

SKILLS NEEDS ANALYSIS 2013

Repair, Maintenance and Energy Efficiency Retrofit of
Traditional (pre-1919) Buildings in England and Scotland



ACKNOWLEDGEMENTS

This Skills Needs Analysis research was commissioned by English Heritage, Historic Scotland and Construction Industry Training Board (CITB).

We would like to thank the interviewees – clients, contractors, building professionals, training providers, trade federations and associations and professional bodies – for their participation in this research, and the following individuals for their invaluable contributions to the project: Bill Brown, Lee Bryer, Richard Groom, Kate Gunthorpe, Seamus Hanna, Karen Hazelden, Karen Houghton, Moses Jenkins, John McKinney, Ray Robertson, Guy Salkeld and Colin Tennant.

Research by Pye Tait

Photographs by English Heritage, Historic Scotland, CITB, National Trust, National Heritage Training Group, West Dean College, Kippa Matthews and Chris Redgrave.

Copy edited by Julie Gardiner

Designed by Intuitive Design

CONTENTS

LIST OF TABLES 04

LIST OF FIGURES 05

1. INTRODUCTION 06

2. EXECUTIVE SUMMARY 07

- 2.1 Context to the Research
- 2.2 Main Findings
- 2.3 Meeting the Skills Challenges

3. RESEARCH OBJECTIVES & METHODOLOGY 15

- 3.1 Aims and Objectives
- 3.2 Research Methodology
- 3.3 Contractors Survey Sample and Respondent Profile

4. DEMAND FOR SKILLS 21

- 4.1 Cultural and Economic Value of Traditional (pre-1919) Buildings
- 4.2 Business and Economic Environment
- 4.3 Strategic and Policy Drivers
- 4.4 Quantifying Demand
- 4.5 Demand, Labour and Training Requirements 2012–2017

5. SUPPLY OF SKILLS 41

- 5.1 Building Contractors Working on Traditional (pre-1919) Buildings
- 5.2 Contractor Workforce Profile
- 5.3 Skills of Building Professionals

6. QUALIFICATIONS & TRAINING 61

- 6.1 Built Heritage Sector Qualifications, CSCS Heritage Skills and Conservation Related Cards
- 6.2 Traditional Building Skills Training
- 6.3 Suitability and Sufficiency of Current Training Provision

7. ENERGY EFFICIENCY RETROFIT OF TRADITIONAL (PRE-1919) BUILDINGS 75

- 7.1 Energy Efficiency Retrofit and Traditional (pre-1919) Buildings
- 7.2 Skills and Knowledge for Energy Efficiency Retrofit
- 7.3 Energy Efficiency Retrofit and Training Provision

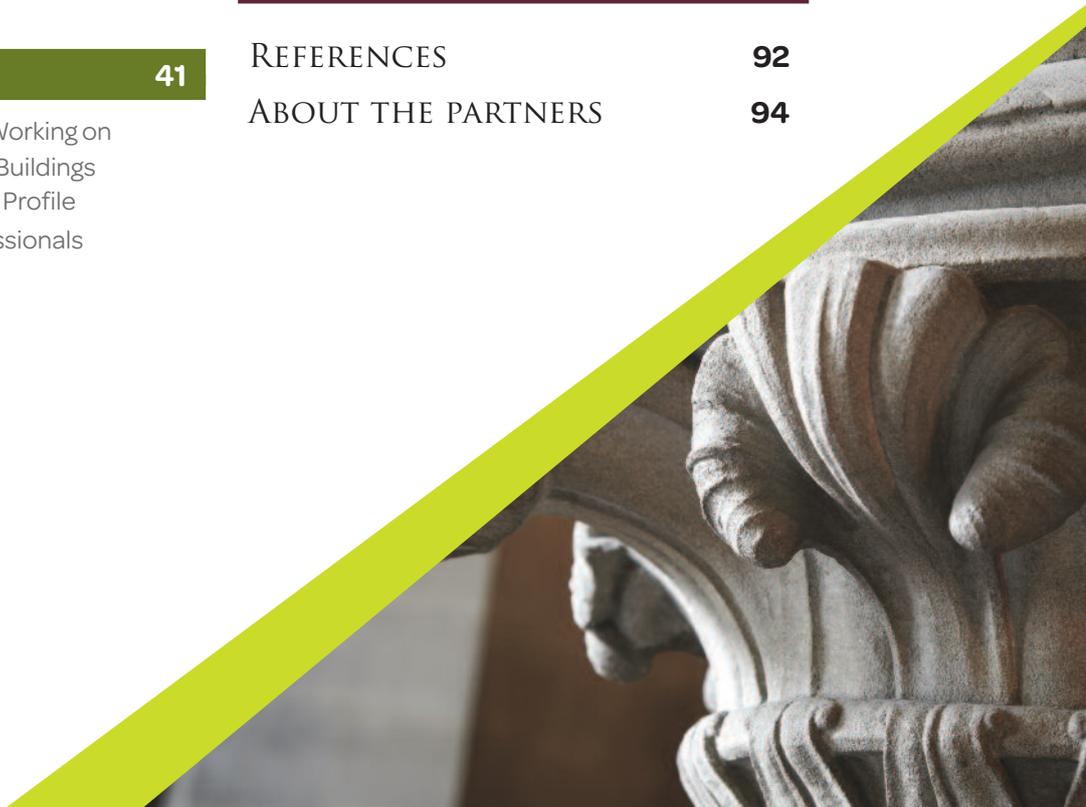
8. KEY FINDINGS & RECOMMENDATIONS 81

- 8.1 Key Findings
- 8.2 Recommendations

9. SKILLS ACTION PLAN 89

REFERENCES 92

ABOUT THE PARTNERS 94



LIST OF TABLES

Table 1

Qualitative and quantitative interviews

Table 2

SIC codes in-scope to this research

Table 3

Interviewees job roles

Table 4

Membership of Trade Federations or Associations

Table 5

Demand for traditional building craft skills – England

Table 6

Demand for traditional building craft skills – Scotland

Table 7

Workforce demand for traditional (pre-1919) buildings – England

Table 8

Workforce demand for traditional (pre-1919) buildings – Scotland

Table 9

Training requirement for the traditional building workforce – England

Table 10

Training requirement for the traditional building workforce – Scotland

Table 11

Rating of skill levels (descending order and including time-series comparison)

Table 12

Confidence of working on types of traditional (pre-1919) buildings (time series comparison England 2008 - 2012)

Table 13

Barriers to the use of traditional materials (including time-series comparison)

Table 14

Average number of employees per company (including time-series comparison)

Table 15

Recruitment of employed and sub-contracted crafts

Table 16

Time-series on availability of sub-contractors (if used)

Table 17

Apprentice/trainee numbers in England and Scotland

Table 18

Conservation registers and numbers in 2012

Table 19

Traditional building or heritage skills qualifications 2013

LIST OF FIGURES

- Figure 1** Main occupational craft skill/trade of contractors interviewed
- Figure 2** Regional breakdown of survey responses
- Figure 3** Contractor view of demand for work on pre-1919 buildings in past five years
- Figure 4** Anticipated stockholder demand for work on traditional (pre-1919) buildings 2013–15
- Figure 5** Type of companies in survey
- Figure 6** Average numbers of employees per company
- Figure 7** Type of work undertaken on traditional (pre-1919) buildings
- Figure 8** Contractors intention to increase their work on traditional (pre-1919) buildings
- Figure 9** Crafts undertaken regularly/sometimes (England and Scotland)
- Figure 10** Confidence regarding working on particular types of buildings
- Figure 11** Traditional building materials reported difficult to source
- Figure 12** Stockholders/professional advisors stipulating traditional building materials on traditional (pre-1919) buildings
- Figure 13** Employers preferred methods of recruitment
- Figure 14** Barriers to finding craftspeople to work on traditional (pre-1919) buildings
- Figure 15** Percentage of qualifications relating to heritage, traditional (pre-1919) buildings or conservation
- Figure 16** Mix of qualifications and competency cards
- Figure 17** Percentage of the workforce holding relevant qualifications
- Figure 18** Contractors' work force undertaking traditional building skills training in past 5 years
- Figure 19** Type of training provider
- Figure 20** Funding or grants obtained for training in past five years
- Figure 21** Satisfaction with existing training provision
- Figure 22** Confidence using existing skills to install low carbon and energy efficiency measures into traditional (pre-1919) buildings
- Figure 23** Confidence that existing training provision for work on traditional (pre-1919) buildings can develop skills for retrofit

INTRODUCTION

This research was commissioned by English Heritage, Historic Scotland and CITB to provide an update on the National Heritage Training Group (NHTG) Skills Needs Analysis of the built heritage sector reports for Scotland (2007) and England (2008)¹. This new report provides up-to-date evidence and data sets on the demand for and supply of traditional building skills, materials and training provision related to the repair and maintenance of traditional (pre-1919) buildings in England and Scotland. The scope of this research was also extended to include the skills and training needs for energy efficiency retrofit of traditional (pre-1919) buildings.

For the first time, analysis of the data for England and Scotland are combined in one report. Both countries will respond separately to the Key Findings & Recommendations (Section 8) and Skills Action Plan (Section 9). However, this report provides opportunities to explore synergies and collaborative working between both countries on common training and skills development issues.

Since the last NHTG Skills Needs Analysis reports of 2007 and 2008, the construction industry, which includes the built heritage sector, has changed dramatically, largely due to the weak economic recovery leading to low demand. This has resulted in increased competition for the reduced volume of available work, reductions in workforce numbers and up-take of training and diminishing opportunities for trainees and apprentices.

Opportunities and challenges are also emerging as the energy efficiency agenda, refurbishment and retrofit of the existing building stock gather momentum. The knowledge and skills required to repair, maintain and install energy efficiency retrofit measures for traditional (pre-1919) buildings are different to other types and periods of buildings, but these must be integrated within mainstream construction and not seen as separate or specialist. Training and qualifications exist for those working in the built heritage sector, but it is now necessary to graft on the knowledge and skills required to improve energy efficiency, without damaging or altering the character of the traditional building stock.

This report and in particular the Key Findings & Recommendations (Section 8) and Skills Action Plan (Section 9) will help inform how the sector responds to current and future demand for the supply of the right skills for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings in England and Scotland.



2. EXECUTIVE SUMMARY

2.1 Context to the Research

2.2 Main Findings

2.3 Meeting the Skills Challenges

2.3.1 Demand for Skills

2.3.2 Supply of Skills

2.3.3 Training

2.3.4 Energy Efficiency Retrofit



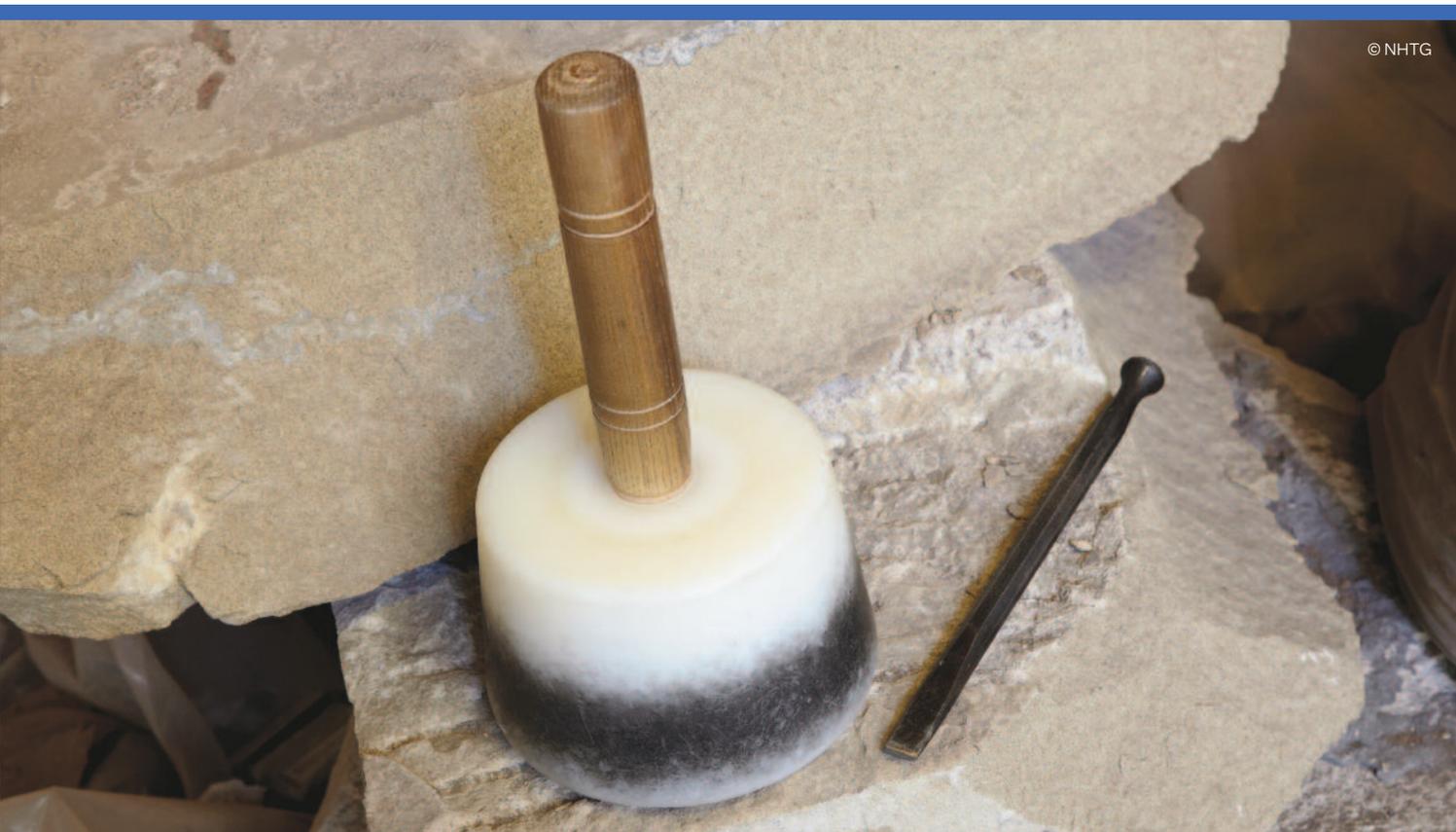
2.1 CONTEXT TO THE RESEARCH

The main research objectives were to:

- Develop an updated and comprehensive perspective of the supply of and demand for, traditional buildings skills, materials and training provision, compared where relevant with data gathered in previous NHTG reports.
- Identify skills and knowledge gaps.
- Determine areas of recruitment difficulty.
- Determine whether and to what extent the profile of the traditional building workforce differs from that involved in mainstream construction by age and gender.
- Assess the suitability and sufficiency of training provision for traditional building skills and knowledge, and identify any gaps.
- Evaluate understanding of energy efficiency retrofit, including specific training needs.
- Contribute to modelling labour market requirements for this sector.
- Recommend actions required to address industry needs.
- Update the Skills Action Plans for England and Scotland.

The research included the following:

- A detailed literature review to explore national and regional policies affecting the built heritage sector in England and Scotland and recent research post-dating the NHTG studies of 2007 and 2008.
- In-depth telephone interviews with 135 stakeholders (95 in England and 40 in Scotland) including stockholders (traditional (pre-1919) building owners in the public and private sector); professional bodies; trade federations and associations; training providers (covering Further Education and Higher Education); manufacturers and suppliers of traditional building materials; large employers (contractors and sub-contractors).
- Telephone-based qualitative survey of 1,161 contractors (including sub-contractors); 763 in England; 398 in Scotland.
- Focus group event to capture qualitative information and test the interim research findings; follow up in-depth interviews with 20 stakeholder respondents in England and Scotland;
- Peer-review group meeting composed of the researchers Pye Tait and representatives from CITB, English Heritage, Historic Scotland, Institute of Historic Building Conservation, National Heritage Training Group and National Trust to appraise the report findings and develop the Recommendations.



2.2 MAIN FINDINGS

This research indicates that the construction industry and the built heritage sector have experienced a number of significant changes since the NHTG Traditional Building Craft Skills research reports for Scotland in 2007 and the England 2008 Review. The most important of these is the on-going effect of the economic recession and subsequent weak economic recovery which affects demand for skills, supply of skills, and training provision.

ENGLAND

DEMAND

- 5.5** million traditional (pre-1919) buildings

- £3.8** billion spend in 2012 on work on traditional (pre-1919) buildings, down from £5.3 billion in 2008

- £2.1** billion spend in 2012 on work on traditional (pre-1919) buildings using traditional materials, up from £1.6 billion in 2008

- 51%** of contractors in survey report no change in demand in past 5 years, 57% expect this to remain unchanged to 2015

SUPPLY

- 89%** of contractors in survey are general mainstream construction companies

- 9%** female workforce

- 13%** female workforce reported by employers classified as working “exclusively” on traditional (pre-1919) buildings. (Both higher than the 1% female in manual trades in construction)

- 44%** of contractors intend to increase their work on traditional (pre-1919) buildings

- 86,880** workforce required to undertake work on traditional (pre-1919) buildings to meet demand in 2012, down from 109,000 in 2007

- 49,459** labour demand by contractors using traditional materials up from 33,000 in 2007

- 3,960** entrant workers required in 2012 in the sector down from 12,351 in 2007

- 1,220** entrant workers required to work with traditional materials in 2012, down from 3,591 in 2007

SCOTLAND

DEMAND

- 505,000** traditional (pre-1919) buildings

- £281** million spend on work on traditional (pre-1919) buildings in 2012 (no comparative figure for 2006)

- £144** million spend in 2012 on work on traditional (pre-1919) buildings using traditional materials (no comparative figure for 2006)

- 44%** of contractors in survey report no change in demand in past 5 years, 50% expect this to remain unchanged to 2015

SUPPLY

- 97%** of contractors in survey are general mainstream construction companies

- 5%** female workforce

- 13%** female workforce reported by employers classified as working “exclusively” on traditional (pre-1919) buildings. (Both higher than the 1% female in manual trades in construction)

- 43%** of contractors intend to increase their work on traditional (pre-1919) buildings

- 6,750** workforce required to undertake work on traditional (pre-1919) buildings to meet demand in 2012, down from 13,160 in 2006

- 3,300** labour demand by contractors using traditional materials (no comparative figure for 2006)

- 310** entrant workers required in 2012 down from 520 in 2006

- 80** entrant workers required in the sector in 2012, down from 520 in 2006

ENGLAND

TRAINING

- 87%** of surveyed contractors do not hold formal qualifications relating to work on traditional (pre-1919) buildings
- 75%** of contractors in survey have not undertaken any traditional (pre-1919) building training in the past 4–5 years
- 38%** of contractors have recruited an apprentice or trainee in the past 4–5 years, but only 26% consider it likely they will recruit an apprentice or trainee in the next 5 years
- 4,340** existing workers requiring up-skilling training in 2012, down from 6,529 in 2007
- 2,470** existing workers require up-skilling to work with traditional materials in 2012, up from 1,959 in 2007

ENERGY EFFICIENCY RETROFIT

- 4%** of contractors surveyed have undertaken energy efficiency retrofit work on traditional (pre-1919) buildings
- 61%** are very or quite confident of using their existing skills to install low carbon and energy efficiency measures
- 63%** unable to express a level of confidence that existing training would develop the skills needed in this area

SCOTLAND

TRAINING

- 95%** of surveyed contractors do not hold formal qualifications relating to work on traditional (pre-1919) buildings
- 72%** of contractors in survey have not undertaken any traditional (pre-1919) building training in the past 4–5 years
- 44%** of contractors have recruited an apprentice or trainee in the past 4–5 years, but only 30% consider it likely they will recruit an apprentice or trainee in the next 5 years
- 340** existing workers requiring up-skilling training in 2012 (no comparative figure for 2006)
- 80** existing workers require up-skilling to work with traditional materials in 2012 (no comparative figure for 2006)

ENERGY EFFICIENCY RETROFIT

- 2%** of contractors surveyed have undertaken energy efficiency retrofit work on traditional (pre-1919) buildings
- 55%** are very or quite confident of using their existing skills to install low carbon and energy efficiency measures
- 72%** unable to express a level of confidence that existing training would develop the skills needed in this area

2.3 MEETING THE SKILLS CHALLENGES

2.3.1 DEMAND FOR SKILLS

KEY FINDINGS

- The economic recession and subsequent weak economic recovery continues to impact upon demand for skills with the amount of money stockholders have available for work on traditional (pre-1919) buildings being typically lower due to economic constraints.
- Much non-essential work has been postponed until stockholders are compelled to undertake major repair, which can make the work more expensive in the longer-term and can be damaging to the buildings.
- The reduced money available for work on traditional (pre-1919) buildings results in less work being commissioned and loss of expertise from the built heritage sector, creating skills and knowledge gaps.
- Contractors acknowledge that, due to the current economic climate, levels of demand are likely to be relatively static at present.
- Insufficient information is readily available for stockholders on the types of skills and materials they should be using on traditional (pre-1919) buildings, in part due to skills and knowledge gaps of building professionals or within Local Authorities, who subsequently do not provide correct advice.
- There is a perception amongst stockholders that traditional building skills are 'expensive' and 'specialist'.
- Stockholders recruit the majority of contractors to undertake work on traditional (pre-1919) buildings by personal 'word of mouth' recommendations, on the strength of relevant experience and the contractors' past portfolio of projects, not qualifications or evidence of competency.
- Cost (including price rises) is seen as a barrier to using traditional building materials, but awareness of the importance of using the right traditional building materials has increased (particularly in Scotland).
- There is a perception of diminished grant funding for repair and maintenance, and perceived administrative burdens and/or onerous requirements associated with grant application processes, which can prevent applications for funding.
- Although the economic recession and subsequent weak economic recovery is controlling low demand at present, this may increase due to latent demand (see Section 4.4)

ACTIONS

- Advocate and influence key stakeholders, including the general public, on the need for the right skills, qualifications and evidence of competency to work on traditional (pre-1919) buildings.
- Establish flagship projects showcasing demand for the CSCS Heritage Skills Card and promote the right traditional building skills training, qualifications and evidence of competency.
- Promote the need for the right knowledge and skills for energy efficiency retrofit of traditional (pre-1919) buildings.

RECOMMENDATIONS

- Ensure that client demand for the right skills for traditional (pre-1919) buildings is pro-actively pursued to translate the underlying or latent need for work on traditional (pre-1919) buildings into actual active demand, which in turn will drive up the supply of suitably qualified workers and stimulate increased take up of up-skilling training programmes and assessment.
- Demonstrate the value of repair and maintenance, notably the longer-term economic value of addressing issues proactively rather than putting off work.
- Improve public awareness of the value of using the right skills for the right job, in particular by showing that repairs of traditional (pre-1919) buildings using the right skills and materials can be very long-lasting.
- Reinforce the value and role of the CSCS Heritage Skills Card, and better promote the card as evidence of competence (based upon relevant experience and qualification assessment) that identifies practitioners who are more competent to work on traditional (pre-1919) buildings than those without the card.
- Overcome the confusion and misunderstanding which can exist on CSCS cards generally, and on the CSCS Heritage Skills Card in particular.
- Increase the use of the right traditional building skills and materials through changes to procurement processes and create a register of traditional building contractors, filterable by region as well as type of craft skill/occupation.
- Properly resource information, advice and guidance (including an audit of current material) on traditional building skills training and development, and ensure websites promoting these are better integrated and accessible via web links to maximise opportunities to match supply and demand for skills.
- Learn from other examples how to better communicate the messages on the knowledge and skills required for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings to stockholders, designers/specifiers, contractors and training providers.

2.3.2 SUPPLY OF SKILLS

KEY FINDINGS

- Contractors are uncertain of a longer-term supply of work. In the short-to-medium term lower tender prices have become the norm and survival is a key issue.
- An increasing number of non-specialist contractors are operating within the built heritage market in a bid to diversify their offering and increase work supply. They are employing more generic skills and using less appropriate methods and materials, which can undercut companies offering the right skills and materials.
- A number of specialist built heritage sector companies have gone out of business due to the recession and on-going weak economic conditions.
- Contractors consider their own skills and knowledge to be fit for purpose, when in fact they may not be, so this means the wrong types of building materials and techniques may be used which can have adverse effects.
- Fewer contractors intend to recruit apprentices and trainees. Without intervention, this raises the prospect of knowledge and skills not being passed on and a smaller-sized skilled workforce in the future.
- A high proportion of contractors comprise small/micro-businesses or sole traders.
- In the past five years, the number of accredited conservation professionals has increased (estimated 2,200), but this is extremely low in relation to the total estimated number of around 6 million traditional (pre-1919) buildings in England and Scotland that need to be maintained.

ACTIONS

- Promote understanding of the essential differences between the skills and knowledge needed for working on traditional (pre-1919) buildings and other construction activities.
- Promote how having skills to work on traditional (pre-1919) buildings enables contractors to benefit from the business opportunities of being able to tender for a wider range of work.
- Scope out and audit the available information, advice and guidance on the knowledge and skills required for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings. From this audit produce relevant, up-to-date, easily accessible information.
- NHTG, the Trade Federations and Associations work in partnership with CITB to increase up-take of training and qualifications leading to achievement of CSCS Heritage Skills Cards by contractors, general builders and craftspeople.
- Develop a new Memorandum of Understanding on the conservation, repair & maintenance of traditional (pre-1919) buildings covering the four UK home countries to increase awareness of the demand for and supply of the right skills; up-take of training and qualifications; and an integrated approach to the management of traditional building skills.

RECOMMENDATIONS

- Address the mismatch which exists amongst contractors between the skills and knowledge they actually need to work on traditional (pre-1919) buildings and the skills and knowledge their workforce possess.
- Promote the benefits and business opportunities of working on traditional (pre-1919) buildings to contractors, general builders and craftspeople.
- Scope out and audit available information, advice and guidance on knowledge and skills required for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings.
- Reduce the skills and knowledge gaps amongst building professionals to avoid materials and techniques being incorrectly specified with potentially damaging consequences for the buildings.
- Undertake an update to the 2008 skills needs analysis quantitative and qualitative survey of the building professional workforce (outside the remit of this study) to establish and understand more clearly the extent of skills and knowledge gaps and required actions.

2.3.3 TRAINING

KEY FINDINGS

- The impact of the economic downturn on demand and supply has a consequential knock-on effect on training provision.
- Investment by contractors in training is seen as a luxury rather than an essential requirement.
- Contractors taking part in this survey do not generally attach high importance to formal training and qualifications.
- Contractors place much higher value on experience and learning 'on the job' than formal training and qualifications. However they may not have an understanding of the correct approaches and standards of competence necessary to carry out work on traditional (pre-1919) buildings which would be gained through relevant training courses.
- Where contractors feel they are best placed to train their staff rather than use external training provision, there is considerable risk that incorrect methods will continue to be passed on to other employees or trainees.
- Limited interest in training may be partly attributable to concerns about inadequate coverage of knowledge and skills to work on traditional (pre-1919) buildings within many construction qualifications.

RECOMMENDATIONS

- Promote the benefits and business advantages to contractors of training their workforce to work on traditional (pre-1919) buildings and link directly to information on relevant training opportunities.
- Increase access for contractors to training resources. Maximise opportunities for all those working on the repair and maintenance of traditional (pre-1919) buildings, including the contractors' preference for on-the-job, in-company training.
- Produce an accessible and readily available map of training and qualifications within the built heritage sector and ensure this resource is regularly maintained and updated.
- Develop appropriate up-skilling training and assessment programmes for the repair and maintenance of traditional (pre-1919) buildings, including for supervisory level.

ACTIONS

- Increase the accessibility of training resources to maximise opportunities for all those working on the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings.
- Map and then promote assessment and training pathways, from OSAT to apprenticeship programmes and degrees, leading to recognised heritage, conservation or traditional building skills qualifications and ensure this resource is regularly maintained and updated.
- Develop appropriate up-skilling training and assessment programmes for the repair and maintenance of traditional (pre-1919) buildings, including supervisory level.



© West Dean College

Learning pointing at West Dean College

2.3.4 ENERGY EFFICIENCY RETROFIT

KEY FINDINGS

- The impact of the UK-wide strategic commitment to the energy efficiency agenda could have a significant impact on future work on traditional (pre-1919) buildings when demanding the right skills, knowledge and expertise.
- Limited consumer awareness of, and limited demand for, energy efficiency measures influences contractors' decisions to invest in up-skilling.
- A lack of awareness exists amongst contractors regarding the skills, knowledge, training/up-skilling and qualifications required for energy efficiency retrofit.
- There is evidence in this research of skills and knowledge gaps amongst building professionals in relation to energy efficiency retrofit.
- A large proportion of contractors were unable to describe any new types of training needed for energy efficiency retrofit measures to traditional (pre-1919) buildings, and many more stated that no additional training would be required or it would not apply to their trade.
- Some contractors reported energy efficiency retrofit training would only be undertaken if they had confirmed work lined up and such training was specified in a works contract.

ACTIONS

- Promote understanding of the need to repair and regularly maintain buildings as an important first step to improving energy efficiency.
- Increase the accessibility of training resources for all those working on energy efficiency retrofit of traditional (pre-1919) buildings.
- Ensure the National Occupational Standards covering the energy efficiency retrofit of traditional (pre-1919) buildings are fit for purpose and those involved have the right knowledge, skills, qualifications and expertise.
- Develop and promote appropriate up-skilling training and assessment programmes for the energy efficiency retrofit of traditional (pre-1919) buildings.

RECOMMENDATIONS

- Raise stockholder awareness of the energy efficiency benefits created through carrying out repairs and undertaking regular maintenance of their buildings.
- Raise awareness among stockholders, designers/specifiers, contractors and training providers of the need for the right understanding, knowledge and skills to undertake energy efficiency retrofit measures on traditional (pre-1919) buildings.
- Develop an appropriate suite of up-skilling programmes for energy efficiency retrofit of traditional (pre-1919) buildings.





3. RESEARCH OBJECTIVES AND METHODOLOGY

- 3.1 Aims and Objectives
- 3.2 Research Methodology
- 3.3 Contractors Survey Sample and Respondent Profile

3.1 AIMS AND OBJECTIVES

The aim of this research is to provide reliable and robust quantitative and qualitative data and information as an evidence base to inform future policy planning and development, notably of the Sector Skills Agreements between English Heritage, Historic Scotland and CITB, as a basis for influencing policy, funding bodies, sector partners and key stakeholders.

It takes into account other relevant reports as well as wider economic and strategic policy drivers such as the low carbon and sustainability agenda and in particular, the energy efficiency retrofit of traditional (pre-1919) buildings to provide an informed picture of the current situation in both countries.

3.2 RESEARCH METHODOLOGY

An iterative process was used to ensure that the various research tools (including interview scripts) were informed by accumulative evidence and findings.

Discussion themes with stakeholders were designed to be, as far as possible, comparable with the National Heritage Training Group (NHTG) Skills Needs Analysis of the built heritage sector reports in Scotland (2007) and England (2008). Certain survey questions were designed to enable comparisons and to help develop time-series analysis with the findings from the previous NHTG research reports: Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge Skills Needs Analysis of the Built Heritage Sector in Scotland 2007 and Traditional Building Craft Skills: Reassessing the Need, Responding to the Challenge Skills Needs Analysis of the Built Heritage Sector in England 2008 Review (2008) and to test progress against the Skills Action Plans from those reports.

All research data collection tools (topic guide, survey questionnaire etc.) were submitted to the Project Steering Group for approval before being used.

The research included the following:

- A detailed literature review to explore national and regional policies affecting the built heritage sector in England and Scotland and recent research carried out since the NHTG studies of 2007 (Scotland) and 2008 (England 2008 Review and Building Professionals) focusing on economic and skills issues and other drivers (including the energy efficiency retrofit agenda) pertinent to the sector.
- In-depth telephone interviews with 135 stakeholders (95 in England and 40 in Scotland) including stockholders (landowners in the public and private sector); professional bodies, Trade Federations and Associations; training providers (covering Further Education and Higher Education); manufacturers and suppliers of traditional building materials; large employers (contractors and sub-contractors).

- Telephone-based survey of 1,161 contractors (including sub-contractors) 763 in England and 398 in Scotland.
- Focus group event to capture qualitative information and test the interim research findings; follow up in-depth interviews with 20 stakeholder respondents in England and Scotland.
- Peer-review group meeting composed of the researchers Pye Tait and representatives from CITB, English Heritage, Historic Scotland, Institute of Historic Building Conservation, National Heritage Training Group and National Trust to appraise the report findings and develop the Recommendations.

It was agreed by the Project Steering Group that the skills needs of building professionals would be explored as part of the desk research and in-depth interviews, whereas, the major survey of contractors focused upon the craft skill occupations. This approach sought to update the information on the profile and characteristics of the workforce involved with traditional (pre-1919) buildings and provide qualitative and quantitative data on the following broad themes:

- Traditional building craft skills and building materials
- Recruitment
- Qualifications and training
- Energy efficiency retrofit.

3.3 CONTRACTORS SURVEY SAMPLE AND RESPONDENT PROFILE

The breakdown of qualitative and quantitative interviews as part of this research is shown in Table 1. The in-depth qualitative interviews were largely undertaken at the start of the process to inform the approach to the employer questionnaires and interviews. Further in-depth interviews were also undertaken with 20 respondents in England and Scotland after the research findings had been presented to a focus group meeting held in Scotland.

The survey target for the contractors was 1,100, but a total of 1,161 responses was achieved through a telephone and supported on-line methodology. The sample size was determined to achieve a satisfactory level of statistical reliability ($\pm 3\%$ margin of error at a 95% confidence level), but a degree of caution is required as the base number of respondents varies for each individual survey question. The survey sample frame was also developed according to two main components, that is, 'industry sub-sector' and 'region'.

Table 1 Qualitative and quantitative interviews

Respondents	All	England	Scotland
Qualitative Interviews	135	95	40
Quantitative interviews (Contractors)	1,161	763	398

INDUSTRY SUB-SECTOR

An initial review of the Standard Industrial Classification 2007 (SIC) codes was undertaken to identify those sub-sectors involved in traditional building craft skills and considered most likely to undertake work on traditional (pre-1919) buildings and these are shown in Table 2.

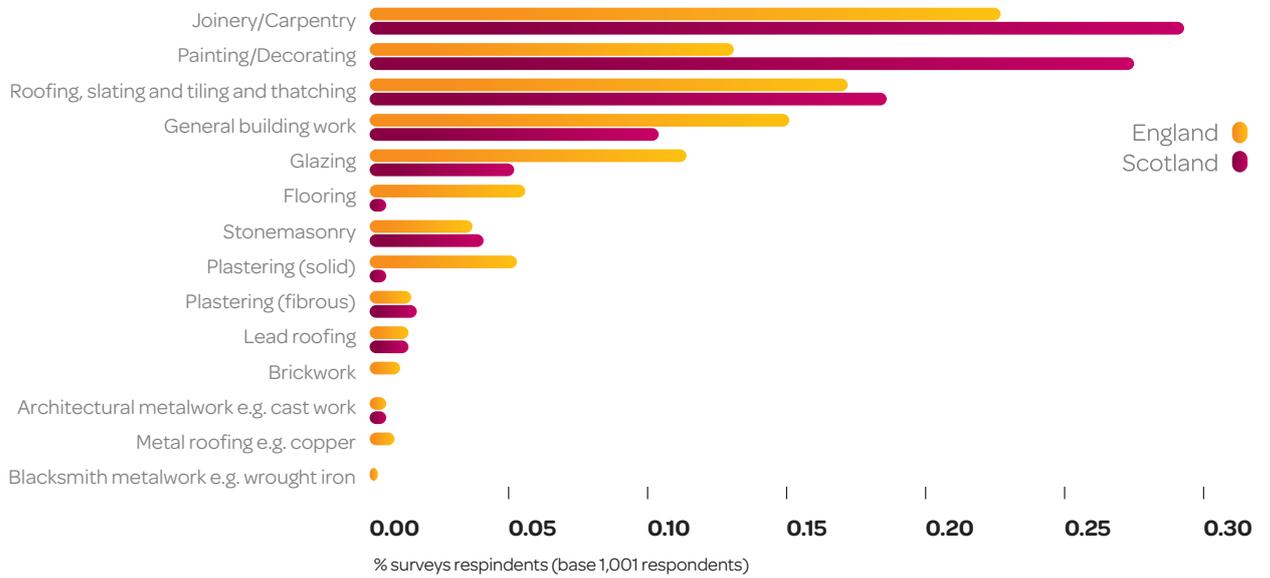
Table 2 SIC codes in-scope to this research

43.31	Plastering
43.32	Joinery installation
43.33	Floor and wall covering
43.34	Painting and glazing
43.39	Other building completion and finishing
43.91	Roofing activities
43.99	Other specialised construction (nec - not elsewhere classified)

Reference was also made to data supplied by the Office for National Statistics (ONS) to determine the estimated number of business enterprises operating within each identified SIC code in both England and Scotland. This information was, in turn, used to apportion a broadly representative target number of responses per SIC code and within the overall survey target and agreed with the Project Steering Group.

A pre-qualification question was used when contacting the contractors within this survey to establish if they had conducted at least some work on traditional (pre-1919) buildings over the previous 12 months and, if they had, the interview continued. The survey then sought to establish the single 'main activity' accounting for the largest proportion of work undertaken by each contractor interviewed. This list of occupational skills or trades built upon the SIC code categories and the responses (England and Scotland in tandem) is shown in Figure 1.

Figure 1 Main occupational craft skill/trade of contractors interviewed

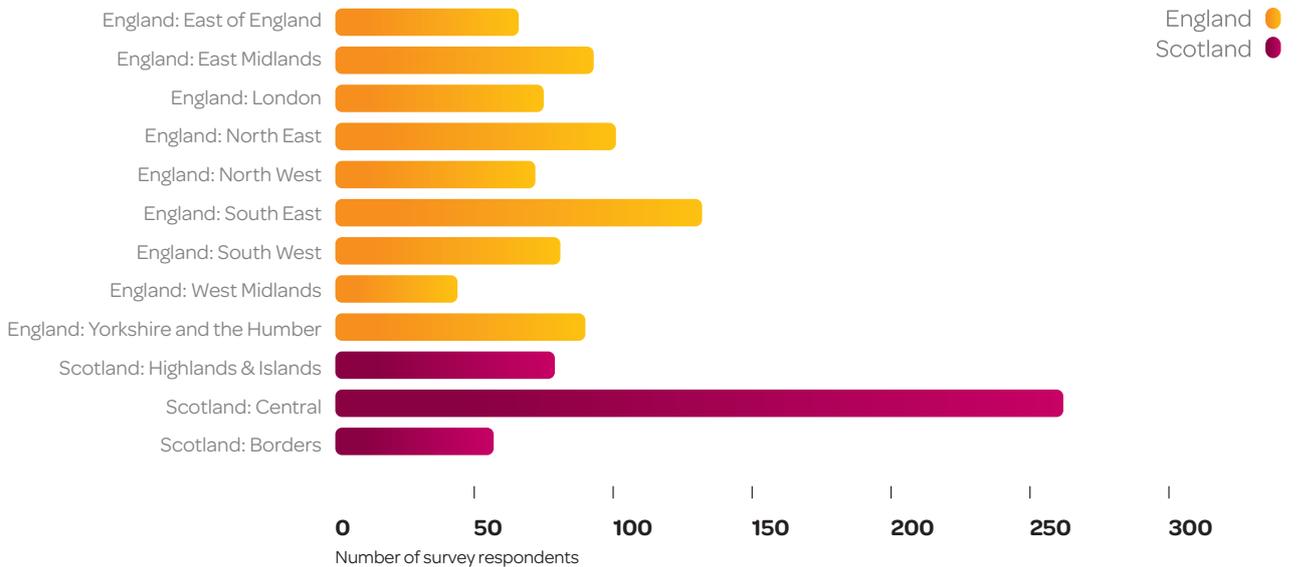


Note: Percentages in tables and figures throughout the report may not add up to 100%, due to the impact of rounding and allowing for margins of error.

REGIONAL BREAKDOWN

The breakdown of survey responses from all nine Government regions in England, as well as three regions in Scotland (Borders; Central; Highlands and Islands) is shown in Figure 2.

Figure 2 Regional breakdown of survey responses



CONTRACTOR PROFILE

The composition of the employers/contractors within the survey was 66% contractors and 34% sub-contractors, although with a slightly higher percentage of contractors in Scotland (68%) versus 65% contractors in England. Table 3 shows the breakdown of the job roles of the respondents from the companies who were interviewed.

Table 3 Interviewees' job roles

	All	England	Scotland
Base respondents	*1,085	712	373
Owner	64.1%	59.7%	72.4%
Director	15.5%	16.7%	13.1%
Manager/Senior Manager	8.9%	10.3%	6.4%
Training Manager	0.7%	0.8%	0.5%
Other	10.8%	12.5%	7.5%

*Number of survey respondents who provided a job role, hence total of 1,085 respondents as not all 1,161 interviewees provided a job role description.



MEMBERSHIP OF TRADE FEDERATIONS AND ASSOCIATIONS

Table 4 shows an almost equal proportion of the contractors in this survey who belong to/do not belong to a Trade Federation or Association. As the majority of the contractors are mainstream construction companies, rather than conservation or heritage specialists, the type and range of membership is not surprising.

Table 4 Membership of Trade Federations or Associations

	All	England	Scotland
Base respondents	1243	830	413
None	50.2%	47.3%	55.9%
British Woodworking Federation (BWF)	2.1%	2.8%	0.7%
Federation of Master Builders (FMB)	6.8%	6.3%	8.0%
Federation of Plastering and Drywall Contractors (FPDC)	0.8%	1.1%	0.2%
Federation of Traditional Metal Roofing Contractors	1.4%	1.7%	0.7%
Glass and Glazing Federation (GGF)	3.1%	4.0%	1.5%
Institute of Carpenters (IoC)	1.2%	1.8%	-
Institute of Plumbing	0.2%	0.2%	-
Lead Contractors' Association	1.8%	2.2%	1.0%
Metal Roofing Contractors' Association	1.0%	1.2%	0.5%
National Federation of Roofing Contractors (NFRC)	4.2%	4.6%	3.4%
Painting and Decorating Association (PDA)	3.4%	3.6%	2.9%
Stone Federation	2.2%	2.7%	1.2%
The Tile Association	0.6%	0.6%	0.5%
Scottish Building Federation	4.6%	-	13.8%
Scottish Decorators Federation	2.1%	-	6.3%
Guild of Master Craftsmen	4.9%	6.7%	1.3%
Federation of Small Businesses (FSB) and FSB in Scotland	6.6%	9.7%	0.3%
FENSA	2.9%	3.6%	1.8%

4. DEMAND FOR SKILLS

4.1 Cultural and Economic Value of Traditional (pre-1919) Buildings

4.2 Business and Economic Environment

4.3 Strategic and Policy Drivers

4.3.1 Planning Reform

4.3.2 Low Carbon Economy

4.4 Quantifying Demand

4.4.1 Traditional Building Stock

4.5 Demand, Labour and Training Requirements 2012–2017

4.5.1 Demand – Market Size

4.5.2 Workforce Requirements

4.5.3 Training Requirements

4.5.4 Findings from the Research on Expenditure Levels

4.1 CULTURAL AND ECONOMIC VALUE OF TRADITIONAL (PRE-1919) BUILDINGS

The economic benefits of the historic environment are well established. It contributes significantly to the education, tourism, regeneration and construction sectors. Of 31.1 million visits to the UK by overseas visitors in 2012, 12 million were for a holiday,² and four in every 10 visitors cite heritage as their primary reason for visiting³. In addition, historic assets play a key role in economic regeneration, sustainable development and social inclusion. For example, Chetwyn & Newton in 2007 proposed that regeneration projects triggered by the need to preserve the built heritage can act as a catalyst for economic growth, or for reversing economic decline.⁴ Traditional (pre-1919) buildings make a substantial social, economic and environmental contribution by providing more diverse commercial and industrial working environments, attracting visitors and investment in an area, which in turn supports greater social cohesion.⁵

Research in Scotland in 2008 demonstrated that the historic environment sector was estimated to contribute over £2.3 billion to Scotland's national GVA (gross value added)⁶. English Heritage research states that "every £1 invested in the historic environment directly contributes on average an additional £1.60 to the local economy over a ten-year period"; and repair and maintenance supports a higher proportion of SMEs and creates "more jobs than building something new".⁷

No less important than commercial factors are the less tangible benefits that come from the historic environment, such as, a sense of continuity and stability, of connection with the past and the landscape, but also the aesthetic pleasure from experiencing well-designed, solidly constructed traditional (pre-1919) buildings. This is reflected in the continuing preference for 'period features' and traditional styles among house buyers⁸. It is also reflected in the substantial price premium for properties in designated conservation areas.⁹



Wallace Monument, Stirling

©CITB

4.2 BUSINESS AND ECONOMIC ENVIRONMENT

Employing some 2.12 million the combined employment of construction workers and professionals accounts for close to 8% of the UK workforce. At 1.78 million the construction workforce in England represents 84% of the overall UK construction workforce, and in Scotland a workforce of 194,000 represents just below 10%.

With an output of £99.4 billion (at constant 2005 prices) in 2012 this represents about 8% of the UK's Gross Domestic Product (GDP). In terms of economic performance, England contributes 87% of all construction output at £87 billion and Scotland 8% at just over £8 billion.¹⁰ Thus England and Scotland contribute well over 90% of the economic and employment contribution to UK construction.

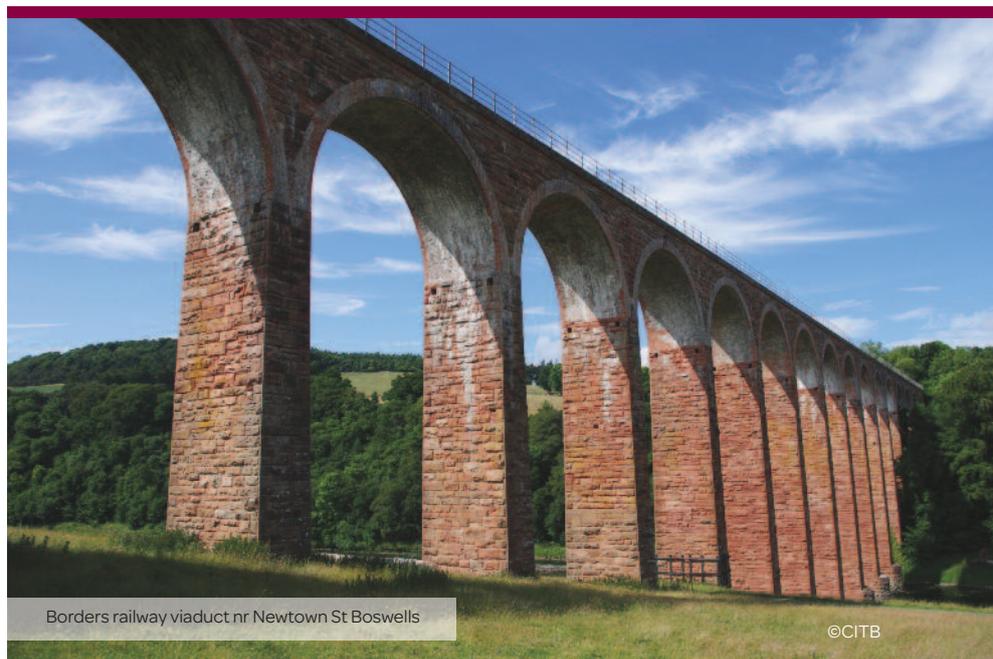
The construction industry has, however, suffered greatly from the economic recession, with both employment and output falling significantly since 2008. With an estimated decline in output of nearly 13% in real terms compared to 2008, continued poor performance across 2012 suggests that the industry is still far from over the worst of the downturn. Construction employment is estimated to have fallen by 11% in the five years from 2007 to 2012.

Lack of demand and intense competition for work have combined to keep tender prices down, but similar pressures are also holding down building input costs. However, margins remain low and cashflow is the predominant concern, particularly among SME builders and specialists. With the focus on survival continuing to take up the energies of the vast majority of firms within the industry, the challenge is to ensure that skills development is at the heart of their planning, rather than being another casualty of the recession.

While ONS data shows unemployment in the industry at the end of 2012 was lower than at the end of 2011. Longer term it is projected that construction employment will continue to fall to 2016 and only grow marginally in the following year. The relative lack of employment opportunities is also apparent in vacancies data. Although there has been a rise in vacancies throughout 2012 (about 3% a month on average) this is from a very low base and is significantly lower than pre-recession levels.

Overall employment in the industry is forecast to be around 80,000 lower in 2017 than in 2012, and at its lowest level since 2000. Data from the Construction Skills Network (CSN) suggests that employment in the industry will continue to fall at an annual average rate of 0.8% before stabilising in 2016 and rising slightly in 2017, but will still be 17% below its 2008 peak. CSN data suggests that over the 2013–2017 forecast period, an average of 29,050 workers per year will be required to deliver the forecast growth and replace those leaving the industry.

One of the main reasons for the low requirement over the forecast period is that there will be a considerable level of inflow from unemployment once the industry starts to show sustained recovery. However, the signs are that levels of under-employment (that is, those not working at full capacity in terms of hours) have risen in the construction industry over the past five years. This 'slack' will need to be taken up before sustained growth in employment re-emerges and this is likely to lengthen the normal lag that would be expected between the start of output growth and rising employment.



Borders railway viaduct nr Newtown St Boswells

©CITB

4.3 STRATEGIC AND POLICY DRIVERS

4.3.1 PLANNING REFORM

There have been significant changes in the planning processes in both England and Scotland since the last NHTG Skills Needs Analysis reports of 2007 and 2008 which impact the protection of the historic environment.

ENGLAND

The National Planning Policy Framework (NPPF), published on 27 March 2012, replaced all previous Planning Policy Statements – including Planning Policy Statement 5: Planning for the Historic Environment (PPS5). It has a primary aim of a ‘presumption in favour of sustainable development’ and recognises that ‘planning should conserve heritage assets in a manner appropriate to their significance’.¹⁴

The Enterprise and Regulatory Reform Act (ERRA) 2013 has enabled a number of heritage reforms, which affect the way heritage is protected, for example, by allowing owners of listed buildings and local authorities to enter into agreements based on long term management plans for their care and development, Conservation area consent is replaced with planning permission and the extent of protection of a listed building can be better defined by excluding attached buildings and structures and those within the curtilage of the principal listed building from protection, and by stating definitively that some features of a listed building is not of special architectural or historic interest.

The scope for communities to become involved in managing their local heritage has widened. The Localism Act introduced neighbourhood planning and community rights to own and manage heritage.

Meanwhile, however, the number of front-line staff employed by local authorities protecting the historic environment continues to fall with implications for the availability of expert advice to inform decisions that affect heritage.¹⁵ The number of specialist heritage and archaeological employees within Local Authorities has declined by 10% since 2003 and by 26% since numbers peaked in 2006.¹⁶

SCOTLAND

The Historic Environment (Amendment) (Scotland) Act 2011 contributed to the Scottish Government’s programme to streamline, simplify and clarify the system for protecting and managing the historic environment. The Act harmonised aspects of the listing and scheduling systems and aligned those systems more closely with Scotland’s modernised planning regime; improved the ability of central and local government to work with developers and other partners; improved the capacity to deal with urgent threats; and increased the efficiency and effectiveness of deterrents.

Among other things, the Act:

- Created a new statutory duty for Scottish Ministers to compile and maintain an inventory of gardens and designed landscapes and an inventory of battlefields – as appear to them to be of national importance;
- Increased the maximum level of fines to £50,000 on summary conviction in relation to unauthorised works etc to a listed building or scheduled monument;
- Aligned, and enhanced, enforcement powers in relation to scheduled monuments and listed buildings;
- Enhanced the powers available to enable a person authorised by the Scottish Ministers to excavate for the purposes of archaeological excavation without the need for consent from the owner in certain rare circumstances;
- Extended the definition of ‘monument’ as defined under the Ancient Monuments and Archaeological Areas Act 1979, to include ‘any site comprising any thing, or group of things, that evidences previous human activity’; and
- Introduced a new power, which allows for a ‘notice of liability’ for expenses for urgent works to be registered in the appropriate property register against the listed building. In effect, this allows the costs for carrying out urgent works under the relevant powers in the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 to be registered against the property itself.

The 2011 Act also introduced a new power which provides that Scottish Ministers may, on the application of any person, issue a certificate stating that they do not intend to list a building for a period of 5 years from the date of the issue of the certificate (Certificate of Intention Not To List – COINTL). A COINTL provides certainty for owners and developers considering works to a particular building. As noted above, anyone can apply for a COINTL whether or not they own the building.

Taken together, the provisions in the 2011 Act provided Scottish Ministers and planning authorities with a much improved toolkit to help manage, protect and enhance Scotland’s historic environment.

4.3.2 LOW CARBON ECONOMY

A key public policy priority is the transition to a low carbon economy. The Climate Change Act 2008 established a legally binding target to reduce the UK's carbon emissions by at least 80% by 2050. As 80% of the housing stock that will be inhabited in 2050 already exists,¹⁷ refurbishment, maintenance and energy efficiency retrofit of the existing building stock are central to achieving these targets.¹⁸ This requires a workforce to undertake the work, which has the appropriate knowledge and skills.

The Government launched the Green Deal in January 2013 to improve the energy efficiency of homes and commercial buildings. The Green Deal is a finance mechanism providing long-term loans to cover the cost of a range of energy efficiency measures including installing cavity, loft, internal and external wall insulation and low carbon technologies such as heat pumps, solar and wind power. The demand for such measures has been estimated as high as 3.7 million homes which could have insulation or low-carbon measures installed by 2030. It is estimated that more than 161,000 skilled workers will be needed across all construction sectors if the Government is to hit the 2020 carbon reduction targets.¹⁹

Another important driver to improve energy efficiency is the Energy Companies Obligations (ECO)²⁰ which runs until March 2015. The obligation requires energy companies to provide a subsidy for packages of energy efficiency measures which do not meet the 'golden rule' payback test within the Green Deal. This has three key targets including the Carbon Saving Obligation which is targeted on the 'hard to treat' cavity walls and solid wall insulation of traditional (pre-1919) buildings.

The Scottish Government's Green Jobs blueprint²¹ identifies the potential for 16,000 jobs in energy-related opportunities in Scotland over the next decade. The Scottish Government's Energy Efficiency Action Plan²² also sets out distinct key actions, including improvements to the energy efficiency of housing stock; development of marketing campaigns relating to energy efficiency and dedicated support for businesses including SMEs in relation to energy efficiency. Progress against the Action Plan is being documented via a series of reports, which have identified a number of key achievements including an increase in funding for Scottish Government fuel poverty and energy efficiency programmes.²³

The knowledge and skills required in relation to traditional (pre-1919) buildings are covered in Section 7 of this report. This has particular relevance to how traditional (pre-1919) buildings are adapted and re-used and how the building stock is refurbished to increase energy efficiency. The built heritage sector needs to lead the way by working with mainstream construction to advocate the re-use of existing buildings over demolition and new build to capture the embodied energy within these buildings, using appropriate energy efficient retrofit and low carbon systems and technologies.

Research from Historic Scotland, English Heritage and others shows before any additional energy efficiency measures are introduced, it is imperative that these buildings are first brought into a suitable state of repair and that they perform as they should so that any ingress of unwanted wind and water is stopped and that premature addition of energy efficiency measures does not create avoidable longer term damage. The major official sources of information on the building stock in England and Scotland are the English House Condition Survey (EHCS) Continuous Survey and the Scottish House Condition Survey (SHCS). The Scottish Government's House Condition Survey 2011, finds that 92% of the traditional (pre-1919) buildings surveyed had some disrepair, 77% were suffering from disrepair to critical elements and that 38% were suffering from extensive disrepair.²⁴ The English Housing Survey found that more than £10bn would have to be spent to remedy serious hazards in the housing stock and that these hazards are disproportionately concentrated in older dwellings. Indeed in the 2011 survey, it was found that traditional (pre-1919) buildings require an average of £3,893 of remedial expenditure.²⁵ These levels of demand, actual and latent, for repair and maintenance building work on traditional (pre-1919) buildings are examined further below.

4.4 QUANTIFYING DEMAND

4.4.1 TRADITIONAL BUILDING STOCK

The total number of traditional buildings is difficult to quantify precisely, partly because building techniques underwent constant evolution and there is no absolutely precise line (physical or chronological) separating a traditional building from a modern one. However, the major official sources of information on the building stock in England and Scotland, the English House Condition Survey (EHCS) Continuous Survey and the Scottish House Condition Survey (SHCS), provide a convenient proxy on the number of pre-1919 buildings. Buildings from before that date are likely to be of solid wall construction, whereas around and after that date cavity wall construction became more common place.

These surveys report around 21% of the total building stock in England and 20% in Scotland are pre-1919, which equates to approximately 5 million in England and 455,000 in Scotland²⁶. In addition, there are estimated to be more than 500,000 commercial, industrial and public pre-1919 buildings in England, and around 50,000 in Scotland. This estimate is based upon English data from 2000, when official surveys ceased to note

the age of individual commercial 'hereditaments'²⁷. In both cases, these figures should not be taken to equate directly to the number of traditional buildings as homes include individual flats as well as houses, and commercial properties are even more diverse²⁸. Nevertheless, there are 6 million pre-1919 buildings in England and Scotland.

Traditional (pre-1919) buildings in England and Scotland represent a substantial source of demand for traditional building skills and materials, but present a challenge in precisely quantifying. Demand can be determined by actual market demand for all building work on traditional (pre-1919) buildings; the actual market demand specifically for traditional building skills; and the potential or latent demand for traditional building skills (the underlying need for traditional building skills that may or may not actually be represented in current active market demand). It is therefore important to distinguish between these categories as shown in the table below:

1. ACTUAL MARKET DEMAND – TRADITIONAL (PRE-1919) BUILDINGS

This equates to the total construction work undertaken on traditional (pre 1919) buildings, and makes no specific analysis of whether that work should or actually does make use of appropriate methods and materials. It simply seeks to identify (in crude terms) how much is actually spent on traditional (pre-1919) buildings in any given year.

2. ACTUAL MARKET DEMAND – TRADITIONAL BUILDING SKILLS AND MATERIALS

This equates to the total amount of work undertaken on traditional (pre-1919) buildings that actually use, or seek to use, traditional building skills and materials. This represents the current active demand for skills and materials that are specifically identified as 'traditional' by stockholders, building professionals, contractors and material suppliers. This can be expected to be considerably less than the total market demand for work to traditional (pre-1919) buildings.

3. LATENT DEMAND

This category is not primarily concerned with identifying the size and profile of the current active market, but instead is concerned with what kind of demand would ideally exist if all necessary work on traditional (pre-1919) buildings was undertaken and completed to appropriate standards. It must be acknowledged that this represents an imaginary 'ideal' state. As such, it cannot readily be stated in straightforward cost terms, nevertheless, this ideal state is the crucial comparator against which the current situation and any trend data must be assessed.

Problems associated with determining the market for traditional (pre-1919) building skills will generally be through a mismatch between the three above types of demand, or one or more of these. This impacts upon calculations of the need for and available supply of skills, particularly, as traditional building skills and materials are not explicitly distinguished in official statistics, nor is the type of building upon which the building work is carried out. Demand is, therefore, estimated on the basis of available current statistics on the number of traditional (pre-1919) buildings to produce an overview of the approximate levels of actual and latent demand this may represent.

The 6 million pre-1919 buildings in England and Scotland represent a substantial source of actual demand for

traditional building skills. Demand is also to some degree borne out by the number of scheduled monuments or listed building consent applications. In England, 29,391 applications for Listed Building Consent, Scheduled Monument Consent and Conservation Area Consent were decided in 2011/12.²⁹ In the same period, 3,539 listed building consent and conservation area consent applications were processed in Scotland.³⁰ Data suggests that the ratio of listed buildings to consents granted varies greatly from one Local Authority to another and that this is difficult to account for by social, geographical or economic variables. The implication appears to be that in some areas work is being carried out without the appropriate consent.³¹



©CITB

Houses, Earlston, Scottish Borders showing different local stone types

4.5 DEMAND, LABOUR AND TRAINING REQUIREMENTS 2012–2017

ENGLAND

5.5	million traditional (pre-1919) buildings
£3.8	billion spend in 2012 on work on traditional (pre-1919) buildings, down from £5.3 billion in 2008
£2.1	billion spend in 2012 on work on traditional (pre-1919) buildings using traditional materials, up from £1.6 billion in 2008
86,880	workforce required to undertake work on traditional (pre-1919) buildings to meet demand in 2012 down from 109,000 in 2007
51%	of contractors in survey report no change in demand in past 5 years
57%	expect this to remain unchanged to 2015
49,459	labour demand by contractors using traditional materials up from 33,000 in 2007
3,960	entrant workers required in the sector in 2012, down from 12,351 in 2007
1,220	entrant workers required to work with traditional materials in 2012, down from 3,591 in 2007
4,340	existing workers requiring up-skilling training in 2012 down from 6,529 in 2007
2,470	existing workers requiring up-skilling training to work with traditional materials in 2012, up from 1,959 in 2007

SCOTLAND

505,000	traditional (pre-1919) buildings
£281	million spend in 2012 on work on traditional (pre-1919) buildings (no comparative figure for 2006)
£144	million spend in 2012 on work on traditional (pre-1919) buildings using traditional materials (no comparative figure for 2006)
6,750	workforce required to undertake work on traditional (pre-1919) buildings to meet demand in 2012 down from 13,160 in 2006
44%	of contractors in survey report no change in demand in past 5 years
50%	expect this to remain unchanged to 2015
3,300	labour demand by contractors using traditional materials (no comparative figure for 2006)
310	entrant workers required in the sector in 2012, down from 520 required in 2006
80	entrant workers required to work with traditional materials in 2012 (no comparative figure for 2006)
340	existing workers requiring up-skilling training in 2012 (no comparative figure for 2006)
80	existing workers requiring up-skilling training to work with traditional materials in 2012 (no comparative figure for 2006)

CALCULATING DEMAND

In the original NHTG Skills Needs Analysis report in England of 2005, attempts were made to estimate the average spend per building of private, public and commercial holders of traditional (pre-1919) buildings. This was then weighted up to yield an estimated total spend on all pre-1919 buildings of approximately £3.5 billion and the NHTG England 2008 Review research report estimated this spend at £4.7 billion. The NHTG Scotland report of 2007 estimated a £1.2 billion annual spend on repair and maintenance of traditional (pre-1919) buildings, which at that time was considered insufficient to ensure survival of the traditional (pre-1919) buildings in Scotland. Strong evidence suggests that the current market (even using the largest estimates) lags far behind the actual need for work on traditional pre-1919 buildings. The English Housing Survey, for example found that more than £10 billion would have to be spent to remedy serious hazards in the housing stock, and these hazards are disproportionately concentrated in older dwellings. Traditional (pre-1919) buildings required an average £3,893 of remedial expenditure, accounting for 65% of the total estimated expenditure.³² Similarly, the Continuous Scottish House Condition Survey has found that 76% of pre-1919 dwellings need repair to critical components, compared to only 24% of post-1982 houses.³³

No separate classification exists for companies or people involved in work on traditional (pre-1919) buildings, not least, because many of the sector's firms and their employees and sub-contractors, sole traders and the self-employed, operate across the construction spectrum from traditional to modern buildings. It is, therefore, impossible to use official statistics or any formally generated statistics to derive employment figures for traditional (pre-1919) buildings work or the training needed at

any given time. For this reason, a methodology was developed during the NHTG Traditional Building Craft Skills: Assessing the Need, Meeting the Challenges, Wales 2007 research report (and refined in the further NHTG reports up to 2009) to enable a consistent and evidence based approach for estimating the demand for skilled people and the required training to ensure that the traditional building stock is properly repaired and maintained.

The approach uses employment coefficients to calculate the level of employment required for a given level of output. The detailed qualitative and quantitative studies in the NHTG Scotland and Wales in 2007 and England 2008 and Ireland 2009 research reports suggested a slightly higher coefficient for conservation, repair and maintenance (CRM) activity compared to general repair and maintenance, based upon the higher than average employment figures per unit of output required for traditional (pre-1919) buildings. Traditional building crafts are necessarily more labour-intensive than new build because very little of the work can be mechanised. However, it is estimated that about 8% of the construction industry labour force (in terms of relevant skilled trades) is still engaged in the conservation, repair and maintenance of around 20% of England's total building stock.

This model for assessing demand relies on the use of nationally verifiable output and employment data, and mainly externally calculated coefficients derived from Construction Skills Network (CSN) analysis, along with confidential interviews by the relevant consultants. This allows a set of calculations to be developed from the value of the market to its labour force requirements, and from that an estimate of training requirements.

4.5.1 DEMAND – MARKET SIZE

Market size is estimated from a number of reliable sources based on information by building contractors in this current survey and nationally available statistics on construction industry output and national rates of industry growth. However, this is a forecast and as such is liable to change in response to changing market conditions. In addition, the value of the market for traditional building work remains extremely difficult to estimate as very few stockholders record information on their expenditure in terms of the age of the buildings concerned, or whether traditional building craft skills and materials or modern skills and materials are involved. This includes the major heritage organisations in England and Scotland which, while maintaining excellent overall project-related financial information, do not necessarily have information in forms which can easily distinguish between work on older and more modern buildings (such as newer visitor centres, etc.). They also do not categorise their expenditure by the level or types of skills used or required.

As part of this approach, the NHTG Traditional Building Craft Skills: Reassessing the Need, Addressing the Issues, England 2008

Review report contained three important tables on workforce demand and labour and training requirements. The data in the three tables from the 2008 report has been updated in Tables 6–11 and explained in the supporting narrative shown below to provide current forecasts for traditional building skills in England and Scotland for 2013–2017. These are based upon output data from the Construction Skills Network (CSN) forecasts for 2013–2017, findings from the CITB Employer Panel, the UK Employer Skills Survey (ESS) and new information collected from this research project.

Overall, the calculations in this update have essentially followed the same methodology as used in the NHTG England 2008 research, with the coefficients adjusted slightly to account for a productivity improvement over time.

The exact same methodology was not used for the NHTG Scotland report of 2007 as this approach to workforce demand and labour and training evolved after that report, but this has been applied now using existing data sets. Although the figures for

Scotland appear small by comparison with England, it must be borne in mind that the number of traditional (pre-1919) buildings in Scotland is under one-tenth of that for England and the market is therefore substantially smaller.

One thing that is different from the previous calculations (and survey data) is that while the proportion of work being undertaken on traditional (pre-1919) buildings has contracted since 2008, the proportion of that work using traditional materials has actually increased. This has fed through to both the market and workforce demand calculations and this emphasises the need for workers undertaking this type of work to be appropriately skilled in the appropriate methods and materials.

ENGLAND

These estimates are based upon the total value of the construction market in England (row A, Table 5) from which the repair and maintenance expenditure can then be derived by using overall market proportions from construction industry output figures (row B). Using the proportion derived from this current survey it is then possible (row C) to calculate an initial market value for conservation, repair and maintenance work carried out on traditional (pre-1919) buildings. The calculations also need to take into account that the proportion in row C was achieved from a survey, which included only firms that had undertaken work on traditional pre-1919 buildings in the year in question.

The survey excluded any company that had not undertaken such work and, to that extent, the theoretical total in row C is overstated. This market value must, therefore, be weighted to take full account of the proportion of firms surveyed that did not undertake traditional pre-1919 building work during the year.

Table 5: Demand for traditional building craft skills – England³⁴

A: Total building market in England ^a	£86,034m	£83,777m	£84,304m	£86,259m	£87,801m	£89,235m
B: Of which the England repair and maintenance output ^a	£30,885m	£30,701m	£31,102m	£31,838m	£32,596m	£33,069m
C: CRM theoretical total spend on pre-1919 buildings (40%) ^a	£12,385m	£12,311m	£12,472m	£12,767m	£13,071m	£13,261m
D: CRM on pre-1919 buildings taking into account those not doing any pre-1919 work from the survey (31%) ^a	£3,839m	£3,816m	£3,866m	£3,958m	£4,052m	£4,111m
E: CRM on pre-1919 buildings and using traditional materials (56%) ^a	£2,150m	£2,137m	£2,165m	£2,216m	£2,269m	£2,302m

^a £million constant 2005. Note: (e) = estimated; (f) = forecast. "CRM" abbreviated form of Conservation, Repair & Maintenance. In this study, use of traditional material is being treated as a proxy indicator for use of traditional building craft skills. Of the work on traditional (pre-1919) buildings in England 22% involved only traditional materials, and 68% a combination of modern and traditional materials. The latter figure has been halved on the assumption that the split between traditional and modern materials is 50/50 following method employed in EPR in Wales study (2007), giving a multiplication factor of 0.22+0.34=0.56.



© Chris Wood / English Heritage

Colly weston slating skills

When this weighting is applied (row D), a more realistic and reliable value for work carried out on traditional (pre-1919) buildings is produced. It is equivalent to an estimated average of some £3.8 billion per year, rising slightly to just over £4 billion in 2017. The comparative estimated figure from the NHTG England 2008 Review report was £5.3 billion. This represents a fall in real terms of £1 billion and highlights the impact of the recession on the sector. A further stage of analysis (row E) shows that over half (56%) of work on traditional (pre-1919) buildings involved the use of traditional building materials. The market for the use of traditional material during work on pre-1919 buildings is estimated to be worth about £2.15 billion in 2012 and predicted to increase by small increments each year to just over £2.3 billion by 2017.

SCOTLAND

In Scotland (Table 6), the overall annual spend on repair and maintenance on traditional (pre-1919) buildings in the NHTG Scotland report of 2007 was estimated to be £1.2 billion and as shown (row C) this has come down to just over £1.12 billion in 2012, but is forecasted to rise to £1.23 billion in 2017.

The 2017 figure equates to the 2007 figure, and whilst the overall annual spend has dipped in the five year period 2007–2012, this is almost certainly due to the effects of the economic recession. The annual spend on repair and maintenance on traditional (pre-1919) buildings is forecast to rise gradually each year up to 2017. This will bring the estimated figure back to a similar level of 10 years ago and so the market size does not seem to have changed much over that period.

Table 6 Demand for traditional building craft skills – Scotland³⁵

Year	2012 (e)	2013 (f)	2014 (f)	2015 (f)	2016 (f)	2017 (f)
A: Total building market in Scotland ^a	£8,070m	£7,873m	£7,930m	£8,244m	£8,473m	£8,518m
B: Of which the Scotland repair and maintenance output ^a	£2,963m	£2,977m	£2,978m	£3,090m	£3,199m	£3,268m
C: CRM theoretical total spend on pre-1919 buildings (38%) ^a	£1,123m	£1,128m	£1,129m	£1,171m	£1,212m	£1,239m
D: CRM on pre-1919 buildings taking into account those not doing any pre-1919 work from the survey (25%) ^a	£281m	£282m	£282m	£293m	£303m	£310m
E: CRM on pre-1919 buildings and using traditional materials(51%) ^a	£144m	£144m	£144m	£150m	£155m	£158m

^a £million constant 2005. Note: (e) = estimated; (f) = forecast. "CRM" abbreviated form of Conservation, Repair & Maintenance. In this study, use of traditional material is being treated as a proxy indicator for use of traditional building craft skills. Of the work on traditional (pre-1919) buildings in Scotland 13% involved only traditional materials, and 77% a combination of modern and traditional materials. The latter figure has been halved on the assumption that the split between traditional and modern materials is 50/50 following method employed in EPR in Wales study (2007), giving a multiplication factor of 0.13+0.38=0.51.

As discussed above, these calculations need to take into account the fact that the proportion in row C was achieved from a survey which included only firms that had undertaken work on pre-1919 buildings in the year in question. This market value was, therefore, weighted to take full account of the proportion of firms surveyed that did not undertake pre-1919 building work during the year. When this weighting is applied (row D), the value for work carried out on traditional (pre-1919) buildings in Scotland is equivalent to an estimated average of some £292 million per year, rising slightly to £310 million in 2017.

As shown in row E, the further stage of analysis indicates that over half (51%) of work on traditional (pre-1919) buildings involved the use of traditional building materials and so the market for this in Scotland is estimated to be worth about £144 million in 2012 and predicted to increase by small increments each year to £158 million by 2017.

4.5.2 WORKFORCE REQUIREMENTS

Calculating the workforce required to meet industry needs is achieved through the application of coefficients developed by CITB and from data collected through the previous NHTG surveys. These coefficients allow us to determine the numbers of workers (FTE) required to meet the labour demand generated by each £1 million of output (at constant 2005 prices). In this instance the coefficients refer specifically to craft occupations related to craft activities undertaken on traditional (pre-1919) buildings.

ENGLAND

In Table 7, these coefficients were applied to the total value of the pre-1919 building market in England. A total workforce requirement (row F) is therefore calculated. In 2007, it was estimated that around 109,000 people were directly involved in work on traditional (pre-1919) buildings. As per Row F in Table 8 this has now dropped dramatically (due to the economic recession) to 86,880, although it is forecast to rise to 93,500 by 2017.

By applying the same approach to the market value of work being carried out on traditional (pre-1919) buildings, but involving the use of traditional materials it is possible to derive a workforce requirement for those not only undertaking pre-1919 work, but also applying the skills necessary to handle traditional materials (row G). This equates to 49,450 in 2012 (a substantial increase from the figure of just under 33,000 craftspeople throughout England in 2007). The increase is a result of findings which suggest that while the value of work undertaken on traditional (pre-1919) buildings has decreased, the proportion of that work undertaken using traditional building materials has actually increased. Again, this is set to rise to 52,950 in 2017.

The low demand for labour overall (row F) is primarily a reflection of labour market conditions resulting from the recession. Reduced workloads have impacted on demand, which has then shaped the size and composition of the workforce. Data on workforce levels, from the CSN and Labour Force Survey (LFS), was reviewed to test if the calculated drop in labour demand was in line with what we might expect when viewed against the wider construction sector. The findings of the review concur sufficiently

and as such we can be reasonably confident that the trend in labour demand in the traditional building sector is a fair reflection of the current requirement. Additionally, analysis from CSN also indicates that there are high levels of under-employment (i.e. excess capacity) within the workforce that will need to be taken up before demand leads to a substantial requirement for new workers (over and above) a replacement demand.

It is estimated that on average 3,500 entrants per annum are required in the forecast period 2013–2017 to work on traditional (pre-1919) buildings (row H1). This has dropped substantially (by almost three-quarters) from the 2007 pre-recession average figure of just over 12,900 new employees, but remains reasonably buoyant as a result of people retiring or permanently leaving an occupation. Replacement rates were determined through analysis of workforce flows from the Labour Force Survey. These were then deflated by 50% to reflect the slightly more stable state of the workforce in the traditional building sector.³⁶ Previous research within the traditional building sector has shown that firms working in this area were less likely to have reduced the number of people employed than mainstream construction.³⁷

The majority of these entrants represent a replacement demand rather than a growth demand. Row H2 shows the equivalent for new entrants (average 1,300 per annum for the period 2012–2017) with traditional building skills required for working with traditional materials.

Table 7 Workforce demand for traditional (pre-1919) buildings – England ³⁵

Year	2012 (e)	2013 (f)	2014 (f)	2015 (f)	2016 (f)	2017 (f)
D: CRM on pre-1919 buildings, taking into account those not doing any pre-1919 work from the survey ^a	£3,839m	£3,816m	£3,866m	£3,958m	£4,052m	£4,111m
E: CRM on pre-1919 buildings and using traditional materials ^a	£2,150m	£2,137m	£2,165m	£2,216m	£2,269m	£2,302m
F: Labour demand (by output) – contractors undertaking pre-1919 building work ^b	86,880	86,690	86,240	88,060	90,650	93,500
G: Labour demand by contractors using traditional materials ^b	49,450	49,160	49,800	50,980	52,190	52,950
H1: Entrant workers ^b	3,960	3,300	3,150	3,250	3,520	3,800
H2: Entrant workers with traditional building skills required for working with traditional materials. ^b	1,220	1,160	1,230	1,330	1,440	1,420

^a £million constant 2005. ^b Numbers of workers. Note: (f) = forecast. "CRM" abbreviated form of Conservation, Repair & Maintenance. Workforce data rounded to nearest 10.



©CITB

The Plough Inn, Rosemarkie, Black Isle

SCOTLAND

In Scotland (Table 8) and by applying the same coefficients to the total value of the traditional (pre-1919) building market, a total workforce requirement (row F) is estimated in 2012 as 6,750 but dropping to 6,450 by 2017. As discussed above, data from the

Construction Skills Network (CSN) and the Labour Force Survey (LFS) was reviewed to establish a picture of labour turnover and demand, which was then applied to establish the overall labour demand (row F).

Table 8 Workforce demand for traditional (pre-1919) buildings – Scotland

Year	2012 (e)	2013 (f)	2014 (f)	2015 (f)	2016 (f)	2017 (f)
D: CRM on pre-1919 buildings, taking into account those not doing any pre-1919 work from the survey ^a	£281	£282	£282	£293	£303	£310
E: CRM on pre-1919 buildings and using traditional materials ^a	£144	£144	£144	£150	£155	£158
F: Labour demand (by output) – contractors undertaking pre-1919 building work ^b	6,750	6,620	6,560	6,240	6,380	6,450
G: Labour demand by contractors using traditional materials ^b	3,300	3,320	3,320	3,440	3,570	3,640
H1: Entrant workers ^b	310	250	240	230	250	260
H2: Entrant workers with traditional building skills required for working with traditional materials. ^b	80	80	80	90	100	100

^a £m constant 2005. ^b Numbers of workers. Note: (f) = forecast. “CRM” abbreviated form of Conservation, Repair & Maintenance. Workforce data rounded to nearest 10.

Again, similar to the situation in England, the low demand for labour overall (row F) is primarily a reflection of labour market conditions resulting from the recession. It is also the case that high levels of under-employment (i.e. excess capacity) within the workforce that will need to be taken up before demand leads to a substantial requirement for new workers (over and above) a replacement demand.

The workforce requirement in Scotland for traditional (pre-1919) buildings, but involving the skills necessary to handle traditional building materials, is 3,300 in 2012 rising to 3,640 in 2017 as shown in row G. The drop in workforce requirement (row F) between 2012 and 2017, but increase between 2012 and 2017 of those involving the skills to handle traditional building materials, is again as a result of findings which suggest that while the value of work

undertaken on traditional (pre-1919) buildings has decreased, the proportion of that work undertaken using traditional building materials has actually increased.

It is also estimated (row H1) that 310 entrants are required in 2012 to work on traditional (pre-1919) buildings dropping to 260 in 2017. The 2012 figure is about half the number estimated in 2007 within the NHTG Scotland 2007 report (Table 5, p. 27), however, some caution is required with this comparison as the methodology used for the Scottish forecasts in 2007 was different to that now used. Again the majority of these entrants represent a replacement demand for those leaving the sector. Row H2 shows the equivalent for new entrants (average 90 per annum for the period 2012–2017) with traditional building skills required for working with traditional materials.



©Historic Scotland Pointing irons

4.5.3 TRAINING REQUIREMENTS

Additional workforce demand does not necessarily equate directly to the demand for training, as some of those joining the industry may be returning to the sector with relevant skills. Furthermore, demand for training related to traditional (pre-1919) buildings and traditional materials will also be enhanced by the amounts of 'up-skilling' required by the existing workforce to

undertake different types of traditional building work. Training will usually consist of short courses and sessions, lasting between a day and a few weeks, designed to enhance the skills of those already working in the sector, rather than being trained for full qualifications.

Forecasts of training requirements are only estimates and two caveats are in order regarding this:

1. 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 figures, given the amount of fluidity within the industry as firms work across new build and traditional (pre-1919) buildings with the same workforce.
2. The additional numbers requiring training should again be viewed as an indicator only, since it is not meant to imply that the existing workforce employed on traditional (pre-1919) buildings actually already possess the necessary skills to repair and maintain these in their entirety. If that were the case, this report would be superfluous. Rather, it is an indication of the additional training requirement in years to come if the forecast demand is realised, and that is additional to the required up-skilling regarding the traditional building skills of the present workforce.



©Historic Scotland

Roof slating, head nail demonstration

ENGLAND

In Table 9, the training requirements for England are based upon two separate levels of calculation. Firstly, the numbers of entrants needing (or not needing) full or up-skilling training has been calculated using proportions derived from data from the CITB Employer Panel: Employer Attitudes and Motivations to Learning and Training (see rows I, J and K). Then the numbers of existing employees requiring up-skilling training for the use of traditional materials were calculated using data from the UKCES Employer Skills Survey (row N).

The figures in Rows I to N were derived by applying survey data to the workforce figures (Rows F, G, and H1). Rows I to K are based on data from the CITB Employer Panel: Employer Attitudes and Motivations to Learning and Training (Wave 11), which looked at the employers views of training requirements of new entrants. Rows L and N are based on findings from the UKCES Employer Skills

Survey 2011, which provides a view on the training requirements of the existing workforce.

Demand for training in England illustrated in Table 9 is essentially underpinned by existing predictions of the growth of the entire construction industry (rows A and B), but this may not represent the growth rate for work on traditional (pre-1919) buildings. The 2008 figure for the total number of craftspeople requiring training was 15,900, whereas in 2012 (row M) this has dropped by around one-third to 7,320, although it is set to rise slightly by 2017.

The number requiring up-skilling training for contractors using only traditional building materials (row N) has increased from 1,960 in 2008 to 2,470 in 2012 and with a predicted rise to 2,650 by 2017.

Table 9 Training requirement for the traditional building workforce – England

Year	2012 (e)	2013 (f)	2014 (f)	2015 (f)	2016 (f)	2017 (f)
F: Labour demand (by output) – contractors undertaking pre-1919 building work	86,880	86,690	86,240	88,060	90,650	93,500
G: Labour demand (by output) – contractors using traditional materials	49,450	49,160	49,800	50,980	52,190	52,950
H1: Entrant workers	3,960	3,300	3,150	3,250	3,520	3,800
I: Entrant workers requiring no training ^a	990	830	790	810	880	950
J: Entrant workers requiring up-skilling training ^a	2,380	1,980	1,890	1,950	2,110	2,280
K: Entrant workers requiring full training ^a	590	500	470	490	530	570
L: Existing workers requiring up-skilling training ^b	4,340	4,330	4,310	4,400	4,530	4,680
M: Total number requiring training	7,320	6,810	6,670	6,840	7,180	7,530
N: Up-skilling training requirement for contractors using only traditional materials	2,470	2,460	2,490	2,550	2,610	2,650

^a Informed by statistics from the CITB Employer Panel. ^b Informed by statistics from the UK Employers' Skills Survey 2011

Note: (f) = forecast. Workforce data rounded to nearest 10. Rows I, J and K are based on a proportional split of Row H1. Row L is derived as a proportion of row F, and row N is derived as a proportion row G. Row M is the sum total of rows J, K and L.

SCOTLAND

For Scotland, the breakdown of the training requirement is shown in Table 10. In the NHTG Scotland 2007 report, the total number of craftspeople requiring training was 1,440 (table 6, p. 28), whereas in row M in Table 10, this figure has dropped to 570 in 2012, with an average annual requirement of 510 between 2013 and 2017. The

average annual number requiring up-skilling training for contractors using only traditional building materials (row N) in Scotland is 90. This was not calculated in the previous NHTG Scotland 2007 report so no comparison is possible.

Table 10 Training requirement for the traditional building workforce – Scotland

Year	2012 (e)	2013 (f)	2014 (f)	2015 (f)	2016 (f)	2017 (f)
F: Labour demand (by output) – contractors undertaking pre-1919 building work	6,750	6,620	6,560	6,240	6,380	6,450
G: Labour demand (by output) – contractors using traditional materials	3,300	3,320	3,320	3,440	3,570	3,640
H1: Entrant workers	310	250	240	230	250	260
I: Entrant workers requiring no training ^a	80	60	60	60	60	70
J: Entrant workers requiring up-skilling training ^a	180	150	140	140	150	160
K: Entrant workers requiring full training ^a	50	<50	<50	<50	<50	<50
L: Existing workers requiring up-skilling training ^b	340	330	330	310	320	320
M: Total number requiring training	570	520	510	480	510	520
N: Up-skilling training requirement for contractors using only traditional materials	80	80	80	90	100	100

^a Informed by statistics from CITB Employer Panel. ^b Informed by statistics from the UK Employers' Skills Survey 2011

Note: (f) = forecast. Workforce data rounded to nearest 10. Rows I, J and K are based on a proportional split of Row H1. Row L is derived as a proportion of row F, and row N is derived as a proportion row G. Row M is the sum total of rows J, K and L.



©CITB

Hands on stonemasonry taster at Newhailes House

4.5.4 FINDINGS FROM THE RESEARCH ON EXPENDITURE LEVELS

Respondents among stockholders, professional bodies and manufacturers/suppliers interviewed for this research suggest that overall expenditure on traditional (pre-1919) buildings has increased over the past five years. The reason given for this was predominantly because traditional building materials can be more expensive than modern materials. In Scotland, building professionals, stakeholders and stockholders attribute this to higher levels of awareness of the benefits of using the correct materials and tools, mainly resulting from publicity from Historic Scotland and associated bodies. This increasingly means that stockholders are prepared to pay higher amounts for the right types of materials in Scotland. Respondents also noted the effect of promotion through television programmes referring to how traditional building work is undertaken and what materials should be used. Stockholders in England and Scotland also reported that the costs of labour have increased as some skills are in shorter supply than in previous years.

Figure 3 shows the findings from employers/contractors surveyed as part of this research regarding their experience of stockholder demand for work on traditional (pre-1919) buildings in terms of quantity over the past five years. This provides a mixed view, with overall 50% experiencing no change (50.7% in England and 44.3% in Scotland) and one-third reporting an increase (either by a little or a lot), whilst the smallest overall proportion (one-fifth of employers) report a decrease. This may be symptomatic of businesses getting through the economic downturn and doing enough to stay in business, but maybe not making a profit. Findings from the CITB Employer Panel³⁸ show that 54% of traditional building sector firms say that their turnover has decreased within the last 12 months with only 16% saying turnover increased in the same period (29% reported no change).

Figure 3 Contractor view of demand for work on pre-1919 buildings in past five years

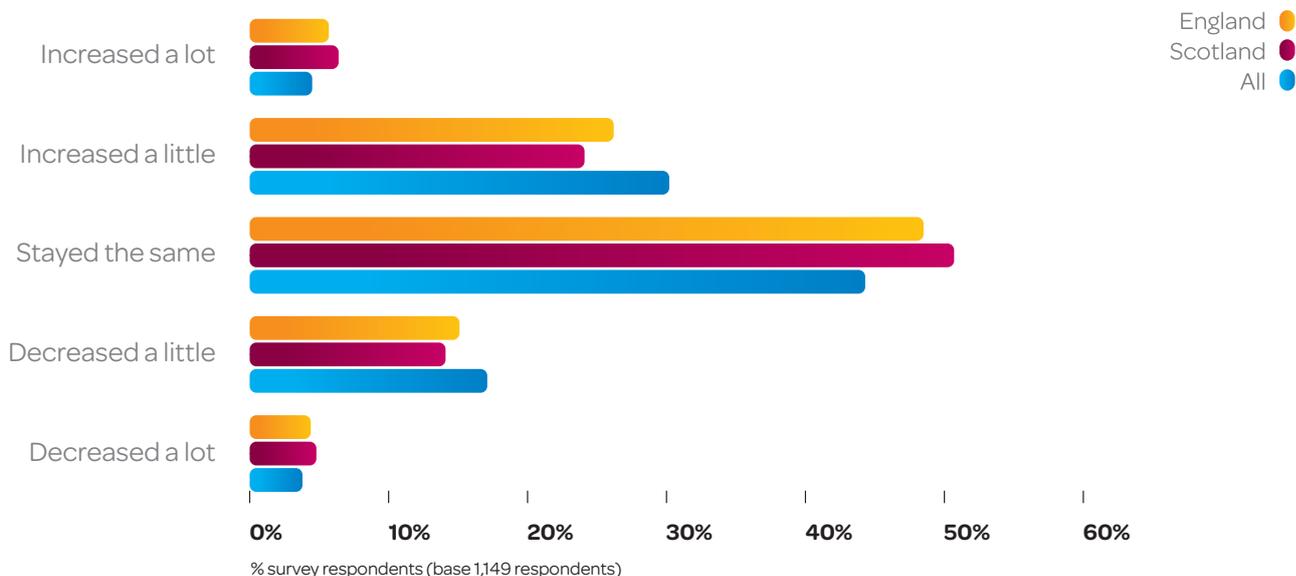
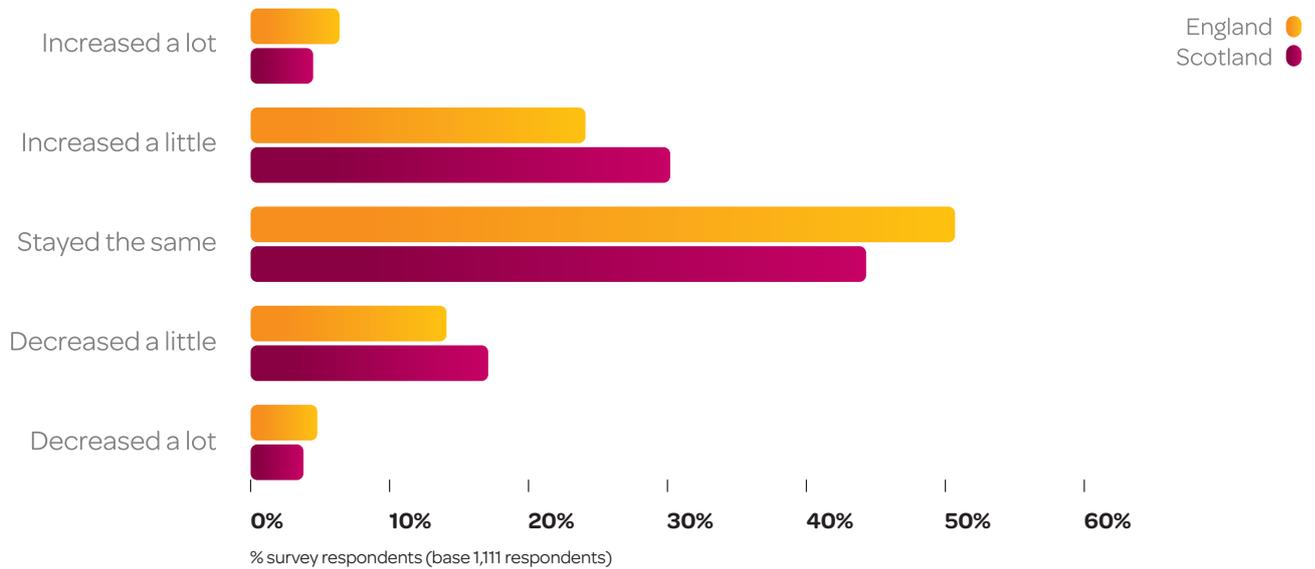


Figure 4 shows that up to 2015, just over half of the surveyed employers/contractors expect demand to remain unchanged. A sense of optimism exists amongst one-third of employers, who believe demand will increase by either a little or a lot, but around 10% of contractors expect a decrease in demand

Figure 4 Anticipated stockholder demand for work on traditional (pre-1919) buildings 2013–15



Respondents report the economic recession and its on-going effects have deeply impacted upon traditional (pre-1919) buildings in a number of ways, notably:

- The amount and extent of money available to carry out work on traditional (pre-1919) buildings;
- Workforce capacity due to building contractors being less financially secure;
- Reduction in tender prices;
- VAT to be imposed on alterations to listed buildings;³⁹
- Financial pressures experienced by training providers who have encountered diminishing levels of demand for training.

To some extent contractors and stockholders accept that the environment of on-going financial constraints and pressures has become 'the new norm'. The economic downturn has resulted not only in limitations to the amount of money available for work, but also in increased competition from contractors who would not normally undertake work of this nature and have moved into the market to try and diversify.

These firms can sometimes provide a cheaper option for people seeking building work by undercutting the price of specialists, who may be better placed to undertake the work most effectively. Not all stockholders are aware of the differences between skills and experience offered between general and specialist firms, and may therefore simply choose the lowest cost, but this may not represent the best value for money.

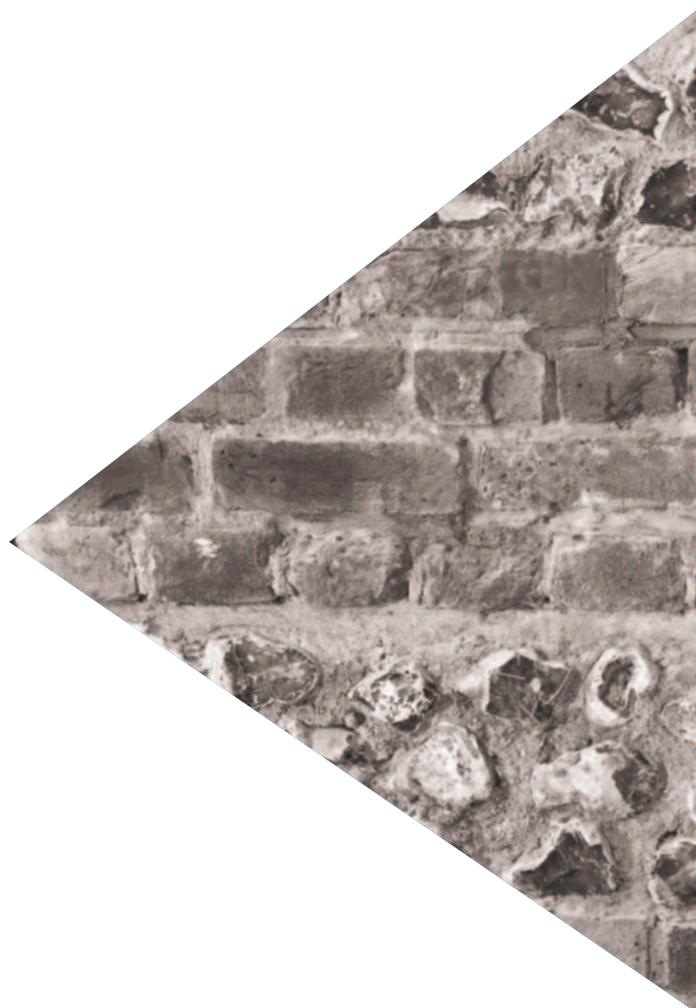
Contractors acknowledge that due to the current economic climate, levels of demand are likely to be relatively static at present and stockholders may delay commissioning work until compelled to address major repair issues (which can make the work more expensive in the longer-term).

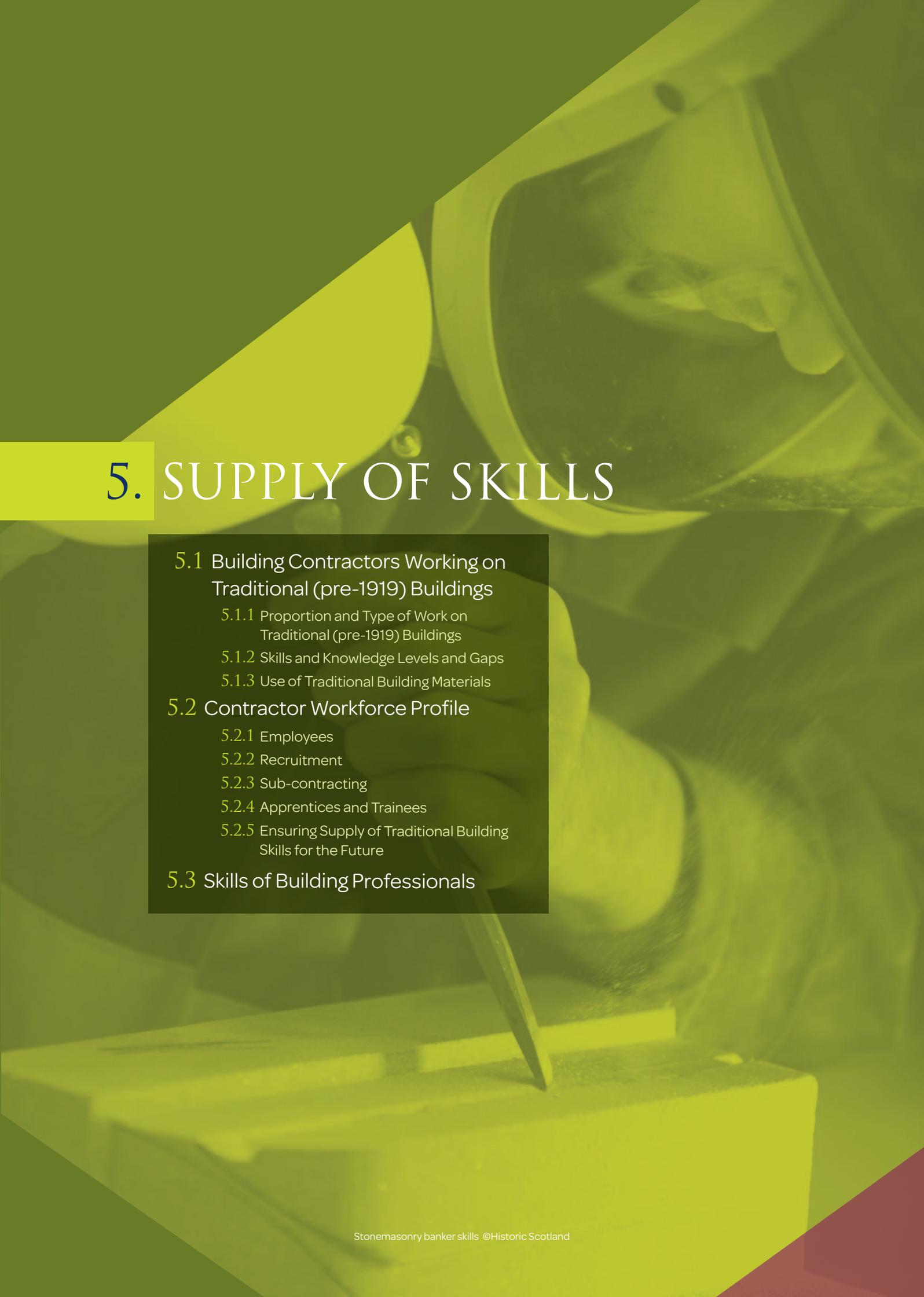
In addition to financial constraints, respondents cited the following barriers to demand for work on traditional (pre-1919) buildings:

- Not all stockholders are aware of the need to use traditional building skills and materials (in part due to skills gaps of building professionals or those within Local Authorities, who subsequently do not provide correct advice);
- Stockholder perception that traditional building skills are 'expensive' and 'specialist';
- Cost (including price rises) of using traditional building materials;
- Perception of diminished grant funding for repair and maintenance (and perceived administrative burdens and/or onerous requirements associated with the grant application process, which can prevent applications for funding);
- Insufficient information for stockholders on the types of skills and materials they should be using on traditional (pre-1919) buildings.

Whilst not all contractors have experienced universal decline in demand for work on traditional (pre-1919) buildings, the majority of respondents interviewed for this research point to 'slowing down' of orders, as stockholders have tended to postpone non-essential types of work. This has meant that some types of trade are more severely affected than others, such as decorative work.

Further 'ripple' effects of the downturn relate to on-going training and development, and up-skilling the traditional building skills workforce. Few building firms consider themselves to be financially secure, with the majority of respondents in this research stating they cannot guarantee a long-term pipeline of work. In consequence, there is less money available for training, and limited opportunities to recruit trainees or support apprentices, which has an immediate effect and longer-term consequence.





5. SUPPLY OF SKILLS

5.1 Building Contractors Working on Traditional (pre-1919) Buildings

- 5.1.1 Proportion and Type of Work on Traditional (pre-1919) Buildings
- 5.1.2 Skills and Knowledge Levels and Gaps
- 5.1.3 Use of Traditional Building Materials

5.2 Contractor Workforce Profile

- 5.2.1 Employees
- 5.2.2 Recruitment
- 5.2.3 Sub-contracting
- 5.2.4 Apprentices and Trainees
- 5.2.5 Ensuring Supply of Traditional Building Skills for the Future

5.3 Skills of Building Professionals

5.1 BUILDING CONTRACTORS WORKING ON TRADITIONAL (PRE-1919) BUILDINGS

A sample target of 1,100 interviews with contractors (and sub-contractors) was a key ingredient of this research and aimed to provide a representative cross-section of the supply of craft skills for work on traditional (pre-1919) buildings. This target was exceeded, with 1,161 interviews (England 763; Scotland 398).

This compares with 533 contractor interviews in the NHTG England 2008 Review report and 354 contractor interviews in the NHTG Scotland 2007 report.

5.1.1 PROPORTION AND TYPE OF WORK ON TRADITIONAL (PRE-1919) BUILDINGS

An important pre-qualification question for the survey of contractors was that they must have undertaken at least some work on traditional (pre-1919) buildings over the previous 12 months, if not the interview was terminated.

As Figure 5 shows, 91.6% of all the interviewed contractors classified themselves as mainstream or general construction companies, with only 8.4% describing themselves as specialist heritage companies (11.2% in England and only 3.1% in Scotland). In addition, 66% described themselves as main contractors and 34% sub-contractors, with a 65/35% split in England and 68/32% in Scotland.

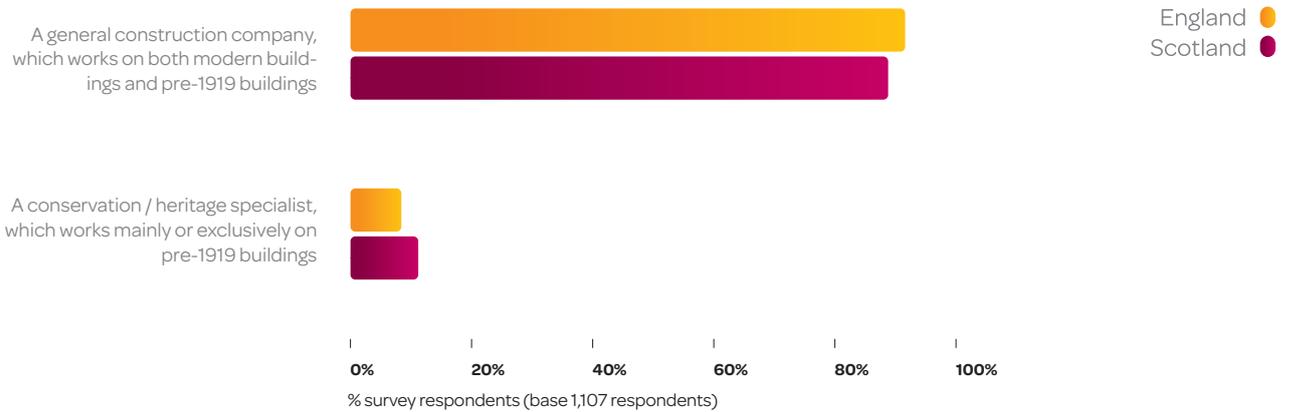
From this, it is clear that the bulk of work on traditional (pre-1919) buildings is undertaken by non-specialist companies. This is good on one hand as this means the work is mainstream and not seen as a niche market, but it can create significant problems for stockholders and the buildings themselves if they do not have the requisite knowledge and skills regarding the right approach and methods and materials for use on traditional (pre-1919) buildings.



©National Trust

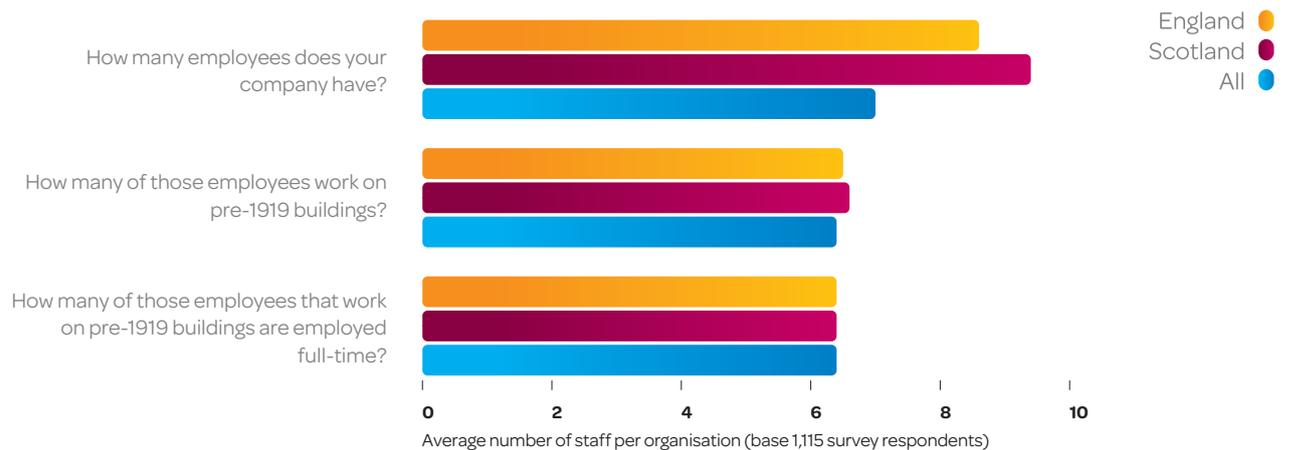
Trainee on Traditional Building Skills Bursary Scheme

Figure 5 Type of companies in survey



As shown in Figure 6, the majority of employees (average 6.5 out of 8.6) employed by those companies in this survey undertake work on traditional (pre-1919) buildings and almost all of those are employed on a full-time basis.

Figure 6 Average numbers of employees per company

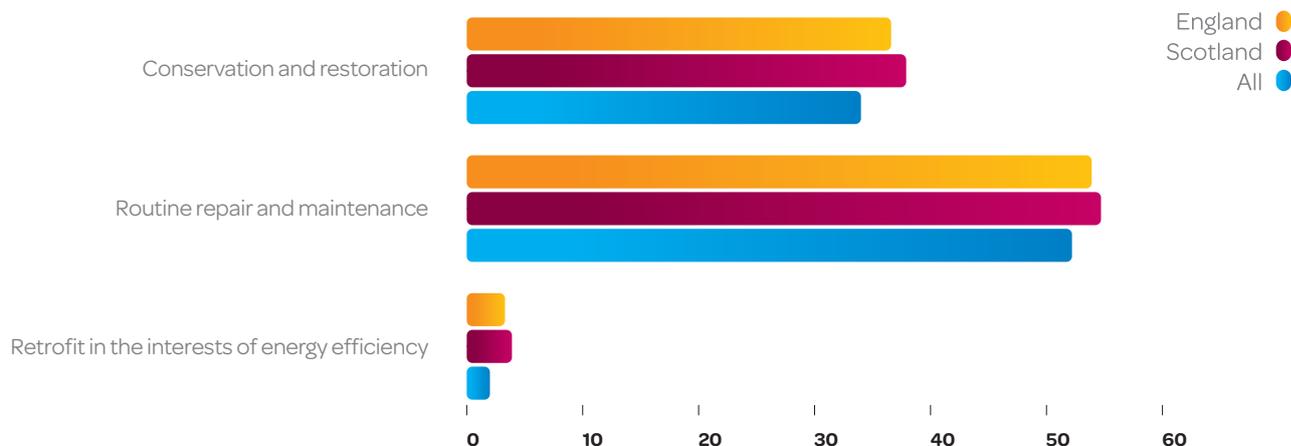


Of the work undertaken in the past 12 months by all of the 1,161 companies responding to this survey, 39% overall was on traditional (pre-1919) buildings (40% in England and 38% in Scotland). The time-series comparison with the previous NHTG research reports shows a slight increase in this aspect, up from 36% in England in 2008 and up from 35% in Scotland in 2007.

As shown in Figure 7, routine repair and maintenance accounts for just over half of the work undertaken on traditional (pre-1919) buildings, while conservation and restoration accounts for just over one-third of activity. The proportions of these are very similar in England and Scotland and it is reassuring that routine repair and maintenance is the largest activity, especially as this approach is the best means of long-term preservation of traditional (pre-1919) buildings and often much under-valued.

It is not surprising, considering the relative newness of the energy efficiency retrofit agenda, that this activity is extremely infrequent by comparison with the other two categories.

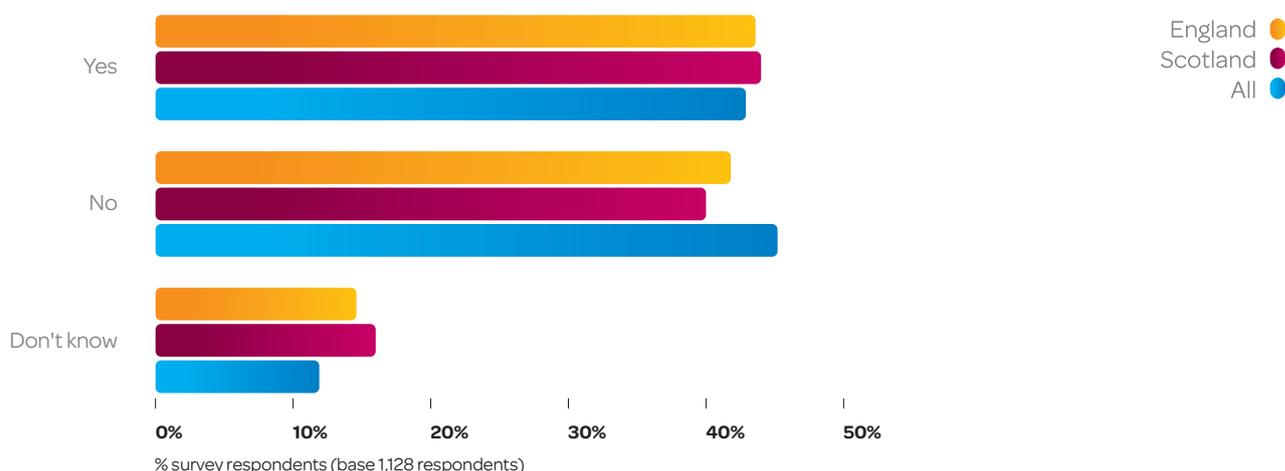
Figure 7 Type of work undertaken on traditional (pre-1919) buildings



As shown in Figure 8, at 43.6% and 41.8% respectively, almost equal proportions of contractors say that they either 'intend to' or 'do not intend to' increase the amount of work they undertake on traditional (pre-1919) buildings. The percentage wishing to do more of this type of work is encouraging from a supply chain

perspective, providing they have the right skills, knowledge and expertise. However, when combining the 15% overall who are undecided (more so in England than Scotland) with the 41.8% not wishing to increase doing this type of work, this forms almost two-thirds of the contractors in the survey.

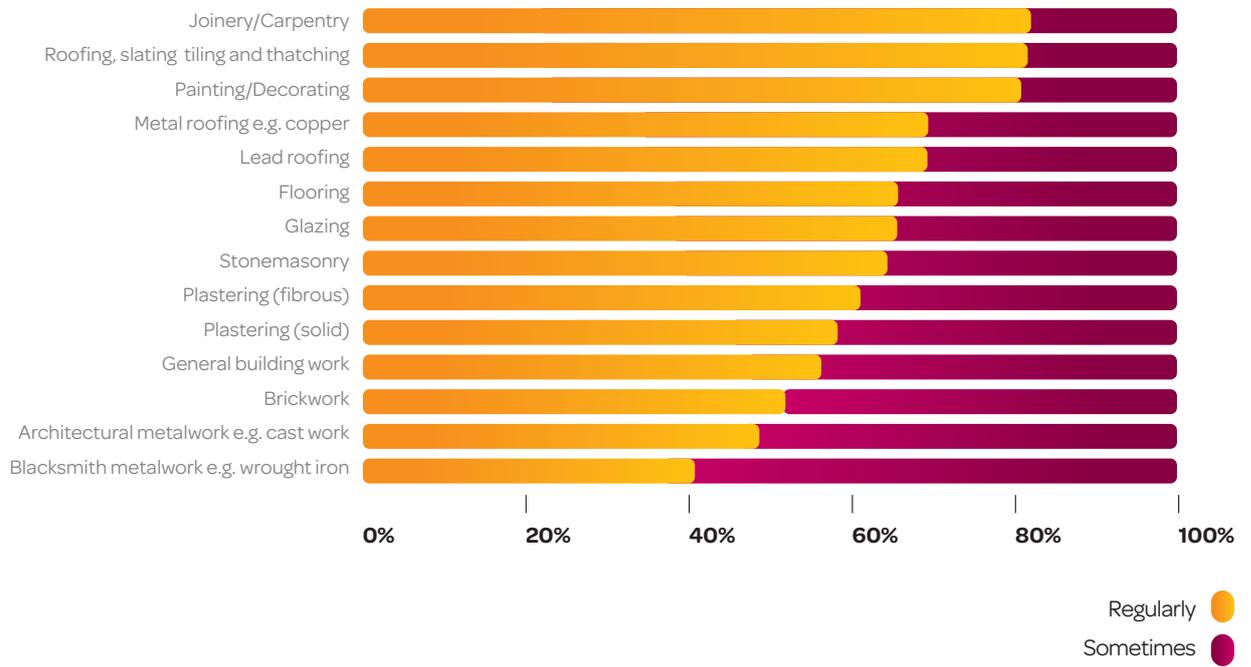
Figure 8 Contractors intention to increase their work on traditional (pre-1919) buildings



Contractors were asked to describe whether each respective trade they undertake is carried out either 'regularly' or 'sometimes'. As can be seen from Figure 9, joinery activities, roofing and painting/decorating are undertaken with the highest degrees of regularity. Conversely, brickwork,

architectural metalwork and blacksmithing are undertaken with the lowest degree of regularity by contractors using these skills. Only slight variations exist between England and Scotland regarding these occupations.

Figure 9 Crafts undertaken regularly/sometimes (England and Scotland)



5.1.2 SKILLS AND KNOWLEDGE LEVELS AND GAPS

Contractors in this survey were asked to rate the current skill levels of their employees across a range of craft specialisms in which they were involved. On a scale of 1 to 10 (with 1 being not skilled and 10 being highly skilled), the average scores of 9 or 10 in each skill shown in Table 11 reflects the employer's views that their employees are highly skilled.

These levels of confidence should be viewed with some caution, as they are based on self-assessment among a group of respondents predominantly working as general rather than specialist traditional building contractors, and the qualitative depth interviews with other stakeholders does not fully support the contractors view.

Table 11 Rating of skill levels (descending order and including time-series comparison)

	Bases	All 2012	England 2012	England 2008	Scotland 2012
Carpenter	347	9.22	9.04	8.64	9.52
Joiner	438	9.21	9.02	8.76	9.52
Roofer - random/natural slates	230	9.13	9.08	8.51	9.21
Stone carver	65	9.13	9.02	8.64	9.47
Glass painter	41	9.12	8.93	8.67	9.58
Roofer - stone tiles	164	9.11	9.02	8.49	9.24
Decorator/Painter	280	9.1	8.99	8.6	9.24
Lead worker (roofing)	190	9.08	9.09	n/a	9.06
Roofer - general tiles and slates	314	9.06	9.03	8.49	9.11
Roofer - other metal e.g. copper, aluminium, zinc	252	9	8.94	8.44	9.09
Glazier	236	8.99	9.09	8.51	8.82
Tiler (floors/walls)	134	8.93	8.99	8.55	8.69
Lead worker (excluding lead roofing)	86	8.92	8.81	n/a	9.05
Plasterer (lime etc.)	206	8.91	8.81	8.63	9.18
Thatcher	32	8.91	8.92	7	8.83
Plasterer (fibrous)	170	8.87	8.8	8.65	9.1
General crafts/trades person	132	8.85	8.75	8.61	9.12
Plasterer (other)	197	8.82	8.85	8.58	8.78
Stone mason (fixer mason)	119	8.81	9.01	8.72	8.49
Bricklayer	184	8.77	8.83	8.6	8.6
Wood machinist	102	8.75	8.75	8.63	8.76
Blacksmith	26	8.73	8.71	8.67	9
Gilder	28	8.7	8.67	8.6	8.83
Wood carver	81	8.7	8.67	8.88	8.74
Stone conservator	36	8.66	8.56	8.64	9
Steeplejack	28	8.61	8.58	8.75	8.75
Timber preserver	82	8.52	8.61	8.45	8.45
Drystone waller	34	8.41	8.44	8.76	8.29
Cabinet maker	22	8.36	8.33	8.71	9
Plumber undertaking leadwork	n/a	n/a	n/a	9.38	n/a

Note: Average rating out of 10

The integrated time-series comparison for England reveals either a slight uplift or constant set of scores (to one decimal place) across all trades since 2008. The exceptions are glazing, stonemasonry (fixer), brick-laying and timber preservation, where scores have dipped slightly.

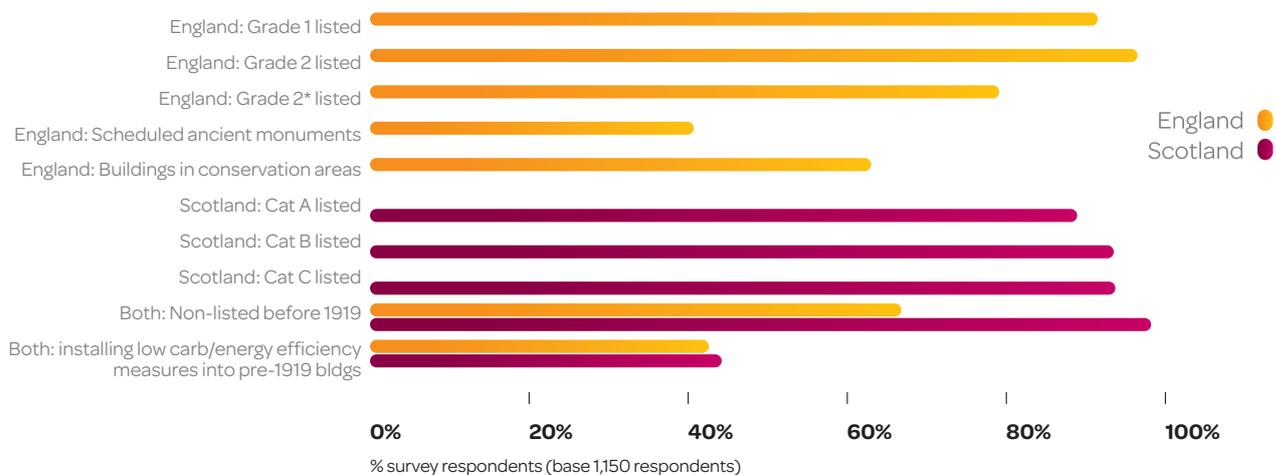
Whilst the ratings presented in Table 9 are encouraging, it is important to remember:

- That the ratings represent the views of employers alone and do not take into account the research findings from other stakeholder groups;
- The vast majority of surveyed employers operate in a mainstream construction environment with varying degrees of contact and experience working on traditional (pre-1919) buildings; and
- That any form of self-assessment should be treated with a degree of caution.

It is therefore extremely important to balance the ratings alongside in-depth qualitative feedback. However, views from a range of industry stakeholders, manufacturers/suppliers and stockholders also affirm and reinforce high levels of confidence in the existing workforce – but largely only where such people have honed their skills and knowledge over a period of many years. What respondents appear more concerned with is the decline and, in some cases, disappearance of skills and knowledge from the current workforce.

As illustrated in Figure 10, the confidence of the contractors regarding the abilities of their employees to work on listed buildings in England and Scotland is high, albeit slightly lower among respondents in England for Grade II* buildings. Among respondents in England, confidence is noticeably lower for work on scheduled monuments and buildings in conservation areas, as well as non-listed traditional (pre-1919) buildings in general. Whereas, the respondents based in Scotland report a higher degree of confidence (98% compared with 67% in England) in relation to working on traditional (pre-1919) buildings.

Figure 10 Confidence regarding working on particular types of buildings



Findings from these interviews suggest there is a mismatch among contractors between the skills and knowledge actually needed to carry out correct, high quality work on traditional (pre-1919) buildings, and the skills and knowledge they believe to be necessary. This is supported to some extent by anomalies in responses within the survey; for example, around 90% of respondents in England are confident in their ability to work on listed buildings, yet only around 66% are confident to work on non-listed buildings. This indicates a lack of awareness and understanding among contractors about the skills and knowledge necessary for work on traditional (pre-1919) buildings.

This is further supported by the fact that around three-quarters of respondents have not undertaken any relevant training in the past five years. Therefore contractors are less likely to know and understand the appropriate standards of competence.

Comparison with the NHTG England 2008 Review report reveals a slight uplift in confidence levels by contractors regarding working on listed buildings in England, although there has been a notable decrease in confidence about working on non-listed traditional (pre-1919) buildings in general (Table 12).

Table 12 Confidence of working on types of traditional (pre-1919) buildings
(time series comparison England 2008 - 2012)

	All 2012	England 2012	England 2008
Base	699	688	533
England: Grade 1 listed	60.8%	91.5%	90.0%
England: Grade 2 listed	64.1%	96.5%	93.0%
England: Grade 2* listed	52.6%	79.1%	85.0%
England: Scheduled ancient monuments	33.9%	40.7%	n/a
England: Buildings in conservation areas	51.0%	63.0%	n/a
Both: Non-listed before 1919	77.7%	66.8%	93.0%

Over 93% of the contractor respondents report that they have never had to turn down work on traditional (pre-1919) buildings due to a lack of skills and knowledge within their company (91.5% of those contractors in England and 96.4% in Scotland). If this is the case, it again reflects a worrying level of misplaced confidence which the contractors have in their abilities, skills and knowledge to work on traditional (pre-1919) buildings, and the potential impact on these buildings of them not having the right skills and expertise.

The employers were asked to rate the knowledge and ability of their employees and sub-contractors to work with different types of traditional building materials (as before using a scale of 1 to 10, with 1 being poor and 10 being excellent). Of the 1,129 contractors who responded to the question, the overall score of 8.5 out of 10 for the knowledge aspect (same in England and Scotland) and ability to work with these materials at 8.8 overall (8.9 in England and 8.7 in Scotland) are equally high. However, as this is based upon self-assessment, this may be over-estimated.

These levels of confidence should again be viewed with some caution, as they are based on self-assessment among a group of respondents predominantly working as general rather than specialist traditional building contractors, and may be an over-estimation. Also, the qualitative depth interviews with other stakeholders do not fully support this view.

SKILLS GAPS

The contractors in this survey highlighted two issues: firstly, examples of skills gaps relating to specialist activities, and secondly, an over-arching concern regarding diminishing knowledge and awareness across the sector regarding traditional (pre-1919) building methods and materials. The latter is perceived to be due to people leaving the sector without young people entering and thus losing skills due to retirement. In the main, this is attributed to a perceived lack of available training, particularly Apprenticeships, which focus upon traditional building skills or offer the knowledge needed to work on traditional (pre-1919) buildings in general.

The most common skills gaps cited by the contractors (in order of frequency) were:

- Carpentry and bench joinery (including carving and knowledge of graded timbers);
- Plastering (particularly lime);
- Traditional glazing (including putty/stained glass work and particularly in England);
- Lead work (including burning and welding);
- Decorating and wall-papering (particularly in Scotland);
- Roofing (including slating and lead).

These issues are contributing to widespread concern amongst the employer respondents about retaining traditional building skills, and in particular, affecting recruitment where and when required and whether skills and knowledge are being passed down to the next generation.

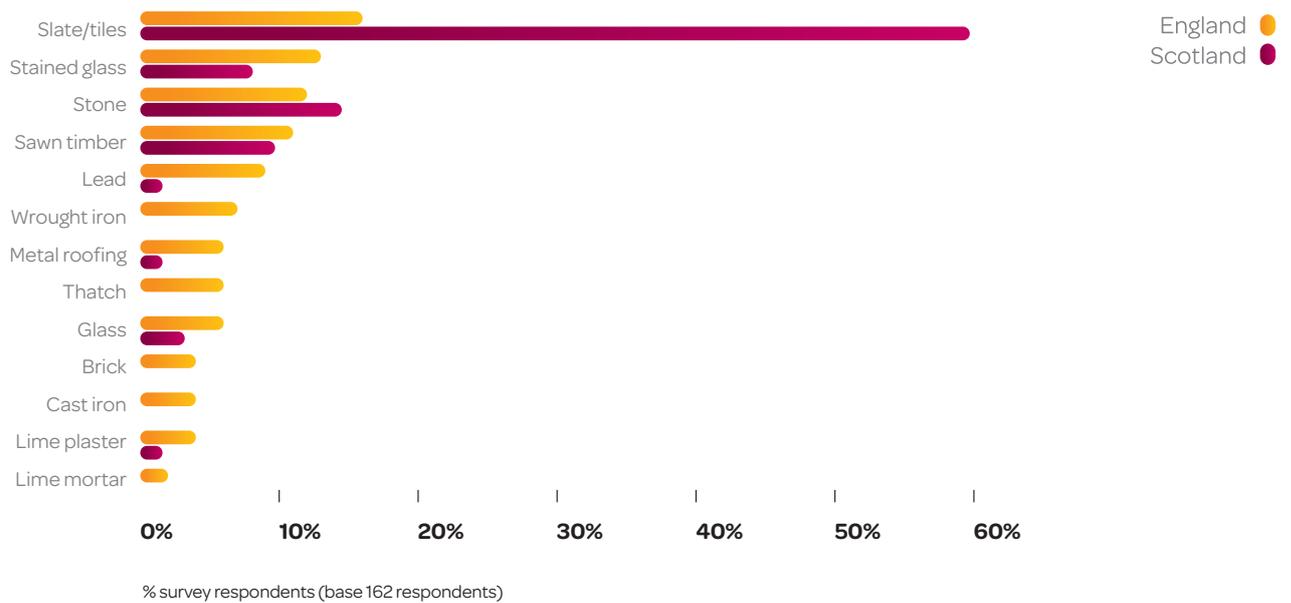
“Skills shortages will occur if the recession continues. There are few opportunities for trainees to gain experience”

Contractor

5.1.3 USE OF TRADITIONAL BUILDING MATERIALS

From the 1,161 survey respondents, only 160 reported that the traditional materials they use are difficult to source. Of the respondents, a range of materials are considered difficult to source (to greater or lesser extents), with a more even mix evident on this in England (Figure 11). From this, the primary problem appears to be the sourcing of slates and tiles, particularly in Scotland, due to there being no indigenous source of supply of slate.

Figure 11 Traditional building materials reported difficult to source



Issues relating to supply of materials based on the qualitative feedback from the in-depth interviews include:

- Insufficient suppliers of traditional building materials based in Scotland, but currently not enough demand to increase this;
- Costs of certain metals, notably lead and copper have risen sharply;
- Demand for water-reed for thatching is currently outstripping supply.

Approximately half of the contractors in the survey report that traditional building materials are always/sometimes required as part of work undertaken. However, a lower proportion of those in England compared to Scotland state this as always being the case (Figure 12). Some 13% overall report that they have never been contractually required to use traditional building materials on traditional (pre-1919) buildings, with the figure being 15% of those based in Scotland, which also reflects a lack of knowledge by the stockholders and/or specifiers to stipulate this.

Figure 12 Stockholders/professional advisors stipulating traditional building materials on traditional (pre-1919) buildings

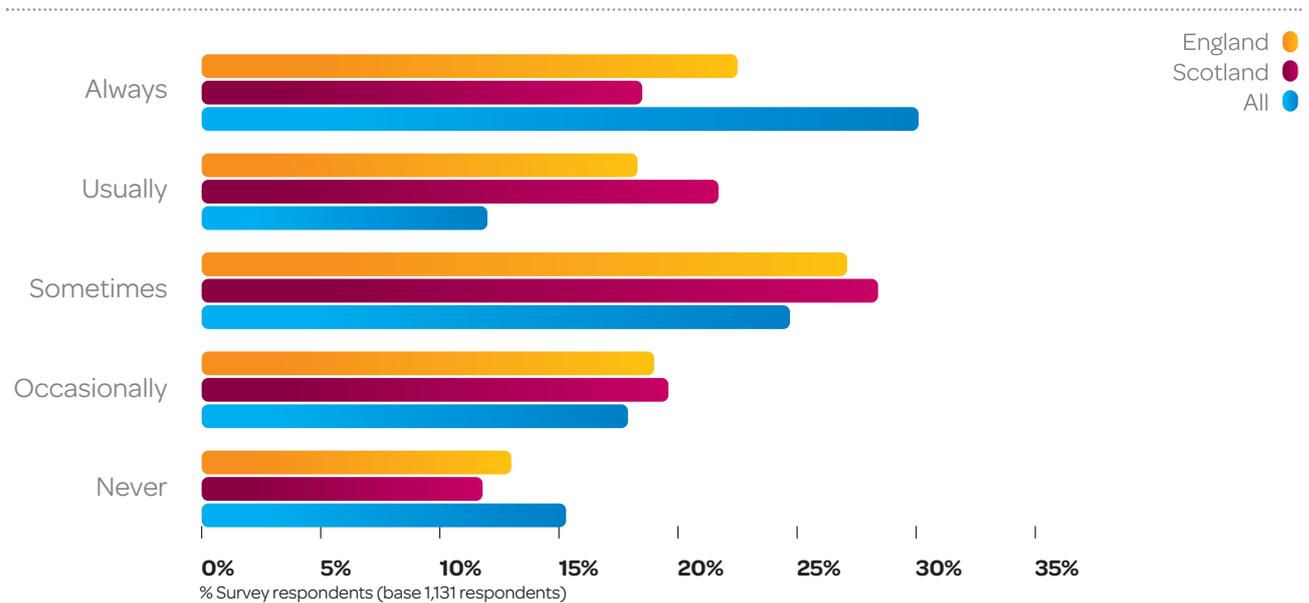


Table 13 shows the other barriers to using traditional building materials (in descending order from the most common, to least common in England and Scotland) and a time-series comparison with the 2008 England survey. The relative significance of the various barriers is similar for both England and Scotland, with the most common being cost, followed by availability.

Between 2008 and 2012 issues relating to “lack of demand from stockholders” and traditional building materials “not being specified by architects/surveyors”, have reduced in significance, whereas cost and availability of materials are now the predominant issues. Whilst the category ‘no demand from stockholders’ ranks third highest in the contractors responses, this has gone down by more than half since 2008 in England (no comparable data for Scotland 2007).

Table 13 Barriers to the use of traditional materials (including time-series comparison)

	All 2012	England 2012	England 2008	Scotland 2012
Base respondents	874	836	654	274
	%	%	%	%
Cost	37.4	36.2	12.4	40.1
Traditional materials not always available	20.5	19.2	9.3	23.4
No demand from our stockholders	7.8	7.2	16.5	9.1
Other	7.2	8.5	n/a	4.4
Modern materials as good/better	5.7	5.8	6.4	5.5
Traditional materials difficult to use	4.9	6.2	n/a	2.2
No need / traditional materials not necessary	4.8	4.7	18.7	5.1
Traditional materials do not meet building regulations/ modern standards	3.5	3.8	7.8	2.9
Not specified by architect/surveyor	3.4	3.7	21.1	2.9
Lack of skills to use traditional materials	2.2	1.8	1.7	2.9
Building inspectors do not know / understand traditional materials	1.4	1.8	0.8	0.4
No knowledge of how to source traditional materials	1.1	1.2	0.9	1.1



©CITB

Ornate plaster ceiling boss, St. Mary's Cathedral buildings, Edinburgh

5.2 CONTRACTOR WORKFORCE PROFILE

5.2.1 EMPLOYEES

As shown in Table 14, the time-series comparison of the average number of staff per surveyed company in England in 2012 is slightly lower than at the time of the NHTG England 2008 Review research.

Due to a low respondent base and high margin of error from the NHTG Scotland report of 2007, it is not possible to provide a similar time-series comparison for Scotland. Using the 2012 figures this could however, be achieved as and when the research is repeated at a future date.

Table 14 Average number of employees per company (time-series comparison)

	All 2012	England 2012	England 2008	Scotland 2012	Scotland 2007
Total number of employees	8.6	9.4	13.5	7.0	Base too low
Number of employees who work on pre-1919 buildings	6.5	6.6	n/a	6.4	n/a
Number of employees who work on pre-1919 buildings and are employed full-time	6.4	6.4	12.6	6.4	Base too low

AGE PROFILES

Of the workforce employed by the 1,161 survey respondents only 8% are aged 16–24 with 53.7% aged 25–49 and 34.3% aged 50 and over (the total percentages do not add up to 100% as 4% of respondents declined to provide their age). Compared to the Office for National Statistics (ONS) Labour Force Survey figures for the overall UK workforce figures of 12% aged 16–24, with 60% aged 25–49 and 28% aged 50 and over (and manual trades of 14% aged 16–24 and 59% aged 25–49 and 26% aged 50 and over) there are fewer younger workers and more older workers in this sample working on traditional (pre-1919) buildings. The entry level is 6% down on the entry level for manual trades and this sample is proportionally older than the ONS Labour Force Survey figures.

The proportion of young people entering the sector (both in terms of mainstream construction and specialist work) is bolstered in the short-term by the number aged 25–49. However, as there are traditionally less young entrants to this sector than

other parts of the construction industry, this pattern has implications for succession planning in the medium and longer term and highlights the importance of retaining and passing on traditional building skills as the older cohort eventually moves into retirement.

“People have been in the job for years but no-one is training the youngsters to come through and replace them...it will be a problem in 10 years’ time when these skilled people retire.”

Contractor

GENDER

The gender of the contractor’s employees working on traditional (pre-1919) buildings is 92.2% male across all respondents, with 90.6% in England and a slightly higher proportion of male employees (95.3%) in Scotland. This pattern is stronger among the 93 employers in England and Scotland classified as working ‘exclusively’ on traditional (pre-1919) buildings, which reports 13% female employees. Both figures are higher than the mainstream construction 1% female in manual trades. Also, 15% of bursaries allocated to females on the Heritage Lottery Funded (HLF) Traditional Building Skills Bursary Scheme for England and Wales which operated 2007–2012 reflects this pattern of female participation.⁴⁰

5.2.2 RECRUITMENT

Only contractors and not sub-contractors in the survey were asked for their views regarding the following in relation to recruitment of a particular traditional building skill/occupation:

- Directly employed
- Sub-contracted
- Hard to recruit
- Hard to source on a sub-contract basis.

Table 15 shows the crafts most likely to work on a directly employed basis are joiners, carpenters and roofers (stone tilers). The most sub-contracted occupations, or the most likely to be required, are gilders, thatchers and steeplejacks.

Those skills reported by the contractors in this survey as hard to recruit and requiring those particular skills are blacksmiths (just under 25% state these as hard to recruit), followed by decorators/painters and thatchers. Those craft occupations reported by the contractors as hardest to source on a sub-contract basis are blacksmiths, stone masons (fixer masons) and thatchers. When interpreting these figures it is however, important to consider the relatively small size of the respondent base for each occupation.

Table 15 Recruitment of employed and sub-contracted crafts

Occupation	Base respondents	Directly Employed %	Sub-contracted %	Hard to recruit %	Hard to sub-contract %
Blacksmith	29	58.6	58.6	24.1	20.7
Bricklayer	217	58.1	52.1	0.5	2.3
Cabinet Maker	15	53.3	53.3	6.7	6.7
Carpenter	373	83.6	26.3	2.4	1.9
Decorator/Painter	294	78.6	36.4	10.5	2.0
Drystone waller	31	45.2	61.3	6.5	0
General crafts/trades person	146	78.1	33.6	3.4	1.4
Gilder	23	43.5	69.6	0	4.3
Glass painter	43	46.5	62.8	4.7	7.0
Glazier	249	71.9	40.6	5.2	2.4
Joiner	452	82.0	25.2	4.2	1.3
Lead worker (exc. lead roofing)	84	63.1	48.8	6.0	6.0
Lead worker (roofing)	205	72.2	36.1	6.8	2.4
Plasterer (fibrous)	203	59.6	49.3	5.9	5.4
Plasterer (lime etc.)	205	61.5	48.3	5.4	4.9
Plasterer other	208	58.2	50.0	3.4	6.3
Roofer – General tiles and slates	318	75.8	35.5	5.7	2.5
Roofer random/natural slates	262	75.6	31.7	6.9	1.9
Roofer - stone tiles	239	79.5	28.0	5.9	1.7
Roofer - other metal	171	78.4	32.2	4.7	2.9
Steeplejack	25	44.0	68.0	0	4.0
Stone carver	72	59.7	52.8	1.4	5.6
Stone conservator	59	69.5	44.1	1.7	5.1
Stone mason (fixer mason)	147	61.2	51.7	3.4	12.9
Thatcher	39	41.0	69.2	7.7	7.7
Tiler (floors/walls)	117	61.5	53.8	5.1	3.4
Timber preserver	71	59.2	53.5	7.0	4.2
Wood carver	81	65.4	45.7	1.2	3.7
Wood machinist	92	65.2	45.7	3.3	7.6

“We find contractors by word of mouth, we know who we need to use – we won’t take on 20 year olds as they don’t have the right experience to do the job – experience is more important than accreditation” Stockholder feedback

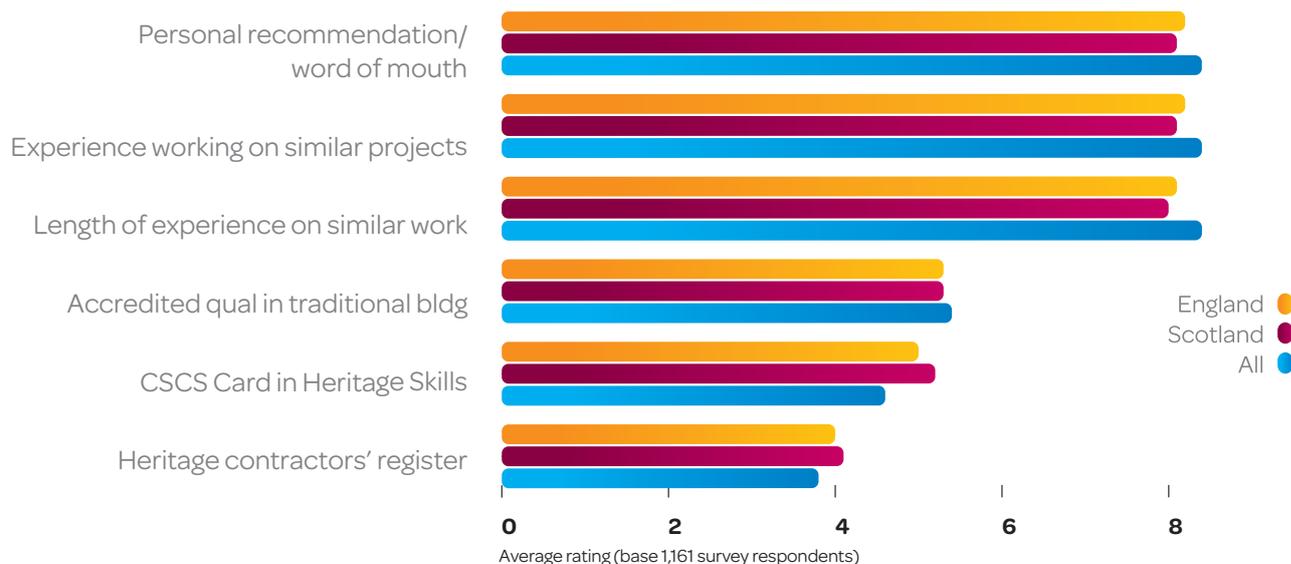
“Personal recommendation” and “experience” held by a new recruit/sub-contractor are considered more important for undertaking this type of work than more tangible measures such as qualifications and/or a CSCS Heritage Skills Card. However, the average score of 5 out of 10 (4.6 in Scotland) for the CSCS Heritage Skills Card may reflect a lack of awareness and/or buy-in among employers. Comparatively, least important to employers is any form of Heritage Contractors’ Register.

Stockholders not employing their own full or part-time workforce (less than 5% of those interviewed fall into this category and these people tend to manage large estates) report considerable reliance upon informal networks and word of mouth recommendations to recruit traditional

building skills (craft and building professionals). A small minority of the stockholders use trade journals to try and find contractors. Typically, only larger projects go out to tender, with one-off, or smaller jobs awarded through less formal means and over 90% of stockholders interviewed state that quality of the work portfolio and relevant experience are the most important factor when choosing a contractor.

The importance of a range of factors to employers when recruiting permanent employees or sub-contractors to work on traditional (pre-1919) buildings is relative consistency for those based in England and Scotland (Figure 13).

Figure 13 Employers’ preferred methods of recruitment



* Score from 1 (not important) to 10 (very important).

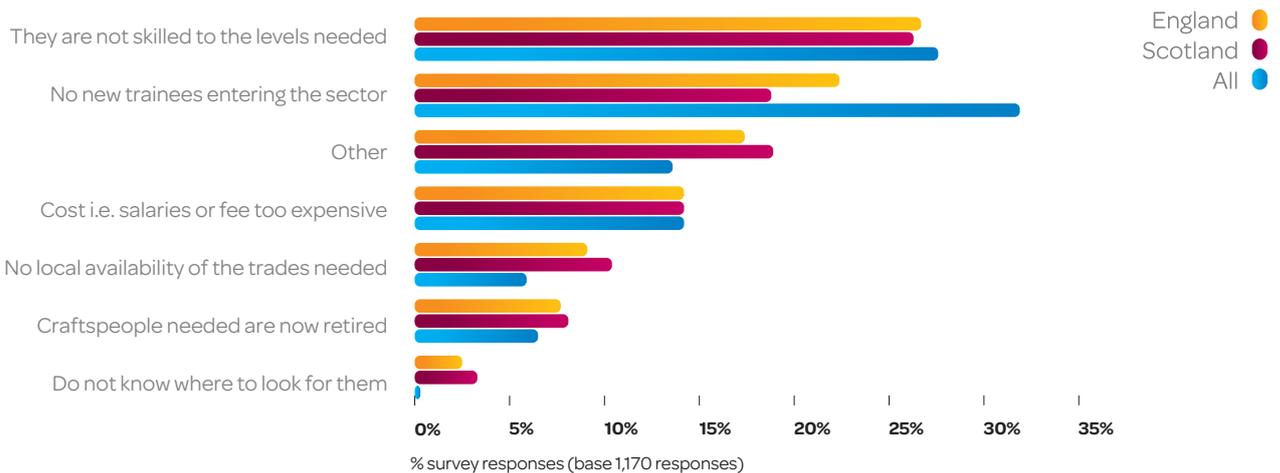
Predominantly speaking, stockholders recruit for specific work from a pool of sub-contractors they have known and worked with over a period of years and as necessary asking them to travel to carry out the work. This is due to trusted working relationships developed over the years, and confidence that these people have the “lengthy experience” needed to do a good job.

BARRIERS TO RECRUITMENT

According to the contractors, the main barriers to finding craftspeople to work on traditional (pre-1919) buildings (Figure 14) are insufficient skills at the required levels (linked to gaps in training provision, see Section 6.5) and a lack of new trainees entering the sector.

Some skills, such as flint working, dry stone walling and thatching are typically perceived to be traditional, 'localised' skills. Cathedral cities are also considered more likely to attract and retain those working on stained glass and stonemasonry.

Figure 14 Barriers to finding craftspeople to work on traditional (pre-1919) buildings



In Scotland, insufficient skills and lack of new trainees appear to be of greater concern amongst the contractors and the research findings suggest that demand is starting to outstrip supply in the following:

- Traditional carpentry (Orkney Islands).
- Thatching using local materials (Scotland-wide).
- Traditional plastering (Highlands and Islands).
- Stonemasonry (Highlands and Islands).

Some Trade Federations and Associations note that it can be challenging to maintain a regular supply of skills in the Highlands and Islands region of Scotland. This appears to be due to the distance contractors may have to travel to undertake the work, craftspeople coming out of retirement to undertake projects or providing training to others or work being carried out by contractors without the relevant skills and knowledge.

Other barriers relate to the impact of the economic downturn. In more austere times, not all contractors can afford to sub-contract to specialist workers and may use more generic and cheaper skills. Highly skilled workers can therefore be excluded, and in turn have to pursue work using more generic skills and/or materials. This has become a particular issue for skilled lead workers, due to the rising cost of lead and the problem of theft of lead. Stockholders in this research also reported a noticeable shortage of lead workers in the past few years.

“Skilled leadworkers are following the market and moving into zinc, stainless steel and copper... the trade will pick up [in the longer-term] but by that time people may have moved into other areas” Professional body

5.2.3 SUB-CONTRACTING

Among 564 companies (approximately half of the survey) that reported using sub-contractors in the past 12 months, 90% in England and Scotland stated that sub-contractors were available immediately or within a few weeks. A waiting time of one month was experienced by only 8.5% of the companies, a 2–3 month wait fell to 2.3% and over 3 months was below 1%, which may reflect the current difficult economic climate and sub-contractors therefore being readily available for work, whereas in buoyant times this would not be the case.

The time-series comparison between now and the NHTG England 2008 Review report in Table 16 shows very little change in terms of availability of sub-contractors. A time-series comparison is not possible with the NHTG Scotland (2007) research as a comparable question was not asked at that time.

Table 16 Time-series on availability of sub-contractors (if used)

	All 2012	England 2012	England 2008
Base	564	392	381
Available immediately/within a few weeks	89.0%	88.3%	88.7%*
1 month	8.5%	8.9%	n/a
2–3 months	2.3%	2.6%	8.7%
Over 3 months	0.2%	0.3%	2.6%



Pitairlie stone roof, Acheson House, Edinburgh

©CITB

5.2.4 APPRENTICES AND TRAINEES

Overall, 40% of the employers recruited apprentices (although it should be noted that no traditional building skills/heritage skills apprenticeship frameworks exist) or other trainees in the past five years to work on traditional (pre-1919) buildings. At 44% this aspect is slightly higher in Scotland and although there is no Heritage Skills Apprenticeship in Scotland, there are well established Apprenticeship Frameworks, which cover some aspects of traditional building skills. Confidence in recruiting apprentices or trainees in the future appears to be slightly lower, with only 30% of employers stating they are likely to do so and again, this figure is slightly higher in Scotland (30.2%) than England (26.3%).

Among employers likely to recruit apprentices or other trainees over the next 12 months the main reasons cited are to bring in 'new blood' to the business, support business growth and expansion and to pass on skills and knowledge. For some respondents there is an on-going commitment to training and described as "something we have always done". For others, particularly family-led businesses, there is enthusiasm to continue to pass skills and knowledge down the generation line. Market conditions and volume of work are important factors when deciding whether to recruit trainees.

Among employers unlikely to recruit apprentices or other trainees over the next 12 months, the main barriers cited are the current state of the economy and associated concerns regarding unpredictability of future business.

Some of the smallest employers (including sole traders) cite their size as a reason for not needing or wishing to take on additional labour. A minority are put off by bad experiences in the past, reporting that trainees do not have the right attitude or required level of commitment, and the cost and time needed to invest in training outweighs the perceived value. A minority of employers perceive training to be a "hassle" and something of a complex process. Diminished or diminishing numbers of apprentices (Table 17) are a cause of particular concern among professional bodies and Trade Federations and Associations.

"All the old skills are dying...if we don't train people now these skills will be lost forever" Contractor

Table 17 Apprentice/trainee numbers in England⁴¹ and Scotland
England

First Year Apprentices and Trainees in Heritage Related Craft Skills	Total number of Apprentices	Total number of Trainees	Total number
2005/06	6,842	13,315	20,157
2006/07	7,088	10,382	17,470
2007/08	6,086	8,806	14,892
2008/09	4,870	7,255	12,125
2009/10	3,786	7,269	11,055
2010/11	3,131	4,576	7,707
2011/12	2,459	3,230	5,689
Change 2005/06 to 2011/12	-64%	-75%	-72%
Change 2010/11 to 2011/12	-21%	-29%	-26%

Scotland

First Year Apprentices and Trainees in Heritage Related Craft Skills	Total number of Apprentices	Total number of Trainees	Total number
2005/06	1,880	2,457	4,337
2006/07	1,355	2,392	3,747
2007/08	2,497	2,821	5,318
2008/09	1,801	2,250	4,051
2009/10	934	1,402	2,336
2010/11	556	852	1,408
2011/12	618	796	1,414
Change 2005/06 to 2011/12	-67%	-68%	-67%
Change 2010/11 to 2011/12	11%	-7%	0%

5.2.5 ENSURING SUPPLY OF TRADITIONAL BUILDING SKILLS FOR THE FUTURE

“Once these trades are gone, they’re gone (for good)” **Contractor**

The majority of the employer respondents feel that the traditional skills pool is shrinking and not being replenished. Passing on skills and knowledge is typically taking place, to some extent, within family businesses, but economic pressures are a contributory factor in the very low numbers of trainees and apprentices currently entering the sector. This is an important consideration regarding preserving skills for the future.

Many respondents acknowledge there is a high risk of losing skills and knowledge for good and suggest the most effective ways of retaining and passing on skills and knowledge to the next generation include:

- Apprenticeships (see Section 6.4).
- Education offered to stockholders to boost demand for skills and knowledge (and therefore, supply of relevant training provision).
- Engagement with young people to stimulate interest in traditional building skills.
- Provision of funding to enable employers to support trainees and apprentices.
- More appropriate training provision (see Section 6.5).



©English Heritage
/ Chris Redgrave

English Heritage Measured Survey for Cultural
Heritage Summer School at Kenilworth

5.3 SKILLS OF BUILDING PROFESSIONALS

The first systematic research into skills and knowledge of building professionals in the built heritage sector was the NHTG Built Heritage Sector Professionals: Current Skills, Future Training – Skills Analysis of the UK Built Heritage Sector report of 2008. This found substantial issues with the lack of accredited professionals needed for the specific demands of traditional (pre-1919) buildings. It also identified problems with skills gaps among already qualified professionals, many of whom reported having had little preparation for dealing with traditional (pre-1919) buildings and structures during their academic training and of consequently having acquired their specialist skills and knowledge by informal means.

This current research study indicates that building professionals continue to be faced with many of the same core challenges identified in 2008. It has also revealed a patchy picture, with progress in some areas (such as the number of conservation accredited architects), but also growing problems in others (notably in Local Authority expertise).

There has been progress in the development of a formal infrastructure for building professional skills assessment, which is underpinned by the ICOMOS⁴² guidelines. Conservation accreditation schemes are now under the umbrella of one common framework, with an on-line resource (last updated in 2009), which is available to all building professionals with an interest or involvement in the repair, maintenance and conservation of traditional (pre-1919) buildings⁴³. This provides information on how to apply for accredited status and a number of support tools and guidance, to assist applicants self-assess against recognised skill requirements, and collate an evidence portfolio.

Many of the major professional bodies in the built environment sector operate registers of conservation accredited professionals. The most important of these are shown in Table 18 with the increase in numbers of conservation registered professionals since the NHTG Built Heritage Sector Building Professionals research report of 2008.

Table 18 Conservation registers and numbers in 2012

Name of Register	Conservation Registered Professionals in 2012
Architects Accredited in Building Conservation (AABC)	423 names on register ⁴⁴ (331 in 2008)
Royal Institute of British Architects (RIBA) Conservation Register	89 specialist conservation architects, 60 conservation architects and 59 conservation registrants ⁴⁵
Royal Incorporation of Architects in Scotland (RIAS) Architects Accredited in Conservation (AAC)	101– 44 architects with Advanced Accreditation and 57 Accredited (64 in total in 2008)
Institution of Civil Engineers (ICE) and the Institution of Structural Engineers (IStructE) Conservation Accreditation Register for Engineers (CARE)	33 registered conservation engineers (22 in 2008)
Royal Institution of Chartered Surveyors (RICS) Building Conservation Accreditation Scheme (BCAS), for Chartered Surveyors	86 (72 in 2008)
Chartered Institute of Architectural Technologists (CIAT) Directory of Accredited Conservationists (DAC)	6 (no comparable figure for 2008)
Institute of Conservation (ICON) Professional Accreditation of Conservator Restorers (PACR)	PACR – in 2011/12 received 80 new applicants for accreditation and 80 new applications forecast for 2012/13 and at the last count (December 2010) 736 PACR accredited conservators ⁴⁶
Institute of Historic Building Conservation Historic Environment Service Providers Recognition (HESPR) scheme ⁴⁷	1,280 Full Members with specialist skills in line with the ICOMOS guidelines

This pattern of small growth in the number of more skilled specialist professionals suggests a broadly positive picture and increasing awareness of the value of accreditation amongst both professionals and their clients and stockholders. At the same time, this must be placed in the context of the 6 million or so traditional (pre-1919) buildings in England and Scotland requiring repair and maintenance and the number of conservation accredited building professionals (937 excluding IHBC members) remains very small. Those with conservation accreditation are a fraction of the overall number of building professionals and so, like the mainstream contractors, the majority of building professionals will be working on traditional (pre-1919) buildings without the right skills and knowledge and so this incremental improvement still falls far short of the actual need.





6. QUALIFICATIONS AND TRAINING

6.1 Built Heritage Sector Qualifications, CSCS Heritage Skills and Conservation Related Cards

6.1.1 Qualifications held by the Workforce in this Survey

6.2 Traditional Building Skills Training

6.3 Suitability and Sufficiency of Current Training Provision

6.1 BUILT HERITAGE SECTOR QUALIFICATIONS, CSCS HERITAGE SKILLS AND CONSERVATION RELATED CARDS

A range of traditional building or heritage skills qualifications⁴⁸ exist at Level 2 to Level 6 as shown in Table 19. These complement the mainstream construction qualifications and are designed to allow craftspeople to achieve a relevant qualification and demonstrate their knowledge and skills competency to work on traditional (pre-1919) buildings.

Table 19 Traditional building or heritage skills qualifications 2013⁴⁹

Qualification Description	Qualification Number	Awarding Organisation
Level 2		
Individual units on repair of traditional buildings and materials (brickwork, masonry, timber, plastering, rendering, roofing components, painted decoration.)	CCX840–CCX859	Agored Cymru
Level 2 Award in Building Heritage (QCF)	500/4449/7	ABC Awards
Level 2 Award in Heritage Construction (QCF)	500/7869/0	Ascentis Awarding Organisation
Level 2 Diploma in Heritage Skills (Construction) (QCF)	600/4502/4	Scottish Qualifications Authority
Level 2 NVQ Diploma in Heritage Skills (Construction) (QCF)	600/3462/2 600/1364/3	Scottish Qualifications Authority Scottish Qualifications Authority
Level 3		
Level 3 Award in Understanding Repair and Maintenance of Traditional (pre-1919) Buildings	Y/503/4822	cskills awards
Level 3 Award in Preservation of Heritage Buildings and Sites (QCF)	500/4312/2	ABC Awards
Level 3 Diploma in Heritage Skills (Construction) (QCF)	600/4503/6	Scottish Qualifications Authority
Level 3 NVQ Diploma in Heritage Skills (Construction) (QCF)	600/3392/7 600/1563/9	Scottish Qualifications Authority
Level 3 NVQ Diploma in Heritage Skills (Construction) (QCF)	501/0670/3 600/3663/1	cskills awards cskills awards
Level 3 NVQ diploma in Construction Site Supervision-Conservation	600/3653/9	cskills awards
National Progression Award in Conservation of Masonry	G8RC46	Scottish Qualifications Authority
Level 4–6		
Level 4 NVQ Diploma in Senior Crafts (Construction) (QCF)	600/1101/4 6	cskills awards /3661/8
Level 6 NVQ Diploma in Construction Site Management – Conservation	600/3652/7	cskills awards

LEVEL 3 AWARD IN UNDERSTANDING REPAIR AND MAINTENANCE OF TRADITIONAL (PRE-1919) BUILDINGS

This award was developed as a knowledge-based qualification, derived from the unit QCF546 within the National Occupational Standard. This is a mandatory unit in all of the Level 3 NVQ Diploma in Heritage Skills (Construction) craft occupations and the learning outcomes and assessment criteria cover all of the essential knowledge elements within the QCF 546.

This Level 3 Award in Understanding Repair and Maintenance of Traditional (pre-1919) Buildings should provide the learner with underpinning knowledge to enable them to work safely and competently on traditional building projects. The specification is generic in nature to facilitate delivery to all the craft occupations covered in the Level 3 NVQ Diploma in Heritage Skills (Construction). This can however be contextualised to deliver to specific craft occupations.

This single unit allows training providers to deliver short courses with a qualification outcome, which provides learners with a stepping stone into further traditional building skills training and the full Level 3 NVQ Diploma in Heritage Skills (Construction).⁵⁰

A 2-day course was also developed to support achievement of the Level 3 Award in Understanding Repair and Maintenance of Traditional (pre-1919) Buildings. Successful completion of this and passing the end test to achieve the award can be taken into account by an assessor as Recognise Prior Learning (RPL) by an assessor for the Level 3 NVQ Diploma in Heritage Skills (Construction).

LEVEL 3 NVQ DIPLOMA IN HERITAGE SKILLS (CONSTRUCTION)

This was developed (and is widely accepted in England, Northern Ireland and Wales) as the entry level qualification for craftspeople working in the built heritage sector. It is obtained via OSAT (On-Site Assessment and Training) with the learner being assessed in the workplace by an approved assessor. There are currently 55 approved centres to assess for this qualification on the cskills awards website.⁵¹ Approved centres may often offer assessment services only and not necessarily underpinning training support.

SCOTTISH QUALIFICATION AUTHORITY (SQA) NATIONAL PROGRESSION AWARD

The SQA NPA in Conservation of Masonry was developed with input from several parts of the conservation, repair and maintenance sector in Scotland, including Historic Scotland, The National Trust for Scotland, the Scottish Lime Centre, the Scottish Stone Liaison Group, CITB- Scotland, Trade Federations and Associations, professional bodies and vocational/craftspeople.

This was developed before the Level 3 NVQ Diploma in Heritage skills (Construction) and the suite of revised National Occupational Standards (NOS) from which the qualifications was derived in its current format. In addition, some aspects of traditional building skills are covered within Scottish Modern Apprenticeships (SMA) frameworks for mainstream construction in Scotland.

CONSTRUCTION SKILLS CERTIFICATION SCHEME (CSCS)

The Construction Skills Certification Scheme (CSCS) is the leading competence card scheme and covers most occupations in the construction industry from crafts to building professionals. From an employer's perspective, having a CSCS carded workforce demonstrates to clients and stockholders that the company has the skills and competency that the job demands.

For clients, stockholders and their representatives, the scheme provides a simple means to check that everyone working on their project possesses the appropriate skills and Health, Safety and Environment awareness to undertake their work competently and safely. The card is valid for five years and is renewable upon application providing the CSCS Health, Safety and Environment test requirements are met.

As the built heritage sector is part of the construction industry, it is not exempt from the industry drive for a fully qualified, competent and safety-aware workforce. Increasingly, anyone undertaking conservation, repair, maintenance or restoration on historic sites is required by clients, stockholders or contractors to show an appropriate CSCS card.

Historic Scotland are currently undergoing a programme of ensuring all Historic Scotland staff (professional and vocational) working on the more than 300 sites in its care have the relevant CSCS cards. From there the requirement for relevant proof of competence will expand. English Heritage is taking the lead in England by requiring within contract preliminaries that all operatives undertaking conservation, repair and maintenance on its 400-plus properties must hold the CSCS card appropriate to their skill. They have also specified that the CSCS Heritage Skills Card must be held by specialist lead workers working on significant projects on their estate. The intention is that this will become a requirement for further crafts as soon as the number of cardholders reaches a viable level in each craft.

CSCS HERITAGE SKILLS CARDS

CSCS HERITAGE SKILLS CARD: Available since September 2008 and developed jointly by CSCS and the National Heritage Training Group (NHTG) and available as a gold, advanced craft card. Currently covers the traditional building skills craft occupations of brickwork, carpentry and joinery, craft masonry, earth walling, painting and decorating, plastering (solid and fibrous), roof slating and tiling, specialist leadwork, stonemasonry, stone carving, thatching, and wall and floor tiling. The two routes to obtaining this card are an approved Apprenticeship plus a recognised conservation qualification and achievement of the Level 3 NVQ Diploma in Heritage Skills (Construction), plus successful completion of the Health, Safety and Environment touch-screen test.

Construction Related Occupations (CRO) cards are also available for traditional building skills such as architectural ironwork, heritage glazing and dry stone walling. These normally exist where there is no recognised National Vocational Qualification (NVQ) to map the required competency for a CSCS card.

OTHER CONSERVATION OR HERITAGE-SPECIFIC CARDS: CSCS cards are available for Building Site Manager (Conservation); Conservation Technician, Conservator; Conservation Controller; Conservation Consultant; Construction Site Manager (Conservation); Construction Site Supervisor (Conservation). The individuals must provide evidence of a conservation Level 4 or 5 NVQ/SVQ Level 4 or 5 in a relevant occupation and also pass a managerial and professional Health, Safety and Environment touch-screen test.

PROFESSIONALLY QUALIFIED PERSON (PQP) CARD: The PQP card is for professionals such as architects, surveyors and engineers who attend site, but are not site-based. It is achieved via a professional membership route and if the professional body is on the approved CSCS list the applicant must complete the application form and provide evidence of their professional institution membership grade and membership number. They must also pass a managerial and professional Health, Safety and Environment touch-screen test.

A list of the competencies and application process for these cards is available on the CSCS website⁵².



© Historic Scotland

Letter carving skills

6.1.1 QUALIFICATIONS HELD BY THE WORKFORCE IN THIS SURVEY

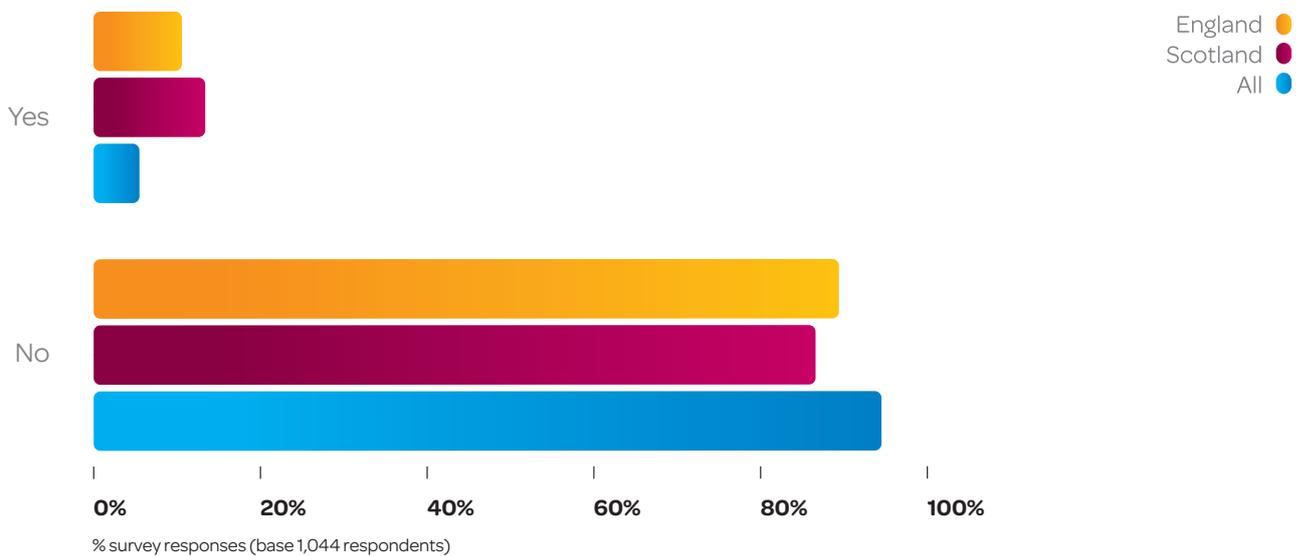
Only 10% of surveyed employers (5% in Scotland) report that their workforce holds one or more specific qualification or competency card relating to traditional building skills, heritage skills, or conservation (Figure 15).

This indicates that the sector operates predominantly without formal qualifications and may instead place greater value on non-

accredited short course training and/or practical experience. It may also indicate that employers undertake work on traditional (pre-1919) buildings without sufficient bespoke training in traditional building knowledge and skills, and instead place reliance on qualifications, training and experience specific to modern buildings and mainstream construction.

“Formal qualifications are “nice to have” but I get the best experience from being hands-on” Contractor

Figure 15 Percentage of qualifications relating to heritage, traditional (pre-1919) buildings or conservation



Figures 16 and 17 present information relating to qualifications/competency cards relevant to traditional (pre-1919) buildings. The bases used for both charts are only those employers who reported at least one relevant qualification/accreditation held by at least one employee within their organisation.

In Figure 16, survey respondents were asked to state which qualifications/competency cards relevant to traditional (pre-1919) buildings are held by their workforce. This chart shows the average mix of responses received, for example the CSCS Heritage Skills

Card accounts for 21% of overall responses (56% for Scotland); whereas, in Figure 17, a total of 63 survey respondents reported the percentage of their workforce holding each qualification/competency card relevant to traditional (pre-1919) buildings. This chart shows the overall averages, for example, 73% of the workforce, on average, holds a CSCS Heritage Skills Card.

Figure 16 Mix of qualifications and competency cards

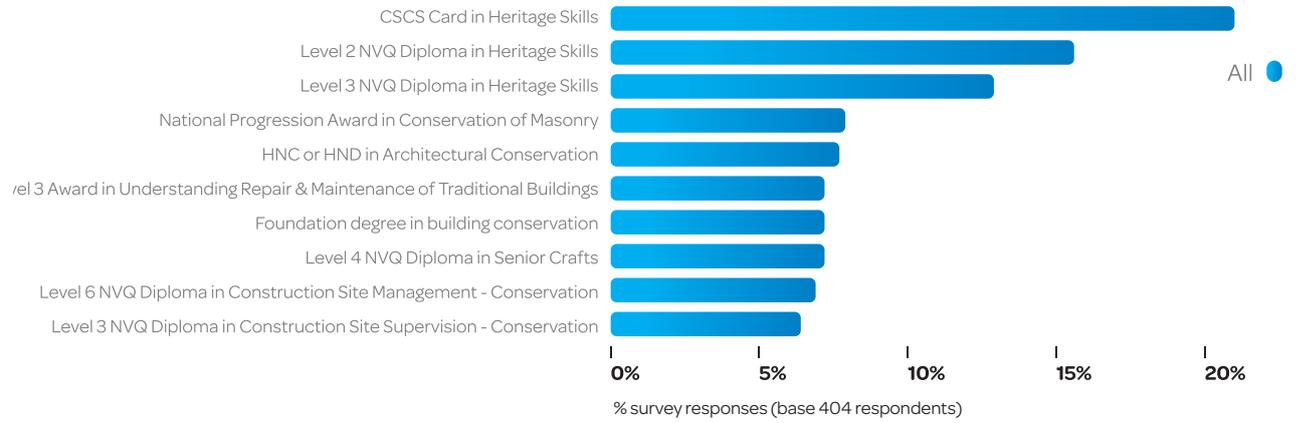
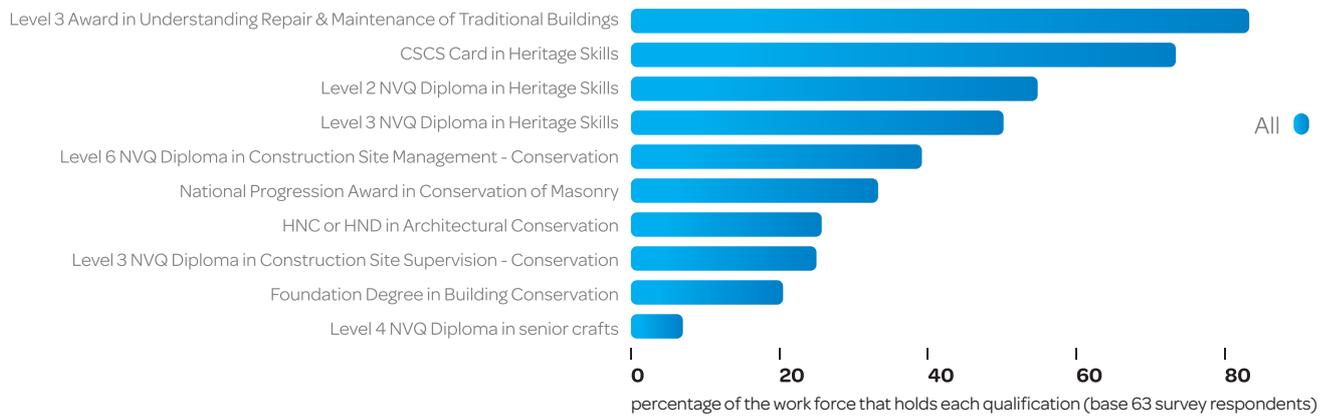


Figure 17 Percentage of the workforce holding relevant qualifications



As stated in Section 5.2.2, stockholders are more likely to recruit contractors based on evidence and length of experience and relevant work. The majority of stockholders interviewed acknowledged that they rarely seek evidence of formal qualifications, but a high proportion of stockholders state they believe formal qualifications are more important at supervisory level.

Contractors typically also attach more weight to experience than formal qualifications. This is partly because of a perception that there is insufficient focus on practical skills within training provision (see Section 6.2), and partly because of gaps in training provision (see Section 6.5).

Qualifications and/or evidence of competency are more likely to be gained where there is a market demand, for example, if procurement protocols demand a certain level of qualification or evidence of the CSCS Heritage Skills Card.

Up-take of the CSCS Heritage Skills Card and client demand for this have not been as high as expected since it was introduced in 2008, with low up-take resulting in fewer people with the card and thus making it difficult for clients and stockholders to specify that contractors must have the card without excluding much of the workforce from available work on this basis. Contractors in this survey reported they were not willing or felt they were not able to gain the Level 3 NVQ Diploma in Heritage Skills (Construction) as the main route to obtain the card. Contractors reported that they thought the CSCS Heritage Skills Card Managed Industry Accreditation route to obtain the card closed too soon.

“There is no substitute for experience - my qualification is my reputation” Contractor



© Historic Scotland

Stonemasonry training

6.2 TRADITIONAL BUILDING SKILLS TRAINING

“On the job training is far better than any college training. You get to see first-hand the issues that must be overcome on site and you can’t refer to a text book. The sort of work we do is passed from father to son” Contractor

A wide range of short courses and training in traditional building or heritage skills are offered across England and Scotland. These vary from unaccredited one-day courses delivered largely by private training providers to more formal programmes, such as the Heritage Specialist Apprenticeship Programmes or Specialist Up-skilling Programmes developed by CITB in partnership with Trade Federations and Associations with a heritage link and the National Heritage Training Group.

The Heritage Specialist Apprenticeship Programmes or Specialist Up-skilling Programmes offer learners with a minimum Level 2 mainstream construction qualification in the associated craft to undertake a combination of structured off-the-job training combined with on-the-job work experience and accruing work-based evidence to be assessed for the relevant craft occupation within the Level 3 NVQ Diploma in Heritage Skills (Construction) – brickwork, leadwork, plastering (solid and fibrous), roof slating and tiling, stonemasonry and wood occupations. This provides the learner with increased background and technical knowledge of their craft occupation and a greater appreciation of traditional (pre-1919) buildings to develop the traditional building skills elements not covered in mainstream occupational NVQs.

“Never looked [for training]. If they [employees] need to be trained I do it myself” Contractor in England

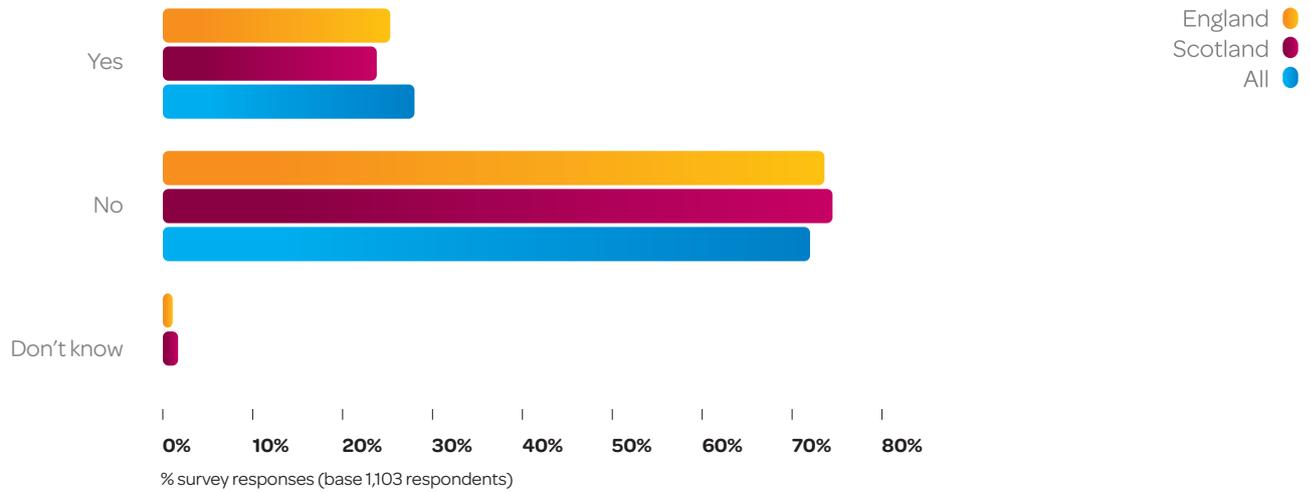
As outlined above, despite the availability of short courses and range of training opportunities leading to recognised traditional building or heritage skills qualifications, and sources of funding to support this, around three-quarters

Historic Scotland, with their own funding and from the Heritage Lottery Fund and Scottish Enterprise, established a Training Bursary scheme to provide opportunities to undertake the National Progression Award (NPA) Award in Conservation Masonry. The focus of the training was on traditional masonry construction, especially repair and maintenance, and used the NPA training qualification to underpin the training delivery and up-skilling of those with general experience of stone masonry to help gain work within the traditional (pre-1919) building sector.

The Heritage Lottery Fund, through its Skills for the Future⁵³ programme, has, since 2007, provided considerable funding for work-based training in traditional building skills and many of these schemes including the Traditional Building Skills Bursary Scheme for England and Wales (2007–2012) and continued since then as the Traditional Building Bursary Scheme for Displaced Apprentices Scheme,⁵⁴ and NHTG Building Traditional Skills scheme⁵⁵, provide opportunities for craftspeople to develop their practical skills by on-site training and work towards the Level 3 NVQ Diploma in Heritage Skills (Construction). Similarly, the Princes Foundation for the Built Environment Craft Apprenticeship⁵⁶ scheme provides structured on-site training towards this qualification.

overall of the surveyed contractors (73.6% in England and 72% in Scotland) say their workforce has not undertaken training specifically in relation to work on traditional pre-1919 buildings in the past five years (Figure 18).

Figure 18 Contractors' work force undertaking traditional building skills training in past 5 years

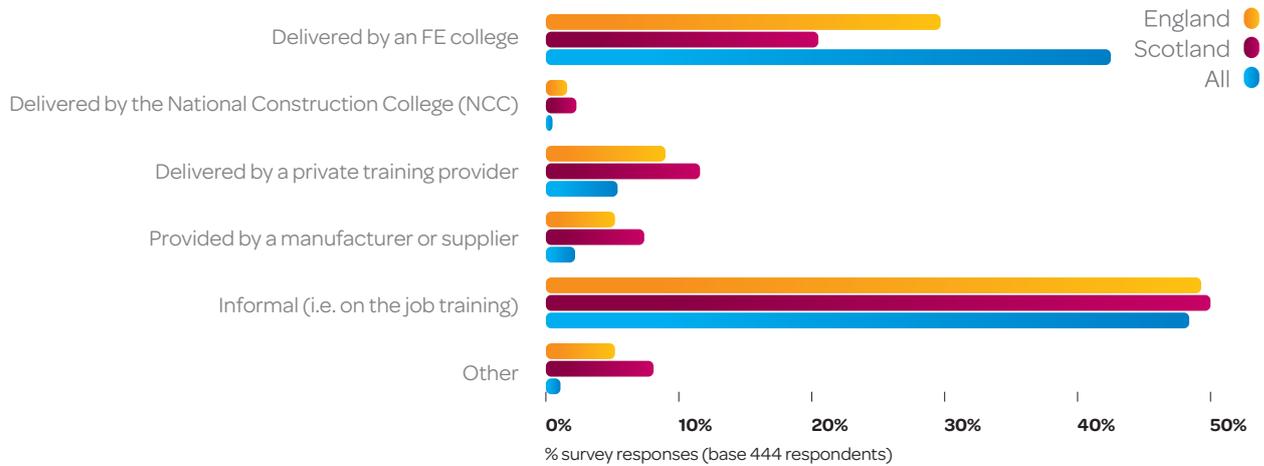


As shown in Section 5.1.1 (Figure 5) 91.6% of all the interviewed employers classified themselves as mainstream or general construction companies, with only 8.4% of all respondents describing themselves as specialist heritage companies. In combination with the findings above (Figure 18), this is an extremely worrying picture in terms of them not having the right skills or accessing training to improve their understanding of and ability to work on traditional (pre-1919) buildings.

Figure 19 shows that among those employers, approximately 25% overall (23.8% in England and 28% in Scotland) that have undertaken relevant training, informal on-the-job training is the most frequent (49%), followed by Further Education College provision, which accounts for 30% of responses overall, but just over double the share of this is in Scotland (42.2%) than the 20% in England.



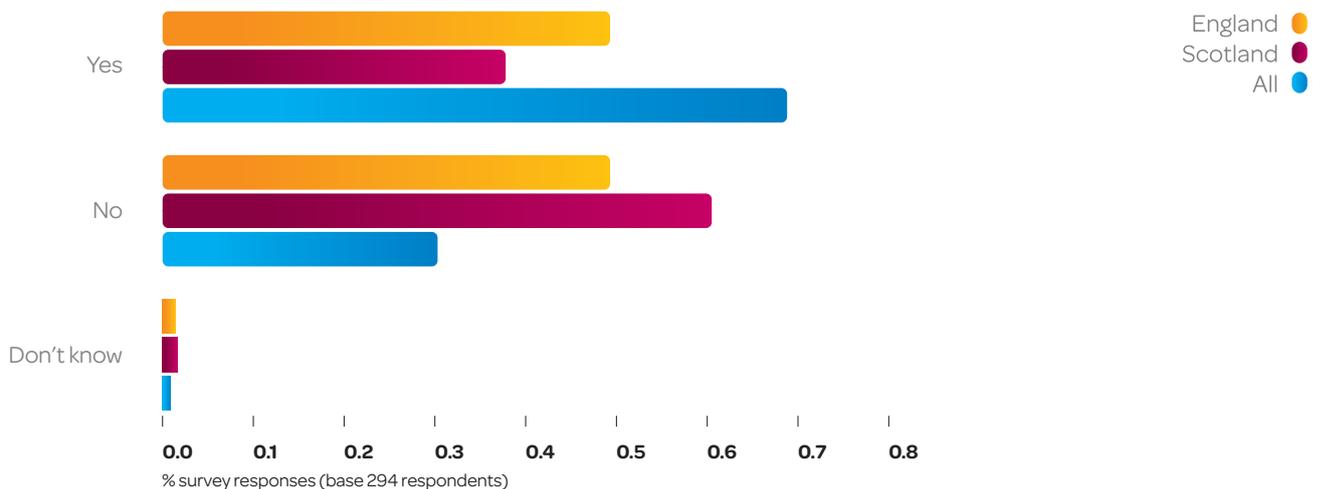
Figure 19 Type of training provider



Of the employers/contractors who have accessed training specifically in relation to traditional (pre-1919) buildings in the past five years, 69% of surveyed employers in Scotland compared to 38% in England sourced funding for the training (Figure 20). From this, the main source of funding was grant

support from CITB (reported as the only source among Scotland-based survey respondents, which may be that the apprentices followed a Scottish Modern Apprenticeship framework) and with other sources accounting for only a small minority of training in England.

Figure 20 Funding or grants obtained for training in past five years



“The Skills Funding Agency tell us how long training can take and because they provide the funding, we are under pressure to deliver Apprenticeships fast so we have no time to do anything other than stick to the syllabus”

Training provider

6.3 SUITABILITY AND SUFFICIENCY OF CURRENT TRAINING PROVISION

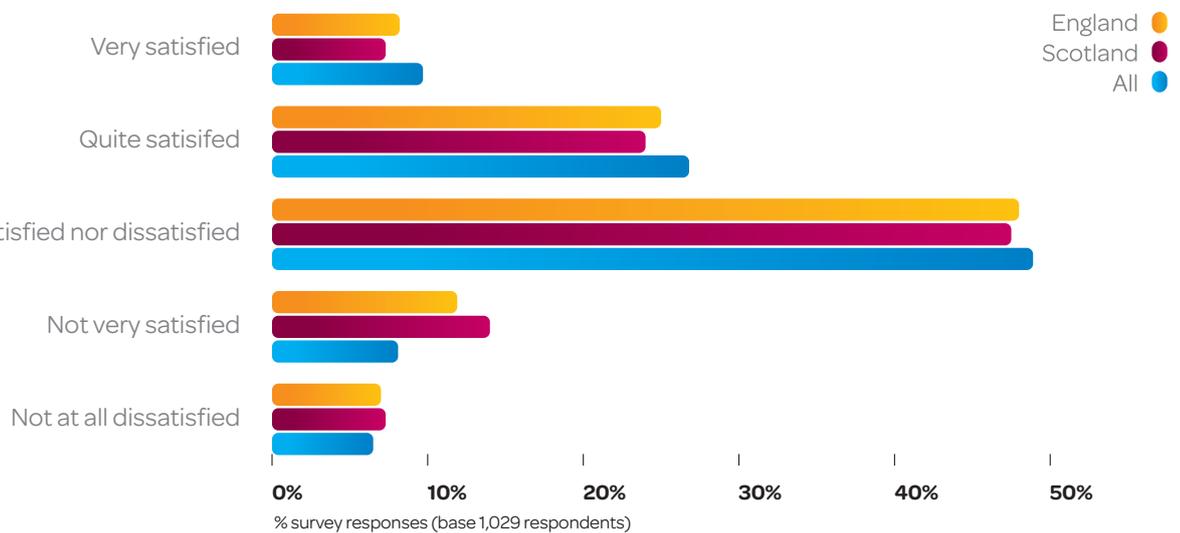
“Colleges only teach the basic skills so lots of traditional training is needed”

Contractor

As illustrated in Figure 21, around one-third of the employers/contractors are very/quite satisfied with existing training provision, although with only 8% overall in that one-third being very satisfied this is not a ringing endorsement. Similarly, as the largest proportion at almost 50% (similar

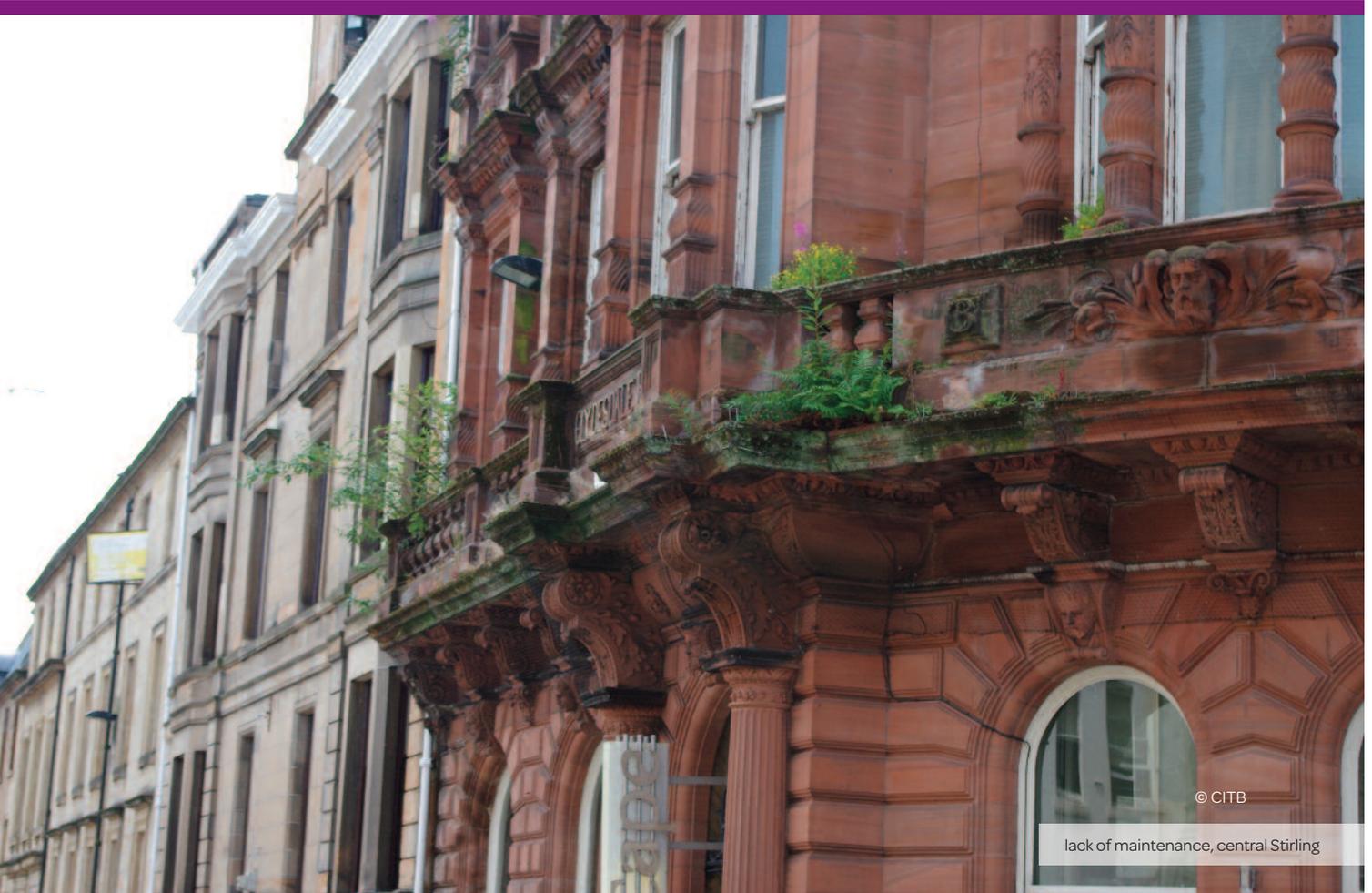
percentages in England and Scotland) are ambivalent about the training provision (neither satisfied nor dissatisfied) and a combined total of 19% are not very satisfied/not all satisfied the overall picture is a negative one.

Figure 21 Satisfaction with existing training provision



Contractors and industry stakeholders interviewed for this research point to a number of issues and barriers associated with accessing training provision for traditional building skills:

- Formal training is perceived to be strongly focused on new build, at the expense of traditional (pre-1919) buildings.
- Trainees do not get the opportunity to practice skills on traditional (pre-1919) buildings.
- Short courses offered by organisations, such as, the Society for Protection of Ancient Buildings (SPAB) are only generating small numbers of attendees (in part because of the cost of this training).
- Apprenticeships are shorter than they used to be and are not providing in-depth knowledge.
- Insufficient funding available to support Apprenticeships.
- Difficulties experienced in accessing courses in the local vicinity, with some contractors compelled to pay travel and accommodation costs to attend relevant training not available nationwide.
- Limited funding available for full-time training courses.
- Limited bursary schemes available for trainees to access training.
- Not all tutors are 'time-served' and lack appropriate industry experience to pass on to learners.
- The majority of contractors choose not to seek formal training, but to learn skills via experience.



“We still train apprentices in the same skills, that is, brickwork and carpentry but there is not the opportunity to let them work on pre-1919 buildings and therefore the particular techniques and skills that are necessary when working on older buildings are not taught as often as they were” Training Provider

The research findings point to gaps in existing training provision included within Apprenticeship Frameworks in England, with respondents' concerns predominantly relating to insufficient coverage of traditional building skills and knowledge, as well as the need for more on-site experience, and diminishing numbers of specialist training courses (and trainers). Training providers also report a lull in demand for formal training over the past five years, but would require clear market demand to amend existing courses.

In relation to Apprenticeships in England in particular, the research findings suggest a perceived lack of relevant content

and flexibility with training providers in England attributing the latter point to pressures from the Skills Funding Agency.

The majority of stockholders in both England and Scotland interviewed for this research are broadly in favour of Apprenticeships as the best means of passing on traditional building skills. They acknowledge, however, limited funding availability to support these, and recognise a need for more financial incentives for contractors to employ trainees. However, a wide availability of Apprenticeships does exist, if employers are prepared to employ directly.

Insufficient coverage of traditional building techniques, tools and materials to underpin appropriate skills and knowledge development, appears to be a major cause for concern in England. For example respondents state that formal training, with the exception of a small number of specialist courses, does not teach the range of different materials and their uses on different building fabric.

Accessing relevant training provision is another barrier for contractors, with many stating that they train on the job because of gaps in existing courses and the following training gaps relating to specific trades were cited:

ENGLAND

- Carpentry (including carving) and Joinery (including timber selection, wood measuring and bench joinery)
- Decorative plasterwork
- Lead burning/welding
- Lime and fibrous plastering
- Roofing
- Stained glass
- Thatching

SCOTLAND

- Repair of lead on stained glass windows
- Stonemasonry
- Thatching
- Traditional joinery (sash & case windows, staircases, traditional roofs and pegged joints)

In England 16.9% of employers/contractors have never looked for training for work on traditional (pre-1919) buildings and the majority state this is because they do not require any training.

In Scotland, almost double (33%) acknowledge they have never looked for training. This appears to be due to a lack of awareness regarding training opportunities and respondents in this survey suggested they would be interested in receiving information on training.

The employers/contractors also state they do not look for training for employees as they are able to provide it themselves, which runs the risk of bad habits and/or incorrect techniques being passed on to unsuspecting trainees, with potentially harmful consequences to the buildings they may work on. This should be taken into consideration when reviewing the self-assessed ratings of skills and knowledge levels among the surveyed workforce presented in Section 4.1.5 where the average scores suggested an industry which considers itself predominantly highly skilled and knowledgeable.



7. ENERGY EFFICIENCY RETROFIT OF TRADITIONAL (PRE-1919) BUILDINGS

- 7.1 Energy Efficiency Retrofit and Traditional (pre-1919) Buildings
- 7.2 Skills and Knowledge for Energy Efficiency Retrofit
- 7.3 Energy Efficiency Retrofit and Training Provision

7.1 ENERGY EFFICIENCY RETROFIT AND TRADITIONAL (PRE-1919) BUILDINGS

Establishing “a smart, sustainable and inclusive economy” has become a core strategic objective for the UK Government. The Climate Change Act 2008 established a legally binding target to reduce the UK’s carbon emissions by at least 80% by 2050. As 80% of the housing stock that will be inhabited in 2050 already exists⁵⁷, refurbishment, maintenance and energy efficiency retrofit of the existing building stock are central to achieving these targets.

The Green Deal and ECO (Energy Companies Obligation), which were launched in January 2013, are the Government’s flagship initiatives to stimulate a large-scale retrofit scheme aimed at improving the energy efficiency of existing homes and commercial buildings. Around 21% of the total building stock in England and 20% in Scotland is traditional (pre-1919), which means there are around 6 million traditional (pre-1919) buildings which are typically built with solid walls and ‘breathable’ construction. These initiatives create particular challenges when considering energy efficiency retrofit measures for these 6 million traditional (pre-1919) buildings due to the differences between traditional and modern construction and their thermal performance.

A key characteristic of older buildings is the widespread use of ‘breathable’ (or ‘permeable’) materials, which are able to absorb moisture and release it again without damaging the building. In contrast, most modern buildings rely on materials that keep moisture out. Traditional (pre-1919) buildings are characterised by relatively soft, flexible and water-permeable mortars and materials. They therefore tend to absorb moisture from the air and ground, but then release it back through permeable walls and chimneys. Windows and doors allow air to circulate, and moisture to escape from the building. Modern buildings in contrast are characterised by the use of relatively hard, inflexible, moisture-resistant materials, such as Portland cement, cavity walls, physical or chemical damp proof courses and sealed unit windows. These materials and techniques are used to isolate the building from its external environment to the greatest possible extent, so that comfortable conditions can be maintained inside regardless of the weather. The need for moisture removal and fresh air is then met through specifically designed ventilation elements, such as trickle vents and mechanical ventilation.

Altering the thermal performance of older buildings is not without risks. The most significant risk is that of creating condensation either on the surface of a building component (such as a window or wall) or between layers of the building fabric, which is referred to as ‘interstitial condensation’. Condensation can give rise to health problems for occupants as it can lead to mould forming and it can also damage the building fabric through decay. Avoiding the risk of condensation can be complex as a wide range of variables come into play. For older buildings though there is no ‘one size fits all’ solution, each building needs to be considered and an optimum solution devised.

In terms of understanding the thermal performance of traditional (pre-1919) buildings, much research has been undertaken by English Heritage, Historic Scotland, SPAB, STBA and others into their thermal properties, breathability, permeability and the limitations of Rd SAP and U value calculations in relation to traditional (pre-1919) buildings. This research also identifies the technical risks, for example, condensation, moisture movement, cold bridges etc., which can result from inappropriate energy efficiency retrofit measures being applied to traditional (pre-1919) buildings.⁵⁷

The workforce therefore needs to understand these differences and have the right knowledge and skills to repair, maintain and retrofit such buildings. In the same way, the knowledge and skills for repair and maintenance must be integrated within mainstream construction training and not be seen as separate or specialist. Concerns over these issues, skills and knowledge gaps among contractors and professionals and a need for more training have been identified by respondents in this research.



7.2 SKILLS AND KNOWLEDGE FOR ENERGY EFFICIENCY RETROFIT

“Policies and initiatives such as the Green Deal are likely to cause considerable harm to many properties as we insulate and double glaze – reducing heating bills, but causing interior damp and mould and rot because houses can no longer breathe”

Training provider

Many retrofitting skills are similar to those needed in the mainstream sector: insulation of exterior walls, of floors and roofs, together with other forms of energy conservation. However the knowledge required for refurbishment and retrofit of traditional (pre-1919) buildings is not the same as that required for later buildings. The difference lies in the need for a detailed understanding of how these buildings differ from modern ones and how the ill-advised installation of inappropriate energy efficiency measures can actually harm the buildings (and sometimes their occupants). Some traditional methods and materials can be used for retrofitting to provide energy efficiency savings such as an external lime harling, render or wash.

In order to benefit fully from the potential of the retrofit opportunity, there are critical skills and knowledge needs for the workforce:⁵⁹

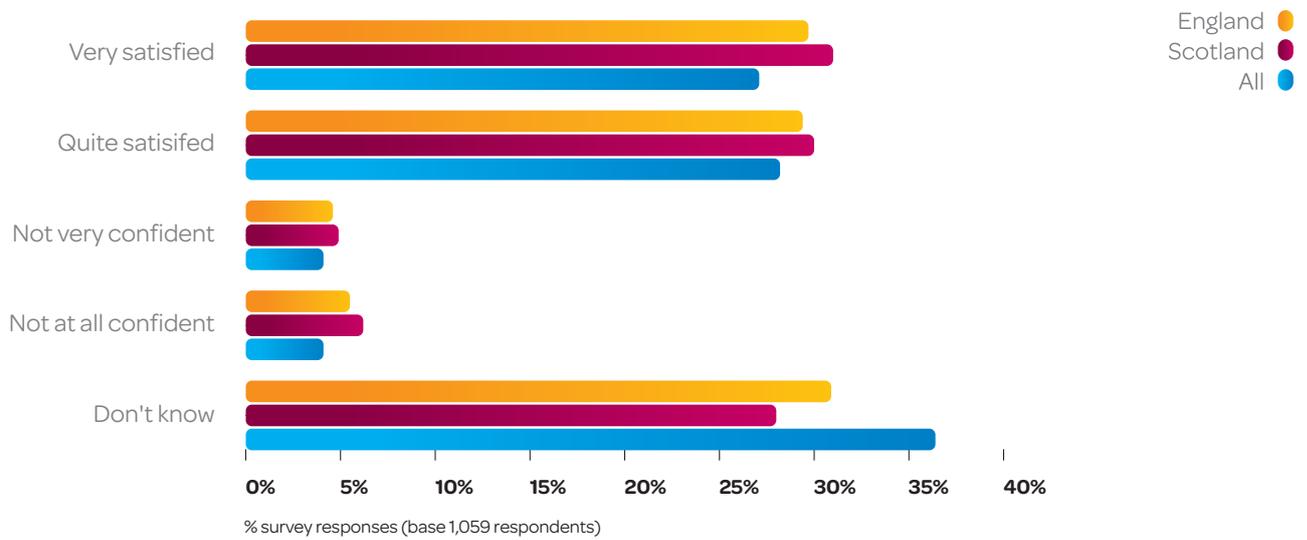
- Understanding the building fabric, notably the impacts that changes can have on moisture content of materials and condensation risks that may change the way the materials behave in practice;
- Understanding of structural integrity of materials, how they fit together and how the use of certain materials can impact on others;
- Types of energy efficiency measures and treatments suitable for traditional (pre-1919) buildings (taking into consideration the fabric as previously mentioned);
- Understanding of air flow (i.e. traditional (pre-1919) buildings typically “don’t like to be sealed”);
- Knowledge of traditional materials that would be more sustainable than other types and the appropriateness of using them in different types of buildings;
- Energy assessment techniques that take into account pre-existing conditions whereby traditional (pre-1919) buildings were built to be warm in winter and cool in summer (using vernacular technique and design). Inappropriate use of heating can mean buildings go through peaks and troughs of temperature, which can have a detrimental effect on the building fabric.

There are also critical skills and knowledge needs among the building professional workforce.⁶⁰ Architects will require relevant design skills, knowledge of energy efficient systems and technologies as well as an understanding of the energy needs hierarchy of buildings and impacts on different types of building fabric. Planners and surveyors also need knowledge of energy efficient materials, systems and technologies as well as installation processes and impacts of energy efficiency measures, and how to apply them to buildings with different fabrics and of different ages. “Hard to treat” buildings could represent a particular challenge as work on such buildings will require detailed knowledge of the fabric, ventilation needs and the impacts of energy efficiency measures on breathability. As previously stated, the consequences of “getting it wrong” could cause substantial damage to traditional (pre-1919) buildings.

The contractors in the survey were asked to rate their confidence in applying/adapting their existing skills for energy efficiency retrofit measures on traditional (pre-1919) buildings. As such a low percentage of their work (3.3% overall, 3.9% in England and 2% in Scotland) and is related to retrofit activity (Figure 7 in Section 5.5.1), it is of concern that 61% in England and 55.3% in Scotland feel very or quite confident of using their existing skills to install low carbon and energy efficiency measures.

The results in Figure 22 suggest that slightly higher levels of confidence exist in England than in Scotland, primarily due to a greater proportion of those based in Scotland providing a “don’t know” response. Also, as this is a self-assessment by the contractors, this may again be seen as an over-statement of their capabilities regarding retrofit and may need to be treated with some caution.

Figure 22: Confidence using existing skills to install low carbon and energy efficiency measures into traditional (pre-1919) buildings



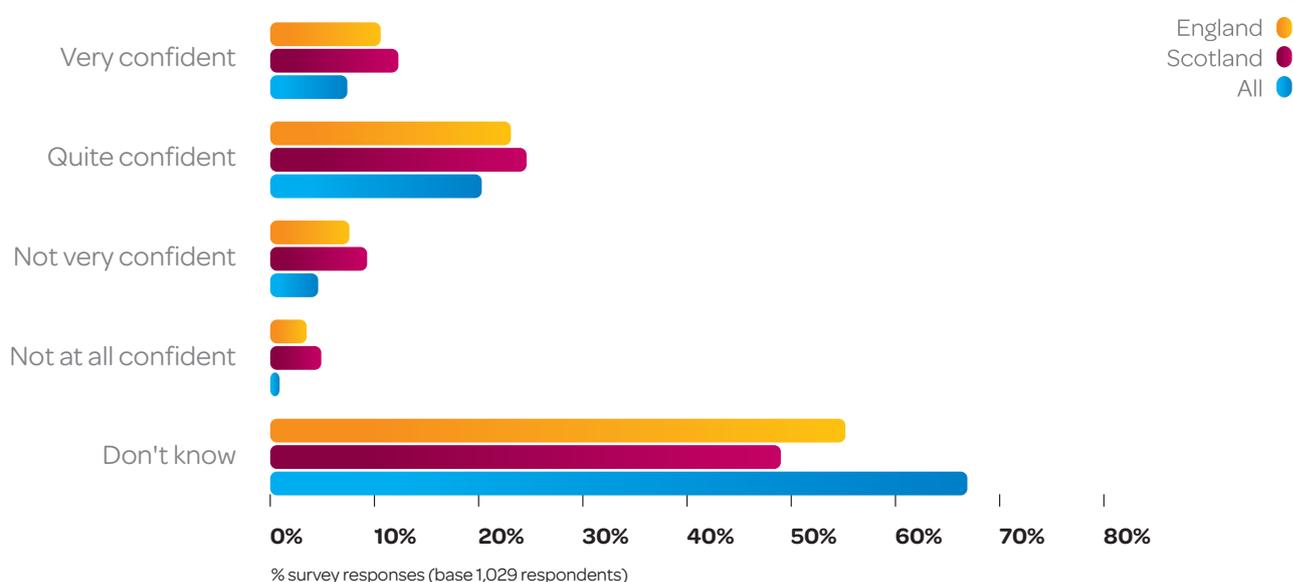
© English Heritage

Retrofit sheeps wool insulation to timber frame house

7.3 ENERGY EFFICIENCY RETROFIT AND TRAINING PROVISION

Figure 23 shows that overall one-third (38% in England; 28% in Scotland) of the contractors in the survey are confident that existing training provision for work on traditional (pre-1919) buildings can develop their skills for energy efficiency retrofit. However, two-thirds overall (63% in England; 72% in Scotland) felt unable to express a level of confidence in whether existing training would develop the skills needed in this area. As Government policy and financial incentives in support of this agenda are relatively new, this response from contractors may be indicative of a lack of understanding around the agenda as a whole and the possible business opportunities available.

Figure 23 Confidence that existing training provision for work on traditional (pre-1919) buildings can develop skills for retrofit



Contractors were asked to describe any new types of training they felt would be needed in relation to energy efficiency retrofit measures for traditional (pre-1919) buildings. A substantial proportion were unable to respond to this question, with many more stating that no additional training would be required in relation to the energy efficiency agenda, or that it would not apply to their trade (particularly painters and decorators). Some contractors also felt that training in energy efficiency retrofit would only be undertaken if it was deemed a requirement for a particular contract, in other words reactively as opposed to proactively and so would only consider training if they had confirmed work lined up.

Industry stakeholders from this research study, such as professional bodies and trade federations, did, however, identify gaps, notably a need for more training in using new technologies, products and materials in general, and in particular how to install measures sensitively and sympathetically to traditional (pre-1919) buildings. There are strong concerns among these industry stakeholders that the needs of traditional (pre-1919) buildings are not explicitly covered within Green Deal Energy Assessors and Energy Advisor training.

The Build Up Skills Energy Training for the Built Environment and the Build Up Skills – United Kingdom 2020 Skills Roadmap and Action Plan⁶¹ also cites that many jobs associated with the move to a low carbon economy will not be new, but involve up-skilling to install new technologies. It also references gaps in training provision and insufficient emphasis or value placed upon retrofit training within existing training provision, with the focus within this to be considered to be predominantly on new build. From this, a need for a suite of training and up-skilling for responsible energy efficiency retrofit of traditional (pre-1919) buildings at craft, supervisory and designer/ specifier levels is starting to emerge. This needs to be linked to the retrofit skills, vocational training and qualifications identified in the Build Up Skills Energy Training for the Built Environment and the Build Up Skills – United Kingdom 2020 Skills Roadmap and Action Plan.

Ensuring the knowledge and training needs for traditional (pre-1919) buildings fits within an integrated construction-wide approach has a much greater chance of successfully developing the right skills to undertake successful energy efficiency retrofit to the traditional (pre-1919) building stock. This is especially true as 91% of contractors in this survey classify themselves as mainstream construction companies.



A woman and a man wearing safety glasses and hard hats are looking at a stone masonry project. The woman is on the left, smiling, and the man is on the right, holding a tool. They are in a workshop or classroom setting with stone masonry equipment and materials visible in the background.

8. KEY FINDINGS & RECOMMENDATIONS

8.1 Key Findings

- 8.1.1 Demand for Skills
- 8.1.2 Supply of Skills
- 8.1.3 Training
- 8.1.4 Energy Efficiency Retrofit

8.2 Recommendations

- 8.2.1 Demand for Skills
- 8.2.2 Supply of Skills
- 8.2.3 Training
- 8.2.4 Energy Efficiency Retrofit

8.1 KEY FINDINGS

Since the NHTG Traditional Building Skills research reports in Scotland of 2007 and the England 2008 Review, the construction industry and the built heritage sector have experienced a number of significant changes. The most important of these has been the economic recession and subsequent weak economic recovery which affects demand for skills, supply of skills, and training provision.

8.1.1 DEMAND FOR SKILLS

ENGLAND

5.5	million traditional (pre-1919) buildings
£3.8	billion spend in 2012 on work on traditional (pre-1919) buildings, down from £5.3 billion in 2008
£2.1	billion spend in 2012 on work on traditional (pre-1919) buildings using traditional materials, up from £1.6 billion in 2008
51%	of contractors in survey report no change in demand in past 5 years, 57% expect this to remain unchanged to 2015

SCOTLAND

505,000	traditional (pre-1919) buildings
£281	million spend in 2012 on work on traditional (pre-1919) buildings (no comparative figure for 2006)
£144	million spend in 2012 on work on traditional (pre-1919) buildings using traditional materials (no comparative figure for 2006)
44%	of contractors in survey report no change in demand in past 5 years, 50% expect this to remain unchanged to 2015

- The economic recession and subsequent weak economic recovery continues to impact upon demand for skills with the amount of money stockholders have available for work on traditional (pre-1919) buildings being typically lower due to economic constraints.
- Much non-essential work has been postponed until stockholders are compelled to undertake major repair, which can make the work more expensive in the longer-term and can be damaging to the buildings.
- The reduced money available for work on traditional (pre-1919) buildings results in less work being commissioned and loss of expertise from the built heritage sector, creating skills and knowledge gaps.
- Contractors acknowledge that, due to the current economic climate, levels of demand are likely to be relatively static at present.
- Insufficient information is readily available for stockholders on the types of skills and materials they should be using on traditional (pre-1919) buildings, in part due to skills and knowledge gaps of building professionals or within Local Authorities, who subsequently do not provide correct advice.
- There is a perception amongst stockholders that traditional building skills are "expensive" and "specialist".
- Stockholders recruit the majority of contractors to undertake work on traditional (pre-1919) buildings by personal 'word of mouth' recommendations, on the strength of relevant experience and the contractors' past portfolio of projects, not qualifications or evidence of competency.
- Cost (including price rises) is seen as a barrier to using traditional building materials, but awareness of the importance of using the right traditional building materials has increased (particularly in Scotland).
- There is a perception of diminished grant funding for repair and maintenance, and perceived administrative burdens and/or onerous requirements associated with grant application processes, which can prevent applications for funding.
- Although the economic recession and subsequent weak economic recovery is controlling low demand at present, this may increase due to latent demand (see Section 4.4).

8.1.2 SUPPLY OF SKILLS

ENGLAND

89% of contractors in survey are general mainstream construction companies

9% female workforce

13% female workforce reported by employers classified as working "exclusively" on traditional (pre-1919) buildings. (Both higher than the 1% female in manual trades in construction)

44% of contractors intend to increase their work on traditional (pre-1919) buildings

86,880 workforce required to undertake work on traditional (pre-1919) buildings to meet demand in 2012, down from 109,000 in 2007

49,459 labour demand by contractors using traditional materials, up from 33,000 in 2007

3,960 entrant workers required in the sector in 2012, down from 12,351 in 2007

1,220 entrant workers required to work with traditional materials in 2012, down from 3,591 in 2007

SCOTLAND

97% of contractors in survey are general mainstream construction companies

5% female workforce

13% female workforce reported by employers classified as working "exclusively" on traditional (pre-1919) buildings. (Both higher than the 1% female in manual trades in construction)

43% of contractors intend to increase their work on traditional (pre-1919) buildings

6,750 workforce required to undertake work on traditional (pre-1919) buildings to meet demand in 2012, down from 13,160 in 2006

3,300 labour demand by contractors using traditional materials (no comparative figure for 2006)

310 entrant workers required in the sector in 2012, down from 520 required in 2006

80 entrant workers required to work with traditional materials in 2012 (no comparative figure for 2006)

- Contractors are uncertain of a longer-term supply of work. In the short-to-medium term lower tender prices have become the norm and survival is a key issue.
- An increasing number of non-specialist contractors are operating within the built heritage market in a bid to diversify their offering and increase work supply. They are employing more generic skills and using less appropriate methods and materials, which can undercut companies offering the right skills and materials.
- A number of specialist built heritage sector companies have gone out of business due to the recession and on-going weak economic conditions.
- Contractors consider their own skills and knowledge to be fit for purpose, when in fact they may not be, so this means the wrong types of building materials and techniques may be used which can have adverse effects.
- Fewer contractors intend to recruit apprentices and trainees. Without intervention, this raises the prospect of knowledge and skills not being passed on and a smaller-sized skilled workforce in the future.
- A high proportion of contractors comprise small/micro-businesses or sole traders.
- In the past five years, the number of accredited conservation professionals has increased (estimated 2,200), but this is extremely low in relation to the total estimated number of around 6 million traditional (pre-1919) buildings in England and Scotland that need to be maintained.

8.1.3 TRAINING

ENGLAND

87% of surveyed contractors do not hold formal qualifications relating to work on traditional (pre-1919) buildings

75% of contractors in survey have not undertaken any traditional (pre-1919) building training in the past 4–5 years

38% of contractors have recruited an apprentice or trainee in the past 4–5 years, but only 26% consider it likely they will recruit an apprentice or trainee in the next 5 years

4,340 existing workers requiring up-skilling training in 2012, down from 6,529 in 2007

2,470 existing workers requiring up-skilling training to work with traditional materials in 2012, up from 1,959 in 2007

SCOTLAND

95% of surveyed contractors do not hold formal qualifications relating to work on traditional (pre-1919) buildings

72% of contractors in survey have not undertaken any traditional (pre-1919) building training in the past 4–5 years

44% of contractors have recruited an apprentice or trainee in the past 4–5 years, but only 30% consider it likely they will recruit an apprentice or trainee in the next 5 years

340 existing workers requiring up-skilling training in 2012 (no comparative figure for 2006)

80 existing workers requiring up-skilling training to work with traditional materials in 2012 (no comparative figure for 2006)

- The impact of the economic downturn on demand and supply has a consequential knock-on effect on training provision.
- Investment by contractors in training is seen as a luxury rather than an essential requirement.
- Contractors taking part in this survey do not generally attach high importance to formal training and qualifications.
- Contractors place much higher value on experience and learning ‘on the job’ than formal training and qualifications. However they may not have an understanding of the correct approaches and standards of competence necessary to carry out work on traditional (pre-1919) buildings which would be gained through relevant training courses.
- Where contractors feel they are best placed to train their staff rather than use external training provision, there is considerable risk that incorrect methods will continue to be passed on to other employees or trainees.
- Limited interest in training may be partly attributable to concerns about inadequate coverage of knowledge and skills to work on traditional (pre-1919) buildings within many construction qualifications.

8.1.4 ENERGY EFFICIENCY RETROFIT

ENGLAND

4% of contractors surveyed have undertaken energy efficiency retrofit work on traditional (pre-1919) buildings

61% are very or quite confident of using their existing skills to install low carbon and energy efficiency measures

63% unable to express a level of confidence that existing training would develop the skills needed in this area

SCOTLAND

2% of contractors surveyed have undertaken energy efficiency retrofit work on traditional (pre-1919) buildings

55% as for England very or quite confident of using their existing skills to install low carbon and energy efficiency measures

72% unable to express a level of confidence that existing training would develop the skills needed in this area

- The impact of the UK-wide strategic commitment to the energy efficiency agenda could have a significant impact on future work on traditional (pre-1919) buildings when demanding the right skills, knowledge and expertise.
- Limited consumer awareness of and limited demand for energy efficiency measures influences contractors' decisions to invest in up-skilling.
- A lack of awareness exists amongst contractors regarding the skills, knowledge, training/up-skilling and qualifications required for energy efficiency retrofit.
- There is evidence in this research of skills and knowledge gaps amongst building professionals in relation to energy efficiency retrofit.
- A large proportion of contractors were unable to describe any new types of training needed for energy efficiency retrofit measures for traditional (pre-1919) buildings, and many more stated that no additional training would be required or it would not apply to their trade.
- Some contractors reported energy efficiency retrofit training would only be undertaken if they had confirmed work lined up and such training was specified in a works contract.



© Historic Scotland

Stonemasonry banker skills

8.2 RECOMMENDATIONS

Recommendations arising from this research were developed following appraisal of the report findings by a peer-review group composed of the researchers Pye Tait and representatives from CITB, English Heritage, Historic Scotland, Institute of Historic Building Conservation, National Heritage Training Group and National Trust.

The key recommendations which English Heritage, Historic Scotland, the National Heritage Training Group (NHTG) and CITB, by working with other sector partners, need to implement and build upon are as follows:

8.2.1 DEMAND FOR SKILLS

Greater stockholder demand for skills is a key requirement, which is likely to equate to tangible evidence for contractors to invest in skills and training as well as recruitment of apprentices and trainees to safeguard the future workforce. Actions to boost demand must at the same time be backed up by concerted efforts to encourage the existing workforce to invest in accredited training and, by attaining recognised qualifications, demonstrate their competency and ensure their skills and knowledge are genuinely fit for purpose.

The following are therefore required to further stimulate demand:

- Ensure that client demand for the right skills for traditional (pre-1919) buildings is pro-actively pursued to translate the underlying or latent need for work on traditional (pre-1919) buildings into actual active demand, which in turn will drive up the supply of suitably qualified workers and stimulate increased take up of up-skilling training programmes and assessment.
- Demonstrate the value of repair and maintenance, notably the longer-term economic value of addressing issues proactively rather than putting off work.
- Improve public awareness of the value of using the right skills for the right job, in particular by showing that repairs of traditional (pre-1919) buildings using the right skills and materials can be very long-lasting.
- Reinforce the value and role of the CSCS Heritage Skills Card, and better promote the card as evidence of competence (based upon relevant experience and qualification assessment) that identifies practitioners who are more competent to work on traditional (pre-1919) buildings than those without the card.
- Overcome the confusion and misunderstanding which can exist on CSCS cards generally, and on the CSCS Heritage Skills Card in particular.
- Increase the use of the right traditional building skills and materials through changes to procurement processes and create a register of traditional building contractors, filterable by region as well as type of craft skill/occupation.
- Properly resource information, advice and guidance (including an audit of current material) on traditional building skills training and development, and ensure websites promoting these are better integrated and accessible via web links to maximise opportunities to match supply and demand for skills.
- Learn from other examples how to better communicate the messages on the knowledge and skills required for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings to stockholders, designers/specifiers, contractors and training providers.

8.2.2 SUPPLY OF SKILLS

- Address the mismatch which exists amongst contractors between the skills and knowledge they actually need to work on traditional (pre-1919) buildings and the skills and knowledge their workforce possess.
- Promote the benefits and business opportunities of working on traditional (pre-1919) buildings to contractors, general builders and craftspeople.
- Scope out and audit available information, advice and guidance on knowledge and skills required for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings.
- Reduce the skills and knowledge gaps amongst building professionals to avoid materials and techniques being incorrectly specified with potentially damaging consequences for the buildings.
- Undertake an update to the 2008 skills needs analysis quantitative and qualitative survey of the building professional workforce (outside the remit of this study) to more clearly establish and understand the extent of skills and knowledge gaps and required actions.

8.2.3 TRAINING

- Promote the benefits and business advantages to contractors of training their workforce to work on traditional (pre-1919) buildings and link directly to information on relevant training opportunities.
- Increase access for contractors to training resources. Maximise opportunities for all those working on repair and maintenance of traditional (pre-1919) buildings, including the contractors' preference for on-the-job, in-company training.
- Produce an accessible and readily available map of training and qualifications within the built heritage sector and ensure this resource is regularly maintained and updated.
- Develop appropriate up-skilling training and assessment programmes for repair and maintenance of traditional (pre-1919) buildings, including at supervisory level.



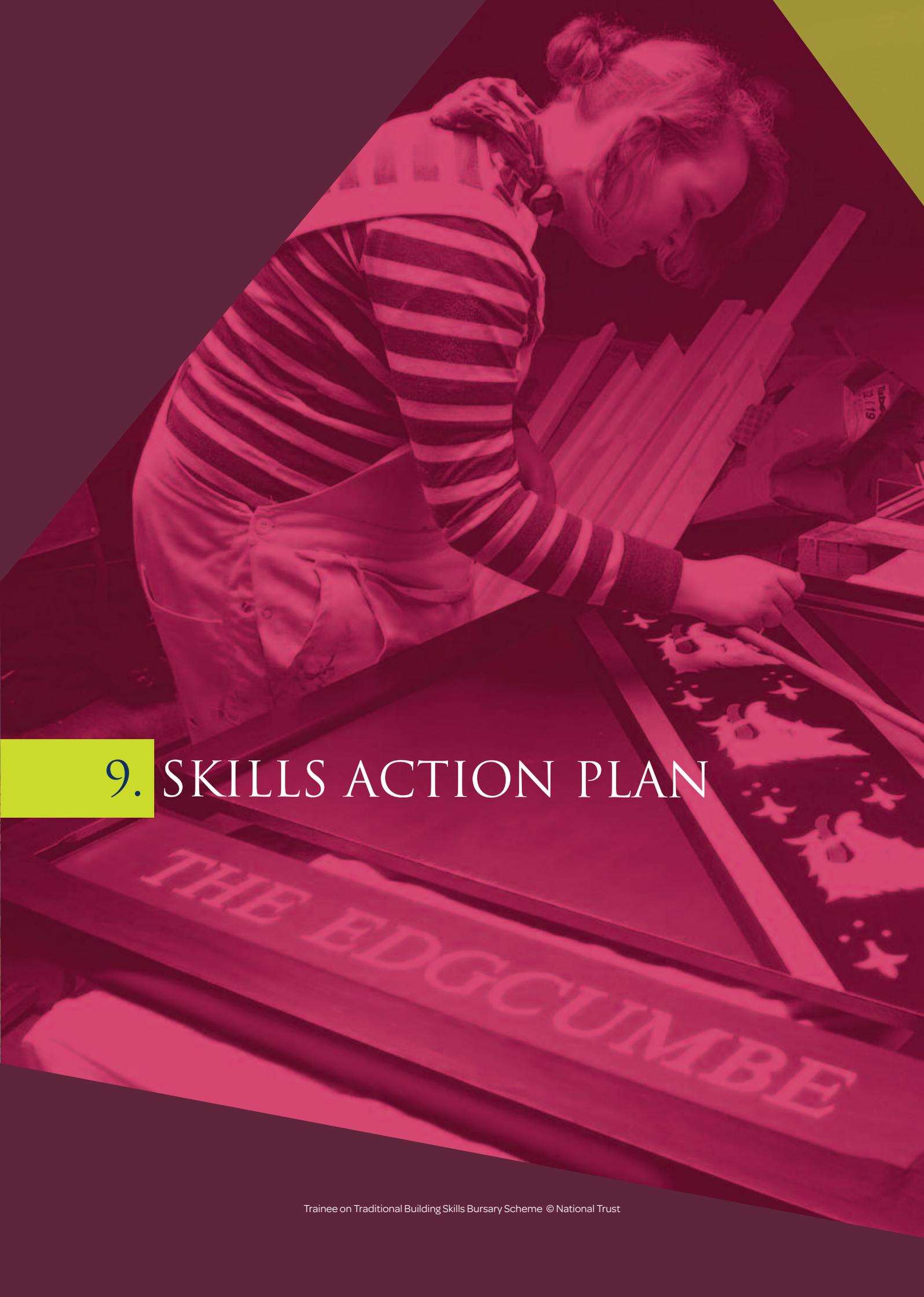
Signwriting skills

© Historic Scotland

8.2.4 ENERGY EFFICIENCY RETROFIT

- Raise stockholder awareness of the energy efficiency benefits created through carrying out repairs and undertaking regular maintenance of their buildings.
- Raise awareness among stockholders, designers/specifiers, contractors and training providers of the need for the right understanding, knowledge and skills to undertake energy efficiency retrofit measures on traditional (pre-1919) buildings.
- Develop an appropriate suite of up-skilling programmes for energy efficiency retrofit of traditional (pre-1919) buildings



A woman with her hair in a bun, wearing a striped long-sleeved shirt and a light-colored apron, is focused on her work. She is using a wooden tool to apply ink through a screen onto a wooden sign. The sign features a repeating pattern of a stylized, bearded man's face. In the foreground, another wooden sign is visible with the text 'THE EDGCUMBE' printed on it. The background shows a workshop setting with stacks of wooden planks and other materials.

9. SKILLS ACTION PLAN

DELIVERING THE SKILLS ACTION PLAN 2013 – 2014

The following key actions and measures will be delivered by English Heritage, Historic Scotland, CITB and industry partners to further stimulate demand, supply and training provision for the correct repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings. Progress will be reviewed after March 2014 and the action plan updated for a further year.

(Note: Energy efficiency retrofit is integrated with repair and maintenance throughout this Skills Action Plan)

DEMAND FOR SKILLS

Increase client and stakeholder demand for evidence of training, qualifications and competency using the Construction Skills Certification Scheme to work on traditional (pre-1919) buildings.

ACTIONS

- Advocate and influence key stakeholders, including the general public, on the need for the right skills, qualifications and evidence of competency to work on traditional (pre-1919) buildings.
- Establish flagship projects showcasing demand for the CSCS Heritage Skills Card and promote the right traditional building skills training, qualifications and evidence of competency.
- Promote the need for the right knowledge and skills for energy efficiency retrofit of traditional (pre-1919) buildings.

PERFORMANCE MEASURES

- NHTG and CSCS complete review of routes to CSCS Heritage Skills Cards, implement any required changes and actively promote the scheme to increase client demand for the card as evidence of competency.
- English Heritage and Historic Scotland Flagship projects established to promote demand for CSCS Heritage Skills Cards established by June 2014 and actively promoted to influence other stockholders and clients.
- English Heritage to promote awareness of a pilot scheme requiring CSCS Heritage Skills Cards for specialist leadworkers on significant projects on their properties and extend the scheme to other craft occupations as up-take of the cards increases.
- Statements on English Heritage and Historic Scotland and other industry partners' websites promoting the need for the right training, qualifications and skills for work on traditional (pre-1919) buildings.
- Traditional (pre-1919) buildings Health Check Scheme project used by Historic Scotland to promote demand for the right knowledge, training, qualifications and skills.
- Historic Scotland adopts policy of requirement to have CSCS Heritage Skills Card for work on traditional buildings on their sites and properties.

SUPPLY OF SKILLS

Improve skills, understanding and knowledge of repair, maintenance and energy efficiency retrofit for work on traditional (pre-1919) buildings.

ACTIONS

- Promote understanding of the essential differences between the skills and knowledge needed for working on traditional (pre-1919) buildings and other construction activities.
- Promote how having skills to work on traditional (pre-1919) buildings enables contractors to benefit from the business opportunities of being able to tender for a wider range of work.
- Scope out and audit the available information, advice and guidance on knowledge and skills required for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings. From this audit produce relevant, up-to-date, easily accessible information.
- NHTG, the Trade Federations and Associations work in partnership with CITB to increase up-take of training and qualifications leading to achievement of CSCS Heritage Skills Cards by contractors, general builders and craftspeople.
- Develop a new Memorandum of Understanding on the Conservation, Repair & Maintenance of traditional (pre-1919) buildings covering the four UK home countries to increase awareness of demand for and supply of the right skills; and up-take of training and qualifications; and an integrated approach to the management of traditional building skills.

PERFORMANCE MEASURES

- NHTG in partnership with Trade Federations deliver more courses supporting achievement of the Construction Skills Awards Level 3 Award in Understanding Repair & Maintenance of Traditional (pre-1919) Buildings and as necessary, Historic Scotland, and NHTG assesses and deliver this, or a similar programme, specific to Scotland.
- NHTG and Trade Federations and Associations and CITB monitor and report progress on up-take of training, qualifications and CSCS Heritage Skills Cards by contractors, general builders and craftspeople.
- English Heritage, Historic Scotland, CITB and industry partners review available information, advice and guidance on repair and maintenance and as required, update and produce revised information to be readily accessible and available on their websites and other relevant sites such as the STBA Knowledge Hub and NHTG.
- NHTG to explore with industry partners development of a new Memorandum of Understanding on the Repair, Maintenance and Energy Efficiency Retrofit of Traditional (pre-1919) Buildings.

TRAINING AND ENERGY EFFICIENCY RETROFIT

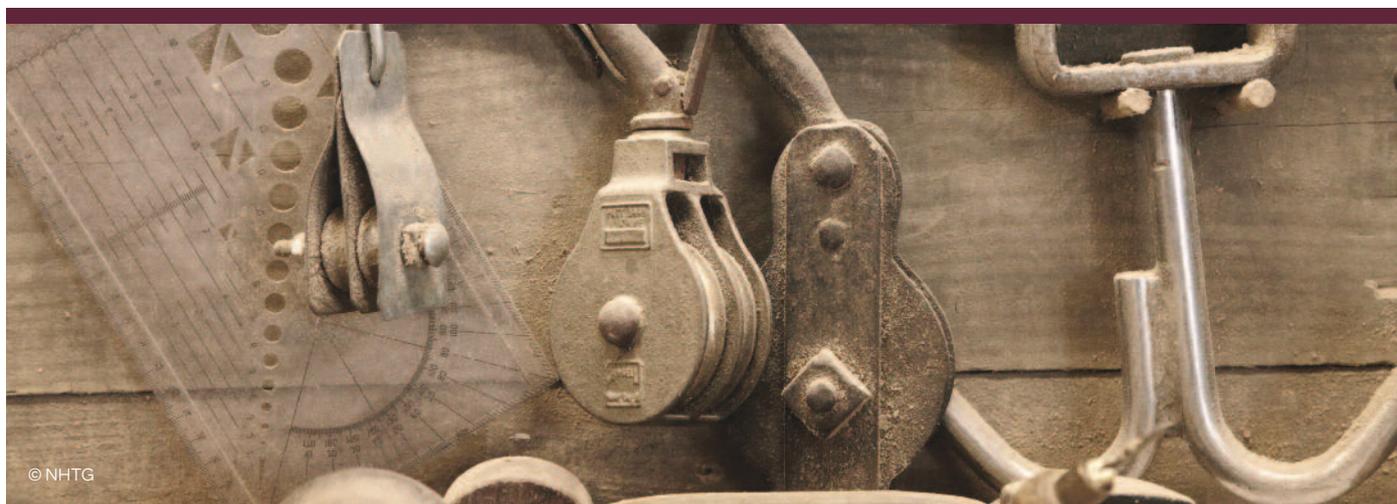
Ensure that appropriate training is available and accessible to meet the needs of contractors, general builders and craftspeople wishing to improve their knowledge and skills for the repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings.

ACTIONS

- Increase the accessibility of training resources to maximise opportunities for all those working on repair, maintenance and energy efficiency retrofit of traditional (pre-1919) buildings.
- Map and then promote assessment and training pathways, from OSAT to apprenticeship programmes and degrees, leading to recognised heritage, conservation or traditional building skills qualifications and ensure this resource is regularly maintained and updated.
- Develop appropriate up-skilling programmes for the repair and maintenance of traditional (pre-1919) buildings.
- Promote understanding of the need to repair and regularly maintain buildings as an important first step to improving energy efficiency.
- Ensure the National Occupational Standards covering energy efficiency retrofit of traditional (pre-1919) buildings are fit for purpose and those involved have the right knowledge, skills, qualifications and expertise.
- Develop and promote appropriate up-skilling training and assessment programmes for energy efficiency retrofit of traditional (pre-1919) buildings.

PERFORMANCE MEASURES

- English Heritage to draft guidance for Domestic Energy Assessors and Green Deal Advisors to be made available on English Heritage website and sign posted from, Historic Scotland, CITB and industry partners' websites.
- English Heritage, Historic Scotland, CITB, Sustainable Traditional Buildings Alliance (STBA) and other industry partners to develop coordinated approach in sharing consistent information, advice and guidance on energy efficiency retrofit measures for traditional (pre-1919) buildings.
- CITB, English Heritage and Historic Scotland to support the work of the NHTG as the representative UK voice on traditional building skills training and development.
- CITB, English Heritage, Historic Scotland, NHTG and IHBC work with other partners and stakeholders to promote training resources for the correct repair, maintenance and energy efficiency retrofit measures for traditional (pre-1919) buildings.
- CITB, English Heritage, Historic Scotland, NHTG use outcomes of the Green Skills for Traditional Buildings Group review to improve National Occupational Standards covering energy efficiency retrofit for traditional (pre-1919) buildings.
- CITB in conjunction with UK wide heritage bodies and other stakeholders within the built heritage sector scope-out, develop and pilot energy efficiency retrofit up-skilling programmes for craft (general builders, contractors, craftspeople), supervisory and building professionals.
- CITB produce mapping of training and qualifications in the built heritage sector and disseminate as widely as possible and update at required intervals and investigate developing this as an on-line resource.



© NHTG

REFERENCES

1. National Heritage Training Group (NHTG) research reports – Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge Skills Needs Analysis of the Built Heritage Sector in Scotland 2007; NHTG Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge. Skills Needs Analysis of the Built Heritage Sector in England, 2005; Built Heritage Sector Professionals: Current Skills, Future Training Skills Needs Analysis of the UK Built Heritage Sector.
2. International Passenger Survey Monthly Overseas Travel and Tourism statistics available from <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-313995>
3. HLF/Visit Britain (2010), Investing in Success, March 2010
4. Chetwyn & Newton (2007), The Social Dimension of Heritage: http://ihbc.org.uk/context_archive/102/social/change.html
5. <http://www.ihbc.org.uk/policy/docs/IHBC%20Valuing%20Historic.pdf>
6. Historic Environment Advisory Council for Scotland (2009), Report and recommendations on the economic impact of the historic environment in Scotland
7. <http://www.english-heritage.org.uk/publications/heritage-and-growth/>
8. RIBA/IpsosMORI (2012), The Way We Live Now, pp. 4–5, 11–12
9. Ahlfeldt, Holman and Wendtland (2012)
10. Construction Skills Network (CSN) and Experian, The Construction Skills Network – Blueprint for Construction 2013–2017, January 2013 (underlying forecasts)
11. http://www.ons.gov.uk/ons/publications/re-referencetables.html?newquery=*&newoffset=25&pageSize=25&edition=tcn%3A77-254386
12. Construction Skills Network (CSN), The Construction Skills Network - Blueprint for Construction 2013–2017 http://www.citb.co.uk/Documents/research/csn%20outputs/CSN_National_interactive.pdf.
13. Office for National Statistics, Statistical bulletin: Labour Market Statistics, January 2013 (VACS02: Vacancies by industry)
14. English Heritage (2012), Commentary on the National Planning Policy Framework
15. http://www.ihbc.org.uk/recent_papers/docs/Local%20Delivery%20Report%20by%20Atkins%202006.pdf. IHBC: England’s new heritage bill proposals can work only with ‘skills, capacity & political will’
16. Heritage Counts England 2012 <http://hc.english-heritage.org.uk/content/pub/2012/hc-2012-england.pdf>
17. Build Up Skills UK (2012): Analysis of the Status Quo
18. http://ec.europa.eu/europe2020/index_en.htm
19. <http://cutcarbon.info/about-carbon-reduction/what-is-the-green-deal.aspx>
20. <https://www.gov.uk/government/policies/helping-households-to-cut-their-energy-bills/supporting-pages/energy-companies-obligation-eco>
21. Published in 2009
22. Scottish Government (2010), Conserve and Save: Energy Action Plan
23. Scottish Government (2012), Second Progress Report on the Energy Efficiency Action Plan
24. Scottish Government Scottish House Condition Survey (2011), www.scotland.gov.uk/Publications/2012/12/4995/7#fig15
25. Communities and Local Government (2012), English Housing Survey – Homes 2010
26. Communities and Local Government (2012), English Housing Survey: Homes 2010; Scottish House Condition Survey: Key Findings 2010
27. On the number of pre-1919 commercial buildings in England and Scotland, see NHTG, Traditional Building Craft Skills: Assessing the Need, meeting the Challenge. Skills Needs Analysis of the Built Heritage Sector in England, 2005 pp. 36-7; NHTG (2007), Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge. Skills Needs Analysis of the Built Heritage Sector in Scotland, pp. 38-39
28. See NHTG, Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge. Skills Needs Analysis of the Built Heritage Sector in England, 2005 p. 35
29. English Heritage (2012), Heritage Counts 2012. Caring and Sharing data tables

-
30. Scottish Government (2012), Planning Performance Statistics 2011/12 Annual
31. Griffith (2010), Listed Building Control
32. Communities and Local Government (2012), English Housing Survey – Homes 2010
33. Continuous Scottish House Condition Survey (2010)
34. Construction Skills Network (CSN) and Experian, The Construction Skills Network – Blueprint for Construction 2013–2017, January 2013 (underlying forecasts)
35. Construction Skills Network (CSN) and Experian, The Construction Skills Network – Blueprint for Construction 2013–2017, January 2013 (underlying forecasts)
36. The 50% reduction represents a “best guess” and not a quantified estimate, it is a conservative estimate based on qualitative assessment of workforce activity levels and personal interviews.
37. CITB, Employer Panel: Employer Attitudes and Motivations to Learning and Training (Wave 12) – Traditional Building Sector, November 2012 (Unpublished)
38. CITB, Employer Panel: Employer Attitudes and Motivations to Learning and Training (Wave 12) – Traditional Building Sector, November 2012 (Unpublished)
39. This intention was announced in the March 2012 budget
40. Traditional Building Skills Bursary Scheme for England and Wales final evaluation report
http://www.buildingbursaries.org.uk/download/TBSBS_evaluation_report.pdf
41. The Construction Skills Trainee Numbers Survey (TNS), Heritage Counts 2012. Figures exclude those undertaking Construction Awards only. The continuing fall in the number of apprentices and trainees is due in part to the difficulty in providing sufficient numbers of work placements for apprentices combined with the popularity of Construction Awards which are delivered solely within a training centre. Around half of first-year trainees in construction craft training were studying for Construction Awards. These trainees are not included in the figures presented here. Equivalent data for apprentices and trainees for Scotland is taken from separate analysis by CITB.
42. International Council on Monuments and Sites
43. www.understandingconservation.org
44. Based on all names listed on AABC online register
45. Based on manual count of all entries on the online registers, spanning England, Wales and Northern Ireland. As the RIBA Conservation Register was established in 2010 no comparable figures for 2008
46. Icon, (2007), Report and Action Plan
47. <http://www.ihbc.org.uk/>
48. For information on Agored Cymru qualification units visit: www.agored.org.uk for the other qualifications visit Ofqual website: <http://register.ofqual.gov.uk/Qualification>
49. Extract from UK Built Heritage Sector Qualifications and Training Provision March 2013. Updated versions are available at www.nhtgskills.org
50. For information visit: www.cskillsawards.co.uk
51. For information visit: www.cskillsawards.co.uk
52. www.cscs.uk.com/occupations
53. www.hlf.org.uk/HowToApply/programmes/Pages/SkillsfortheFutureprojects.aspx
54. www.buildingbursaries.org.uk
55. www.nhtgskills.org/owners-and-investors/skills-for-the-future/
56. www.princes-foundation.org/what-we-do/projects/uk/building-craft-apprentices
57. Build Up Skills UK (2012): Analysis of the Status Quo
58. www.stbauk.org/resources/useful-links
59. Build Up Skills UK (2012), Analysis of the Status Quo
60. Build Up Skills UK (2012), Analysis of the Status Quo
61. www.buildupskillsuk.org

ABOUT THE PARTNERS IN THIS RESEARCH PROJECT



ENGLISH HERITAGE

English Heritage is the Government's statutory adviser on the historic environment, with responsibility for protecting and promoting all aspects of the historic environment, working in partnership with central government departments, local authorities, voluntary bodies and the private sector to conserve and enhance the historic environment, broaden public access to heritage, and increase people's understanding of the past.

www.english-heritage.org.uk



Historic Scotland is an executive agency of the Scottish Government charged with safeguarding the nation's historic environment and promoting its understanding and enjoyment on behalf of Scottish Ministers.

www.historic-scotland.gov.uk



CITB is both the Sector Skills Council and Industry Training Board for the construction industry, working to deliver a safe, professional and fully qualified construction workforce. It works with construction companies to help them improve skills to increase their competitive edge. The Sector Skills Council (SSC) for the construction industry is a partnership between CITB, the Construction Industry Council (CIC) and CITB- ConstructionSkills Northern Ireland. It is UK-wide and represents the whole industry from professional consultancies to major contractors and SMEs.

www.citb.co.uk



PDF versions of the main report and summary documents for England and Scotland can be downloaded from the following websites:

www.english-heritage.org.uk

www.historic-scotland.org.uk

www.citb.co.uk