

The background of the cover is divided into three main visual sections. The top left is a light green gradient. The top right shows a close-up of a stone wall. The middle section is a dark, curved wooden roof structure. The bottom right features a close-up of a stone relief with intricate carvings. The title text is overlaid on the dark wooden roof section.

TRADITIONAL BUILDING CRAFT SKILLS

Assessing the Need, Meeting the Challenge

SKILLS NEEDS
ANALYSIS OF
THE BUILT
HERITAGE SECTOR
IN WALES 2007



foreword

Wales has a rich cultural heritage and its historic environment is one of its greatest assets – the landscape and the historic built environment play an important role in reflecting the history and development of its people. It contributes to the strong Welsh national identity, creating a sense of place and attracting visitors, and, as tourism is one of the main industries in Wales – of which visiting historic buildings and monuments is a major attraction – contributes greatly to the economy. The wide spectrum of the built heritage – from cottages to castles, chapels to terraced housing – represents the unique qualities of Wales and its different regions. As well as being a welcome attraction for visitors, this forms the historic heart of our cities, towns and villages – the functioning places we work and live in – and without them we have no link to the past.

There are almost 500,000 pre-1919 buildings in Wales, almost one-third of the building stock. The vast majority are the more humble terraced houses and vernacular architecture – used for everyday working and living – but we need to ensure that these are preserved along with the major historic buildings. Unfortunately, the once commonplace skills and knowledge base necessary for correct repair and maintenance of such buildings has diminished over time.

The materials, skills and attitude needed for work on older buildings are very different from those used in modern construction. Although underpinning skills can be transferred from the new-build sector, these have different training requirements. Repair, maintenance and improvement (RMI), a subset of the construction industry, represents over one-third of construction industry output in Wales, and as there is a high proportion of pre-1919 buildings, much of the work is undertaken on older buildings. This work should be undertaken by skilled trades/craftspeople, but more usually falls to the general builder, who often does not have the understanding and skills readily available to complete the work using appropriate methods and materials.

We need to ensure that the tried and tested technologies and skills associated with traditional buildings are integrated within mainstream construction courses and, crucially, provide flexible means of training to upskill existing contractors and sole traders working within the RMI sector.

A shortage of skilled craftspeople throughout the UK – not only in Wales – highlighted the need for a coordinated strategy to ensure that the right skills are available now and in the future, which in 2002 led to the formation of the National Heritage Training Group (NHTG). Central to this process is the craft-skills-mapping research in each of the four home countries that is essential to understand the extent of skills shortages and skills gaps, and inform our solutions to the problems. This report is the first ever detailed labour and skills needs analysis of this sector of the construction industry in Wales: it cannot provide trend analysis or accurate forecasts, but has established a benchmark against which we can measure and quantify our progress.

In presenting the research findings, solutions and Skills Action Plan in one report we have assessed the need and suggested the way forward. However, to address this vital issue we need to work together with Welsh Assembly Government; Learning and Skills Council; NHTG; ConstructionSkills; heritage organisations; contractors and sole traders; and public and private training providers. This is essential to revive and sustain traditional building skills and the use of traditional building materials to care for our built heritage.

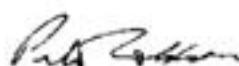
We hope you will join us to meet the challenge.



Marilyn Lewis
Director
Cadw



David Linford
Chairman
National Heritage
Training Group



Peter Lobban
Chief Executive
ConstructionSkills



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EXECUTIVE SUMMARY 1

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executive summary

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

The purpose of the research was to:

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

The research included structured quantitative interviews with:

- 261 contractors
- 44 public and commercial and 45 private stockholders
- 36 manufacturers and suppliers of building materials
- 40 architects and 13 surveyors
- 20 further education colleges.

In addition to the stakeholder groups mentioned above, 31 preliminary in-depth qualitative interviews were held with conservation officers, heritage organisations and grant-aiding bodies prior to the quantitative interviews.

The research findings are crucial to delivery of the NHTG Business Plan and the development of a 5–10-year Training Plan needed to influence the Welsh Assembly Government, their agencies and the sector in Wales to ensure continued skills provision. The main findings and key recommendations of the report are presented in Section 9.

1.1 Report Conclusions

1.1.1 Demand

■ There are 497,000 pre-1919 buildings in Wales, comprising one-third of the total building stock (a bigger proportion than in England and Scotland), and in terms of sustainability it is imperative that these are appropriately maintained and repaired.

■ The Welsh construction industry¹ generates £5.2 billion² of turnover (at basic prices), and with an output of £4.23 billion³ (at current prices) represents over 7.0% of the country's gross value added (GVA), and 3.2% of the total for construction in the UK, generating £1.8 billion of GVA in 2004⁴

■ At 36%, the share of repair and maintenance work in Wales is rather low compared with an average of 43% for the UK (but consistent with the 38% in

Scotland); as one-third of all Welsh housing stock dates from before 1919, compared with 19% in England,⁵ it can be inferred that less is being spent on repair and maintenance of pre-1919 buildings in Wales than in England

■ Estimated demand for traditional building craft skills is £48 million (1.6% of the total construction output for Wales), but this would rise to £122 million (4% of construction output) if all repair, maintenance, conservation and restoration work on pre-1919 buildings was undertaken using traditional building craft skills and materials; it would be larger still if the backlog identified as necessary in statutory surveys and inspections was undertaken

■ Direct grant funding and grant-funded initiatives such as Townscape Heritage Initiatives (THIs) and Town Scheme Partnerships are major sources of

demand for traditional building craft skills

■ Currently 100 trades/craftspeople need to be trained in traditional building craft skills each year between 2007 and 2011, and this is likely to increase to match demand, but only nine trainees from the 2006/7 intake enrolled on a course leading to a recognised conservation qualification

■ Statutory duty or other pressing interest to preserve the historic fabric of a building is needed to make most stockholders undertake repair and maintenance that involves traditional skills and materials

■ Cost of conservation and traditional building skills and materials is a primary concern with private homeowners (89% of stockholders), who spend much more on new kitchens, bathrooms or hard landscaping

■ Many of the stockholders (homeowners and the public and commercial sector) use general builders, but in Wales stonemasons and lime plasterers are effectively main trades rather than conservation specialists

■ Contractors/builders generally respond to clients' instructions, so that improved stockholder knowledge/ awareness of caring for old buildings would increase demand for traditional building skills and materials.

Recommendations:

■ Further grant support is required for owners of buildings of outstanding and national importance and imaginative community and environmental schemes for vernacular buildings

■ Cadw guidance for owners of specific types of properties (industrial workers' housing and those seeking to convert historic farm buildings) should be adapted and extended for all pre-1919 buildings and produced in a simpler format for homeowners (similar to that on www.myvalleyshouse.org.uk); this could include guidelines regarding professional and building services and recommendations for a full supervisory contract for major works or those involving structural defects

■ Existing local authority guidelines for purchasing building services in response to planning applications can be developed and circulated to owners of listed buildings and stockholders in conservation areas to include information on professional and building services, including the recommendation for a full supervisory contract for major works or those involving structural defects, and the need for sensitive repair and conservation

■ It is imperative that general

builders and those working in the main trades (most likely to be engaged by private stockholders) have an understanding of sympathetic repair for pre-1919 buildings.

■ At a national level, Cadw should be consulted on all large-scale group repair and regeneration projects, particularly local authority or other social housing improvements prior to large-scale transfer of ownership to ensure that major improvement, regeneration and group repair schemes do not have a detrimental effect on the built heritage by using inappropriate modern materials

1.1.2 Skills Supply

■ The construction industry in Wales now employs 99,200 people⁶ in 40,050 enterprises⁷, which is 7.6% of the economically active population (EAP) of 1.3 million⁸

■ The built heritage sector is a subset of the main construction industry and this research has determined that the estimated workforce in the last 12 months was the equivalent of 710 full-time trades/craftspeople.

■ To meet current demand an estimated additional 280 workers are required in this sector over the period 2007–2011 which, combined with the upskilling needs in the existing workforce, means that there is a requirement for 100 trades/craftspeople to be trained in traditional craft skills each year for the next 4 years

■ This research, however, identified just 9 trainees on recognised heritage skills courses from the 2006/7 intake of all Welsh FE colleges

■ The key issue facing Wales's built heritage is that many of today's trades/craftspeople have had no formal training or skills development pertinent to pre-1919

buildings, and builders must be convinced of the need to upskill if training initiatives are to succeed

■ Industry culture, trade practice and the historic lack of awareness among most stockholders has contributed to the vicious circle that perpetuates the use of inappropriate methods and materials on pre-1919 buildings

Recommendations:

■ Traditional building craft skills training should focus upon the need for thoughtful and sympathetic application of skills and materials which can be practised by mainstream trades/craftspeople, rather than being solely the domain of conservation specialists

■ Reinforcing the relationship between traditional building skills and the ability to tender for and carry out work is the best way of stimulating demand for skills training

■ Using the registration systems sell2Wales for public sector contracts and TrustMark for homeowners should ensure that only suitably qualified builders with the right skills and attitude work on older buildings

■ Grant-awarding bodies must insist on evidence from contractors and sole traders that they have the necessary skills or short-course continuing professional development (CPD) attendance as a prerequisite for tendering for work on pre-1919 buildings.

1.1.3 Contractors and Sole Traders

■ Skill shortages and skills gaps exist, but the latter are the key issue, and all firms are proactive in addressing this by providing their staff with more training/upskilling or by subcontracting

■ Of the firms interviewed, 88% consider themselves as general

builders/craft firms undertaking work on old buildings rather than conservation/heritage specialists, and almost three-quarters of those who carry out more than 75% of their work on pre-1919 buildings work within a 20 mile radius of their base

- Trainees are recruited by 44% of the firms, with one in eight employees being trainees; the drop-out rate for these is 15% compared with 25% in England; encouragingly three-quarters of all new recruits are with firms providing formal training, but stonemasonry firms are more likely to recruit fully skilled staff

- Most firms (84%) subcontracted pre-1919 work in the past 12 months, with plumbers/lead-workers most used, followed by painters and decorators, glaziers, timber preservers, blacksmiths, bricklayers, joiners and roofers; this is linked to the proportion of pre-1919 work undertaken by firms

- Retention of skilled staff is not easy and most difficult in the south-west, with stonemasonry and roofing reporting more departures than other main trades

- Contractors employing trainees are not enthusiastic about the college-based element of the modern apprenticeships, and 29% value the need for combining formal college training alongside 'on-the-job' experience

- Key age groups are 30s and 40s, followed by 16–24 and 50s, with the lowest numbers in the late 20s and over 60s groups; smaller firms avoid younger age groups, while large firms have a more age-diverse workforce

- Worryingly, under 50% of those working on pre-1919 buildings expressed an interest in developing their traditional building skills, and only 23% would like to provide further such training to their staff; of 22 craft skills mentioned, lime

plastering and stonemasonry were the most popular suggestions

- Welsh building firms working on pre-1919 buildings are more likely to use only modern materials than traditional building materials, with expense and lack of demand from clients cited as the main constraint in the use of the latter

- A clear progression ladder for craft trades was favoured by 89% of those interviewed, reflecting a desire for more structure within the sector/industry than at present; progression should be based upon experience and skills.

Recommendations:

- Action is required to upskill the workforce in order to address the major issue that many builders have had no formal training on traditional craft building skills, and therefore have no real conception that what they have been doing for years or decades on older buildings is often fundamentally wrong

- Overly academic or complicated delivery of traditional building craft skills will be counter-productive, and the emphasis must be upon encouraging thoughtful and sympathetic application and refinement of existing skills by mainstream trades/craftspeople using traditional building materials

1.1.4 Material Supply Chain

- Availability and specifying the need for traditional building materials for pre-1919 buildings is interlinked with traditional building skills, but increased supply of materials is dependent upon increased demand

- Manufacturers in Wales have skilled workforces and invest in training to the same extent as contractors, but have greater recruitment problems, with skills gaps in joinery, wood machining and stonemasonry

- Several manufacturers have had to start training their customers because of gaps in skills relating to simple, basic traditional materials such as slate and the use of lime mortars; this type of training should be integrated into mainstream FE construction courses

Recommendations:

- Manufacturers should explain the linkages between traditional craft materials and environmental sustainability, to demonstrate growing demand for traditional skills for these materials

- Manufacturers, especially joinery companies, should be included in all proposed training and upskilling initiatives for builders and trades/craftspeople.

1.1.5 Building Professionals

- Building professionals must take a more robust approach to ensure compliance with specifications and schedules of works to prevent the current position whereby builders often vary the contract because they do not understand how to use traditional materials. Building professionals appear in many cases to have the appropriate theory; as this was also a key finding in Scotland, it is likely to be a UK-wide issue

- The apparent lack of supervision is partly a symptom of the changing role of architects in the project management chain within the construction industry as a whole, but accredited status would provide additional authority and assist the architect's leadership

Recommendations:

- The use of accredited professionals, including a supervisory/clerk of works function, should be a condition of grant awards for major stockholders

- Promotion of conservation

accreditation for architects and surveyors is needed to assist them in winning contracts and ensuring the development and use of appropriate skills; this process must be sufficiently robust and involve peer-review, rather than self-certification, to provide evidence of practical knowledge and experience

- Practical as well as theoretical elements to CPD programmes covering issues such as building regulations and building control are needed

- Establish an advisory service for architects and professionals working with traditional materials involving key manufacturers and trade associations, such as the Timber Research and Development Association.

1.1.6 Training Provision

- The growing demand for heritage skills training is demonstrated by the number of short courses being provided by independent organisations and material manufacturers and suppliers, but this research shows there is practically no take-up of existing heritage skills modules offered on an optional basis within FE colleges

- All main trade construction courses in Wales should include some course content on the difference in construction of old buildings from modern buildings, and the differences in approach required for repair, maintenance, conservation and restoration

- Better understanding of the sector destinations of trainees is required at defined periods (e.g. on leaving and at say 2-, 5-, 10-year intervals), so the need for traditional building skills elements within mainstream training can be demonstrated to employers and also allow colleges to deliver relevant and appropriate built heritage training

- The research shows that the Heritage Lottery Fund (HLF) Traditional



Building Skills Bursary Scheme is regarded in principle as an excellent means of delivering upskilling training, but current funding for 80 placements across England and Wales implies only 5–10 placements for Welsh trades/craftspeople and cannot alone fulfil the annual requirement for

training 100 trades/ craftspeople in traditional building craft skills

Recommendations:

- The NHTG must promote its Training the Trainers initiative to FE colleges in Wales, and recruit trainers to improve their



knowledge and understanding of conservation and restoration to promote best practice and ensure that close working relations between local trades/craftspeople and colleges do not perpetuate and reinforce inappropriate practices that exist in the current workforce

- Long-term sustainability of courses within FE colleges must be carefully considered to avoid courses closing, as in the past, when local demand declines

- Considering the number and diversity of training providers in

Wales, the NHTG should coordinate the full range of FE and independent short-course providers to ensure consistent quality of delivery and best value, to avoid duplicating existing expertise and resources, and where necessary to expand this in areas where a lack of provision exists

- Upskilling the current workforce requires alternative and more flexible forms of training provision, such as short courses or mobile training by private providers or using ConstructionSkills On-Site Assessment and Training (OSAT),⁹

especially in remote rural areas if this can combine more training with the assessment process

- FE colleges need to develop closer links with employers, particularly small firms, to deliver practical, short-course training to upskill the workforce; unlocking the potential of the existing workforce will be a cost-effective means of helping to ensure appropriate skills and materials are used on older buildings

- Electronic and mobile learning being devised by Learn Direct & Build are opportunities for improved training, skills and knowledge development, and the latter could provide a UK-wide virtual network linked to the development of traditional building skills centres in Wales

- The extent to which colleges/schools/other organisations involve young people to work with local authorities to repair or restore a local building/structure for community use under the guidance of an experienced trades/craftsperson should be explored as a means of engaging young people with their heritage/community and acquiring a basic understanding of caring for old buildings.

- Ensure that craft skills trades and training are underpinned and informed by an awareness of and training in established building conservation concepts.

1.2 Key Issues

The Skills Action Plan (see Section 10) provides a clear strategy to implement a cohesive, sustainable long-term solution to the current skills shortages, skills and knowledge gaps, and lack of adequate traditional building skills training provision in Wales. For this to be successful, to correct the gradual decline in availability of these skills

and to promote increased, regular use of traditional building materials on pre-1919 buildings, requires coordinated partnership working.

This needs to be underpinned by three aspects.

1. Improvements in the quality and amount of traditional building skills training provision can only be achieved in a 10-year timescale, but strategic and tactical work to develop this should start immediately to ensure that structured change occurs in the short term, with examples of best practice influencing future developments.

2. Cadw should continue its close working with the NHTG, as the UK-wide specialist skills development group for traditional building skills training and development to coordinate and promote the work needed to deliver this Skills Action Plan.

3. In terms of the long-term skills needs of the built heritage sector in Wales, those most likely to be employed by the average stockholder are general builders and those working in the main trades, rather than conservation specialists, so training and upskilling must focus upon the need to improve their understanding of how to work sympathetically on pre-1919 buildings.

A real impact on the labour and skills market is only possible by immediate action, but many of the measures in the Skills Action Plan must be undertaken simultaneously to effectively develop an appropriately skilled workforce to meet current and future demand. Cadw, ConstructionSkills and the NHTG have the resources and knowledge of the sector and will to work together. However, this also requires financial and strategic

support from the Welsh Assembly Government and Learning Wales – to ensure that the necessary changes to the infrastructure and delivery of training provision in this sector are funded to thrive in tandem with the main construction industry.

Skill levels and work experience are the key factors by which the stockholders chose contractors to work on their pre-1919 buildings. Private stockholders' perception of skills is based on personal recommendation, and a contractor's experience of working on old buildings is much less important. So much remains to be done in the private sector in terms of education to raise awareness of what the right skills and approach to this type of work are, and to stimulate demand for traditional building skills and the traditional building materials supply chain.

One-third of public and commercial stockholders consider one or more traditional building craft trades hard to find, and a quarter of the private stockholders experienced three-month waiting times for a number of trades, or these were at times impossible to find, which reflects the need for greater training and upskilling to match supply with demand.

Current training provision must move away from producing large numbers of trades/craftspeople with basic levels of competency to developing a high-quality workforce, capable of adding significant value to the built heritage sector. National or regional centres of excellence for traditional building craft skills training are required, with at least one centre in the north and one in the south to encourage a more strategic and systematic approach to marketing and delivering courses. This could be linked to gaining practical experience

of working on old buildings through live heritage projects or modelling these on the emerging heritage skills academies in England. Where possible, such centres could be located in regeneration areas to attract European Objective One Funding and contribute to the local environment and economy.

Not all employers will want to pay for their trainees to learn traditional building skills and techniques, but achieving the necessary understanding of the different principles underpinning the use of traditional buildings as the need arises is possible through the new Heritage Skills NVQ Level 3, available from April 2007.

While building professionals were not the main concern of this research, enhancing traditional building skills training within their training and CPD and, where possible, by sharing training with craftspeople, would reinforce the knowledge base within the traditional building sector. Similarly, improved knowledge and understanding regarding the sourcing, specifying and use of traditional building materials supply and use of traditional building materials is required across the whole spectrum of the sector, from architects and building surveyors to contractors, sole traders and training providers.

Future training should also include cross-sector discussions and planning between ConstructionSkills and Proskills (the Sector Skills Council for the Process and Manufacturing Sector) to bring together manufacturers and suppliers of traditional building materials with users of traditional building materials.

1.2.1 Strategic Vision

NHTG, ConstructionSkills and Cadw: through the Sector Skills Agreement, coordinate action and partnership involvement to improve skills training and development.

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

Welsh Assembly, NHTG and Cadw: plan and develop future training and skills needs across the traditional building sector spectrum, especially for career changers and upskilling.

CITB-ConstructionSkills and NHTG: liaise with Cadw to influence curriculum changes to improve the repair, maintenance and conservation content in mainstream construction courses, and work together to develop integrated training and education for craftspeople, conservators and building professionals.

1.2.2 Demand

NHTG and Cadw, Welsh Assembly Government: increase awareness by clients, designers and specifiers, property owners and funding bodies regarding the specification and use of traditional building materials and using only suitably skilled and qualified contractors and trades/craftspeople for the conservation, repair and maintenance of pre-1919 buildings.

1.2.3 Recruitment and Career Development

ConstructionSkills, NHTG and Cadw, FE colleges: improve awareness of traditional building crafts skills within the school curriculum and promote the vocational route as a career pathway through educational material and

involvement with schools, with particular emphasis on interactive materials and by integrating this with ConstructionSkills and Cadw education programmes and the Construction and the Built Environment GCSE.

ConstructionSkills, NHTG and Cadw: develop an appropriate strategy to improve information on and support for careers within the traditional buildings sector for schools, general construction and architecture courses, and ensure that qualifications and training are relevant, easier to access and valued within the sector.

ConstructionSkills, NHTG and Cadw: encourage investment in training by contractors and promote the benefits of apprenticeships and upskilling for this sector of the construction industry.

ConstructionSkills, NHTG and Cadw: improve the image of the construction industry and built heritage sector and attract applicants with suitable skills and attitude, and create a more diverse workforce.

NHTG and Cadw: respond to the desire for a career progression route within the sector by implementing a mentoring scheme so knowledge and experience is passed on to less experienced practitioners.

1.2.4 Training and Skills Development

Welsh Assembly Government, Learning Wales: provide long-term funding opportunities for training and developing the workforce in the conservation, repair and maintenance of pre-1919 buildings.

NHTG, Cadw: improve current theoretical learning and practical traditional building skills by utilising

existing training provision and as necessary creating new training delivery, such as establishing centres for traditional building skills.

NHTG, Cadw: explore with the Heritage Lottery Fund opportunities within its Young Roots scheme to support projects linking young people (aged 13–20) to heritage and community as an introduction to this sector.

1.2.5 Standards and Accreditation

Cadw, NHTG, trade federations and trades unions: develop a system of conservation accreditation for craftspeople by building upon and adapting advances made to date in England and in certain trades.

Royal Society of Architects in Wales (RSAW) and Cadw: increase levels of understanding of traditional building skills and materials among building professions to ensure improvements in standards of specifications and schedules of works, and to highlight the importance of ensuring these are adhered to when acting in a project management or clerk of works role.

Cadw: with other funding bodies, heritage organisations, trade federations and professional bodies, devise a system to maintain quality standards within the traditional buildings sector.

NHTG and Cadw, Welsh Assembly Government: increase awareness by clients, designers and specifiers, property owners and funding bodies regarding the specification and use of traditional building materials and using only suitably skilled and qualified contractors and trades/craftspeople for the conservation, repair and maintenance of pre-1919 buildings.

INTRODUCTION

2

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 - 2.1.1 Repair and Maintenance
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introduction

This section provides the background to the research, briefly summarising the significance of the historic built environment in Wales, its relationship to the wider built environment, the need for traditional building skills in the 21st century, the skills shortages that exist, and the skill sets required to ensure that pre-1919 buildings are appropriately

conserved, repaired and maintained. It also provides the current context to this report within the UK-wide skills needs analysis research of the built heritage sector and relates it to other reports. This also highlights some of the main current drivers for change in Wales that the research and Skills Action Plan must take into account.

2.1 Significance of the Historic Built Environment

The historic environment is one of Wales's greatest assets, and its built heritage is an evocative physical manifestation of Welsh culture and identity and has an important role in giving people and communities a sense of place. From cottages to castle, the buildings represent the unique qualities of Wales and its different regions. These are an attraction for locals and visitors alike, but are also functioning places to work and live in. As an educational and social resource the historic environment is crucial to our understanding not only of the past, but the present and future.

Tourism is one of the main industries in Wales and continues to be of great importance to the economy, and 'visiting historic attractions' is one of the most popular tourist activities.¹⁰ Many thousands of people connect with the historic environment in Wales through visits to historic properties, local history societies and groups, and media campaigns. This popular appeal is demonstrated through the success of the 'History Matters – Pass It On' campaign and a successful second year of the HLF Wales Identity Day.

In the past few years, academic and political debate has ensued regarding the social and cultural importance

attached to a strong sense of locality and identity. A key factor in this is the retention of distinctive regional historic building styles – the diversity of which characterises much of Wales's historic environment. Dramatic castles, austere chapels, timber-framed wattle and daub farmsteads, thatched crogllofts, medieval halls with hammer-beam roofs, and the numerous, but often undervalued, 19th- and early 20th-century workers' houses and industrial buildings all contribute to the unique character of the quintessentially Welsh built environment.

The uncertainties of past politics and the often rugged Welsh terrain mean that much of Wales's vernacular architecture is quite different from its English counterparts in the west and north of the country. Evidence of cross-border trading, and indeed movement of the border itself, can be seen in the architecture on the east. A shallow scratch under the surface reveals considerable variation in local methods and materials of construction and craft styles – offering an insight into the unique skills of the generations of craftsmen who have left this rich legacy.

2.1.1 Repair and Maintenance

The repair and maintenance of such distinctive historic properties within their local context is of particular importance. Disused buildings and those facing an uncertain future are often highly

regarded elements of the local landscape and have a significance that goes far beyond their original uses. It is therefore important that positive and alternative uses are found so these buildings can be integrated with sensitivity and care to complement the modern built environment. However, public support and enthusiasm must continue to be backed by appropriate listed buildings legislation and planning control to afford protection to the historic environment and maintain the integrity of historic properties in their local context.

The new Welsh Assembly Government actively supports the historic environment through its division Cadw and the Royal Commission on the Ancient and Historical Monuments of Wales. In addition, it has recently established the Historic Buildings Advisory Council as its primary counselling body on all matters relating to historic buildings in Wales. This has the direct aim of helping to safeguard and promote this rich resource for the benefit of present and future generations.

2.2 The Need for Traditional Building Craft Skills

Wales is famous for the rich diversity of its built heritage, the beauty of its landscape and wealth of its raw materials, many of which have historically been used in

construction – from the Preseli bluestone used in the creation of Stonehenge and the slate of Snowdonia that provided so many roofs throughout the UK, to the abundant natural materials, such as iron ore, thatching reed, timber and lime.

Historically these and many other local materials were used by skilled local and peripatetic craftspeople to construct the vast array of buildings needed in the past. In addition to the repair and maintenance of pre-1919 buildings, there are examples where such materials are undergoing a renaissance on new-build sites. Concerns about global warming, the desire for green workspaces and the development of a sustainable economy and reduced carbon footprint are all adding to the need for a well-trained workforce, skilled in traditional building crafts with knowledge of local methods and materials. Valuing and passing on these skills has a dual value today – historic buildings and sustainable new-build projects.

Although Wales can boast a high degree of multi-skilling in the general trades within the construction workforce – and there is evidence of some on-the-job training and experience in traditional building skills, particularly in rural areas – there is an acute shortage of coordinated training provision and skills development and new entrants to the built heritage sector.

There is little or no opportunity to gain an understanding of the fundamental principles of conservation which are needed to maintain and repair the historic building stock. Although there are a small number of specialist

conservation firms working in Wales, most of the market is covered by the main industry where specialist skills have been in steady decline. Those craftspeople with the necessary skills are overstretched and are often unavailable, leaving the stockholder to compromise by using inappropriately skilled contractors or face significant delays to, and increased costs for, the required work.

Upskilling within the mainstream workforce in Wales to accommodate the needs of the historic building market is of particular importance, but in comparison to the situation in England, the market for traditional skills is not widely recognised. Also, while most professionals tend to engage a small circle of local firms and thus develop the local skills base, larger, more prestigious and generally more visible conservation projects often use larger firms from outside Wales.

Private stockholders living or working in vernacular buildings are less likely than the owners of higher-status buildings to have access to funding to employ craftspeople working within specialist conservation firms. While many of the small rural firms in Wales are frequently able to offer more traditional skills expertise than many of their English counterparts, most work in a limited geographical area and do not advertise as heritage specialists.

The UK and Welsh Assembly Governments, professional bodies, ConstructionSkills and the Heritage Lottery Fund agree on the need for improvements in the built heritage sector in Wales. As traditional

*There'll be a time
when no-one will be
able to work on these
buildings and we are
very close to this
now.*

Building Control Officer

*The difference is that
a craftsman has
traditional skills in
say slating, lead-
work, etc whereas a
modern builder
installs factory made
products and has no
need to adapt or
change them.*

North Wales Lead roofing contractor

building craft skills are a limited resource, skills shortages and skills gaps exist regarding repair and maintenance of the 500,000 pre-1919 buildings, including the 29,861 listed buildings in Wales. Stonemasons, lime plasterers, lead-workers, joiners are considered to be in short supply. Without intervention, these shortages

within the skills base may have disastrous consequences in the foreseeable future.

In 2002 the Welsh Assembly Government and the National Trust co-hosted a major conference, *An Asset for the Future*,¹¹ in Cwmaman to examine the challenges and social and economic advantages that could

be derived from a well-managed and well-cared-for historic environment. Following the conference the Welsh Assembly Government launched a consultation document in March 2003 on the historic environment in Wales – *Review of the Historic Environment*¹² – which highlighted some of the ongoing concerns regarding traditional building craft skills and materials.



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2.3 Shortages

The construction industry in Wales now employs 99,200 people¹³ (7.6% of the economically active population of 1.3 million¹⁴). Small firms that work across the full range of new-build, repair, maintenance, and improvement (RMI) and the built heritage sectors are dominant.

As in the other UK home countries, the choice of a career in construction is often informal and dictated by personal local networks. Training is generally achieved on the job, and employers have neither asked for nor encouraged formal qualifications, resulting in a low proportion of the workforce being qualified.

Employment within the construction industry is generally undertaken via short-term contracts on a project-by-project basis. On large projects and in urban areas it is usual for each project to be led by a main contractor with subcontracted specialists. On smaller projects and in the more rural areas of Wales where a multi-skilled workforce is the norm, a single contractor will undertake an entire project.

The use and continued development of modern methods and materials within the mainstream construction industry has led to the traditional

building sector becoming ever more isolated. This has introduced challenges to the protection of historic buildings, unforeseen 50 years ago, and compromised both the traditional building craft skills base and availability of training. The lack of a suitably qualified and experienced workforce is of particular importance in Wales, where the proportion of pre-1919 buildings at one-third of the total building stock is higher than in England and Scotland.

While the general picture of skills shortages and skills gaps has improved within the mainstream construction industry, many companies are still experiencing recruitment and retention problems. Such shortages

are even more acute in the built heritage sector, with firms often working at full capacity, and builders report an even greater problem with skills gaps (deficits in the knowledge and competence of existing staff) than skills shortages, although both are a cause for concern. For those considering a career in construction, finding employment in the mainstream building industry means that many do not consider a career path in traditional building skills.

2.4 Skill Sets

The second half of the 20th century saw a rapid move away from the more labour- and skills-intensive traditional methods of construction. Local vernacular

styles – which developed from the use of local materials by local craftspeople – were replaced by more homogeneous country-wide styles and utilised off-site technology to produce prefabricated structures that require a very different skill set. The once common traditional building knowledge and skills – acquired and passed down from generation to generation – declined along with recruitment and retention to the construction industry in the latter part of the 20th century.

Although the techniques and craftsmanship employed in the new-build sector are often of high quality and provide underpinning skills for the built



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heritage sector, there are fundamental differences. The traditional building sector requires a sympathetic understanding of the original methods and materials, and an understanding of and regard for conservation principles. These different skill sets must be recognised, but the need for and value of vocational training and career routes are common to both sub-sectors of the construction industry.

Compared with England, much of the work completed on historic properties in Wales is still undertaken by general builders rather than specialist firms. This can be seen as a strength and a weakness, as many general builders, especially in rural areas, are often both sympathetic to and experienced at working on historic properties. However, these small multi-skilled workforces have little

or no formal training in, or understanding of, the use of traditional building materials and ethos required for this work. This is compounded by the under-provision in current construction courses for traditional building skills training, and the economic realities of running a small business mean that trades/craftspeople are often unaware of or unable to attend training opportunities as they arise.

The inappropriate use of modern materials on pre-1919 buildings and the resultant damage to Wales's built heritage is also of real concern. With its unique mix of larger modern firms in urban areas and the multi-purpose and multi-skilled workforce prevailing in the rural areas, Wales provides the ideal opportunity to integrate traditional building skills into mainstream training and skills development, rather than treating these as separate entities.

2.5 Current Context

Concern for the future of the historic building stock has been steadily growing since the 1990s. Research undertaken between 1996 and 1999 highlighted sector skill shortages, skills gaps and problems in training provision across the whole heritage sector, including building skills, which was collated in the report *Sustaining Our Living Heritage* (Heritage Lottery Fund, 2000). Other UK reports which highlighted traditional building skills shortages were:

- *Power of Place* (English Heritage, 2000)
- *The Historic Environment: A Force for Our Future* (Department for Culture, Media and Sport, and Department for Transport, Local Government and the Regions, 2000)
- *Foresight Report* (CITB-ConstructionSkills, 2002)
- *State of the Historic Environment* (English Heritage, 2002).

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

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

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

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

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

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

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

In the six years since the *Sustaining Our Living Heritage* report much has been accomplished, and further reports have highlighted the need for and measures used to improve traditional building skills training and development, such as:

- *Heritage Counts (State of the Historic Environment reports) (2005, 2006)*

- *Review of the Historic Environment in Wales (2003)*

- *Welsh Heritage Protection Review (2006)*.

The *Review of the Historic Environment in Wales* consultation document summarised the situation as of 2003, and was a driver for change particularly with respect to identifying the key role of ConstructionSkills in promoting practical training in traditional construction skills, and the technical and supervisory/management skills needed in the heritage sector to ensure the future survival of the historic built environment (review and results of the consultation available at www.cadw.wales.gov.uk).

The NHTG *Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge – Skills*

Needs Analysis of the Built Heritage Sector in England, 2005, of which this report is the direct Welsh equivalent, has since led to a number of initiatives:

- Training the Trainers programme established to increase FE college lecturers' skills and knowledge of conservation and restoration, and to provide them with teaching support material

- Traditional building skills groups being established in each of the nine English regions to share ideas and best practice, and to respond to regional differences and create a national and regional training network. This is a partnership of training providers, contractors and sole traders, trade federations, enterprise agencies, specialist societies, voluntary organisations and heritage clients to establish region-wide traditional building skills training and development.

2.6 Drivers for Change

In addition to the UK-wide drivers for change outlined in the English report, there are a number of drivers specific to Wales which set the context for this skills mapping research and the Skills Action Plan (Section 10).

2.6.1 People, Places, Futures: The Wales Spatial Plan (November 2004)

Setting out the direction of travel for Wales for the next 20 years and describing what is required for a sustainable spatial development, this plan has five guiding themes:

- Building sustainable communities
- Promoting a sustainable economy
- Valuing our environment
- Achieving sustainable accessibility
- Respecting distinctiveness.

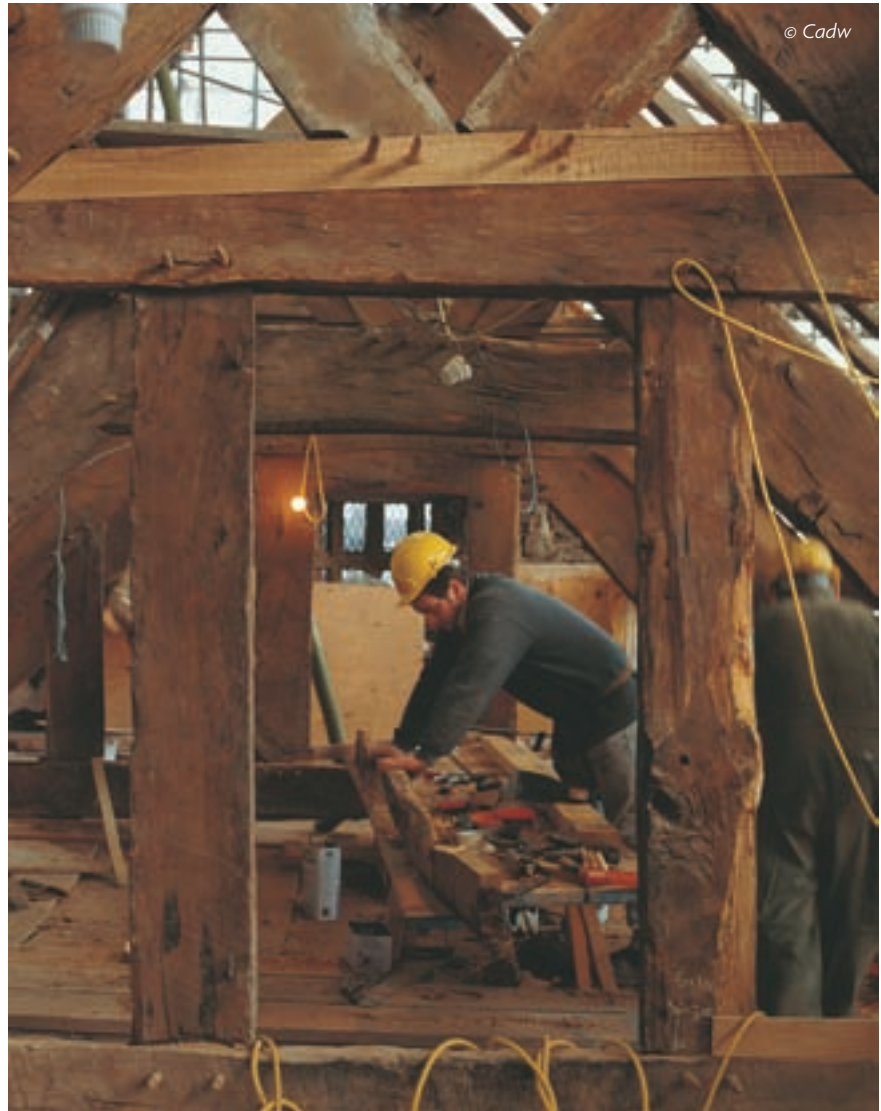
As well as these vital principles for all of Wales, each theme has a unique regional vision. It goes well beyond ‘traditional’ land-use planning and sets out a strategic framework to guide future development and policy interventions, whether or not these relate to formal land use planning control, and considers what can and should happen, and where. It also investigates the interaction of different policies and practice across regional space, and sets the role of places in a wider context.

The need to improve traditional skills training and provision within the construction industry and built heritage sector fits within the objectives of the Wales Spatial Plan, especially key elements defined in the Skills and Employment Action Plan and the section outlining the importance of distinctiveness.

2.6.2 ‘A Winning Wales’: The National Economic Development Strategy of the Welsh Assembly Government – Refresh (April 2004)

The strategy provides a route map to deliver a dynamic, prosperous Welsh economy that is inclusive and sustainable, and based on innovative businesses supported by a highly skilled, well-motivated workforce. The Welsh Assembly Government’s economic development strategy specifically states:

“We need to develop Wales as a country committed to lifelong skills development and learning and where the capacity of individuals, businesses and communities to acquire, adapt and apply knowledge is continuously improving. We have to start by ensuring that all of us have the essential skills needed to engage in,



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and achieve maximum benefit from, lifelong learning.”

2.6.3 ‘Achieving Our Potential’: National Tourism Strategy (2000–13)

The strategy emphasises the need for the development and promotion of tourism to be based on Wales’s quality and distinctiveness. Sustainability is one of the four central themes of Achieving Our Potential, which recognises that the scale, pace and character of development must be carefully controlled in order to safeguard Wales’s environmental, historical and cultural assets. The future challenge is to realise the

full potential of Wales’s unique qualities and tourism assets in a sustainable way.

2.6.4 Stone in Wales: Materials, Heritage and Conservation Conference 2002

The conference agreed that a permanent forum through a dedicated website should be established to raise awareness and share skills and knowledge on the use and source of building stones and the application of technology. The papers from the conference were published by Cadw in 2005.

2.6.5 Lantra Initiatives

In Wales Lantra (Sector Skills

Council for the Environmental and Land-based Sector) funds a number of initiatives within the rural communities to encourage upskilling in traditional skills and best practice in the built environment repair, renovation and maintenance markets. Lantra is also driving the new skills and business development agenda for the environmental and land-based sector, which includes much of the rural built environment.

2.6.6 The Objective 1 Programme

The Objective 1 Programme, one of three programmes set up by the European Union to help reduce differences in social and economic conditions within Wales, is aimed at areas where prosperity, measured in gross domestic product is 75% or less of the European average.

The priorities of the programme include:

- Improving the competitiveness of the region, through the acquisition and use of knowledge via the creation of a culture of innovation, and development of a greater number of higher level skills to support innovation
- Community economic regeneration, through targeting local, community-based action in the most deprived communities to increase skills and employability, and to improve conditions for business
- Developing people, by helping unemployed and economically inactive people into sustainable employment, preventing others drifting into long-term unemployment, promoting equality of opportunity and helping to prevent social exclusion. Activities under this priority should seek where possible to add value to and complement Welsh Assembly

Government and UK-wide employment policies

- Rural development and the sustainable use of natural resources, through combining a healthy, well-managed rural environment with economic productivity and viability
- Strategic infrastructure development, aiming to secure additional investment and employment for the less developed parts of the region by promoting area-based business investment, supported by key infrastructure improvements.

2.6.7 Heritage Lottery Fund Traditional Building Skills Bursary Scheme

An important development is the award by the HLF of £900,000 to a partnership between English Heritage; the National Trust; Cadw; Welsh Assembly Government; ConstructionSkills and the NHTG to deliver a £1.2 million Traditional Building Skills Bursary Scheme for England and Wales. Funding is available from 2006 to 2010, but it is expected that the scheme will be sustained beyond this date.

The aims of the scheme are to address skills shortages and skills gaps and increase diversity through offering bursaries to encourage applications from people who are currently under-represented. Craftspeople, trainees and career changers qualified to NVQ Level 3 or equivalent and above will gain valuable work-based training, develop existing skills or improve their knowledge and gain experience of conservation and repair of historic buildings, structures or sites.

A range of public and private providers will offer placements, with supervision provided by experienced craftspeople, and will supplement

training gained at college. The scheme will fund 80 variable-length work placements, comprising 16 placements of one month's duration, 48 of three to six months' and 16 of six months' to two years'.

This is a much-needed boost to support trainees to obtain essential practical experience on live projects, and the placement providers will also benefit from having their own employees train as bursary-holders. It is also an excellent means of raising skill levels within the built heritage sector and could enable existing tradespeople in the new-build sector to transfer to the heritage field by providing them with further training.

The financial support from the HLF shows its commitment to act upon the findings of its own report of 2002, *Sustaining Our Living Heritage*, and encourages employers to acknowledge the lack of available training and education. The Traditional Building Skills Bursary Scheme is an important step in ensuring that the threatened building conservation skills and a trained workforce to use them do not disappear.

2.6.8 The Welsh Historic Environment Position Statement 2006

In 2006, the Assembly Government promised to produce an annual statement on the Welsh historic environment. The report concentrates on the activities of the Assembly Government's historic environment bodies Cadw, the Royal Commission on the Ancient and Historical Monuments of Wales, the Historic Buildings Council and the Ancient Monuments Board, both of which have subsequently become advisory

panels. In the coming years the Assembly Government will consider, with its advisers, how the scope and content of the report might be widened to encompass the historic environment as a whole. (See www.wales.gov.uk)

2.6.9 ConstructionSkills and Cadw Sector Skills Agreement

ConstructionSkills and Cadw have worked together informally for several years to strengthen the relationship between the new-build and built heritage sectors of the construction industry in Wales. Repair and maintenance account for 36% of the Welsh construction industry, yet virtually all the industry is trained in new-build technologies. A challenge therefore exists to ensure that the construction industry is better prepared to carry out the full range of effective repair, maintenance and improvement work.

As conservation is part of the RMI sector of the construction industry, the link between these organisations provides a mechanism for developing common strategies, initiatives, and the exchange of research and information. The main shared objective, however, is to address existing traditional building labour and skills shortages and to improve recruitment, training and career development for trades/craftspeople working within the historic environment.

ConstructionSkills and Cadw will shortly sign a Sector Skills Agreement, to reflect the shared goals of both organisations in establishing sustainable strategies for training and skills development for traditional building crafts within the historic environment. This will formalise the collaboration between

both organisations, and the recommendations in Section 9 of this report and the Skills Action Plan in Section 10 will be used to influence future training and development in traditional building skills.

2.7 Material Supply Chain

The availability and use of the correct methods and materials are essential for conservation, repair and maintenance of traditional buildings. Aligned to this is the need for an understanding of the performance of the original materials and using like-for-like for repair or replacement to ensure functional and aesthetic compatibility. The survival of a large proportion of the pre-1919 building stock reflects the excellent life-cycle and whole-life costs of the original materials of construction (often well in excess of 100 years), and demonstrates their economic viability and sustainability.

Natural materials such as slate, stone, lime, thatch and timber are needed to properly conserve, repair, maintain and preserve our pre-1919 buildings. This requires not only a suitably trained and experienced workforce, but a well-developed traditional building materials supply chain to match the supply and demand for traditional building skills. Manufactured replacement elements should where possible match the original in terms of design and composition, but suppliers of some of these in Wales are either in short supply or no longer exist.

The training and skills development needs of the built heritage sector must incorporate the need for sufficient future traditional building skills and materials within the construction industry. This applies particularly to meeting the

needs of the historic building stock, but also relates to those required to construct new buildings using traditional methods and materials.

RESEARCH OBJECTIVES AND METHODOLOGY

3

- 3.1 Research Objectives
- 3.2 Research Methodology
- 3.3 Quantitative Research
 - 3.3.1 Geographical Boundaries
 - 3.3.2 Stockholders
 - 3.3.3 Contractors and Trades/Craftspeople
 - 3.3.4 Manufacturers and Suppliers
 - 3.3.5 Building Professionals
- 3.4 Qualitative Research
- 3.5 Interpretation of Results

research objectives and methodology

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

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

3.1 Research Objectives

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

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

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

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

within England. Similarly, the NHTG *Skills Needs Analysis of the Built Heritage Sector in Scotland* report (*Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge*, launched in January 2007) contained a Skills Action Plan that is currently being delivered in Scotland.

The present NHTG report for Wales complements the English and Scottish skills needs analyses with the following objectives:

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

The brief of this report mirrored that of the previous English study but

delivered a more substantial assessment of material supply chain issues and their attendant skills needs through its detailed survey of manufacturers and suppliers of traditional building materials. This is also linked to the views of professionals (architects and building surveyors) regarding materials and skills specifications for traditional building projects (see Section 7).

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

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

- To fully take into account the extent of the conservation repair and maintenance market in Wales
- To identify areas of recruitment difficulty and the location and skill



gaps in training provision and the associated reasons

- To take into account the current and future skills and learning agenda, coupled with current and future developments in the traditional building and construction industry repair and maintenance sectors

- To create an effective mechanism of consulting with, and evaluating the views of, employers, manufacturers, suppliers, training providers, clients and the relevant professions, and establish a database to help follow-up surveys

- To align with the CITB-ConstructionSkills Sector Needs Analysis Report on the construction industry.

The researchers were also required by the NHTG to ensure that the findings and conclusions of the

research would present the current situation to help analyse future trends and opportunities. This would assist further development of training and qualifications to meet the needs of the industry and inform the work with employers over the next three to five years.

3.2 Research Methodology

This Skills Needs Analysis was commissioned by the NHTG in March 2006 and involved both primary (qualitative and quantitative) and secondary (desk) research.

To maintain consistency with the other UK home countries, the methodology for this report was guided by that used in the English and Scottish research, and continued the additional focus on

the supply and manufacture of traditional building materials and the views of building professionals that the Scottish research introduced. This took into account the need for careful regard for the particular Welsh political, legal, geographical, educational and cultural context.

While secondary sources, such as the Welsh House Condition Survey and ConstructionSkills data on the UK and Welsh construction industry, were used, the emphasis was on primary research. As this was the first ever analysis of this sector in Wales, the main aim was to establish a clear picture of the current situation regarding traditional building skills. This was achieved through structured quantitative telephone interviews with key

stakeholder groups, and in-depth face-to-face interviews with a broad range of key stakeholders.

Understanding the views of all the stakeholders and identifying commonalities and differences is vital in having a positive impact on the future training and skills development for this sector, as outlined in the Skills Action Plan in Section 10.

3.3 Quantitative Research

A series of standardised questionnaires was devised by the researchers, with guidance and input from the steering group, for each of the stakeholder groups:

- public and commercial stockholders
- private stockholders
- contractors
- building materials manufacturers and suppliers
- architects and surveyors
- training providers

The quantitative survey of 459 individuals (Table 1) was carried out between June and October 2006 using trained interviewers and a standard format to ensure consistency of interviewing and recording that conformed to the code of conduct for researchers.¹⁵

In total 414 telephone interviews were undertaken with contractors, professionals, training providers, manufacturers and suppliers, and public and commercial stockholders. The 45 interviews with private stockholders were undertaken in person by senior members of Enterprise Planning & Research's Welsh field interviewer resource.

All survey data is affected by sampling variability. This depends on two factors:

- the size of the sample (not on the size of the universe, except for very small samples); the error is inversely proportional to the square root of the sample, so that to improve accuracy by a factor of two it is necessary to increase the sample size by four
- the percentage level in the data, that is, a result of 10% or 90% has a lower range of errors than does a value of 50%

The size of sample for any one survey depends on the level of accuracy required balanced against the available budget, and in this case a total sample size of 450 was chosen. In this survey the total number of interviews has been split between the various different stockholder groups.

Levels of statistical reliability covering the broad range of individual sample sizes within the research are shown below.

Sample size	Accuracy (%)
50	± 8.3–13.8
100	± 5.8–9.8
200	± 4.2–6.9
300	± 3.4–5.7
500	± 2.6–4.4

3.3.1 Geographical Boundaries

The regions referred to in this report are shown in Figure 1.

3.3.2 Stockholders

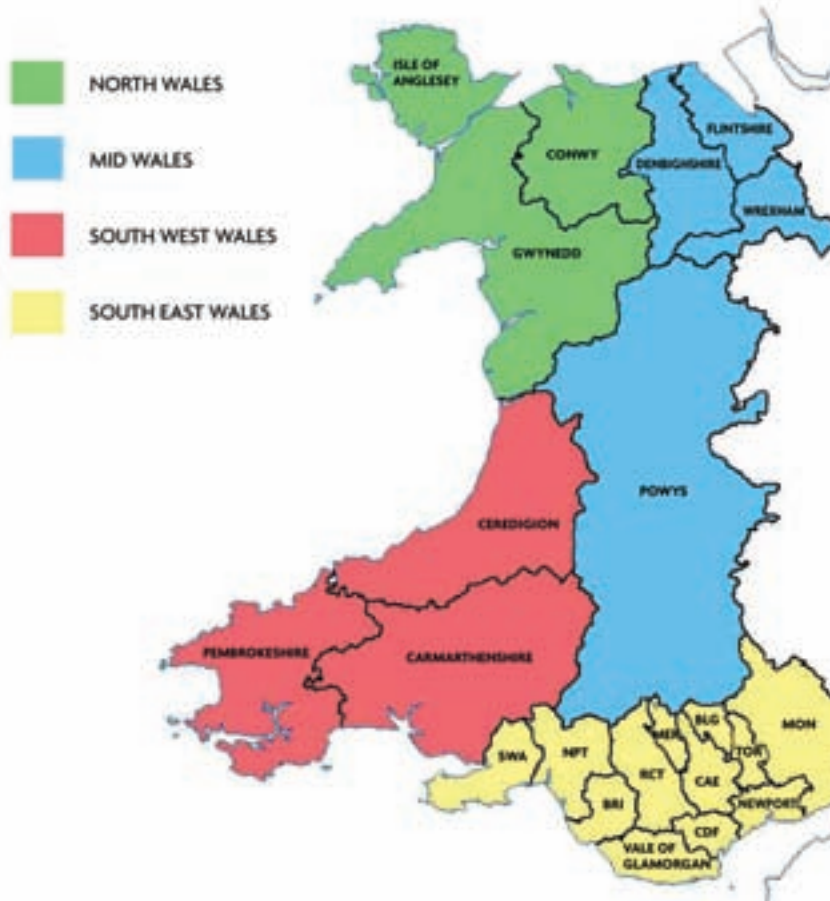
Of the 44 public and commercial stockholders, 11 are based in the north, 12 in mid-Wales, 10 in the south-east and 11 in the south-west. All public and commercial stockholders were sourced by desk research, and all were screened to ensure they had undertaken work on pre-1919 buildings in their care in the 12 months prior to the study.

In addition 45 private stockholders were interviewed, 15 each in mid-Wales (Denbigh), the south-west (Ceredigion) and in the valleys of south-east Wales. The intention among the private stockholders was to gain an understanding of

Table 1: Quantitative Interviews by Region

Stakeholders	Number of Interviews				Total
	North Wales	Mid-Wales	South-East	South-West	
Architects	5	4	19	12	40
Surveyors	2	4	5	2	13
Contractors	59	51	89	62	261
Building materials manufacturers and suppliers	5	8	15	8	36
Public and commercial stockholders	11	12	10	11	44
Private stockholders	0	15	15	15	45
Training providers	3	4	10	3	20
Total	85	98	163	113	459

Figure 1 Welsh Regions as Defined by the Scope of this Project



the behaviour and attitudes of homeowners in areas broadly representative of pre-1919 Welsh housing stock. Completion of work on their homes was not a prerequisite for inclusion in the study, as the objective was to set the expenditure of those undertaking work on their homes into a broader context.

The key focus within both groups was to establish their average annual spending on their properties, with additional investigation of their experiences and practices with respect to contracting trades/craftspeople. Further details of each sample group can be found in Section 4.2.

3.3.3 Contractors and Trades/Craftspeople

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

Of the 261 companies surveyed, 69 were sole traders by the definition of the term used in this report, a firm comprising one or two individuals including proprietors, directors and/or employees. In this report the term 'sole trader' does not refer specifically to firms

legally defined as such (that is, with personal liability for their business).

In total 238 respondent firms were obtained from the CITB-ConstructionSkills Levy Register, 18 from the Federation of Master Builders, 1 from the National Federation of Roofing Contractors and the remainder from *Yellow Pages*. The latter sources extended coverage to the smaller firms not subject to the levy.

As in the Scottish research, it was a condition of the survey that the firms interviewed should have done some work on pre-1919 buildings in the previous 12 months. Unlike the English report, which set a minimum of 10%, no ceiling was set on the percentage of their work on such buildings to qualify for this survey. This was primarily to ensure that the research covered a representative cross-section of those working on pre-1919 buildings, not just the conservation specialists.

3.3.4 Manufacturers and Suppliers

A total of 36 building material manufacturers and suppliers were interviewed, including 20 joinery manufacturers, 13 stone and slate suppliers/manufacturers, a brass firm, a lime firm and a glass firm.

3.3.5 Building Professionals

An important element of the research was to establish the working practices of building professionals, especially architects and building surveyors, in relation to pre-1919 buildings. While in general the onus for skills and training development in the construction industry rests with contractors, it is also essential to understand how their working practices and resultant skills needs

Table 2: Qualitative Interviews by Region

Stakeholders	Number of Interviews				Total
	North Wales	Mid-Wales	South-East	South-West	
Architects/surveyors	1	2	1	1	5
Conservation officers	1			1	2
Contractors	2	2	2	2	8
Sole traders	1	1	1	1	4
Building materials manufacturers and suppliers	1	1	1		3
Public and commercial stockholders, incl. grant bodies	1		2	1	4
Private stockholders	1		2		3
Training providers	1		1		2
Total	9	6	10	6	31

are affected by professionals' specifications and supervision.

The 40 architects and 13 surveyors interviewed were all members of the Royal Society of Architects in Wales or the Royal Institute of Chartered Surveyors respectively. In order to obtain a representative sample, those promoting themselves as conservation or heritage specialists were not targeted. Rather, all respondents were screened to ensure they had been involved in managing building works affecting the fabric of pre-1919 buildings in the previous 12 months.

3.4 Qualitative Research

Qualitative research was undertaken prior to the quantitative survey in order to gain a thorough understanding of the issues involved and to guide the development of the quantitative questionnaires. In addition, numerous individuals were consulted on an ad hoc basis throughout the research period, providing invaluable further information.

The original specification for 31 face-to-face interviews is shown in

Table 2: all were undertaken by senior EPR executives and, where appropriate, Welsh language associates. Interview duration ranged from an hour to half a day. In addition, following comments made during these interviews, a further study of qualitative work comprising two personal and three telephone in-depth interviews was undertaken with local authority building control officers.

3.5 Interpretation of Results

The results of the quantitative research summarised in this report are mostly presented in the form of the proportion (i.e. the percentage) of respondents giving each answer. Unless stated otherwise it should be assumed that the base for the table or chart is all respondents in the relevant chapter, that is, for architects and surveyors (Section 7) the 'all respondents' base comprises the 53 interviewed in the quantitative research. Where a question was asked of only a subset of respondents, the base is stated in both the commentary and any accompanying tables or figures.

In some cases a 'mean' value has been calculated and this is shown as an 'average' in this report;

wherever the word 'average' is used this signifies the arithmetic mean value.

Extensive use of rating scale questions has been made throughout the research to measure respondents' attitudes to various issues. In all cases a five-point scale has been used, where 1 is the negative pole/lowest value and 5 the positive pole/highest value. For each rating scale, mean scores have been calculated to aid analysis. On a scale measuring importance, for example, a mean score over 4 would signify that a particular attribute was important to the sample group as a whole; a score of 2 or less would signify that it was not important. A mean score of or around 3 indicates a broadly neutral response; this can be either because the majority of respondents have given a neutral response or because approximately even numbers have given answers at either end of the scale.

4

DEMAND FOR TRADITIONAL BUILDING SKILLS: STOCKHOLDERS

- 4.1 Pre-1919 Buildings in Wales
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demand: stockholders

This section of the report shows the actual demand for traditional building skills. Data sets were used from a number of sources to quantify the number of pre-1919 buildings in Wales.

Stockholders of historic buildings, that is, public and commercial owners and private dwelling owners, were interviewed to establish:

- Amount of money spent in the past 12 months and any predicted spend in the next 12 months on

conservation, repair, maintenance and restoration

- Which craftspeople or trades they had most used in the past 12 months and were most likely to use in the next 12 months
- Level of satisfaction on the quality of work and waiting time of the work to be undertaken.

This combined spend profile and specific skills used has been used to determine current and future requirements for traditional building skills in Wales.

4.1 Pre-1919 Buildings in Wales

The historic built environment is widely recognised as an important part of the nation's heritage. As at 5 January 2007, 29,869 buildings in Wales had listed (protected) status because of their importance to local and national heritage (source: Cadw). Buildings listed for

their architectural, historic or group value fall into three grades of listing:

- I Buildings of exceptional, usually national interest (491 buildings)
- II* Particularly important buildings of more than special interest (2,112)
- II Buildings of special interest, which warrant every effort to preserve these (27,258).

Listed buildings in Wales are predominantly domestic housing (46%), commercial (12%), religious (10%), agricultural (8%) or transport-related (7%) buildings, but cover a far wider range of building types from structures in gardens and parks to large industrial buildings.

However, listed buildings are a small proportion of the overall stock, which includes many non-listed properties that this report defines as heritage buildings by virtue of their being built prior to 1919. Indeed, a third of all housing stock in Wales (442,000 homes) is estimated to be pre-1919.¹⁶ This is a significantly higher proportion than in England or Scotland, where the comparative figure is around one-fifth.¹⁷ As in the complementary English and Scottish surveys, domestic housing is assumed to represent 89% of the built environment in Wales,¹⁸ implying a total of c. 497,000 pre-1919 buildings.

The historic built environment covers a wide range of property types:

- the monumental and well-known buildings, such as medieval castles and cathedrals
- the vernacular farm buildings and cottages, which are such a feature of the Welsh rural environment
- the many examples of predominantly 19th- and early 20th-century terraced houses built to accommodate the workers of the coal, iron and mineral industries



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- the accompanying industrial, religious and social buildings from the period when Wales was an industrial centre of global significance
- the Victorian villas, guesthouses and hotels built to accommodate visitors to the mostly seaside holiday destinations of the age
- the ruined remains of now incomplete buildings which are now regarded as ancient monuments, such as Tintern Abbey.

4.2 Survey Sample Overview

This report makes a distinction between public and commercial stockholders and private stockholders.

Public and commercial stockholders include local and national government, commercial and industrial concerns, and heritage organisations. In many cases a distinguishing characteristic is that the stockholder owns and maintains an estate of properties rather than just one. The National Trust, Cadw and a large commercial organisation with an estate of some 180 Welsh pre-1919 buildings were interviewed during the qualitative research. Distribution of the 44 public and commercial stockholders interviewed during the quantitative research was as follows:

- places of worship (20)
- hotels & restaurants (15)
- independently owned stately homes (5)
- public sector, i.e. housing associations, universities (4)

Public and commercial stockholders were drawn equally from the four regions and criteria for inclusion in the study was that the organisation concerned had undertaken work on pre-1919 buildings in its care in the preceding 12 months. In addition to

the stockholders mentioned above, a number of local authorities were also contacted. However, exploratory conversations revealed that these could not be included in the quantitative study because of the diversity of the estates in care, the number of different members of staff involved, different means of undertaking building work (contractors and direct labour forces) and the accounting systems in place.

Private stockholders are, by and large, the owners of the private homes that represent the vast majority of the built heritage stock in Wales. During the qualitative research, interviews were conducted with the owner of a Grade II listed building, the owner of a terraced home in a designated conservation area and the owners of 'typical valleys homes'. The quantitative survey of private stockholders involved 45 personal interviews with owners of pre-1919 homes in Cardigan, Denbigh and the south Wales valleys.

4.3 Ownership of Pre-1919 Buildings

4.3.1 Number of Buildings Owned

Not including those interviewed during the qualitative research, the commercial and public stockholders surveyed owned some 622 pre-1919 buildings. The vast majority of these, however, were owned by two housing associations (450). Excluding these two disproportionately large estates, the average public and commercial stockholder owned just over four pre-1919 buildings, but over one-third (16 out of 44) owned a single building, all being places of worship and hotels.

Cadw had an estate of 127 monuments in its care, while The National Trust had an estate of over 2,000 buildings, not including

We like the character and the history and the fact that we're preserving something for the future. It's also more spacious and more solid than an affordable new house.

Cardigan homeowner

tearooms and shops. This estate is very largely vernacular in character, having over 1,000 farm buildings in active use, more than any other region in England, Wales and Northern Ireland, and only 15 'mansions', which is fewer than any region except Northern Ireland. Over half of the Trust's properties have listed status or require statutory consent for work to be undertaken.

4.3.2 Types of Buildings Owned

Almost half of the public and commercial stockholders involved owned places of worship (20), with almost as many owning commercial buildings (18). Smaller numbers owned buildings used for residential (8) or public uses (7), while universities and owners of stately homes tended to have more diverse estates.

4.3.3 Conservation Value of Properties

Of the 44 public and commercial stockholders interviewed, 42 owned buildings subject to planning constraints and, as in Scotland, some 90% owned listed buildings, including 59% also owning buildings located in conservation areas.

Fewer buildings owned by the private stockholders interviewed were subject to planning protection, although the proportion of homes in designated conservation areas (20 out of 45) or

listed (3 out of 45) is higher than in the pre-1919 stock as a whole. Somewhat worrying is the fact that 16 of the 45 interviewed did not know whether they lived in a conservation area or not.

As shown in Table 3 the majority did, however, agree that their home is an important part of local heritage (MS 4.2), with 73% agreeing with this statement and only 9% disagreeing. Older homeowners (MS 4.5) and those from the ABCI social group (MS 4.6) tended to agree more strongly than other groups. Although the numbers involved in each location are too small for geographic cross-analysis to be statistically significant, it is interesting to note that those in the south Wales valleys were most likely to consider their home an important local heritage feature (MS 4.4).

The valleys benefit from a strong partnership project, Valleys Built Heritage, which aims to celebrate and assist in the preservation of the heritage of the area. Led by the Heritage Lottery Fund, the Valleys Built Heritage partnership has members representing Bridgend County Borough Council; Cadw; Cardiff City Council; ConstructionSkills; Civic Trust for Wales; Design Commission for Wales; Federation of Master

Builders; and the Royal Institute of Chartered Surveyors (Wales). For further information see www.myvalleyshouse.org.uk.

4.3.4 Benefits and Disadvantages of Living in a Pre-1919 Home

Practically all of those interviewed commented positively on living in a pre-1919 home, with some 30 different comments from 43 respondents. As shown in Table 4, the main comments were that older homes have character (40%), are solidly built (38%) and are comfortable and warm (27%). The traditional materials used were spontaneously mentioned by some 42% of respondents, including one-fifth overall espousing the benefits of the thick walls and 11% each referring to the stone fabric of the building or internal features such as fireplaces or banisters.(TABLE4)

Far fewer homeowners commented negatively about living in a pre-1919 house, with some 60% unable to mention any disadvantages. Two main issues existed among those mentioning disadvantages: firstly, the difficulty owners have experienced maintaining and looking after their homes; secondly, the layout of the property. Only two respondents considered lack of warmth to be an issue. When examined at an individual level,

Table 3 Extent to which Private Stockholders Agree That: My Home Is an Important Part of Local Heritage

'My home is an important part of local heritage'	%	MS
Agree strongly (5)	53	
Agree slightly (4)	20	
Neither agree nor disagree (3)	18	
Disagree slightly (2)	7	
Disagree strongly (1)	2	
Total	100	
Mean score (all respondents)		4.2

Base: all private stockholders (45)

comments concerning the difficulty of maintaining older homes demonstrate the extent to which both homeowners and builders have lost touch with the original materials and technologies that were employed.

The extent to which homeowners believe the benefits of living in a pre-1919 home outweigh the disadvantages is further evidenced by the fact that some 60% of those surveyed would choose a property of similar or greater age if they were to move, while only 28% would want something more modern.

4.3.5 Maintenance Approach

The value of undertaking regular repair and maintenance on historic buildings has long been recognised. Research findings in *Putting It Off*,¹⁹ published by Maintain Our Heritage, indicate that while the philosophy of regular repair and maintenance is well understood, it is very rarely put into practice. The result is that

stockholders are often faced with substantial repairs to correct problems which simple maintenance measures might have prevented. This is a problem for all building types. In the case of historic buildings there are not only financial costs, but also potentially cultural costs to be borne where the historic fabric of a building is damaged or destroyed as a result of lack of maintenance.

All stockholders were therefore asked whether their overall approach was to undertake routine planned maintenance on their pre-1919 buildings or whether they undertake reactive repairs and maintenance when problems arise. Overall, most public and commercial stockholders have only one strategy for maintenance, with roughly two-fifths each undertaking either regular planned maintenance or reactive repairs and the remaining fifth employing both approaches.

Very few of our buildings are original and they've been invested and reinvested since we started. So there's very little left which is an untouched example of 17th century craftsmanship. We're left with this legacy where you can see people have made mistakes in the past. We try to put those right, but it is a commercially driven investment and it is to make the pub a busier place.

Commercial stockholder

Table 4 Main Benefits and Disadvantages of Living in a Pre-1919 Home

	%
Benefits	
Traditional materials	42
Solid walls	20
Stonework	11
Original features, eg banisters	11
Character	40
Solid/well built	38
Comfortable and warm	27
Layout	20
Like older houses/dislike modern	18
History and heritage	11
None	4
Disadvantages	
Maintenance and upkeep	29
Layout	11
Cold/difficult to heat	4
None/Don't know	60

Base: all private stockholders (45)

Two groups are more likely to take a planned approach to maintenance: the first are those who have received grant funding, where regular inspection and maintenance is often a condition of the grant award; the second are those responsible for religious buildings that are often subject to quinquennial inspections, the five-yearly inspections of churches required under chapter IV.¹⁷ of the Constitution of the Church in Wales.

Reactive repairs and maintenance were the norm for private stockholders, although some 40% claimed to undertake a planned approach. There appears to be a socio-demographic aspect to this, in that men and those in the ABCI social group were more likely to claim a planned approach, whereas women, those in terraced houses and those in the C2DE groups were more likely to instigate work in response to problems.

4.4 Expenditure

4.4.1 Demand for Traditional Craft Building Work

This research has established that few, if any, stockholders collected or recorded 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 were involved. While some of the better-informed public and commercial stockholders might be able to provide a rough estimation of this, few of the private stockholders would know where to start. Given that 9 out of 10 buildings were private dwellings, insufficient information could be recorded from the stockholders to enable an estimation of the market size for traditional building work.

Indeed, even the major heritage organisations did not necessarily record the appropriate information. The latter might provide data on how much was spent on repair and maintenance and how much on major projects. However, they could not specify how much went on pre-1919 buildings and how much was on more modern buildings such as visitor centres, toilets and other facilities. In some instances non-building work, such as checking alarms and even grounds maintenance, fell within the overall repair and maintenance budget. In many cases repair, maintenance, restoration and conservation work formed only an unspecified part of a larger overall project, so it is not surprising that expenditure was not recorded separately for these items.

The following market size estimation is therefore based on information provided during the survey by the building contractors, as was the case in the Scottish research. The estimate has been calculated by combing information collected in the survey with published industry statistics as follows:

1. The proportion of respondents' work involving pre-1919 buildings is combined with the construction industry output figures for 2005:

$$X = a \times b \times c$$

where X is the market for building work on pre-1919 buildings in the 12 month period; a is the total output figure for the construction industry in Wales (constant 2000 prices); b is the proportion of output involving the repair and maintenance sector (0.40) (assuming repair and maintenance is the only valid sector for inclusion but that all such work is included); c is the proportion of work undertaken on pre-1919 buildings (0.43) (see Section 5.3.1 and assuming this figure is constant across all sizes of firm).

This calculation gives a market value, rounded to the nearest £1,000, of almost £511 million:

$$\begin{aligned} & \mathbf{£2,996,000,000 \times 0.40 \times 0.43} \\ & = \mathbf{£510,840,000} \end{aligned}$$

2. The proportion of builders not undertaking any work on pre-1919 buildings in the 12 month period then needs to be considered.

The £511 million figure is only valid if the builders involved in the study were interviewed at random. This was not the case because only those who had undertaken some work on pre-1919 buildings in the past 12 months were interviewed. In total 2,734 firms were contacted during the course of the research. Of these, 917 were screened out on the basis that they had not undertaken any work on pre-1919 buildings, and 261 were interviewed. The remaining 1,556 firms did not indicate whether they had undertaken work on pre-1919 buildings or not, and so are excluded from the market size estimation. Thus the proportion of builders screened out is built into the calculation:

$$X = a \times b \times c \times d$$

where X is the market for building work on pre-1919 buildings in the 12 month period; d is the proportion of builders undertaking work on pre-1919 buildings expressed as a proportion of all builders contacted (0.22), with a , b and c as before.

Thus a new market value of £112 million is estimated:

$$\mathbf{£510,840,000 \times 0.22 = £112,385,000}$$

3. The proportion of work on pre-1919 buildings involving traditional craft skills then needs to be considered.

The £112 million figure, however, does not represent the actual market for traditional craft building skills in Wales. Rather, it expresses



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the total value of the market assuming that all work carried out on pre-1919 buildings uses the traditional building craft skills and materials appropriate to each building. This then is the latent or potential size of the market, if all work is to be undertaken according only to heritage criteria.

When work is undertaken on pre-1919 buildings, however, the exclusive use of modern materials is more likely than the exclusive use of traditional materials (see Section 5.11.1). In order to get a more realistic value for the existing market for traditional building craft skills, the extent of using these for work on pre-1919 buildings therefore has to be taken into consideration.

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 pre-1919 buildings 25% involved only traditional materials, and 35% 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, giving a multiplication factor of $0.25+0.18=0.43$. Thus the market for traditional craft building skills is better estimated by the following calculation:

$$X = a \times b \times c \times d \times e$$

where X is the market for building work on pre-1919 buildings in the 12 month period; e is the proportion of work undertaken on pre-1919

It has character with beams and the thick walls. I love the way it's built on the rocks and that it is unique, not part of a development.

Cardigan homeowner

It's a sturdy old house and it's easy to maintain and easy to keep warm. Also it has character and there are no loose fittings or plasterboard as you would get in a modern house.

Denbigh homeowner

buildings involving only traditional or a combination of traditional and modern materials (0.43), with *a*, *b*, *c* and *d* as before.

The current market for traditional craft building skills in Wales is therefore estimated to be nearly £48 million:

$$£112,385,000 \times 0.43 = £48,325,500$$

There is therefore a huge gap between the potential size of the market, £112 million, and its true size in Wales today, £48 million. Also noticeable is the relatively small proportion of the total repair and maintenance market (£1,188 million at constant 2000 prices) that either figure represents.

4.4.2 Future Workforce Demand

As to estimating the future workforce demand for traditionally skilled tradespeople in Wales, this can be based on the following elements.

1. The value of the current market for traditional craft building skills. Utilising the same formula as discussed in Section 4.4.1, this stood at approximately £50 million in 2006 (at constant 2000 prices).

2. The changes to the output of the industry over the forecast period (in this instance from 2006 to 2011). These forecasts are made for the Construction Skills Network²⁰ approximately every six months and are based on a number of indicators of trends in the industry. As such, they are subject to some degree of fluctuation: the figures presented here are based on the forecast as of November 2006.

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

4. The annual employment stock for the traditional skills sector. The base used for this has been the workforce requirement for 2005, that is, 710. To this, estimated

inflows to that workforce must be added, and the outflows subtracted. These in turn are based on a number of variables. Outflow considers forecasts based on industry trends relating to factors such as retirement and moves to other industries within the workforce. Inflow considers those joining the workforce from unemployment, other industries, other sectors of the construction industry and so forth. National level industry forecasts have been used here rather than the inflow and outflow figures generated in Section 5.8 of this report.

5. The difference between the workforce requirement (demand) and the stock (supply) forms the employment requirement. As shown in Table 5, rising forecast output is not met by rising forecast employment stock, and therefore there is a positive additional workforce requirement for each year from 2007 to 2011. This requirement is cumulative: if not met within one year, it carries into the next, adding to the requirement for that year. By these calculations the cumulative demand for additional workers in the

Table 5: Demand for Additional Workers in the Traditional Building Sector in Wales, 2007–11

	CRM&I output (£m at constant 2000 prices)	Workforce requirement to meet demand (14.7 workers per £1m output)	CRM&I Employment Stock (including inflow and outflow in the labour market)	Annual additional worker requirement
2005	48.3	710	710	
2006	49.8	730	710	20
2007 (f)	49.6	730	710	20
2008 (f)	49.8	730	710	20
2009 (f)	52.5	770	710	60
2010 (f)	53.6	790	710	80
2011 (f)	55.3	810	710	100
2007–2011				280

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

Source: ConstructionSkills; Experian

Table 6 Annual Additional Training Requirements in the Traditional Building Sector in Wales 2007–2011

	Annual numbers requiring training
2006	70
2007 (f)	60
2008 (f)	70
2009 (f)	110
2010 (f)	120
2011 (f)	150
2007–2011	510

Note: Numbers are rounded to the nearest 10, (f) = forecast.

Source: ConstructionSkills; Experian

traditional sector in Wales between 2007 and 2011 is estimated to be 280, rising from 20 in 2007 to 100 by 2011. This implies an average of 55 each year for the next five years.

Additional workforce demand does not, necessarily, equate directly to the demand for additional training, as some of those joining the industry may be returning with relevant skills. However, because this is a demand additional to the existing construction workforce, it may be assumed that all, or virtually all, of those required will also need training, even if in some cases it is only top-up training. To that must be added the further training requirement within the rest of the inflow into the industry. A number of variables apply here, including trends relating to those numbers within the inflow that require top-up training as opposed to full training, according to where they are joining the sector from.

Table 6 shows the training requirement for 2007–2011 (assumed to be a combination of both those coming into the industry and those required owing to an increase in demand), with a total additional requirement for the period until the end of 2011 being 510 or approximately 100 per annum over the next five years.

Two caveats are in order here. Firstly, the numbers within the traditional sector, as opposed to the repair and maintenance sector as a whole, or the construction industry as a whole, is a notional figure, given the amount of fluidity within the industry as firms work across new-build and pre-1919 buildings with the same workforce. Secondly, 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 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 upskilling into traditional skills of the present workforce.

Notwithstanding these caveats, Section 8.2.4 of this report demonstrates that the Welsh FE colleges are currently delivering just nine trainees with a recognised conservation skills qualification per year. There is therefore a clear and immediate need for a greater level of traditional building craft skills training to meet the current

They are warmer and more solid than new houses and the stonework is valuable. There's also a community spirit unlike with new houses.

Valleys (Pontypridd) homeowner

The character of the houses and the Welsh stone, it's part of the community – they were built when the miners were here so it's an important part of our heritage.

Valleys (Pontypridd) homeowner

Table 7: Expenditure on Building Work: Private Stockholders

	Last 12 months		Next 12 months	
	%	£	%	£
£5,001+	11		9	
£3,001–5,000	13		9	
£1,000–3,000	18		20	
Up to £1,000	13		7	
Nil – no work undertaken/don't know	45		55	
Total	100		100	
Total expenditure		176,474		106,750
Average (all private stockholders)		3,922		2,483
Average (all undertaking work)		7,059		5,338

Base: all private stockholders (45)

needs of the industry and to safeguard the nation's heritage for future generations.

The forecast demand for 100 trainees per year for the next 5 years assumes that the current level of demand for traditional craft skills remains constant at c. 1% of total output per annum. As discussed in Section 4.4.1, this level of demand is considered low compared with the possible level of demand should a higher proportion of work on pre-1919 buildings involve traditional skills and materials.

Some of the qualitative respondents and the manufacturers (Section 6.6.6) consider that there has been, and will continue to be, increased public interest in the historic built environment and increasing demand for traditional craft building skills. Contributing factors include television programmes, such as BBC's *Restoration* and *A Pembrokeshire Farm*, HLF-funded initiatives such as Townscape Heritage Initiatives (THIs) and Valleys Built Heritage, and the growing international recognition of Welsh industrial heritage. It is likely therefore that demand for

traditional building craft skills will increase beyond overall industry growth levels. With it the demand for a properly skilled and trained workforce will also increase above the current level and above the level estimated in the above model.

Expenditure information provided by the stockholders is shown in sections 4.4.3–4.4.6.

4.4.3 Spending by Public and Commercial Stockholders in the Past 12 Months

Public and commercial stockholders were asked approximately how much they had spent on repair, maintenance, restoration and conservation work on their pre-1919 buildings in the past year.

Forty-three public and commercial stockholders provided a value for the work undertaken on their pre-1919 buildings in the 12 months prior to the study, which totalled £10.75 million. Across the 604 historic buildings owned by this group, this gives an average spend per building of c. £17,873. At individual respondent level, three respondents had budgets in excess of £1 million, but the majority spent far less, with half spending less than £50,000. On average the commercial sector and

the stately homes reported far higher expenditure than those caring for religious or public sector buildings.

Looking at the major heritage organisations, Cadw had a budget of £3.9 million during this period, of which it is estimated that £2.45 million can be attributed to work on pre-1919 buildings involving traditional building skills and materials. Some 70% of this £2.45 million is estimated to go on capital maintenance and development, with the remaining 30% being spent on current maintenance.

4.4.4 Private Stockholders' Expenditure in the Last 12 Months

As Table 7 shows, 55% of the private homeowners interviewed had undertaken building work in the previous year. The total value of this work was estimated at £176,474, ranging from just £10 up to some £80,000 at individual property level. Most building work undertaken in the past year was on relatively small projects, with 20 of the 25 respondents involved spending £5,000 or less and only 5 paying more than this. The resulting estimate of £3,922 average expenditure per stockholder is lower

than the £8,487 estimated in the comparative English research, but does take into account the 45% of stockholders spending nothing at all. Those in Cardigan and Denbigh were more likely to have undertaken work, and to have spent more money, than those in the South Wales valleys.

Respondents were asked what sorts of work they had undertaken, with their answers being classified into the two main categories: major projects or repair, maintenance, conservation and restoration (RMCR). The former, while possibly involving an element of traditional building craft skill and the use of traditional building materials, are more likely to involve mostly modern materials. The latter are more likely to feature the use of traditional building materials and craft skills, although this is not necessarily the case. Overall 36% had carried out major projects, with 40% having been involved in RMCR. As expected, a relatively high proportion of stockholders commented that the work had involved both elements (20% overall).

Looking at the major projects, hard landscaping was the most popular, mentioned by 7 of the 16 involved, followed by new kitchens (5), bathrooms (4) and the installation of UPVC replacement windows, doors or rainwater goods (5).

With regard to repair, maintenance, conservation and restoration work, masonry repairs to the walls of the buildings was a major concern, mentioned by 9 of the 18 respondents involved in this sort of work. The extent to which this work was appropriate for the buildings concerned or used traditional building skills is difficult to determine with job descriptions including the installation of a damp-

proof course and complete resealing of external walls.

Work to maintain existing doors/windows (7) and rainwater goods (6) is more encouraging from a conservation point of view, especially when one stockholder had reinstated cast iron rainwater goods. In addition, a variety of other types of RMCR projects were undertaken, with some involving inappropriate modern building work (for example a damp-proof course) or the removal or replacement of original materials.

The expenditure by stockholders totals £63,490 for major projects and some £112,984 for RMCR. The unexpectedly high figure for RMCR work is highly influenced by the out-of-proportion expenditure of £80,000 on just one home, £66,500 of this being on RMCR work with some three-quarters of the total (£60,000) being grant funding.

4.4.5 Public and Commercial Stockholders' Expenditure in the Next 12 Months

The projected expenditure for public and commercial stockholders in the 12 months after the survey was £6.5 million, substantially lower than for the previous 12 months. This is in part due to fewer very large projects, but it is also consistent with the English and Scottish research and the average projected spend per building being £10,832.

Cadw expected a similar overall budget in this period as for the last period, that is, c. £3.8 million in total, of which £2.45 million will go towards building work on its pre-1919 stock. The National Trust expected a similar level of expenditure in the future as at present, although with an increasing emphasis being placed on planned maintenance work.

*Everything falls apart,
the plaster is
crumbling. It needs a
lot of work to keep
up to scratch and
today's standard
doors don't fit.*

Denbigh homeowner

*It has taken a lot of
renovation and
nothing runs
smoothly when you
are doing any work
on it.*

Valleys (Pontypridd) homeowner



4.4.6 Private Stockholders' Expenditure in the Next 12 Months

As also shown in Table 7, private stockholders expected to spend a total of £106,750 in the 12 months after the survey, giving an average of £2,483 per home or £5,338 for each stockholder planning or expecting work.

The figures are lower than for the previous 12 months, reflecting both the reactive nature of much of this market (fewer expect to have to do work) and the lack of an equivalent to the single largest project undertaken in the previous 12 months. Again, those in the valleys were less likely to be planning work and to have the lowest predicted budgets.

Those planning major projects were most likely to be thinking of hard

landscaping (5), new kitchens (5), new bathrooms (2), extensions, loft conversions or conservatories (2), often in combination. Again, wholesale use of UPVC replacement windows, doors and rainwater goods (4) was planned.

A wider variety of RMCR work was also planned with masonry work again to the fore, with repair/maintenance of existing doors and windows, rainwater goods and the existing roof also predicted. Also in evidence was the replacement or removal of existing, possibly original, features.

More in line with expectations, the predicted average expenditure per building where major projects were anticipated was, at £5,800, twice that where RMCR work was planned (£2,684).

4.4.7 Outstanding Work

In addition to being asked the level of planned expenditure for the next 12 months, respondents were also asked whether there was any outstanding work that had been identified as necessary during recent quinquennial inspections or condition surveys and, if so, its value.

Over half of the public and commercial stockholders owned buildings subject to quinquennial inspections and/or condition surveys. As expected this is highly sector-specific; practically all of those responsible for religious buildings are included, as are all of those in the public sector, but none of the commercial stockholders are involved. None of the private stockholders owned houses subject to regular

inspections or surveys. All of the 24 stockholders concerned commented that the most recent survey had identified necessary work but in only 4 cases had this been completed.

Not all of those with outstanding work could estimate the cost of this but the answers of those that did answer varied from £3,000 to £2.5 million, and totalled £3.4 million. The largest outstanding repairs were reported by the public sector respondents, although in most cases, probably because of the number of properties involved, they were unable to provide exact values. Neither Cadw nor the National Trust could provide an accurate backlog figure for outstanding work.

4.5 Funding

4.5.1 Funding Sources

Cadw is the historic environment division of the Welsh Assembly Government, which provides grants for historic buildings. Grant is available for the conservation, repair and restoration of buildings of outstanding architectural or historic merit. This is restricted to the very best of Wales's historic buildings and mostly, but not exclusively, to the higher grades of listed building. Additionally Cadw provides conservation area grants for works (usually external works on a historic building) judged to make a significant contribution towards the preservation and enhancement of the conservation area in which the building is located. In the 2005/6 financial year it is estimated that grants to the value of £1.1 million were awarded for outstanding buildings, together with conservation area grants worth £230,000.

In the same financial year, Cadw also contributed £300,000 to the HLF's Townscape Heritage Initiatives alongside the HLF, the Welsh Assembly Government's Department of Enterprise, Innovation and Networks, local authorities and other funding partners. These schemes aim to regenerate historic areas of towns through historic building conservation, restore the built environment and provide an economic stimulus for commercial activity. As such, THIs mostly involve commercial rather than residential property and often include a traditional building craft skills training element. Town Scheme Partnerships are jointly funded by Cadw and local authorities and also aim to improve the visual and economic well-being of run down historic towns.

Cadw has a grant budget of £0.5 million available for work on scheduled ancient monuments not in its care, of which there are over 4,000 in Wales. While not all of this budget will go towards what this report regards as traditional craft building skills, a substantial proportion will, and a further proportion will be in related areas.

In addition to the grants that go directly towards building conservation work, Cadw also provides funding to voluntary organisations for projects that promote the historic environment. This can include literature, heritage trails, plaques and other initiatives, with a maximum of £2,000 available per project, which has to be matched by funds from the voluntary sector.

Finally, Cadw funds bodies such as the Civic Trust for Wales, the Association of Preservation Trusts, the Architectural Heritage Fund, the

We have insufficient budget to do as much as we would like to do, so it has to be managed carefully in terms of what we can do and when. Clearly there's a fair amount of fire-fighting that goes on. We prioritise work as A, urgently required, B, necessary and C is desirable. Inevitably most of the desirables won't get done, unless there are works going on under A in a particular site and it's convenient to do it at the same time.

Heritage Organisation

Friends of Friendless Churches, the Welsh Religious Buildings Trust and amenity societies to help support the work they undertake in conservation of the historic environment.

The *Heritage Lottery Fund* is a major source of funding in Wales and it has invested £72 million in grants to save, conserve and improve access to historic buildings in Wales. The HLF has various funds from which grants can be made to historic buildings, but the three main schemes relevant to the repair and conservation of historic buildings are heritage grants, Townscape Heritage Initiatives, and repair grants for places of worship.

During the 2005/6 financial year it is estimated that the HLF awarded grants in Wales to the value of £3 million towards historic buildings under the heritage grants scheme, £1.2 million worth of repair grants for places of worship and £2.6 million towards THIs. The HLF estimates that every £1 million of grant funding that it provides attracts a further £800,000 from other sources.

Regeneration Schemes are the third main source of funding, which come from many different sources both in the UK and from the European Union. The Architectural Heritage Fund²¹ considers that few if any such schemes include building conservation as a key objective and rather exist to stimulate the economic regeneration of a 'deprived' area.

Many of these include historic buildings, however, so that, providing a sound economic argument is put for restoring such building stock, these schemes can

provide a rich source of funding. Indeed the sums of money available are often considerably larger than those allocated purely on the basis of building conservation. The disparate nature of regeneration schemes means it has not been possible to estimate the value of conservation or repair undertaken to historic buildings during regeneration projects. (Details on obtaining funding for regeneration schemes are available on the Funds for Historic Buildings website, www.ffhb.org.uk).

Many other organisations exist which provide funds for work on historic buildings, and it is not possible to list these all in this report. Some are sector specific, for example, supporting religious buildings, and others essentially local, such as building preservation trusts and civic societies.

4.5.2 Grant Funding of Work Undertaken by Contractors

As Table 8 shows, 45% of all the builders interviewed during the survey have undertaken work which has attracted grant funding. These firms mentioned between one and two grant awarding bodies each, with local authorities by far the most widespread funding provider, mentioned by a third overall. However, the qualitative research in this survey indicated that few local authorities have set budgets for conservation work on historic buildings.

Similar comments were made by stockholders and building professionals, and it might be that because local authorities play a leading role in Townscape Heritage Initiatives and Town Scheme Partnerships the misconception arises that they are the major source

of grant funding, rather than other partners such as Cadw and the HLF.

It is also possible that the 'grants' are not for conservation work but for 'improvements', such as group repair, energy efficiency or improved disability access. Each of these latter types of grant could result in the replacement of historic building fabric with modern materials and a devaluing of the historic built environment where the work in question involved pre-1919 buildings. Typical examples might be the replacement of original sash windows with UPVC replacement units or the substitution of manufactured tiles for natural slate.

Cadw is the second most common source of grant funding, mentioned by 16%, with 8% and 7% respectively working on Townscape Heritage Initiatives and Town Scheme Partnerships. Larger firms are more likely to report work involving grant funding, and roofers and sole traders are less likely to undertake grant work than contractors. Those working with traditional building materials are more likely to mention grant-aided work than those not using these materials, indicating that grant assistance does result in their more widespread usage.

4.5.3 Grant Funding Received by Stockholders

As shown in Table 9, just over half of the public and commercial stockholders interviewed had received some form of grant assistance towards work on their historic buildings in the 12 months prior to the study. This is, however, more a reflection of the stockholders interviewed than an accurate representation of the

Table 8 Grant Funding of Work Undertaken by Contractors

	Wales (%)
Local authorities	31
Cadw	16
THI	8
Town Schemes	7
Other	5
No work involving grants	51
Don't know	4

Base: all contractors and sole traders (261)

overall level of grant funding in Wales. Some 18 of the 23 stockholders receiving grant assistance owned religious buildings, compared with 3 of the 13 in the commercial sector and 1 of the 4 in the public sector. Cadw is the donor most frequently mentioned (30% overall or 56% of grant recipients), followed by the Heritage Lottery Fund (16%/30%) and local authorities (14%/26%). Twenty other funding sources were also mentioned, the majority of them religious charities and organisations specifically supporting work on places of worship.

The grant awards themselves vary from the relatively small, under £10,000, to almost £1.5 million, and total £3.4 million. Most of the larger awards went to places of worship but the single largest award went to a stately home. Among respondents, grants had contributed on average 54% of the funding required for the work carried out in the previous 12 months.

With the private homeowners, grant funding for conservation work was less common, having been received by just 2 of the 25 respondents undertaking work in the previous 12 months. One had received a total of some £60,000 from the Welsh Assembly Government and the local

authority, and one had received over £15,000 from the local authority.

Among public and commercial stockholders, the time required for the grant process was the key factor dissuading grant applications, mentioned by three-quarters of those who had not received any funding. The administration required was regarded as a barrier by 56% of the same group, with just under half saying that conditions applied to grants were an issue.

Those public and commercial stockholders receiving grants were asked to what extent the same factors would discourage them from applying again in future. Timing was again the main concern, mentioned by 39%, with administration (22%) and grant conditions (26%) being lesser, albeit still significant, concerns. The views of the public and commercial stockholders on this issue are consistent with those expressed by the building professionals in Section 7.

The private homeowners not benefiting from grants awards cited conditions applied to the grant (30%) and lack of knowledge about how to apply (22%) as the main factors deterring applications, with timing (17%) and administration (13%) somewhat less important.

It takes too long, our process is pretty fast track and by the time they get round to opening the letter, we've virtually finished the job. So, unless we can afford to be very patient, we don't bother. And they tend to want you to do more than you're prepared to do, so you expand the scheduled works with no real benefit.

Commercial Stockholder

Table 9: Grant Funding Received by Stockholders in the Previous 12 Months

	Private Stockholders		Public & Commercial Stockholders	
	%	£	%	£
£1m+	0		2	
£501K–1m	0		2	
£101–500K	0		5	
£51K–100K	4		16	
£21K–50K	0		9	
£11K–20K	4		5	
£10K or less	0		9	
Don't know	0		4	
No funding received	92		48	
Total	100		100	
Total		75,514		3,375,947
Mean (per recipient)		na		160,759

Base: all public & commercial stockholders (44); all private stockholders undertaking work in last 12 months (45)

4.6 Building Contractors

4.6.1 Factors Affecting Contract Awards

As Table 10 shows, skill levels and work experience were the key factors by which public and commercial stockholders chose contractors to work on their pre-1919 buildings, with availability to start the work and cost also fairly important. Trade association membership/accreditation was important to some but not to others (MS 3.2), while formal qualifications and proximity to the work were the least influential factors. The views of public and commercial stockholders are consistent with those of the building professionals.

Private stockholders, meanwhile, had rather different priorities. While skill levels were the most important factor, their perception of skills was based on personal recommendation, with cost, availability and proximity to the work the secondary factors. A contractor's experience of working on old buildings was a much less important decision-making factor

for private stockholders than it was for either their public and commercial counterparts or the building professionals. Formal qualifications and trade association membership/accreditation were the least important factors.

Grant bodies are increasingly introducing an element of weighting to tender assessments so that cost is not the only criteria by which they can judge a tender submission. Other developments include the use of cost plus and target cost contracts where materials are purchased up front by the client organisation and the contractor then works for agreed labour rates. This system is thought to be particularly useful for conservation work where the extent of the work required can be unknown at its beginning.

4.6.2 Accreditation

Despite not rating trade association membership/accreditation as a key factor when awarding contracts, three-quarters of public and commercial together with two-thirds of private stockholders

would support the introduction of an accreditation scheme for trades/craftspeople with traditional building craft skills.

Nearly half of the public and commercial stockholders and the majority of private homeowners supporting an accreditation scheme would be prepared to pay a premium to use accredited tradespeople. Those in favour stated that they would pay an additional 10% in the private sector and maybe 10–20% in the public and commercial arena. Around half, however, would either not expect to pay a premium or could not put a value on this.

4.6.3 Profile of Contractors Used

Public and commercial stockholders predominantly used fairly local contractors for work on pre-1919 buildings, with over three-quarters using builders based within 20 miles of the property. The remainder were split equally between those using builders based 21–50 miles away and those employing contractors from farther afield. Those using conservation specialists

rather than general contractors were more likely to engage these from further afield. Some 40 of the 43 stockholders employing contractors employed Welsh firms, with eight using English firms, mostly for religious buildings.

As expected, the private stockholders used an even higher proportion of local firms, with 28 of the 30 answering employing builders from within a 20 mile radius of home and all 30 using only Welsh contractors.

Two-thirds of public and commercial stockholders interviewed used general building firms, with 20% mostly using conservation specialists and 9% using both. These figures are highly affected by the prevalence of stockholders of religious buildings, however, with 12 of the 13 respondents mentioning conservation specialists from this sector. The private sector is almost exclusively the domain of the general builder with only one homeowner out of 30 using a conservation/heritage specialist.

Cadw and the National Trust make extensive use of building

contractors to undertake work on their estates in care. For the most part the main contractors used are general contractors who either have the appropriate level of skills within the workforce to undertake conservation work or source this from specialist subcontractors. While the overall aim is to use Welsh firms to help sustain and develop traditional skills in the industry as a whole, some of the larger or more specialist jobs go to firms based in England. Contractors undertake in the region of 70% of the work to properties in Cadw's care and as much as 90% of the National Trust's work. The latter engages over 100 contractors in the course of a year, from small sole traders and small firms of maybe 10 contractors up to large firms of 100 or more employees.

4.6.4 Perceptions of Contractors Used

As shown in Table 11, public and commercial stockholders were generally satisfied with the quality of work undertaken on their buildings (MS 4.3) and the skill levels of contractors (MS 4.2), with only 2% dissatisfied on either factor. The majority were also satisfied with the time taken to start the work (MS

I should say as well we're also looking at different types of contract, cost plus and various types of target cost schemes, so we take the confrontational element out of contracting, particularly on conservation work where it's quality you want.

Heritage Organisation

Table 10: Importance of Factors Affecting Contract Awards (Mean Score)

	Public & commercial stockholders	Private stockholders	Building stockholders
Work experience on old buildings	4.5	3.9	4.5
Skill levels	4.7	4.7	4.5
Formal qualifications	2.7	3.2	2.4
Cost	3.9	4.2	3.8
Proximity to work	2.7	4.2	2.9
Trade association membership/accreditation	3.2	3.2	2.5
Availability to start work	4.2	4.1	3.7
Personal recommendation	na	4.6	na

Base: all public & commercial stockholders (44); all private stockholders undertaking/planning work (33).

1=not at all satisfied; 5=very satisfied

Table 11: Satisfaction with Contractors Used for Work on Pre-1919 Buildings

	Time to start the work	Time to complete the work	Skill levels	Quality of work
Public & commercial stockholders	3.6	3.4	4.2	4.3
Private stockholders	4.4	4.0	4.4	4.2
Building professionals	3.2	3.4	3.7	3.8

Base: all public & commercial stockholders (44); all private stockholders carrying out work in last 12 months (25); all building professionals (53).

1=not at all satisfied; 5=very satisfied

Table 12: Craft Skills Needed

	Public & Commercial Stockholders				Private Stockholders	
	Last 12 months		Next 12 months		Last 12 months	
	%	N	%	N	%	N
Carpenter	80		73		2	
Painter/decorator	77		80		11	
General craftsperson	77		73		2	
Joiner	64		61		7	
Plumber/lead-worker	64		48		4	
Glazier	61		52		7	
Stonemason	57		45		0	
Plasterer	45		48		2	
Roofer (general)	45		34		0	
Bricklayer	43		36		2	
Timber preserver	41		36		0	
Lime plasterer	36		27		2	
Tiler	34		48		0	
Roofer (random/natural slates)	30		23		4	
Blacksmith	27		36		0	
Stone fixer	23		18		0	
Roofer (metalworker)	23		14		0	
Cabinetmaker	20		30		0	
Drystone waller	20		23		0	
Wood machinist	18		16		0	
Stone carver	14		16		0	
Roofer (stone tiles)	14		7		0	
Steeplejack	9		9		0	
Fibrous plasterer	9		7		0	
Glass painter	9		7		0	
Gilder	2		16		0	
Wood carver	2		9		0	
Thatcher	0		0		0	
General builder	na		na		24	
DIY only	na		na		13	
No work in last 12 months	na		na		44	
Average number of skills used		9.5		8.9		12

Base: all stockholders: public & commercial (44), private (45)

3.6), although there was slightly less satisfaction regarding the time taken to actually finish it (MS 3.4). The private stockholders recorded higher levels of satisfaction on most measures, especially those relating to timing, perhaps as a result of the smaller scale of the work.<TABLE11>

Stockholders were generally more satisfied with the contractors they used than were the building professionals.

4.7 Skills Used

4.7.1 Craft Skills Needed

Table 12 shows the traditional building craft trades that stockholders used for work on pre-1919 buildings in the 12 months prior to the survey, and those that they expected to use in the 12 months following the survey.

The majority of public and commercial stockholders used carpenters and joiners, painters and decorators, plumbers/lead-workers, general craftspeople, glaziers and stonemasons in the last year. Over a quarter also used what have become regarded as more specialist craft skills such as lime plastering, timber preservation, random slating and blacksmithing.

There is considerable breadth in the number of different skills used, with each public and commercial stockholder using in the region of 9.5 different craft skills during the course of a year's work on pre-1919 buildings. Notwithstanding the dominance of listed religious buildings in the survey sample, some of the truly specialist conservation skills, such as gilding, glass painting and wood carving, were rarely used. Given the relatively small sample size and the

extent of undertaking work reactively, the forecast requirements for next year show that demand remains broadly consistent year on year.

The picture in the private housing sector is very different, however, and is dominated by the general builder (24%) followed by the work undertaken by the stockholders themselves (13%). Despite the high incidence of masonry-related work, only one specialist bricklayer was involved, with no stonemasons of any description being employed. Indeed, on average only 1.2 crafts/tradespeople were employed by private stockholders. Private stockholders could not comment on the trades they might need to employ in the future.

4.7.2 Skills Shortages

A third of public and commercial stockholders considered one or more traditional building craft trades hard to find. While some considered all trades difficult to source, the main trades mentioned in this regard were stonemasonry, carpentry and lime plastering.

In the private sector only general builders were considered hard to find, by about a quarter of those seeking them. Three-month waiting times for a contractor to become available were experienced in the following trades: general builder, painter/decorator, plumber/lead-worker and roofer (random/natural slates). A further five private homeowners commented that they had found it 'impossible' to find contractors to undertake certain work. Two had been looking for a plumber, one for a general builder and one for someone to repoint a stone wall, and the fifth homeowner had difficulty finding any type of contractor.

Thinking of the people I use here, the majority of them are general builders who've done work for the Trust and have come to understand the philosophy over time and through their experience with the Trust.

The National Trust

Table 13: Materials Used for Work on Pre-1919 Buildings

	Proportion of work (%) involving		
	Only modern materials	Only traditional materials	Combination of modern & traditional
Public & commercial stockholders (all)	31	54	15
Places of worship	7	82	11
Pubs/hotels	62	22	16
Stately homes	17	57	26
Public sector	56	36	8
Building Professionals	12	30	58
Contractors	39	25	36

Base: all respondents: public & commercial stockholders (44), professionals (53), contractors (261)

4.7.3 Extent of DIY Work

Overall 15 of the 25 homeowners undertook some or all of the required work themselves in the last year, with cost the main driver for this (13 out of 15 respondents doing DIY), with 6 either enjoying it or preferring to do it themselves, including one who was himself a tradesman.

4.7.4 Direct Employed Labour

Four of the public and commercial stockholders employed a direct labour force with traditional building craft skills to undertake work on their own properties (all owned listed buildings): two stately homes, a university and a hotel within estates of 6–20 buildings. Most of these direct labour forces comprised only one or two craftspeople, but the university concerned employed 12.

In the main the profile of the direct labour force was older (majority in their 50s and 60s) and more experienced than in the industry as a whole, with no apprentices employed. Most undertook more general types of skills work such as carpentry, painting and decorating, and bricklaying. Stockholders with direct labour did not have a

particularly high opinion of their employees' traditional building craft skills, and the more specialist types of work tended to be undertaken by contractors.

Cadw has a direct labour team of 45 trades/craftspeople (half of what it was in the mid-1990s) operating in eight regional teams. It has its own internal skills training and assessment scheme with a variety of different skill levels within the workforce, and when considering its properties in care, it is not surprising that stonemasonry predominates. The direct workforce undertakes maybe 30% of Cadw's building work.

At the time of this research, the National Trust had a direct labour force of just eight trades/craftspeople, with four of these based at Llanerchaeron, an estate bequeathed to the Trust in 1989. They were primarily engaged in restoring the estate buildings, which has attracted major European funding. The National Trust is currently undertaking a review of its direct labour force to establish whether it would benefit from increasing or decreasing its use of direct labour.

4.8 Traditional Building Materials

4.8.1 Materials Used on Pre-1919 Buildings

All public and commercial stockholders were asked what proportion of work on their pre-1919 buildings involved only traditional materials, what proportion involved only modern materials and what proportion involved a combination of the two. This approach was taken in an attempt to gain a measure of how appropriate were the materials used, on the assumption that this provides a proxy for the type of work undertaken on pre-1919 buildings.

Respondents were read the following examples to make clear the distinction between traditional and modern materials:

- using lime mortar rather than sand and cement
- repairing sash windows rather than fitting plastic or softwood replacement units
- using lime plaster rather than gypsum/dry lining
- using quarried stone rather than concrete blocks
- using purlin and rafter roof work rather than trussed roofs.

The figures in Table 13 are only broadly indicative, as they are generally based on top-of-mind estimations and the answers are

highly sector-specific. The use of only traditional building materials was very much the norm for places of worship and widespread for stately homes. Those responsible for commercial buildings, such as pubs and restaurants, or for public-sector buildings were much more likely to only use modern materials.

Private stockholders undertaking or planning building work were asked how important the use of traditional building materials was for work on their home. The majority (54% of this group) considered this important, with 15% disagreeing and the remainder considering this neither important nor unimportant (30%). Although the numbers involved are small, those in the valleys placed less importance on the use of traditional materials than did others.

4.8.2 Traditional Building Materials Specified

All but 3 of the 44 public and commercial stockholders had at least some specifying influence on the materials used during work on their historic buildings. Those responsible for religious buildings considered that they had less influence than others.

As shown in Table 14, overall 59% had specified the use of lime in the last 12 months, and half had stipulated Welsh slate and 43% locally quarried stone. Although the numbers involved are low, it is interesting to note that specification of traditional building materials was far more widespread among those responsible for religious buildings and stately homes than in the commercial and public sectors. A third of the hoteliers had not specified any of the traditional materials listed, with neither of the

housing associations specifying any; the two universities had specified the use of Welsh slate, but nothing else. (Table 14)

Compulsion would appear to be a key factor influencing the use of traditional materials in the public and commercial sector. Although those with listed buildings felt they had less specifying influence than those with non-listed buildings, they were more likely to have used traditional materials. Similarly, those receiving grant assistance for conservation work were more likely to mention traditional materials than those not getting any such assistance.

Use of traditional materials in the private sector appears much, much lower than elsewhere, with only seven of the private homeowners mentioning the use of lime, locally quarried stone or Welsh slate.

4.8.3 Factors Limiting the Use of Traditional Materials

As shown in Table 15, cost is the main factor that stockholders considered limits the more widespread use of traditional materials, which is consistent with the views of the building professionals and the contractors and sole traders. Cost was more likely to be mentioned by those taking a reactive repair approach to routine maintenance than those undertaking regular planned maintenance.

Beyond cost, the main limiting factor among public and commercial stockholders was the widespread belief that traditional building materials were simply not necessary. In the main, this view is that of owners of buildings with commercial uses, such as

Quite often we'll get an excuse from a builder that something is irreparable, but we won't accept that. We know that you can always get things repaired and restored if you put the effort into it, so we don't just take it on face value that we need to just put in a PVC window. We take each issue on its own merit and we know that there is a benefit in keeping an original feature.

Commercial Stockholder

hoteliers. This lack of awareness of the need to use appropriate materials is not consistent with the views expressed by the builders and the professionals, who were much more likely to refer to the perceived disadvantages of traditional building materials.

Other than cost, the main obstacle to the more widespread use of traditional building materials in the private sector is a preference for modern materials (18%).

Public and commercial stockholders were also asked to what extent they believed that building regulations and local authority building control officers

restricted the use of traditional materials. The majority were unable to give a view on either issue.

4.9 Career Progression Ladder

Four out of five private stockholders supported the principle of a career progression ladder for traditional building skills, ranging from apprentice to master craftsperson. Two-thirds of those supporting the idea thought it should be linked to experience and skills, with almost half saying success at the job and about a third formal qualifications.

4.10 Interest in Further Information

Some two-thirds of public and

commercial stockholders expressed further interest in the research findings, with 40% interested in information about traditional building craft skills training. Those private stockholders who had undertaken work in the last year were mostly interested in the research findings and further related information, but those planning work in the future showed far less interest. Although in statistical terms the numbers involved are insignificant, this is perhaps a rather instructive reminder of how most private homeowners go about commissioning work on their homes, that is, with little real thought or planning concerning what is needed and how it should be done.

Table 14: Use of Traditional Building Materials in the Last 12 Months (%)

	Public & commercial	Stockholders		
		Private	Professionals	Contractors
Lime	59	11	94	67
Locally quarried stone	43	7	75	61
Welsh slate	50	7	77	59

Base: all respondents: public & commercial stockholders (44), private stockholders (45), professionals (53), contractors (261)

Table 15: Main Factors Constraining Greater Use of Traditional Building Materials (%)

	Public & commercial	Stockholders		
		Private	Professionals	Contractors
Cost	27	27	43	27
Not specified by architect/surveyor	0	0	na	27
No demand from clients	na	na	17	25
Perceived disadvantages	14	9	34	19
Preference for modern materials	5	18	13	11
Traditional materials not necessary	25	0	6	7

Base: all public & commercial stockholders (44), private stockholders undertaking/planning work (33), all professionals (53), all contractors (261)

5

SUPPLY OF TRADITIONAL BUILDING SKILLS: CONTRACTORS AND SOLE TRADERS

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supply: contractors & sole traders

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

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

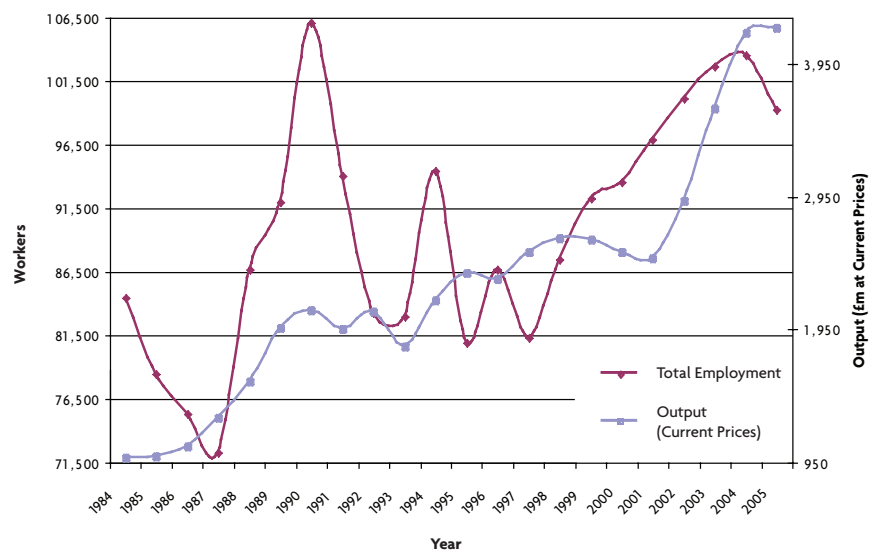
5.1 The Construction Industry in Wales

The Welsh construction industry²² generates £5.2 billion²³ of turnover (at basic prices), with an output of £4.23 billion²⁴ (at current prices), shown in Figure 2. This represents over 7.0% of the country's GVA, and 3.2% of the total for construction in the UK, generating £1.8 billion of GVA in 2004.²⁵ Construction industry GVA grew steadily between 1998 and 2004, at an average of 5.9% per year, and this trend looks set to continue, as in the rest of the UK.

In output terms, the construction industry in Wales grew strongly, by an average of 6.3% per year, in the 10-year period to 2005. The same period was largely characterised by a steady rise in employment, although prior to 1997 the trend was very much more erratic, featuring several peaks and troughs most notably through 1990 to 1995. This would suggest that any excess capacity was alleviated with large losses in the workforce. As also shown in Figure 2, the construction industry in Wales by 2005 employed 99,200 people²⁶ in 40,050 enterprises,²⁷ which is 7.6% of the Economically Active Population (EAP) of 1.3 million.

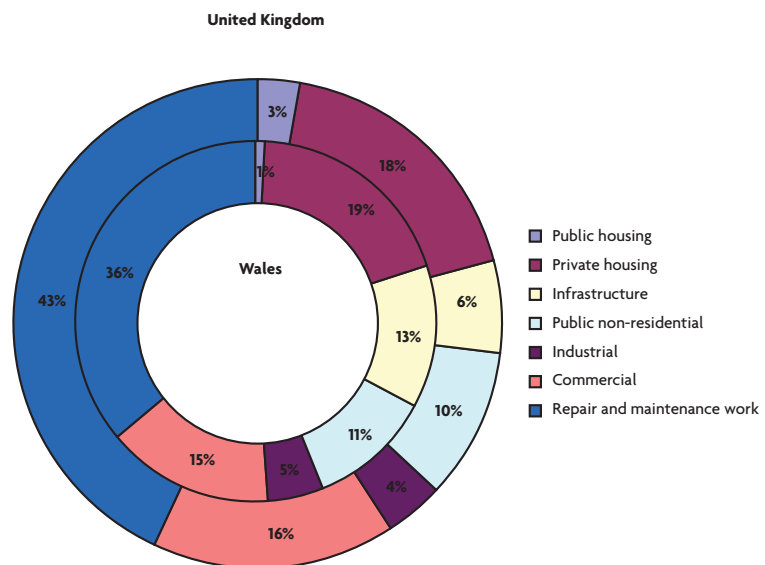
While the proportion of the construction workforce employed in Wales is broadly similar to that of the UK as a whole, there is a

Figure 2 Construction Output (at Current Prices) and Employment, Wales, 1984–2005



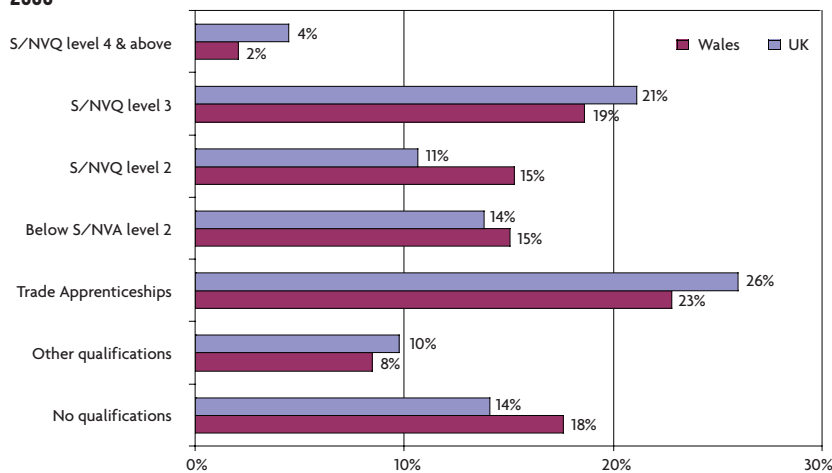
Source: Office for National Statistics, Labour Force Survey; Department of Trade and Industry; Experian

Figure 3 Construction Output by Sub-sector, UK vs. Wales, 2005



Source: Department of Trade and Industry; Department of Finance and Personnel Northern Ireland; ConstructionSkills

Figure 4 Qualification Levels of the Manual Construction Industry Workforce, UK and Wales, 2005



Source: Office for National Statistics, Labour Force Survey

notable difference in the structure of the industry that is of key importance to any study relating to the built heritage sector. In the sub-sectoral division of output, the share of repair and maintenance work in Wales is rather low in comparative terms: 36% as opposed to an average of 43% for the UK. Other differences, such as the higher involvement in new-build private housing, infrastructure and non-housing public-sector work, are shown in Figure 3.

This lower involvement in repair and maintenance work is consistent with that in Scotland, but belies the age of the built environment in Wales; one-third of all Welsh housing stock dates from before 1919, compared to 19% in England.²⁹ It can therefore be inferred that in both Wales and Scotland less is being spent on the repair and maintenance of pre-1919 buildings than is the case in England.

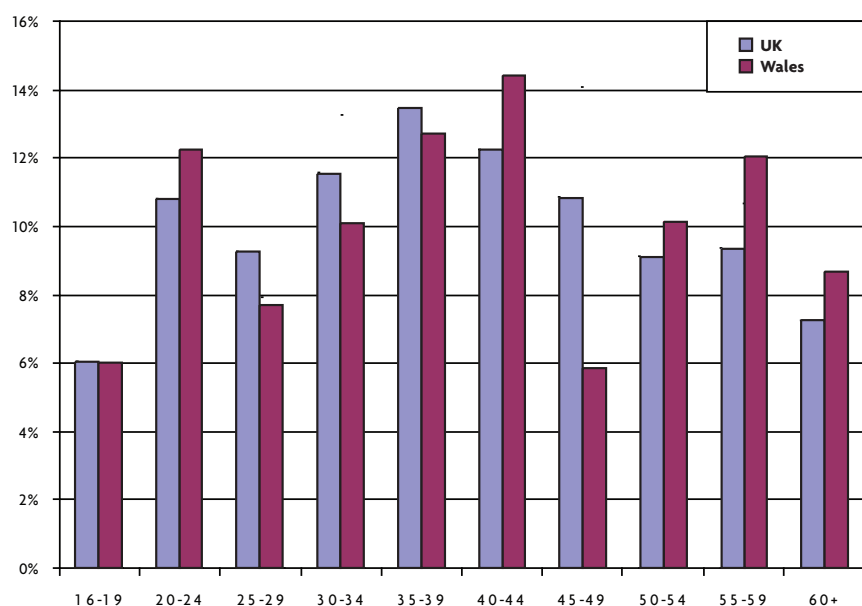
While the level of self-employment in the Welsh

construction industry (37%) is comparable to that across the UK as a whole (38%), it remains particularly high in the main craft trades (wood trades, bricklaying, plastering, painting and decorating), where it averages 55% of the workforce.³⁰ The number of self-employed within the industry has major implications for training,

especially as recent research confirms that training is much less likely to be forthcoming for the self-employed than their employed counterparts. For example, 17% of those employing manual staff directly in Great Britain indicated that all their direct manual staff had received training in the last 12 months, compared to 8% of companies employing labour-only subcontractors.³¹

The structure of the industry in Wales, in common with the rest of the UK, is dominated by small firms. Indeed, 99% of Welsh construction firms are micro-firms of 0–9 employees, compared to 98% across the UK as a whole. More significantly, some 65% of Welsh construction workers are employed by micro firms, compared with 57% across the UK. At the other end of the scale, Wales has a lower proportion of large construction firms of 250+ employees than in the UK as a whole.³²

Figure 5 Age Profile of the Manual Construction Industry, UK and Wales, 2005



Source: Office for National Statistics, Labour Force Survey

Table 16 Total Number of Employees, including Directors

Number of employees (total workforce = 1,659)	%
41+	1
21–40	4
11–20	8
6–10	14
5	10
4	15
3	21
2	16
1	11
Total	100

Base: all builders firms (261)

The higher proportions self employed and employed by micro-firms may explain why a lower proportion of construction workers in Wales are qualified than in any of the other home nations. It may also help to explain why those who are qualified are more likely to be qualified to NVQ 2 or lower levels, and less likely to be qualified to higher levels such as NVQ 3 or 4, as shown in Figure 4. NVQ Level 2 is seen as the industry norm in Wales, as it is in England, whereas in Scotland SVQ Level 3 is more prevalent.³³

The age profile of the manual workforce is slightly older in Wales than the rest of the UK, as shown in Figure 5. The higher proportions in the 40–44 and 50+ age brackets

mean that there are currently more workers in the most experienced and productive work group. However, as many of these will be retiring in the next 10 years or so, the present numbers in the 16–19 range will (as it stands) not provide sufficient replacement. The industry as a whole clearly needs to do more to attract young entrants, especially given the currently heavy emphasis on academic, rather than vocational, educational and career choices.

By occupational breakdown, the Welsh construction industry is broadly similar to the rest of the UK.³⁴

5.2 Survey Sample Overview

This study defined a sole trader as any firm with either one or two employees in total, including directors, and so 27% of those interviewed were 'sole traders', including 11% comprising only one person. The remainder of the sample comprised micro-firms (up to 9 employees) and small firms (10–49 employees). Only 13 firms (5%) had 21 or more employees, the three largest employing 42, 65 and 106 respectively. As Table 16 shows, this research is, therefore, dominated by small firms.

In terms of the workforce as a whole, larger firms had a major influence, with some 50% overall being

employed by just 35 firms. As shown in Table 17, company size varied by trade, with masonry and general building firms generally larger than average, and wood trades smaller.

Overall, the firms interviewed employed some 1,659 staff, giving an average overall of 6.4 employees per firm. Nearly all (1,585) were full-time and only 74 part-time (including 39 employed by one large roofing firm), and only 9% of firms had any part-time staff.

Over three-quarters of the building firms interviewed commented that they could forecast their workload for more than the immediate 3 months, and only 5% said that they could predict their workload for a period of only 2 months or less. Those in the south-east had slightly less confidence in their long-term workload, as did plasterers. Conservation specialists and those working predominantly on pre-1919 buildings were most likely to be booked for 3 months or more.

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

5.3.1 Proportion of Work involving Pre-1919 Buildings

As shown in Table 18, on average, some 43% of all the work undertaken by building firms in the 12 months prior to the study was on pre-1919

Table 17 Company Size by Main Trades Surveyed

	Number of firms	Number of trades/craftspeople	Average size of firm
Wood trades	59	270	4.7
Plastering	27	150	5.6
Roofing	34	224	6.6
Stonemasonry	34	279	8.2
General building	53	383	7.2
All trades	261	1,659	6.4

Base: all builders firms (261)

Table 18 Percentage of Firms' Work Involving Pre-1919 Buildings in the Previous 12 Months: Contractors

	%
100%	9
76–99%	11
51–75%	11
50%	13
26–49%	12
11–25%	20
10% or less	23
Don't know	1
Total	100
Mean	43

Base: all contractors and sole traders (261)

buildings. This average or mean figure in itself, however, is somewhat misleading. Firms tended to do either a small amount or most of their work on pre-1919 buildings; 43% said that this work accounted for less than a quarter of their business, and almost a third (31%) said that it accounted for the majority. One in five builders contacted worked predominantly (76% of the time or more) on old buildings.

Table 19 Trades Practised by Firms (%)

	Trades practised %	Main trade (%) N
Joinery/carpentry	79	23
General building work	83	20
Roofing	72	13
Stonemasonry	66	13
Plastering	72	10
Brickwork	65	5
Painting/decorating	52	5
Lead/metalwork	57	*
Glazing	43	0
No main trade	na	9
No trades practised	2	2
Average number of trades		6 na

Base: all contractors and sole traders (261)

*=less than 1

Overall, the results show that, in line with the age of the building stock, a slightly higher proportion of time was spent by Welsh respondents working on pre-1919 buildings than in Scotland, where the figure was 40% for sole traders and 35% for contracting firms.

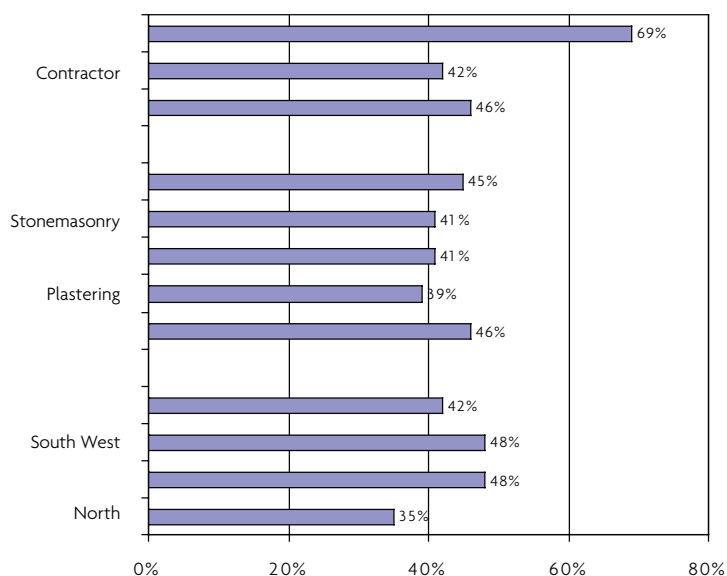
As shown in Figure 6, those in mid-Wales and the south-west worked most often with older buildings, as

did general builders, sole traders and conservation specialists. The fact that even the relatively small number of conservation specialists did not work exclusively on pre-1919 buildings suggests that demand for specialist conservation or heritage work is fairly limited in Wales.

5.3.2 Main Activities and Range of Trades

All building firms were asked which trade activities they undertook on pre-1919 buildings, without the use of subcontractors (overall, only 2% of firms subcontracted all trade crafts). On the assumption that many firms would practise more than one trade, they were also asked to state which they regarded as their main trade relating to pre-1919 buildings. In addition to the main trades themselves, respondents were also offered the opportunity to describe their work as general building work.

As shown in Table 19, general building work (83%) and the wood trades (79%) were the most prevalent types of work undertaken by building firms on pre-1919 buildings, followed by roofing (72%),

Figure 6 Average Proportion of Work Undertaken by Contractors Involving Pre-1919 Buildings

Base: all respondents

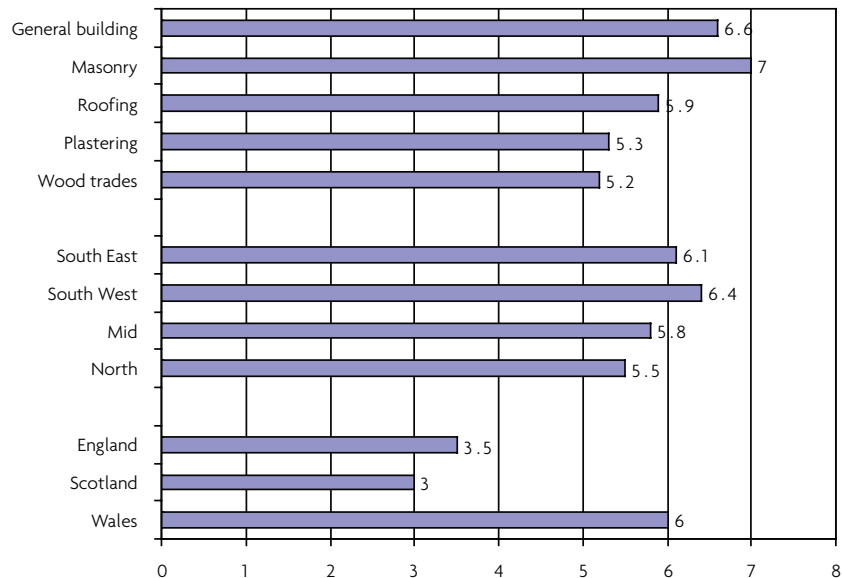
plastering (72%), stonemasonry (66%) and brickwork (65%). What is immediately apparent is the high number of firms practising more than one trade, or 'multi-skilling'. Indeed, it would appear that on average each of the Welsh builders interviewed practised six trades on pre-1919 buildings, far more than their counterparts in England (3.5) or Scotland (three for contractors, two for sole traders).

While the sampling methodology for selecting respondents was subtly different between the English and Welsh studies, which might account for some of this difference, there was no substantive difference between the methodologies used in the Welsh and the Scottish research. Notwithstanding the addition of the 'general building work' category to the Welsh research, this does indicate a greater level of multi-skilling, or at least multi-tasking, than in England and Scotland.

It is perhaps not surprising to see the wood trades as the largest single group, but interesting that the second largest grouping working on pre-1919 buildings in Wales regarded themselves as 'general builders' rather than as having a specific trade or craft.

As shown in Figure 7, by contrast with Scotland where the second largest group was brickwork, such firms made up a relatively minor proportion of the Welsh builders, with stonemasons, roofers and plasterers all more prevalent. Less than 1% of the respondents in Wales were lead/metal workers, and there were no glazing specialists. In addition to the 20% describing themselves as 'general builders', a further 9% said that they had no main trade.

Figure 7 Average Numbers of Trades Practised by Contractors



Base: all respondents

General builders and stonemasons reported the highest degree of multi-skilling, as did those in mid-Wales and the south-west. Those predominantly working on pre-1919 buildings also gave a higher number of trades than those rarely working on such buildings, but conservation specialists used slightly fewer trades than the average firm.

Table 20 shows the proportion of firms with one or more employee possessing a specific craft skill. Again the results emphasise the extent to which Welsh firms regarded themselves and their employees as multi-skilled, with the average firm possessing 10.5 craft skills from the average 6.4 employees. The results are broadly comparable with the English and Scottish research, with the main trades at the top of the list in each study.

The proportion of firms claiming to employ plasterers capable of lime and fibrous work appears very high given the evidence of the qualitative research undertaken as part of this survey.

5.3.3 Membership of Trade Organisations

Overall, the building firms were split almost equally between those belonging to trade associations/federations and those not. As might be expected, the larger the firm the more likely it was to belong to a federation – only 30% of sole traders were members. Stonemasons and those in mid-Wales were also less likely to be involved.

5.3.4 Geographic Range of Work

Work on pre-1919 buildings in Wales was predominantly undertaken by very local firms, with 73% of all the building firms interviewed saying that 76%+ of their work on pre-1919 buildings was undertaken within 20 miles of where they were based. Welsh builders therefore worked more locally than their Scottish counterparts, where about two-thirds undertook an equivalent proportion of their work within 20 miles. Some 64% of Welsh building firms did not undertake any work on pre-1919 buildings located 21–50 miles from home, with 89% saying that they never travelled more than 50 miles to work on pre-1919 buildings.

Table 20 Building Firms with at Least One Employee with a Specific Craft Skill

	%	Wales N	England (%)
General craftsperson	76		22
Carpenter	75		24
Plasterer (general)	67		
Bricklayer	67		22
Joiner	67		22
Roofer (general)	66		21
Tiler	62		8
Roofer (random/natural slates)	59		
Lime plasterer	52		17
Painter/decorator	50		15
Stonemason	48		17
Glazier	39		6
Roofer (stone tiles)	39		
Drystone waller	38		6
Fibrous plasterer	36		10
Roofer (metalworker)	33		4
Timber preserver	32		
Plumber/lead-worker	31		9
Wood machinist	26		6
Cabinetmaker	24		5
Stone fixer	22		10
Wood carver	10		
Stone carver	6		
Gilder	5		2
Blacksmith	4		9
Steeplejack	1		2
Thatcher	1		4
Glass painter	*		1
Average number of craft skills		10.5	na

Base: all contractors and sole traders (261)

* = less than 1% NB: blanks show where a craft category was not classified in previous work

As might be expected, larger firms were more likely to travel further, while smaller firms and sole traders stayed local. In terms of the trades, plasterers and general builders stayed local; the more specialist workers such as carpenters, joiners, stonemasons and roofers travelled slightly further. Conservation specialists were most likely to travel to work, with 29% working more than 50 miles away.

Welsh building firms working on pre-1919 buildings undertook the vast

majority of such work inside Wales itself. Indeed only 32 firms, or 12% overall, had worked on pre-1919 buildings in England in the previous year. Not surprisingly most of these firms were based in mid-Wales (15) or the south-east (9). It should be noted, however, that the definition of mid-Wales used in this report includes areas of north-east Wales such as Denbighshire and Wrexham, areas which the qualitative research indicated had a proportion of local builders working in Liverpool in preparation for its tenure as

European Capital of Culture in 2008. Only one contractor, a medium-sized joinery firm from mid-Wales, had worked beyond England and Wales in the previous 12 months. The conservation specialists were again the most likely to work in England.

The research did not interview building firms based in England which work in Wales. There is some evidence from the qualitative work that in the border areas this does happen, and that large conservation contracts in Wales are awarded to English firms owing to the lack of Welsh bidders. It is recommended that this aspect should be quantitatively measured in the forthcoming repeat of the corresponding English research.

As shown in Table 21, rural (39%) and mixed rural/urban (51%) environments were the norms for Welsh building firms working on pre-1919 buildings. Only 10% worked mainly in an urban setting, and the majority of these were based in the south-east. As expected, rural work areas were more prevalent in the south-west (53%) and in mid-Wales (49%). A lower proportion of Welsh building firms mostly worked in urban areas than in Scotland, perhaps reflecting the relative youth of major Welsh conurbations. Stonemasons were most likely to work predominantly in the countryside.

Table 21 Rural/Urban Working

	Wales (%)
All/mainly urban	10
All/mainly rural	39
A mixture	51
Total	100

Base: all contractors and sole traders (261)

5.3.5 Type of Work Undertaken, by Sector

In terms of the types of buildings that Welsh builders worked on, the private sector was dominant (86% overall, including 71% where it accounted for the majority of their work). Of these, 20% worked on commercial buildings and religious buildings, with a slightly higher proportion involved in the public sector (23%). Specialisation in any of these sectors was relatively rare but was apparent: 5% of Welsh building firms undertook most of their work on commercial buildings, with 9% and 3% respectively doing so in the public and religious sectors. These findings are broadly comparable with those collected during the Scottish work. Conservation specialists, builders, who were less likely to work on private-sector housing and more likely to work on public-sector or religious buildings.

5.3.6 Degree of Heritage Specialisation

The large majority (88%) of all respondents regarded themselves as general building/craft firms undertaking work on old buildings, rather than as conservation or heritage specialists (12%). The latter were, however, more commonly found in the south-west (19%) and mid-Wales (16%). Roofers (26%), stonemasons (18%) and wood trades (15%) were most likely to describe themselves as conservation specialists, plasterers the least likely (0%). Nearly three-quarters of those working predominantly on pre-1919 buildings were general builders rather than conservation specialists.

5.3.7 Confidence in Ability to Work on Pre-1919 Buildings

On the whole, most building firms interviewed had a high degree of confidence in their ability to work on old buildings. Indeed, some two-

thirds overall said they would be confident working on any pre-1919 building, even those with a Grade 1 listing. In total 89% said they would be confident working on a Grade 2 listed building, 75% on a Grade 2* and 71% on Grade 1. Only 9% overall said that they only felt confident to work on non-listed buildings; these included a higher proportion of plasterers (22%) than other trades.

It is not clear, however, that these opinions are entirely justified. Those in the south-east, for example, expressed a very high level of confidence in their ability to work on all old buildings despite the fact that they later recorded much lower ratings of their employees' knowledge of and ability to work with traditional materials than those in other regions. There is also no difference in the responses from those rarely working on pre-1919 buildings when compared with those working predominantly working on them.

Examination of responses from individual respondents also contradicts these levels of confidence. Some firms said that they were confident to work on Grade I listed buildings but not Grade II, suggesting a complete ignorance of the grading system and, by inference, the heritage value of the buildings that the system attempts to protect. The answers of those exclusively using modern materials on pre-1919 buildings are perhaps the most disturbing: over half would be happy to work on Grade I listed buildings. One conclusion that can be drawn is that many building firms working on pre-1919 buildings apparently do not see the need to adjust their approach whether working on a Grade I listed building of national importance or an everyday terraced home.

5.4 Workforce Management

5.4.1 Age Profiles

The firms interviewed employed staff with ages ranging from 16 to over 60, with a tendency towards the early middle aged. As shown in Table 22, the key age groups are people in their 30s and 40s, followed by those aged 16–24 and in their 50s. The lowest numbers are found in the late 20s and over 60 groups. The age profile of those working on pre-1919 buildings is broadly similar to that for the construction industry as a whole in Wales, with fewer in their late 20s involved, and the largest groups being in their 30s and 40s.³⁵

There is a strong correlation between the size of the firm and the age of its workforce. Small firms tended to avoid the younger age groups, with their employees being predominantly in their 30s, 40s and 50s. As firms increase in size so they are more likely to have a more age-diverse workforce and, in particular, to employ the younger (under 30) age groups.

Those firms in the survey working predominantly on pre-1919 buildings were less age-diverse, with employees mostly in their 40s and 50s and few under 40.

Table 22 Age Profile of Labour Force

Employee age	Proportion of firms (%)
60+	18
50–59	41
40–49	55
30–39	49
25–29	34
20–24	43
16–19	42

Base: all contractors and sole traders (261)

5.4.2 Recruitment

Table 23 shows that 45% of the building firms interviewed had recruited staff in the past year (compared to 63% in Scotland), including 23% recruiting a single staff member and 22% recruiting more than one, resulting in a total inflow of 228. The largest number of recruits in any one contracting firm was 10, with an average of 1.9 new members of staff joining the workforce in the year among those who recruited, which equates to 0.9 new members of staff across all respondent firms.

Encouragingly, some three-quarters of all new recruits went to contracting firms providing formal training. Across the various trades, the general builders were most likely to be recruiting, as were commercial and public sector specialists. Geographically, firms in mid- and North Wales were more likely to have recruited during this time period, perhaps as a result of regeneration

work in the area and perhaps because of demand for building work associated with Liverpool's status as European Capital of Culture in 2008. The size of the firms involved meant, however, more new staff were actually recruited in the south-east (80) than anywhere else.

5.4.3 General Employment Policies

This last finding bears out the fact that 44% of contracting firms working on pre-1919 buildings recruited trainees (Table 24), which is a higher proportion than recruited fully skilled (28%) or semi-skilled trades/craftspeople (33%). Stonemasonry firms were more likely to seek fully skilled staff than other trades. Some firms, particularly the larger ones, employed staff with varying skills and training needs. The situation is somewhat different in Scotland where employers were keener to take on skilled or semi-skilled staff rather than trainees.

You see other people's work which has been done with no apparent feeling or sensitivity or appreciation of that building. There's no thought of the future because the industry has been educated in the way it has. The philosophy is to make money, grab it and run away.

General Builder

Table 23 Number of Staff Recruited in the Past 12 Months (Total=228)

	%	Mean
6–10	1	
5	2	
4	2	
3	3	
2	14	
1	23	
None	55	
Total	100	
Mean (all recruiting)		1.9
Mean (all respondents)		0.9

Base: all contractors and sole traders (261)

Table 24 General Employment Policies (%)

	Wales	Scotland
Employ skilled staff, no training need	28	5
Employ staff in need of some training	33	39
Employ trainees	44	26

Base: all contractors and sole traders (Wales, 261; Scotland, 226)

5.4.4 Recruitment Channels

Word of mouth (66%) was by far the most important source of recruitment for Welsh builders, as was the case in Scotland. The ConstructionSkills managing agency, local press, job centres and local colleges were the other important channels. A small number (8) regarded their relatives as a main source of recruitment. Relatively few firms mentioned more than one main source of recruitment, suggesting that recruitment of staff in general was not particularly difficult.

5.4.5 Ease of Recruiting Skilled Trades/Craftspeople

Recruitment of trades/craftspeople with craft skills appears more difficult, however, than recruitment of staff in general (Table 25). Almost half found this difficult, with 21% finding it neither difficult nor easy and only 24% finding it easy (MS 2.6). Smaller firms tended to find this slightly less difficult, perhaps because they were working within local networks to a greater extent than large firms and partly because they undertook less recruitment.

Figure 8 shows that there was some regional variation, with those in the south-west finding recruitment of trades/craftspeople slightly easier and those in the south-east finding it slightly more difficult. Among the trades, and in common with Scotland, general builders and roofers found recruitment slightly easier than the more specialist trades such as wood, plastering or stonemasonry.

5.5 Skills Shortages and Skills Gaps

5.5.1 Definitions

Skills shortages are defined as the inability to recruit people with the appropriate skills at an appropriate

Table 25 Ease of Recruiting Traditional Craft Trades/Craftspeople

	%	Mean
Very easy (5)	11	
Fairly easy (4)	13	
Neither easy nor difficult (3)	21	
Fairly difficult (2)	22	
Very difficult (1)	25	
Don't know/not applicable	8	
Total	100	
Mean score		2.6

Base: all respondents (261)

wage. This can include long-term unfilled vacancies and understaffing, and can result in long working days and weeks and high overtime rates, thus affecting a company's performance, including its capacity to bid for and fulfil new work.

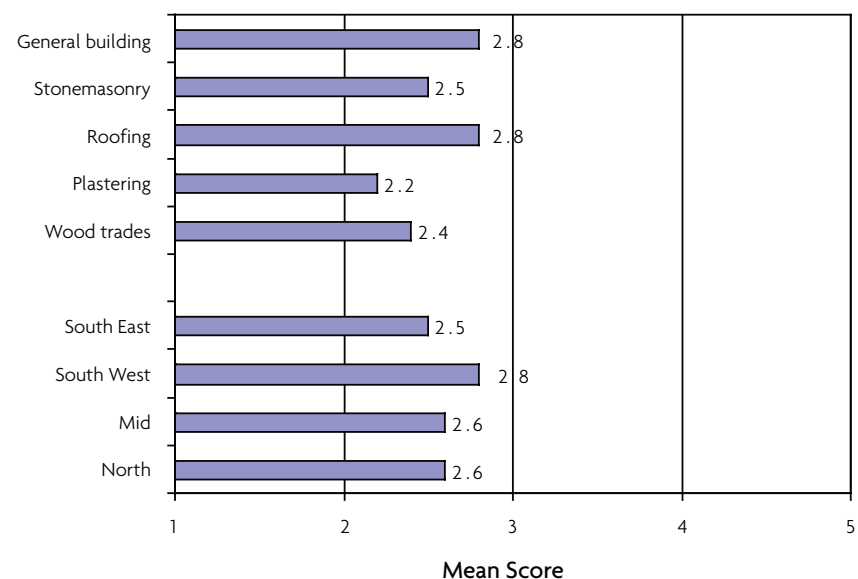
Skills gaps are defined as missing knowledge and competence of existing staff, with gaps leading to reduced performance, quality and safety. This may lead to lower-quality output and longer snagging, below-par health and safety record, and less profitability.

All respondents reporting difficulty recruiting trades/craftspeople (121 in total) were asked whether they considered this to be due to skills shortages or skills gaps.

5.5.2 Existence of Skills Shortages and Skills Gaps

The qualitative research indicated that the industry in Wales suffers from both skills shortages and skills gaps, but the latter is the key issue. In the main survey, half of those experiencing recruitment problems said this was due only to skills gaps, with 15% saying it is purely the result

Figure 8 Regional Variations in Recruitment



Base: all respondents 1=very difficult 5=very easy

of a skills shortage, while the remaining 29% recognised both gaps and shortages in the workforce. A small proportion did not consider either of these issues to be significant. Table 26 shows that 81% in total reported skills gaps and 44% skills shortages. These figures are almost exactly the converse of the Scottish picture, but are more consistent with the findings of the English research.

Although a national skills gap is the key issue, on a regional level those in the south-west and in mid-Wales were more likely to report skills shortages than those in the north or south-east.

Most of the main trades considered skills gaps to be the key issue, but roofers gave equal weighting to skills gaps and skills shortages, perhaps as a consequence of the physical and health and safety requirements of that particular trade.

5.5.3 Response to Skills Shortages

In total 53 firms reported skills shortages. The most common response to this was not to take any action at all (19 respondents), particularly for sole traders, who otherwise did more work themselves. Larger firms by comparison were more likely to increase trainee programmes or increase training for existing staff. Only 2 of the 53 firms commented that skills shortages led them to use subcontractors more often.

5.5.4 Response to Skills Gaps

Welsh firms working on pre-1919 buildings were more proactive when faced with skills gaps than when faced with skills shortages: 80 out of 98 firms experiencing skills gaps took action, compared with 34 out of 53 reporting shortages. A higher proportion of all firms reported providing further training when gaps existed, and this extended to trainees, existing staff and, among the small firms, upskilling of the respondents themselves. Subcontracting was a slightly more common response to skills gaps than it was to skills shortages, but it remained a fairly rare response (7 firms in total).

5.5.5 Traditional Craft Trades Difficult to Recruit

Respondents were asked which trades were particularly difficult to recruit and about any long-term outstanding vacancies (three months and over) as further measures of skills gaps and shortages. Overall, 39% commented that they experienced difficulty recruiting specific trades. The figure is much higher for the very largest firms and lower for small firms and sole traders, probably reflecting the local networking abilities and the relative infrequency with which smaller builders recruit. On average those reporting difficulties mentioned between one and two trades each.

Stonemasons (13%) and lime plasterers (10%) appear the most difficult trades to recruit, with fibrous plasterers and plumbers/lead-workers being the

You can go out there and find a stonemason who can do conservation work but they're likely to want to work on somebody's very expensive new house. The stonemasons wanting to earn less money working on a castle or a period home are very few and far between.

Conservation Contractor, South-East

Table 26 Skills Shortages and Skills Gaps, Great Britain (%)

	Wales	Scotland	England
Skills shortages	44	81	53
Skills gaps	81	43	71

Base: all experiencing difficulty recruiting trades/craftspeople

only other trades being mentioned by 5% or more overall. Some 22 other specific crafts trades were described as being difficult to recruit but none of them by more than 9 firms or 3% overall.

Following the pattern seen previously with regard to recruitment, the more traditional trades and those in the south-east were more likely to report problems. Conservation specialists were also more likely to find recruitment of specific trades difficult, perhaps because of the need for more specialised skill spread across a number of trades.

5.5.6 Long-Term Outstanding Vacancies

Only 11 Welsh respondents (4% overall) had long-term outstanding vacancies, compared to almost a quarter of firms reporting this in England. On average each firm involved mentioned two vacancies, mainly carpentry (4 firms), lime plastering (4), fibrous plastering (3) and general plastering (3). Despite stonemasonry being the craft most likely to be described as difficult to recruit, there was only one long-standing vacancy, and this work was likely to be subcontracted. Again, conservation specialists were more likely to report problems than general builders.

5.6 Retention of Skilled Trades/Craftspeople

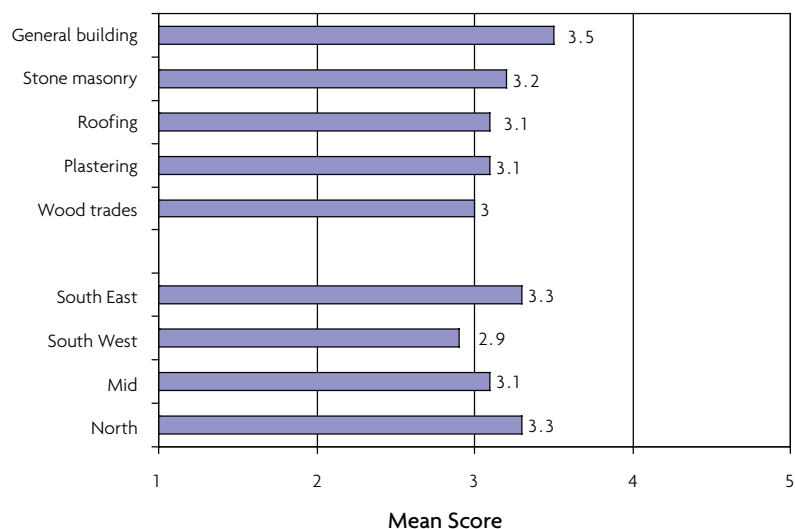
As shown in Table 27, having recruited trades/craftspeople, Welsh builders did not find it particularly easy to retain them. Only a third said that retention of trades/craftspeople with good craft skills was easy or fairly easy, with 30% saying it was neither easy nor difficult. Overall a quarter found retention of skilled workers difficult. These findings paint a more worrying picture

Table 27 Ease of Retaining Trades/Craftspeople with Good Traditional Craft Skills

	%	Mean
Very easy (5)	17	
Fairly easy (4)	18	
Neither easy nor difficult (3)	30	
Fairly difficult (2)	15	
Very difficult (1)	10	
Don't know/Not applicable	10	
Total	100	
Mean score		3.2

Base: all respondents (261)

Figure 9 Ease of Retaining Trades/Craftspeople by Region and Trade



Base: all respondents 1=very difficult 5=very easy

than in either Scotland or England, where around two-thirds overall considered it easy to retain skilled staff.

As shown in Figure 9, retention appears slightly more difficult in the south-west, where there was greater evidence of skills shortages, than elsewhere. Retention also appears more of an issue in the more specialist trades than among general builders.

5.7 Loss of Trades/Craftspeople

Table 28 shows that 45% of the firms interviewed had lost a number of trades/craftspeople in the three

years prior to the study. In total, 342 trades/craftspeople had left the 117 firms affected during the period, an average of almost 3 per firm. As might be expected, small firms were far more stable than large firms, with only 36% of sole traders reporting departures, compared with 50% of contractors and 77% of firms with more than 21 employees.

Stonemasonry and roofing firms were more likely to report departures than the other main trades (Table 29), but proportionately wood trades firms suffered greater losses when departures are viewed as a proportion of the total workforce.

Table 28 Number of Trades/Craftspeople Leaving Firms in the Last Three Years

	%	N
11–20	*	
6–10	6	
3–5	11	
2	11	
1	17	
None	54	
Refused	1	
Total	100	
Total (trades/craftspeople)		342

Base: all contractors and sole traders (261)

* = less than 1%

As shown in Table 30, over half of trades/craftspeople leaving firms in the three years prior to the survey remained in the industry, with the majority (115) working for other firms but around 70 working for themselves. Relatively small numbers

either left the industry altogether (38) or retired (19), although in construction it is common for the latter group to move to other industries. A huge variety of other reasons for leaving were given, including some dismissals.

5.8 Sector Inflow and Outflow

Because the time periods for recruitment and loss of staff are different, it is not possible to get a definitive measure of the degree of churn among contracting firms working on pre-1919 buildings. As Table 30 shows, 21% of the workforce moved on over a three-year period, but the majority (11%) of these had remained within the industry.

If it is assumed that 157 trades/craftspeople left the industry in the last 3 years and that this rate of departure has been constant, it can be estimated that 52 people leave the workforce annually. During the past year 228 members of staff joined the contracting firms, resulting in a net gain in the workforce of 176, or

Table 29 Number of Trades/Craftspeople Leaving Firms in Last 3 Years as a Proportion of the Total Workforce

	Proportion of firms losing trades/craftspeople in last 3 years (%)	Number of trades/craftspeople	Departures as proportion of total workforce (Outflow) (%)
Wood trades	42	75	28
Plastering	37	28	19
Roofing	47	46	21
Stonemasonry	53	62	22
General building	40	63	16
All trades	45	342	21

Base: all contractors and sole traders (261)

Table 30 Reasons for Trades/Craftspeople Leaving Firms in Last 3 Years

	Firms affected	Number of trades/craftspeople leaving	Outflow from total workforce (%)
Moved to competitor firm	21	115	7
Now self-employed	16	70	4
Left the industry	9	38	2
Retirement	6	19	1
Left employment altogether	2	7	*
Other (including dismissed)	13	93	6
All respondents	45	342	21

Base: all contractors and sole traders (261)

* = less than 1%

slightly over 10%, suggesting that the industry is undergoing a period of substantial growth. However, this is almost certainly overstating the case in skills terms, as the figures relate to *staff* recruited but *trades/craftspeople* leaving.

5.9 Subcontracting

5.9.1 Extent of Subcontracting

Table 31 shows the proportion of firms with in-house expertise and the

proportion of firms subcontracting each of the different crafts in the previous 12 months. Overall some 84% had subcontracted craft trades/craftspeople to undertake work on pre-1919 buildings in the previous year. Sole traders and those in the south-east were less likely to have subcontracted.

Overall, plumbers/lead-workers were the most likely to be subcontracted, followed by

painter/decorators, glaziers, timber preservers, blacksmiths, bricklayers, joiners and roofers. A clear link exists between the use of subcontractors and the proportion of work undertaken on pre-1919 buildings, with those predominantly working on old buildings more likely to subcontract than those rarely working on them.

Overall, each building firm interviewed had subcontracted 5.2

Table 31 Building Firms Subcontracting Each Specific Craft Skill

	Possessed in-house	Subcontracted		N
	%	N	%	
General craftspeople	76		11	
Carpenter	75		19	
Plasterer	67		21	
Bricklayer	67		25	
Joiner	67		25	
Roofer (general)	66		23	
Tiler	62		21	
Roofer (random/natural slates)	59		20	
Lime plasterer	52		17	
Painter/decorator	50		38	
Stonemason	48		19	
Glazier	39		33	
Roofer (stone tiles)	39		11	
Drystone waller	38		18	
Fibrous plasterer	36		15	
Roofer (metalworker)	33		23	
Timber preserver	32		31	
Plumber/lead-worker	31		44	
Wood machinist	26		21	
Cabinetmaker	24		16	
Stone fixer	22		9	
Wood carver	10		8	
Stone carver	6		7	
Gilder	5		5	
Blacksmith	4		28	
Steeplejack	1		3	
Thatcher	1		3	
Glass painter	*		5	
None	na		16	
Average number of skills		10.5		6.2

Base: all contractors and sole traders (261)

* = less than 1%

Table 32 Craft Skills Hard to Find/Where Long-Term Outstanding Vacancies Exist: Contractors (%)

	Proportion subcontracting ^a	Craft hard to find ^b	Average wait 3 months ^{+b}
General craftsperson	11	11	7
Carpenter	19	14	0
Plasterer	21	16	0
Bricklayer	25	26	3
Joiner	25	6	0
Roofer (general)	23	3	0
Tiler	21	9	0
Roofer (random/natural slates)	20	2	0
Lime plasterer	17	20	2
Painter/decorator	38	14	0
Stonemason	19	14	8
Glazier	33	2	1
Roofer (stone tiles)	11	3	3
Drystone waller	18	29	4
Fibrous plasterer	15	23	10
Roofer (metalworker)	23	20	7
Timber preserver	31	6	0
Plumber/lead-worker	44	17	1
Wood machinist	21	7	2
Cabinetmaker	16	12	2
Stone fixer	9	30	4
Wood carver	8	24	14
Stone carver	7	32	16
Gilder	5	69	15
Blacksmith	28	12	0
Steeplejack	3	22	11
Thatcher	3	86	29
Glass painter	5	14	7

Base: all contractors and sole traders (261) ^aAll respondents. ^bAll subcontracting each craft

other trades during the past 12 months when working on pre-1919 buildings. Removing those who had not subcontracted any work during this period increases the number of trades subcontracted to 6.2 for those involved. Conservation specialists subcontracted an average of 5.9 trades compared with an average of 5.1 for general builders, suggesting that often subcontracting is undertaken to meet specific skills needs not possessed within the firm. Those in mid-Wales and the north also tend to subcontract a higher number of trades than those in the south-west and south-east.

5.9.2 Scarcity of Skills

In order to establish the scarcity of each craft skill against demand, all those subcontracting each skill were asked whether they had found it difficult to find a suitable subcontractor and what the average wait had been before the subcontractor could start work.

Table 32 shows that thatchers (86%) and gilders (69%) were by far the hardest crafts to find in Wales, although in both cases it should be noted that demand for them was very low. A number of the more specialist crafts were regarded as difficult to find by between a fifth

and a third of respondents using them, although in each case suitable subcontractors had usually been found within three months.

5.9.3 Training Contributions

Of those subcontracting trades for work on pre-1919 buildings, 24% contributed towards the cost of training subcontractors (Table 33) and were more likely to contribute to both skills and Health & Safety/Construction Skills certification scheme training (13% overall) than to skills training (4%) or Health & Safety/Construction Skills Certification Scheme training (7%) alone.

5.9.4 Attitudes to Subcontracting

Opinion among Welsh firms working on pre-1919 buildings was split, almost equally, as to whether the building industry as a whole was too reliant on subcontracting (46%) or not (47%). In general, large firms, which were more often likely to be acting as lead contractors, were more likely to say the industry was too reliant on subcontractors than were sole traders, who were in turn more likely to act as subcontractors. Conservation specialists were also less likely to agree that the industry is too reliant on subcontractors than were general builders.

Given the lack of agreement on the basic premise that the industry was too reliant on subcontractors, it is not surprising that respondents were equally unable to come to a consensus as to whether subcontracting was a key factor limiting the development of traditional building skills. One-third agreed that subcontracting limited traditional skills, but almost exactly the same proportion disagreed.

5.10 Training

5.10.1 Views on Training

The Welsh building firms working on pre-1919 buildings perceived a clear need for formal college training alongside 'on the job' training. Over half said that both elements were definitely needed, with a further 31% saying they would prefer training to be both college- and workplace-based. Only 10% think that on-the-job training is all that is required.

The views of building professionals in Wales were even stronger, with 79% considering that both on-the-job and college-based learning were definitely

Table 33 Contractor Contributions to Subcontractor Training

	%
H&S/CSCS training only	7
Skills training only	4
Both	13
Have not contributed to skills training	60
Don't know/no subcontracting in last 12 months	16
Total	100

Base: all contractors and sole traders (261)

required. These perceptions echo those in Scotland, where over three-quarters recognised the need for both college- and work-based tuition.

In order to determine the relative importance of different factors that had been identified during the qualitative work as contributing to the development of traditional craft building skills, respondents were asked to rate the following: formal college training, on-the-job training, and work experience on old buildings.

Figure 10 demonstrates the firms' view that acquisition of good craft building skills comes primarily from in-house training/on-the-job experience (MS 4.6), backed up by

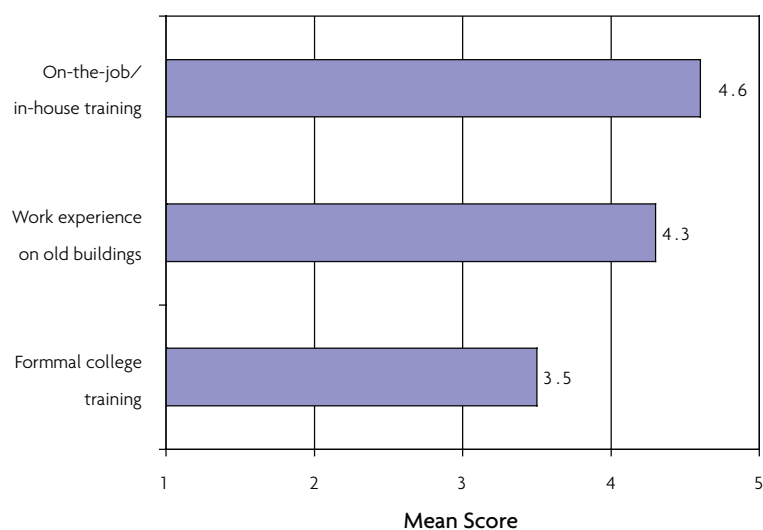
experience of working on old buildings (MS 4.3), with formal college-based training playing a supporting role (MS 3.5). Those working predominantly on old buildings and conservation specialists were least likely to place importance on formal college training (both MS 3.3).

5.10.2 Numbers of Staff in Formal Training

In total, this research identified 209 employees on formal training programmes out of a total workforce of 1,689. This implies that every eighth trades/craftsperson employed by firms working on pre-1919 buildings was a trainee.

These trainees were not, however, distributed evenly throughout the

Figure 10 Importance of Factors Contributing to Skills Development and Training, Contractors



Base: all respondents 1=not at all important 5=very important

workforce, as only 44% of the firms interviewed (114 out of 261) employed a trainee, compared with 60% overall in the English *Traditional Building Craft Skills* report (Table 22, p. 69) and the Scotland report (section 5.7.1). Reflecting the generally small nature of the contracting firms, most had 1 or 2 trainees, and only 3 firms employed more than 5 trainees, with 10 the largest number. Taken as an average across all firms, Welsh builders employed 0.8 trainees each, compared with 1.6 in Scotland (excluding 3 disproportionately large firms) and 2 in England (*Traditional Building Craft Skills*, 6.2.1, p. 69). As expected, sole traders employed hardly any trainees.

Regionally, the north was the only area where the majority of firms employed trainees. In the south-west only just over a third (37%) had any trainees. Because of the differing sizes of firms across Wales, the south-east had the highest number of trainees (67). As expected, there is a direct relationship between the size of the firm and the likelihood of employing staff engaged in formal training programmes, with only 25% of sole traders employing trainees, compared with 80% of the largest firms.

The vast majority of trainees (83%) were apprentices aged under 25, while only 3% of firms overall employed trainees aged over 25, of whom there were 12 in total. A similar proportion of firms employed adult apprentices aged over 25, of whom there were 14 in total, including 5 employed by a single firm.

5.10.3 Perceptions of the College-Based Element of Modern Apprenticeships

As shown in Table 34, those employing apprentices were not overly enthusiastic about the college-based element of modern apprenticeships (MS 3.1). Overall, the verdict is that this is reasonable rather than good, with stonemasons (MS 2.7) and conservation specialists (MS 2.5) the least likely to praise college-based elements.

Welsh views on college-based elements of modern apprenticeships appear to sit between the more positive views of the Scottish (59% excellent/good, 16% poor/very poor) and the more negative perception from the English research (33% poor/very poor).

The 30 respondents regarding the college-based elements as either poor or very poor were invited to suggest improvements. The main

Basically I've never really asked as far as whether they went to college or not, because it's not important. I go by how long they've been working in building, what their main tasks have been in the building trade and the rest they learn working with us ... you can tell within a week whether they can do what they say they can do.

Contractor

Table 34 Overall Opinion of College-Based Element of Modern Apprenticeships

	%	Mean
Excellent (5)	4	
Good (4)	34	
Reasonable (3)	34	
Poor (2)	20	
Very poor (1)	6	
Don't know	2	
Total	100	
Mean score		3.1

Base: all employing apprentices (113)

themes from the 20 different suggestions made were that: college trainers themselves need further training; college-based elements should be more relevant to work actually undertaken on site; further emphasis should be given to the development of basic traditional building skills.

5.10.4 Drop-out and Retention Rates Post-Apprenticeship

Some 59% of building firms employing apprentices commented that all of them completed their apprenticeships, with an overall drop-out rate of 15%, which is substantially lower than the 25% drop-out rate in England.³⁶ The fact that trainees are apt to leave their employer after they have completed their formal training programmes is a vicious circle often cited as a disincentive for employers to fund training programmes.³⁷

Although a lower proportion of Welsh apprentices dropped out of their training, those that completed their courses tended to leave their employer more quickly than their English or Scottish counterparts (Table 35).

Of those Welsh builders answering, 12% said apprentices stayed for a year or less, with nearly a fifth retaining them for 2 years and 8% holding on to their apprentices for 3 years. Only 25% retained their apprentices for 4 or more years, compared to half of the equivalent Scottish firms.³⁸

Table 35 Average Retention Period (Years) in Wales and England

	Years
Wales	4.5
England (sole traders)	3.5
England (contractors)	6

5.10.5 Funding for Skills Training

Overall, 84% of those employing trainees received training grants from ConstructionSkills, while 14% stated that they did not receive any grants; three other funding sources were mentioned, each by 1 respondent. Sole traders and conservation specialists were less likely to secure grant assistance for training.

Grant funding generally contributes to course fees and in some cases the subsistence expenses incurred by trainees such as travelling. These elements were, however, regarded as the biggest cost elements of training by only 15% and 6% of all Welsh contracting firms respectively. By far the biggest cost concern, and one that is not covered by grants, was the lost time/productivity experienced while the apprentice was learning rather than earning, mentioned by 79% overall.

5.10.6 Traditional Building Craft Skills Training

While most requests were for heritage building skills, expressions of interest in training for concrete finishing and ground-works indicate how out of touch some builders working on pre-1919 buildings apparently are.

Of the firms interviewed as part of this survey, 23% commented that they would like to be able to provide further traditional building skills training to their staff. Lime plastering (22 firms) and stonemasonry were the two most popular requests, but over twenty other craft skills were mentioned including carpentry, lead-work, decorative plastering and thatching.

Those in the south-west were more interested, as were those with staff enrolled on formal training courses. Lack of suitable courses, the cost of

having staff away from work, the cost of the course itself, the distance required to travel for a course and, to a lesser extent, the lack of demand from customers are the main reasons why these firms could not provide traditional craft skills training

All respondents were asked the extent to which various different factors would encourage further uptake of traditional skills training. As shown in Table 36, it is not surprising to find that further financial support/grant aid is one of the key factors (MS 3.9, mentioned by 65%). It is interesting to note, however, that overall a higher number of builders commented that being able to develop their skills on old buildings would encourage them to sign up for traditional building skills training (MS 3.9, mentioned by 71%). In terms of the other influencing factors, having some input into course content (MS 3.8) was a greater incentive to undertaking craft skills training than having the training provided locally (MS 3.6).

These findings reinforce established practice of much of the existing traditional building skills training activities already taking place in Wales. In most such activities, trainees can develop skills through practising on old buildings: for example, training linked to THIs; training provided by Faenol or Ty Mawr; short courses provided by the National Trust. All of these activities are centred on historic properties where real work can be undertaken.

Almost 40% made no use of additional sources of traditional building skills training. Even where Welsh builders do claim to be taking up traditional building skills training,

Table 36 Extent to which Factors Encourage Further Uptake of Traditional Craft Building Skills Training

	Opportunity to develop skills on old buildings		Further financial support		Ability to influence course content		Providing training locally	
	%	Mean	%	Mean	%	Mean	%	Mean
To a great extent (5)	42		46		35		33	
To some extent (4)	29		19		25		25	
Neutral (3)	15		21		26		17	
Not very much (2)	3		4		4		8	
Not at all (1)	9		7		8		14	
Don't know	2		3		2		3	
Total	100		100		100		100	
Mean score		3.9		3.9		3.8		3.6

Base: all respondents (261)

it is clear from their answers that some of them have a rather vague conception of what constitutes traditional skills training. This is evidenced by the main answer given in Table 37, use of the ConstructionSkills OSAT programme by almost two-thirds of those claiming to undertake further traditional skills training (44% of all respondents). Conservation units are available at NVQ Level 3 via the OSAT route, but this process is mainly used to achieve a fully qualified workforce in the mainstream trades through the ConstructionSkills certification scheme, rather than for skills training delivery.

After OSAT, FE colleges and short courses run by building materials merchants/manufacturers such as

Ty Mawr were each mentioned by one-fifth overall, or a third of those undertaking additional training. While use of organisations such as Ty Mawr is encouraging, the mention of FE colleges again gives rise to some concern about the nature of the skills training in question.

All Welsh colleges providing training in construction courses were interviewed during this research, and only 4 were identified as providing traditional skills training which does not lead to a recognised qualification. One provides courses for children with special needs, and one provides courses for full-time students for whom NVQ courses are considered inappropriate. It is known that some FE colleges have worked with THIs to help train local

Firms round here must have trained literally dozens of apprentices in the last ten or fifteen years and they just get to a level where they know they can leave and they'll get more money in another situation.

General Builder, South-East

Table 37 Additional Sources of Traditional Skills Training

	%
ConstructionSkills OSAT programme	44
Short courses by builders' merchants, eg Ty Mawr	21
Further education colleges	20
Short courses run by Faenol/local authorities	16
Equipment manufacturers/suppliers	15
Trade federations	15
Conservation organisations, eg SPAB	8
None	38

Base: all respondents (261)

builders, but it is again considered likely that this is another example of some firms not recognising the difference between mainstream skills training in the main trades and specialist heritage/conservation skills training.

Three other training providers were fairly widely mentioned by 15–16% overall (a quarter undertaking additional training), and these were short courses run by Faenol/local authorities, equipment manufacturers /suppliers and trade federations. Finally, 8% overall mentioned receiving training from conservation organisations such as the Society for the Protection of Ancient Buildings.

Only 42% of sole traders undertook additional traditional skills training, compared with 92% of the largest contractors, and those firms who had staff on formal training courses were more likely to also use additional training providers. As in the Scottish work this finding tends to contradict the oft-repeated belief that large firms do not pull their weight when it comes to training provision.

One in eight Welsh building firms (12% overall) travelled outside Wales to obtain traditional craft building skills training. This was primarily because the course was not available in Wales; other reasons were finding an English

course cheaper/more convenient than its Welsh counterpart. Plasterers and conservation specialists were more likely to travel to England than other trades/craftspeople.

5.10.7 Heritage Lottery Fund Traditional Building Skills Bursary Scheme for England and Wales

Almost a quarter (24%) of all respondents stated that they were aware of the Heritage Lottery Fund Traditional Building Skills Bursary Scheme for England and Wales, which drops to only 10% among the conservation specialists. Overall, two-thirds expressed interest in the bursary scheme and 43% were interested in both applying for a bursary for someone in their firm and being a placement provider, thereby hosting a bursary trainee. Larger firms were more likely to express interest in the scheme as a whole, as were stonemasons, conservation specialists and those with staff in formal training.

5.10.8 Interest in Further Traditional Building Skills Training

As shown in Table 38, slightly under half of the Welsh building firms working on pre-1919 buildings expressed interest in developing their traditional building craft skills further. Most of the remainder (35% overall) were ambivalent on this issue, with only 17% of firms saying they were not interested in further

skills development (MS 3.5). Those in the south-west were slightly more interested (MS 3.7), as were woodworkers (MS 3.8), plasterers (MS 3.7) and stonemasons (MS 3.6). Conservation specialists were keenest to build further on their traditional craft skills (MS 4.1).

The reasons for the slightly equivocal response overall are unclear. Partly it could be that Welsh builders already possess or are acquiring the skills required to work on pre-1919 buildings. On the basis of the findings of the qualitative research, and the comments from building professionals, it is considered unlikely that as many as half of the firms working on pre-1919 buildings in Wales possess a level of traditional craft skill which could not be improved further. Indeed the conservation specialists were among the most likely to say they would like to improve their traditional skills further.

5.11 Traditional Building Materials

5.11.1 Materials Used on Pre-1919 Buildings

The qualitative research indicated that traditional craft building is just as much about theory, understanding and use of materials as it is about physical 'skills' per se.

All respondents were therefore asked what proportion of their work on pre-1919 buildings involved only traditional materials, what proportion involved only modern materials and what proportion involved a combination of the two. This approach was taken in an attempt to gain a measure of the appropriateness of the materials used on the assumption that this provides an indication of the type of work that the builders practise on a regular basis.

Table 38 Extent to which Firms Are Interested in Developing Traditional Craft Building Skills Further

	%	Mean
To a great extent (5)	30	
To some extent (4)	17	
Neutral (3)	35	
Not very much (2)	9	
Not at all (1)	8	
Don't know	1	
Total	100	
Mean score		3.5

Table 39 Materials Used by Firms for Work on Pre-1919 Buildings : Contractors

	Proportion of firms' work (%) involving		
	Only traditional materials	Only modern materials	a combination of modern and traditional
All respondents	25	39	36
North	23	36	41
Mid	22	35	44
South-west	37	35	28
South-east	21	47	32
Main trades			
Wood trades	29	35	37
Plastering	20	54	26
Roofing	32	21	47
Stonemasonry	28	37	35
General building	25	44	32
Proportion of work on pre-1919 buildings			
1–25%	20	47	32
26–50%	24	37	40
51–75%	41	31	29
76–100%	31	31	39
Type of firm			
General	22	43	35
Conservation specialist	49	14	37
Sole trader	25	45	29
Contractor	25	37	38

Base: all contractors and sole traders (261)

The figures provided can be regarded as only broadly indicative, not as factually accurate, because they were generally based on top-of-mind estimations: respondents did not analyse their materials bills over the course of the year. Indeed, some of the firms were labour-only subcontractors and would not have purchased any significant proportion of the materials they had themselves used.

As shown in Table 39, it is somewhat depressing, although perhaps not altogether surprising, to find that on average Welsh builders working on pre-1919 buildings were more likely to use only modern materials (39%) than they were to use only traditional materials (25%) or a combination of modern and traditional (36%). One in ten of those interviewed (26 building

firms) had not used any traditional materials in the past year. Use of only traditional materials was more commonplace in the south-west than elsewhere in Wales, with the south-east the region where only modern materials are most likely to be used on historic properties.

In terms of the main trades, plasterers were most likely to use only modern materials and least likely to use only traditional materials. There is a clear link between use of traditional materials and proportion of work undertaken on old buildings. Reassuringly, conservation specialists most often employed only traditional materials, but even in this group use of modern materials only or both modern and traditional materials did occur.

5.11.2 Ease of Obtaining Traditional Building Materials

Those using traditional materials were asked whether they had used three primary materials in the past year and, if they had, how easy these were to obtain. Noting that answers for usage are based on all respondents, not just all using traditional materials, the responses in Table 40 are encouraging. Two-thirds overall

Table 40 Use of Traditional Building Materials in the Last 12 Months: Contractors

	%
Lime	67
Locally quarried stone	61
Welsh slate	59

Base: all respondents (261)

claimed to have used lime in the last year, with 61% saying they had used locally quarried stone and 59% Welsh slate.

As expected, Welsh slate was most widely used in the north and least in the south-east. Lime and locally quarried stone were also less often purchased by builders in the south-east than in other regions. Evidence from manufacturers and suppliers somewhat contradicts these usage figures, particularly for locally quarried stone, where many of the operative quarries are primarily producing aggregates.³⁹ This again suggests a lack of detailed knowledge of the provenance of materials. For some the difficulty in obtaining new materials led them to cannibalise materials from other historic buildings.

Encouragingly, lime (MS 4.5) is now considered very easy to obtain by Welsh builders, with locally quarried stone (MS 4.0) also regarded as easy to obtain, as Table 41 demonstrates. Given that Wales is reputed to have the largest operative slate quarry in the world, it must be somewhat dispiriting for the operators of that quarry to see that Welsh building firms regarded Welsh slate (MS 3.9) as the least easy of these three materials to obtain. Tellingly those

with the best knowledge, the roofers, were most likely to say that Welsh slate is difficult to obtain (MS 3.3). Those in the south-east reported the greatest difficulty in obtaining each material.

As shown in Table 42, the vast majority of traditional materials used in Wales were purchased from suppliers based in Wales, although this is less the case for those based in mid-Wales or for the largest firms. As Table 43 shows, however, building firms were on the whole less confident in saying where the materials used actually originated from, and over a quarter (29%) said they did not know. Even where respondents did give an answer it is not clear that this is accurate. For example, one-third of the plasterers using traditional materials said that these came from Wales. This is despite the fact that there is no commercial lime burning in Wales, the primary specialist suppliers, such as Lime Firms and Ty Mawr, importing their lime from France and England. The wood trades appear less sanguine, their main answers being either less than 20% or 'don't know', perhaps as a consequence of the importance of materials certification and traceability in the sector.

Table 42 Proportion of Traditional Materials Purchased from Welsh Suppliers

	%
All	52
Most	31
Some	9
Hardly any	6
None	2
Total	100

Base: all purchasing traditional materials in last 12 months (235)

Table 43 Proportion of Traditional Materials of Welsh Origin

	%
Over 75%	30
51–75%	12
21–50%	14
<20%	15
Don't know	29
Total	100

Base: all purchasing traditional materials in last 12 months (235)

5.11.3 Factors Limiting the Use of Traditional Building Materials

As shown in Table 44, the perception that traditional materials were more expensive, either in terms of material cost or working time, was one of the key constraints on their use (27%).

An equal number commented that there was also a lack of demand

Table 41 Ease of Obtaining Traditional Building Materials: Builders

	Lime		Locally quarried stone		Welsh Slate	
	%	Mean	%	Mean	%	Mean
Easy (5)	68		53		47	
Fairly easy (4)	20		19		19	
Neither easy nor difficult (3)	6		13		18	
Fairly difficult (2)	4		7		6	
Difficult (1)	2		8		10	
Total	100		100		100	
Mean score		4.5		4.0		3.9

Base: all using traditional materials in the last year (235)

Table 44 Main Factors Constraining Greater Use of Traditional Materials: Contractors

	%
Cost	27
Not specified by architect/surveyor	27
No demand from clients	25
Perceived disadvantages	19
Preference for modern materials	11
Traditional materials not necessary	7

Base: all contractors and sole traders (261)

for such materials to be used on old buildings. It is perhaps understandable that clients are ignorant of the need to use traditional materials and so do not demand them (25%). It is worrying, however, that 27% of builders commented that traditional materials were not used because these were not specified by the architect or surveyor managing the project.

Some 7% of the builders concerned, however, show a worrying lack of understanding of the need to use traditional materials, saying they are simply 'not necessary'.

Various other factors were mentioned, the majority of which are effectively differing nuances of two key sentiments: traditional materials have disadvantages (19%); modern materials are preferable (11%).

5.11.4 Influence of Building Regulations and Local Authority Building Control

The view was expressed by several builders and building professionals interviewed during the qualitative research that building regulations and local authority building control officers restrict the use of traditional materials. All respondents were asked to what extent they agree with these two opinions (Table 45). Overall, there is little consensus on whether building regulations (MS 2.9) restrict the use of traditional materials: a third consider that they do, roughly the same number think they do not, but the biggest group is those remaining neutral on the subject.

Building regulations in Wales underwent significant changes during the course of the research, with new regulations coming into effect. The overall change represents a shift away from prescriptive

regulations stating which materials can be used to performance-based regulations detailing the technical performance that materials must achieve in use. Theoretically this should allow for greater acceptance of traditional materials, providing that users can prove that the materials meet the performance requirements. At the same time, however, building control officers have less discretion with regard to the application of modern regulations on historic buildings. Previously, buildings deemed to be of architectural interest might not have had to comply with all aspects of building regulations, whereas now only listed buildings, scheduled ancient monuments or buildings in conservation areas can be exempted. In this respect, and of particular concern for the historic built environment, is Building Regulations Part L (Conservation of Fuel and Power), specifically those elements regarding heat loss and air tightness.

As shown in Table 45, respondents were slightly less equivocal when it comes to the extent to which building control officers restrict the use of traditional materials. Over a quarter disagreed strongly with this sentiment, with a further 16% disagreeing to a lesser degree (MS 2.7).

Table 45 Extent to which Building Regulations and Local Authority Building Control Officers Restrict the Use of Traditional Materials

	Building regulations		Local authority building control officers	
	%	Mean	%	Mean
To a great extent (5)	15		12	
To some extent (4)	17		18	
Neutral (3)	29		22	
Not very much (2)	14		16	
Not at all (1)	21		26	
Don't know	4		6	
Total	100		100	
Mean score		2.9		2.7

Base: all respondents (261)

Table 46 Rating of Contractors' Knowledge of and Ability to Work With Traditional Materials

	Knowledge		Ability to work	
	%	Mean	%	Mean
Good (5)	27		40	
Fair (4)	33		34	
Neither good nor poor (3)	25		14	
Fairly poor (2)	8		6	
Poor (1)	5		5	
Don't know	2		2	
Total	100		100	
Mean score (building contractors)		3.7		4.0
Mean score (building professionals)		3.4		3.6

Base: all respondents (261)

As a result of the concerns expressed in the first phase of qualitative work, an additional qualitative study was undertaken with local authority building control officers. This proved instructive in terms of both understanding the new building regulations and in terms of the attitudes of the officers concerned. Some local authority officers were open to the use of traditional materials and understood the advantages of their use on older buildings, and alerted planning and conservation officers to the use of inappropriate materials on older buildings, for example, UPVC windows in listed houses.

Others, however, perhaps those who had come straight into the profession from an academic rather than a trade background, had little understanding of or sympathy for the materials used in pre-1919 buildings, and applied modern thinking and regulations to them in an almost dogmatic fashion.

A further finding of this additional study is that local authority building control now faces competition for building control work from certified bodies. While the National Home Builders Council has for a long time

undertaken the majority of approvals relating to new-build housing, other organisations are now able to offer private-sector building control services. It is considered that commercial organisations in particular might find a national service provider to be attractive.

5.11.5 Employees' Knowledge of and Ability to Use Traditional Building Materials

As shown in Table 46, contracting firms are more confident in their employees' ability to work with traditional materials (MS 4.0) than they are in their employees' knowledge of such materials (MS 3.7). Although not a direct comparison, as the Scottish version of the research recorded a single score for these two factors, it is interesting to note that the Welsh builders were slightly less confident in appraising their employees highly on these factors, particularly in terms of knowledge.⁴⁰ Those in the south-east had a lower level of confidence in their employees on these measures than did firms elsewhere in Wales. Of course, self-praise is no recommendation and it can be seen that building professionals have a rather lower opinion of contractors' traditional craft skills than have the contractors themselves.

5.12 Career Progression

There was very widespread support among Welsh builders for a formal career progression ladder in traditional building skills, with 89% supporting this notion and only 11% not in favour. This would start with apprentices and culminate in the title of master craftsman. The answers of those in the south-west and from stonemasons were particularly emphatic, with 97% of each group in favour. Greater enthusiasm was expressed for a formal career structure than in either the English or Scottish work. This enthusiasm for establishing a formal career structure must, however, be tempered by reality, as one roofing specialist commented during the qualitative research.

The answer to the question regarding what factors should career progression be linked to, other than pay, is useful in terms of understanding the values of building firms working on pre-1919 buildings. As in England and Scotland, experience (58%) and skills (53%) were the key factors that respondents considered should govern career progression, with success at the job (19%) and qualifications (13%) comparatively minor concerns.

6

MANUFACTURERS AND SUPPLIERS OF TRADITIONAL BUILDING MATERIALS

- 6.1 Manufacture of Building Materials in Wales
- 6.2 Survey Sample Overview
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 - 6.3.1 Traditional Building Materials Manufactured and Supplied
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- 6.7 Career Progression

manufacturers and suppliers

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

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

6.1 Manufacture of Building Materials in Wales

While GVA in the Welsh manufacturing and production industries decreased by an average 0.4% per annum between 1995 and 2004, its share of UK manufacturing GVA dropped from 5.4% to 4.9% over the same period,⁴¹ and is now about 9% lower than it was a decade ago.⁴² However, in terms of its contribution to GVA, manufacturing marginally remains the largest industry sector in Wales ahead of real estate, renting and business activities, wholesale and retail trade, and health and social work. In 2004 all manufacturing activities in Wales generated £7.2 billion of GVA, or 18% of the total GVA for Wales.⁴³

The manufacturing sector covers considerably more than just building materials. After removing wholly unrelated activities, the GVA figure stands at approximately £1.57 billion, which is about 22% of total GVA for manufacturing in Wales. However, this still encompasses more than just building materials, covering as it does manufacture of basic and fabricated metals, wood and wood products, manufacture of other non-metallic mineral products and, outside of manufacturing, non-energy producing mining and quarrying. No accurate figures exist that would truly reflect this sector, which is in fact a set of sub-sectors of larger manufacturing activities. The closest proxies are those relating to the economic activities represented by Proskills.⁴⁴ Established in 2005, Proskills covers five areas:

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

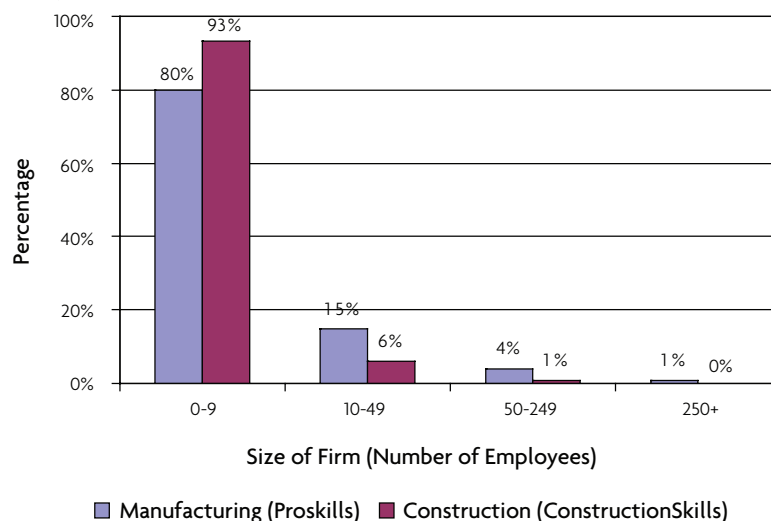
With the exception of printing the remaining areas are all closely related to the manufacture of building materials. Missing from the Proskills remit, however, are the key areas of metal- and wood-related activities.⁴⁵ These tend to fall between construction, manufacturing and engineering, leaving them without a fully representative body. The sector within the Proskills remit that is of particular relevance to this study is the extractive and mineral processing industry.

The firms included within the Proskills remit in Wales employ approximately 14,200 people or about 4% of the UK manufacturing

and processing workforce. As shown in Figure 11, manufacturing firms in Wales are, predominantly, not as small as in the construction industry and, as illustrated by Figure 12, are very much in line with the UK average for their activities. However, as demonstrated by both figures, the vast majority are still small firms.

As within the construction industry, the Welsh manufacturing and processing workforce is essentially male (84%) and white (>99%). In terms of age profile, no official figures are currently available for Wales because of the unreliable nature of the small numbers, but the UK manufacturing and processing workforce is older than the average across the economy, with only 9% within the 16–24 age bracket, compared with the 14% UK average. Qualification levels

Figure 11 Percentage of Firms within the Proskills and ConstructionSkills Footprint by Size, Wales, 2005



Source: Annual Business Inquiry

are higher than the manual construction industry workforce, with 35% of manufacturing workers having NVQ Level 2 or above, compared with 29% in construction (again, no figures are currently available for Wales).⁴⁶

While the proportion of Welsh manufacturing firms reporting that they provided off-the-job training to employees within the last 12 months (45%)⁴⁷ was less than that of the construction industry (58%),⁴⁸ only 16% of establishments reported skills gaps. As Section 6.4.3 shows, the situation was far more acute in the traditional building materials sector than in the wider manufacturing industry, with all of those reporting recruitment difficulties (58% overall) reporting skills gaps. This is despite a similar commitment to off-the-job training among the heritage sector, where some 42% overall had staff involved in such training.

In terms of skills shortages in the wider manufacturing industry, only 440 vacancies were reported in



Wales, of which 80 were hard to fill and only 7% (30) attributed to skills shortages, which equates to less than 1% of employment. Again, as demonstrated in Section 6.4.5, the picture in the traditional building materials sector is somewhat different, with a fifth overall reporting long-term outstanding vacancies. Practically all in the latter group operate in the joinery manufacturing sector and the

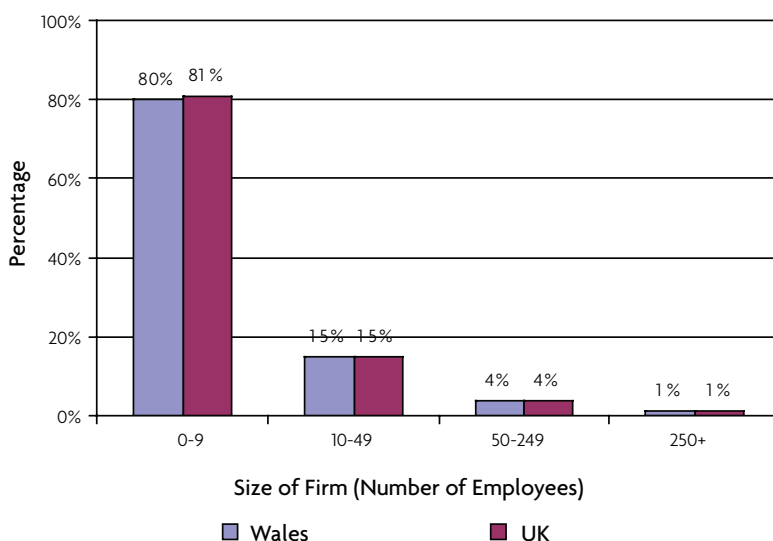
differences probably reflect the relative dynamism in this sector compared with the comparative lack of dynamism in the extraction sector as a whole.

A 2003 report by EPIC⁴⁹ into training and assessment provision in the quarrying industry in Wales⁵⁰ forecast that the industry was faced with the prospect of losing at least 25% of the skilled labour force over the following 10 years.

The growth of the industry is seen to be increasingly constrained by environmental legislation and falling levels of overall demand from some established markets, such as housing, in the face of cheaper foreign imports. Foreign imports appear a significant influence on demand, particularly where flexibility is required in the specification. Furthermore, labour reductions as a result of changes in technology have also impacted on skills needs.⁵¹

Collectively, this has led to low levels of recruitment in the

Figure 12 Percentage of Firms within the Proskills Footprint by Size, Wales and the UK, 2005



Source: Annual Business Inquiry

Table 47 Total Number of Employees, including Directors: Manufacturers and Suppliers

	%	N
21–26	8	
11–20	19	
6–10	19	
5	6	
4	19	
3	14	
2	8	
1	7	
Total	100	
Total workforce		294
Average		8.2

Base: all manufacturers and suppliers (36)

manufacturing industry as a whole, particularly at the younger end of the labour market, and is probably responsible for the relatively low levels of firms reporting skills shortages and skills gaps.

6.2 Survey Sample Overview

During the qualitative research, in-depth interviews were undertaken with representatives of a stone quarry, a slate quarry and a major

supplier of lime and other conservation building materials. A total of 36 interviews were undertaken with manufacturers and suppliers in the quantitative stage, 20 with joinery manufacturers, 13 with suppliers of stone and slate, and one each with brass-work, glass and lime suppliers. Joinery manufacturers were drawn from the CITB-ConstructionSkills Levy database, while other suppliers were identified through desk research.

As Table 47 shows, the sample covered firms ranging from sole traders to those having 20+ employees. Unlike the contractors, which were dominated by micro-firms of under 10 people, there was a broad spread of size, although 8 companies accounted for around

Table 48 Building Materials Supplied

	Materials provided		Main Product	
	%	N	%	N
Timber products	69		50	
Sawn timber	36		3	
Dressed natural stone	36		17	
Quarried rubble stone	33		14	
Reclaimed stone	28		0	
Roofing slates/tiles	19		3	
Bricks	11		0	
Cast/reconstituted stone products	11		0	
Glass/stained glass	28		3	
Metal products, eg cast iron, lead brass, bronze, copper	14		0	
Architectural metalwork, eg railings/gates	11		3	
Interior decorative fittings, eg textiles, wallpaper, plasterwork	8		0	
Ironmongery for doors	6		0	
Mortars	8		0	
Lime	6		3	
Plaster	3		0	
Sand	3		0	
Paint	3		0	
General building materials	11		0	
No main product		na		6
Average number of products		3.4		na

Base: all manufacturers and suppliers (36)

50% of all employees. Nearly all staff (275) were full time, with 12 firms employing just 19 part-time staff between them. Overall, the firms interviewed employed 294 staff, giving an average overall of 8.2 employees per firm, which is somewhat lower than in Scotland (15). In Wales, joinery firms (10.2 employees) tended to be larger than stone/slate companies (6.5), with each of the three 'other' material suppliers (stained glass, brassware and lime) being very small.

6.3 Key Activities in the Survey

6.3.1 Traditional Building Materials Manufactured and Supplied

Two-thirds of those interviewed were just manufacturers, most of them were joinery firms, and 10 both manufactured and supplied, mostly stone and slate suppliers. Only two companies undertook no manufacturing, both in the stone and slate sector.

Table 48 shows the building materials provided by the manufacturers and suppliers and the main one for each firm. Within the joinery sector, timber products were sold by twice as many firms as sawn timber, while the three main products for stone and slate were dressed natural stone, quarried rubble stone and reclaimed stone. Glass and stained glass products were mentioned by over a quarter of all firms, including almost half the joinery manufacturers, presumably in the form of windows and doors. On average each supplier supplied 3.4 main product categories.

6.3.2 Involvement in Other Activities

Half of all manufacturers and suppliers also offered installation services and 39% offer specification



services, while a third offer neither. Joinery manufacturers were more likely to also be involved in installation, and stone and slate firms to be involved in specifying.

6.3.3 Proportion of Materials Used on Pre-1919 Buildings

The manufacturers and suppliers were asked what proportion of their products was used on pre-1919 buildings. As in Scotland, there was a broad range of answers (Table 49), with around a third saying less than 25% but a quarter each saying half or more than half. There was no major difference between the joinery and stone and slate sectors, whereas the three 'other' companies tend to specialise in materials for pre-1919 buildings.

6.3.4 Proportion of Traditional Building Materials Supplied

Table 50 shows that, overall, three-quarters of products sold by the manufacturers and suppliers could be described as traditional building materials. One-third of all the manufacturers and suppliers said that all products were traditional

Table 49 Proportion of Building Materials Used for Pre-1919 Buildings

	%
1–25%	36
26–50%	25
51–75%	22
76–100%	8
Don't know	9
Total	100

Base: all manufacturers and suppliers (36)

Table 50 Proportion of Products which Are Traditional Building Materials

	%
<49%	16
50%	6
51–75%	17
76–99%	25
100%	36
Total	100

Base: all manufacturers and suppliers (36)

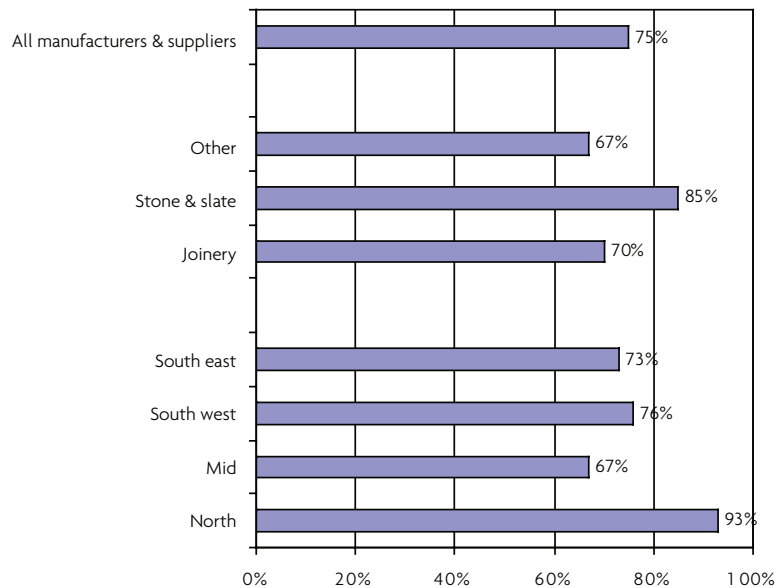
and another quarter said that the majority were. Only 16% said less than half their products were traditional. Joinery firms were less likely to consider their products traditional than those in the stone and slate sector (Figure 13).

6.3.5 Geographic Range of Supply

In contrast to the contractors, who tended to work fairly close to home, only a quarter of manufacturers and suppliers said that most of their traditional materials were used within 20 miles of the outlet. Indeed almost one-fifth said that none of their products were used within this radius. For the majority, most products were used within a radius of 50 miles, although half sent at least some product further afield, and joinery tended to travel further than stone products. Two-thirds commented that most of their products were used in Wales, although the majority sent at least some to England. Only one company supplied outside England and Wales, and this represented only a small proportion.

6.3.6 Degree of Heritage Specialisation

Of the 36 respondents, only 8 (22%) described themselves as providing specialist conservation or heritage products, the remainder regarding themselves as generalists, providing products for a range of buildings including old properties.

Figure 13 Average Proportion of Traditional Building Materials Supplied

Base: all manufacturers & suppliers

In line with this, Table 51 shows that a third of manufacturers and suppliers stated that their customers tended to be general builders or trades/craftspeople, with half this proportion mainly serving conservation specialists. Interestingly, almost a quarter supplied homeowners/DIY more than any other sector.

6.4 Workforce Management

6.4.1 Number of Skilled Trades/Craftspeople Employed

As Table 52 shows, just under three-quarters of manufacturers and

suppliers had at least one employee with traditional craft building or manufacturing skills, giving a total of 157, which was just over half the total workforce. Joinery manufacturers (85%) were more likely to employ skilled staff than those in the stone and slate sector (62%) and also employed a higher number of skilled staff, at an average of 7 per firm compared with 1.2 for the stone and slate suppliers.

6.4.2 Ease of Recruiting Skilled Trades/Craftspeople

Table 53 shows that there is a much greater problem in recruiting skilled

Table 51 Types of Customers

	%
General builders/tradespeople who can work on old buildings	33
Conservation/heritage specialists	17
Homeowners/DIY	22
Builders merchants/resellers	5
Varies	23
Total	100

Base: all manufacturers and suppliers (36)

Table 52 Total Number of Employees, including Directors, with Traditional Building Craft or Manufacturing Skills

	With craft skills		Total employees	
	%	N	%	N
21–26	0		8	
11–20	14		19	
6–10	11		19	
5	0		6	
4	8		20	
3	8		14	
2	25		8	
1	6		6	
None	28		na	
Total	100		100	
Total workforce		157		294
Average		4.4		8.2

Base: all manufacturers and suppliers (36)

Table 53 Ease of Recruiting Trades/Craftspeople with Traditional Building Skills

	%	Mean
Very easy (5)	4	
Fairly easy (4)	4	
Neither easy nor difficult (3)	12	
Fairly difficult (2)	15	
Very difficult (1)	65	
Total	100	
Mean score		1.7
Mean score (contractors)		2.6

Base: all employing skilled staff (26)

Table 54 Skills Shortages and Skills Gaps: Manufacturers, Suppliers and Contractors (%)

	Manufacturers & suppliers	Contractors
Skills shortages	14	44
Skills gaps	100	81

Base: all experiencing difficulty recruiting trades/craftspeople

employees into manufacturing and supply (MS 1.7) than into contracting (MS 2.6), although the builders themselves experienced difficulties. Some 80% of manufacturers and suppliers employing skilled staff considered recruitment difficult or very difficult compared with 47% of contractors. There was no difference between joinery and stone and slate in this respect. Overall, the Welsh manufacturers

were mostly united in considering recruitment difficult, whereas the picture in Scotland was ambivalent with 59% considering this easy and 41% difficult.

6.4.3 Skills Shortages and Skills Gaps

Table 54 demonstrates that almost all of those experiencing recruitment difficulties said this was purely due to skills gaps, with a small number also saying skill shortages, a

more extreme view than that taken by contractors. As with the contractors these views contrast with the situation in Scotland, where manufacturers were more likely to report skills shortages (83%) than skills gaps (42%).

6.4.4 Traditional Craft Trades Difficult to Recruit

Not surprisingly, joinery manufacturers found it hard to recruit joiners, while those in the stone and slate sector mentioned stonemasons in this respect. A small number of joinery manufacturers also mentioned wood machinists. Stonemasons were also the main trades/craftspeople mentioned by contractors as difficult to recruit.

6.4.5 Long-Term Outstanding Vacancies

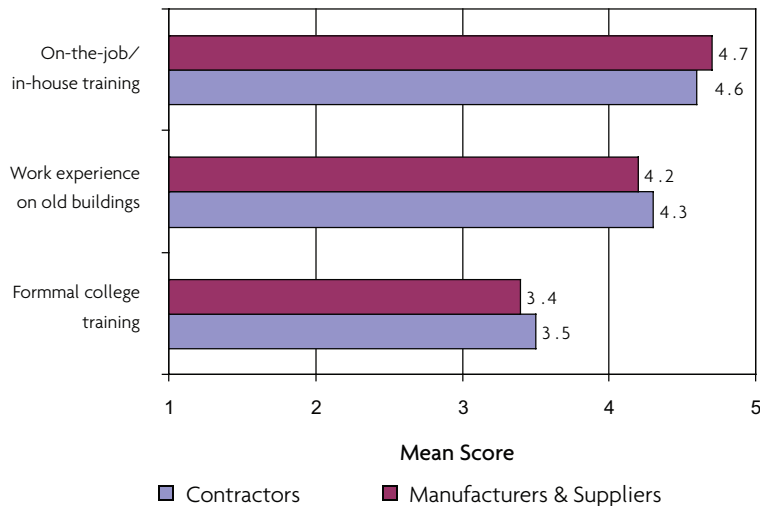
A quarter of all firms employing skilled staff had long-term outstanding vacancies (19% overall) compared with only 4% among contractors, with six of the nine firms seeking to recruit joiners and two mentioning wood machinists. Among contractors, carpenters were a key area of long-term outstanding vacancies.

6.5 Training

6.5.1 Views on Training

The views of those manufacturers and suppliers employing skilled tradespeople were almost identical to those of the contractors in that they recognised a need for both college work and on-the-job training. Over half said that both were definitely needed, and 38% considered this preferable, while only 8% thought that on-the-job training alone was sufficient. Figure 14 shows that on-the-job/in-house training is perceived as vital, experience of old buildings important and college training only moderately so.

Figure 14 Importance of Factors Contributing to Skills Development and Training, Manufacturers and Suppliers



Base: all respondents 1=not at all important 5=very important

6.5.2 Numbers of Staff in Formal Training Programmes

Over half of manufacturers and suppliers employing tradespeople had staff involved in formal training (42% overall), a level almost identical to that among contractors (44%), but substantially higher than in Scotland (30%). The research identified 35 employees on formal training courses, which amounts to 12% of the overall workforce, again similar to contractors. On average, each firm had one employee in formal training, marginally higher than the contractors (0.8). Joinery manufacturers were much more likely to have employees in formal training (70% overall) compared to those in the stone and slate sector (8%).

As with the contractors, the great majority of trainees (94%) were apprentices aged under 25, with only one firm employing any trainees aged over 25 (2 in total), and there were no mature apprentices.

6.5.3 Traditional Craft Skills Training

All but two manufacturers and suppliers employing tradespeople claimed to make use of additional sources of traditional skills training. Three-quarters mentioned on-the-job training and 42% used the ConstructionSkills OSAT programme. Small numbers mentioned training from equipment manufacturers, FE colleges or specialist short-course providers. Only two respondents needed to seek training provision outside Wales.

6.5.4 Manufacturers and Suppliers as Training Providers

Both the slate quarry and the lime supplier interviewed during the qualitative research provided structured training courses for people outside their respective firms. The lime company provided university-accredited short courses on how to use the materials, with c. 600 people trained by this firm annually including building contractors, building professionals, local authority conservation

officers, homeowners, other stockholders and the general public. In addition the firm also undertook awareness-raising courses reaching several hundred people a year. The slate quarry is an accredited NVQ provider, training its own staff in the manufacture of slates and slate products, building professionals in the specification of slate, and contractors in the fixing and laying of natural slate. In both cases, these manufacturers had provided training because of the complete absence of relevant traditional building skills training at local FE colleges.

Other suppliers of lime are also known to provide training to customers, but in the main survey sample only one joinery manufacturer was involved in external training, being active in providing work placements for schoolchildren.

6.6 Manufacturing Methods and Traditional Building Materials

6.6.1 Processing and Manufacturing Methods

Of the 34 manufacturers interviewed, 10 were involved in the extraction of raw materials, all but one of these being in the stone and slate sector. Almost all (92%) were involved in working raw or semi-processed materials. As shown in Table 55, one fifth of manufacturers, all in joinery, used only traditional methods of manufacture, while a similar proportion used mainly traditional techniques. Almost half used a mix of traditional and modern techniques, but only 9% (all stone and slate) used all or mainly modern techniques, mainly for speed.

Table 56 shows the very high opinion that manufacturers have of their employees' knowledge of (MS 4.3) and ability to manufacture/process (MS 4.6) traditional materials.

Table 55 Manufacturing Techniques Used

	%
Only traditional	22
Mainly traditional	22
Mix of traditional and modern	47
Mainly modern	6
Only modern	3
Total	100

Base: all manufacturers extracting/working material (32)

Table 56 Rating of Employees' Knowledge of and Ability to Manufacture/Process Traditional Materials

	Knowledge		Ability to manufacture/process	
	%	Mean	%	Mean
Good (5)	44		65	
Fair (4)	39		35	
Neither good nor poor (3)	14		0	
Fairly poor (2)	3		0	
Poor (1)	0		0	
Total	100		100	
Mean score (employees)		4.3		4.6
Mean score (building contractors)		3.7		4.0
Mean score (building professionals)		4.0		na

Base: all manufacturers (34)

The provision is not there, there is no supply so we put in place an in-house facility aimed at giving roofing contractors and stone masons the skills of natural slate roofing and general masonry.

Slate Quarry



Table 57 Ease of Sourcing Welsh Materials

	All		Joinery		Stone	
	%	Mean	%	Mean	%	Mean
Easy (5)	13		0		36	
Fairly easy (4)	9		10		10	
Neither easy nor difficult (3)	19		21		18	
Fairly difficult (2)	31		32		36	
Difficult (1)	28		37		0	
Total	100		100		100	
Mean score		2.5		2.1		3.5

Base: all manufacturers extracting/working material (32)

Table 58 Extent to which Factors Constrain the Use of Traditional Building Materials

	Lack of knowledge among architects & surveyors		Lack of knowledge among property owners		Lack of knowledge among builders		Lack of traditional skills among builders	
	%	Mean	%	Mean	%	Mean	%	Mean
To a great extent (5)	2		14		16		14	
To some extent (4)	28		22		14		25	
Neutral (3)	22		25		20		28	
Not very much (2)	17		25		20		19	
Not at all (1)	25		8		22		6	
Don't know	6		6		8		8	
Total	100		100		100		100	
Mean score		2.6		3.1		2.8		3.2

Base: all respondents (261)

6.6.2 Country of Origin of Materials Worked and Supplied

While most of the worked stone and slate was of Welsh origin, wood for joinery tended to come from a range of other regions, notably Africa and America, and smaller numbers mentioned France, Russia and Scandinavia in this context. The main reason for importing materials was lack of availability within Wales, with cost and quality as secondary factors.

The 12 respondents buying in products were asked what proportion of resold traditional building materials originated in Wales. The majority consider that the bulk of these products were of Welsh origin, and as this group were predominantly in the stone

and slate sector this would seem credible. Among the five not generally using Welsh materials, three said that nothing appropriate was available, two considered imports to be better quality and one mentioned cost. Three imported stone from India; China was mentioned as a source of stone; Brazil, of slate; France, of lime; Germany, of glass.

6.6.3 Ease of Sourcing Materials

Table 57 shows that joinery manufacturers considered it fairly difficult to source Welsh materials, while those in the stone and slate sector thought it moderately easy. Overall, importing traditional materials was considered easier (MS 4.4) than sourcing them domestically (MS 2.5).

6.6.4 Constraints against Supplying Further Traditional Materials

Only a third of manufacturers and suppliers considered that there was any constraint against their supplying traditional materials; all but one of this group regarded lack of demand from clients as the issue, with the exception citing cost as the reason.

All respondents were then specifically asked whether lack of knowledge within the industry was a constraint against the use of traditional building materials. As Table 58 shows, manufacturers and suppliers' views were mixed, with lack of knowledge considered more of an issue among property owners (MS 3.1) than professionals (MS 2.6). The builders' lack of traditional

Table 59 Extent to which Building Regulations and Local Authority Building Control Officers Restrict the Use of Traditional Materials: Manufacturers and Suppliers

	Building regulations		Local authority building control officers	
	%	Mean	%	Mean
To a great extent (5)	6		8	
To some extent (4)	11		6	
Neutral (3)	39		28	
Not very much (2)	8		28	
Not at all (1)	25		14	
Don't know	11		16	
Total	100		100	
Mean score		2.6		2.6

Base: all respondents (36)

building craft skills was seen as more of a constraint (MS 3.2) than their lack of knowledge (MS 2.8).

6.5.5 Influence of Building Regulations and Local Authority Building Control

Manufacturers and suppliers did not consider that building regulations and local authority building control restricted the use of traditional building materials (Table 59).

6.5.6 Changes in Demand for Traditional Materials

Three-quarters said there had been an increase in demand for traditional materials over the last five years, with the remainder seeing no change. Joinery manufacturers (90%) were more likely to have seen an increase compared with those in the stone and slate sector (62%).

Almost all of those experiencing growth in demand said that this was because of a higher awareness among customers. Small numbers mentioned television and media interest in heritage buildings or commented that traditional materials were of higher quality and more durable.

This revival in interest in traditional building materials would appear to have started from a very low base, and Table 60 shows that manufacturers and suppliers did not rate their customers' knowledge of traditional materials very highly (MS 3.0). Almost half say this is only moderate, with around a quarter each considering this good/fair or poor/very poor.

We've experienced a greater demand for natural slate as a consequence of the greater awareness in the last decade of the importance of retaining the vernacular environment, in both urban and rural contexts.

Table 60 Rating of Customers' Knowledge of Traditional Materials

	%	Mean
Good (5)	6	
Fair (4)	19	
Neither good nor poor (3)	47	
Fairly poor (2)	17	
Poor (1)	6	
Don't know	5	
Total	100	
Mean score		3.0

Base: all manufacturers and suppliers (36)

Slate Quarry

6.7 Career Progression

As among all respondents, there was strong support (92%) from Welsh manufacturers and suppliers for a formal career progression ladder in traditional building skills, with experience (45%) and skills (48%) seen as the key factors, and success at the job (21%) and qualifications (12%) much less important.



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Television has had an extraordinary impact in the last two years with the Restoration programmes making people think about traditional buildings. People are starting to recognise that it's fashionable to restore and builders without any real traditional skills have scratched conservation specialists on the side of their van. So both tradespeople and homeowners are hugely more interested but it's been too rapid as there hasn't been the educational support.

Manufacturer and Supplier

ARCHITECTS AND SURVEYORS

7

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architects and surveyors

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

7.1 Architects and Surveyors in Wales

The Royal Society of Architects in Wales is the regional organisation of the Royal Institute of British Architects (RIBA). RSAW has approximately 800 members served through four local branches and a small team of permanent staff based in Cardiff at the Welsh School of Architecture. RSAW delivers a continuing professional development scheme for Welsh architects.

The Royal Institute of Chartered Surveyors (RICS) is the representative body for surveyors in the United Kingdom, and the RICS Association for Wales has over 3,000 individual members. The surveying profession is extremely diverse, covering 160 specialisms represented by 16 'faculties' within RICS.

Within RICS, the building conservation discipline is represented by the Building Conservation Forum, open to those with an interest in building conservation and not restricted to the surveying profession alone. It runs an accreditation scheme for conservation surveyors involving assessment by two RICS assessors and one from another profession. Requirements for accredited status include five years' post-qualification experience and submission of a portfolio of five conservation projects that must demonstrate a range of building conservation knowledge and experience. There are approximately 70 accredited surveyors in the UK and currently 9 members of the Building

Conservation Forum in Wales, one of whom was awarded accredited status in 2006.

RIBA disbanded its Conservation Register more than 10 years ago. One consequence of this was that ex-members of the register formed a company to manage a new register: Architects Accredited in Building Conservation (AABC). The architects listed on this register have all been assessed as to their individual knowledge and experience in conservation work by their peers in a team including a non-architect to ensure an element of public participation in the assessment process. The register includes both those practising in an active project management capacity and those acting in consultancy, educational or advisory roles. Of the 325 members listed on the register, only two are based in Wales. Conservation accreditation has been a major issue for building professionals in recent years.

Some RIBA members have been vociferously opposed to AABC, even to the extent that they have complained to the Office of Fair Trading that such forms of accreditation represent restrictive practice. At the time of writing it appears that the AABC register will come back into RIBA, and the Institute will once again assume responsibility for this vitally important function. Membership of RIBA will not be a precondition of membership of the register.

Given this background it is perhaps not surprising how few architects or surveyors actually have accredited status. The situation in Wales is, pro rata, similar to that in the UK as a whole.

The view of the RICS Building Conservation Forum is that only those who absolutely need to acquire accredited status apply for it and, more often than not, this is to fulfil a contract requirement. RICS considers it likely that some other members will have appropriate building conservation experience and expertise, but have never been presented with a compelling reason to go through the accreditation process.

7.2 Survey Sample Overview

Three architects were interviewed during the qualitative research and 40 during the main quantitative survey (all RSAW members), while 2 surveyors were interviewed during the qualitative phase of research and 13 during the quantitative survey (all RICS members). All building professionals interviewed had been actively involved in managing building works contracts affecting the fabric of buildings dating from before 1919 in the 12 months prior to the interview.

Practices interviewed during the research were typically small businesses, with one-third having only one or two people in the firm and another third within the 3–5 size. Only four firms, all architecture practices, employed more than 10 people.

The two largest of these firms interviewed, however, account for over half of all the 528 staff employed by firms taking part in the survey. There is an inverse relationship between company size and proportion of work undertaken on pre-1919 buildings, so those predominantly working in this sector tend to be the smallest firms. Regionally, most of the firms interviewed were based in the south-east.

Some 95% of staff worked full-time and in total there were only 25 part-time staff, although the latter were spread across a quarter of all firms. The use of part-time staff was more common than among the builders.

7.3 Work on Pre-1919 Buildings

7.3.1 Proportion of Work involving Pre-1919 Buildings

As shown in Table 61, on average, 38% of all the work undertaken by building professionals' firms in the 12 months prior to the study was on pre-1919 buildings, compared to 32% in Scotland. The figure for Welsh professionals was a little lower than for the contractors (43%), but in common with the builders, those

involved tended to do either a small amount or most of their work on pre-1919 buildings. Around half of the professionals commented that this work accounted for less than a quarter of their business, while for just under one-third it accounted for the majority.

Firms in the more rural or mixed landscapes tended to be involved in a far higher proportion of work with old buildings than those based in the more urban environments of the south-east (Figure 15). As expected, conservation specialists undertook considerably more work with old buildings than general practitioners, although most of the specialists did not work exclusively in this sector.

7.3.2 Geographic Range of Work

Welsh building professionals covered a greater geographic area in their work on pre-1919 buildings than did the contracting firms, with only one-third saying that their work was predominantly local, compared with almost three-quarters of contractors. Indeed, almost two-thirds of professionals undertook work on buildings 21–50 miles away, with some 40% working on buildings even further afield.

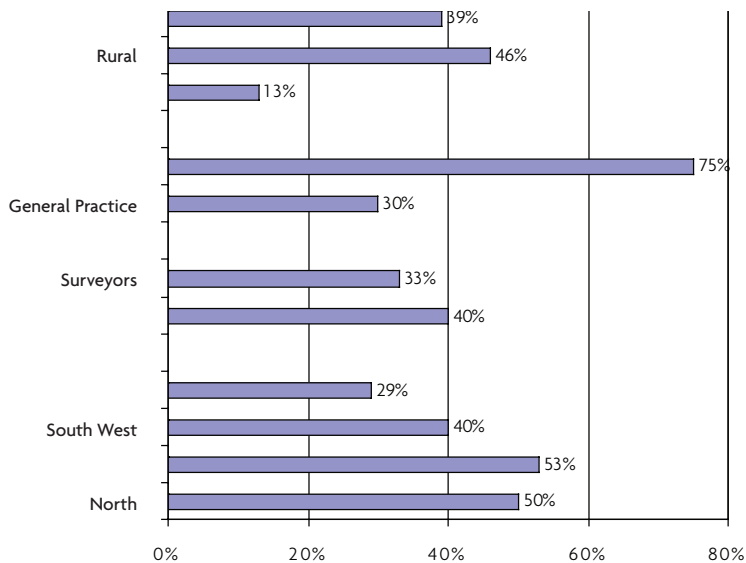
We wanted slates with a mica fleck content in a non-standard size. A UK provider wanted a two-year lead time and would only supply them in a standard size. In the end we traced the rock strata to Vermont, had them made the right size, shipped across the Atlantic and imported cheaper than the original company and in the time frame we wanted.

Architect, Mid-Wales, 6 employees

Table 61 Percentage of Firms' Work Involving Pre-1919 Buildings in the Previous 12 Months: Professionals and Contractors

	Professionals	Contractors
100%	6	9
76–99%	6	11
51–75%	19	11
50%	9	13
26–49%	11	12
11–25%	30	20
10% or less	19	23
Don't know	0	1
Total	100	100
Mean	38	43

Base: all respondents – professionals (53), contractors (261)

Figure 15 Average Proportion of Firms' Work Involving Pre-1919 Buildings: Building Professionals

Base: all respondents

The vast majority of the pre-1919 building projects concerned properties in Wales, with none of those in the north or south-west undertaking any work in England. Around half of those in the south-east and in mid-Wales worked on historic English properties, although in all such cases this formed a relatively minor part of their overall turnover. Two architects had undertaken projects involving pre-1919 buildings outside England or Wales in the year prior to the survey.

The research did not investigate the extent to which English building professionals work in Wales. While there are no traditional building materials or skills which are unique to

Wales, it is recommended that this aspect should be quantitatively measured in the forthcoming repeat of the corresponding English research, as there are regional variations in materials and in stylistic features.

In terms of the urban/rural dimension of pre-1919 building work, Table 62 shows that rural (30%) and mixed rural/urban (59%) environments were the norms for Welsh building professionals. This is very similar to the answers given by the builders, although the latter tended to be slightly more biased towards rural work. As would be expected, those in the south-east were more likely to work in urban environments than those elsewhere.

Table 62 Working Environments (%)

	Building Professionals	Builders
All/mainly urban	11	10
All/mainly rural	30	39
A mixture	59	51
Total	100	100

Base: all respondents (53)

7.3.3 Type of Work Undertaken, by Sector

Building professionals tended to work with a wider variety of building types than did the builders, so that their work was typically less concentrated. Whereas 86% of builders worked on private housing, 71% doing so predominantly, 94% of professionals worked on private housing, with only 40% doing so predominantly. Over 40% of professionals worked on historic commercial/industrial buildings, 28% on publicly owned properties and 51% on religious buildings. Architects were more likely to work in the public sector and with commercial/industrial stock, while surveyors were more likely to be involved where religious buildings were concerned.

7.3.4 Degree of Heritage Specialisation

Overall, 81% of building professionals engaged in work on pre-1919 buildings regarded themselves as general practitioners rather than as conservation or heritage specialists, but, at 19%, the proportion of specialists was slightly higher than among the building contractors (11%).

7.3.5 Confidence in Ability to Work on Pre-1919 Buildings

All building professionals interviewed were confident in their ability to undertake work on non-listed and Grade 2 listed buildings dating from before 1919. Practically all would be confident of working on Grade 2* buildings (98%), although there was a lower level of self-assurance with Grade 1 listed buildings (72%), and under half (49%) would be certain of their skills when faced with a scheduled ancient monument. Some 42% would be happy to work on any pre-1919 structure.

On the whole, most Welsh building professionals working on pre-1919 buildings were more confident in their abilities than were the building firms in their work on the same properties.

7.3.6 Accreditation

Of the 53 building professionals interviewed, 7 commented that they or someone in their firm was an accredited building conservation specialist, all of whom were architects, but only 2 said they were accredited by AABC.

The main reason for building professionals' not applying for conservation accreditation is that it was perceived as being too much effort (20 out of 46 respondents not claiming accreditation). It is not clear that these comments were made from an informed point of view, as few seemed to know what accreditation involved. Linked to this is the fact that many building professionals found that accreditation was simply not necessary for the kind of work they were involved in (11 respondents). Some held postgraduate qualifications or many years' experience with old buildings, others had simply never been asked if they were accredited.

Smaller numbers said there was no particular reason (5 respondents) or that conservation was only a minor part of their business (3); some were unaware even that conservation accreditation was available for their profession; and 5 respondents were strongly opposed to the concept of accreditation for professional architects. These findings are highly consistent with the Scottish research, both in terms of the relative proportions with accreditation and the reasons given for not seeking accreditation, so this is clearly a UK-wide rather than a separate home country issue.

7.3.7 Involvement in Grant-Funded Work

As might be expected, building professionals were more likely to have been involved in grant-aided pre-1919 building projects in the last year than builders, and those involved often mentioned more than one grant provider.

The professionals, in common with the builders (Table 63), were most likely to have been involved with local authority funded work (40%). Again this is somewhat unexpected as the qualitative research indicated that few local authorities had set budgets for conservation work to historic buildings. A higher proportion of the professionals had

I'm afraid I was as guilty as others back in the 1980s, I was involved in a lot of grant work on pre-1919 properties and it was always a stipulation then that you had a damp-proof course, you had timber treatment and you had your hard finish inside which was ostensibly to hold back the moisture and it was essential for the guarantee. The grants officers in this area are now fairly well educated and they're not going to be asking for those sort of things anymore.

Surveyor

Table 63 Proportion of Firms Involved with Grant-Aided Work

	Building Professionals	Contractors
Local authorities	40	31
Cadw	28	16
THI	21	8
Town Schemes	23	7
Tir Gofal	6	*
Other	9	5
No work involving grants	42	51
Don't know	2	4

Base: all respondents (53) * = less than 1

worked on town schemes and THIs, and it could be that, as local authorities often play the lead role in such projects, the perception was that the local authority had provided all of the required funding. In reality this is often provided in partnership with other sources such as the Heritage Lottery Fund and Cadw.

Another possible explanation is that this was not grant funding of conservation work, but improvements, group repair, energy efficiency or work to improve disabled access. Each of these latter types of grant could result in the replacement of historic building fabric with modern materials and a devaluing of the historic built environment where the work in question involved pre-1919 buildings. Typical examples might be the replacement of original sash windows with UPVC replacement units or the substitution of manufactured tiles for natural slate.

Cadw was the second most common source of grant funding, mentioned by over a quarter of the

professionals, with only slightly fewer citing THIs and town schemes. Regionally, far fewer of the firms in the south-east working on pre-1919 buildings had been involved with grant funding than elsewhere in the country. All of those specialising in work on religious buildings had been involved with grants, and they also mentioned a far wider range of funding sources than others.

Grant support for work on heritage buildings is an invaluable source of funding and should ensure that the work is appropriately specified and managed. Notwithstanding this, views that the process of applying for grant funding and that conditions applied to grants can act as disincentives to seeking funding were expressed during the qualitative research. Building professionals were, therefore, asked to what extent they agreed or disagreed with three statements concerning grant aid applications.

As shown in Table 64, the time taken for the process was the main factor discouraging involvement (MS 3.6), with less agreement that

the administration required (MS 3.3) or the accompanying conditions (MS 3.1) were significant issues. Some subtle differences exist between the architects and the surveyors, with the surveyors more concerned with the conditions applied and the architects more concerned about the time and administration. On each factor those whose work had not received any grant-aid in the preceding year were more likely to agree that the factor was a disincentive than those whose work had received funding.

7.4 Contractors

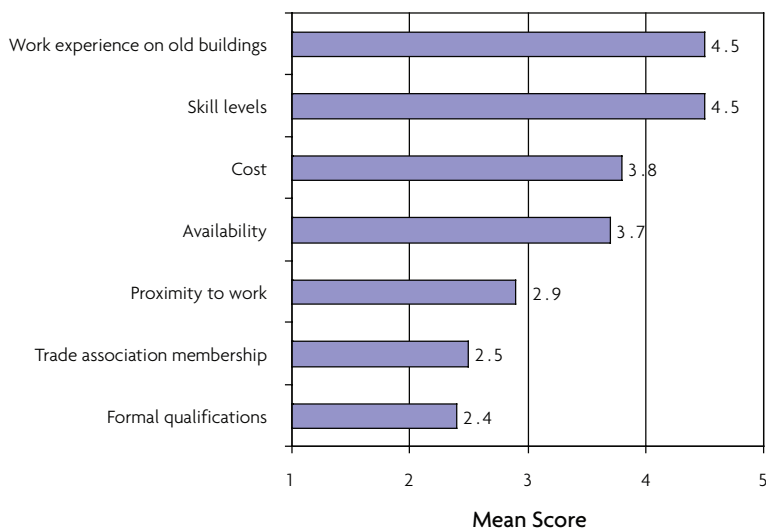
7.4.1 Factors Affecting Contract Awards

As shown in Figure 16, skill levels and work experience are the key factors by which building professionals said they award contracts for work on pre-1919 buildings, with cost and availability to undertake the work also fairly important. For the majority of professionals, the proximity of the contractor to the site, formal qualifications and trade association membership/accreditation were not important.

Table 64 Extent of Agreement that Time and Administration Discourage Involvement in Applying for Grant Aid

	Time taken for whole process		Administration required		Conditions applied to awards	
	%	Mean	%	Mean	%	Mean
Agree to a great extent (5)	34		26		21	
Agree (4)	19		17		17	
Neither agree nor disagree (3)	19		25		15	
Tend not to agree (2)	13		15		30	
Do not agree at all (1)	9		11		11	
Don't know	6		6		6	
Total	100		100		100	
Mean score (all)		3.6		3.3		3.1
Mean score (architects)		3.7		3.4		2.9
Mean score (surveyors)		3.2		3.2		3.4

Base: all respondents (53)

Figure 16 Importance of Factors Affecting Contract Awards

Base: all respondents 1=not at all important 5=very important

Despite not rating trade association membership/accreditation as a key factor when awarding contracts, 4 out of 5 building professionals (81%) would support the introduction of a traditional building craft skills accreditation scheme for trades/craftspeople. The general practitioners, the larger firms and those doing a relatively low proportion of work with pre-1919 buildings were more likely to be in favour of accreditation for trades/craftspeople.

Overall 30% would be prepared to pay a premium of typically 10–20% to use accredited trades/craftspeople. The majority could not see that accreditation would allow trades/craftspeople to charge a premium, although some acknowledged that it would give them an advantage in winning contracts.

A minority of professionals stipulated either formal qualifications (19%) or skills training (15%) as tender requirements for builders when awarding work.

7.4.2 Profile of Contractors Used

Welsh building professionals predominantly used reasonably local contractors for work on pre-1919 buildings, with 62% using builders based within 20 miles of the property; 28% used regional contractors, based anything up to 50 miles away; most of the remainder used a variety of local and other contractors. Conservation specialists were more likely to use contractors from further afield. While nearly all professionals used Welsh contractors for pre-1919 buildings, 23% also used English contractors, with one architect using firms from England, Wales and elsewhere. As would be expected, use of English contractors was more widespread in mid- and south-east Wales.

Three-quarters of professionals used general contractors, with only 9% mostly using conservation specialists and a further 15% using both as the need arises. All of those using specialist conservation contractors were architects and, as might be expected, professionals

They do already command a premium. Paying more isn't what's needed, more competition is needed to open up the market.

Architect

I think there is a tendency for heritage work to be looked on in some circles as something that's kind of elite, which is the last thing I would want to see, because it was an artisan skill and hopefully we can bring it back on that basis.

Surveyor

Table 65 Satisfaction with Contractors Used for Work on Pre-1919 Buildings: Professionals

	Time to start		Time to complete		Skill levels		Quality of	
	%	Mean	%	Mean	%	Mean	%	Mean
Good (5)	6		8		5		17	
Fair (4)	36		40		55		47	
Neither good nor poor (3)	26		32		36		30	
Fairly poor (2)	24		11		0		4	
Poor (1)	4		4		0		0	
Don't know	4		5		4		2	
Total	100		100		100		100	
Mean Score		3.2		3.4		3.7		3.8

Base: all respondents (53)

who were themselves conservation specialists were more likely to use specialist contractors.

7.4.3 Perceptions of Contractors Used

As shown in Table 65, building professionals in Wales were fairly satisfied with the contractors used for work on pre-1919 buildings, although few gave a rating higher than 'fair' for the time taken to start or complete the job or for the skill levels possessed by contractors.

By the same token, none described the skills of contractors as poor and in total 61% gave a rating of good or fair, exactly the same proportion as in Scotland. Overall timing, rather than the level of skills or the quality of work, received the lowest ratings. This reinforces the view that reasonable traditional building craft skills exist in Wales, but these are in rather short supply. As was the case in Scotland, it can also be inferred from these results that building professionals wait for a decent contractor to become available rather than use the first contractor to hand.

Those using specialist conservation contractors were more critical of the time taken to complete the work than those using general contractors.

7.4.4 Skills Employed

Table 66 shows the traditional building craft trades that building professionals used for work on pre-1919 buildings in the 12 months prior to the survey and also the skills they were likely to need in the next 12 months; demand is consistent across both periods.

Nearly all building professionals used carpenters and joiners, painters and decorators, plumbers/lead-workers and general roofers. Demand for some of what have become regarded as more specialist craft skills, such as lime plastering, stonemasonry and timber preservation, was also strong. Indeed, the range of different traditional building craft skills used is very wide, with each building professional using in the region of 15 different craft skills during the course of a year's work on pre-1919 buildings. However, some of the truly specialist conservation trades, such as gilding, glass painting and wood carving, were only rarely needed.

The overall pattern of usage described is consistent with the view that vernacular stone, valleys terraces and Victorian buildings dominate the pre-1919 building stock in Wales.

Table 67 shows the proportion of building professionals who had difficulty finding tradespeople in each craft and the proportion having to wait three months or more before they were available to work. Over 10% of building professionals faced more than a three-month wait for 10 of the key traditional craft skills, with the main difficulties faced in:

- the plastering trades, especially for lime or fibrous work
- stonework, whether drystone walling, banker masonry or stone carving
- lead- and metalworking
- cabinetmaking and wood machining (although the demand for these was somewhat lower)

These shortages were broadly consistent with those in Scotland where stonemasons, plasterers, lead-workers and joiners were most difficult to find.

Comparison with Table 32 in Section 5.9.2 indicates that building professionals were more likely to face delays in finding suitable trades/craftspeople than were the builders. This may partly explain why such a high proportion (almost a quarter) of all the building professionals interviewed entrusted

Table 66 Craft Skills Used by Building Professionals in the Last 12 Months/Likely to Use in Next 12 Months (%)

	Used in the last 12 months	Likely to use in the next 12 months
Blacksmith	40	47
Bricklayer	75	74
Cabinetmaker	32	34
Carpenter	94	91
Drystone waller	43	47
Fibrous plasterer	45	42
General craftsperson	83	81
Gilder	2	6
Glass painter	8	11
Glazier	74	77
Joiner	94	92
Lime plasterer	83	79
Painter/decorator	91	91
Plasterer	83	81
Plumber/lead-worker	92	89
Roofer (general)	91	91
Roofer (metalworker)	55	60
Roofer (random/natural slates)	72	74
Roofer (stone tiles)	30	30
Steeplejack	6	6
Stone carver	25	25
Stone fixer	28	30
Stonemason	72	72
Thatcher	8	2
Tiler	77	77
Timber preserver	72	70
Wood carver	4	6
Wood machinist	30	34

Base: all respondents (53)

the sourcing of some or all of the traditional building craft skills they needed to their main contractors.

On the one hand this could indicate good close working relationships between professionals and contractors, but it could also be argued that professionals are not adequately supervising the work that they have themselves specified.

7.4.5 Consequences of Skills Shortages

One-third of the building professionals interviewed did not consider that they experienced

skills shortages when seeking specific trades/craftspeople. Two-thirds did perceive shortages with the consequent time delays the key concern, mentioned by 49% overall, with increased costs (21%) a secondary concern. Smaller numbers considered that shortages led to a risk of using trades/craftspeople with unproven skills (6%) or poor/inappropriate work being carried out (8%).

7.4.6 Attitudes towards Subcontracting and Skills Development

Some 74% of building professionals believed that the building industry

as a whole was too reliant on the practice of subcontracting work, significantly more than the 46% of builders believing this to be the case. Building professionals also tended to agree (MS 3.4) that subcontracting limited the development of traditional building craft skills, whereas the views of the builders were fairly mixed (MS 2.9).

Encouragingly, 51% of the building professionals stated that they were aware that there are now optional NVQ Level 3 Conservation Units in the main trades.

Table 67 Craft Skills Hard to Find/Where Three-Month or Longer Waits Experienced: Professionals (%)

	Contracted in last 12 months ^a	Craft hard to find ^b	Average wait 3 months+ ^b
Blacksmith	40	5	5
Bricklayer	75	10	5
Cabinetmaker	32	12	12
Carpenter	94	6	0
Dry stone waller	43	43	26
Fibrous plasterer	45	21	13
General craftsperson	83	5	0
Gilder	2	0	0
Glass painter	8	0	0
Glazier	74	8	5
Joiner	94	14	8
Lime plasterer	83	23	14
Painter/decorator	91	10	4
Plasterer	83	16	7
Plumber/lead-worker	92	16	16
Roofer (general)	91	6	10
Roofer (metalworker)	55	17	21
Roofer (random/natural slates)	72	5	8
Roofer (stone tiles)	30	6	0
Steeplejack	6	33	0
Stone carver	25	31	31
Stone fixer	28	13	7
Stonemason	72	26	18
Thatcher	8	75	75
Tiler	77	7	0
Timber preserver	72	0	3
Wood carver	4	0	0
Wood machinist	30	19	13

Base: all respondents (53)

^aAll respondents. ^bAll subcontracting each craft

7.5 Traditional Building Materials

7.5.1 Materials Used on Pre-1919 Buildings

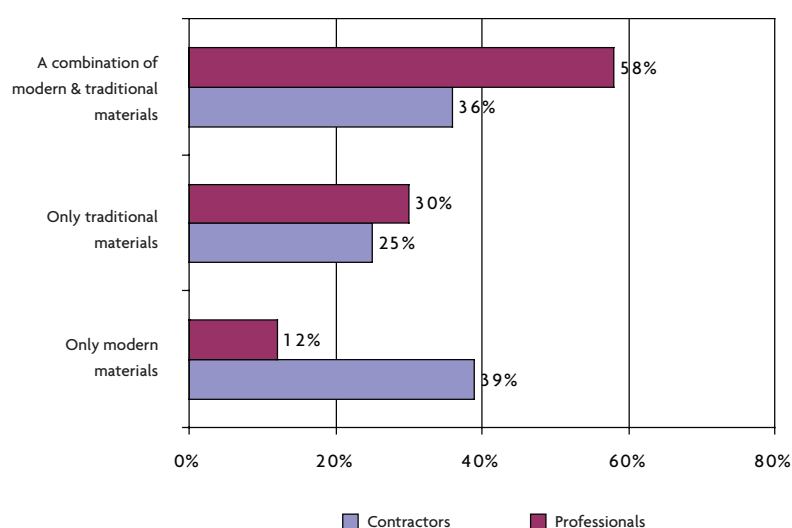
All respondents were asked what proportion of their work on pre-1919 buildings involved the specification of only traditional materials, what proportion involved only modern materials and what proportion involved a combination of the two. This approach was taken in an attempt to gain a measure of the appropriateness of the materials used, on the assumption that

this provides a proxy for the type of work undertaken to pre-1919 buildings.

The data provided in Figure 17 can be regarded as only broadly indicative, as it is based on top-of-mind estimations. Nevertheless, building professionals were far more likely to specify the use of traditional building materials, either solely or in tandem with modern materials, than builders were to use them. Only 12% of work specifications involved purely modern materials, compared with some 39% of work undertaken by

contractors; only one architect specified purely modern materials compared with some 10% of builders.

As one of the key constraints on the use of traditional materials mentioned by contractors was the failure of professionals to specify these, the results might seem contradictory. Of course, not all of the builders' work was carried out under the supervision of a building professional, and not all of the contracts where professionals acted as specifiers also entailed a supervisory role.

Figure 17 Materials Used by Firm for Work on Pre-1919 Buildings: Building Professionals

Base: all respondents

Table 68 Proportion of Firms' Work Involving Only Traditional Materials or a Combination of Modern and Traditional Materials

	%
North	81
Mid	81
South-west	97
South-east	86
Architects	86
Surveyors	91
General practice	86
Conservation specialist	94
Urban	73
Rural	92
Mixed	88

Base: all respondents (53)

Table 69 Specification and Use of Traditional Building Materials in Last 12 Months (%)

	Professionals	Contractors
Lime	94	67
Locally quarried stone	75	61
Welsh slate	77	59

Base: all respondents: professionals (53), contractors (261)

Perhaps there is an element of interpretation on the part of the builder if the professional has not been completely prescriptive in the specification. In either case, it is conceivable that the culture within the building industry

dictates that the contractor uses the materials which are perceived to be cheapest, quickest or easiest to use, rather than those which would be fundamentally better for the property from a conservation perspective.

It is also possible that professionals do not check sufficiently what materials are being used. One architect specialising in conservation work suggested that many professionals have good theoretical knowledge, but lack the practical experience to spot the use of inappropriate materials, such as sand and cement, in their projects.

The ability of the architect or surveyor to assume the lead supervisory role in the industry as a whole has declined in recent years, with the introduction of design and build and private finance initiatives, and the rise of dedicated project managers. This decline in supervisory influence is also possibly a factor here.

Table 68 shows the proportion of the professionals' work on pre-1919 buildings that involved traditional building materials, and shows that specification of traditional materials was more commonplace in the south-west than elsewhere in Wales, reinforcing the answers given by the builders.

Surveyors were slightly more likely to specify traditional building materials than architects, perhaps because they would more typically be involved in small works or repair and maintenance projects than projects involving significant design input. Again, the rural/urban split is evident, although there is less of a difference between the answers given by conservation specialists and general practitioners.

7.5.2 Ease of Obtaining Traditional Building Materials

As shown in Table 69, practically all of the building professionals interviewed specified the use of lime in the last year, with three-

Table 70 Ease of Obtaining Traditional Building Materials: Professionals and Contractors (MS)

	Professionals	Contractors
Lime	4.4	4.5
Locally quarried stone	3.8	4
Welsh slate	3.7	3.9

Base: all using traditional materials in the last year: professionals (52), contractors (235)

1=difficult; 5=easy

Table 71 Main Factors Constraining Greater Use of Traditional Materials: Professionals and Contractors (%)

	Professionals	Contractors
Cost	43	27
Not specified by architect/surveyor	na	27
No demand from clients	17	25
Perceived disadvantages	34	19
Preference for modern materials	13	11
Traditional materials not necessary	6	7

Base: all respondents – professionals (53), contractors (261)

Table 72 Proportion of Traditional Materials Purchased from Welsh Suppliers: Professionals and Contractors (%)

	Professionals	Contractors
All	15	52
Most	48	31
Some	29	9
Hardly any	2	6
None	0	2
Don't know	6	0
Total	100	100

Base: all purchasing traditional materials in last 12 months – professionals (52), contractors (235)

quarters specifying locally quarried stone and Welsh slate (higher figures than among the contractors).

In terms of finding traditional building materials, the views of the building professionals are generally consistent with those of the contractors (Table 70). Lime was considered easy to get hold of, locally quarried stone less easy to obtain, and Welsh slate the most difficult of the three but still considered 'fairly easy' to acquire.

Some regional differences exist, in that locally quarried stone was considered easier to get hold of by those in the north and south-east and more difficult in the south-west. Despite all building professionals in north and mid-Wales having specified Welsh slate, they considered it more difficult to obtain than did those in the other regions specifying it less often.

7.5.3 Factors Limiting the Use of Traditional Building Materials

As Table 71 shows, 43% of the building professionals interviewed

cited cost as the main factor constraining the use of traditional building materials. They also referred to a lack of demand from clients, albeit to a lesser extent than the builders. As with the builders a small minority considered that traditional materials were simply 'not necessary'.

Many other comments were made, the majority of which are effectively differing nuances of two key sentiments: traditional building materials have disadvantages (34%), modern materials are preferable (13%). The perceived disadvantages of traditional building materials were that they do not meet modern standards, including building regulations, and that builders lack the necessary skills to use them. Unlike Scotland, few commented that traditional building materials were difficult to source or obtain.

In the Scottish research, manufacturers and suppliers were critical of professionals' basic understanding of traditional building materials. In Wales, some of the building control officers interviewed during the qualitative research commented that they felt some professionals disguised their own ignorance of materials by telling clients that 'Building Control or building regulations won't allow traditional materials to be used'.

7.5.4 Availability of Traditional Building Materials in Wales

The 52 building professionals using traditional building materials in the past year were asked whether these were purchased from a supplier based in Wales and also whether the material itself originated in Wales, for example, whether stone purchased from a Welsh quarry was actually extracted in Wales.

As Table 72 shows, professionals believed that the majority of traditional materials used in Wales were purchased from suppliers based in Wales, although to a lesser extent than did the builders themselves. As would be expected, those in the north and south-west bought more of their materials in Wales, with those in mid- and south-east Wales purchasing less from native suppliers.

Building professionals were on the whole slightly less confident in saying where the materials actually came from than were the contractors, with 38% saying that they did not know (Table 73). Given that the contractors themselves were not entirely sure, these results show the extent to which the industry (including those working on pre-1919 buildings) has come to view materials as interchangeable and indistinguishable manufactured commodities.

7.5.5 Influence of Building Regulations and Local Authority Building Control

The view was expressed by several builders and building professionals during the qualitative research that building regulations and local authority building control officers restrict the use of traditional materials. All respondents were asked to what extent they agreed with these two opinions and, as shown in Table 74, building professionals tended to slightly disagree with the idea that building regulations restrict the use of traditional materials (MS 2.8), which is consistent with the contractors.

Building professionals were more definite in their views regarding building control officers (MS 2.3), considering them less of an obstacle than did the builders. A fuller discussion of the role of building regulations and building control officers is given in Section 5.11.4.

They have good basic skills but the modern builder lacks the enthusiasm of the traditional builder for working on old buildings. We need to start thinking more about output in terms of quality and not just quantity. Having said that it's better here than in England as we are more insular and that means people are keen to do a better job and take more care. A bricklayer in Ruthin is known to everyone in Ruthin but a bricklayer in Liverpool wouldn't be known by anyone in Liverpool.

Table 73 Proportion of Traditional Materials of Welsh Origin: Professionals and Contractors (%)

	Professionals	Contractors
Over 75%	17	30
51–75%	8	12
21–50%	23	14
<20%	14	15
Don't know	38	29
Total	100	100

Base: all purchasing traditional materials in last 12 months – professionals (52), contractors (235)

Table 74 Extent to which Building Regulations and Local Authority Building Control Officers Restrict the Use of Traditional Materials: Professionals and Contractors (Mean Score)

	Professionals	Contractors
Building regulations	2.8	2.9
Local authority building control officers	2.3	2.7

Base: all respondents – professionals (53), contractors (261)

1=not at all; 5=to a great extent

Architect

Table 75 Rating of Knowledge of Traditional Building Materials

	%	Mean
Good (5)	28	
Fair (4)	47	
Neither good nor poor (3)	25	
Fairly poor (2)	0	
Poor (1)	0	
Don't know	0	
Total	100	
Mean score		4.0

Base: all respondents

7.5.6 Knowledge of Traditional Building Materials

Table 75 shows that overall building professionals considered that their firms have good knowledge of traditional building materials (MS 4.0), with surveyors slightly more confident (MS 4.3) than architects (MS 4.0) in this respect. No building professional interviewed described their knowledge as poor.

7.6 Career Progression

Building professionals (91%) were as strongly in favour of a career progression ladder for traditional building craft skills as the contractors and sole traders (89%). Their views were also similar regarding the defining measures for career progression, preferring skills (71%) and experience (69%) over success at the job (27%) and qualifications (23%).

It costs more because you don't have a good selection of traditional builders and they can set their own wages because they don't have enough competition.

Surveyor

There is a time delay and if you bring in workers from elsewhere to overcome this you can meet resistance from planners.

Architect



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TRAINING PROVISION FOR TRADITIONAL BUILDING SKILLS IN WALES

8

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training provision for traditional skills

This section assesses current traditional building skills provision within Wales in relation to the wider construction industry.

The construction industry is working towards a fully qualified workforce by 2010 and has well-established mechanisms for recognising the existing workforce's skills and mapping this against the National Vocational Qualification framework. Individuals and companies can then identify gaps in training and skills, and employees can train and achieve a full NVQ. The ConstructionSkills On-Site Assessment and Training programme is an initiative to enable the process of training and assessing the existing workforce.

Apprentices are not the only route into the industry and the bulk of those working in the traditional building skills sector enter via mainstream site-based trades (carpenters, bricklayers, etc). They learn on the job, and very few take up existing conservation options as part of the NVQ qualifications or apprenticeship training.

Only very specialist trades, for example stonemasons, seek formal qualifications on entry into the conservation sector. Also, most craftspeople enter the built heritage sector at an older age, having qualified

initially as apprentices, or through an NVQ programme based on mainstream site trades, or having changed career usually from a background of creative crafts and through an empathy with historic buildings and handcraft skills.

Although there has been a significant increase in apprenticeships within the construction sector over the last few years, apprenticeships still account for less than a third (27%) of all new entrants (excluding sub-level-2 courses).

The main part of this section concerns the primary source of recognised training for the construction industry and the main entry route for trades/craftspeople. This is training provided by the further education colleges, based around the NVQ and, increasingly, Construction Award qualifications. Once qualified to a recognised level (typically NVQ level 2 in Wales), many trades/craftspeople continue their career development with little in the way of formal training courses, and few return to college to pursue the higher-level qualifications such as NVQ Level 3 or 4. The main exception is perhaps those whose career path has taken them in the direction of a supervisory or managerial role where more academic types of study and qualification may be required.

8.1 Construction Training Provision in Scotland

Further education colleges are not the only sources of training used by trades/craftspeople, as confirmed by the answers given on the subject of training in the Section 6.5.

Short courses addressing more specialised training and skills needs are commonly used by trades/craftspeople with several years' solid work experience. They perform an invaluable task in providing many trades/craftspeople with the knowledge that can enable them to transfer and develop their existing skills to the built heritage sector. A number of different training providers are involved in this short-course arena, including

building materials suppliers and manufacturers, major stockholders, equipment manufacturers, heritage and conservation organisations, local authorities and trade associations. Some FE colleges, including Coleg Sir Gar, also reach out to the qualified construction industry workforce.

The two most widely respected short-course providers, Ty Mawr Lime and Faenol, both provided valuable insights during the qualitative research, and between them provided traditional building skills training to over 500 people in 2005. The decision to focus this section of the report on FE colleges was, therefore, not taken in ignorance of the other forms of training available. Rather, it is because

the short-course providers are providing training to fill fundamental gaps that have existed for some time in the college provision.

This research can properly consider how the skills needs of the built heritage sector can be met in the future only once it has established what today's trainees are learning at college and what implications this has for traditional building craft skills.

8.2 Further Education Colleges

8.2.1 Overview

Representatives of all 20 FE colleges offering formal training in construction skills in Wales were interviewed, one in person and 19 by telephone. The detailed personal interview was for Bridgend College,

a college which in the past has offered an NVQ Level 4 Master Crafts diploma. Each interview focused on mainstream training provision – that is, training leading to a recognised qualification such as an NVQ, City & Guilds or Construction Award. Regionally, the colleges are, as might be expected, heavily biased in favour of the south-east (10), with three each in mid-Wales and the north, and four in south-west Wales.

8.2.2 Main Trades Taught in Wales

As shown in Figure 18, nearly every FE college in Wales offers courses in the wood trades and bricklaying/masonry, and most train plumbers and painters/decorators. However, only a minority cover plastering, with only a few addressing the more specialist trades such as roofing or wall and floor tiling.

The size of each FE college differs substantially, with some providing only two or three different courses, up to the largest with 50–100,

including different delivery variants. Eleven of the colleges offer fewer than twenty courses each. One college was unable to comment on the total number of its courses, but the total across the country is estimated to be just over 400.

8.2.3 Qualifications

Construction Awards provide a means of entry for students wishing to join the industry through a full-time study route before they have found an employer. After reaching intermediate level, students are encouraged to find employment or a placement in industry so that they can undertake the practical work required to achieve an NVQ Level 2. Construction Awards are the taught element of the Young Apprenticeship framework agreement.

National Vocational Qualifications are evidence based and are designed to demonstrate that the candidate can achieve competency in a series of tasks to industry standards and tolerances (as defined within the National Occupational Standards).

NVQ courses barely equip students to work on modern buildings, due to systematic problems with the way we are required to teach. The problems are not with the students themselves.

FE College Head

Well, it's obviously demand led, we have to meet the needs of local employers who are taking on a lad to meet specific needs, so he wants him trained in that specific area and that area is new build.

FE College Head

Figure 18 Main Trades Taught at Welsh Further Education Colleges

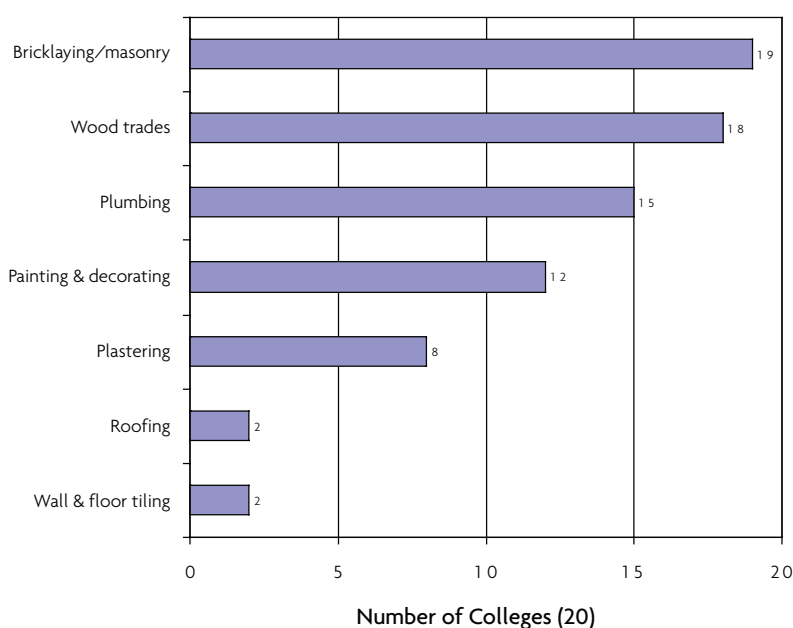


Table 76 Qualifications Awarded

	Colleges offering course (20)	Proportion of courses offered (%)	Trainee Intake 2006/7 (N)
Construction Award (Foundation, Intermediate, Advanced)	18	48	2,198
NVQ Level 1 or equivalent	8	7	278
NVQ Level 2 or equivalent	19	27	1,007
NVQ Level 3 or equivalent	17	18	812
NVQ Level 4 or equivalent	2	*	*

*Respondents unable to provide sufficient data. Table does not total 5,332 as one college could not apportion numbers of students to courses

NVQs are available only to those employed in the industry and do not necessarily involve a training element, but instead are awarded purely on assessment of work undertaken by a candidate.

Table 76 shows that 18 of the 20 colleges provide Construction Awards courses; 8 offer NVQ Level 1, 19 offer NVQ Level 2, 17 offer NVQ Level 3 and only 2 offer NVQ Level 4. Course numbers and course types are split almost equally between Construction Awards and NVQs (or equivalents), with NVQ Level 2 the recognised industry standard in England and Wales. One college only undertakes Construction Awards training.

The high number and proportion of first-year trainees involved with Construction Awards rather than via the work placement route is a Great Britain-wide trend.⁵² This is a cause for some concern, as achieving a Construction Award does not require work placement or evidence of work-based competency, and so commands less authority in the industry than via the NVQ route. As this report has already demonstrated, practical hands-on experience is considered essential for the development of traditional building craft skills.

It should be noted that the

interviews with training providers took place in September 2006, so a proportion of trainees on Construction Awards courses at the start of the academic year will have moved across to the NVQ route as placements are found for them. However, results from the most recently available Trainee Numbers Survey indicate that less than half of those requiring work experience in Wales are likely to have found it.⁵³

Perhaps even more worrying is the fact that Wales has a lower proportion of formal apprentices than Scotland or any English region.⁵⁴

8.2.4 Conservation/Heritage Skills Qualifications

Three-quarters of colleges (15) were aware that FE colleges can offer optional building conservation/heritage skills modules in the main trades at NVQ level. Less than half (9) were aware of the forthcoming Heritage Skills NVQ Level 3, available from September 2007.

This research has identified two Heritage Skills courses in Wales: Coleg Menai has been running an NVQ Level 2 course in Banker Masonry since 2000 and had a full cohort of eight trainees enrolled for 2006/7; Coleg Ceredigion has been providing Craft Masonry as an

optional route on its Trowel Trades NVQ Level 2 since 2002. More recently this course was less well subscribed, however, with only one trainee inducted for 2006/7 against the capacity of six that it has reached in previous years. Both colleges are committed to running these courses in 2007/8, assuming sufficient demand exists.

When combined there were only nine trainees (less than 0.2%) working towards a recognised qualification in a traditional building craft skill from the 2006/7 intake of 5,332.

This is not, however, the only FE college interest or involvement in specialist heritage skills training. Bridgend College ran an NVQ Level 4 Master Crafts course for 4–5 years in the earlier part of this decade with a course capacity of 12 and a typical 50% uptake rate. However, once numbers of trainees started to fall the course was considered no longer financially viable and was closed. The college is hopeful that its involvement in delivering training connected to Bridgend Town Centre THI will stimulate sufficient demand that it can restart the course in the future.

Neath Port Talbot College is currently proposing to run a Master

Crafts NVQ Level 4, starting in 2007. Finally, several colleges have been involved in more academic courses: from 1995 to 2005 Pembrokeshire College ran an architectural and building conservation course. Students included both building professionals and trades/craftspeople, with a total of around 100 people participating, with as many as 20 per annum at the peak of the course's popularity. After the numbers declined the course was discontinued, but if there was evidence of sufficient demand the college would consider reinstating this in the future.

University courses in historic building and architectural conservation are offered by Swansea Institute of Higher Education and the University of Glamorgan.

8.2.5 Non-Vocational Conservation/Heritage Skills Training

Three colleges offer traditional building skills training which does not lead to a recognised vocational qualification, with variable audiences and formats. Pembrokeshire College offers Open College Network Restoration, a part-time course comprising 10x4 hour sessions providing up to 15 trades/craftspeople and homeowners with a theoretical overview and practical experience of wood, stone and lime.

Coleg Sir Gar in Ammanford provides short ad hoc courses covering lead welding, stonemasonry, ornamental plasterwork and furniture restoration for around 12 local trades/craftspeople. Each course is typically of 1 to 5 days' duration at a minimal cost of around £50. The purpose of the courses is to upskill local trades/craftspeople, and the success of the courses is

in part a result of the strong links the college has with the local construction industry. The college is in discussion with the National Trust and various other parties regarding setting up a regional traditional building skills training centre.

Bridgend College delivered six free-of-charge, one-day workshops for 16–25 people as part of the Bridgend Town Centre THI in early 2007. A range of topics were covered, including lime plastering and conservation approaches to joinery work – for example, scarf repairs where appropriate rather than the wholesale replacement of original material. The primary aim was to enable local trades/craftspeople to tender for THI-funded work and also attract some local building professionals.

8.2.6 College Intake and Capacity for 2006/7

Table 77 shows that on average each FE college in Wales would enrol just under 270 trainees in construction courses for the 2006/7 academic year. However, this figure hides a wide variation in numbers at individual college level, with the smallest college enrolling just 15 trainees and the largest almost 1,000.

Of the 20 Welsh FE colleges delivering construction training in 2006/7, 18 were operating at or above their maximum capacity in terms of trainee numbers, with the two remaining colleges at 95%. This is consistent with the picture observed in the most recent Trainee Numbers Survey, although it should be noted that courses in Wales are less over-subscribed than in England or Scotland.⁵⁵

We ran it for a number of years, but generally with very low numbers, because it was a specialist provision. Despite local marketing, we weren't getting the same demand as people in London, for example, we seemed unable to sustain the numbers and sadly the course had to be terminated, it just wasn't a viable programme to deliver. So, we're still accredited to run, but we haven't run it now for the last two years.

FE College Head

8.2.7 Drop-out and Pass Rates

Approximately every eighth trainee (13%) will drop out of an FE construction course in Wales, meaning that approximately 650 trainees will not complete their training. This figure does, however, vary considerably across the colleges, with some reporting a rate as low as 1% but two as high as 25%, and a further three losing 20% of their trainees. The drop-out rate is lower in smaller colleges, and given that mid-Wales has the smallest colleges on average, this helps to explain the particularly low drop-out rate in that region, whereas the drop-out rate is highest in the south-east (19%). Recent research indicates that two-thirds of those dropping out of a construction course remain within the industry, with most of these having changed employer.⁵⁶

The average pass rate for those finishing an FE college course in Wales is 85%, with pass rates at individual colleges ranging from 60 to 100%. In total it is estimated that approximately 4,100 trainees will pass, with colleges in mid-Wales reporting the highest pass rates (95%). It should be noted that those leaving with a foundation-level Construction Award or a Level 1 NVQ will not possess an industry-recognised qualification. The total number of the 2006/7 intake of 5,332 would therefore result in the supply of fewer than 4,100 fully qualified trades/craftspeople.

8.3 The Trainees

Table 78 shows that trainees on construction courses at FE colleges are predominantly young (less than a quarter of first-year trainees aged

Table 77 Intake for 2006/7

	Colleges (20)	Trainees
501+ trainees	2	
251–500	5	
101–250	8	
100 or fewer	5	
Average intake		267
Total intake		5,332



over 18, and just 5% aged over 25) and male, and reside near to the college. Only three colleges commented that the majority of trainees were aged over 18, including one small college where some 90% were aged 18–25.

As might be expected, trainees in the south-west and mid-Wales typically travel further to college than those in the north or south-east. Only two colleges, both in the south-east, have any trainees travelling to college from England,

Table 78 Trainee Profiles (First Year)

	%	Number of trainees
Age		
Under 18	78	4,104
18–25	17	756
Over 25	5	333
Diversity		
Female	4	207
Ethnic minority	4	279
Residence		
Within 20 miles	83	4,184
21–50 miles	16	929
50+ miles away	1	79

Base: all respondents

NB % figures show straight percentages across the colleges

Numbers of trainee are weighted by the size of each college

involving perhaps a total of only 20 English trainees.

Overall, only 4% of trainees have ethnic minority backgrounds, with the majority attending colleges in the south-east. Although 18 of the 20 colleges have female trainees, these form a small minority overall and are more prevalent in the south-west. A higher proportion of older trainees is also found in the south-east.

Colleges were asked to comment on the sector destinations of their graduating trainees but few, if any, recorded this information factually, and 5 of the 20 colleges were

unwilling to give any estimation. From the layperson's perspective, it is unclear how colleges can deliver the most appropriate forms of training without a clear understanding of the type of buildings that trainees will be employing their skills on.

The 15 colleges willing to answer estimated that trainees on completion of their college training were almost evenly split between working in the new-build housing sector and the repair, maintenance and improvement sector (Table 79). The proportion of trainees destined for each of these sectors varied considerably at individual college

They've done three months in a training college and suddenly they're a brickie. I know one lad who is a qualified carpenter, plumber, electrician, bricklayer and a plasterer and he's done a three months course on each of these. I'm thinking how come everybody else is having three or four years learning the trade, but he can supposedly turn his hand to all of them?

Building Control Officer

Table 79 Destinations of Graduates (%)

	New-build housing	Repair, maintenance & improvement	Historic building conservation
All respondents	50	49	2
North	48	53	0
Mid	41	59	0
South-west	46	51	3
South-east	58	39	3

Base: all respondents

NB: Not all totals sum to 100% due to rounding

level: for new-build housing this figure ranged from 10 to 99%, and RMI ranged from 1 to 90%.

Perhaps not surprisingly, the proportion of trainees going straight from FE colleges into the historic building conservation sector was tiny (2% overall, representing a total of 126 trainees). Of the five colleges reporting trainees destined for this sector, only one provides training that leads to an accredited vocational qualification in heritage skills.

There is also a regional dimension in that new build is dominant in the south-east, whereas in the north and south-west the split is fairly even between new build and RMI, while those in mid-Wales are much more likely to work in the RMI sector rather than new build.

8.4 The Trainers

8.4.1 Profile

In total there were approximately 430 trainers involved in delivering construction courses at FE colleges in Wales, mostly full-time staff (308), with the number varying from 2 to 40 at college level (average of 15). Nineteen colleges also employ part-time trainers, with the number of these varying from 2 to 20 and totalling 121 (just below an average of 6).

Table 80 shows that opinions differ enormously as to the proportion of trainers within the colleges who have themselves the necessary traditional building craft skills to undertake work on traditional buildings. Four colleges considered that all of their trainers would have the necessary skills for this, with another three saying that the majority do. At the other end

Table 80 Proportion of Trainers with Necessary Traditional Craft Building Skills to Work on Heritage Buildings

	Colleges (20)	
	N	%
100%	4	
51–99%	3	
26–50%	4	
10–25%	5	
<10%	1	
None	1	
Don't know	2	
Average (all colleges)		50
North		53
Mid		46
South-west		47
South-east		51

of the scale two colleges commented that none or practically none of their staff had traditional building craft skills experience themselves.

Overall, most colleges considered their staff to be ambivalent towards further developing their own traditional building craft skills (MS 2.7) and typically only some staff were interested or experienced in the skills required for older buildings. Thus, those with an interest were often keen to develop their traditional craft skills further, and those more involved with new build less so.

Additionally, some of those interested in theory were unlikely to be sufficiently motivated to devote the time and effort to developing their skills unless a clearly defined need was present, that is, demand for the college to deliver more traditional building skills training.

There was considerable interest in future NHTG 'Training the Trainers' programmes, with 16 colleges saying some or all of their staff would be interested, which is more than the 13 who were initially aware of the scheme.

A lecturer at one college had

Table 81 Extent of Agreement with Statement: Mainstream NVQ Courses Provide Trainees with Appropriate Skills to Work on Pre-1919 Buildings

	Colleges (20)	
	N	Mean
Agree strongly (5)	0	
Tend to agree (4)	1	
Neither agree nor disagree (3)	8	
Tend to disagree (2)	4	
Disagree strongly (1)	6	
Don't know	1	
Mean score		2.2

recently attended a 'Training the Trainers' event, but his attendance at future sessions is in doubt because these are scheduled for term-time rather than during holiday or half-term periods.

8.4.2 Trainers' Opinions on Training

Seventeen of the 20 colleges considered that skills training definitely needs to include both on-the-job and college-based learning, with the remainder considering this preferable rather than essential.

As shown in Table 81, only one FE college in Wales tended to agree with the statement 'that mainstream NVQ trade courses provide trainees with the appropriate skills to work on pre-1919 buildings'. Half the colleges disagreed, and the remainder neither agreed nor disagreed. The one college tending to agree with the statement is one of the two colleges actually offering a qualification in traditional building craft skills.

The main reasons given by the colleges for disagreeing with the statement were:

- NVQs are highly focused on new-build technology
- lower levels of skills are now needed because of widespread use of prefabricated materials
- the NVQ system doesn't offer

trainees the opportunity to acquire a broad range of skills.

Colleges were asked to what extent they agreed that additional modules should be introduced to mainstream NVQ courses to cover traditional building materials theory and practical skills training using traditional building materials. If such modules were introduced on a compulsory basis, support from the Welsh FE colleges would be moderate. Eight colleges agreed with the introduction of a theory module and seven were in favour of a practical skills module, whereas seven and six respectively were opposed. Overall the majority supported the introduction of such modules on an optional basis, although some of those pressing for their compulsory introduction were strongly opposed to their introduction as options.

Table 82 demonstrates that there was slightly more support for the inclusion of traditional building materials theory than for the addition of practical skills training.

Only one-third of Welsh FE colleges (6) were aware of the Heritage Lottery Fund Traditional Building Skills Bursary Scheme for England and Wales, but all considered it to be a good way for trades/craftspeople to develop traditional building skills.

NVQ courses barely equip students to work on modern buildings, due to systematic problems with the way we are required to teach. The problems are not with the students themselves.

FE College Head

Table 82 Extent of Agreement with Statement: Additional Traditional Materials Modules Should be Introduced to Mainstream NVQ Courses

	Compulsory		Optional	
	Theory (20)	Skills (20)	Theory (20)	Skills (20)
Agree strongly (5)	3	2	4	3
Tend to agree (4)	5	6	9	9
Neither agree nor disagree (3)	5	6	5	5
Tend to disagree (2)	7	5	0	1
Disagree strongly (1)	0	1	2	2
Mean score	3.2	3.2	3.7	3.5

8.5 Career Progression

All FE colleges would welcome the reintroduction of a career progression ladder for traditional building skills, and trainers believed this should be linked to qualifications (14), skills (13), experience (12) and success at the job (10).

8.6 Primary and Secondary Education

As shown in Figure 19, FE colleges were almost completely united in their desire to see teaching of construction and building materials introduced at schools, with only one college opposed. However, some debate existed regarding the appropriate age to start, with six favouring primary school, eight preferring secondary school and five saying either.

There was also widespread support for teaching children at both levels the purpose of traditional materials, with slightly more support for children actively using the materials and seeing demonstrations from trades/craftspeople at secondary-school level.

Several colleges are already involved in teaching construction to schoolchildren, mostly at secondary level, but one college also has an input to its local curriculum board and organises visits for primary schoolchildren.

Not surprisingly, therefore, there is also widespread support for construction to be taught as a full subject leading to a qualification in schools (Table 83). Practically all FE colleges in Wales support the introduction of the Construction and the Built Environment GCSE (with very strong support for GCSE level wood- and metalwork). Two-thirds support the idea of GCSE Traditional Building Skills and the Construction and the Built Environment Diploma.

Figure 19 Traditional Building Skills Teaching Desired in Schools

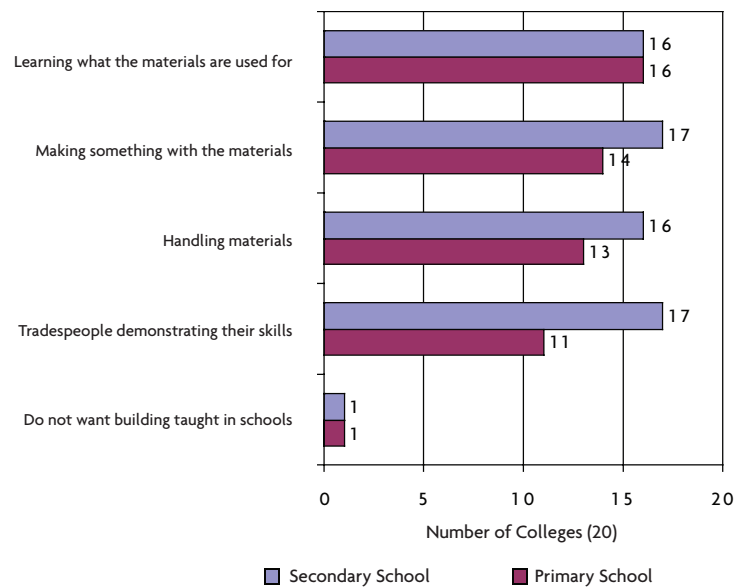


Table 83 Support for Building-Related Courses in Schools

	Colleges (20)
Construction and the Built Environment (GCSE)	19
Woodwork (GCSE)	17
Metalwork (GCSE)	16
Traditional Craft Building Skills (GCSE)	14
Construction and the Built Environment (Diploma)	13
Do not want building taught in schools	1



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CONCLUSIONS AND RECOMMENDATIONS

9

- 9.1 Key Recommendations
- 9.2 Main Findings of the Report

conclusions and recommendations

The primary aim of this research was to inform and underpin a Skills Action Plan to ensure that the supply of traditional building skills and materials meets the repair and maintenance needs of the almost 500,000 pre-1919 building stock in Wales. This also includes the more specialised conservation and restoration skills for listed buildings and ancient monuments.

The findings of the research highlight the real need for joined-up thinking to develop a coordinated approach to improve the current sparse provision of traditional building skills training and development. This must be linked to the need to re-establish the general knowledge and understanding of the supply and use of traditional building materials when undertaking repair of older buildings. This will help greatly in conveying the crucial difference in construction between old buildings and modern buildings, and the approach necessary for their repair, maintenance, conservation and restoration.

Within colleges, the imbalance in current training provision must alter from producing large numbers of trades/craftspeople with basic levels of competency to

developing a high-quality workforce, capable of adding significant value to the built heritage sector. There is also a need for better understanding of the sector destinations of trainees at defined intervals so the need for traditional building skills elements within mainstream training can be demonstrated to employers. This would also allow colleges to adapt to changes in delivering relevant and appropriate built heritage training.

There is evidence of a number of colleges having good links with schools to promote construction as a positive vocational career choice, but this needs to be developed further to include traditional building skills and should be integrated with the GCSE Construction and the Built Environment curriculum.

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



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9.1 Key Recommendations

Interrelated measures to address demand, supply, training provision and education to promote the built heritage sector and attract new entrants are now urgently needed to match demand with a suitably trained and qualified workforce.

The first priority must be to increase traditional building skills training provision within FE colleges and private providers needed to achieve immediate and lasting upskilling of the current workforce. This will develop a credible skills base within this sector across Wales, whose skills can be passed on to less experienced practitioners to the long-term benefit of the pre-1919 buildings. For this to occur, the combined efforts of the construction industry and the Welsh Assembly Government are required.

The key recommendations arising from this research and those organisations responsible for coordinating or facilitating effective change are:

Recommendation	Link to Research Theme
1. NHTG, ConstructionSkills and Cadw – through the Sector Skills Agreement, coordinate action and partnership involvement to tackle the issues identified in this report and improve skills training and development	Common to all themes
2. NHTG and Cadw – develop an effective sector-wide communications and marketing strategy to raise awareness of the need for traditional building skills and materials	Demand and Supply
3. NHTG and Cadw – increase awareness by clients, designers and specifiers, property owners and funding bodies regarding the use of suitably skilled and qualified contractors and traditional building materials for conservation, repair and maintenance	Demand
4. Welsh Assembly Government and Learning Wales – provide long-term funding opportunities for the conservation, repair and maintenance of historic buildings and training of craftspeople to ensure continuity in developing and training the workforce	Demand and Training
5. ConstructionSkills, NHTG and Cadw – improve the image of the construction industry and built heritage sector, attract applicants with suitable skills and attitude, and create a more diverse workforce	Demand
6. Welsh Assembly Government, Learning Wales, NHTG and Cadw – work together to plan and develop future training and skills needs across the traditional building sector spectrum, especially for career changers and upskilling	Training
7. NHTG and Cadw – respond to the desire for a career progression route within the sector by implementing a mentoring scheme to ensure that less experienced practitioners gain experience and knowledge from more established craftspeople, and ensure that qualifications and training are relevant, easier to access and valued within the sector	Supply
8. ConstructionSkills, NHTG and Cadw – improve awareness of traditional building crafts skills within the school curriculum, and promote the vocational route as a career pathway by dissemination of educational materials and visits to and involvement of schools, with particular emphasis on interactive materials and integrating this with ConstructionSkills Wales and Cadw education programmes to maximise opportunities	Supply
9. ConstructionSkills, NHTG and Cadw – encourage investment in training by contractors and promote the benefits of apprenticeships through developing an appropriate strategy to improve information on and support for careers within this sector	Training

9.2 Main Findings of the Report

	Demand	Skills Supply
Facts	<p>There are 497,000 pre-1919 buildings in Wales, including around 30,000 listed buildings</p> <p>Average spend of £3,922 for each pre-1919 building owned by private homeowners and £17,873 among owners and custodians of public and commercial buildings in the last 12 months</p> <p>£112m annual spend on repair and maintenance on pre-1919 buildings, of which only £48m involves traditional building craft skills – insufficient to ensure survival of Wales’s built heritage</p> <p>Insufficient demand to sustain a dedicated traditional building skills workforce; most stockholders employ generalists rather than specialists</p> <p>Rise in future spending is not certain and may not occur without intervention</p> <p>Varying levels of understanding of the need for the use of traditional building materials and skills among stockholders – awareness is growing, albeit from a low base, but the majority of private homeowners and commercial stockholders are uninterested unless their building is listed</p>	<p>A total of 280 additional workers needed in the traditional building sector to meet expected demand from 2007 to 2011</p> <p>Skilled trades/craftspeople exist but are difficult to find, especially stonemasons, lime plasterers and lead-workers</p> <p>Stockholders are reactive in terms of repair, rather than proactive</p> <p>Stockholders are generally satisfied with completed work, but skills gaps and delays to work mean there is less satisfaction with timing</p> <p>Skills and knowledge gaps are the key issues existing within the traditional building sector</p> <p>Inadequate supervision of work specified by architects and surveyors means that inappropriate practices and skills continue to be employed to the detriment of historic Welsh buildings</p>
Reasons	<p>Culture of spending the bare minimum on the fabric of homeowners’ properties is endemic</p> <p>Lack of incentives to maintain buildings: VAT is chargeable on repair, maintenance and conservation work but not new build or conversion</p> <p>Most private homeowners choose local contractors according to personal recommendation, with less regard for qualifications, accreditation or experience on old buildings</p> <p>Because skilled trades/craftspeople are hard to find, stockholders may use contractors without traditional skills to the detriment of their buildings</p>	<p>Shortage of labour, skills and experience, particularly in more urban areas</p> <p>Poor image of construction industry and lack of knowledge of built heritage sector has historically resulted in lack of high-quality entrants at apprentice level</p> <p>Inadequate attention paid to sector destinations and the types of buildings trainees will work on in their careers</p> <p>Insufficient training provision to meet requirement across Wales</p> <p>Craftspeople with traditional building skills sufficiently busy to maintain their existing business without promoting it, and lack the entrepreneurial spirit to develop their business further</p>
Solutions	<p>More education required for stockholders on the long-term cost benefits of regular planned maintenance and sympathetic conservation/repair work</p> <p>Create incentive structure to encourage or obligate regular maintenance by all stockholders</p> <p>Lobby for the reduction or abolition of VAT on repair, maintenance and conservation work to heritage properties in line with new build and conversion</p>	<p>Government needs to create parity of esteem between academic and vocational training routes</p> <p>Reintroduce career progression for craft trades</p> <p>Address image issues of the construction industry and built heritage sector to improve recruitment</p> <p>Target skills gaps at regional and national level</p>

Material Supply Chain	Contractors	Training Provision
<p>Stone and slate suppliers predominantly use Welsh materials, although imports from developing countries are increasing</p> <p>In some areas, the vernacular built heritage is being dismantled and damaged because of inadequate domestic supply of new building stone</p> <p>Joinery and other trades mostly import materials</p> <p>Increased supply of materials is dependent upon increased demand</p> <p>Manufacturers find recruitment much more difficult than contractors</p> <p>Importing stone and slate from the developing world causes significant increases in CO² emissions and consequent environmental damage, contrary to government-stated objectives for materials to be sourced sustainably</p> <p>Traditional skills base is eroding as processing becomes increasingly automated</p>	<p>45% of the contractors have real difficulties with recruiting skilled staff and are more likely to recruit trainees than skilled staff</p> <p>Only 44% of contractors have staff in formal training, compared to 60% in England and Scotland</p> <p>1 in 8 employees working on pre-1919 buildings is a trainee</p> <p>Contractors do not see current FE training provision as relevant to development of traditional building skills</p> <p>Lost staff-time/productivity is the main cost to contractors in training staff</p> <p>Poor understanding among some contractors about the difference between traditional building skills training and the main trades</p> <p>Lack of knowledge of the need to use traditional materials and the skills required to use them</p>	<p>New-build drives FE course content, to the detriment of traditional building skills training</p> <p>From the 2006/7 intake, only nine trainees will leave Welsh FE colleges with a recognised heritage skills qualification</p> <p>Annual need for 100 individuals trained in traditional building skills, 2007-11</p> <p>Low take-up of add-on traditional skills NVQ units and courses at individual college level means that their long-term sustainability is questionable</p> <p>Manufacturers and suppliers heavily reliant on in-house training</p>
<p>Scarce material supply chains and widespread ignorance in the industry of the need to use traditional materials</p> <p>Focus among quarry operators on aggregate extraction, rather than building stone.</p> <p>Closure of quarries to self-selection of building stone because of health and safety restrictions, and difficulties in reopening quarries because of planning and environmental concerns</p> <p>Acceptance of cheaper imported materials in place of indigenous materials without due regard to their quality and service life</p>	<p>Industry dominated by micro-firms, and fewer employees in large firms</p> <p>Perceived lack of incentives for employers to provide adequate training, and existing training focused on new-build</p> <p>After training, employees leave their employer more quickly than in Scotland or England</p> <p>High level of travel for some apprentices to attend courses, especially in rural areas</p> <p>Training employees can reduce retention with firms and lead to increased competition if they become self-employed</p> <p>Contractors without skills or knowledge of traditional building materials seek to vary contracts or disregard work schedules where these are specified</p>	<p>Lack of understanding of the need for traditional skills training among colleges, employers and contractors</p> <p>In face of growing demand, the industry is over-reliant upon unregulated, short-course training providers for upskilling training</p> <p>FE colleges too focused on apprentice-level training and not providing suitable short-course training for upskilling the qualified workforce</p> <p>Too much focus on qualifying the existing workforce rather than improving skills levels</p>
<p>Demonstrate environmental and economic benefits of reworking existing quarries against long-term financial and environmental problems caused by over-reliance on imported materials</p> <p>Stimulate demand for native materials in new build and RMCR by raising awareness of the longevity, thermal efficiency and sustainability of Welsh slate and stone</p> <p>Manufacturers/suppliers to promote products and good practice to professionals and contractors/sole traders as part of CPD training</p> <p>Manufacturers or trade associations to help building professionals prove traditional products perform to modern standards</p>	<p>Demonstrate to employers what traditional skills training is, and why it is required</p> <p>Reinforce and extend the need for accreditation of contractors and professionals working on historic buildings</p> <p>Develop flexible training routes to encourage uptake from all age groups and overcome geographic inhibitors</p> <p>Support and expand the HLF bursary scheme</p>	<p>Demonstrate the need for traditional building skills training among employers and contractors</p> <p>Compulsory introduction of elements of traditional building skills across main craft trades</p> <p>Establish a standard-setting lead body for short-course provision (the most effective delivery of upskill training to existing workforce)</p> <p>Establish national or regional centres of excellence for higher-level traditional skills courses</p> <p>Capitalise on planned raising of the leaving age for compulsory education or training by introducing vocational courses designed to complement the forthcoming GCSE</p>

SKILLS ACTION PLAN

10



skills action plan

This Skills Action Plan is central to providing a cohesive, long-term solution to the current skills shortages and skills and knowledge gaps identified in this report. To be successful, this requires a sector partnership between the Welsh Assembly Government; ConstructionSkills; Proskills; Cadw; other heritage organisations; contractors; employers' groups; FE and private training providers; and the National Heritage Training Group.

This needs to be underpinned by three aspects:

1. Though improvements in the quality and amount of traditional building skills training provision will not happen immediately, strategic planning and tactical delivery should start as soon as possible to ensure that structured change occurs in the short term, with examples of best practice used to influence future developments.
2. Cadw must continue its close working with the NHTG, as the UK-wide specialist skills development group for traditional building skills training and development, and ConstructionSkills Wales to coordinate and promote the work needed to deliver this Skills Action Plan.

3. In terms of the long-term skills needs of the built heritage sector in Wales, as those most likely to be employed by the average stockholder are general builders and those working in the main trades, rather than conservation specialists, training and upskilling must focus upon the need to improve their understanding of how to work sympathetically on pre-1919 buildings.

Simultaneous action on the measures within the Skills Action Plan is needed to make a real impact on the labour and skills market and effectively develop an appropriately skilled workforce to meet current and future demand. While Cadw, ConstructionSkills and the NHTG have the required knowledge of the built heritage and can provide some of the human resources to address the problem, this also requires financial and strategic support from the Welsh Assembly Government and Learning Wales. This is essential to ensure that necessary changes to the infrastructure and delivery of training provision in this sector are sufficiently funded to thrive in a sustainable manner within the main construction industry.



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Meeting the Challenge

Built Heritage Sector in Wales Skills Action Plan

Research Theme 1: Demand for Skills and Materials

1.1. Dissemination of information and awareness-raising among a range of stakeholders to promote demand for traditional building skills and materials

Recommendations, Actions and Deliverables		Delivery									
1.1.1	Utilise and expand existing information for clients, ensure that it carries clear messages of the importance of maintenance and develop a coordinated campaign to target a wide range of stakeholders to promote this, using information tailored to their particular interests	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•				•				
Action	Build upon mass distribution of this information to the public, for instance through local authorities, heritage trusts, heritage groups, building societies, insurance companies, estate agents, the web and the press Identify key stakeholders, such as estate agents, solicitors, building societies, insurance companies and others who impact on the building industry, and create information packs accordingly, together with general outreach and relationship building Establish consistent message promoting the need for routine maintenance from Welsh Executive level downwards	Lead: NHTG with Cadw, ConstructionSkills, Heritage Lottery Fund									
		Scope: Wales-wide									
Performance Measures	Early 2008: Monitor and revise distribution mechanisms 2012: Importance of building maintenance prominent within stakeholders' published literature	Priority: High		Impact: High			Ease: Easy				
1.1.2	Improve standards of specification, schedules of works and general levels of understanding of traditional building skills and materials among the building professions	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•				
Action	1. Work with the professional bodies to continue to unify and promote conservation accreditation 2. Explore with the professional bodies the possibility of strengthening the conservation components of professional courses and study curricula 3. Investigate with partners the formation of a technical advice centre to provide guidance to building professionals on skills and materials	Lead: ConstructionSkills, Design Commission for Wales									
		Scope: Wales-wide									
Performance Measures	Mid-2010: Achieve a 15% increase in uptake of conservation accreditation	Priority: Medium		Impact: High			Ease: Medium				

1.1.3	Stimulate demand and use of appropriate materials by increasing awareness among planning authorities of the need to specify Welsh traditional materials	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•				
Action	Investigate the relevance of other UK home countries' practices and their use as a means to assisting work, and explore a useful means of replicating them in Wales to identify, safeguard and allow access to indigenous sources	Lead: Cadw, the Welsh Assembly Government, Countryside Council for Wales, Welsh Local Government Association, NHTG									
		Scope: Wales-wide									
Performance Measures	2008: Research started to explore and promote increased availability of traditional building material sources	Priority: High			Impact: High			Ease: Difficult			

1.2. Information and awareness-raising underpin demand for skills and materials, but the following further incentives are essential

Recommendations, Actions and Deliverables		Delivery									
1.2.1	Promote effective conservation, repair and maintenance as part of mainstream construction, and integrate traditional building skills within thinking and delivery of construction courses	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•				
Action	Built Heritage Sector Skills Agreement between Welsh Assembly Government and ConstructionSkills, and liaise with Design Commission for Wales	Lead: Welsh Assembly Government, ConstructionSkills, Design Commission for Wales, NHTG									
		Scope: Wales-wide									
Performance Measures	2007-2011: Establish and deliver actions within Sector Skills Agreement	Priority: High			Impact: High			Ease: Medium			
1.2.2	Make maintenance agreements a condition of Cadw and Heritage Lottery Fund grants, and create sink funds for repairs	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Action	Take necessary steps within Cadw	Lead: Cadw, relevant local authorities									
		Scope: Wales-wide									
Performance Measures	Early 2011: Evaluate effect of this measure	Priority: High			Impact: Medium			Ease: Easy			

Research Theme 2: Supply of Skills and Materials

2.1. Attracting people into the sector with the potential to become accomplished traditional building craftspeople is essential to the future supply of traditional skills. People tend to make critical career decisions at three key stages: in school, leaving school/at the young apprentice stage and mid-career. All three need to be taken into account in developing different strategies.

Recommendations, Actions and Deliverables		Delivery									
2.1.1	Raise awareness of traditional building skills and the practical needs of the built heritage sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•					
Action	<p>Continue and expand dissemination of educational materials and visits to and involvement of schools, with particular emphasis on interactive materials and by integrating with ConstructionSkills and Cadw education programmes</p> <p>Target information packs and skills events towards parents, career advisers, employment agencies, etc. to highlight the potential of careers and a rewarding salary from working within traditional building skills</p> <p>Emphasise need for high-quality work and decision-making as important characteristics of the traditional building sector in all promotional material</p> <p>Ensure that the structure and funding of courses is sufficiently flexible to cater for the particular needs of individuals at mid-career, who often have family commitments and financial constraints</p>	<p>Lead: NHTG, Cadw, ConstructionSkills, The National Trust, Welsh Qualifications Authority, JobCentre Plus, Careers Wales, Enterprise Networks</p> <p>Scope: Wales-wide</p>									
Performance Measures	<p>2007: Establish a coordinated strategy between the sector partners to use and build upon existing school links and activities, and map linkages to the education curriculum to maximise opportunities</p> <p>2007–8: Clearly map current opportunities for progressing in each field of traditional building skills</p> <p>2007–9: Identify craftspeople and record and promote examples of best practice</p> <p>2008–9: Monitor throughput of trainees to assess changes needed to training schemes to allow training or upskill for career changers</p> <p>2009–10: Develop funding streams to ensure sustainability of HLF Traditional Building Skills Bursary Scheme in Wales beyond 2010</p>	Priority: High			Impact: Medium			Ease: Medium			
2.1.2	Promote and maintain exchanges of ideas with key stakeholders in the UK, Republic of Ireland and Europe	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•				
Action	Ensure coordinated approach to delivery of skills action plans, and explore and promote as necessary European programmes for exchanges of personnel and experts	<p>Lead: NHTG, Cadw</p> <p>Scope: UK and Europe</p>									
Performance Measures	2008: Develop links with other home countries, Republic of Ireland and European partners on traditional building skills training	Priority: High			Impact: High			Ease: Difficult			

2.2. Even with measures outlined above in place, employers will continue to be the principal drivers for training. What incentives would encourage employers to provide more training?

Recommendations, Actions and Deliverables		Delivery									
2.2.1	Give employers a direct incentive in the marketplace in order to increase the amount of traditional building skills training they provide to improve standards of work	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•					
Action	Apply single supply-chain procurement methods used in mainstream construction to the built heritage sector in Wales through best buy/best value contracts, that is, procuring to quality using the 2-stage quality/price tendering process and working to the long-term view, rather than the more accustomed short-term, lowest-cost tendering, followed by repeat orders. Establish a system of conservation accreditation for built heritage contractors and craftspeople as a subsection of Sell to Wales and TrustMark schemes	Lead: Cadw, Constructing Excellence, ConstructionSkills, Trade Federations, NHTG Scope: UK-wide									
Performance Measures	2008-9: Assess the impact of Sell to Wales for public procurement and TrustMark scheme for homeowners, and investigate establishing a specific historic building contractors subsection within these schemes	Priority: High			Impact: High			Ease: Medium			
2.2.2	Increase financial incentives for traditional building skills training	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•					
Action	Expand and extend the new HLF Traditional Building Skills Bursary Scheme, which funds trainees' salaries and expenses to gain work-based practical experience through placements with historic building contractors	Lead: Cadw, HLF, ConstructionSkills, The National Trust, NHTG Scope: Wales and England									
Performance Measures	2010: Funding and placement providers in place to extend and expand the bursary scheme beyond its current time-span	Priority: High			Impact: Medium			Ease: Medium			
2.2.3	Target sole traders and small contracting firms in particular to impart the need to train for work on pre-1919 buildings	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•					
Action	Explore with trade organisations the most effective strategies for targeting these firms	Lead: Welsh Assembly Government, ConstructionSkills, NHTG Scope: Wales-wide									
Performance Measures	2007-8: Develop approach and means of reaching target groups	Priority: Medium			Impact: Medium			Ease: Difficult			

2.3. How can improvements in the supply of traditional building materials be matched by those in the materials supply chains?

Recommendations, Actions and Deliverables		Delivery									
2.3.1	Consider means to increase the competitiveness of Welsh natural building materials over those imported, and consider the cost of both	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Conduct UK-wide research to address this issue in all four home countries	Lead: Confederation of British Industry, Welsh Assembly Government, ConstructionSkills Scope: UK-wide									
Performance Measures	2010: Carry out research into how the real cost of imports can be passed on to the market and how Welsh producers can stimulate market demand for their product 2011: Undertake research to confirm the extent to which Welsh vernacular building materials can contribute to regional diversity and a sustainable future	Priority: Medium			Impact: High			Ease: Medium			
2.3.2	Improve the supply of home-grown and imported hard- and softwoods for repair of traditional buildings	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•						
Action	Establish UK-wide research to assess the current situation of the supply of materials and skills in timber, and to devise a sector-specific approach	Lead: The Forestry Commission Wales, Proskills, Building Research Establishment Scope: UK-wide									
Performance Measures	2007: Establish links with the Forestry Commission and devise strategy	Priority: Medium			Impact: Medium			Ease: Medium			

Research Theme 3: Training Provision for Traditional Craft Skills

3.1. Factors of geography and low potential uptake of specialised courses are obstacles to training provision. How can these be overcome to ensure that training provision meets the skills requirements of the traditional building stock?

Recommendations, Actions and Deliverables		Delivery									
3.1.1	Continue to develop more flexibility in training provision and delivery using alternative mechanisms to the formal college route	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
		•	•	•	•	•	•				
Action	1. Promote e- and m-learning to support practical skills training 2. Create mobile training units using ConstructionSkills OSAT model	Lead: NHTG, ConstructionSkills, Enterprise Networks Scope: Wales-wide									
Performance Measures	2007-08: Develop a clear skills route map for all occupational levels showing entry to and career progression within the traditional buildings sector in Wales	Priority: Medium			Impact: High			Ease: Medium			

More generally, provision of traditional training must be increased to meet the demands of our traditional building stock. What other means are there of improving the scope and availability of traditional training?

3.1.2	Change the present situation whereby pockets of traditional skills providers work in isolation from one another	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
			•	•	•	•	•				
Action	Establish a network of traditional building skills training through centres for traditional building skills as a source of information exchange and specialised trainers	Lead: Cadw, ConstructionSkills, The National Trust, FE and private training providers, NHTG									
		Scope: Wales-wide									
Performance Measures	2008: Establishing traditional building skills training network 2010: Develop traditional building skills centres of excellence throughout Wales	Priority: Medium			Impact: High			Ease: Medium			
3.1.3	Increase the uptake of traditional building skills training within the FE college system	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
			•	•	•						
Action	Promote and help to roll out the Heritage Skills NVQ Level 3 qualification within Wales to FE colleges to encourage uptake Ensure that potential demand can be met by enlisting FE college trainers in the NHTG Training the Trainers programme to increase their knowledge of conservation and restoration necessary to support delivery of the Heritage Skills NVQ Level 3, and increase knowledge and understanding at NVQ Level 2	Lead: Cadw, Welsh Qualifications Authority, NHTG									
		Scope: Wales-wide									
Performance Measures	2008: Deliver the NHTG Training the Trainers programme in Wales 2010: Heritage Skills NVQ Level 3 fully supported within Welsh FE colleges	Priority: High			Impact: Medium			Ease: Medium			

REFERENCES

11

references

1. Defined by Standard Industrial Classification (SIC) Division 45
2. Annual Business Inquiry, 2006
3. Department of Trade and Industry, Construction Statistics, 2005
4. Annual Business Inquiry, 2006
5. Welsh Housing Statistics, 2004; Survey of English Housing, 2004/05
6. Office for National Statistics, Labour Force Survey, Spring 2005
7. Small Business Service, Small and Medium-Sized Enterprise Statistics UK, 2005
8. Office for National Statistics, Labour Force Survey, Spring 2005
9. www.citb-constructionskills.co.uk
10. www.visitwales.co.uk and www.new.wales.gov.uk
11. Welsh Assembly Government and The National Trust conference, An Asset for the Future, 2002
12. www.cadw.wales.gov.uk
13. Office for National Statistics, Labour Force Survey, Spring 2005
14. *ibid.*
15. The Market Research Society (MRS) Code of Conduct, www.mrs.org.uk/standards/codeconduct.htm
16. Welsh Housing Statistics, 2004, chapter 1
17. National Heritage Training Group, Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in England, 2005, and Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in Scotland, 2007
18. *ibid.*
19. Maintain Our Heritage, Putting It Off: How Lack of Maintenance Fails our Heritage, 2004
20. Construction Skills Network (www.constructionskills.net/research/constructionskillsnetwork/) operates an econometric model by region and nationally twice a year, predicting labour demands and skills gaps. The network is supported by nine regional observatories in England, plus three observatories in Wales, Scotland and Northern Ireland. These are used to test the assumptions of the model and provide an independent, industry-based reality check, giving the model assumptions transparency and credibility. CSN findings are published in the form of regional Labour Market Intelligence reports (LMIs) and a National Model report which provides a summarised overview of the totality of the model's finding, with all reports published annually.
21. Regeneration Funding: An Introduction, www.ffhb.org.uk
22. Defined by SIC Division 45
23. Annual Business Inquiry, 2006
24. Department of Trade and Industry, Construction Statistics, 2005
25. Annual Business Inquiry, 2006
26. Office for National Statistics, Labour Force Survey, Spring 2005
27. Small Business Service, Small and Medium-Sized Enterprise Statistics UK, 2005
28. Office for National Statistics, Labour Force Survey, Spring 2005
29. Welsh Housing Statistics, 2004; Survey of English Housing, 2004/05
30. Office for National Statistics, Labour Force Survey 2005. Based on an eight-quarter average from summer 2003 to spring 2005
31. IFF Research, The Effect of Employment Status on Investment in Training, Great Britain, 2003

32. Small Business Service Analytical Unit, 2005; Office for National Statistics, Labour Force Survey, 2005; CITB-ConstructionSkills
33. Trainee Number Survey, 2005–6, CITB-ConstructionSkills, p. 8
34. Construction Skills Network Model, 2006
35. Labour Force Survey, four-quarter average data covering summer 2004 to spring 2005 inclusive
36. National Heritage Training Group, Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in England, 2005, section 6.2.3
37. Rural Labour Markets, Skills & Training, Institute for Employment Research, p. iii
38. National Heritage Training Group, Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in Scotland, 2007, section 5.7.3
39. Smith, M., 'Links: Geology, Building Stones & Geological Conservation', Stone in Wales, papers from the Welsh Stone Conference, Cardiff, 2002, published by Cadw, 2005, p. 92
40. National Heritage Training Group, Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in Scotland, 2007, section 5.8.2
41. Annual Business Inquiry, 2005
42. Institute of Employment Research, SSDA Working Futures, 2004–14
43. Office for National Statistics, UK Standard Industrial Classification of Economic Activities for GVA by Region, 1989–2003
44. Readers are advised that in the analysis of different data sources the Standard Industrial Classification (SIC) coverage used to represent Proskills varies because of data limitations
45. The detailed footprint of Proskills covers SIC codes 10, 12, 13, 14, 21.24, 22.2, 24.3, 26.1, 26.26, 26.4–26.8 and 40.3
46. Office for National Statistics, Labour Force Survey, 2005
47. Future Skills Wales, Employers' Skills Survey, 2005
48. Department for Education and Skills, National Employer Skills Survey (NESS), 2005
49. EPIC, formerly the National Training Organisation for the Extractive and Minerals Processing Industries
50. EPIC, Training & Assessment Provision in the Quarrying Industry in Wales, 2003
51. *ibid.*
52. Trainee Numbers Survey, 2005/6, ConstructionSkills, p. 9
53. *ibid.*, p. 25
54. *ibid.*, p. 11
55. *ibid.*, p. 24
56. Early Leavers/Completers Survey, ConstructionSkills, p. 26

appendix

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES COVERED BY CONSTRUCTIONSKILLS

SIC 45	CONSTRUCTION
SIC 45.1	Site Preparation
SIC 45.11	Demolition and wrecking of buildings; earth moving
SIC 45.12	Test drilling and boring
SIC 45.2	Building of complete construction or parts; civil engineering
SIC 45.21/1	Construction of commercial buildings
SIC 45.21/2	Construction of domestic buildings
SIC 45.21/3	Construction of civil engineering constructions
SIC 45.22	Erection of roof covering and frames
SIC 45.23	Construction of motorways, roads, railways, airfields and sport facilities
SIC 45.24	Construction of water projects
SIC 45.25	Other construction work involving special trades
SIC 45.3	Building Installation
SIC 45.32	Insulation work activities
SIC 45.34	Other building installation
SIC 45.4	Building Completion
SIC 45.41	Plastering
SIC 45.42	Joinery installation
SIC 45.43	Floor and wall covering
SIC 45.44	Painting and glazing
SIC 45.45	Other building completion
SIC 45.5	Renting of construction or demolition equipment with operator
SIC 74	OTHER BUSINESS ACTIVITIES
SIC 74.2*	Architectural and engineering activities and related technical consultancy
SIC 74.20/1	Architectural activities
SIC 74.20/2	Urban planning and landscape architectural activities
SIC 74.20/3	Quantity surveying activities
SIC 74.20/4	Engineering consultative and design activities
SIC 74.20/5	Engineering design activities for industrial process and production
SIC 74.20/6	Engineering related scientific and technical consulting activities
SIC 74.20/9	Other engineering activities

*Asset Skills (the Sector Skills Council for Property and Facilities Management) has a peripheral interest in SIC 74.2.

Note: ConstructionSkills shares an interest in SIC 45.31 (Installation of electrical wiring and fittings) and SIC 45.33 (Plumbing) with SummitSkills (the SSC for Mechanical and Electrotechnical Services); in SIC 14.1 (Quarrying of stone), SIC 20.3 (Manufacture of builders' carpentry and joinery), SIC 26 (Manufacture of other non-metallic mineral products), SIC 28.11 (Manufacture of metal structures and parts of structures), and SIC 28.12 (Manufacture of builders' carpentry and joinery metal) with Proskills (Sector Skills Council for the Coatings, Extractives, Glass, Building Products and Printing industries).

Source: UK Standard Industrial Classification of Economic Activities, 2003, Office for National Statistics.

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www.nhtg.org.uk

www.cadw.wales.gov.uk

www.constructionskills.net/research



The National Heritage Training Group
Carthusian Court
12 Carthusian Street
London
EC1M 6EZ

e-mail: info@nhtg.org.uk
www.nhtg.org.uk

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Designed by:
Intuitive Design
Tel: 01621 868 698
www.intuitive-design.co.uk