the forecast as of June 2006.

3. The workforce required to meet the demand generated by output. ConstructionSkills has developed a number of coefficients that



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calculate the numbers of different types of workers required to meet the labour demand generated by each £1m of output (at constant 2000 prices). Using those coefficients directly relating to the trades in question, this equates to 14.7 workers required for each £1m of output. Changes in output can then be used to reflect changes in the workforce requirement.

4. The annual employment stock for the CRMI sector. The base used for

this has been the workforce requirement for 2005. To this, estimated inflows to that workforce must be added, and the outflows subtracted. These in turn are based on a number of variables. Outflow considers forecasts based on industry trends relating to factors such as retirement and moves to other industries within the workforce. Inflow considers those joining the workforce from unemployment, other industries, other sectors of the construction industry and so forth.

5. The difference between the workforce requirement (demand) and the stock (supply) forms the employment requirement. As shown in Table 5, rising forecast output is not met by rising forecast employment stock: therefore there is a positive additional workforce requirement for each year from 2006 to 2010. This requirement is cumulative: if not met within one year, it carries into the next, adding to the requirement for that year. By these calculations the cumulative demand for additional workers in the traditional building sector in Scotland between 2006 and 2010 is estimated to be 4,740.

Additional workforce demand does not necessarily equate to a demand for additional training, as some of those joining the industry may be returning with relevant skills. However, because this is a demand additional to the existing construction workforce, it may be assumed that all, or virtually all, of those required will also require some training, if only top-up training. Further training requirement within the rest of the inflow into the industry must also be added, to which a number of

Table 5 Demand for Additional Workers in the Traditional Building Sector in Scotland 2006–2010

	CRMI output	Workforce requirement to meet demand	CRMI employment stock	Annual additional worker requirement
2005	861.7	12,630	12,630	
2006	897.8	13,160	12,640	520
2007 (f)	906.9	13,290	12,640	650
2008 (f)	929.3	13,620	12,650	970
2009 (f)	951.0	13,940	12,650	1,280
2010 (f)	954.1	13,980	12,660	1,320
2006–2010				4,740

Note: The employment stock incorporates flows into and out of the labour market with the exception of the inflow from training as the aim of the forecast is to give a total employment requirement – how this requirement is addressed is the subject of stakeholder decision. Numbers are rounded to the nearest 10

Source: ConstructionSkills; Experian

Table 6 Annual Additional Training Requirement within the Traditional Building Sector in Scotland 2006–2010

	Annual numbers requiring training
2006	1,310
2007 (f)	1,440
2008 (f)	1,760
2009 (f)	2,080
2010 (f)	2,120
2006–2010	8,710

Note: numbers are rounded to the nearest 10

Source: ConstructionSkills; Experian

variables apply, including trends relating to those numbers within the inflow that require top-up training as opposed to full training. The training requirement for 2006–2010 (Table 6), assumed to be a combination of both those coming into the industry and those required due to an increase in demand, shows that an additional 8,710 will require training of some description.

These figures, however, require two caveats:

- Given the amount of fluidity within the industry and as firms work across new build and pre-1919 buildings with the same workforce, the numbers within the traditional sector, as opposed to the repair and maintenance sector as a whole, or the construction industry as a whole, are notional.

- The additional numbers requiring training should be viewed as an indicator only, as it is not implied that the existing workforce working on pre-1919 buildings actually already possess the required skills. This is an indication of the additional training requirement in years to come if the forecast demand is realised, which is additional to the required up-skilling of the current workforce in traditional building skills.

4.6 Funding

Historic Scotland is one of the principal funding bodies for work on pre-1919 buildings and spends approximately £12m annually on grants. This funding generates around £40m in the construction industry for repair and restoration work. The benchmark rate of the grant is 33% for private owners, 40% for charities and 25% for local authorities, with commercial grants determined more widely upon ability to pay. The purpose of the grants is partly to ensure adequate standards of work, including use of the most appropriate available materials, in the interests of preserving the value of the Scottish built heritage. In practice with finite public funds, only higher-category listed buildings are likely to receive a grant, while middle category ones are judged on individual merit.

Historic Scotland also has 345 of its own properties in care, of widely varying sizes and types. These range from Edinburgh Castle (comprising 70 buildings) to the standing stones of Callanish in the Western Isles, and Skara Brae in Orkney. A large proportion of the sites are masonry structures, often roofless and incomplete, which require frequent maintenance. The spending to

maintain all Historic Scotland's sites in care is approximately £16m per year including the direct employed workforce that undertake conservation and maintenance.

The other principal grant provider is the Heritage Lottery Fund (HLF), both through its main fund and the National Heritage Memorial Fund. In the period 1994–2005, the HLF gave over 1,690 grants in Scotland, worth £333m, with at least £166m for historic buildings and townscapes. The latter has been promoted by the Townscape Heritage Initiative (THI), which aims to generate inner-city renewal through the rehabilitation of key traditional buildings and central districts. Funding is jointly provided by the HLF, Historic Scotland and (depending on circumstances) the local authority and local enterprise company.

Local authorities in the past have been important sources of funding for conservation work in their area: however, this in some cases has declined, especially in the form of direct council grants. HLF funding is also anticipated to decline in coming years, as its priorities shift to other concerns, including the development of the Olympics site for 2012.

To complement the principal grant system of Historic Scotland, and the THI, Historic Scotland led the establishment, in 2004, of five City Heritage Trusts – Inverness, Aberdeen, Perth and Kinross, Stirling and Dundee. With core funding from Historic Scotland, the Trusts work in partnership with local authorities, which provide support in kind. They have an investment budget of £200,000 a year, and are principally designed to cover the small-scale

projects required in the city centres, such as shopfront repairs. In this context, heritage managers, given the nature of the projects they oversee, report particular difficulties in obtaining joiners with the requisite skills. In general, trades/craftspeople prefer to replace rather than repair, the latter being more time-consuming and, in many cases, beyond their capabilities.

Edinburgh has a larger and older equivalent body, the Edinburgh World Heritage Trust, which was formed in 1999 when the city attained UNESCO World Heritage Site status through the merger of the Old Town Renewal Trust and the New Town Conservation Committee. Glasgow has no direct equivalent at the time of this report, but has an active Building Preservation Trust and the presence of other major projects through the THI.

4.7 Conservation Projects and Conservation Officers

Townscape Heritage Initiatives tend to be slow in getting started, due to difficulties in forming management teams, which are generally building preservation trusts (BPTs), which often face difficulties in obtaining grants for their running costs.

As one conservation officer observed, the other great difficulty many projects have is finding adequately skilled contractors, particularly on smaller and outlying projects (quote, far right).

This means that a large proportion of conservation projects go to centrally based specialist firms, often with long delays. For

example, a conservation officer in the Borders, Dumfries and Galloway reported having to wait up to a year on some occasions for availability of a contractor. The central belt is similarly affected, and one Glasgow-based planning officer reported two cases of THIs where the lack of available contractors led to cement repairs being undertaken on the stone buildings. Of the nine planning/conservation Officers interviewed, only two indicated that they did not experience difficulty in finding contractors, or had been in close contact with others in their area that had.

Conservation officers are increasingly scarce and it appears that many councils that used to have conservation teams no longer do so. One conservation officer covers the whole Highlands and Islands region today and other areas reported that conservation officers on retirement are not being replaced. This indicates shifting funding priorities, which means less knowledge within those local authorities on how to maintain their own properties.

4.8 Other Key Bodies

4.8.1 The National Trust for Scotland

With over 270,000 members, the National Trust for Scotland (NTS) is the largest conservation charity in Scotland²¹ and its 128 properties in care include 1,000 buildings. Its principal funder for repair and maintenance is Historic Scotland, which contributes 40% of the £1 million annual maintenance grant for its Category A properties, but excluding major development projects.

The NTS maintains only a limited direct workforce for its properties, although it does have a team of 17 surveyors based in five locations to oversee the upkeep of the buildings. Despite having established lists of contractors, the NTS surveyors reported increasing difficulties in obtaining adequately skilled craftspeople and this difficulty was said to increase proportionately to their geographical distance from the central belt. In the last year, over 100 contractors were employed by the Trust.

4.8.2 Building Preservation Trusts

There are 277 building preservation trusts in the UK, of which 49 are in Scotland under an umbrella organisation of the Association of Building Preservation Trusts (ABPT). BPTs fall into two principal types: revolving fund BPTs sell on buildings when the repair work is completed and put the surplus funds into the next project; single project BPTs keep possession of the building once repaired and maintain it in perpetuity. The trusts have charitable status and so cannot make commercial profits, only cover administration and management costs. A main supporter of the BPTs is the Architectural Heritage Fund, itself a charity largely maintained by the heritage agencies.

On repair projects, funding bodies usually deal with the BPT (whether on THIs or other projects) as clients rather than through their consultants or contractors. Some projects can be highly complex, and one £3.3 million project encountered during this research had 16 funders of widely differing sizes and types.

4.8.3 The Scottish Civic Trust

Although not a stockholder, the Scottish Civic Trust is active in the field of conservation by operating and coordinating a number of services, including the Buildings at Risk Register, which aims to find investors to conserve, restore and find alternative uses for neglected buildings. Since its creation in 1990 the Register has developed a database of 1,500 listed buildings.

4.9 Other Spend Indicators and Drivers

Department of Trade and Industry figures showed that £3.2 billion (at current prices) or 35% of the total Scottish construction industry turnover in 2005 was spent on repair and maintenance. As indicated by the Scottish Housing Condition Survey, 40% of that total comes to £1.2bn for pre-1919 buildings, and when divided by the 501,000 pre-1919 buildings the average annual baseline figure is £2,315. This validates the estimated average annual figure of £2,438 calculated in this survey.

The amount currently being spent on pre-1919 buildings is not the same as the amount which should be spent, as illustrated by the Church of Scotland. If its buildings, and the rest of the pre-1919 stock in the country, had the amount spent on them that emerged as the average annual figure (less the under-funded church buildings figure of £3,280 per building), then the national spend figure would rise to £1.6bn.

Similarly, albeit more dramatically, if all the listed buildings in the country had the same amount spent as found in this survey (taking the lower figure of £23,772 per building that excluded those with £100,000 or more having being spent in the last year), then the

amount spent on listed buildings alone would come to £1.1bn.

Other indicators exist regarding the cost of more comprehensive repairs. The Scottish Stone Liaison Group (SSLG), with support from Scottish Enterprise, undertook the first ever systematic survey of the listed stone buildings in Glasgow to estimate the repair costs and required work to restore these to a good state of repair. The SSLG research²² established that 1,411,000 mason days were required to implement all of the stone repair needs of the City of Glasgow, resulting in a need for 6,075 stonemasons and carvers over the next 20 years.

In Edinburgh, the City Council has been very active in recent years in overseeing the safety of the city's buildings, partly due to the impetus of a tragic incident of falling masonry that killed Australian waitress Christine Foster in June 2000. The Council benefits from the City of Edinburgh District Council Order Confirmation Act of 1991 which enables it to issue statutory repair notices requiring owners to ensure the structural integrity of their building where inspection has found them wanting. The need for such measures was underlined by the Council's own findings of an average 17 incidents of falling masonry per month in the city: 'it is a miracle that there haven't been more fatalities', in the words of one Council Officer.²³

Default works ordered by the Council (it is both required and enabled by law to recover all costs, including administration) amount to more than £10m a year and rising, with an additional £3m spent by

'The biggest problems are often with smaller scale projects where highly skilled workers, say joiners, are required to undertake relatively low value works – say, under £15,000 as part of a larger project. They are in great demand and so often reluctant to tender or give the time commitment.'



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owners once they have received the repair notice. This does not include owners' spending where they choose to employ the contractor themselves – they are not bound to use the contractors assigned by the Council.

Policing issues are complex, of course, particularly in the case of shared ownership of tenement buildings, as well as the sheer scale of the challenge in a city of 450,000 inhabitants living in 222,810 units, of which there are approximately 5,500 pre-1919 tenemental stairs, representing some 34,000–50,000 individual properties. However, recent findings from the Edinburgh Safe Buildings Initiative^{24,25} shows that the number of Statutory Notices served on joint owners increased

15% between 1995/96 and 2005/06, and the number of Emergency Statutory Notices by 8% over the same period.

The initiative also found that 74% of owners served with Statutory Notices now request the Council (as opposed to 34% in 1995) to arrange the necessary repairs to their property in default. This has resulted in a £7.5 million increase in turnover, which after adjustment for annual inflation represents a real increase at current value of £6.14 million (159%). This also relates to a similar increase (148%) of Statutory Notices being arranged in default of the joint owners. Assuming a similar level of spend is necessary over the next 10 years then works costing upwards of £34m would be required.

The 1991 District Council Order Confirmation Act on which Edinburgh Council's authority rests has until now been unique to the capital. However, that is about to change, with the regulation of the recent Housing (Scotland) Act 2006.²⁶ This means that all the other local authorities in the country will enjoy the same powers as Edinburgh. As the Act will have the effect of putting owners' responsibilities to the fore, the demand for the skills required to work on pre-1919 buildings is set to grow, and perhaps significantly.

It is therefore vital to avoid the same kinds of inappropriate repair work that has exacerbated and even created a great deal of the problems now facing older stone buildings.

SUPPLY OF TRADITIONAL BUILDING SKILLS: CONTRACTORS AND SOLE TRADERS

5

- 5.1 The Construction Industry in Scotland
- 5.2 The Survey Sample: Overview
- 5.3 Trades and Work on Pre-1919 Buildings in the Survey Sample
 - 5.3.1 Pre-1919 Work
 - 5.3.2 Main Activities and Range of Trades
 - 5.3.3 Geographic Range of Work
 - 5.3.4 Type of Work Undertaken by Contractors and Sole Traders
 - 5.3.5 Membership of Trade Organisations
 - 5.3.6 Repair and Maintenance versus Conservation and Restoration
- 5.4 Workforce Management
 - 5.4.1 Retirement and Age Profiles
 - 5.4.2 Recruitment
- 5.5 Skills Shortages and Skills Gaps
- 5.6 Subcontracting
- 5.7 Training
 - 5.7.1 Numbers in Training
 - 5.7.2 Views on Training
 - 5.7.3 Retention Post-Apprenticeship
 - 5.7.4 Funding for Traditional Skills Training
 - 5.7.5 Self-appraisal of Training Needs
- 5.8 The Use of Traditional Building Materials
 - 5.8.1 Extent of Use of Traditional Materials
 - 5.8.2 Source of Traditional Building Materials
- 5.9 Career Progression
- 5.10 The Regional Dimension
 - 5.10.1 Type and Scope of Trade Activities
 - 5.10.2 Recruitment, Subcontracting and Training
 - 5.10.3 Use of Traditional Materials
 - 5.10.4 Career Progression

supply: contractors & sole traders

This section of the report assesses the vital component of availability of skilled trades/craftspeople to undertake conservation, repair, maintenance and restoration of historic buildings. A combination of qualitative and quantitative interviews with contractors and sole traders provides detail on the current composition of the workforce through the following inter-related aspects:

- The numbers of employed and self-employed within the built heritage sector
- Outstanding vacancies, recruitment difficulties
- The quality and availability of requisite skills, retention of trades/craftspeople as indicators of skills shortages or gaps
- Inflow and outflow within the built heritage sector
- Attitudes to and support for training

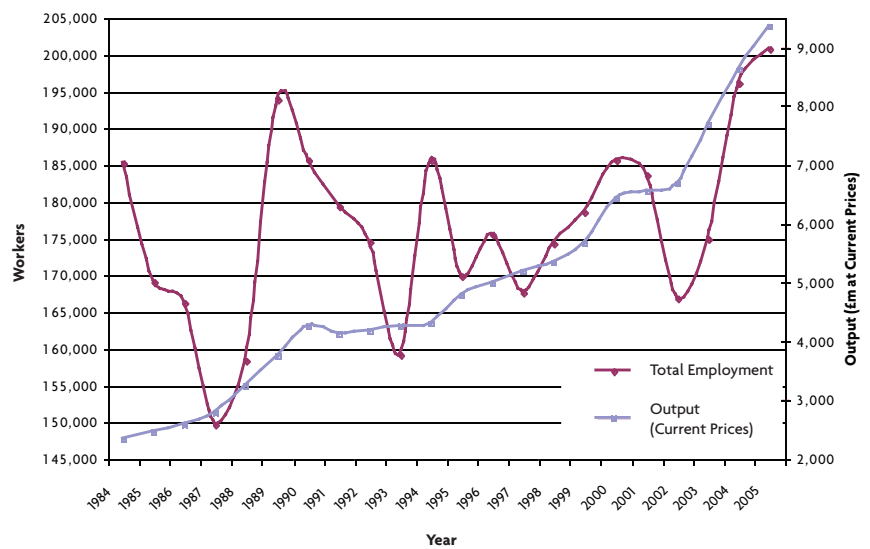
5.1 The Construction Industry in Scotland

The construction industry in Scotland accounts for over 7.0% of the country's gross value added (GVA), and 8.4% of the total for construction in the UK, generating £4.7bn of GVA in 2004.²⁷ Construction industry GVA grew steadily between 1998 and 2004, at an average of 6.8% per year, and this trend looks set to continue, as in the rest of the UK. Strong demand in Scotland is underpinned by the devolved government's plans to make major advances in public housing and infrastructure provision.

In output terms, the construction industry in Scotland has grown strongly, by an average of 7.1% per year, in the 10-year period to 2005. However, that same period was characterised by a distinct peak and trough in employment, 185,600 in 2000, followed shortly thereafter in 2002 by a 10% drop. This would suggest that any excess capacity was alleviated with large losses in the workforce.²⁸ Those peaks have since been exceeded: in 2005, the construction industry employed 200,700 people²⁹ in 42,740 enterprises,³⁰ which is 8.3% of the economically active population (EAP) of 2.4 million.³¹

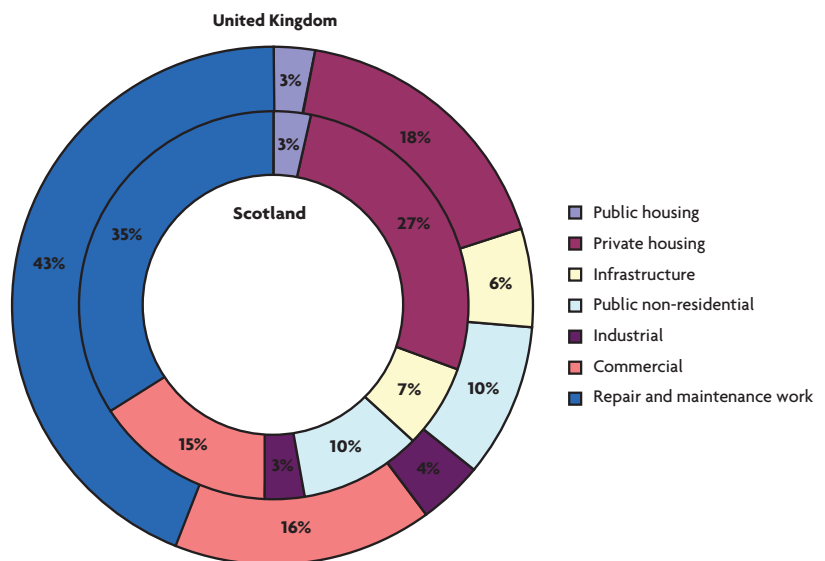
While the proportion of the construction workforce employed in Scotland is broadly similar to

Figure 2 Construction Output (at Current Prices) and Employment, Scotland, 1984-2005



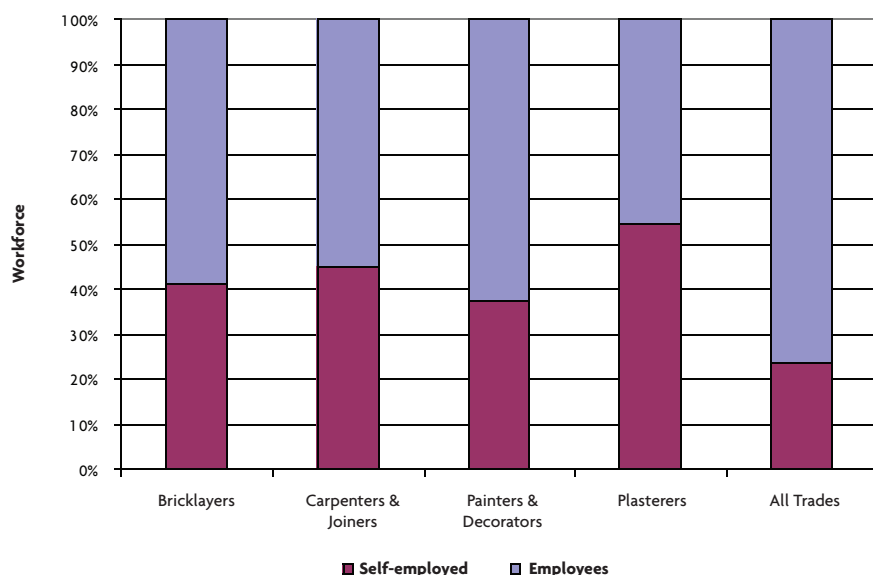
Source: Office for National Statistics (ONS), Labour Force Survey; Department of Trade and Industry (DTI); Experian

Figure 3 Construction Output by Sub-sector in the UK versus Scotland 2005



Source: Department of Trade and Industry (DTI); Department of Finance and Personnel Northern Ireland (DFPNI); ConstructionSkills

Figure 4 Employment Status within ConstructionSkills Footprint, Scotland, 2005



Source: Office for National Statistics (ONS), Labour Force Survey

that of the UK as a whole, there are notable differences in the structure of the industry. Two differences are of key importance to this study. Firstly, in the sub-sector division of output, the share of repair and maintenance work in Scotland is rather low in comparative terms: 35% as opposed to an average of 43% for the UK. Other output differences are shown in Figure 2, but this is the most marked.

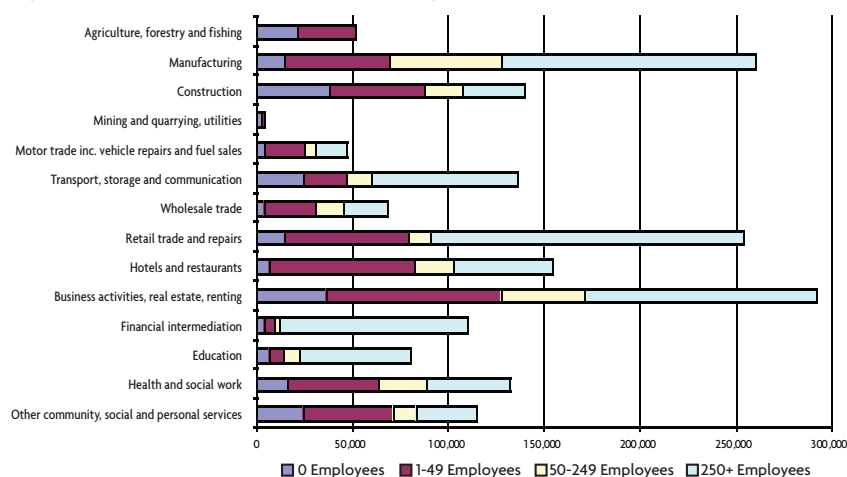
The relative amount of output derived from repair and maintenance by the construction industry in Scotland is 8% lower than the UK average, but the proportion of pre-1919 dwellings is roughly the same as that in England. Therefore, there will be a greater shortfall in the amount of work being done on those buildings (as compared with the work which needs to be done) than in England. On the other hand, it should be noted that the most

recent data shows that repair and maintenance output grew by 16% in the first three quarters of 2005, as against an 8% climb in new work, thus altering the pattern of recent years in which new-build growth had been much the stronger.³²

The second structural difference is in the sizes of the companies: Scotland has a tendency towards slightly larger companies than the UK average: 15% of firms have over ten employees, as opposed to 10% in UK, with 5% fewer one person businesses in Scotland than the wider average.³³ This structural difference in size is almost certainly a factor contributing to another interesting statistic: 38% of the UK construction industry's workforce is estimated to be self-employed, while it is only 24% in Scotland.³⁴ While self-employment is considerably lower in Scotland it remains particularly high in the main craft trades, where it averages 45% of the workforce.³⁵

Nonetheless, the structure of the industry in Scotland, in common with the rest of the UK, is dominated by small firms. The comparison of construction with other industry groups in this respect is shown in Figure 5.

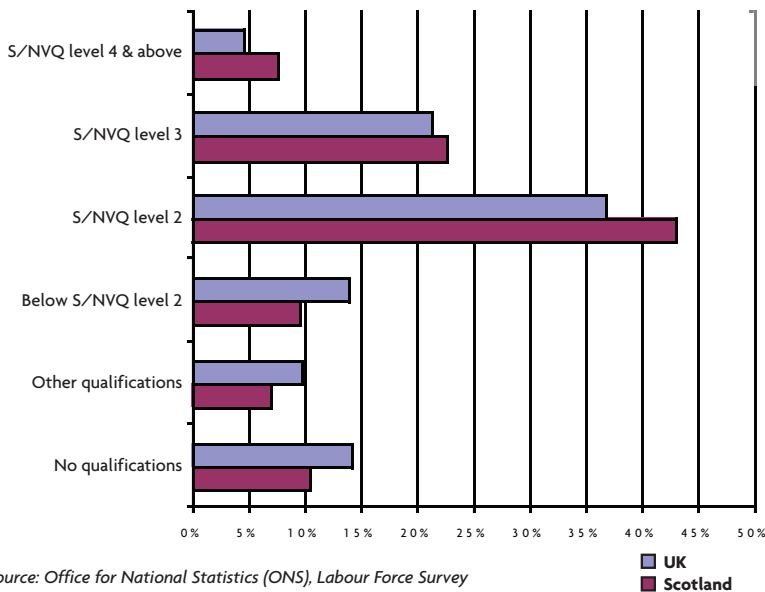
Figure 5 Employment in Small, Medium and Large Enterprises in Scotland by Industry Group 2004



Source: Scottish Executive; Office for National Statistics (ONS); Inter Departmental Business Register (IDBR)

The number of self-employed within the industry has major implications for training, especially as recent research confirms that training is much less likely to be forthcoming for the self-employed than their unemployed counterparts. For example, 17% of those employing manual staff directly in Great Britain indicated that all their direct manual staff had received training in the last 12 months, compared to 8% of companies employing labour-only subcontractors (LOSCs).

Figure 6 Qualification Levels of the Manual Construction Industry Workforce in the UK and Scotland 2005

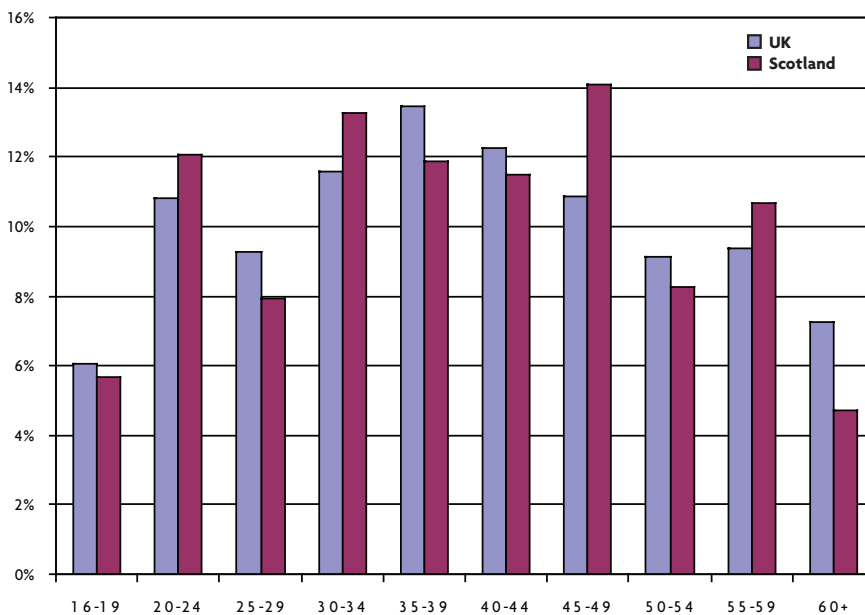


Source: Office for National Statistics (ONS), Labour Force Survey

Formal qualification levels of the manual construction workforce are higher in Scotland than the UK as a whole (Figure 3). Also, while the same proportion (59%) of the manual workforce in Scotland as in the UK were found to hold a construction skills card or certificate, 64% in Scotland have a construction-relevant qualification higher than that level, as opposed to just 50% in the UK as a whole.³⁸

Consistent with these higher levels of qualifications, although not necessarily directly associated with them, is the fact that the age profile of the manual workforce is slightly higher in Scotland than the rest of the UK, as shown in Figure 6.

Figure 7 Age Profile of the Manual Construction Industry in the UK and Scotland 2005



Source: Office for National Statistics (ONS), Labour Force Survey

The higher proportions in the 45–49 age bracket means that there are more workers in the most experienced and productive work group. However, as they will be approaching retirement in 20 years, the present numbers in the 16–19 range will (as it stands) not provide sufficient replacement. A great amount of effort is needed to overcome the image problems of the construction industry and attract more young people and other age groups, creating greater diversity than the standard white, non-disabled male that overwhelmingly characterises the construction workforce profile in Scotland and in the rest of the UK.

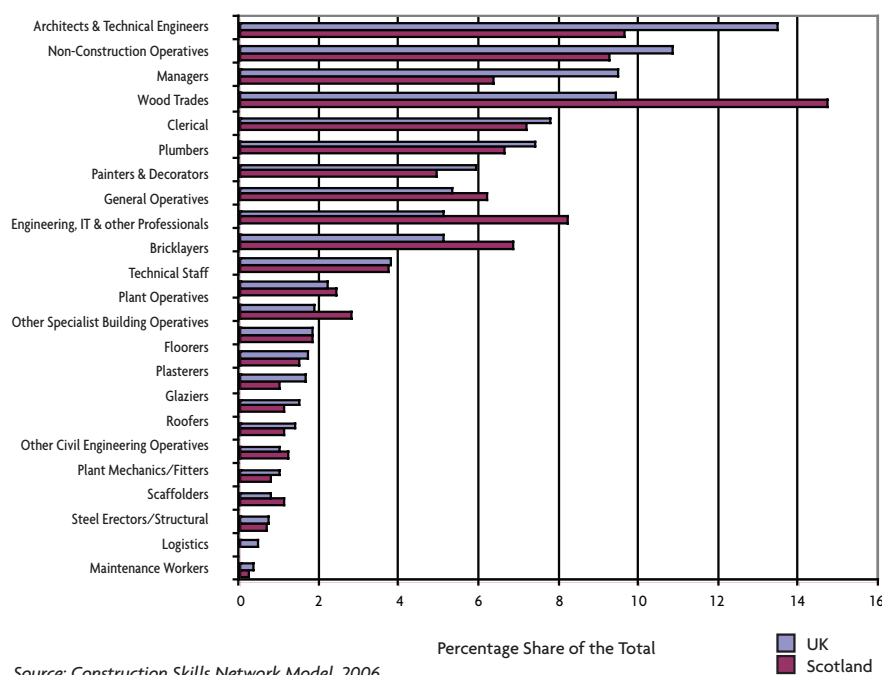
Similarly, 37% of firms reported having given training to some directly employed staff in the last 12 months, compared to 20% of firms having provided any to LOSCs.³⁶ Therefore, the structure of the industry in Scotland means there is likely to be more scope for employers to provide training than

for Great Britain as a whole. This is based upon the higher proportion of the workforce with an employer and is a factor in explaining the higher proportions of the firms claiming to have an apprentice within the manual workforce – 49% in Scotland, compared to 25% in the UK as a whole.³⁷

By occupational breakdown, Scotland is also broadly similar to the rest of the UK, with the exception of the wood trades in which Scotland has 6.5% more craftspeople working than the UK average, as illustrated in Figure 8.

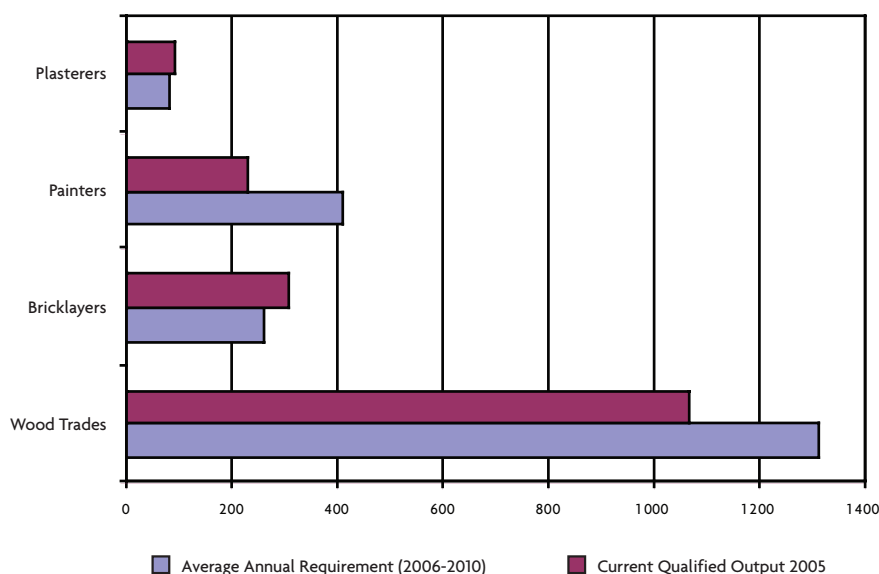
Stonemasons are subsumed under bricklayers in the breakdown of occupations shown in Figure 8. The 2004 ConstructionSkills survey of

Figure 8 Employment by Occupation in the UK versus Scotland 2005



Source: Construction Skills Network Model, 2006

Figure 9 Building Trades Annual Average Required Intake Compared with Trained Output in Scotland 2006–2010



Source: Construction Skills Network Employment Model, 2006; Experian; ConstructionSkills Trainee Numbers Survey 2005/06. Note: Current qualified output based on a 65% completion rate and excludes Level 1 qualifications.

employment by occupation found 7,873 stonemasons working in the UK, while there are 447 stonemasons in Scotland, of whom 272 were employees, 33 trainees and 142 self-employed.

Scotland is in line with the UK average regarding the labour and skill needs of the industry in the current context of growing demand, with an estimated shortfall of 630 (30%) of trained individuals required in the four main

building trades, as illustrated in Figure 9 (assuming that those entering from training will constitute the primary source of skilled labour).³⁹

5.2 The Survey Sample: Overview

The 128 sole traders interviewed mirrors the national industry profile for Scotland in terms of their proportionate presence in the construction market. These and other comparisons by company size of the 354 construction companies surveyed and the national (Scottish) are given in Figure 10.

The total number of individuals employed full time by contractors was 7,276 (7,404 including the sole traders), or just under 4% of the total national construction industry figure for 2005 (200,700). Of the contractors, 187 also had 215 part-time employees, indicating that most firms only employ one part-time person.

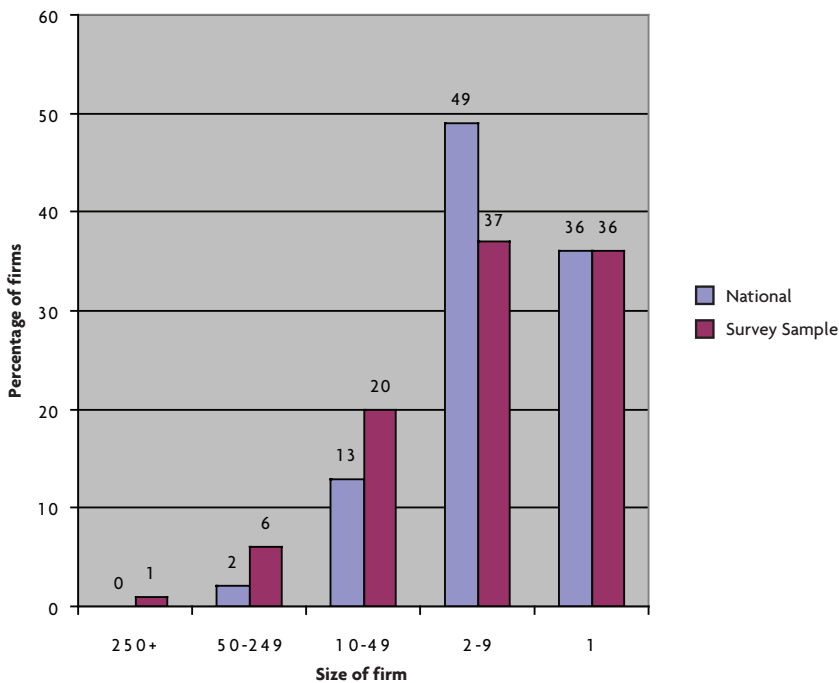
Scottish regional differences in the survey results are given in Section 5.10; however, as an initial overview, the Scottish regional distribution of the contractors and sole traders is shown in Figure 11.

5.3 Trades and Work on Pre-1919 Buildings in the Survey Sample

5.3.1 Pre-1919 Work

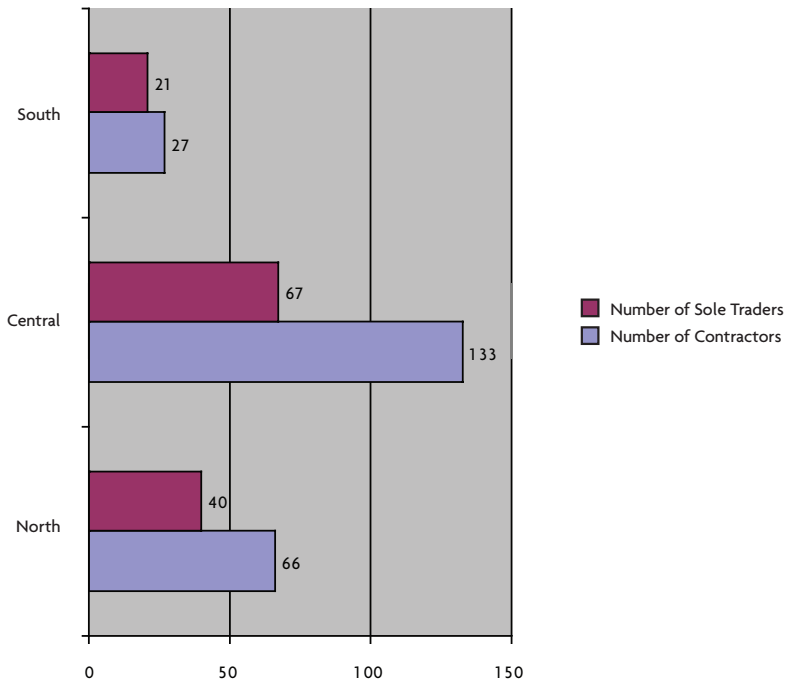
The average percentage of the work carried out on pre-1919 buildings by contractors and sole traders was 35% and 40% respectively. This is directly in line with the 35% of work on repair and maintenance found as the output figure for the sub-sector in Scotland. The average figures conceal an extreme breadth of responses (ranging from 1% to 100%), but the most common response for the contractors was

Figure 10 Percentage of Companies by Size: National (Scotland) and Survey Figures



Source: Department of Trade and Industry; Office for National Statistics, Inter Departmental Business Register (IDBR) 2004; Pye Tait Limited

Figure 11 Regional Distribution of the Contractors and Sole Traders



only 5% (20% for sole traders). The percentage split (Figure 12) shows that 40% of sole traders reported that half or more of their work was on pre-1919 buildings, compared to 30% for the contractors.

When disaggregated by company size, the findings show that larger companies do not tend to carry out large amounts of their work in the traditional building sector. None of the three largest companies carried

out more than a quarter of their work on pre-1919 buildings, and only two of the eight companies in the 101–500 size bracket do more than half their work on such buildings. On the other hand, the proportions of the work of large companies must represent quite a substantial contribution to the overall market of work carried out on older buildings.

Moreover, the amount that the 50–100 employee size firms stated that they worked on pre-1919 buildings was actually more than for the 3–49 sized companies, with 23% of those companies stating that over half their work was on traditional buildings, compared with 19% of the smaller firms. Of the smallest (1–2 employees or in the sole trader category), 54% did more than half their work on older buildings, and when combined with the sole traders, 64 firms, or 43%, did more than half of their work on older buildings.

5.3.2 Main Activities and Range of Trades

In common with the main construction industry data and other surveys, the 189 contractors who indicated that they had a main activity confirmed the pre-eminence of joinery in this sector. As shown in Figure 13, this was 18% ahead of the next most common, brickwork. An even higher percentage of the sole traders than contractors were principally joiners (33% and 30% respectively).

A significant number of contractors said that they had no main activity (37, or 17%) and 105 (82%) of the sole traders stated that they did have a main activity, but they were also working in others, as shown in Figure 14.

Figure 12 Percentage of Work on Pre-1919 Buildings by Contractors and Sole Traders

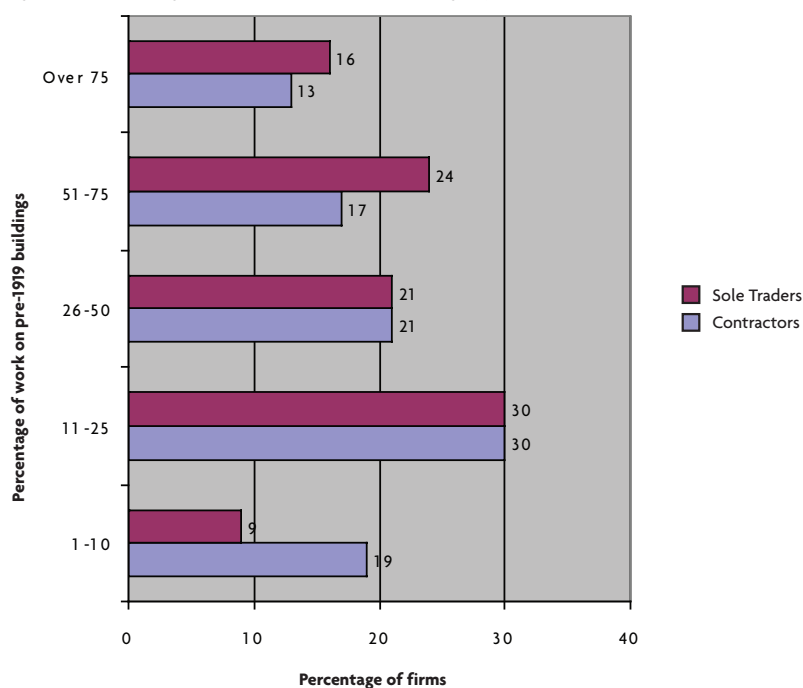
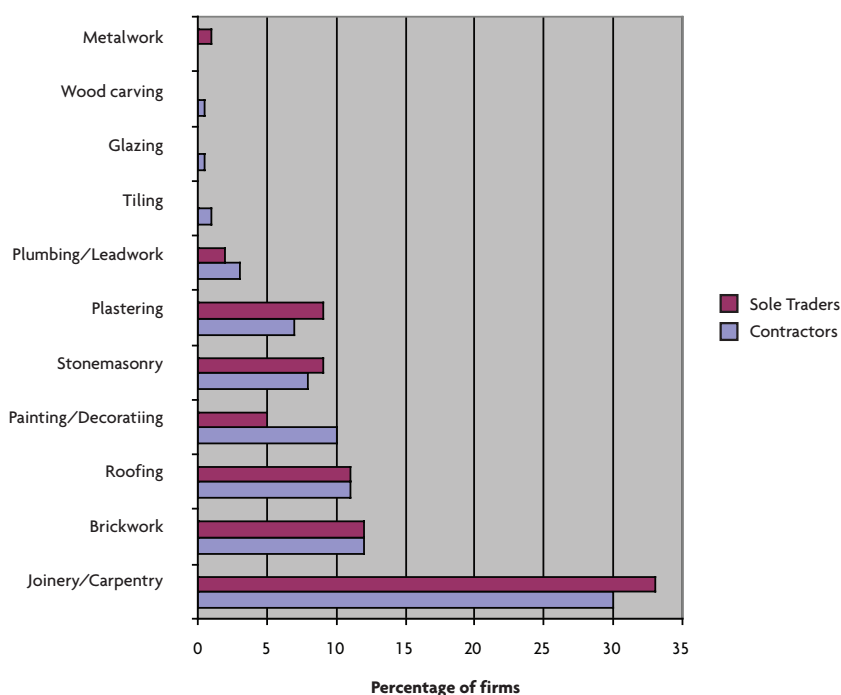


Figure 13 Main Activity of Contractors and Sole Traders



On average, each contractor worked in three trades. Although this suggests multi-skilling, particularly given the preponderance of small companies in the contractors' survey, it does not actually prove it. This is more easily established for the sole traders,

however, where each is working on average in at least two trade areas.

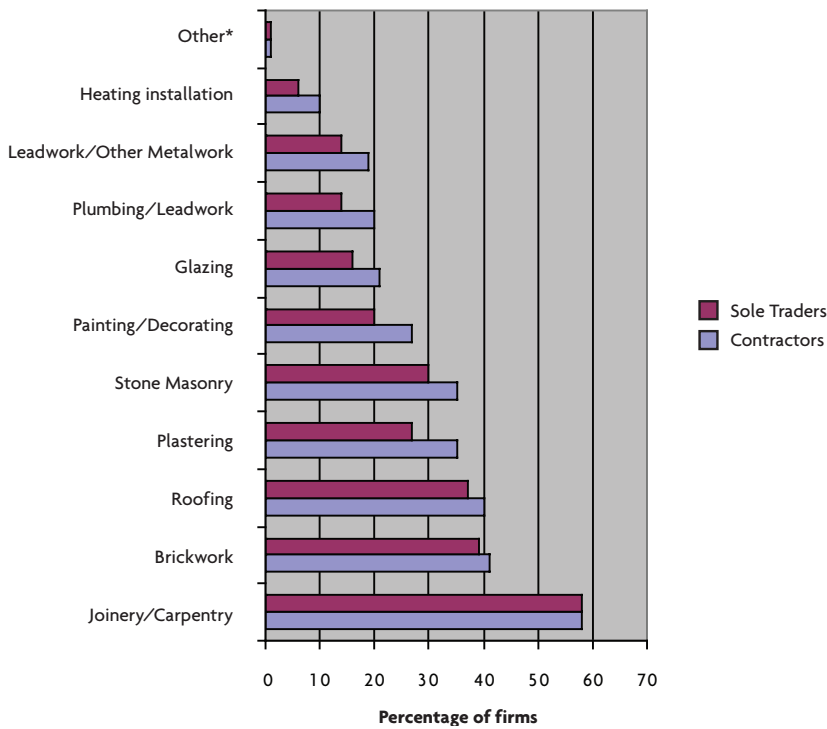
For the 32 firms with 1–2 employees, the indication is of less multi-skilling among the sole traders, since each firm works on an average of 1.6 trades,

so fewer of these than the sole traders are likely to be engaged in more than one trade. The 167 firms with 3–49 employees have an average amount of three trades per firm. Although it is not possible to extrapolate a clear picture from the existing data, the indication is of more multi-skilling at this level of firm than necessarily of the individuals within it.

It is useful to relate the findings for the main activities of the survey sample to the types and quantities of repair and maintenance undertaken in the year prior to the 2002 Scottish Housing Condition Survey (SHCS). Types of repair are not quantified by the age of the house so it is not possible to provide exact numbers, but those involving traditional building skills are 190,000 on the fabric; 160,000, painting; 140,000, joinery; 145,000 plastering; 80,000, lead-work; and 50,000, roofing.⁴⁰ Fabric refers to 'foundations/structural work to walls/roof, rebuild/point chimney, repair rendering on walls'; painting, 'paint outside windows'; joinery, 'replace/repair floor joists/boards, replace doors, work to stairs' with additionally 'conservatory/porch work and convert loft' (which might also involve fabric work); plastering, 're-plaster wall/ceiling'; lead-work, 'replace gutters/down-pipes'; and roofing, 'replace areas of roof', but the most common type of work overall was 'service heating'.)

A great deal of the SHCS joinery work was clearly modern (such as fitting kitchens) and including this work the total number of joinery jobs was 290,000. In other words, the trades division of the sample survey does more or less reflect the demand in the SHCS survey, with the exception of plastering. (It should also be borne in mind that the firms were not all

Figure 14 All Activities Undertaken by Contractors and Sole Traders



* Other skills were electrical, flooring, drainage/damp control and timber preservation.

Figure 15 Contractors' Main Activity by Amount of Pre-1919 Work

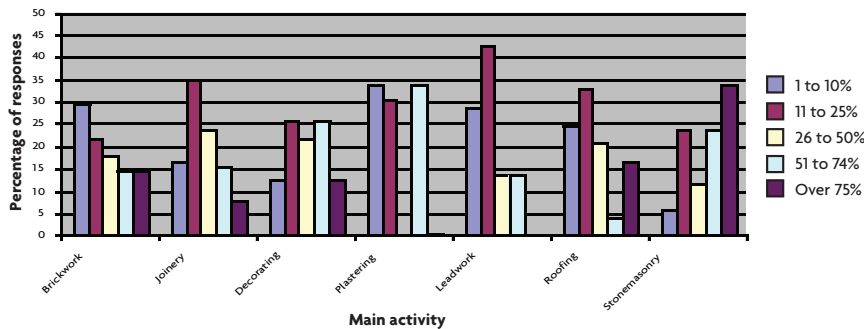
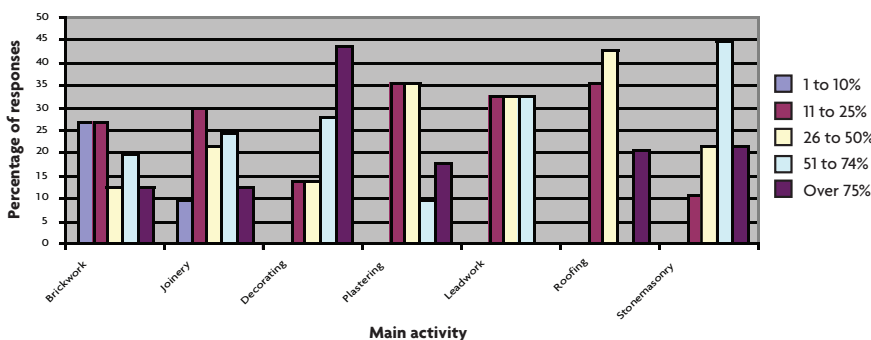


Figure 16 Sole Traders Main Activity by Amount of Pre-1919 Work



selected from CITB-ConstructionSkills' Levy Register of firms describing themselves as working in repair and maintenance – 63 firms, 18% of the total, came from that source.)

The breakdown of the contractors' main activities by the percentage of work they do on pre-1919 buildings shows that the more traditional trades do a greater amount of work on older buildings (Figure 12). For example, 58% of stonemasons did more than half of their work on pre-1919 buildings, while only 30% of the brick specialists did the same. However, it could be argued that, given the fact that pre-1919 buildings are predominantly built of stone, it is perhaps alarming that so many brick specialists are engaged on those buildings.

Similarly, only 21% of joiners worked mainly on pre-1919 buildings. While it could hardly be said that joinery is not a traditional craft skill, the picture supports wider industry trends of enormous demands for joiners on timber-framed new builds. The findings were similar for the sole traders, as shown in Figure 15.

The full range of trade crafts employed and subcontracted by contractors (Table 7) indicates where at least one person with that specific trade skill is employed or subcontracted by a company.

Again, joiners once more lead the field for trades employed or subcontracted by contractors, with bricklayers as the second most popular trade, but 22% behind joiners. The tendency for joiners to be directly employed is marked, much more so than any other trade. Indeed, plumbers are actually more likely to be subcontracted than

Table 7 Trades/craftspeople Employed and Subcontracted by Contractors

	Contractors directly employing		Contractors subcontracting	
	No.	%	No.	%
Joiners	133	58	13	6
Bricklayers	82	36	27	12
Roofers (slate)	56	25	34	15
Stonemasons	55	25	21	9
Plasterers (fibrous)	52	23	30	13
Plasterers (lime etc.)	48	21	31	13
Decorators/painters	40	17	20	9
Plumbers (lead-workers)	33	14	51	22
Roofers (metal)	33	14	21	9
Glaziers	23	10	17	7
Heating specialists	12	5	9	4
Carpenters	11	5	5	2
Tilers	8	3	8	3
Stone fixers	6	3	5	2
Blacksmiths	5	2	6	3
Carvers	3	1	6	3
Gilders	3	1	2	1
Cabinetmakers	2	1	3	1
Drystone dykers	2	1	3	1
Timber preservers	2	1	3	1
Machinists	2	1	2	1
Steeplejacks	2	1	2	1
Master glass painters	1	0.5	2	1
Totals	614		321	

employed directly, a reflection of the particular speciality of their work. Interestingly, each firm on average directly employs three different trades. Although this does not necessarily correlate with the fact that each firm works on average in three different trade areas, it does suggest a possible connection – one which again indicates less multi-skilling among individuals than among firms. The clear exception to that picture, however, remains the sole traders.

Almost half (105) of the contractors were found to use subcontractors, and on average they each sub-contract to three different trades. However, it is

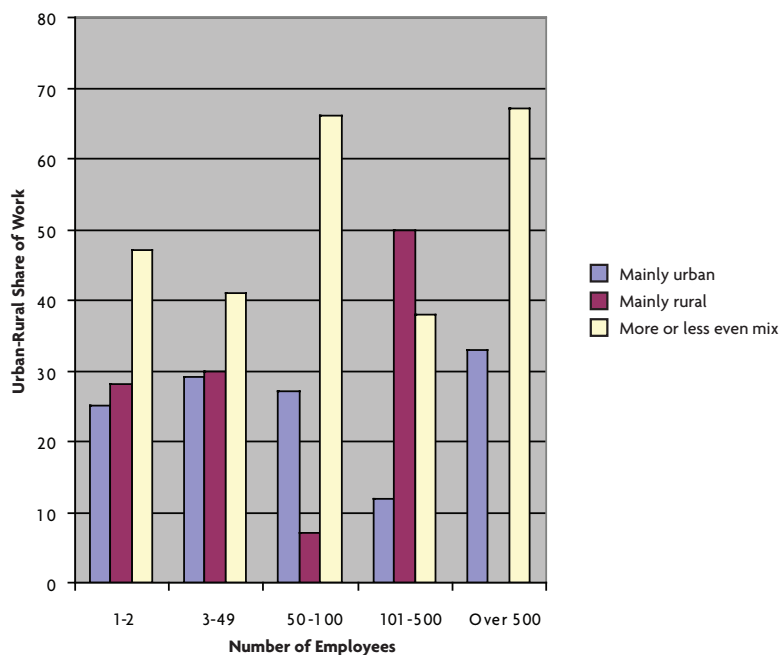
particularly difficult to draw inferences across companies regard to multi-skilling.

5.3.3 Geographic Range of Work

The great majority of firms' work on pre-1919 buildings was carried out locally (within a 20 mile radius): 63% of contractors and 67% of sole traders said that over three-quarters of their work came into that category. The remainder was mostly regional (within a 50 mile radius), with only 3% of contractors indicating that most of their work was carried out all over Scotland and only 1.7% beyond that. Only 4% of sole traders said they worked mainly across Scotland, and none outside Scotland.

The rural–urban divide among contractors was very even, with 28% working mainly in urban centres, 28% mainly in rural areas, and the remainder an almost even mix. As one might expect, the findings showed a greater proportion of sole traders in rural areas, with only 15% saying that their work was mainly urban, as opposed to 33% mainly rural, and the remainder essentially saying that it was an even mix. The breakdown of the rural–urban division of the contractors' work by company size (Figure 17) shows that the larger companies' work was not necessarily mainly urban and the 100–500 employee size bracket was in fact more rural.

Figure 17 Rural-Urban Share of Work by Company Size



5.3.4 Type of Work Undertaken by Contractors and Sole Traders

The contractors' pre-1919 building work was mainly private, which accounted for three-quarters of their turnover. Only 5% of contractors stated that their principal area of work was for the public sector, although 22% did some public work. This was more than that for commercial buildings (18%) and only 2% said it was their principal earner. None cited religious building work as their main source of income: in fact, only 27 contractors of the 226 reported doing any religious building work at all, and for most of these it represented only a small proportion of their work. The findings were roughly comparable for the sole traders; again only 15 of them reported doing any work on religious buildings.

A factor that may underlie these findings is the limited numbers of contractors who feel able to undertake work on churches, which is widely recognised by those with

experience in the sector. This is supported by only 11 contractors and 7 sole traders reporting that work on religious buildings accounted for more than 20% of their work. This is also affected by the small amount of funds (average £2,000 per year each) that churches have at their disposal to spend on their buildings.

Apart from religious buildings, business was reported as being generally good, thus reflecting UK construction industry trends, and 82% of the contractors and 80% of the sole traders can forecast their workload more than two months in advance. This, however, probably reflects the situation regarding all their work, rather than specifically pre-1919 buildings.

5.3.5 Membership of Trade Organisations

As shown in Table 8, the extent and spread of memberships of trade organisations is higher among contractors than sole traders. However, the margin of difference is quite striking: 65% of contractors

belong to one trade organisation or another, whereas 69% of sole traders do not. This is another indication of the difficulties inherent in establishing fluid contact with this section of the labour force.

5.3.6 Repair and Maintenance versus Conservation and Restoration

During the interview, respondents were asked how their pre-1919 building work divided between repair and maintenance and conservation and restoration, and to aid this process the interviewer used the following abbreviated definitions from the BS 7913 *Guide to the Principles of the Conservation of Historic Buildings*, 1998:

Repair = Work to remedy damage without alteration/restoration

Maintenance = Routine work to keep the building in good order

Conservation = Actions to preserve the authenticity of a building, without alteration

Restoration = Reinstating details to return a building to its previous appearance

One of those consulted on the design of the questionnaire suggested that the survey should ask respondents if they could distinguish between the four generic types of work. This was meant not as a matter of semantics, but a reflection of deeper issues of knowledge (the bedrock underpinning understanding and skills), and this issue repeatedly emerged as being the critical factor which needs to be in place before the skills can be effectively developed. The original four subdivisions were maintained, but the responses clearly indicated a considerable degree of confusion as to the meaning of these terms.

Table 8 Membership of Trade Organisations among Contractors and Sole Traders

Trade federation membership	Contractors		Sole traders	
	No.	%	No.	%
Scottish Building Employers' Federation (SBEF)	47	21	9	7
Federation of Master Builders (FMB)	28	12	8	6
National House Builders Council (NHBC)	12	5	5	4
Stone Federation of Great Britain (SFGB)	10	4	3	2
Federation of Small Businesses (FSB)	8	3	5	4
Scottish Decorators' Federation (SDF)	7	3	2	1
Scottish and Northern Ireland Plumbing Employers Federation (SNIPEF)	5	2	0	0
National Federation of Roofing Contractors (NFRC)	5	2	0	0
Guild of Master Craftsmen	4	2	0	0
Painting and Decorating Association (PDA)	3	1	0	0
Construction Line	2	1	0	0
SELECT	2	1	0	0
Other*	11	5	8	6
None	80	35	88	69

*Where only one contractor or sole trader indicated that they belonged to the organisation (although in some cases they belonged to more than one specialist organisation). These organisations were: Association of Environmentally Conscious Buildings, Atlas, British Woodworking Federation (BWF), BWPD, BWPTA, CIKA, ELC, Federation of Scottish Slaters, Floor Layers Association, HETAS, HVAC, IRATA, Lead Contractors Association, Master Plasterers' Federation, Master Slaters Federation, NACE, National Federation of Roofers, NLC, National Specialist Contractors Council (NSCC), PIFM, Quality Guild Federation, Scottish Master Builders, Shetland Building & Allied Trades, SPOA, SPDC, Traditional Paint Forum.

Contractors suggested that an average of 69% of their work was repair and maintenance, and 52% conservation and restoration – a mathematical impossibility. However, this might be explained by the fact that 198 out of 226 contractors gave a percentage figure for their repair and maintenance work, whereas only 126 out of 226 did so for conservation and restoration. Furthermore, the most common response was 100%, for both categories. In other words, many contractors would say it was all one or the other, and these discrepancies had the effect of distorting the overall figures.

A similar, albeit less extreme, pattern emerged for the sole traders, who suggested that an average of 72% of their work was on repair and maintenance and 44% on conservation and restoration. In their case, 117 out of 128 gave a percentage for repair and

maintenance and 51 out of 128 for conservation and restoration. Again there were many who took an 'all or nothing' approach, including declaring that all their work was conservation and restoration. However, the most common response was to say that they worked roughly evenly on each generic type of work.

In a great many cases where contractors responded that all, or virtually all, their work was in repair and maintenance it is probable that they were correct. By the same token, it is extremely unlikely that those saying that all they did was conservation and restoration were in fact correct. For one thing, work requiring conservation and restoration of a building will, in the process, almost inevitably also entail some more basic repair and maintenance works – but there is more to it than that.

The full BS definition of conservation states 'Action to secure the survival or preservation of buildings, cultural artefacts, natural resources, energy or any other thing of acknowledged value for the future.' In other words, conservation is highly specialist work requiring a depth of knowledge that allows for important value judgements about a building.

The tendency to conflate repair and maintenance with conservation by saying, 'Well, it all amounts to conservation, doesn't it?' is perhaps understandable and can perhaps to some degree be put down to simple semantics. But this also points to a deeper lack of knowledge of the wider range of needs and issues in the upkeep of older buildings. There is, of course, absolutely nothing wrong with concentrating work on repair and maintenance, but a perception that these are all that are required for the 'conservation' of buildings amounts to a serious oversimplification.

Figure 18 Age Profile of Contractors' Workforce

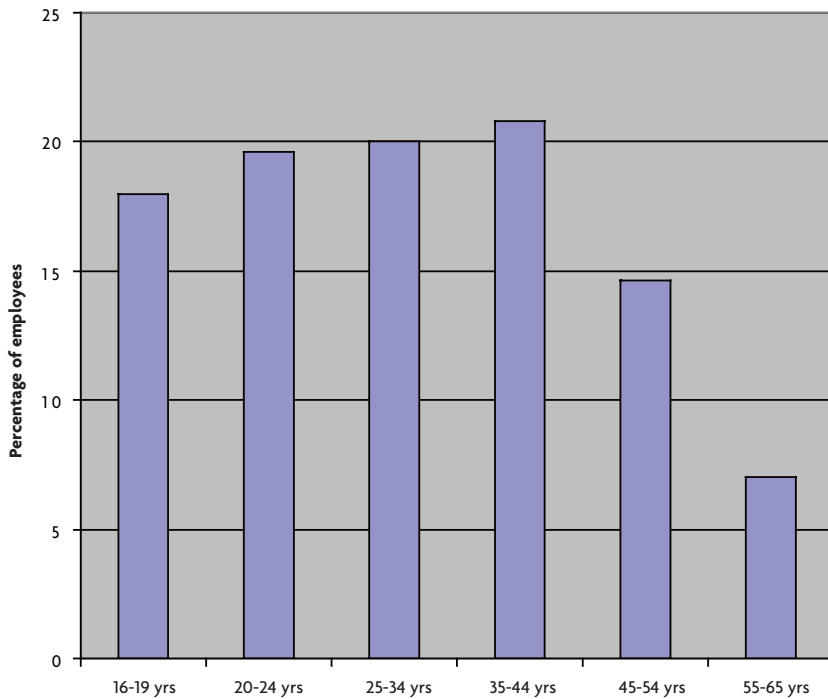
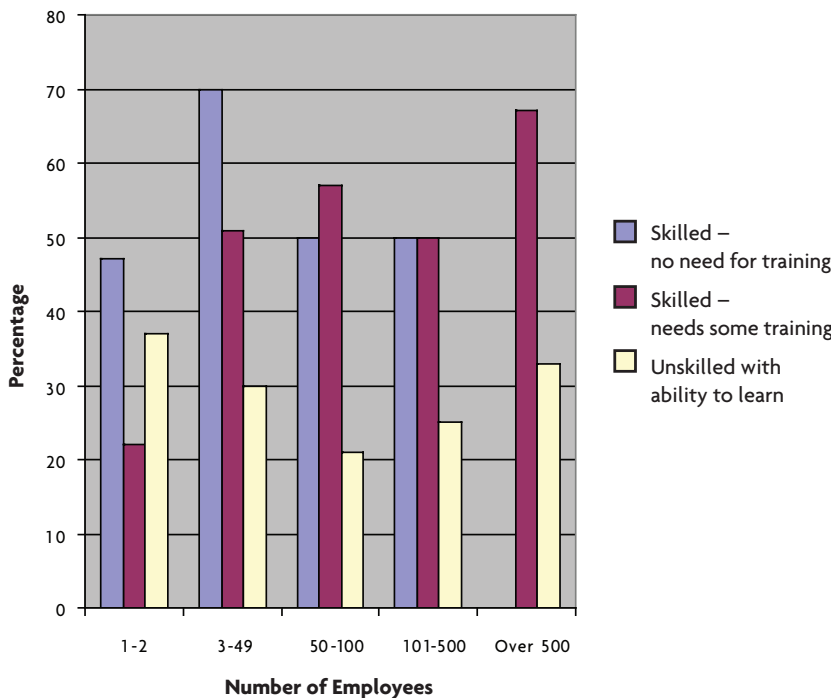


Figure 19 Recruitment Policies of Contractors by Company Size



5.4 Workforce Management

5.4.1 Retirement and Age Profiles

Of the 226 contractors interviewed, 146 declared that they had had trades/craftspeople leave

their company in the last three years. In total, 518 staff left, an average of 3.5 per company, but that figure reduces to an average of 2.3 staff when taken as an average among all 226 companies. Only 64

(12%) of the 518 were reported as leaving due to retirement.

Anecdotal evidence from the qualitative interviews, however, suggests that this low figure for retirement may be partly explained by the fact that companies have already experienced considerable staff loss due to retirement and now have a predominantly younger workforce than was the case 5–10 years ago. Whether that is the case or not, the current situation of the contractors with regard to the age profile of their workforce is shown in Figure 18.

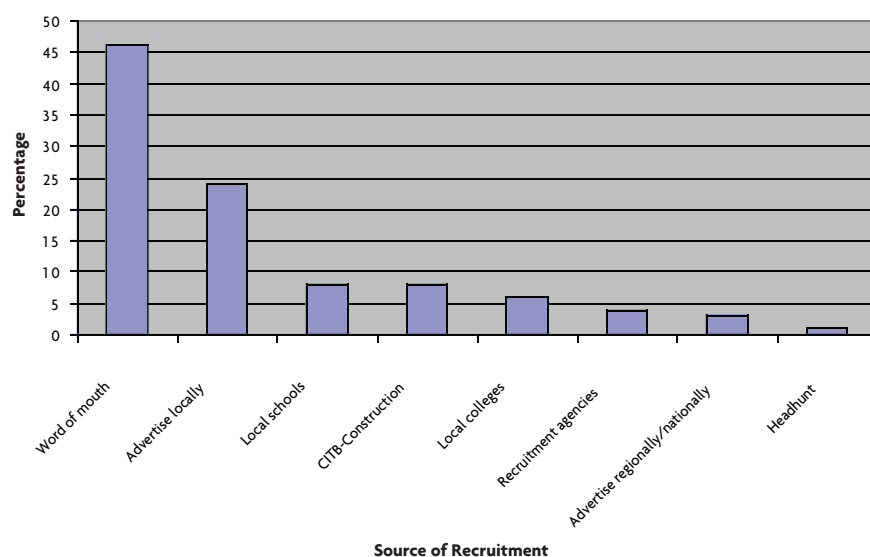
Most striking is the fact that the age profile among the firms surveyed is notably lower than the Scottish construction industry, where only 39% of manual workers are under 35, compared with 56% from this survey sample. Similarly, the total Scottish figure for those over 45 is 37% as opposed to 21.5% in this survey. The tendency for older individuals to move into the traditional building sector, whether within the construction industry or from outside, does not appear to apply to this sample. However, this data does not permit any firm conclusions in this respect.

Regarding traditional building skills training, staff in the oldest age bracket (56–65) would have received their initial training in the 1960s, by which time the industry was deeply entrenched in the transition to new build techniques and materials.

5.4.2 Recruitment

The currently buoyant construction market is no doubt another factor behind the low numbers reported as leaving the contractors, which is also reflected by 63% of contractors having recruited staff in the last 12 months. One particularly large

Figure 20 Contractors' Sources of Recruitment



company in the Highlands and Islands region had recruited 300 staff, but the most common answer was just one individual taken on, resulting in a sample average of 6 per firm.

In terms of recruitment policies, 39% of employers engaged staff with relevant skills and experience, but in need of some training. Only 26% said that they generally took on staff with no experience and in definite need of training, while 35% said it was their practice to take on fully skilled staff. This is in contrast with Scottish research, which shows that 50% of construction firms employed inexperienced staff in the last three years.⁴¹

Recruitment patterns (Figure 19) show that all sizes of firms follow the same general policies. Although not asked to make these mutually exclusive categories, only 39 firms stated that they had more than one practice, indicating that they have set recruitment practices. What is disconcerting is the relative lack of enthusiasm for taking on inexperienced staff, which points to a reluctance to invest in training. The

demise of the traditional family firm was reflected by only one contractor stating that he had taken on his son as an apprentice.

Of particular concern is the reluctance of the small to medium size firms to take on unskilled apprentices, with various reasons offered. A common complaint was the difficulty in finding young people with the right predisposition to this type of work.

Although pessimistic views of the younger generation were widespread, these were not shared by all employers. Some insisted that, provided one is selective, it is possible to take on young people able and willing to learn, irrespective of attitudes towards work. The problem of losing trained staff, particularly among small and medium sized firms, was stated with particular vehemence.

Interestingly, only three contractors actually declared that they headhunted from other contractors, but given that within the industry this is regarded as commonplace, the response is probably of mainly

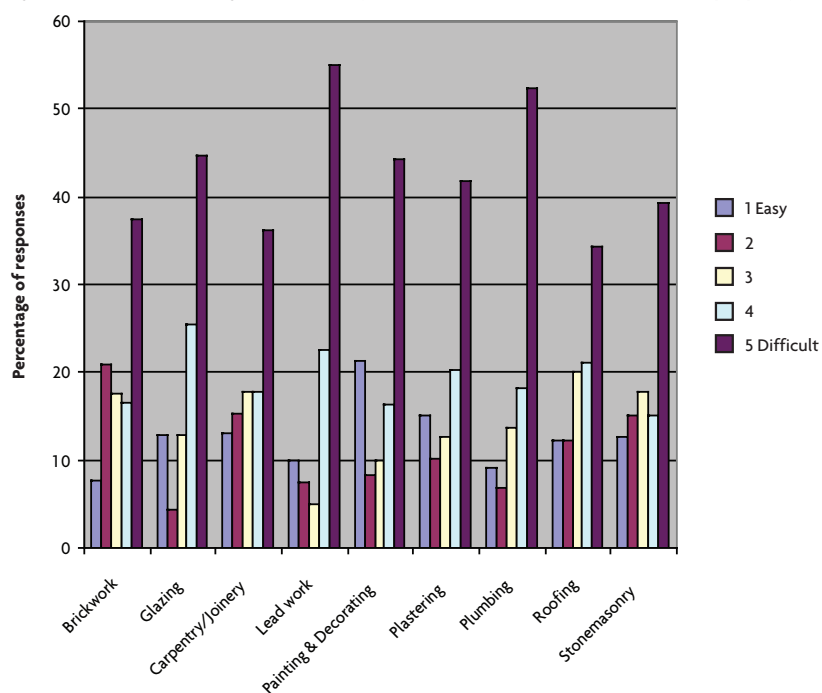
psychological interest. Other explanations are that many cases of poaching are subsumed under subcontracting and, furthermore, the majority of companies surveyed were in the smaller size categories.

There were no marked differences in recruitment policies in different sizes of firms, but the most common response (Figure 20) was by word of mouth. Worth highlighting is the small amount (6%) of recruitment from colleges, so in the vast majority of cases, those studying in college must have already been recruited as apprentices.

In terms of difficulty experienced in recruitment, 53% of firms felt it was most difficult or very difficult to recruit skilled trades/craftspeople, only 30% indicated it was easy or relatively easy, and 56% stated that no individual trade was particularly difficult to recruit. The latter indicates a mixture of responses that combines contrasting experiences of all trades being easy to recruit for some, and all difficult for others. The full findings of the degree of difficulty felt by contractors in recruiting skilled trades/craftspeople of different trades is shown in Figure 21. The most sought-after trades in absolute terms (in descending order) were joiners, bricklayers, slaters, stonemasons and plasterers, followed by decorators/painters and plumbers.

This emphasises that the contractors working in the more traditional trades are experiencing the greatest difficulty in recruiting skilled people. This applies particularly to lead-work, plastering and stonemasonry. Perhaps surprisingly, there was no difference in difficulty in recruitment between those firms whose work was mainly rural and that were mainly urban. In both cases, just over 50% of those

Figure 21 Contractors' Degree of Difficulty in Recruitment of Skilled Trades/craftspeople by Trades



firms indicated that they experienced high or quite high levels of recruitment difficulties.

5.5 Skills Shortages and Skills Gaps

Skills shortages are defined as: the inability to recruit people with the appropriate skills at an appropriate wage. This can include long-term unfilled vacancies and understaffing and can result in long working days and weeks and high overtime rates, thus affecting a company's performance, including its capacity to bid for and fulfil new work.

Skills gaps are defined as: missing knowledge and competence of existing staff, with gaps leading to reduced performance, quality and safety. This may lead to lower quality output and longer snagging, below par health and safety record and less profitability.

Of the contractors who experienced the two highest degrees of recruitment difficulties (scored on a scale of 1 to 5 where 1 is easy and 5 is

difficult), 57% felt that this was due to a lack of trades/craftspeople, as opposed to only 19% saying it was a lack of skills and the remaining 24% attributing difficulties to both factors. So, 81% felt that there was a shortage of trades/craftspeople (a skills shortage) and 43% a lack of skills (a skills gap). However, the severity of the skills shortage being experienced by the sample group is called into question by the fact that only 12% reported having outstanding vacancies (unfilled for at least three months). Industry evidence indicates that, while local hotspots of skills shortages may exist and some trades may be more affected than others, there are no widespread skills shortages in the workforce at the time of this research.⁴²

These findings contrast with the NHTG skills needs analysis survey, where 71% of those experiencing recruitment difficulties cited a skills gap and 53% a skills shortage. Moreover, almost twice as many of the English contractors (23%) reported outstanding vacancies of

more than three months' duration. It is difficult to know how to interpret these differences.

One explanation is that the most common response for numbers recruited over the last 12 months was only one individual per firm. These are predominantly small and micro firms whose uptake of new staff is necessarily low in any event, as reflected by the relatively low number with outstanding vacancies. The most common reason (32%) from those who considered that there were skills gaps was that this was due to a failure to train staff, and only 2% reported high staff turnover as a cause of skills gaps.

Whether they attributed their recruitment difficulties to skills shortages or skills gaps, the most common response in both cases was to offer more training; 66% of those with skills gaps did so, as did 37% of those experiencing skills shortages. In the latter case, a further quarter of the sample said that they put extra effort into recruitment drives, and a third took no action. Other responses included working longer hours themselves, and considering recruiting from abroad.

Whatever degree of recruitment difficulties contractors may have experienced, retention of skilled staff did not appear to be a problem, and this was to a more marked degree than in England. Of all the contractors surveyed, 78% said it was 'easy' or 'quite easy' to retain good trades/craftspeople as employees, with only 10% expressing problems in this regard.

5.6 Sub-contracting

Subcontracting does not necessarily represent an easier

means of gaining the skills a company needs, although it may well be the most cost-efficient. Of the 105 firms that indicated they subcontracted some of their work on pre-1919 buildings, 64 (61%) said there was at least one trade that was particularly hard to obtain. The trade most difficult to subcontract was plasterers, followed by plumbers, which is markedly different from the trades cited as being most difficult to recruit directly (stonemasons, joiners, slaters). A range of more specialised trades including lead-work, metal casting, glazing and ceramic tiling were highlighted as being difficult to subcontract.

The waiting times for subcontractors to become available was not long, with only 12% of contractors saying they regularly had to wait over three months, and 69% reporting that their usual waiting time was 1–3 weeks. This was a general response across all trades, and does not mean that those trades cited as being particularly difficult were being hired in such relatively short periods.

The generally short waiting times are also likely to reflect the fact that many sole traders and other small subcontractors work in networks quite closely associated with one larger firm or another, being informally employed at less cost to the larger contractor.

The results from contractors when asked to rate the skills of subcontractors (1 as poor and 5 good) were quite mixed. Most striking was the contrasting experiences among contractors: 40% gave an essentially positive account of the subcontractors they had used, whereas 43% were negative and the remainder neutral.

Trades identified as being particularly weak in terms of lack of skills were plasterers (particularly in use of lime and other wet plasters), plumbers (particularly lead-work), stonemasons, slaters and traditionally skilled joiners. More specific responses included: stonemasons for rubble building, traditional plasterers to run cornices, decorative stonemasons, wet plasterers and rough casters.

The overall contracting picture is inevitably quite complex, and many reputable firms and individuals work as subcontractors to larger companies and produce excellent work. However, at the risk of over-generalisation, it is worth highlighting trends in the construction industry as a whole that do appear, on balance, to have a negative impact on the traditional building industry within it, and its skills base. As the ConstructionSkills SSA notes: *'Typically, major contractors and house builders manage projects and do not employ craftspeople or workers in specialist trades. These skills are provided by sub-contractors, usually on short-term contracts.'*⁴³

One crucial issue is the tendency for subcontracting to drive down training. Not only are firms less likely to be inclined to fund training for subcontractors, as shown in UK construction industry research, but the self-employed who undertake a large proportion of their work as subcontractors, are also unlikely to train themselves once established in business or to take on apprentices.

Naturally, the merits or otherwise of subcontracting are coloured by personal interests and experiences. Only 32% of the contractors who worked with subcontractors thought that the construction

industry is too reliant on subcontracting, with 57% disagreeing and 11% saying it was not possible to generalise. This contrasts with UK data on employer opinion, which found that 53% of companies in Scotland believe that the industry is too reliant on subcontracting, although that data includes employers who do not themselves subcontract.⁴⁴

It is perhaps surprising that so many thought that there was too much subcontracting in the industry, since they themselves were engaged in it. According to them, this situation is undermining training, driving down standards of work and affecting long-term work planning.

5.7 Training

5.7.1 Numbers in Training

The amount of training being undertaken by contractors closely mirrored the findings of the English research, with 60% reporting having staff in formal training. The actual number in training, however, was proportionately larger, at an average of six young apprentices per firm (only two in the English survey) and one adult apprentice (the same as the English survey). The total number of trainees among the contractors was 961, of whom 790 were apprentices aged under 25; 119 of the remaining 171 were adult apprentices.

The three largest firms in the survey account for 425 of those apprentices under 25 years of age and 75 of the adults (over half of the total number of trainees), so without these, the average number of under-25 apprentices comes down to 1.6 per firm. This questions the common perception that the larger firms are not pulling their weight in terms of training.

Those three largest firms employ 2,800 staff, with around a third of their total staff in training. This picture changes dramatically, however, when assessing the eight firms in the survey that have between 100 and 500 employees (ranging from 120 to 450 and an average size of 213 employees) who between them had only 86 trainees. At just under 11 trainees per firm on average, this represents less than 5% of their workforces and with the largest single number of trainees (25) in a firm of 300 this is still less than 10% of the workforce. Two firms had no trainees at all and only 14 of the 86 trainees were from the over-25 age bracket.

These findings seem to indicate (albeit from a very small sample size) that criticisms of larger firms (excluding the largest) for failure to train employees or take on apprentices may at least in some cases be well founded. The largest firms are undertaking substantial amounts of training, while firms with low numbers of trainees are poaching trained staff from other companies. This is further supported by the finding in Figure 19, that only two of those eight firms' recruitment policies included taking on untrained apprentices.

Nearly all firms with 50–100 employees have staff in training (Figure 22). In actual numbers of firms and numbers of apprentices, six firms had between one and five apprentices, four had between six and ten apprentices and three had between 11 and 15 apprentices, indicating a substantial training effort on the part of at least some of them. In the smaller size bracket (3–49 employees), 58% had some staff in training. Ten of those said that they had between six and ten apprentices, but the great majority had less than five. Although it is difficult to draw

strong conclusions, these findings indicate that a disproportionate brunt of the training effort is being borne by firms in the 50–100 size, that is, the lower end of the medium sized firms.

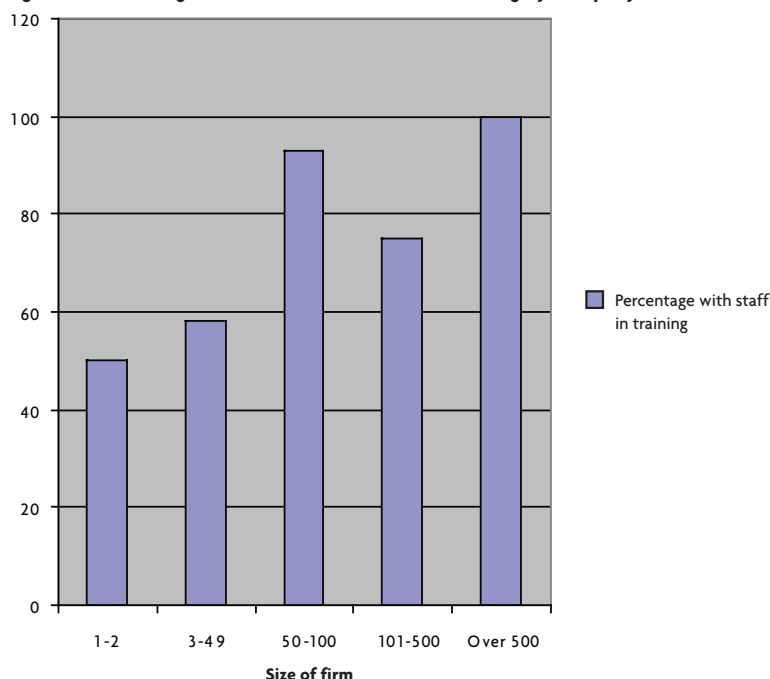
Another key issue is the amount that the smallest firms, or sole traders (with 0–2 employees), invest in training. Half of those firms with 1–2 employees had a trainee, which in most cases is likely to mean a sole trader with an apprentice. However, taking into account the further 128 sole traders who did not have any employees, and therefore of course no trainees, the overall picture is of only 16 of 160 sole traders (1 in 10) having any person in formal training. It should be remembered that the survey did not deliberately target a disproportionate amount of firms with no employees; rather the target aimed at was the equivalent of the sole traders' category of 0–2. The figure of 16 out of 160, therefore, is a research finding.

Bearing directly on the relationship between subcontracting and training, 62% of the 105 firms that subcontract have staff in training, which is in line with the average across all firms. Unfortunately, however, the data does not establish whether or not any of that training was directed at the subcontractors themselves.

This quantitative aspect of training shows that of contractors doing more than half their work on pre-1919 buildings, 58% had staff in training, which is broadly in line with the average across all contractors. Overall, the amount of training being provided by the survey sample is generally in line with UK construction industry data and underlines the importance of getting more sole traders to undertake training. It also illustrates the importance of

'The larger players in the industry must return to an acceptable level of apprenticeship training. This would help substantially to end the poaching from others who do train at a responsible level.'

Figure 22 Percentage of Contractors with Staff in Training by Company Size



distinguishing between how many firms in any particular size bracket provide training, and the actual numbers of trainees they employ. Firms in the 100–500 size category rate reasonably well on the first count, but rather badly in terms of their overall training effort.

5.7.2 Views on Training

The better reputation of training in Scotland is borne out by the views of Scottish employers as compared to their English counterparts. Of the 136 employers with apprentices, 81 (59%) felt that the college-based element of the Modern Apprenticeship (MA) is either 'good' (54%) or 'excellent' (5%). Only 22 (16%) considered it 'poor' or 'very poor'. This compares favourably with the third of English contractors who expressed dissatisfaction with the courses. Among the less than satisfied employers in Scotland, the most common cause for complaint was lack of relevance of the courses (42%), combined with the associated view that on-the-job training was all that apprentices really required (21%).

One surprising finding is that dissatisfaction with college training did not rise among firms whose work is concentrated in the traditional building sector. Over 50% of those working mainly on pre-1919 buildings thought the college elements of the MA 'good' and none 'excellent', which is the same proportion as those firms doing less traditional work. In fact, the firms doing the least amount of pre-1919 work found most fault with college training.

There are two likely explanations for this. Firstly, most, if not all, of those firms working substantially on older buildings are likely to be using the same few sources of traditional training. Secondly, it may also be that their expectations of what the college is able to deliver (with the best will in the world) may not be of the highest order, so judgements are more likely to be tempered. In fact, more traditional building orientated firms interviewed repeatedly suggested that a great deal of training had to be in-house, and college training was only a starting point.

'There are not enough incentives for medium-sized firms to take on apprentices. When trained, they take their skills elsewhere or go to work for themselves, so you lose the investment. That may be inevitable, but it needs a counterbalance with better incentives for apprentices.'

That is reinforced by the earlier finding that those working largely on pre-1919 buildings are no more likely to have staff in training than those in the main construction industry.

Most contractors and sole traders (78%) preferred combining coursework with on-the-job training. Although off-site training was clearly valued, those with an opinion as to how it might be improved (49 out of 148 contractors) felt that the training could be tied more closely to workplace concerns.

5.7.3 Retention Post-apprenticeship

Although the fear of losing apprentices after paying for their training acts as a deterrent to the overall training effort, especially among small to medium sized firms, the findings on retention rates within this survey sample are mixed. Half the firms were able to retain former apprentices for four years or more and, although only 10% reported losing them in under a year, half of them were losing apprentices within three years.

Tracing the movements of staff once they have left a company is a notoriously difficult undertaking, so there is no means of knowing whether they remain within the construction industry or traditional building sector.

Just as recruitment difficulties appeared no greater in rural areas, rurally orientated firms did not appear to suffer disproportionately in terms of retention rates. On the contrary, 50% of rural firms reported losing apprentices within 3 years, as opposed to 62% of those whose work was predominantly urban. The same proportions remained with rural and urban firms for 4–10 years (29%), with the differential falling to the benefit of the rural firms: 21% indicated that

their apprentices generally stayed with them for over 10 years compared to 10% among urban-orientated firms. This may reflect the greater diversity of opportunity in urban areas, but not too much should be read into this from the small sample size of only 136 firms with apprentices.

In terms of company size, 63% of firms with 1–2 employees reported retaining apprentices for 4 years and more; 49% of 3–49 size firms did the same, as did 58% of those with 50–100 employees. The lowest rate was 44%, in the 101–500 sized firms, while 81% of the largest firms had good retention (although the sample size of this group was small). The evidence is not conclusive, other than that the firms in the 3–49 size do not seem to be suffering above-average early loss of apprentices.

5.7.4 Funding for Traditional Skills Training

Most of those contractors with apprentices (120 out of 136) received a grant towards their cost at an average of £3,552 per trainee, and this was estimated to cover, on average, half the costs of training provision.

In comparison, separate research⁴⁵ by ConstructionSkills found that just under one in five (17%) of those firms with employees who had trained had sought any financial support for training in the last 12 months. However, it also found that larger employers have a greater propensity to claim support. It is assumed that smaller companies (which represent a large proportion of all Construction firms – particularly those with 2–9 employees) are not aware of the extent of support available. Similarly construction sector employers and particularly employers with apprentices were more likely than average to have claimed financial support for training activity. By

geography, trainers based in Scotland were above the UK average in terms of their likelihood to seek financial support, with 18% stating that they had claimed such support in the last 12 months.

ConstructionSkills was the main source of this financial support for construction employers who trained staff (93%), and among all those who claimed support, the average amount received over the year was around £2,750. On average the amount received covered 42% of their training costs.

Among those in receipt of CITB-ConstructionSkills grants, three in five (60%) felt that both the range of training for which support can be claimed and the size of grants were fine; a fifth (22%) wanted larger grants but a narrower range, and 12% wanted a broader range but smaller grants.

Discouragingly, the research in Scotland found that when asked if there were any traditional skills training that they would like to offer their trainees, but were unable to do so; only 25 contractors expressed such a wish. Current training provision, which is heavily weighted towards new building skills, means it is unlikely that employers feel that the existing traditional training provision is sufficient. Rather, by inference, it means – at least for the majority of responses – that they did not consider such training necessary at all. Again, this points to a knowledge gap (or absence) rather than a skills issue.

The exceptions to the pattern of a generalised lack of interest in and lack of understanding of traditional building skills are those companies sending their apprentices to the few existing traditional skills courses

(see Chapter 8) and supplementing this with in-house training by skilled craftspeople. Therefore the generalised level of satisfaction with college training expressed by firms working predominately on pre-1919 buildings reflects low expectations, together with a preference for in-house training as the only practical means to pass on specialised skills.

This may account in some degree for the generalised lack of demand for additional traditional building skills training, but the finding remains a disturbing one. Moreover, this response came from only 11 firms, with more than 50% of their work on traditional buildings.

This lack of interest in traditional building skills training has serious implications which go to the core of the purpose of this research. One third of those 25 firms expressing a wish for additional traditional building skills training attributed their difficulties in obtaining this to unavailability of such courses. Of the remainder, 20% said that the obstacles were logistical (there were no available courses within a reasonable distance), and the rest divided their reasons evenly between lack of funds and lack of time to release staff.

The profit margins in the construction industry are notoriously tight and the trend suggests these will become ever tighter. Almost half of the reasons for lack of interest in training were reported as being down to time representing money, and the lack of both inevitably militates against training. However, that should not detract from the significance of those respondents stating that their principal reason for not offering

traditional skills training was simply that there is none available or not within reasonable travelling distance.

Only 10 sole traders (of whom four mainly worked on pre-1919 buildings) expressed an interest in undertaking any traditional building skills training, their reasons for not doing so also divided fairly evenly between lack of availability of courses, and lack of time/money to attend. The few who did want traditional building skills training most commonly cited stonemasonry (and use of lime); other skills cited were traditional plastering, lead-work, drystone dyking, advanced joinery and forge work.

Most of those contractors wanting further traditional building skills training said that better access to financial support would increase their efforts. Presumably, the cost of compensating for the long-distance travel necessary for some to access training providers is another factor behind that response. Access, through increased provision of local training, was the next most commonly expressed support need.

Unsurprisingly, the Highlands and Islands region is in a particularly unenviable situation regarding travelling distances from training sources. Stonemasonry training previously available in Aberdeen (itself 100 miles away from Inverness) is no longer available. The only stonemasonry training available in the Highlands and Islands is the Historic Scotland training unit at Elgin. This is essentially an in-house facility, with capacity for just two non-Historic Scotland apprentices per year from the total of six per year that can be accommodated on the present site.

Additional training sources contractors and sole traders are

‘As things stand today, there is a small group of specialists in Scotland who can cope with just about any kind of conservation challenge. For the rest, they just transfer new build skills to old buildings without thinking twice.’

currently using (beyond their basic apprentices' training) are shown in Figure 23. However, increased financial support (or any other support) will not increase the ability of 66% of the sole traders to undertake training, and only three sole traders indicated that more local sources could make a difference. Their generalised antipathy towards training should nonetheless be considered within the context of sole traders being, on the whole, more rurally based than the contractors. Most striking of all is the fact that a massive 73% of sole traders appear not to be undertaking any training at all.

From this, the only identifiably traditional skills training provider is the Scottish Lime Centre Trust – a source of training for, at most, nine of the 226 contractors interviewed and two of the sole traders.

5.7.5 Self-appraisal of Training Needs

While responses on training in general were not encouraging from a traditional building skills perspective, the final question asked of contractors regarding training prompted a more challenging set of answers to interpret (see Figure 24). When asked to sum up their overall situation regarding training and training needs, it is at least reassuring that only 13% (30) of the contractors felt that their staff had nothing left to learn.

However, 67% (84) of the sole traders stated that they had no need of any further training, which, as seen in Section 5.7.4, is at least consistent with the amount of training they are actually doing. This response underlines the large challenge of how to involve sole traders in training programmes.

Whether those who stated that they had no training needs would be receptive to having training opportunities brought to their doorstep is debatable, unless there are clear incentives for training. This is underlined by the lack of receptivity to specifically traditional building skills training. There is a need for stockholders to demand high standards of work and for those demands to filter into the functioning of the market. The current paucity of traditional building skills training provision, and the likelihood that the younger sole traders have never received more than cursory exposure to it, is of particular concern to the traditional building sector.

The contractors' response is more promising, with 65% undertaking training, albeit with only 12% on a regular basis. However this more positive picture must be tempered by the previous responses regarding specifically traditional building skills training, and the additional training providers that are used. It is doubtful how much of this regular training is related to traditional skills, especially given the extremely limited amount of currently available training.

Once again, it is important to disaggregate contractors' responses by company size (Figure 25), with the most mixed response among the smallest firms, whose training practices varied widely. Regular training was the exception among all sizes of firms.

5.8 The Use of Traditional Building Materials

5.8.1 Extent of Use of Traditional Materials

One basic indicator of whether a building firm has traditional building skills is how much it uses traditional

building materials on pre-1919 buildings (Figure 26).

The answers in this figure pose more questions than they seem to resolve: what, for example, does 'sometimes/usually' actually mean? Do they use some materials and not others. The interviewees were not asked which materials were being used or in what contexts, and in retrospect this would have been helpful.

Nevertheless, only 19.5% of contractors and 28% of sole traders stated that they used traditional materials all of the time. With a minimum amount of possible exceptions (such as the great difficulty and expense of sourcing a few scarce materials such as wrought iron) there is no reason why traditional materials should not be used all of the time on all pre-1919 buildings. The conservation code is to repair where possible and otherwise replace like with like. Whether or not the stockholder demands their use is another matter, and, of the nine contractors who said that they never used traditional materials, the reason all of them gave was that there was no demand from their clients. Interestingly, this was the preferred reason over cost.

It is equally possible that many of those who said they used traditional materials only 'some of the time' (42% of contractors and 33% of sole traders) did so because their clients feel that such materials are too expensive, but this again is speculation. The cost of traditional materials is a complex issue in which initial and maintenance costs have to be weighed against longevity through whole-life costing, as well as current market trends (see Section 9). Also, saying that

Figure 23 Additional Training Sources Used by Contractors and Sole Traders

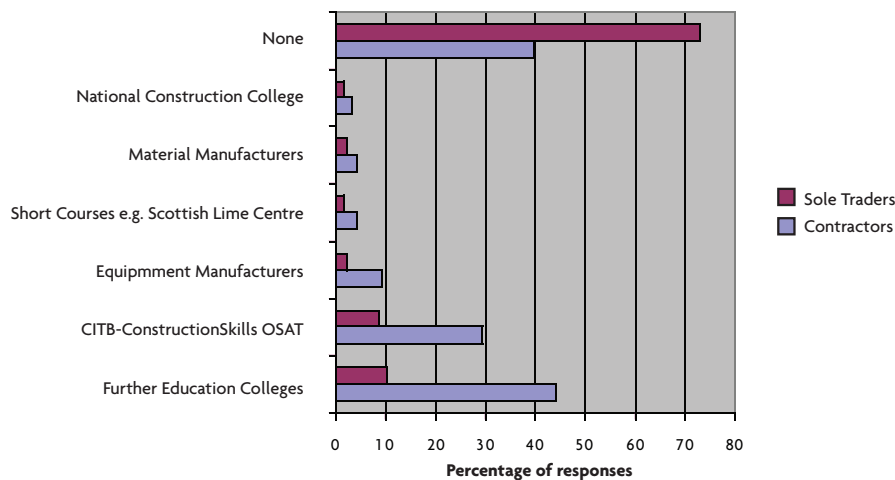
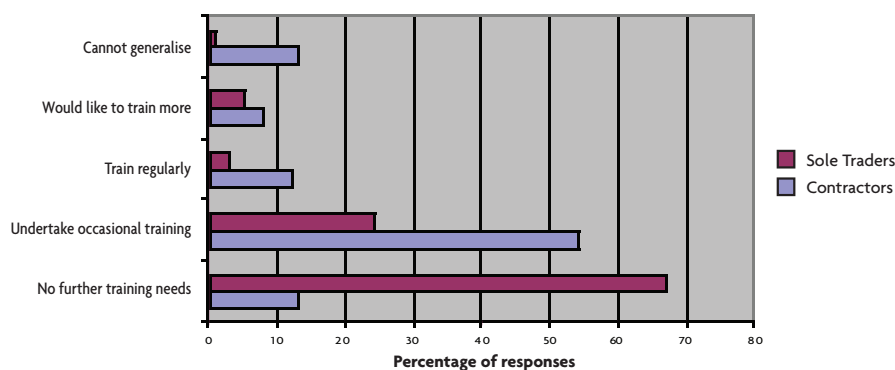


Figure 24 Contractors and Sole Traders Assessment of Training Needs



traditional materials are used 'some of the time' probably means not very much. When that translates into, say, using planed timber wood for the window frames of a building but Portland cement (as opposed to lime) for the harling, the picture becomes largely negative.

As shown in Figures 27 and 28, a more encouraging picture arises from considering the use of traditional materials by the amount of work the contractors and sole traders undertake on pre-1919 buildings.

Although there were three alarming cases of contractors (and one of a sole trader) whose work is over 50% on pre-1919 buildings declaring that

they never use traditional materials, these were the exceptions. Contractors on the whole appeared better versed in using traditional materials than sole traders, with 83% of those working more than 75% of their time on older buildings stating that they used them most or all of the time, as opposed to 68% of the sole traders.

5.8.2 Source of Traditional Building Materials

Another indication of traditional skills is knowledge of the provenance of the materials being used, with 27% of the contractors and 17% of the sole traders not knowing what percentage (as an estimate) of the materials they used came from Scotland (Figure 29).

The rather high number of those not knowing whether the materials used were Scottish or not indicates a clear lack of knowledge and interest. If a builder does not know exactly what kind of material they are working with, it is highly doubtful that they know how to use it to the best effect. This also suggests that no effort has been made to use compatible materials, an undertaking which involves knowing where the materials being used originated. These findings also cast further doubt over earlier assertions by sole traders in particular, although not exclusively, regarding their lack of a need for further training, or their interest in traditional building skills training.

Once more, the contractors' view of themselves and their workforce is rather positive. When asked about their employees' knowledge of and ability to work with traditional materials (on a scale of 1–5 where 1 was 'poor' and 5 'good'), 79% of contractors opted for the top two categories and under 5% said they were poor or quite poor. Such findings are based on subjective self-assessments and should be treated with some caution. Future research should include more searching questions to probe real skill levels in handling different materials in order to establish a more complete picture regarding the state of skills in Scotland for using traditional materials.

5.9 Career Progression

A great majority of contractors (70.5%) and sole traders (71%) would like to see a clear progression ladder in place for their tradecraft: that is apprentice; craftsperson; senior craftsperson; master craftsperson. What this should be linked to, from a range of non-mutually exclusive options, is shown in Figure 30.

Figure 25 Contractors Assessment of Training Needs by Company Size

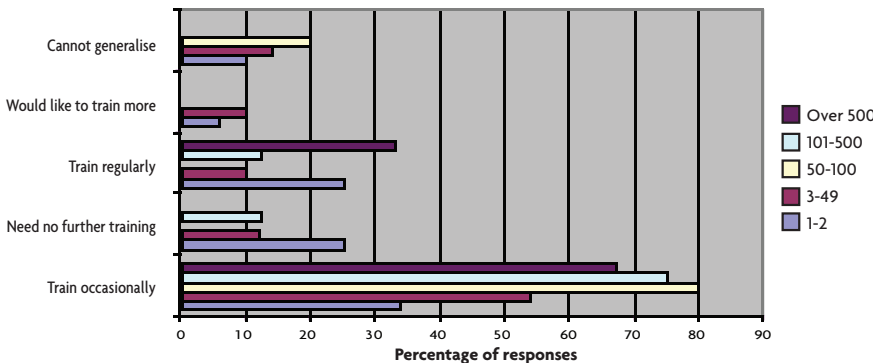
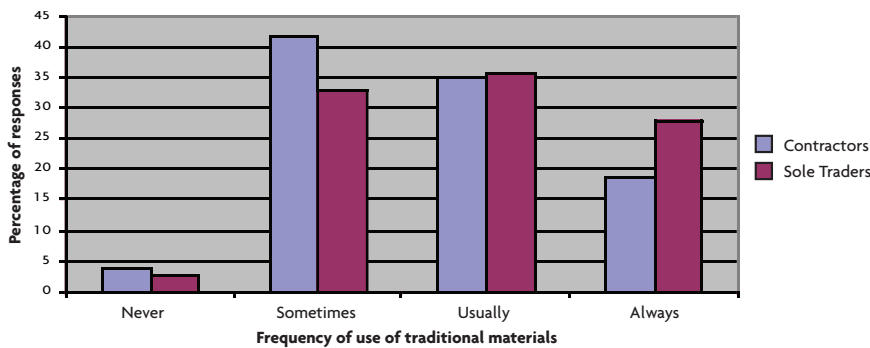


Figure 26 Use of Traditional Building Materials by Contractors and Sole Traders



These findings are quite similar to those in England, both in terms of favouring career progression and the preference that this be linked to experience. The high proportion favouring experience as the main criterion implies a relative lack of insistence on formal upskilling. However, the very concept of career progression does indicate willingness for measurable standards by which progression can be achieved. The degree of enthusiasm for career progression was essentially the same among those working predominantly in rural and urban areas and was also the same across all trades. This can be interpreted as a widespread desire for a greater internal structure to the building trades than currently exists.

5.10 The Regional Dimension

The regional distribution of the contractors by company size (Figure 31) shows the tendency for

the larger firms to be concentrated in the central belt with the Borders, Dumfries and Galloway in particular having a preponderance of small firms.

5.10.1 Type and Scope of Trade Activities

Of the contractors, 41% in the Highlands and Islands and 44% in the Borders, Dumfries and Galloway work mainly in rural areas, compared to 20% in the central belt. The proportions for sole traders were 50% rural in the Highlands and Islands, 48% in the Borders, Dumfries and Galloway and 22% in the central belt.

The proportional share of contractors and sole traders working mainly on pre-1919 buildings is roughly the same for each region (34% in the Highlands and Islands, 39% in Borders, Dumfries and Galloway and 35% in the central belt), but the same does not apply to absolute numbers. The survey found only eight genuinely specialist firms (doing over 75% of their work on older

buildings) in the Highlands and Islands, four in the Borders, Dumfries and Galloway and 34 in the central belt. This confirms the findings from qualitative interviews, and the general view in the industry that the central belt draws upon a much larger pool of specialist, traditionally orientated firms than elsewhere.

Although the numbers are roughly proportionate to the populations in the three regions, the implications remain, especially in the Highlands and Islands, that there are a small body of firms being spread very thinly in relation to the geographic area they have to cover. Inevitably, there may be no firms on the islands with specialist skills.

The regional division of activities was quite evenly spread, but in the Borders, Dumfries and Galloway there was a shortage of specialist trades/craftspeople, notably stonemasons, plumbers and glaziers.

Current demand and likely labour shortages are more marked in the Highlands and Islands and Borders, Dumfries and Galloway than the central belt, with 86% and 89% respectively of contractors in the first two regions reporting being able to forecast their workloads over two months in advance, against 78% in the central belt. Similar figures (87%, 86% and 75%) were recorded for sole traders in the three respective regions.

Regarding the geographic scope of work, the contractors and sole traders in the Highlands and Islands were in line with the Scottish average, with 60% reporting that the majority of their work was local and the remaining 40% being regional. In the central belt the picture was rather different; 48% of contractors said that their work was mainly local, opposed

Figure 27 Contractors' Use of Traditional Building Materials by Amount of Pre-1919 Building Work

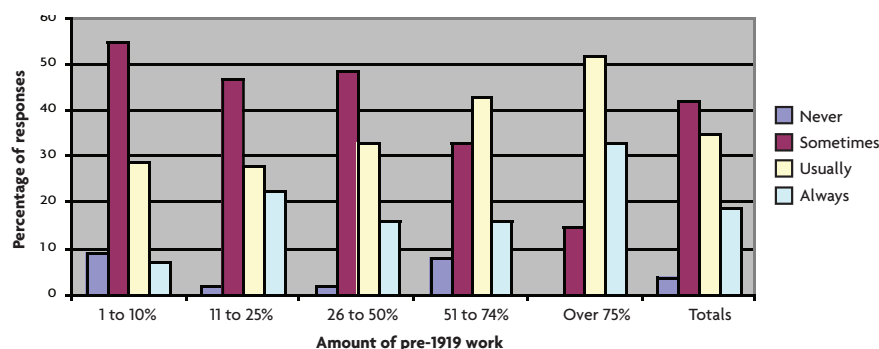


Figure 28 Sole Traders' Use of Traditional Building Materials by Amount of Pre-1919 Building Work

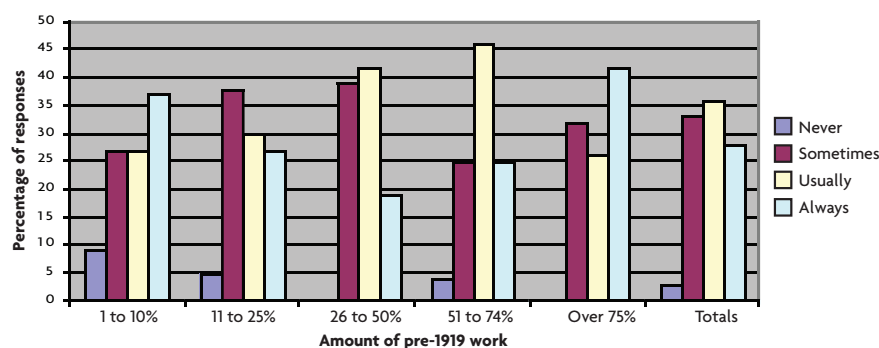
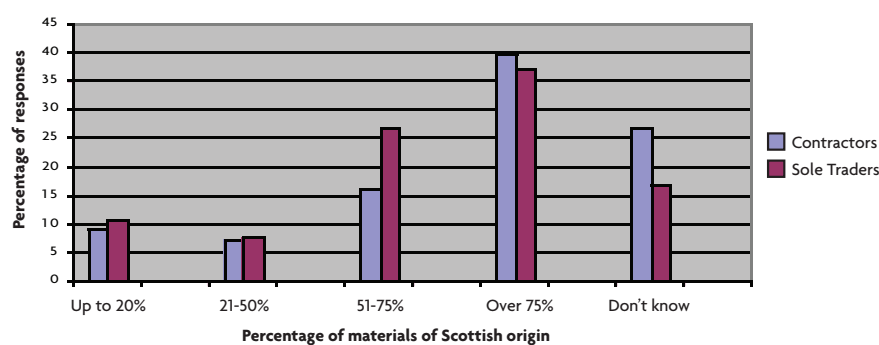


Figure 29 Percentage of Traditional Building Materials of Scottish Origin



to 73% of sole traders, suggesting the greater demand for and mobility of larger firms based in the central belt to work across Scotland. Although only 41% of contractors in the Borders, Dumfries and Galloway reported their work as being mainly local, the remainder mostly worked regionally rather than across Scotland.

Public versus private division of work was consistent with the national averages across the three regions, but no contractors from the Borders, Dumfries and Galloway and only

three sole traders reported doing a small amount on religious buildings.

5.10.2 Recruitment, Subcontracting and Training

While 62% of contractors in the Highlands and Islands and 66% in the central belt had taken on staff in the past 12 months, this fell to only 41% in the Borders, Dumfries and Galloway. The data does not permit an exact division by region of the numbers employed, but reflects how much the Borders, Dumfries and Galloway region has lost out of the

boom in new building under way elsewhere in Scotland and the low GVA within this region.

Only 33% of contractors in the Borders, Dumfries and Galloway reported marked difficulties in terms of recruitment, compared to 56% in the Highlands and Islands and 53% in the central belt. There was no marked regional variation in those experiencing recruitment difficulties regarding whether they attributed this to a skills shortage or skills gap. Somewhat contradictorily, 15% of firms in the central belt reported having outstanding vacancies, against only 6% in the Highlands and Islands and 11% in the Borders, Dumfries and Galloway. The implication is that firms in the centre are more selective about whom they employ than the other two regions.

Most contractors in the Highlands and Islands (73%) said it was easy or quite easy to retain skilled staff, as did 79% in the central belt and 83% in the Borders, Dumfries and Galloway.

In the Highlands and Islands 72% of contractors reported difficulties in the recruitment of skilled subcontractors, compared to 55% in the central belt and 63% in the Borders, Dumfries and Galloway. In the Highlands and Islands generally 20% had to wait over two months for sub-contractors to become available for work on pre-1919 projects, whereas this was 8% and 13% for the central belt and Borders, Dumfries and Galloway respectively. Interestingly, 41% of contractors in the Highlands and Islands rated the skills of the subcontractors they worked with in the top two brackets, compared with 31% in the central belt and 37% in the Borders, Dumfries and Galloway.

Figure 30 Preferred Linkages for Career Progression among Contractors and Sole Traders

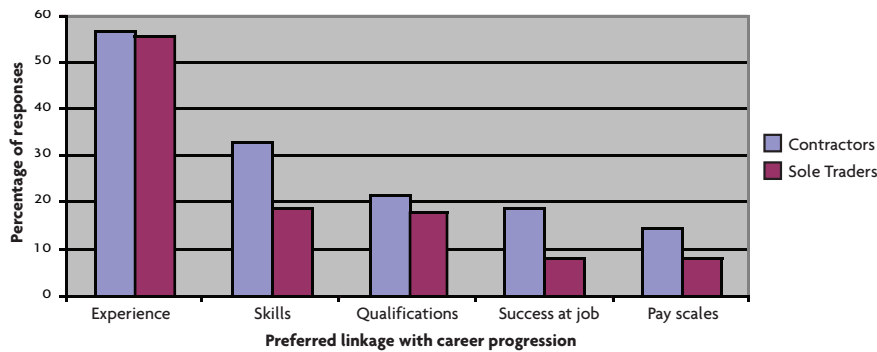
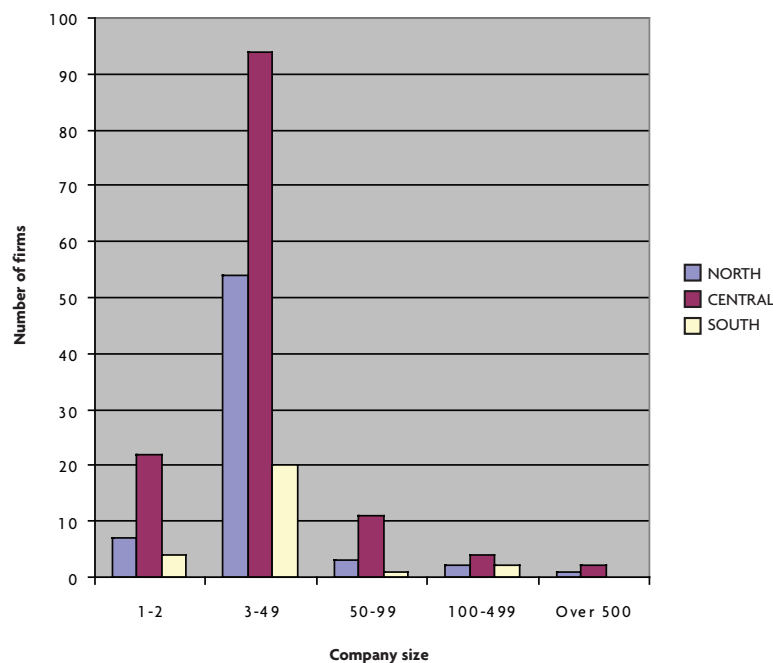


Figure 31 Regional Distribution of Contractors by Company Size



The percentage of contractors with staff currently in training was identical for the Highlands and Islands and for the Borders, Dumfries and Galloway (63%), with 58% in the central belt. Considering the earlier findings that the most common response to recruitment difficulties was to undertake more training, it appears that a great deal of that training in the central belt is in-house as opposed to formal training courses. Consistent with this is that 56% of central belt contractors with apprentices currently in training thought the college element of the Modern Apprenticeship excellent or good and 19% considered it poor.

The majority of Highlands and Islands contractors (61%) and Borders, Dumfries and Galloway contractors (72%) considered this training good or excellent, and 15% and 6% respectively thought it poor.

A surprising finding is that no real regional difference exists regarding retention of apprentices, with exactly half of the companies in the central belt and the Borders, Dumfries and Galloway having lost apprentices within three years, and 48% in the Highlands and Islands. This compares with an industry wide rate of 48%.⁴⁶

With respect to additional sources of training used by firms, the most marked finding is that 49% of contractors in the Highlands and Islands used the ConstructionSkills On-Site Assessment and Training (OSAT) programme, compared to 24% in the other two regions, which could be especially useful in outlying rural areas.

5.10.3 Use of Traditional Materials

Regional use of traditional materials among contractors and sole traders do not show great anomalies compared to the overall Scottish picture. The exception was that 90% of sole traders in the Borders, Dumfries and Galloway reported that they used traditional materials most or all of the time, compared to 59% in the central belt and 57% in the Highlands and Islands. Among contractors, 56% in the Borders, Dumfries and Galloway usually or always used traditional building materials, as did 57% in the central belt and 50% in the Highlands and Islands. The initial impression is that there is a pool of particularly well-trained sole traders in the Borders, Dumfries and Galloway, also well versed in the use of traditional materials, but who do not even work predominantly on pre-1919 buildings for the most part. However, more detailed targeted research on the types and use of materials is necessary to establish a clearer picture.

5.10.4 Career Progression

A joint average of 71% of contractors and sole traders in the Highlands and Islands and the central belt were in favour of a career progression route (in line with the national average of 71% and 72% respectively), as were 80% in the Borders, Dumfries and Galloway (partly accounted for by the sole traders, 86% in favour). The Highlands and Islands alone had more contractors than sole traders in favour of career progression.

MANUFACTURERS AND SUPPLIERS OF TRADITIONAL BUILDING MATERIALS

6

- 6.1 Manufacture of Traditional Building Materials in Scotland
- 6.2 Traditional Building Materials Manufacturers and Suppliers: Key Activities in the Survey Sample
- 6.3 Recruitment
- 6.4 Training
- 6.5 Manufacturing Processes and Methods
- 6.6 Career Progression

manufacturers and suppliers

Knowledge and understanding of the practical use of traditional building materials is vital for proper conservation, repair and maintenance, and so the material supply chain for these materials is crucial.

This section of the report assesses this vital aspect gained from qualitative and quantitative interviews with a sample of manufacturers and suppliers of traditional building materials.

6.1 Manufacture of Building Materials in Scotland

The decline of manufacturing industries in the UK since the mid-19th century is well documented. However, this manufacturing heyday coincided with the Victorian construction boom and thus a large building stock has been inherited from a period when materials and fittings were produced in abundance and to the highest standards. Moreover, exotic materials such as tropical hardwoods were also readily available. This historical backdrop presents a particularly exacting set of challenges for traditional building manufacturers in today's context.

Manufacturing's share of UK GDP dropped by 0.4% between 1994 and 2004 but by 0.6% in Scotland, the highest single drop within the UK.⁴⁷ Scotland, therefore, continues to suffer disproportionately in the continuing overall decline of UK manufacturing. In 2003, all manufacturing activities in Scotland generated £11.8 billion, or 15% of the total Scottish GVA.⁴⁸

The manufacturing sector covers considerably more than just building materials. After removing wholly unrelated activities, the GVA figure comes down to £2 billion for manufacture of basic and fabricated metals, wood and wood products and, outside of manufacturing, non-energy producing mining and quarrying. No accurate figures exist that would

reflect this sector, which is in fact a set of sub-sectors of larger manufacturing activities. The closest proxies are those relating to the economic activities addressed by Proskills, (Sector Skills Council for Process and Manufacturing Sector). Established in 2005, Proskills covers five areas:

- building products (principally tiles and bricks)
- coatings (principally paint)
- extractives (quarrying and mining)
- glass
- printing

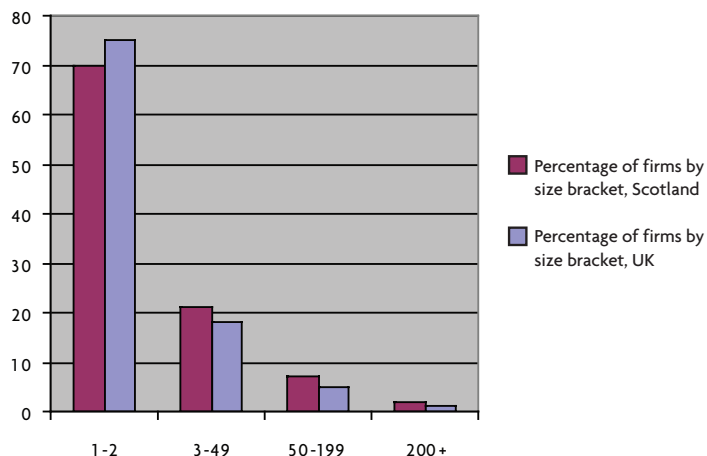
With the exception of printing the remaining areas are all closely related to the manufacture of building materials. The detailed footprint of Proskills is rather complicated and covers SIC 10; 12; 13; 14; 21.24; 22.2; 24.3; 26.1; 26.26; 26.4–26.8 and 40.3, so missing from the Proskills mandate are the key areas of metal- and wood-related activities. These tend to fall

between construction, engineering and manufacturing, leaving them without a fully representative body.

The firms included within Proskills remit employ 21,000 people or 6% of the Scottish manufacturing and processing workforce. This is slightly lower than the 7% figure for the UK as a whole.⁴⁹ As shown in Figure 5 in the previous chapter, manufacturing firms are, predominantly, not as small as in the construction industry, and are larger than the UK average for their activities. However, as shown in Figure 32, the great majority are still small firms.

As within the construction industry, the Scottish manufacturing and processing workforce is essentially male (81%) and white (100%). In terms of their age profile, no figures are currently available for Scotland, but the UK manufacturing and processing workforce is older than the average across the economy, with only 9% within the 16–24 age

Figure 32 Percentage of Firms within the Proskills Footprint by Size in Scotland and the UK





bracket, compared with the 14% UK average. Qualification levels are higher than the manual construction industry workforce, with 40% of manufacturing workers having S/NVQ Level 3 and above, compared with 25% in construction (again, no figures are currently available for Scotland).⁵⁰

The percentage of Scottish firms reporting that they provided off-the-job training to employees within the last 12 months (58%) was the same as that of the construction industry, but the proportion of employees receiving training was at 24% rather low compared with 37% for the whole Scottish economy.⁵¹ This reflects the prevalence of in-house training within the industry.

In terms of skills shortages, only 400 vacancies were reported in Scotland, of which half were hard to fill, and 100 attributed to skills shortages, only 2% of employment. The lack of dynamism within the industries is probably the principal explanation for this, and 30% of firms reported skills gaps.

The sector within Proskills of particular relevance to this study is the extractive and mineral processing industry. It appears that skills and training issues have become more important to managers over the last five years, including among smaller firms.⁵² Environmental concerns, multi-

skilling and flexibility have also emerged. These were particularly stressed by hard-rock (as opposed to sand or gravel) extractors and most underlined by Scottish firms.⁵³ The principal driver across all firms for increased training effort was health and safety concerns, both for legislative and accident-reduction reasons.⁵⁴

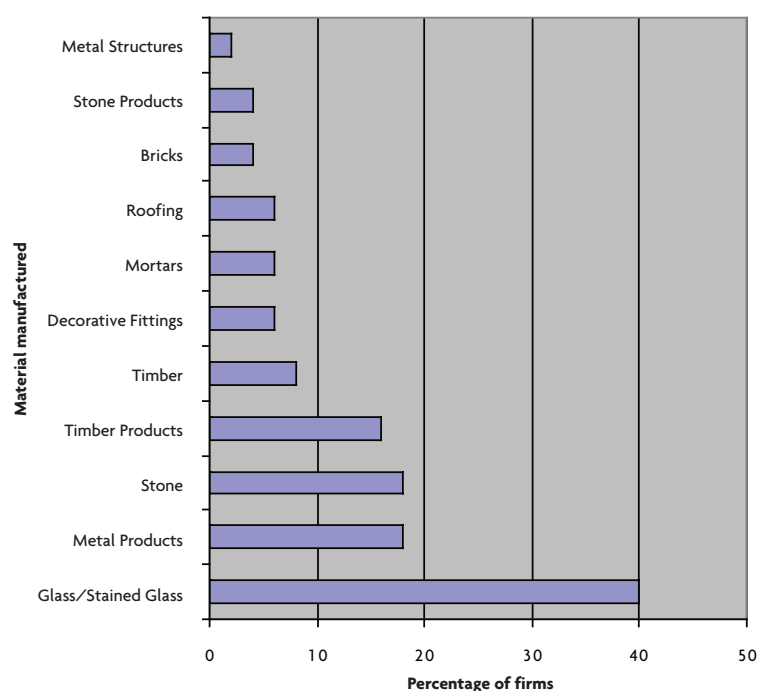
6.2 Manufacturers and Suppliers: Key Activities in the Survey Sample

Of the 50 firms surveyed, the division of basic activity among those interviewed was:

- 16 suppliers
- 6 manufacturers
- 12 manufacturer/suppliers
- 12 manufacturer/supplier installers
- 4 manufacturers/suppliers/installers and specifiers.

The division by type of materials manufactured/supplied is shown in Figure 33.

Figure 33 Materials Manufactured and Supplied



These firms employed 763 full-time and 65 part-time staff (average 15 full-time staff per firm); 27 firms had 3–49 employees, 18 had 1–2, four had between 50 and 100, and just one over 100.

The largest single group (39%) reported that only 25% or less of their materials were used on pre-1919 buildings, 10% did not know and the rest divided fairly evenly between the 26–50%, 51–75% and over 75% brackets.

Apart from two large general builders' merchants suppliers the firms specialised in one product, with the exception of glass and timber products. Four glass manufacturers were also joiners and glaziers, manufacturing windows and glass doors. The other manufacturers of timber products also made windows and doors, and some had a wider range of activities. The high number of glass manufacturers in the survey is in part due to the fact that 10 were stained glass manufacturers listed in the BCRS and available to respond to the survey. These were all micro firms employing a maximum of four people, with nine located in the central belt and one in the Highlands and Islands.

Of those who only supplied materials, six firms supplied glass; three, metal; three, stone; two were general builders' merchants; two supplied mortars; one supplied roofing materials, bricks, interior fittings, metal products, stone products, and timber and timber products. As this indicates, and with the exception of the builders' merchants, most suppliers were specialists, only seven supplied more than one product, and these were all within the same material

(except for firms supplying windows and glass doors).

The materials and items produced (but not including all materials supplied by the two builders' merchants) were: architectural metalwork; bricks; bronze; cast iron; concrete blocks; finished joinery products; fireplaces; glass; granite (hewn blocks – polished and unpolished); lead; lime mortar; lime putty; lime wash; metal products (lamp-posts, gates, railings etc.); mild steel; paints and coatings; paper (wall hangings); patterns for cast metal; plasterwork (interior); Portland cement; rainwater goods; sandstone (carved and hewn blocks); stained glass; stone paving; tiles (slate roofing tiles); tiles (wall/floor ceramics); timber (logs and rough sawn timber products); windows (sash and case); and wrought iron.

The manufacturing craftspeople directly employed by those firms involved in more than the supply of materials were (in descending order of numbers of firms employing them): glaziers; joiners; masons (both bankers and fitters); master glass painters; blacksmiths; quarry excavators; civil engineers; electrical engineers; pattern makers; roofers; tilers; cabinet makers; core makers; decorators; founders; gilders; moulders; plasterers; and wood machinists.

Only three firms engaged subcontractors; two were glaziers that subcontracted joinery, and a large engineering products manufacturer subcontracted some aspects of the installation process.

This limited amount of subcontracting illustrates the

highly specialised nature of much of the manufacturers' work and is a key difference from the contractors. While it is a structural advantage in terms of training, the degree of specialism required in many firms brings with it another set of training difficulties.

Firms that specialised also indicated a tendency for their products to be used UK-wide. Although no firms reported that most of their work was UK-wide, five said that up to half of it was, and seven worked at least occasionally all over the UK. In the Highlands and Islands and the Borders, Dumfries and Galloway, however, the overall tendency towards being locally orientated was more marked than in the central belt, with over half of the firms in both regions saying most of their materials were used locally.

6.3 Recruitment

Companies engaged in manufacturing activity (not the sixteen suppliers) were asked about recruitment and training issues, thus making the base smaller but more relevant to the survey as a whole. Most of the small manufacturing firms and even the larger firms in metal and joinery manufacture indicated that recruitment was a very rare event, as they tended to retain a small core of staff for many years

That apart, the manufacturing firms tended to share the reluctance of the contractors to take on untrained staff: 24% said they recruited unskilled apprentices, compared to 36% preferring staff in no need of training and 40% in need of some training. The type of bad experiences with young apprentices reported by

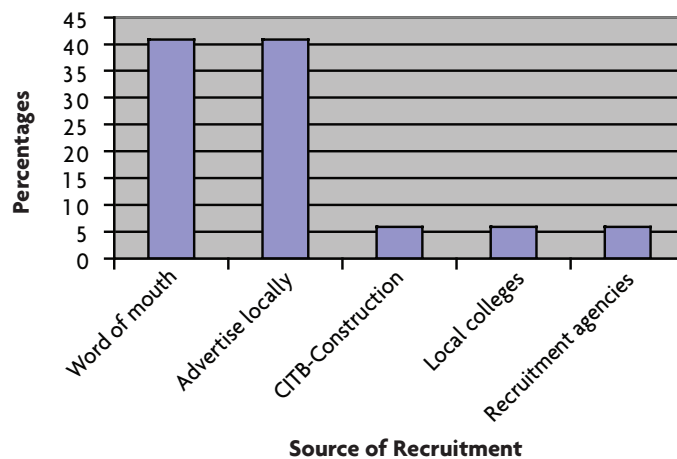
contractors was also common among manufacturers. This primarily concerned a question of attitudes and predisposition to work, since employers expected to be supplementing much of the formal college training in-house. Reports that young people seemed to have fallen into the job without prior thought and then found it too physically demanding were common and appeared to have discouraged some employers from taking on apprentices. Manufacturers' recruitment sources (Figure 34) were similar to the contractors, albeit less varied.

The proportions recruited by word of mouth or local advertising were even higher than with the contractors (82% : 70%). The differential was largely due to recruitment from schools, since no manufacturer cited schools as a source of recruitment, reflecting a lack of engagement in more varied recruitment methods.

Views on the overall difficulty of recruitment were mixed: 59% considered it easy or quite easy to recruit trades/craftspeople, while the remainder suggested that it was hard or quite hard (none were neutral). Disaggregation by the type of manufacture showed that metal producers had serious recruitment problems in all but one case. Also, the only stained glass maker expressing difficulties (a reflection of their small size and smaller staff turnover) did so in respect of finding lead-workers. The other firms experiencing difficulties were principally joinery manufacturers.

The specific trades cited as being difficult to recruit also reflected the particular troubles of the metal manufacturers, that is, green sand

Figure 34 Manufacturers' Sources of Recruitment



moulders (who work with cast iron); blacksmiths; stainless steel fabricators; lead-workers; coppersmiths and pattern makers. Non-metal trades cited were masons and joiners, and four larger firms indicated that all trades were problematic in terms of finding higher levels of skills.

A lack of trades/craftspeople (skills shortage) was cited by 58%, while 17% attributed this to skills gaps and 25% said both. The response to this from the contractors (with one exception) was not to offer more training. Two firms said they expanded their recruitment effort by advertising more widely, in part in an effort to attract skilled workers from Eastern Europe. However, for the majority of firms the response was one of 'no action' when unable to find the necessary staff.

In several cases among metal-producing firms, 'no action' simply meant that the firm got smaller. They reported plenty of demand for work, but were unable to meet that demand. Reportedly, ornamental pattern-making is at an absolutely critical juncture, with only three people still possessing the requisite skills. In another case, a joinery manufacturer stated that,

in desperation, he had just purchased new machinery for making doors, 'and that says it all'.

This picture of skills shortages needs to be balanced against the fact that, whatever their difficulties, only three firms reported currently having outstanding vacancies of more than three months for joiners, masons and quarry excavators. However, it is difficult to interpret this finding in the light of the protestations of skills shortages; those firms describing their general shrinkage presumably no longer think in such time scales, and many firms have low staff turnovers.

Most firms (89%) indicated that it was easy or very easy to retain staff, and although from a small sample size, the firms who said it was difficult were from the Highlands and Islands and in different trade areas: metal, stone and glass. While such high retention may in part reflect firms taking all necessary steps to keep their precious skilled staff, it may also be due to high degrees of specialism. This is confirmed by the qualitative interviews, and is borne out by the small number of firms who regularly take on apprentices, with 70%



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saying that they tended to stay with the company for over 10 years after finishing their initial training.

Small specialist firms in both metal work and joinery manufacture stated they were able to be selective in recruitment, since craftspeople were eager to work for them. However, while it is encouraging that such companies still exist, these were the exception among the survey sample.

6.4 Training

Only 30% of manufacturers had staff (57) in formal training; only two were aged over 25, and the rest were apprentices. In general, views on the college-based element of the Modern Apprenticeships were

lukewarm: 30% found these good or excellent, and 30% reasonable; the rest either did not know or found them poor. One leading manufacturer stated that ‘we have found levels so appalling at the SVQ level that henceforward we want apprentices to do Higher National Diplomas’, but this was as much to do with general educational standards as particular craft skills.

The manufacturers offered very few views on how college training could be improved. One surprising suggestion, given the lack of recruitment from schools, was to seek more contact with schools. The great majority (74%) felt that training should include both on-the-job experience and

off-site learning, while 23% considered that all that mattered was work experience.

What emerges strongly is a degree of indifference towards college training in its present form, which is based on the experience that it does not have much of relevance to offer the manufacturing activities, and that this is unlikely to change.

There is a sense that manufacturers feel the modern building industry has entirely passed them by and is indifferent to their needs, resulting in a degree of mutual rejection, as shown by 82% of manufacturers provide in-house training (Figure 35). As 30% of manufacturing firms have apprentices, they themselves drive training provision.

A serious problem of providing such substantial proportions of in-house training is that of time, and of money as a factor of time. Time constraints impinge on manufacturers' receptiveness to additional traditional training, as shown by only six firms wishing to undertake training that is currently unavailable. The particular training they wanted was advanced masonry, medieval glass and glass blowing, green sand moulding, and advanced sash and case window production.

A more generalised desire was for greater freedom through subsidies to access when required specific outsourced training not available in Scotland. Blacksmithing training, for example, is available in England, and other more specialised skills training was available only in Europe or the USA. However, the consensus of opinion on these issues was not that Scotland should attempt to provide such training, rather that there be more receptiveness to providing funding to attend training courses elsewhere.

There were fewer complaints of colleges being at great distances than with the contractors, since

there was simply no expectation of the situation being any different.

At present, only eight companies (apart from those with apprentices) were using outside training sources, and six of these were further education colleges. Of the other two, one was using an equipment manufacturer's course and the other the CITB-ConstructionSkills' OSAT programme.

As shown in Figure 36, the manufacturers' overall assessment of their training needs seems to contradict other findings, as none responded that they would like to provide more training but do not have time, and none stated that they train and learn regularly. Given that 59% said they do undertake some training, the implication is that they do make the time, but that training cannot be on a regular basis.

Despite 35% declaring no training needs, training was a more pressing issue for manufacturers than contractors. The traditional building material manufacturers suggest that training is a daily concern, with each individual firm having to fend for itself.

Figure 35 Amount of All Training Provided In-house among Manufacturers



'There is an absolute lack of specific training for our work. What is taught today does not provide a sufficient knowledge base on which to build the necessary skills.'

'Better networking among those who have skills is needed. I am not sure how this could be accomplished, but there is a real need for coordination in order to preserve and foster increasingly rare higher joinery skills.'

Figure 36 Manufacturers' Assessment of Training Needs

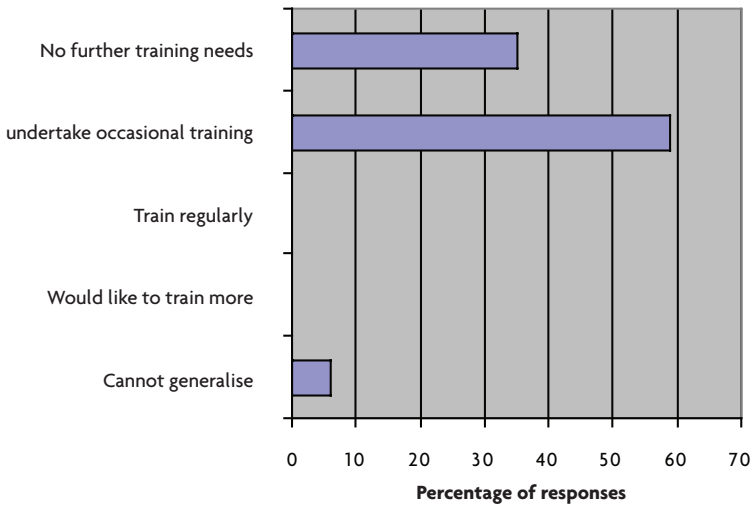
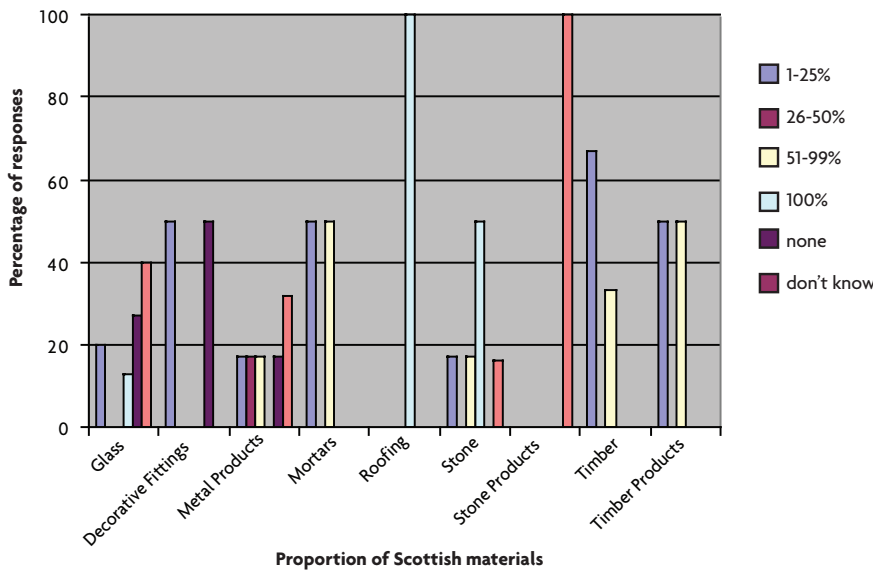


Figure 37 Percentage of Manufacturers' Materials from Scotland



6.5 Manufacturing Processes and Methods

Although the disparate activities of the firms surveyed presented a complex undertaking for this study, an effort was made to understand the range of manufacturing processes and methods.

Only five firms extracted raw materials, four stone quarriers and one glass manufacturer. The rest worked with raw materials obtained

from other suppliers, with the exception of one glass maker and one metalworker who both worked with semi-processed materials.

As shown in Figure 37, mixed results were obtained regarding the percentage of materials worked with which were originally Scottish.

It is reassuring that those who did not know what percentage of their materials was Scottish, with the exception of one stone supplier,

were working in fields where it is understandable to be unsure. That applies to glass and scrap metals whose original provenance may be impossible to know. Quarries responded that all their materials were Scottish, while others working in and supplying stone were likely to work with a combination of Scottish and imported materials.

The most common source of stone was England, notably Northumberland sandstone. Firms were also importing marble largely from Portugal and Italy, and granite from a wide range of countries. China was a growing source for both granite and slate, while other sources of slate were Italy and Spain. Those supplying slate of Scottish origins were recycling from older buildings, and mortar suppliers specified that the lime mortars were English or European.

In general, England was the most common source for most materials, with the exception of wood, which, when not Scottish, was either Scandinavian or Canadian. Glass, though mainly from England, was also sourced from a number of European countries and, in two cases, from the United States.

The manufacturers most commonly reported that less than 25% of their materials were of Scottish origin, and 47% attributed this to inadequate supply chains, particularly timber, glass and stone. The next most common response (38%) was that no suitable materials were available regarding timber, glass and stone, lime mortars and plasters. A further 10% indicated that the quality of available materials was insufficient, and the remaining 5% were unsure. None gave expense as the reason: apparently, Scottish materials are not expensive, but simply unavailable.

This research aimed to establish the extent to which firms were using traditional methods, defined as 'methods largely unchanged from those of the nineteenth century, although using modern machinery where appropriate', as shown in Figure 38.

Modern methods have made very little impact on the practices of building materials manufacturers. Those firms using solely or mainly modern methods were producing glass, stone and metal products. In all cases they were working at the high-tech end of the market, with less than 25% of their materials being used on pre-1919 buildings.

Glass and metal (small-scale blacksmiths) were manufactured solely using traditional methods, while manufacturers of other materials were more inclined to have used a combination of modern and traditional methods. The reason for not using more traditional methods was overwhelmingly cited as cost, with metalworkers particularly at pains to point out significant cost differences when working in mild steel as opposed to wrought iron, and additional problems of sourcing the materials in the first place.

When asked to assess their employees' skills in working with

'The biggest difficulty we have is that we have to train our own people, but it is very hard to find the time to take people out of line to do this:

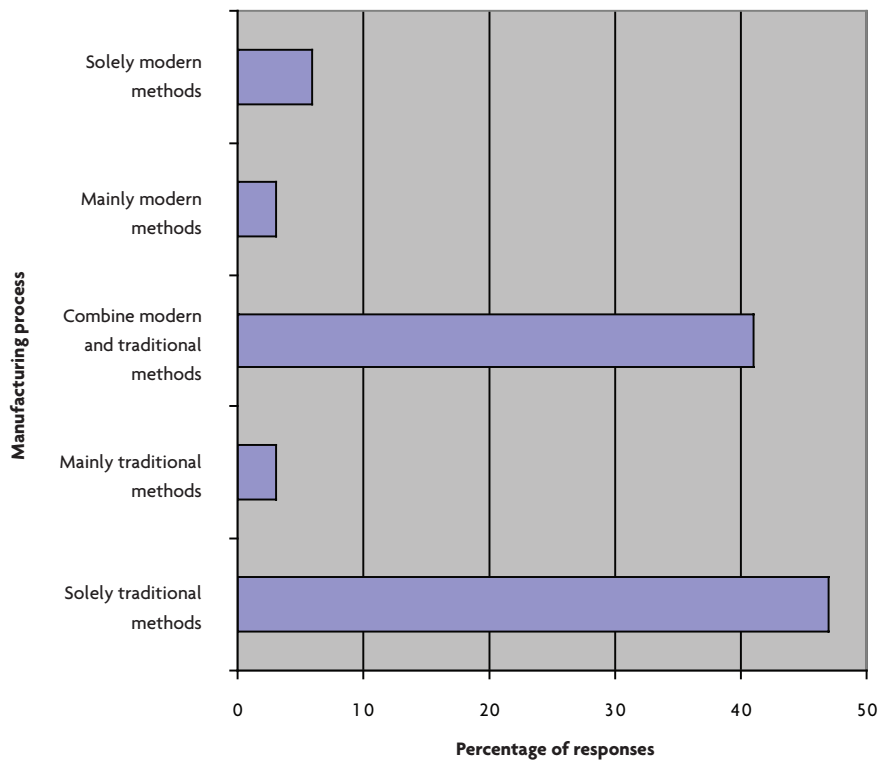
I would like to provide more training myself personally.

The thing is that we, like everyone else, work on very tight margins. If we put a training levy on our prices then we would lose work, so we need a training subsidy if we are to continue to maintain our standards adequately.'



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Figure 38 Traditional versus Modern Manufacturing Methods



traditional methods, the response was cautious, with 64% saying that they could not generalise, although the remainder considered them good or very good.

6.6 Career Progression

The manufacturers' response to formal career progression for their respective trades was identical to that of the contractors and sole traders, 70% in favour and 30% against. Timber and joinery manufacturers were unanimously in favour; glass and metal manufacturers were also enthusiastic (79% and 86% respectively), and stone producers less so (57%); the rest were evenly divided. Again (as with the contractors and sole traders) 47% said that progression should be linked to experience, with 36% in favour of qualifications and 17% divided between skills and success at the job.



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ARCHITECTS AND SURVEYORS

7

- 7.1 Architects and Surveyors in Scotland
- 7.2 Sample Group and Their Pre-1919 Work
- 7.3 Geographic and Sectoral Spread of Work
- 7.4 Work with Contractors and Views of Contractors' Skills
- 7.5 Use of Traditional Building Materials
- 7.6 Specification Writing
- 7.7 Views on the Future of the Traditional Building Industry

architects and surveyors

This review of the current supply of traditional building skills in Scotland needed to include an assessment of the knowledge base of architects and building surveyors in their role of overseeing standards on conservation projects, including specifications for materials and contractors or craftspeople.

7.1 Architects and Surveyors in Scotland

To complete the picture of the current supply of traditional building skills in Scotland, it was considered important to review architects and surveyors, who play a crucial role regarding standards on projects, including specifications for materials and craftspeople.

The Royal Incorporation of Architects in Scotland (RIAS), founded in 1916, has a partnership agreement with the Royal Institute of British Architects (RIBA) to be the lead professional body for architects in Scotland. In 2004, there were 3,860 affiliates to the RIAS (685 retired) working in 1,000 mostly small practices.⁵⁵ Membership divides among honorary fellows, fellows, associates, affiliates and students, the majority (2,835) being Associates.

The Royal Institution of Chartered Surveyors (RICS) is the main professional body for the 9,000 full members, students and probationer surveyors in Scotland. Surveyors are divided into 170 different specialisations, grouped into 16 different faculties, of which 14 are represented within the RICS in Scotland. Those most involved in pre-1919 buildings are building surveyors, although quantity surveyors may be involved in specifications and sourcing materials.

In recent years, a major issue regarding work on pre-1919 buildings in these professions has

been conservation accreditation, which remains unresolved. Accreditation was first established within the RICS in 1992, with the RIAS introducing a comparable scheme in 1995; the RICS has a uniform level of accreditation, whereas three levels exist for architects, but both systems are subject to renewal every five years.

Problems with the uniformity of the schemes across the professions has resulted in a continuing need for clients (led in this case by Historic Scotland) to have a standard source of information. A pan-professional body known as the Edinburgh Group, representing architects, surveyors, civil engineers and client interests was established which has since worked to resolve these issues. To date there is a framework for exactly which competences are reviewed across the professions, agreement on how those competences are assessed, and consensus on the process required to disseminate the scheme to their memberships. Progress on these fronts has been impeded, however, by complaints within some sectors that insistence on accreditation in order to receive grant funding from Historic Scotland amounts to restrictive practice.

These problems underlie the slow uptake of the scheme to date, despite its continued support and promotion by the professional bodies. There are 56 accredited

architects in total (34 are at the highest level, A; 14 at level B; 8 at level C). A mere 17 of them, however, are based outside Edinburgh and Glasgow or towns in their close environs.⁵⁶ Conservation accredited surveyors are even thinner on the ground: out of 163 accredited surveyors in the United Kingdom, just 11 practice in Scotland⁵⁷. At root, the deeper problem appears to be that many professionals consider such accreditation as tantamount to a specialisation within a specialisation, and of little relevance to them.

The RIAS and RICS also both have a Conservation Committee. As well as representing their professions within the Edinburgh Group, these take an interest in matters such as the availability of traditional materials, and policy reviews within Historic Scotland.

7.2 Sample Group and Their Pre-1919 Work

The sample group involved interviews with 53 architects and 31 surveyors from three practices employing 1,330 full-time staff (an average of 16 employees per firm) and 62 part-time staff. The average number of employees among the architects' firms was 7 per firm, and 30 among the surveyors.

All were drawn from the Building Conservation Register Scotland (BCRS), but this did not necessarily mean that all were conservation

Figure 39 Percentage of Work on Pre-1919 Buildings by Architects and Surveyors

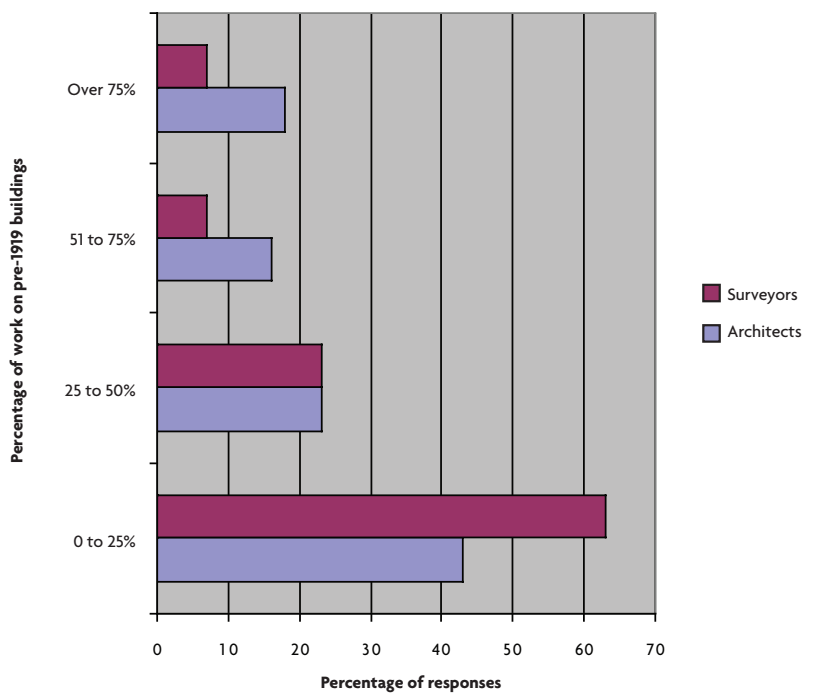
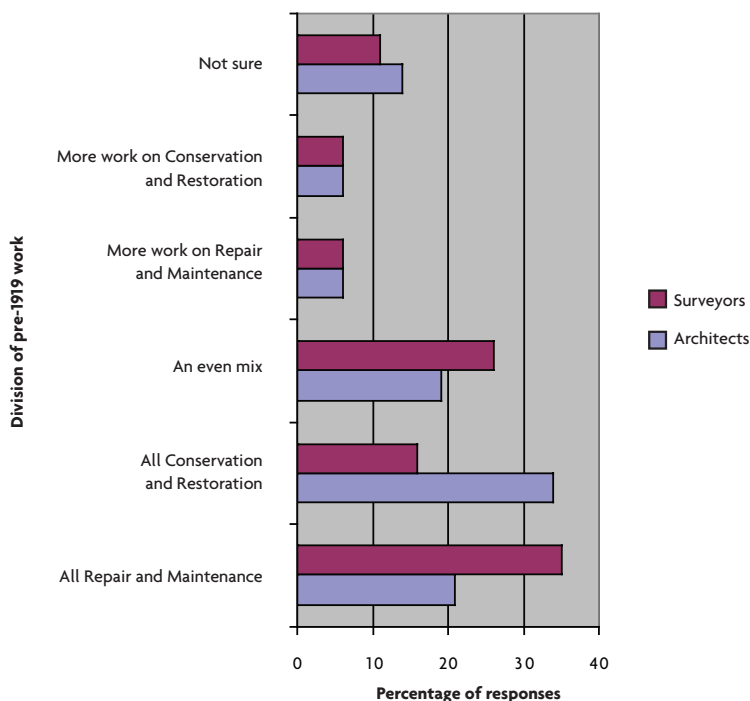


Figure 40 Division of Work between Repair & Maintenance and Conservation & Restoration among Architects and Surveyors



specialists. The average amount of work on pre-1919 buildings reported across all firms was 32%, a little lower than the 35% average for contractors. As shown in Figure 39, this also included an average of 37%

for architects on pre-1919 buildings, compared to 27% for the surveyors.

As can be seen, 34% of architects did half or more of their work on older buildings, compared to only

‘Architects and surveyors are never given sufficiently rigorous testing of their knowledge of materials. I bet that if you tested the top people in conservation in the country they would have difficulty at any level of detail on traditional materials. For the rest, they have less idea still.’

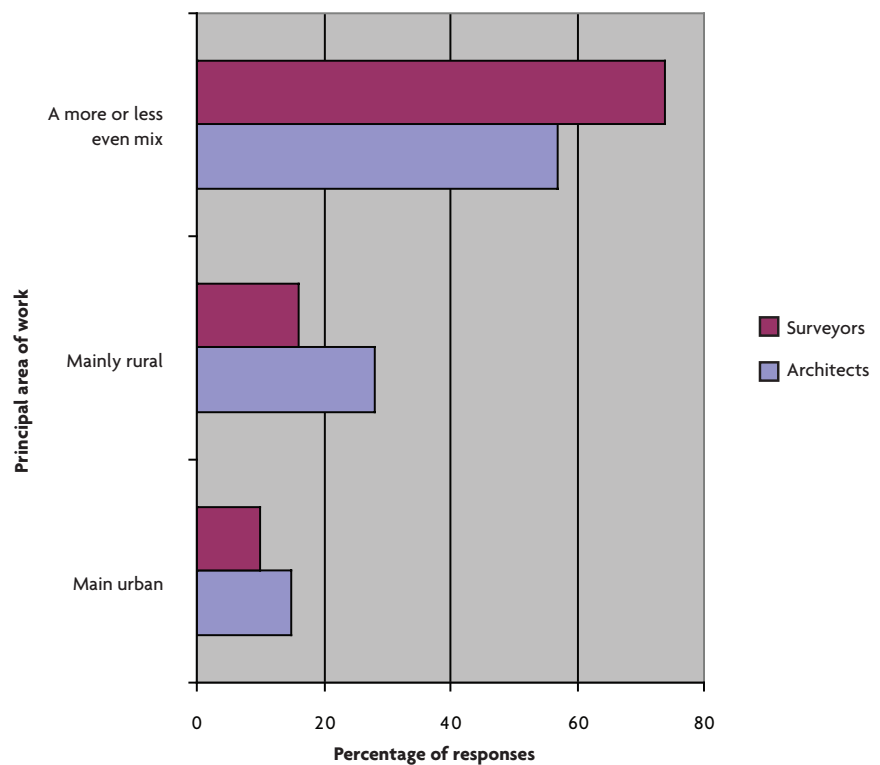
14% for surveyors, and this represented less than a quarter of their work for 63% of surveyors, opposed to 43% for architects. The findings confirm that the architectural practices have a greater degree of specialisation in their work than surveyors, giving the fact that they were sourced from the conservation-orientated BCRC more relevance in their case than that of the surveyors. With surveyors, it is more common to find larger firms covering a wide number of specialisms, whereby it is likely that different individuals within the firm have particular areas of expertise.

Figure 40 shows the degree of apparent confusion among respondents when asked to divide their pre-1919 building work between repair and maintenance and conservation and restoration.

As expected, surveyors are generally more involved in repair and maintenance, and architects in conservation and restoration. However, the 55% of architects and 51% of surveyors saying that their work was all one thing or the other is, with exceptions, questionable, especially among those apparently doing all of their work in conservation and restoration.

The latter applies particularly to surveyors, and may follow the same oversimplification, 'it's all conservation, really', that applied to the contractors. This suggests a lesser understanding of the distinctions than those who simply said that they were unsure how to make the division. Generally, though, the surveyors' responses were arguably more cogent than those of the architects.

Figure 41 Urban–Rural Divide of Work among Architects and Surveyors



Thirteen architects and surveyors were accredited in building conservation and only three of the architects were based outside the central belt. Almost a third (30%) of architects and 74% of surveyors said that they did not have conservation accreditation because 'there is no need for it in the work that I undertake'. Presumably, some meant that there is no absolute requirement for it, rather than that accreditation would not be of at least occasional use to them.

However, this is not encouraging, even allowing for the relatively small amounts of pre-1919 work in which they tend to be involved. More worryingly, six architects and one surveyor did not know that accreditation existed.

Only four of those who carried out half or more of their work in the traditional sector said that

they did not need accreditation, and none was unaware of its existence. Four more architects reported that they were in the process of obtaining accreditation, as did one surveyor. None gave complexity of the requirements as a reason for not acquiring it, the main obstacle being time constraints. A key finding is that surveyors generally do not feel it relevant to them, despite the fact that 27% of their work is carried out on pre-1919 buildings.

7.3 Geographic and Sectoral Spread of Work

In common with the contractors and sole traders, the architects and surveyors predominantly worked locally, with 38 of those interviewed indicating that over 75% of their company's work was within a 20-mile radius. This represented 45% in total for both professions. The architects' work

did range more widely than the surveyors', with four reporting that most of it was all over Scotland, and two others saying that it was UK-wide and beyond, which did not apply to any of the surveyors. In both professions, those working regularly across larger distances were based in the central belt, whereas most of the work in the Highlands and Islands and the Borders, Dumfries and Galloway was concentrated locally.

The urban–rural divide illustrated in Figure 41 shows that although more architects reported working in mainly rural contexts (28% against 16% of the surveyors), overall the picture was of a fairly even mix. This changed somewhat when divided regionally, with no Highlands and Islands or the Borders, Dumfries and Galloway professionals reporting their work as being mainly urban, as compared with 23% of those based in the

central belt. The highest percentage who said that their work was mainly rural (35%) was in the Highlands and Islands.

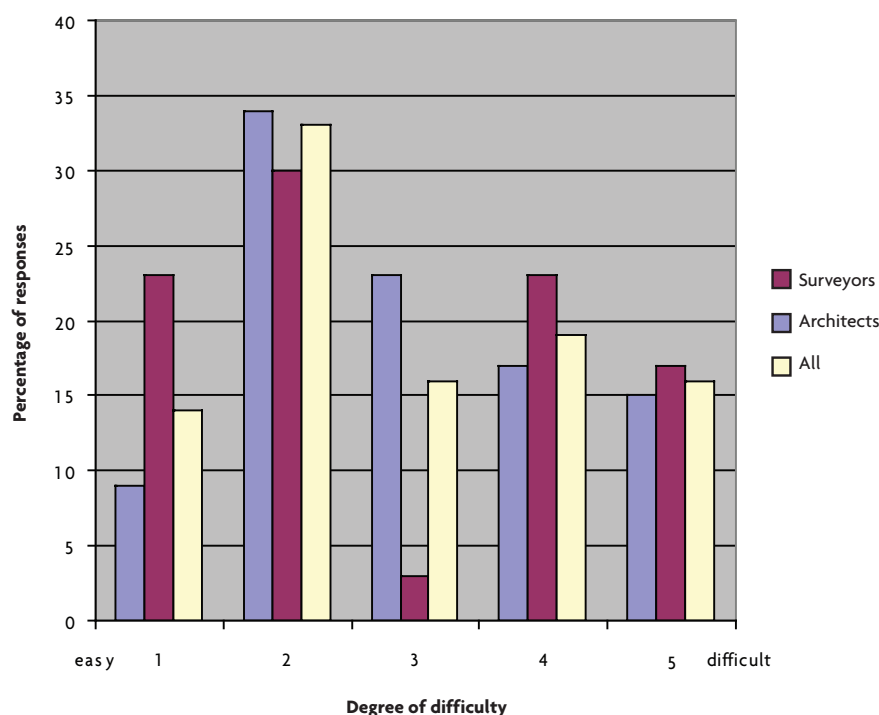
Private work was reported by 37 interviewees as accounting for more than three-quarters of their turnover, and in this respect there was no marked proportional difference between architects and surveyors. The next most common field of work was in the public sector, although it was the main source of work for only two firms. The surveyors were more active in the commercial sphere than the architects, and eight surveyors and seven architects indicated that they carried out work on religious buildings.

Business was apparently good for both groups, with 90% responding that they were able to forecast their workload over two months in advance.

'The hassle factor of conservation work puts many off projects on old buildings.'

'There is a massive difference between those with genuine experience in traditional work and those who just think that they know what they're doing.'

Figure 42 Difficulty in Finding Suitable Contractors among Architects and Surveyors



'There are hundreds of thousands of stone buildings in the country, therefore a lot of work is being done by non-qualified operatives.'

7.4 Work with Contractors and Views of Contractors' Skills

Having to wait over two months for contractors was reported by 30%, while 48% said they were usually available within three weeks, which probably reflects the fact that long-standing, close working associations are common. Over three-quarters indicated that they recruit contractors from among a small circle of firms that they always use, while 20% would follow the recommendations of a conservation agency, 10% those of a colleague, and only 20% would take recourse to advertising. This is further confirmed by the fact that 80% reported that the contractors with whom they work are also local to their area. As shown in Figure 42, the response to finding suitable contractors for work on pre-1919 buildings was mixed.

Surveyors expressed greater difficulty in finding suitable contractors than architects, with 40% and 32% respectively saying it was difficult or quite difficult. However, the proportion of those reporting difficulties rose to 54% among those working predominantly on older buildings. There was also a marked regional difference, with 55% of firms in the Highlands and Islands reporting having regularly to wait over two months for contractors, compared with 35% in the Borders, Dumfries and Galloway and only 16% in the central belt.

These difficulties were attributed by 30% to skills shortages and 27% to skills gaps and the remainder felt that both applied. There was a perception among

many of the professionals interviewed that the higher skill levels required for traditional building work are simply not being recognised by the market. The implication of a reluctance to undertake pre-1919 work is that jobs risk being rushed and shortcuts taken.

The majority of professionals suggested that they simply had to wait to overcome difficulties in finding contractors, which reflects their preference for working with an established circle of firms. The trade cited as being particularly difficult to find skilled craftspeople in was stonemasonry, in some cases with additional mention of lime work. Other traditional building craftspeople considered most scarce were plasterers, lead-workers and joiners, although several stressed that traditionally skilled people were rare in all trades.

7.5 Use of Traditional Building Materials

Most respondents (79%) said that they used traditional building materials on their pre-1919 projects most or all of the time. This number was even higher among surveyors, at 89%, compared with 67% of the architects. Those using traditional materials just 'some of the time' gave their reasons for not doing so as more to do with the difficulty in obtaining these and lack of client demand. Of those whose work was mainly on traditional buildings, only two individuals were in the 'some of the time' category, but four held conservation accreditation.

Figure 43 shows the respondents' knowledge of the percentage of the materials they were working with was of Scottish origin.

The provenance of the materials they were working with was unknown to 21% of respondents, a

Figure 43 Percentage of Materials of Scottish Origin Used by Architects and Surveyors

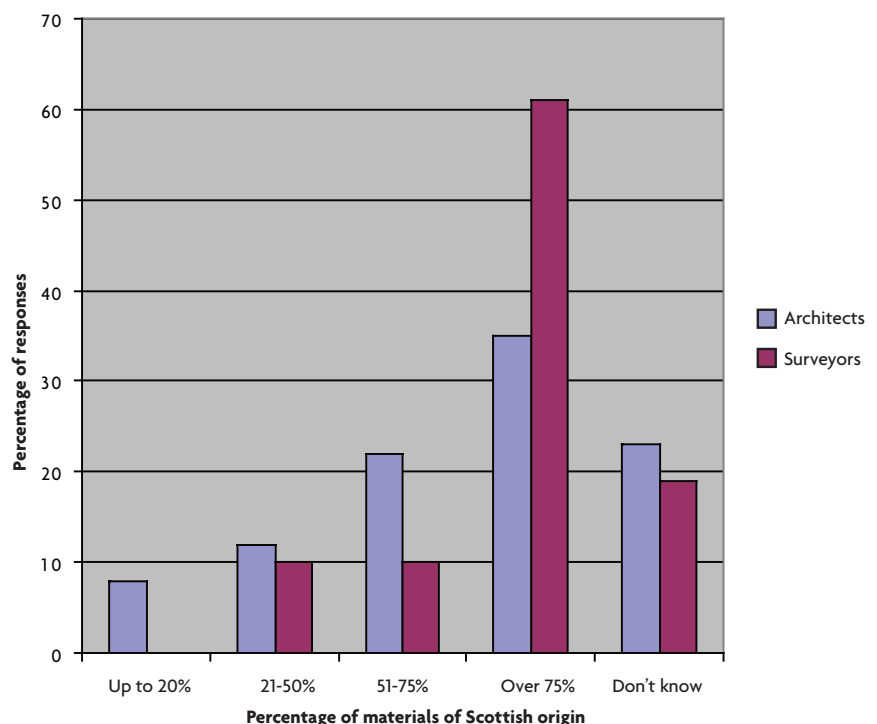


Figure 44 Professionals' Views of Contractors' Skills with Traditional Building Materials

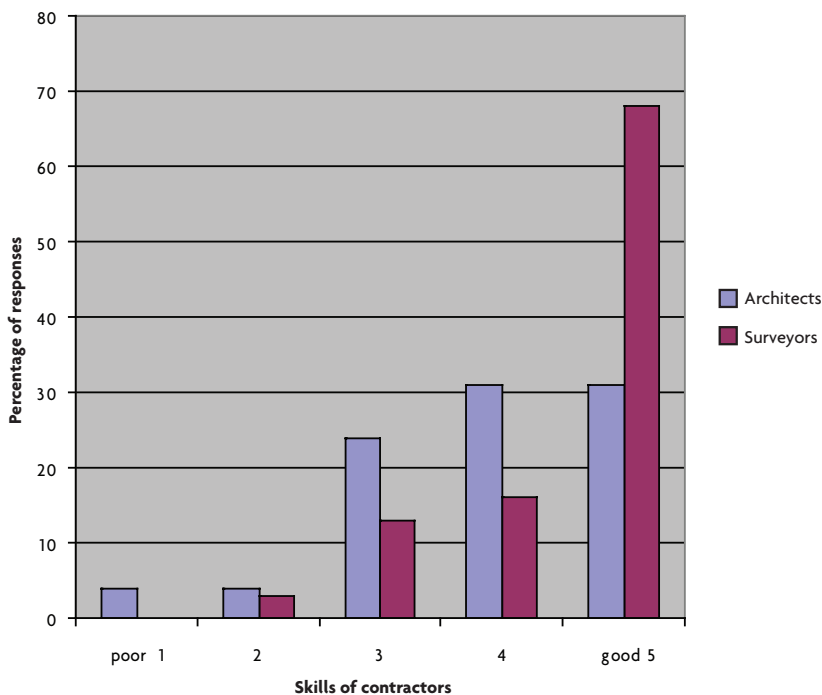


figure slightly higher among architects (23%) than surveyors (19%). The architects did, however, tend to be more conservative in terms of how much of the materials they used were of Scottish origin, with 20% indicating it was less than half, compared with 10% of the surveyors. Four of those who did not know what proportion was Scottish were conservation accredited, and all of them indicated that they used traditional materials 'most of time'.

As shown in Figure 44, both the architects' and surveyors' ratings of contractors' skills in working with traditional materials were generally positive in their assessments, with 61% considering them 'good' or 'quite good', although the surveyors were markedly more likely to consider them 'good' (68% compared with 31% of architects). There were higher approval levels among those reporting longer waiting times, indicating that selectiveness of the contractor employed is an important

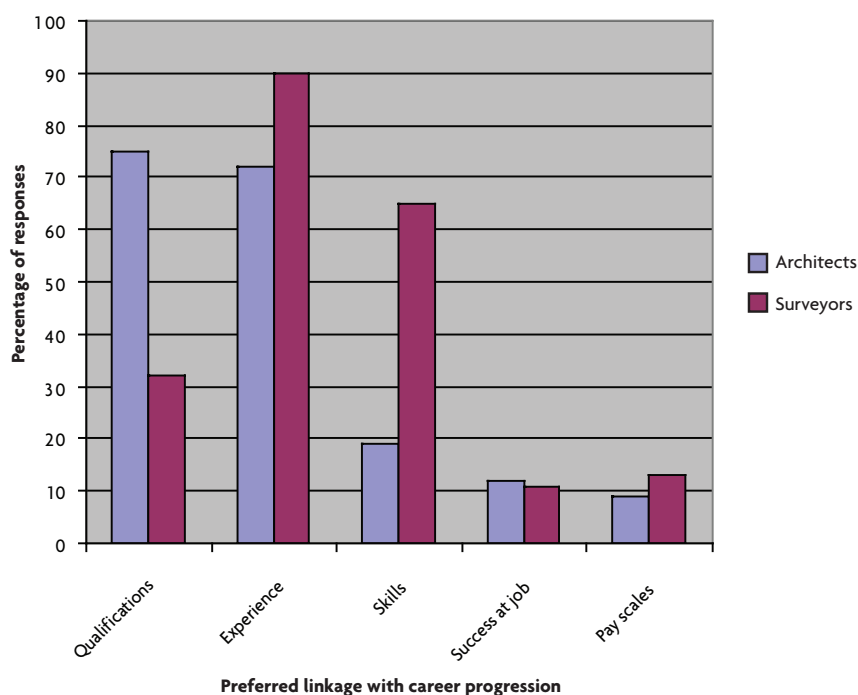
means of protecting the overall quality of work.

7.6 Specification Writing

Nineteen architects (eight conservation accredited) and two surveyors reported writing specifications for pre-1919 building projects. Only 44% among these 21 said that they always stipulate within the specifications that some work must be carried out by experienced craftspeople. Even allowing for the fact that most work with an established group of contractors, there still seems to be a need for this stipulation to protect the quality of the work and thereby improve skills levels among the trades. Moreover, the professional may be in regular contact with the main contractor, but have very little knowledge of who may be subcontracted on any project.

Specifications are also crucial with respect to the materials being used on a project. It appears from much

'Specifiers refer to Standards to avoid knowing what they're talking about. Because they have no real understanding of the materials themselves, they use these as crutches to ensure – they hope – the basic strengths to be used. This also means that they don't learn from one project to the other and keep repeating the same mistakes.'

Figure 45 Preferred Linkages for Career Progression among Architects and Surveyors

of the qualitative research, especially covering the material manufacturers, that this is the greatest perceived failing with the building professionals. Not all those writing specifications are architects, so the same can apply, for example, to engineers as well as surveyors as well as other specialists.

Insufficient understanding of materials and their provenance also affect pricing of a project. Traditional manufacturers reported cases of great frustration where they and the professional writing the specification were 'not speaking the same language'. Poor-quality specifications can also discourage firms from bidding for tenders, with experienced contractors unwilling to incur project risks. Instances in the past have put larger contractors off, thus losing their presence in the traditional building sector.

Many building professionals are quick to recognise shortcomings

within their own professions and to provide traditional skills training for their staff, both on the job and through short, specialised courses. Incentives for this type of training were considered worthwhile and may overcome the tendency for professionals to be considered to need training subsidies less than trades/craftspeople and contractors.

7.7 Views on the Future of the Traditional Building Sector

Six of those who write traditional building heritage specifications said that they would become more insistent on demanding qualified trades/craftspeople in the future to ensure adequate skills levels among younger intakes into construction firms. The majority, who expressed little interest in changing, were on the whole sceptical of formal qualifications.

All architects and all surveyors were unanimous in their support for a career progression for the trades

and what this should be linked to. Their views are shown in Figure 45.

The scepticism towards qualifications expressed by some architects was not shared by all, and qualifications were deemed by architects to be more important than experience for career progression (75% versus 72% on a non-mutually exclusive basis). The views of surveyors, however, were very different: 90% felt that experience was an essential criterion for progression, compared to 32% for qualifications. In fact, the surveyors regarded skills as more important than qualifications and were closer in their views to the contractors and sole traders, whose descending hierarchy was also experience, skills and qualifications.

Regarding the desirability of conservation accreditation for the trades, support from the professionals, while not unanimous, was very strong, with 84% in favour, 8% unsure and only 8% against, with no strong differences between architects and surveyors. Those against appeared to feel it was perhaps a step too far and unlikely to be workable.

A common deep concern was the lack of incentives for employers to provide adequate traditional building skills training, or even take on apprentices at all. The lack of incentive structures throughout the traditional sector of the industry was another closely related concern. On the whole, the interviewees considered the most critical issues to be funding, lack of trades/craftspeople, and the need for better incentives for training and more effective channels for the transmission of skills.

TRAINING PROVISION FOR TRADITIONAL BUILDING SKILLS IN SCOTLAND

8

- 8.1 Construction Training Provision in Scotland
- 8.2 Traditional Building Skills Training in Scotland: The Further Education Colleges
- 8.3 Funding
 - 8.3.1 Scottish Funding Council (SFC)
 - 8.3.2 CITB-ConstructionSkills
 - 8.3.3 Employers
- 8.4 Training Places, Training Routes
- 8.5 Other Training Centres and Initiatives
 - 8.5.1 Historic Scotland Stonemasonry Training
 - 8.5.2 St Mary's Episcopal Cathedral Workshop
 - 8.5.3 Culzean Castle Masonry Workshop
 - 8.5.4 Scottish Traditional Skills Training Centre, Fyvie Castle
 - 8.5.5 Historic Scotland Craft Fellowship
 - 8.5.6 The Scottish Lime Centre Trust
 - 8.5.7 The HLF Bursary Scheme for Masonry Conservation in Scotland and Northern Ireland
 - 8.5.8 Historic Scotland Masonry Qualification

training provision for traditional skills

This section of the report assesses current traditional building skills provision within Scotland in relation to the wider construction industry. Trades/craftspeople are qualified to a higher level (SVQ Level 3) than the rest of the UK, but only four centres in Scotland provide traditional building skills training.

The construction industry has developed mechanisms for recognising the existing workforce's skills and mapping this against the NVQ framework. Individuals and companies can then identify gaps in training and skills and employees can train and achieve a full NVQ. The ConstructionSkills On-Site Assessment and Training (OSAT)⁵⁸ is an initiative to enable the process of training and assessing the existing workforce.

Apprentices are not the only route into the industry and the bulk of those working in the traditional building skills sector enter via mainstream site-based trades (carpenters, bricklayers, etc). They learn on the job and very few take up existing conservation options as part of the SVQ qualifications or apprenticeship training. Only very specialist trades, for example, stonemasons, seek formal qualifications on entry into the conservation sector. Also, most craftspeople enter the built heritage sector at an older age, having qualified initially as apprentices, or through an SVQ programme based on mainstream site trades, or having changed career, usually from a background of creative crafts and through an empathy with historic buildings and hand-craft skills. Although there has been a significant increase in apprenticeships within the construction sector over the last few years, apprenticeships still account for less than a third (27%) of all new entrants (excluding sub-level 2 courses).

8.1 Construction Training Provision in Scotland

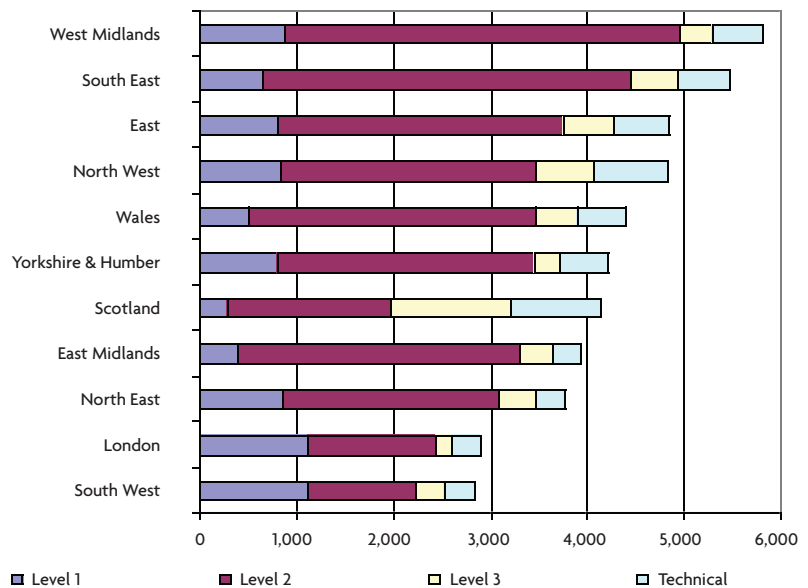
A total of 7,885 people registered as taking a Modern Apprenticeship (MA) course in Construction in Scotland in September 2005, 6,846 of whom were in the Scottish Enterprise area, with the remainder in the Highlands and Islands. Data from colleges, private training providers and construction industry training centres across Great Britain, informs ConstructionSkills statistics for 2005/6 (Figure 46) and shows 4,150 first-year trainees in Scotland.⁵⁹

This also shows a key difference between Scotland and the rest of Great Britain is that trainees on an SVQ Level 3 qualification represent the largest single group compared with those on VQ Level 2 elsewhere. This reflects that Level 3 is the expected level of skill required for craftspeople in Scotland. Scotland has avoided some of the fragmentation within

training that has occurred in England, whereby crafts are divided into a growing number of specialisms. Courses in Scotland aim to maintain a holistic approach to training, giving apprentices a broad general grounding in their trades.

Another general difference is that skills testing at the end of MAs was phased out in England but remains in Scotland, and MA completion rates are higher in Scotland (1,191 in 2005 or 57% of those starting their courses) than the rest of the UK, with a comparable figure of 49% in England.

Figure 46 First-Year Trainees by Level of Qualification and Geographical Area – 2005/06 (Great Britain)



Source: ConstructionSkills Trainee Numbers Survey 2005/6

8.2 Traditional Building Skills Training in Scotland: The Further Education Colleges

Despite those advantages, traditional skills training in Scotland today fares less well than new build in terms of attracting new trainees. ConstructionSkills 2005 records of trainees registering for MAs in the 39 further education (FE) colleges with construction-related courses (Table 9) shows that 38 of the 2,228 trainees were in stonemasonry, 92 in roof slating and tiling, and 103 in plastering.

Although these courses relate to traditional building trades, or trades of longstanding, that does not mean that they are tailored to providing the skills required for work on pre-1919 buildings.

Specific traditional building skills courses are extremely limited in Scotland.⁶⁰ In a review of over 1,000 courses in 112 colleges, six were

found to be focused specifically towards heritage skills (thatching for example), none of which were in Scotland. However, this does not mean that such courses are entirely lacking in Scotland, as ongoing research by Historic Scotland has found courses in drystone dyking, for example, in more than one college: again, however, they are the exception and tend to be part-time and evening courses.

According to the three principal providers who offer stonemasonry courses, that is, Edinburgh's Telford, Glasgow Metropolitan College and Historic Scotland's own training unit in Elgin, approximately half of the time on the two-year SVQ Levels 2 and 3 is spent acquiring the skills needed to work on pre-1919 stone buildings. This includes skills transferable to the traditional sector, such as cutting flat stone surfaces, but this reduces to 20%

'We're driven by the need to respond to employer demand, and in the great majority, particularly the one-man bands, they want new build techniques taught – so, in effect, they cherry pick the units within the SVQ system.'

'We do not have the funding to provide proper repair and maintenance training or conservation units – our work has to concentrate on the main trades.'

Table 9 First-Year Modern Apprentices by Trade in 39 Scottish FE Colleges, 2005

Trade*	Number of 1st year Apprentices
Carpenter and joiner	1,120
Bricklayer	292
Painter and decorator	278
Plasterer	103
Roof slater and tiler	92
Scaffolder	59
Plant mechanic and operative	47
Floor layer	40
Stonemason	38
Ceiling fixer	37
Building and engineering technician	32
Wall and floor tiler	26
Felt and sheet roofer and cladder	26
Crane and other operative	13
Shopfitter	13
Glazier	12
Total	2,228

*Does not include trades outside the ConstructionSkills footprint, such as plumbers (see Appendix for details of industry sub-sectors and activities within the remit of CITB-ConstructionSkills)

or less for skills directly relating to work on older buildings.

The rest of the courses in these three centres are dedicated to techniques required in new build, such as cladding. The amount of directly relevant material taught in the additional one-year Advanced Craft Certificate is about 50%. However, nearly half the employers tend to withdraw their trainees from FE colleges at the end of the first two years, because they are unwilling to sustain the costs or the downtime that accompanies off-the-job training.

Eight times more trainees enrolled in bricklaying courses than in stonemasonry and it was reported in this research that employers use bricklaying courses as substitutes for masonry courses. This applies particularly in the north where the shortage of available masonry training is most acute. This shortcoming was also highlighted in a recent UK-wide survey of 98 contractors: when asked what construction activities that they themselves employed were not covered by existing qualifications at SVQ Levels 2 and 3, the largest group (59%) responded that this applied to stonemasonry, with 15% suggesting glazing (including stained glass); 11%, plumbing; 7%, metalwork; 4%, flintwork; and 4%, underpinning.⁶¹

In the largest craft trade of all, joinery (accounting for 1,120 of the 2,228 enrolled in 2005), the proportion of time spent on traditional skills is smaller still. That is not to say that none are present; the SVQs have retained at least to some extent a holistic approach to training. Colleges that have equipped themselves to

becoming centres of excellence for traditional building skills training also need the resources to provide hands-on training and work with materials necessary for a more rounded training experience. However, the availability of consumable materials, such as timber and stone, is a key bottleneck.

The two FE colleges doing most work in traditional craft skill areas are Glasgow Metropolitan (formerly the Glasgow College of Building and Printing) and Edinburgh's Telford. Glasgow Metropolitan has capacity for 20 stonemasonry and 30 plastering trainees per year, and offers advanced certificates. It also offers large-capacity courses in floor- and wall-tiling and others, ranging from pre-entry to first-degree level courses in construction-related disciplines. It is also the only college in Scotland to offer the two-year Higher National Diploma (HND) in architectural conservation, which 15 students complete each year.

Edinburgh's Telford has largely comparable capacity although with more emphasis on roofing rather than flooring and tiling. With a new campus having opened in July 2006, the construction training offered by the college is set to expand. In common with Glasgow Metropolitan, it prides itself on the standard of hand tools skills provided, with pupils making sash and case windows in the joinery course. It is a national testing centre for masonry, plastering and joinery.

At present, Edinburgh's Telford has the benefit of regular supplies of apprentices from locally based

specialist masonry firms, the St Mary's Cathedral Workshop and Historic Scotland. Similarly, Glasgow Metropolitan has a regular supply of trainees and has reported a slight increase in demand for its masonry courses, attributed to the anticipated demand arising from the Scottish Stone Liaison Group (SSLG) report *Safeguarding Glasgow's Stone-Built Heritage: Skills and Materials Requirements*.

South Lanarkshire College has quite large-capacity courses in roof slating and tiling and plastering, and such courses are also available at Dumfries and Dundee colleges.

The North Highland College is an important example for the future of traditional building skills, where the drivers behind its introduction of a new roofing and slating course is the recent increase in the use of Caithness stone and construction in general in the Highlands and Islands. One of the leading construction firms in the region is taking an active interest in supporting traditional building skills training is a sign of demand for work by this company and a hopeful sign for the future.

The College received European funding, through Highlands and Islands Enterprise, to create a fresh set of traditional units as add-ons to the main SVQ courses – to include, for example, lime units as part of bricklaying courses. The impetus for this has come partly from the North Highland Initiative of the Prince of Wales with ConstructionSkills support as well as the large local construction company. The intention is to provide where possible, and health and safety allowing, live project training as part of the courses.

8.3 Funding

8.3.1 Scottish Funding Council (SFC)

Funding for the MAs comes (in descending order of support) from the SFC, ConstructionSkills and the employer directly. As the SFC determines what funding goes to each college and for which courses, this determines the courses the college can offer, its capacity for any course and whether it is able to offer Advanced Level Certificates. Colleges can propose new courses, but need to be able to demonstrate sufficient employer demand to ensure sustainability, where a public subsidy would be involved.

A key issue for the SFC is that traditional building skills training provision is more expensive than new build; classes need to be smaller to teach particular skills properly and the materials, and in some cases tools, are more expensive to provide. At present, there is no differential funding from the SFC for traditional building skills training to offset the additional costs. A very low uptake exists for add-on conservation units designed to improve understanding and practical experience of traditional building skills components within courses, which are affected by the lack of available funding.

Also, one college reported having set up a course which it then had to close due to lack of demand. This is costly to the college and, as funding is always tight, acts as a disincentive for future ventures.

8.3.2 ConstructionSkills

ConstructionSkills works with the FE colleges, whose funding is drawn down from the SFC. The apprentices, once taken on by

employers, enter through their Local Enterprise Company (LEC), and ConstructionSkills contracts through the LEC with the individuals and then with the college, so the college can draw down additional funding from the SFC.

8.3.3 Employers

The attitudes of employers and their often unwillingness to pay for college-based training are also a problem, and the need for better incentives for employers to offer training was a constant refrain from the qualitative and quantitative findings of this report.

The impact upon employers of shifts in the subsidy regime is not necessarily very great, but is far less than if more decided that their interests lay in improving their standards of work on traditional buildings, and/or undertaking a higher proportion of such work.

8.4 Training Places, Training Routes

The difficulty of attracting those with good potential as craftspeople into the sector is often cited as a bottleneck to positive change. Other factors were the emphasis within schools on students going on to higher education and the poor image of the construction industry. This was a perception shared by many of the stakeholders interviewed in this survey.

However, some contradictory evidence has emerged: for example, both Historic Scotland and the SSLG are regularly contacted by young people for advice on how to enter traditional training courses. The

‘There’s a real chicken and egg situation: we have to have qualified teacher and students on a course for it be approved, but then that in itself is problematic since if the course does not officially exist it is hard to get those people on board. It’s all rather backwards.’

limited number of places offered by Historic Scotland is fiercely competitive.

ConstructionSkills is also regularly approached by young people and is often unable to secure apprenticeships due to a lack of employers willing to offer employment. One Highlands and Islands college reported that 120 young people who passed an access course for the construction industry in the last year were unable to get placements as apprentices. Construction courses are currently full, but the upturn in the new build sector is driving this and the colleges are already securing funding to expand and enhance their infrastructure and extend their courses to meet this demand.

Employer demand leading to college expansion predominantly in the new build sector is balanced by young people not being able to enter the industry, which rejects the generalised perception of manual trades not being attractive to school leavers.

Another problem is that the project-based nature of construction work requires a relatively mobile workforce, thereby needing workers, usually on a subcontracted basis, from other parts of the country. This is often the case for specialist occupations and traditional skills. While the flexibility of such a large pool of subcontracting labour is a significant advantage to prime contractors, the disadvantage is the lack of investment in skills and qualifications by many who are self-employed.

Furthermore, it is generally recognised by industry that smaller

companies lead the way in job creation but that they often overlook training as a key investment in longer-term growth. With self-employment representing 24% of the available labour in Scotland⁶² and small firms (0-4 employees) representing 75% of all construction enterprises in Scotland,⁶³ the ability of the sector to provide sufficient opportunities for those wishing to join the industry is limited.

A strong tendency exists for career progression to lead towards self-employment, particularly in the main trades, and employers fear that they would pay for training and

then see their trainees go and work for rival firms, or set themselves up as sole traders.

Tracking the movements of former trainees is notoriously difficult. However, data for construction is available from CITB ConstructionSkills Construction Apprentices Survey 2006⁶⁴, which looked at the CITB ConstructionSkills' Managing Agency in England. A sample of 1,501 individuals (1,119 completers and 382 early leavers) showed that 52% of completers stayed with their current employer as against 24% going to work for another employer and 9% entering self-employment in construction and the remaining 13%



either leaving the industry altogether or continuing training (7% unemployed, 3% on another training course and 3% in Further education at college or university). Among early leavers, 20% continued to work for their employer, 39% went to another employer, 5% became self-employed in construction, whilst 19% left the industry as unemployed. Employers' fears are not unfounded, but where they encourage their trainees to complete training, they stand a better chance of seeing a return on their investment. However, the employers of those 39% of early leavers who remained with them realised that return on investment without them completing their training.

Apprenticeships are not, of course, the only route into the construction industry. Labour Force Survey data for 2005 indicates that of the 217,990 individuals in the UK joining the industry only 42,720 came directly from full-time education, that is, the group most likely to enter through the apprenticeship route. Many enter initially through the main trades and receive training on the job in more traditional skills, or through a career change in later life.

The ConstructionSkills OSAT scheme can be particularly useful in achieving formal recognition for skills acquired over time, and upskilling. Between the start of this scheme in 1999 and the end of 2005 OSAT training in Scotland had 10,508 registrations, of which 6,611 achieved qualifications (63% achievement rate compared with 44% for Great Britain as a whole). OSAT assessment is available for the Level 3 masonry SVQ in Scotland through Edinburgh's Telford College, but uptake of OSAT both in Scotland and Great Britain in general has been, in the vast majority (6,598 of 6,611

achievements in Scotland), at SVQ Level 2. Therefore, while OSAT is important for the construction industry as a whole, it is only having a marginal impact on traditional building skills training required at the high SVQ level.

Because different individuals are attracted to working in the traditional building sector at different times and stages in their lives, this requires a range of options for entry, training and even upskilling for those who have been working on traditional buildings for many years.

8.5 Other Training Centres and Initiatives

8.5.1 Historic Scotland Stonemasonry Training

Historic Scotland is a key provider of stonemasonry training aimed at its directly employed workforce on the upkeep of its properties in care, but some of its apprentices also move into the wider traditional building sector or construction industry. Since its establishment in 1991, Historic Scotland has provided training for a minimum of three apprentices each year on its four-year course; as of July 2006, this has produced 33 trained stonemasons and a further 12 are currently in training. Although the majority are trained in stonemasonry, some are also taken on as apprentice joiners and plumbers.

Until 2000, all formal course training was provided by Edinburgh's Telford and Glasgow Metropolitan colleges, but in recent years Historic Scotland has developed its own Training Unit in Elgin, with registration of trainees through Inverness College. The course has the capacity for six new apprentices per year, with two being Historic Scotland apprentices and four from private

'Before Elgin we would send one or two trainees a year down south, but very few lasted the course so far away from home. Some employers send their apprentices on bricklaying courses at Inverness as a substitute because there simply are not enough places in masonry here in the north – just four a year – and it's just too far to Glasgow or Edinburgh.'

companies, predominantly sole traders associated with large estates. An average of four out of the six trainees achieve the Advanced Certificate. The ConstructionSkills office in Inverness reports that it could easily double the numbers being sent to the Unit, but this is prevented by a lack of allocated resources on the part of Historic Scotland.

While the trainers at Elgin would like to provide more conservation training, at present they are limited to the additional 14 day unit in lime as the principal traditional element of the course.

8.5.2 St Mary's Episcopal Cathedral Workshop

St Mary's Episcopal Cathedral Workshop in Edinburgh was established in 1987 with the dual aims of the restoration of the Cathedral and provision of masonry training. Its apprentices are employed by the Workshop and registered with Telford College with the support of Scottish Enterprise Edinburgh and Lothian LEC on the Modern Apprenticeship in masonry. The programme has charitable status, with grant aid support from Historic Scotland.

The Workshop currently supports five apprentices, with a capacity for one or two per year over a four-year course. Completion rates are high, with 32 apprentices who were all initially school-leavers having completed the training programme and who have all progressed to masonry careers.

8.5.3 Culzean Castle Masonry Workshop

Since 1991, this important National Trust for Scotland (NTS) property in Ayrshire has provided a small training centre for apprentice

masons, offering an SVQ course registered through Glasgow Metropolitan College. It accepts two apprentices at a time, one being taken on every alternate year for the four-year training scheme and has trained seven masons. Working alongside a resident conservation-trained mason, trainees undertake work on the Castle buildings, other NTS properties and work-placements. The trainees have progressed to work as masons and two are in training as of July 2006.

A recent development at Culzean is the creation of a Master Mason Project. This will function as a four-year postgraduate course, with subject to further funding, capacity for one student every alternate year. Again, training concentrates on practical work on the Castle and elsewhere through work placements, together with an MSc in Architectural Conservation.

8.5.4 Scottish Traditional Skills Training Centre, Fyvie Castle

Also based at a major NTS property, Fyvie Castle has the potential to become an important traditional building skills training centre in the north-east area of the Highlands and Islands region. This developed as a result of a report commissioned by Grampian LEC that found that the crucial heritage resources of the region were in danger of being eroded due to lack of skills to conserve and maintain them. The project now has a board led by the regional private sector and a business plan. To date the project has organised day courses for schoolchildren in the Aberdeen area, and hosted fieldwork for architecture students at Robert Gordon University. Future training is intended initially to be short courses in masonry, lime mortars and drystone

dyking, with a potential to become a centre for providing MAs and other, higher level courses in partnership with Banff and Buchan College, the Scottish Agricultural College and Robert Gordon University.

8.5.5 Historic Scotland Craft Fellowship Scheme

Historic Scotland has operated a Fellowship Scheme for some time and in recent years the scheme has been refocused into three distinct strands:

- Research fellows undertake two-year research projects relating to a material- or structure-based project
- Teaching fellows develop the potential of 'Training the Trainer', and the current Teaching Fellow is a masonry tutor based at the Scottish Lime Centre Trust
- Craft fellows target more specialised craft disciplines where the scheme can have a more specific impact, with recent craft fellowships including ornamental plasterwork, stained glass, architectural woodcarving and engineering.

Research and craft fellowships have a notional two-year timeframe, where the Fellow has an appointed Mentor to guide and develop their progress. Craft fellows are usually time-served, or have excellent craft skills potential and can be placed in the commercial or public sector and often a mixture of both. They receive a stipend and training allowance which can be used to attend specialised training or travel for short work-placements to gain additional experience. The fellowship scheme has attracted much interest within the UK and overseas as an innovative model, and as of July 2006 there have been 12 craft fellows and one each of the research and teaching fellows.

8.5.6 The Scottish Lime Centre Trust

From a modest operation started in borrowed premises in 1994, the Scottish Lime Centre Trust (SLCT) has now established itself as a centre of national and international importance for traditional building skills.

The main aims of the SLCT are to:

- Provide a focus for the development of expertise in traditional techniques of masonry building and the specific techniques for conservation, repair and maintenance of Scotland's masonry buildings
- See this expertise effectively applied for the benefit of Scotland's buildings

The SLCT offers a range of services including: training; consultancy in Scotland and abroad; on-site assistance and project work; research, especially on lime mortars; technical advice and

supply of traditional and environmentally sustainable building materials. Training includes three-day introductory courses to lime and more advanced lime and masonry conservation-related short courses. A series of master classes in other traditional materials is provided by visiting experts aimed at contractors, trades /craftspeople, building professionals and home owners. This expertise has enabled the SLCT to develop the accredited lime units for the SVQ 3, designed to give masonry courses critical technical knowledge.

A recent development with funding from Scottish Enterprise has been the establishment of the SLCT mobile masonry training squad, which by exemplary work it is hoped will raise standards of conservation and the use of traditional building skills in Scotland.

'It boils down to teaching conservation philosophy and practice. Tool skills are essential, but without the understanding of the use and properties of materials they do not stand alone.'



8.5.7 The HLF Bursary Scheme for Masonry Conservation in Scotland and Northern Ireland

An important development is the acquisition of a £1 million bursary fund from the Heritage Lottery Fund (HLF) by a partnership comprising Historic Scotland; the SLCT; the National Trust for Scotland; Edinburgh's Telford College; Glasgow Metropolitan College; the Mourne Heritage Trust (Northern Ireland) for a masonry conservation bursary scheme. The £1m will be matched by Historic Scotland funding over the four-year period from 2006 to 2010.

This work-based scheme will enhance current masonry training provision by bringing together and building upon the existing resources, knowledge and experience of the partner organisations. Funding will support a total of 132 bursaries (33 per year), with the bursary-holders' salary being paid by the bursary scheme, while employers will allow their staff to take one month's leave to fulfil the work placement.

The HLF expects this and their other bursary schemes to be sustainable beyond 2010, so additional financial support is necessary. This second tranche of funding will allow the SLCT masonry squad to develop from five to ten staff and allow further work placements, for example at leading masonry firms, as well as specialist tuition from Historic Scotland stone conservators. This programme will be able to provide 20 one-year placements (five per year).

One target group is the SVQ masonry apprentices who are

unable to access the new masonry conservation units not currently being taught in colleges. SLCT Staff will work alongside staff from the partnership to deliver these units at locations throughout Scotland and Northern Ireland in a satellite system of training provision.

Although this is an important development, this initiative will have a limited impact on the construction industry as a whole. Much remains to be done, including greater provision for skills development in the other main craft trades.

8.5.8 National Progression Award in Conservation Masonry

Historic Scotland is co-ordinating the development of a new conservation masonry award with masonry training providers in Scotland.

This National Progression Award seeks to raise the standard of masonry conservation and will be delivered as part of the HLF bursary scheme. This will provide training in the approach to older buildings and the principles of conservation, repair and maintenance, including an understanding of traditional building materials. The course components will adhere to the International Council on Monuments and Sites (ICOMOS) Training and Education Guidelines and the British Standard BS 7913 *Guide to the Principles of the Conservation of Historic Buildings*.

Award 1 should be achievable through a 4–5-week training programme of block release and is aimed at general building contractors and sole traders to improve their general understanding of the use of stone and lime mortars.

Award 2 will be achievable through a 5–7-week training programme of block release. This award will be more in-depth and require a higher level of entry. Candidates will be expected to be qualified to SVQ Level 3 in a related discipline or be able to demonstrate they can achieve this level by industry or other relevant experience.

Both awards will allow individuals to gain further specialised training in masonry conservation.

Under the HLF bursary scheme, 150 one-month and 20 one-year bursaries will be available over four years, and both will work towards the new masonry qualification. The one-month-long bursary holders will receive the Award 1, and one-year-long bursary recipients will receive Awards 1 and 2.

The qualification has received very strong support from specifiers, training providers and the industry. The City of Edinburgh Council has committed to make Awards 1 and 2 a condition of contract for the letting of a major masonry contract in April 2007. It is hoped to have the new qualification up and running and placements available by March 2007. Inevitably, the first year will have fewer placements, but numbers will increase in the following three years.

CONCLUSIONS AND RECOMMENDATIONS

9

- 9.1 Traditional Building Skills
 - 9.1.1 Spend
 - 9.1.2 Demand
 - 9.1.3 Supply
- 9.2 Supply of Materials
- 9.3 Recruitment to the Sector
- 9.4 Training Provision
- 9.5 Main Findings of the Report
- 9.6 Key Recommendations

conclusions and recommendations

The primary aim of this research was to inform and underpin a plan of action to ensure that the supply of traditional building skills and materials meets the repair and maintenance needs of the 500,000 pre-1919 building stock in Scotland, not simply conservation and restoration of listed buildings at the top end of the spectrum.

The findings of the research confirm and quantify the need for coordinated action to instigate sustainable positive change within this sector of the construction industry. This requires a multifaceted approach that encompasses stimulating increased spending and meeting demand with an adequate supply of skills and traditional building materials through improved training provision. A great need exists to re-establish a base-line of general knowledge and understanding of conservation and restoration across all participants, from craft to professional level in the conservation, repair, maintenance and improvement sector (CRMI). There is also a desire to demonstrate to new entrants

to the construction industry the relevance of the skills and career possibilities within the traditional building sector. Within this, is a need to encourage life-skills and reliability necessary for employment. As traditional building skills not only capture the imagination, but provide a real sense of achievement, this needs to be promoted to attract new recruits to this sector.

To achieve this requires a new vision including less formal means of training in a flexible system to integrate upskilling and continued skills development through exchange programmes or the HLF bursary scheme.

Current skills shortages and more especially bridging the skills gaps identified in this report can only be resolved by long-term planning and solutions based upon partnership. To be effective and influence real change, this must integrate with and take account of the role of the traditional buildings sector within the wider construction industry.

9.1 Traditional Building Skills

9.1.1 Spend

■ Repeat surveys are necessary among the same group of stockholders to establish spending patterns over time; however, this research shows that the stockholders are reactive in their approach to the upkeep of their buildings and respond to particular repair needs as these arise, rather than working to long-term maintenance plans

■ While the implications on future spending patterns are difficult to assess, lack of maintenance due to neglect or budget constraints leads to increased costs over time and costs soar when the need for further repairs become visible

■ Greater spending by all types of stockholders would generate a short- to medium-term surge to accommodate the accumulated repair needs and will then level off over time, but such an increase in spending is by no means certain

■ At present, the principal incentives for spending on pre-1919 buildings are availability of grants for listed buildings. Initiatives such as the five City Heritage Trusts are intended to stimulate work in the smaller-scale repair and maintenance sector, but the scope and funds are limited. In the absence of mandatory repair orders it is doubtful how much the present levels of spending will change for the majority of the pre-1919 building stock which are privately owned dwellings

■ Repair and maintenance represents 35% of the total construction industry output in Scotland (8% lower than the UK average), but as the proportion of pre-1919 buildings is the same as the UK average, current repair and maintenance is insufficient to ensure the survival of the built heritage

■ The research report by the SSLG indicates a considerable deficit in terms of the repair, conservation

and restoration needs in Glasgow and similar research should be extended to establish the extent of the problem affecting older buildings across Scotland.

9.1.2 Demand

■ While those within building conservation and the findings of this survey suggest that building owners and other stockholders are becoming more aware of the need to use skilled craftspeople and traditional building materials, much still needs to be done to create demand

■ As the majority of stockholders spend the bare minimum on the fabric of their properties, incentives to create demand are necessary to encourage real and sustainable advances in the supply chain

■ Demand must be matched with supply of appropriately skilled craftspeople, and as 33% of stockholders and between 33% and 50% of architects and building

surveyors experience delays in obtaining skilled craftspeople (even when using an established circle of firms), greater training and upskilling is needed to match any increased demand

- Stonemasons, roofers and slaters, plasterers, lead-workers and other metalworkers and joiners were reported as being the most difficult trades to find.

Supply

- This research estimates that between 2006 and 2010 an additional 4,740 workers are required in the traditional building sector, with an additional training requirement for 8,710, which is beyond the need to impart traditional building skills to the existing workforce who work on pre-1919 buildings. Gainful employment for these is dependent upon continued demand

- Fluidity between firms working on pre-1919 buildings and the new building sector affects the calculations of numbers required in the sector. This also presents a challenge in persuading non-specialist firms to acquire traditional building skills and regain the knowledge base lost in the mid 20th century

- The need to increase the supply of skills is an immediate and future requirement. However, the situation cannot be resolved immediately and a 10-year timescale may be needed if improvements in training provision and skills development are to make a real and lasting impact in the sector

- Employers are central to the supply of skills by providing training in terms of apprentices and upskilling their workforce. But as only 26% of the contractors and 24% of building materials manufacturers interviewed employ inexperienced staff and only

12% offer their staff regular training, much remains to be done to improve training and skills development.

9.2 Supply of Materials

- Availability and use of the correct materials is essential to supply and demand for traditional building skills, but increased supply of materials is dependent upon increased demand

- The fabric of pre-1919 buildings in Scotland is largely stonemasonry and so the supply of indigenous sources and the use of lime mortars for bedding and pointing must be strongly encouraged. Future demand for the latter could lead to the reintroduction of lime burning in Scotland

- Reopening quarries depends upon demand for stone in the new build sector and this can be fostered for the new build and the traditional building sectors by planning authorities specifying the use of natural, native stone for all appropriate projects

- The survey of materials manufacturers found that they were commonly using less than 25% Scottish materials, particularly stone, timber, glass, and lime. This was attributed to a combination of there being no adequate supply chains for Scottish materials or a lack of suitable materials, and represents a serious shortcoming regarding preservation and maintenance of Scotland's pre-1919 building stock

- Significant advances have been made regarding the use of stone, but similar attention is required for timber and ferrous metals, but the specialised nature of this means it is best addressed on a UK-wide basis

- Positive environmental aspects, whole-life costs and embodied

energy associated with using traditional, natural building materials, and the lesser environmental impact of the production and processing of these than modern manufactured building materials, merit greater publicity.

9.3 Recruitment to the Sector

- This research has produced mixed findings on how attractive the traditional building sector is to young people. While the Historic Scotland apprenticeships are heavily oversubscribed, employers expressed difficulties and frustrations in finding young people who are genuinely interested in pursuing a career in the built heritage sector – which is in turn a disincentive for them having apprentices

- Career changers are a suitable cohort for the traditional building sector, but the recruitment process needs to be reviewed to determine how this can be made more flexible to meet their needs

- Academic education routes hold higher prestige than the vocational, yet there is clearly an appeal in working in the traditional building sector. The excellent work by ConstructionSkills and the heritage agencies' education teams needs to be extended to include raising awareness of the historic environment and traditional building skills within the school curriculum to stimulate interest and potential future craftspeople.

9.4 Training Provision

- The immediate interests of the newbuild sector of the construction industry inevitably drive the course content within FE colleges, which has resulted in traditional building skills training being increasingly under-provided

■ Increasing the number of stonemasonry apprenticeships must be integrated with bolstering the conservation elements across all the main trades, and greater promotion among employers of the add-on conservation units and development of an SVQ Level 3 Heritage Skills qualification would improve this aspect

■ Upskilling the current workforce requires alternative and more flexible forms of training provision, such as short courses by the Scottish Lime Centre Trust and other private training providers and the ConstructionSkills OSAT scheme, if combining training with assessment

■ Demand is the driver for funding traditional building skills training whereby clients/ stockholders require skilled building contractors who in turn require trained craftspeople. Initiatives such as Edinburgh City Council Safe Buildings Programme are crucial in

promoting awareness and helping to maintain standards of workmanship and use of the correct materials

■ Increased training can be achieved by utilising the existing FE college infrastructure and trainers. A willingness exists among a range of colleges to extend the amount of traditional building skills training they provide. Some are keen to improve this by forging links with a wider consortia, such as the heritage agencies and/or private training providers⁶⁵

■ Training is required for college trainers to develop their knowledge and understanding of the approach to and use of traditional building methods and materials, and this can be developed in conjunction with the Scottish Conservation Forum for Education and Training

■ A multi-skilled fabric maintenance technician is needed to work in this sector

■ The HLF Bursary Scheme for Masonry Conservation in Scotland

and Northern Ireland and e-learning being developed by Learn Direct & Build are opportunities for improved and different means of learning and skills development. The latter could provide a UK-wide virtual network linked to the development of traditional building skills centres

■ Future training provision will also need to address the under-represented needs of the manufacturers and suppliers of traditional building materials. Some of these specialised industries fall outside the remit of ConstructionSkills and this will require cross-sector involvement

■ Manufacturing firms are heavily reliant upon in-house training, but this is not supported by incentives or training subsidies. Consideration might be given to providing some manufacturing training within centres for traditional building skills. This would also promote greater interaction and exchanges between firms and training providers

■ Increased demand for dimensional stone creates training challenges. Proskills (the Sector Skills Council for the process and manufacturing sector) is already active in this field, and can build upon the experience of those still within the industry⁶⁶

■ Understanding among building professionals of specifying and sourcing traditional building materials requires attention. A more holistic training model whereby manufacturers, contractors, sole traders, craftspeople and professionals share common modules of training should be considered.



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9.5 Main Findings of the Report

	Demand	Skills Supply	Material Supply Chain	Contractors and Sole Traders	Training Provision
Facts	<p>446,000 pre-1919 buildings in Scotland including around 47,000 listed buildings</p> <p>Average spend on pre-1919 buildings of £2,438, but ranging from £1,250 for private owners to £23,772 among owners and custodians of listed buildings</p> <p>£1.2 billion annual spend on repair and maintenance on pre-1919 buildings - insufficient to ensure survival of Scotland's built heritage</p> <p>Rise in future spending is not certain and may not occur without intervention</p> <p>Good level of understanding exists among stockholders of the need for the use of traditional building materials and skills</p>	<p>Skilled trades/craftspeople are difficult to find, especially stonemasons</p> <p>4,740 additional workers needed in the traditional sector to meet expected demand from 2006 to 2010</p> <p>Stockholders reactive in terms of repair</p> <p>82% of stockholders were 'satisfied' or 'most satisfied' with completed work</p> <p>Skills shortage and skills and knowledge gaps exist within the traditional building sector</p> <p>Knowledge gaps are evident in specifications by architects and surveyors for traditional building work</p>	<p>The use of compatible building materials for conservation and repair is essential to ensure the health of the fabric of the buildings</p> <p>Less than 25% of materials used by traditional building materials manufacturers & suppliers is of Scottish origin</p> <p>Increased supply of materials is dependent upon increased demand</p> <p>Manufacturers and suppliers of traditional building materials reluctant to employ untrained staff</p> <p>Only 24% recruit apprentices, and incentives to train are seen as inadequate</p>	<p>Over 50% of the contractors have real difficulties with recruitment</p> <p>Only 26% of contractors engage inexperienced staff</p> <p>60% of contractors have staff in formal training; firms with 50–100 staff and over 500 are best in this respect; 100–500-sized firms have very low numbers in training</p> <p>Only 1 in 10 of the sole traders have staff in formal training and 73% undertake no training at all</p>	<p>New build drives the FE course content, to the detriment of traditional building skills training</p> <p>Disproportionately low number of available places on those courses which are most relevant to traditional building skills</p> <p>8,710 individuals require training in traditional building skills between 2006 and 2010</p> <p>Manufacturers and suppliers heavily reliant on in-house training</p> <p>65% of manufacturers and suppliers feel they need further training</p>
Reasons	<p>Culture of spending the bare minimum on the fabric of homeowners' properties is endemic</p> <p>Lack of incentives to maintain buildings</p> <p>As building stock increases with age, more conservation, repair and maintenance is required</p>	<p>Shortage of labour, skills and experience</p> <p>Specialists are sparse in some regions</p> <p>Poor image of construction industry and lack of knowledge of built heritage sector results in lack of applicants</p> <p>Insufficient training provision to meet demand across Scottish regions</p>	<p>Closure of quarries and widespread unavailability of traditional building materials</p> <p>Inadequate material supply chains</p> <p>Widespread ignorance in the industry of the need to use traditional materials</p>	<p>Existing training focused on new build</p> <p>Widespread perception that upskilling employees leads to reduced retention</p> <p>High level of travel for some apprentices to attend courses, especially in rural areas</p> <p>Perceived lack of incentives for employers to provide adequate training</p>	<p>Low uptake of add-on conservation units</p> <p>Training opportunities are sparse in some regions</p> <p>Lack of relevant training for manufacturers' & suppliers' employees</p> <p>Lack of appropriately skilled trainers to deliver traditional building skills courses which require a higher skills and knowledge content</p>
Solution	<p>SSLG Glasgow project to be extended to other cities/regions to refine assessment of demand</p> <p>More education required for stockholders on the need for sympathetic conservation and repair</p> <p>Create incentive structure to encourage or obligate regular maintenance by all stockholders</p>	<p>Government needs to create parity of esteem between academic and vocational training routes</p> <p>Reintroduce career progression for craft trades</p> <p>Address image issues of the construction industry and built heritage sector to improve recruitment</p> <p>Target skills gaps at regional and national level</p>	<p>Proposed reopening of small-scale stone quarrying</p> <p>Stimulate demand for native materials in new build and CRMI by raising awareness of the importance and benefits</p> <p>Problems within timber and ferrous metals supply chain need UK-wide solution</p> <p>Manufacturers and suppliers need to promote their products and good practice to architects, building surveyors, contractors and sole traders as part of CPD training</p>	<p>Educate employers on the benefits of training to their business</p> <p>Reinforce and extend need for accreditation of contractors and professionals working on historic buildings</p> <p>Develop flexible training routes to encourage uptake from all age groups and overcome geographic inhibitors</p>	<p>Strengthen conservation elements of training courses across the main craft trades and provide upskilling opportunities for existing trainers to support delivery</p> <p>Raise awareness of traditional building skills training routes to employers and contractors</p> <p>Address need for incentives or subsidies to support manufacturers' & suppliers' training needs</p>

9.6 Key Recommendations

Recommendation	Link to Research Theme
1. NHTG, ConstructionSkills and Historic Scotland – through the Sector Skills Agreement, coordinate action and partnership involvement to tackle the issues identified in this report to improve skills training and development	Common to all themes
2. NHTG and Historic Scotland – develop an effective sector-wide communications and marketing strategy to raise awareness of the need for the traditional building skills and materials	Demand and Supply
3. Scottish Executive and Historic Scotland – determine medium- and long-term demand for masonry repairs and conservation by supporting the extension of the SSLG Glasgow audit to other Scottish cities	Demand
4. NHTG and Historic Scotland – increase awareness by clients, designers and specifiers, property owners and funding bodies regarding the use of suitably skilled and qualified contractors and traditional building materials for conservation, repair and maintenance	Demand
5. Scottish Executive and Scottish Funding Council – provide long-term funding opportunities for the conservation, repair and maintenance of historic buildings and training of craftspeople to ensure continuity in developing and training the workforce	Demand and Training
6. ConstructionSkills, NHTG and Historic Scotland – improve the image of the construction industry and built heritage sector and attract applicants with suitable skills and attitude and create a more diverse workforce	Demand
7. Scottish Executive, Scottish Funding Council, NHTG and Historic Scotland – work together to plan and develop future training and skills needs across the traditional building sector spectrum, especially for career changers and upskilling	Training
8. NHTG and Historic Scotland – respond to the desire for a career progression route within the sector by implementing a mentoring scheme to ensure that less experienced practitioners gain experience and knowledge from more established craftspeople, and ensure that qualifications and training are relevant, easier to access and valued within the sector	Supply
9. ConstructionSkills, NHTG and Historic Scotland – improve awareness of traditional building crafts skills within the school curriculum and promote the vocational route as a career pathway by dissemination of educational materials and visits to and involvement of schools, with particular emphasis on interactive materials and integrating this with ConstructionSkills and Historic Scotland education programmes to maximise opportunities	Supply
10. ConstructionSkills, NHTG and Historic Scotland – encourage investment in training by contractors and promote the benefits of apprenticeships through developing an appropriate strategy to improve information on and support for careers within this sector	Supply

SKILLS ACTION PLAN

10

skills action plan

The key findings of this research were presented to a group of 71 stakeholders including contractors, manufacturers, stockholders, building professionals, trade federations, professional associations, training providers, heritage organisations and public agencies in Glasgow on 21 June 2006.

The delegates focused upon three key areas:

- Receiving the findings of the research project
- Discussing and agreeing solutions to address the issues raised in the report
- Agreeing the Skills Action Plan

This consultation process was important in presenting the findings to a wider group than the research steering group and using the collective experience of this range of stakeholders to ensure that the action plan was relevant and would achieve support.

This Skills Action Plan forms an integral part of an overarching strategy aimed at providing a cohesive, long-term solution to the current skills shortages and skills and knowledge gaps identified in the report.

To be successful, this requires a sector partnership between the Scottish Executive; CITB-ConstructionSkills; Proskills (Sector Skills Council for Process and Manufacturing Sector); Historic Scotland; other heritage organisations; contractors; employers' groups; FE and private training providers and the National Heritage Training Group.

Three aspects are essential to underpin the Skills Action Plan:

1. Significant improvements in the amount and

quality of traditional building skills training provision can only be realised within a 10-year timescale. An immediate start on strategic and tactical work to develop this is a matter of urgency so that progress can be made and profited from in the shorter term

2. The Scottish Executive must recognise that traditional building skills and materials are a national requirement, and it needs to address the current problems and accept its responsibility to provide appropriate relevant support and funding for labour and skills development in this sector

3. Historic Scotland as the lead agency within Scotland should work with the NHTG, as the UK-wide specialist skills development group for traditional building skills training and development, to coordinate and promote the work needed to deliver this Skills Action Plan

Sequencing to implement the measures proposed in the Skills Action Plan is essential, but many of the measures need to be pursued together to be mutually reinforcing. Concerted measures to address education and incentives for the demand side are for example needed, but there is little merit in stimulating demand if there is an insufficiently skilled workforce to meet this.

The current skills deficit means that immediate action is required so that renewed investment in traditional building skills training can have a real impact on the labour market. The human and financial resources needed to promote and implement these initiatives must be carefully considered and developed. This requires the will of the construction industry and the Scottish Executive to regard the preservation of the built heritage as a national priority and act accordingly.

Meeting the Challenge

Traditional Building Sector in Scotland Skills Action Plan

Research Theme 1: Demand for Skills and Materials

1.1. Dissemination of information and awareness-raising among a range of stakeholders to promote demand for traditional building skills and materials

Recommendations, Actions and Deliverables		Delivery									
1.1.1	Exploit established means of mass communication (television, radio & print media), to raise public awareness of the need for traditional building skills and materials and to encourage an appreciation of the skills and expertise of craftspeople	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•								
Action	Approach television companies or develop current contacts, e.g. BBC's <i>Restoration</i> series, with proposals and opportunities for programmes featuring traditional building skills and materials, based on successful international examples such as the <i>Your House</i> series in the Republic of Ireland	Lead: NHTG with Historic Scotland and ConstructionSkills Scope: UK-wide but with regional emphasis									
Performance Measures	Mid-2007: gather existing information on or develop evaluation of the impact of past relevant TV series, radio programmes and printed media articles Mid-2008: TV programme focused on skills and materials to be broadcast	Priority: High			Impact: High			Ease: Easy			
1.1.2	Make fuller use of existing information for clients, such as that developed by the Technical Conservation Research and Education Division (TCRE) of Historic Scotland, and ensure that it carries with it clear messages of the importance of maintenance	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•									
Action	Explore means of mass distribution of this information to the public, for instance through local authorities, City Heritage Trusts, heritage groups, building societies, insurance companies, estate agents, the web and the press	Lead: Historic Scotland Scope: Scotland-wide									
Performance Measures	Late 2007: Mass distribution mechanism in place	Priority: High			Impact: High			Ease: Easy			
1.1.3	Target a wider range of stakeholders through a coordinated campaign to promote maintenance, using information tailored to their particular interests	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Identify key stakeholders such as estate agents, solicitors, building societies, insurance companies and others who impact on the building industry and create information packs accordingly, together with general outreach and relationship building Establish consistent message promoting maintenance from Scottish Executive level downwards	Lead: NHTG, Historic Scotland, Convention of Scottish Local Authorities and Scottish Executive Scope: Scotland-wide/UK-wide									
Performance Measures	2010: Importance of building maintenance given clear credence as part of stakeholders' published literature	Priority: Medium			Impact: Medium			Ease: Medium			

1.1.4	Encourage familiarity at an early age with the practical needs of our built heritage	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Continue and expand dissemination of educational materials and visits to and involvement of schools, with particular emphasis on interactive materials, such as the Heritage activity currently under development, and by integrating with ConstructionSkills and Historic Scotland education programmes	Lead: NHTG, Historic Scotland, National Stone Institute, ConstructionSkills, City Heritage Trusts									
		Scope: Scotland-wide									
Performance Measures	Mid-2007: Map linkages to current curriculum to fully maximise opportunities	Priority: Medium			Impact: High			Ease: Easy			
1.1.5	Improve levels of understanding of traditional skills and materials among the building professions, especially with a view to the improvement in standards of specification	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•	•	•	•	•
Action	1. Work with the professional bodies to continue to unify and promote uptake of conservation accreditation 2. Explore with the professional bodies the possibility of strengthening the conservation components of professional courses and study curricula 3. Investigate with partners the formation of a technical advice centre to provide general guidance to building professionals on skills and materials	Lead: Historic Scotland and SSLG with NHTG and Royal Incorporation of Architects in Scotland (RIAS), Royal Institution of Chartered Surveyors (RICS), Institution of Structural Engineers, Institution of Civil Engineers etc									
		Scope: Scotland-wide, possibly UK-wide									
Performance Measures	Mid-2008: Achieve a 15% increase in uptake of conservation accreditation	Priority: Medium			Impact: Medium			Ease: Medium			
1.1.6	Improve the information available to stockholders regarding the traditional skills of contractors and craftspeople	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•							
Action	Establish a system of conservation accreditation for craftspeople, building on advances made to date in England, and in certain trades Professional organisations to continue to encourage members to become accredited, with Historic Scotland leading by accreditation of its practitioners, in line with recommendations of 2006 HEACS report	Lead: Historic Scotland, SSLG and NHTG with the trade federations, ConstructionSkills and Construction Liaison Executive (CLE)									
		Scope: UK-wide									
Performance Measures	Late 2007: Trade federation support secured Early 2008: System established 2009: At least 25% of existing craftspeople working in the sector are conservation-accredited for their respective trade	Priority: High			Impact: High			Ease: Medium			
1.1.7	Strengthen organisations on the ground that promote good practice in the repair, maintenance and conservation of pre-1919 buildings	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Consider increase in budget and longer-term commitment for City Heritage Trusts Evaluate the potential of schemes such as 'Monument Watch' in appropriate circumstances and by considering results of pilot projects	Lead: Historic Scotland and NHTG									
		Scope: Scotland-wide									
Performance Measures	End of 2007: Numbers and value of grants issued raised by 20% Mid-2008: Impact on City Heritage Trusts evaluated	Priority: Medium			Impact: Medium			Ease: Medium			

1.1.8	Increase awareness in planning authorities of the need to specify Scottish traditional materials in order to stimulate demand for them and the use of appropriate materials	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•	•	•	•	•
Action	Investigate the relevance of English practices and their use as a means to assisting work, and explore a useful means of replicating them in Scotland to identify, safeguard and allow access to indigenous sources	Lead: SSLG, Historic Scotland, NHTG, Scottish Natural Heritage, Scottish Society of Directors of Planning, Architecture and Design Scotland (A+DS) and Scottish Executive Inquiry Reporters Unit Scope: Scotland-wide									
Performance Measures	2007: Research started to explore and promote increased availability of traditional building material sources 2016: Stone re-established as material of choice rather than renders	Priority: High			Impact: Medium			Ease: Medium			

1.1.9	Take urgent action to stem the damage being caused to stonemasonry by cement repairs and ill-matched replacement stone, and promote the use of lime mortars and matching stone as a matter of course	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•								
Action	Increase distribution of existing technical information to public and private stockholders, local authorities and building contractors, in conjunction with promoting routine care and maintenance (Action 1.1.2). Consolidate dissemination and promotion with regional seminars.	Lead: Historic Scotland, SLCT, SSLG, City Heritage Trusts and Construction Liaison Executive (CLE) Scope: Scotland-wide									
Performance Measures	2007: Identify baseline figures for the sales of lime products and monitor on an annual basis	Priority: High			Impact: High			Ease: Easy			

1.2. Information and awareness-raising underpin demand for skills and materials, but the following **further incentives are essential**

Recommendations, Actions and Deliverables		Delivery									
1.2.1	Eliminate existing contradictions in building regulations which undermine conservation requirements	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•					
Action	Continue ongoing work with Scottish Building Standards Agency towards building regulations/standards appropriate to traditional buildings, and ensure that this information is disseminated to all levels, that the scope of professionals roles is clearly defined and that it is used to increase awareness of local authority verifiers and professional certifiers	Lead: Historic Scotland and Scottish Building Standards Agency Scope: Scotland-wide									
Performance Measures	2007–2008: Historic Scotland and Scottish Building Standards Agency to produce guidelines	Priority: Medium			Impact: Medium			Ease: Medium			

1.2.2	Make maintenance agreements a condition of Historic Scotland and the Heritage Lottery Fund (HLF) grants, and create sink funds for repairs	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•									
Action	Take necessary steps within Historic Scotland	Lead: Historic Scotland, City Heritage Trusts and relevant local authorities									
		Scope: Scotland-wide									
Performance Measures	Early 2007: Measure effect	Priority: Medium			Impact: Medium			Ease: Easy			
1.2.3	Correct the negative incentives in current VAT regime, such as contradictions between rebates for alteration not repair work	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
			•	•	•						
Action	Establish current situation within VAT system and explore possible changes with the respective authorities. UK-wide perspective to be taken from ministerial level, in line with 2006 HEACS report recommendations	Lead: Historic Environment Advisory Council for Scotland									
		Scope: UK-wide									
Performance Measures	2010: VAT to be a level playing-field	Priority: High			Impact: Medium			Ease: Difficult			
1.2.4	Work towards an insurance and mortgage regime that is favourable to maintenance	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
			•	•	•	•					
Action	Explore with insurance companies and mortgage lenders (through the Association of British Insurers and the Council of Mortgage Lenders) the potential benefits of the introduction of a system equivalent to a 'no claims bonus'/discounts in interest rates for proof of regular maintenance work undertaken and underpinned by legislation	Lead: NHTG, ConstructionSkills and SSLG									
		Scope: UK-wide									
Performance Measures	2008: Commence programme of monitoring of repairs notices issued by local authorities and monitor every 2 years 2012: Achieve a 20% reduction in repairs notices issued by local authorities	Priority: High			Impact: Medium			Ease: Difficult			
1.2.5	Work towards a Council Tax regime that encourages maintenance	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
			•	•	•	•					
Action	Explore with local authorities the possible benefits of introducing a system of Council Tax rebates in recognition of proof of regular maintenance work or punitive taxes for those who fail to maintain; accompanied by information packs to the public in conjunction with their tax notices (Action 1.1.2)	Lead: NHTG, ConstructionSkills, Convention of Scottish Local Authorities and Scottish Executive									
		Scope: UK-wide									
Performance Measures	See 1.2.4	Priority: Medium			Impact: Medium			Ease: Difficult			

1.2.6	Work towards market acceptance of building maintenance of pre-1919 buildings	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•	•	•	•	•
Action	<p>1. Explore the possibility with building societies of the introduction of a system of proof of maintenance as a legal requirement for the selling of pre-1919 property and integrate into a wider package of work within the financial services industry</p> <p>2. Historic Scotland to partner local authorities in providing repair and maintenance grants for listed buildings and unlisted properties in conservation areas, in line with 2006 HEACS report recommendations</p> <p>3. Investigate benefits of a National Repair and Maintenance fund in line with recommendations of 2006 HEACS report</p>	<p>Lead: NHTG, Historic Scotland, SSLG, Communities Scotland and CLE</p> <p>Scope: Scotland-wide and subsequently UK-wide</p>									
Performance Measures	<p>1. Produce research into international models which might be adapted for this purpose.</p> <p>2. Also see above 1.2.4</p>	Priority: Medium		Impact: High			Ease: Difficult				

Research Theme 2: Supply of Skills and Materials

2.1. Attracting people with the potential to become accomplished traditional craftspeople into the sector is essential to the future supply of traditional skills. People tend to make critical career decisions at three key stages: in school at P7/S1; leaving school/at the young apprentice stage and mid-career. All three need to be taken into account in developing different strategies.

Recommendations, Actions and Deliverables		Delivery									
2.1.1	Raise awareness of traditional skills at an early age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Continue and expand dissemination of educational materials and visits to schools, with particular emphasis on interactive materials (as at 1.1.4)	<p>Lead: NHTG, Historic Scotland, NSI and ConstructionSkills</p> <p>Scope: Scotland-wide</p>									
Performance Measures	2007: Establish a coordinated strategy between the partners to use and build upon existing school links and activities	Priority: High		Impact: Medium			Ease: Easy				
2.1.2	Ensure that school leavers and those returning to work have access to information on traditional skills	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Target information packs and events towards parents, career advisers, employment agencies, Careers Scotland, etc to highlight the potential for careers in traditional building skills to command a rewarding salary	<p>Lead: NHTG, Historic Scotland, ConstructionSkills and Learn Direct & Build</p> <p>Scope: Scotland-wide</p>									
Performance Measures	2007: Clearly map out current opportunities for progressing in each field of traditional skills	Priority: High		Impact: Medium			Ease: Easy				

2.1.3	Target individuals with the interest and potential to become accomplished craftspeople	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Put emphasis on high-quality work and highly skilled decisions as being defining characteristics of the traditional building sector in all promotional material	Lead: NHTG, Historic Scotland, ConstructionSkills and Learn Direct & Build									
		Scope: Scotland-wide									
Performance Measures	2007-2008: Identify craftspeople and record and promote examples of best practice 2008: Develop mentoring scheme for more experienced to help develop the skills, knowledge of less experienced practitioners	Priority: High			Impact: Medium			Ease: Easy			
2.1.4	Make it as easy as possible for those at mid-career to come into the traditional building industry	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Ensure that the structure and funding of courses is sufficiently flexible to cater for the particular needs of individuals at mid-career, who often have family commitments and financial constraints	Lead: Historic Scotland, Scottish Funding Council, Scottish Qualifications Authority and Local Enterprise Companies (LEC)									
		Scope: Scotland-wide									
Performance Measures	2008–2009: Monitor throughput of trainees to assess changes to allow more career changers to train or upskill	Priority: High			Impact: Medium			Ease: Medium			
2.1.5	Establish greater parity of esteem between vocational and academic training and education routes	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Promote vocational training routes in general and encourage joint promotional campaigns among training providers	Lead: Historic Scotland and NHTG									
		Scope: Scotland-wide									
Performance Measures	2007: Devise and distribute promotional material and develop links with training providers	Priority: Medium			Impact: Medium			Ease: Difficult			
2.1.6	Increase opportunities for possible entrants into the traditional building sector to receive training without having the benefit of relevant employment	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•								
Action	Assess efficacy of existing assistance measures for possible entrants and explore means of introducing alternative funding arrangements for traditional building courses	Lead: Historic Scotland, Scottish Funding Council and Local Enterprise Companies									
		Scope: Scotland-wide									
Performance Measures	2007: Assessment of existing assistance 2008: Development and rollout of alternative funding models if considered necessary	Priority: High			Impact: Medium			Ease: Difficult			

2.1.7	Promote and maintain exchanges of ideas with key stakeholders in the UK, Republic of Ireland and Europe	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•	•	•	•	•
Action	Ensure coordinated approach to delivery of skills action plans and explore and promote as necessary European programmes for exchanges of personnel and experts	Lead: NHTG, Historic Scotland, Cadw Welsh Assembly Government, Environment and Heritage Service Northern Ireland									
		Scope: UK and Europe									
Performance Measures	2007: Develop links with other home countries, Republic of Ireland and European partners on traditional building skills training	Priority: High			Impact: High			Ease: Difficult			

2.2. Even with measures such as 2.1.5 in place, employers will continue to be the principal drivers for training. **What incentives would encourage employers to provide more training?**

Recommendations, Actions and Deliverables		Delivery									
2.2.1	Give employers a direct incentive in the marketplace in order to increase the amount of traditional skills training they provide to improve standards of work	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Establish a system of conservation accreditation for contractors and craftspeople by building upon advances made to date in England and in certain trades	Lead: Historic Scotland, NHTG and ConstructionSkills in conjunction with the Trade Federations									
		Scope: UK-wide									
Performance Measures	2007–2008: Assess the impact of Constructionline for public procurement and Trustmark scheme for homeowners and consider a specific historic building contractors sub-section within these schemes	Priority: High			Impact: High			Ease: Medium			
2.2.2	Use the procurement process as a means to raise building work standards and thereby provide an incentive for training	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Continue to build upon gains made in introducing quality price tendering in public procurement procedures involving pre-1919 buildings, and develop integrated works and training contracts to encourage training within companies Explore the use of the City of Edinburgh model for requiring training provision as part of tender for repairs Examine potential impact of the Scottish Executive's Construction Procurement Manual and the Scottish Executive LOAN in the delivery of this recommendation	Lead: Scottish Executive, Local Enterprise Companies and Local Authorities									
		Scope: Scotland-wide									
Performance Measures	2007: Evaluate tendering processes within the sector 2008: Organise a meeting of funding bodies and procurers of traditional building skills work to discuss implementing changes to tendering process, but working within EU procurement regulations	Priority: High			Impact: High			Ease: Difficult			

2.2.3	Increase financial incentives for traditional skills training	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•					
Action	Expand and extend the new HLF bursary scheme which funds trainees' salaries and expenses to gain work-based practical experience through placements with historic building contractors	Lead: Historic Scotland, HLF, ConstructionSkills and NHTG Scope: Scotland and N. Ireland									
Performance Measures	2010: Funding and placement providers in place to extend and expand the bursary scheme beyond its current time-span	Priority: High			Impact: Medium			Ease: Medium			
2.2.4	Target sole traders and small contracting firms in particular as part of an overall strategy to address their particular reluctance to train themselves or provide training	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Explore with trade organisations the most effective strategies for targeting these firms	Lead: Historic Scotland, Trade Federations, and Learn Direct & Build Scope: Scotland-wide									
Performance Measures	2007–2008: Develop approach and means of reaching target groups	Priority: Medium			Impact: Medium			Ease: Difficult			

2.3. Other incentives for improving skills are dependent upon **improving career structures and opportunities within the traditional building sector**. How can such improvements be made?

Recommendations, Actions and Deliverables		Delivery									
2.3.1	Increase pay levels in the traditional building sector in order to reflect the levels of skills required	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•	•	•	•	•
Action	While much of this depends upon market forces that ultimately are driven by demand, a coherent strategy between Historic Scotland, NHTG, the Trade Federations and Trades Unions to develop measures such as the introduction of conservation accreditation for craftspeople should be developed Ensure that incentives are in place in order to reflect the additional skills and expertise required, in addition to obligations	Lead: NHTG, Trade Federations, Trades Unions Scope: Scotland-wide, although market forces in driving up pay levels are likely to be UK-wide									
Performance Measures	Mid-2007: Develop strategy to consider how to address remuneration for craftspeople within the sector	Priority: High			Impact: High			Ease: Difficult			
2.3.2	Setting standards and benchmarks for repair and maintenance	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
			•	•	•	•					
Action	Explore developing written standards with Trade Federations and awarding bodies	Lead: Historic Scotland and NHTG in conjunction with Trade Federations Scope: Scotland-wide									
Performance Measures	Mid-2008: Reach agreement on standards and develop common standards for consultation within the sector	Priority: Medium			Impact: High			Ease: Medium			

2.3.3	Provide more support for upskilling within companies or for companies and craftspeople to switch to using more traditional methods to meet an improvement in career opportunities	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•								
Action	Extend the system of bursaries to enable master craftspeople to travel and train around the UK and abroad	Lead: Historic Scotland, HLF, NHTG, and ConstructionSkills									
		Scope: Scotland-wide									
Performance Measures	2007–2008: Investigate funding for bursaries and work-exchange opportunities	Priority: Medium			Impact: Medium			Ease: Medium			

2.3.4	Enable greater cross-fertilisation of ideas and practices among traditional building skills and building material manufacturing companies to improve standards	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Provide public subsidy for promotion of small grants and information by trade federations	Lead: Historic Scotland, NHTG, Proskills and Trade Federations									
		Scope: UK-wide									
Performance Measures	Late 2007: Establish a forum for contractors and manufacturers to exchange ideas and encourage manufacturers/suppliers to self-help by promoting their products and good practice to architects, building surveyors, contractors and sole traders as part of CPD training	Priority: Medium			Impact: Medium			Ease: Medium			

2.4. How can improvements in the supply of traditional building materials be matched by those in the materials supply chains?

Recommendations, Actions and Deliverables		Delivery									
2.4.1	Quantify the materials and skills needs of the pre-1919 building stock, particularly stone and slate	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•	•	•	•	•
Action	Evaluate, using the SSLG Glasgow project as a model, the need for stone and stonemasons in other parts of the country, such as those with an established City Heritage Trust and other towns	Lead: SSLG, British Geological Survey, Historic Scotland, NHTG and Proskills									
		Scope: Scotland-wide, although initially in selected areas									
Performance Measures	Accurate quantification of building needs is a lengthy task, and country-wide assessment would require considerable time and resources Funding and buy-in from local authorities needs to be addressed initially Mid-2008: Two further studies on the scale of Glasgow project, followed by two others	Priority: Medium			Impact: Medium			Ease: Medium			

2.4.2	Promote the reintroduction of snatch quarrying	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Disseminate information on successful cases to the industry and appropriate public bodies, together with information on technological advances in quarrying techniques and environmentally sensitive means of local stone extraction Local authorities to be encouraged to recognise disused quarries as assets rather than as potential brown-field development sites	Lead: SSLG, Historic Scotland, NHTG, Scottish Lime Centre Trust (SLCT), enterprise networks, local authority planning departments Scope: Scotland-wide									
Performance Measures	2008: Initiate programme of university research/innovation in relation to quarrying, supported by Scottish Executive Proof of Concept Fund	Priority: Medium			Impact: Medium			Ease: Easy			
2.4.3	Promote the case for the extension of quarrying activities in general, including the reintroduction of slate quarrying and lime burning	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Disseminate information to the industry and relevant public bodies, including the findings of the SSLG work in quantifying stone needs in Glasgow, and target the urgent need to produce indigenous slate	Lead: SSLG, Historic Scotland, NHTG, SLCT, enterprise networks and Proskills Scope: Scotland-wide									
Performance Measures	By 2008: guidance on use of second-hand slate for repair and maintenance of historic buildings only to have been issued by Scottish ministers, in line with recommendations from 2006 HEACS report	Priority: High			Impact: Medium			Ease: Difficult			
2.4.4	Promote the development of the skills needed and environmental impact of the extension of quarrying activity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Continue and extend ongoing research work Addressing the issue of commercial viability is pivotal to this recommendation	Lead: Proskills, SSLG, Historic Scotland, NHTG, SLCT and enterprise networks Scope: Scotland-wide									
Performance Measures	End of 2007–2008: Review ongoing research and support appropriate action and dissemination of information	Priority: Medium			Impact: Medium			Ease: Medium			
2.4.5	Consider means to increase the competitiveness of Scottish natural building materials over those imported	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
				•	•	•	•	•			
Action	Conduct UK-wide research to address this issue in all four home countries	Lead: Confederation of British Industry (CBI Scotland) and Historic Scotland Scope: UK-wide									
Performance Measures	Carry out research into how the real cost of imports can be passed on to the market and how Scottish producers can stimulate market demand for their product Research to confirm the extent to which Scottish vernacular building materials can contribute to regional diversity and a sustainable future, in line with recommendations from 2006 HEACS report	Priority: Medium			Impact: Medium			Ease: Medium			

2.4.6	Improve the supply of home-grown and imported hard- and softwoods for repair of traditional buildings	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
				•	•	•	•	•	•	•	•
Action	Establish UK-wide research to assess the current situation of the supply of materials and skills in timber, and to devise a sector-specific approach	Lead: The Forestry Commission and NHTG									
		Scope: UK-wide									
Performance Measures	2007: Establish links with the Forestry Commission and devise strategy	Priority: Medium			Impact: Medium			Ease: Medium			
2.4.7	Take urgent action to address the critical situation of the supply of materials and skills in sectors related to ferrous metals and their use on pre-1919 buildings	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•					
Action	Promote and support the UK Ferrous Metals Forum and produce detailed analysis of the present situation in the sector	Lead: NHTG and UK Ferrous Metals Forum									
		Scope: UK-wide									
Performance Measures	Early 2008: Establish a baseline measurement of the number of foundries and people employed in the ferrous metals and related sectors	Priority: High			Impact: Medium			Ease: Medium			

Research Theme 3: Training Provision for Traditional Craft Skills

3.1. Factors of geography and low potential uptake of specialised courses are obstacles to training provision. How can these be overcome to ensure that training provision meets the skills requirements of the traditional building stock?

Recommendations, Actions and Deliverables		Delivery									
3.1.1	Continue training provision in the direction of greater flexibility, using alternative delivery mechanisms to the formal college route	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	1. Promote Learn Direct & Build's traditional skills package 2. Create mobile training units on the basis of the SLCT stonemasonry squads and ConstructionSkills OSAT model	Lead: NHTG, Historic Scotland, ConstructionSkills, Local Enterprise Companies and SLCT									
		Scope: Scotland-wide									
Performance Measures	2007: Develop a clear skills route map for all occupational levels covering both how to join the construction industry and traditional buildings sector and the potential for progression	Priority: Medium			Impact: Medium			Ease: Medium			

3.2. More generally, provision of traditional training must be increased to meet the demands of our traditional building stock. What other means are there of improving the scope and availability of traditional training?

Recommendations, Actions and Deliverables		Delivery									
3.2.1	Change the present situation whereby pockets of traditional skills providers work in isolation from one another	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
			•	•	•	•	•	•			
Action	Develop a Centre for Traditional Skills, which can be a virtual network of training providers as an information exchange and source of specialised trainers	Lead: Historic Scotland, NHTG, SLCT, employers, and Learn Direct & Build									
		Scope: Scotland-wide									
Performance Measures	2008: Where feasible Historic Scotland training commitment to be amalgamated 2009: Bring together existing centres of excellence in traditional skills training throughout Scotland to form working group 2011: Scottish Centre for Traditional Skills to be launched	Priority: Medium			Impact: High			Ease: Difficult			
3.2.2	Address the provision of highly specialist training, particularly for the most endangered skills	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Explore further with employers and trade federations the most workable means of supporting specialist training	Lead: NHTG and Learn Direct & Build									
		Scope: UK-wide									
Performance Measures	2007: Establish extent of and needs within specialist training and means of using current resources, trainers and structure to best effect	Priority: Medium			Impact: Medium			Ease: Medium			
3.2.3	Increase the uptake of traditional building skills training within the FE college system	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Clarify the present situation of add-on conservation units as qualifications, and introduce the Historic Scotland Masonry Qualification Promote this qualification to FE colleges and Trade Federations to encourage uptake and ensure that potential demand can be met Upskill existing trainers as necessary to support the delivery of conservation units/heritage qualifications	Lead: Historic Scotland, Scottish Qualifications Authority, NHTG and SLCT									
		Scope: Scotland-wide									
Performance Measures	2008: Establish the NHTG Training the Trainers initiative in Scotland 2010: Heritage qualifications fully supported within Scottish FE colleges	Priority: High			Impact: Medium			Ease: Medium			

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11

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appendix

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES COVERED BY CONSTRUCTIONSKILLS

SIC 45	CONSTRUCTION
SIC 45.1	Site Preparation
SIC 45.11	Demolition and wrecking of buildings; earth moving
SIC 45.12	Test drilling and boring
SIC 45.2	Building of complete construction or parts; civil engineering
SIC 45.21/1	Construction of commercial buildings
SIC 45.21/2	Construction of domestic buildings
SIC 45.21/3	Construction of civil engineering constructions
SIC 45.22	Erection of roof covering and frames
SIC 45.23	Construction of motorways, roads, railways, airfields and sport facilities
SIC 45.24	Construction of water projects
SIC 45.25	Other construction work involving special trades
SIC 45.3	Building installation
SIC 45.32	Insulation work activities
SIC 45.34	Other building installation
SIC 45.4	Building completion
SIC 45.41	Plastering
SIC 45.42	Joinery installation
SIC 45.43	Floor and wall covering
SIC 45.44	Painting and glazing
SIC 45.45	Other building completion
SIC 45.5	Renting of construction or demolition equipment with operator
SIC 74	OTHER BUSINESS ACTIVITIES
SIC 74.2	Architectural and engineering activities and related technical consultancy
SIC 74.20/1	Architectural activities
SIC 74.20/2	Urban planning and landscape architectural activities
SIC 74.20/3	Quantity surveying activities
SIC 74.20/4	Engineering consultative and design activities
SIC 74.20/5	Engineering design activities for industrial process and production
SIC 74.20/6	Engineering related scientific and technical consulting activities
SIC 74.20/9	Other engineering activities

Source: UK Standard Industrial Classification of Economic Activities, 2003, Office for National Statistics.

Note: Asset Skills (the SSC for Property and Facilities Management) has a peripheral interest in SIC 74.2 Architectural and engineering activities and related technical consultancy.

ConstructionSkills shares an interest in SIC 45.31 Installation of electrical wiring and fittings and SIC 45.33 Plumbing with SummitSkills (the SSC for the Mechanical and Electrotechnical Services), SIC 14.1 Quarrying of stone, SIC 20.3 Manufacture of builders' carpentry and joinery, SIC 26 Manufacture of other non-metallic mineral products, SIC 28.11 Manufacture of metal structures and parts of structures, and SIC 28.12 Manufacture of builders' carpentry and joinery metal with Proskills (Sector Skills Council for the coatings, extractives, glass, building products and printing industries)



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www.nhtg.org.uk

www.historic-scotland.gov.uk/index/publications.htm

www.constructionskills.net/research



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