BUILT HERITAGE SECTOR PROFESSIONALS

Current Skills, Future Training

SKILLS NEEDS ANALYSIS OF THE UK BUILT HERITAGE SECTOR 2008

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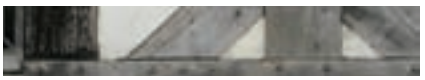
foreword



Construction and the built environment are central to our social development – creating places to work, learn, live and relax in and providing us with a sense of place and identity. Construction is also one of the largest employers and contributors to the UK gross domestic product (GDP) and a key economic indicator - used as a barometer to measure buoyancy or recession.

Building professionals within construction play a key role in the design, planning, delivery and management of our built environment. They must ensure that buildings are safe, fit for purpose and properly maintained to achieve their maximum life-span. Different skills, knowledge, expertise and understanding are required for each profession, but they often over-lap during projects on existing and new buildings.

Our built heritage – the 6million or so UK pre-1919 buildings – is a vital and vibrant part of the built environment. Understanding and caring for this important inheritance requires professionals and craftspeople well versed in traditional building methods and materials and with a sound knowledge of the approach to and techniques of conservation, repair, maintenance and restoration.

It is therefore of concern that this ground-breaking research report has highlighted extensive knowledge and skills gaps among many of those who undertake this type of work. This will have a detrimental effect on preserving our traditional building stock and with a lack of suitably knowledgeable younger recruits to replace experienced professionals when they retire these gaps are set to widen unless immediate action is taken.

The low numbers of professionals seeking accreditation in building conservation also needs to be addressed, as professional disciplines need to operate within a framework of common principles designed to protect and conserve the historic built environment.

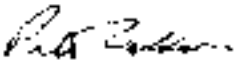
The Sector Skills Councils, professional bodies, heritage agencies and conservation bodies, educationalists and training providers need to work together to strengthen the traditional building and conservation components within mainstream professional courses and educate clients of the value and importance of using traditional building methods and materials on their pre-1919 buildings.

We also need to ensure that the conservation, repair and maintenance (CRM) sector of the construction industry – of which traditional buildings form a considerable part – continues to be linked to the sustainability, regeneration, energy efficiency and climate change agendas. In so doing, we must educate clients and this wider CRM sector of the correct methods and materials for conservation, repair and maintenance by using examples of best practice and disseminating published information, advice and guidance.

Effective and meaningful change takes time, but now is the time to act to ensure that this happens. We hope you will join us in our collective efforts to ensure that there is a suitable supply of professionals with the right skills and knowledge to work in this sector, now and in the future.

Help us to continue to make a difference for the UK built heritage sector.

Mike Moody
Chairman
National Heritage Training Group



Peter Lobban
Chief Executive
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acknowledgements

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Finally, this work could not have been undertaken without the vision and commitment of the National Heritage Training Group's Executive Committee. This independent specialist sector skills development group initiated the research having recognised the need for an evidence-based strategy to address the skills gaps and shortages among built heritage professionals, and is fully committed to supporting the delivery of its recommendations through practical and achievable solutions.

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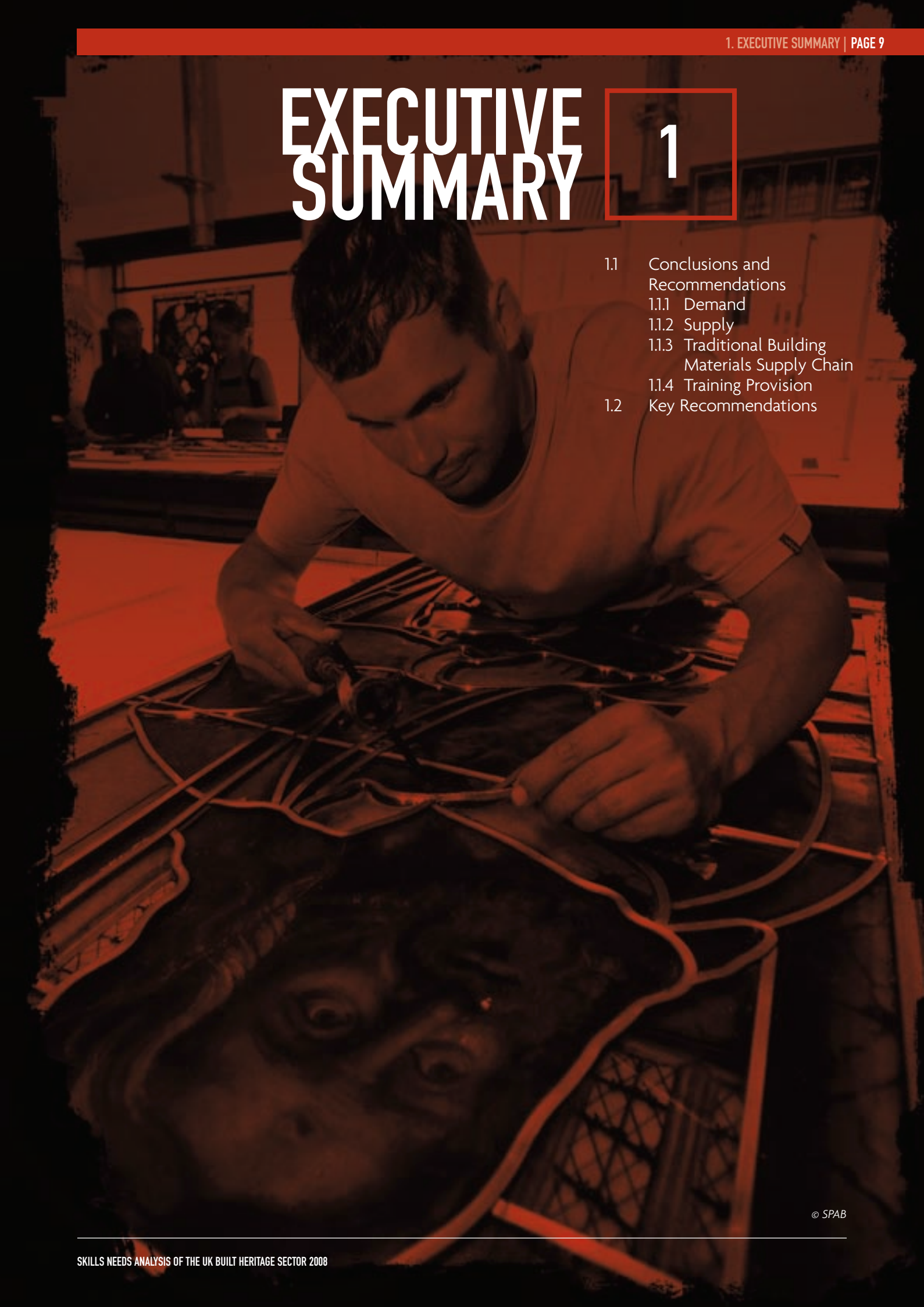
EXECUTIVE SUMMARY 1



executive summary

This report was commissioned by the National Heritage Training Group (NHTG) to complement its UK-wide programme of Skills Needs Analysis for the built heritage sector, published as *Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge* (England, 2005 and 2008; Scotland and Wales, 2007; Ireland, forthcoming 2008).

The home country craft skills reports concentrate on heritage contractors and craftspeople working on pre-1919 buildings, but include the views of manufacturers and suppliers of traditional building materials, public and private stockholders, training providers and a limited survey of architects and surveyors. This report seeks to provide a separate assessment of the needs of UK building professionals – architects, building control officers, conservation officers and specialists, engineers, planners, surveyors and property managers – to establish their training, knowledge and skills in relation to specifying for and advising on traditional buildings and structures.

The research objectives were to:

- analyse and quantify the UK building professionals' labour market, and the demand for building professionals in the heritage sector
- identify the ways in which the skills of professionals may need to change in the future, and as part of this review their understanding and knowledge of the supply and use of traditional building craft skills and materials on pre-1919 buildings and structures
- examine the provision of formal education and continuous professional development available and relevant to building professionals working in the built heritage sector
- make recommendations for improvement to help inform the development of a Skills Action Plan (see Section 11, main report)

To this end, the research has included:

- a quantitative survey of 398 professional services firms and building professionals
- a total of 52 in-depth qualitative interviews with building professionals and professional bodies
- a further 20 interviews with education and training providers offering courses of relevance to built heritage sector professionals
- a set of 30 further in-depth qualitative interviews with property owners and managers (referred to as 'stockholders' throughout the report), and the building professionals they commission
- two focus group meetings with a range of key building conservation professionals and representatives of professional bodies: one at the beginning of the research to inform the quantitative questionnaires and topic guides for the in-depth qualitative interviews; the other at the end of the research to consider the findings and assist in developing the Skills Action Plan.

1.1 Conclusions and Recommendations

1.1.1 Demand

- There are over 6 million traditional (pre-1919) buildings in the UK including around half a million listed buildings and over 33,000 scheduled monuments.
- For professionals who have worked on pre-1919 buildings in the last 12 months, this kind of work has made up an average of 35% of their workload, which increases to 76% for conservation or heritage specialists.
- Most professional firms (85%) expect their workload either to stay the same or to increase in the next 12 months, but over half (54%) of conservation or heritage specialists expect an increase in pre-1919 work, compared with 39% of general professional practices.
- Of pre-1919 turnover 61% is in the private sector and 54% involves conservation and restoration activities, with specialist conservation or heritage practices more likely to be involved in work on public and religious buildings, and general professional practices on private properties.
- Building professionals are most likely to be called upon by property owners to supervise or specify works of repair to pre-1919 buildings and least likely to be involved in routine maintenance work.
- Evidence points to low awareness levels among stockholders regarding the importance and long-term benefits of regular maintenance.
- Even when stockholders are aware of the existence and relevance of conservation accreditation, they can sometimes be persuaded to overlook the fact that a professional is not building-conservation accredited, if the professional can produce a portfolio of relevant experience. This implies a lack of incentive for conservation accreditation.
- The cost of commissioning conservation-accredited professionals was mentioned as being prohibitive by some stockholders.

- Almost half (45%) of building professionals interviewed produce specifications for built heritage work; 42% of these always or usually consult conservation specialists when developing specifications, and 39% consult master or experienced craftspeople.
- Over a third (37%) of professionals producing specifications for heritage work stipulate that certain aspects of the work requires specialists.
- Encouragingly, 62% of building professionals stipulate that the work should be undertaken by experienced contractors or master craftspeople, although only 34% stipulate that appropriate qualifications should be a requirement.
- It is recognised that demand for appropriate qualifications among contractors will increase.

Recommendations: Demand

The sector needs to work together to:

- Increase the amount of maintenance carried out on pre-1919 buildings using appropriate techniques and materials.
- Increase the demand for suitably skilled and building conservation accredited professionals.
- Improve the relevance of national building standards relating to pre-1919 work to drive demand for professionals with the requisite knowledge to successfully deliver projects
- Identify where variables in practice, policy or understanding might impact significantly on the future demand for skills and supplies in traditional buildings.
- Drive demand by ensuring that the links between built heritage and the sustainability agenda are understood and promoted

1.1.2 Supply

- There are approximately 542,249 UK building professionals within non-manual construction occupations and related consultancy services.
- It is impossible to accurately quantify how many of these professionals work on pre-1919 buildings, although the indications are that a significant proportion of general professional practices undertake work on pre-1919 buildings as part of a broader portfolio of work.
- Out of an initial survey of 1,096 building professionals, 36% said that they had carried out work on pre-1919 buildings in the past 12 months.
- Many building professionals choose to become members of professional bodies, but relatively few become building-conservation accredited.

- This research identified a total of 507 conservation-accredited building professionals from a number of available schemes.
- This equates to one conservation-accredited architect for every 14,722 traditional buildings; one conservation-accredited surveyor for every 84,444 traditional buildings; and one conservation-accredited engineer for every 276,364 traditional buildings.
- Over a third (35%) of professional practices report difficulties in recruiting at professionals level and a quarter (25%) at technical level.
- Skills shortages are most prevalent among architects and engineers, and considered very severe by the vast majority (80%) of building professionals.
- New recruits are generally not thought to be adequately prepared for the built heritage sector (unless they have undertaken postgraduate or other specialist conservation training) because of the lack of heritage or conservation content in undergraduate courses.
- Concern exists that there will be inadequate numbers of suitably knowledgeable younger recruits to take over as experienced professionals retire.
- Although the majority (86%) of professionals say they have not knowingly experienced *skills gaps,* there is a problem relating to the knowledge that building professionals have of appropriate traditional methods and materials for use on pre-1919 buildings.

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Recommendations: Supply

The sector needs to work together to:

- Maximise the number of high-quality new entrants.
- Improve the image of the built heritage sector.
- Promote clear progression routes for new recruits and the existing workforce.
- Establish a UK-wide pan-professional system of accreditation and facilitate greater uptake of building conservation accreditation within the sector.
- Improve access to authoritative advice and guidance relating to traditional skills and materials.

1.1.3 Traditional Building Materials Supply Chain

- Over half (55%) of pre-1919 projects worked on by professionals in the last 12 months involved the use of traditional materials, and 77% of professionals writing heritage specifications always or usually stipulate these on traditional buildings and structures.
- Cost and lack of client demand are the main reasons for not specifying traditional building materials, although the latter is to some extent a result of the former.
- There is an apparent lack of understanding among property owners regarding the importance of using traditional building materials and the potential damage that can be caused to their

properties by the use of inappropriate substitutes.

- More than half (55%) of professionals find it easy or fairly easy to obtain performance data on traditional building materials from manufacturers and suppliers, although a minority (5%) do report that this is particularly difficult.
- General guidance on the application of traditional materials for pre-1919 buildings is considered to be lacking.
- A quarter (25%) of professionals find it difficult to specify traditional building materials because of a lack of knowledge on how to guide craftspeople in their use; 38% find planning obligations in relation to these materials difficult.
- Perceived complexities with the planning system and the need to meet modern building standards and legislative requirements can prove particularly challenging for professionals when specifying traditional building materials for pre-1919 buildings; specific concerns relate to the need for pre-1919 buildings to meet energy efficiency and public accessibility criteria, while still observing conservation principles or meeting listed building requirements.

Recommendations: Materials

The sector needs to work together to:

- Promote and develop further training programmes targeted at specifiers.
- Promote awareness of the importance of using traditional materials to clients.
- Encourage manufacturers and suppliers to liaise with professionals in order to establish how and where traditional materials meet modern building requirements.
- Establish a comprehensive, easily accessible and well-publicised source for building professionals to obtain information and performance data on traditional materials and techniques.
- Encourage and facilitate dialogue between professionals and craftspeople to enable experienced craftspeople to contribute their knowledge to the development of the specification process.

1.1.4 Training Provision

- Almost two-thirds (65%) of building professionals do not feel that their formal education prepared them adequately for working on pre-1919 buildings, and the majority (68%) believe that much of the skills and knowledge they have acquired is self-taught.
- Although over half (53%) of building professionals have sourced information and advice before commencing conservation and restoration activities, only a third (32%) say that they find it easy or fairly easy to locate specialist training providers.
- Higher education courses relating specifically to the historic built environment are most commonly taught at postgraduate level; however, concerns exist among providers regarding numbers of students attending specialist courses (at both undergraduate and postgraduate level) because of the effects of top-up fees and other financial considerations.
- Lack of awareness of the career opportunities, a poor image of the heritage sector, and less than adequate coverage of traditional building materials and techniques in relevant mainstream undergraduate curricula are thought to be responsible for lack of interest in this sector by new entrants.
- Practical 'hands on' learning is integral to the way in which building professionals develop their knowledge and understanding relating to pre-1919 projects, despite the reported lack of practical learning elements within some education and training provision.
- Building professionals report extensive use of online resources to mitigate project-specific knowledge gaps, and more generally as a support to professional development.
- Nearly three-quarters (71%) of professional firms report not having a formal training and development strategy, and staff working within professional practices had an average of 1.7 training days (CPD seminars, conferences, personal research) in the last 12 months in order to assist work on pre-1919 projects.

Recommendations: Training

The sector needs to work together to:

- Strengthen the traditional building and conservation components of mainstream built environment professional courses and higher education study curricula.
- Encourage more uptake of existing postgraduate courses relevant to the built heritage sector.
- Demonstrate to employers the essential need for building professionals to continuously develop their understanding.
- Further develop and promote flexible training opportunities and CPD available to building professionals.
- Improve access to information on available training and education relevant to the built heritage sector.
- Continue to link the development of traditional building techniques and the material supply chain to the wider issues raised in the sustainability agenda.

key recommendations

In its findings and recommendations, this report recognises the widespread need for awareness-raising and education – educating clients so that they appreciate the benefit and importance of using traditional building methods and materials on their pre-1919 buildings - and ensuring that there is a suitable supply of professionals with the right skills and knowledge to work in the sector through improved training and skills development.

It is also essential in the long term to promote the image of the built heritage sector better to potential new entrants. However, this requires existing building professionals to fully understand the most appropriate of ways of working with traditional buildings and the materials they use. Effective communication with experienced craftspeople will assist this process.

The immediate priority is to increase the amount of high-quality information and training available to building professionals in relation to pre-1919 projects. This will help to drive demand for more built heritage and conservation teaching within formal education routes, which in itself will also have to be a parallel driver. These changes will not only help existing building professionals achieve higher standards when working on pre-1919 buildings but will also prepare new entrants better for the type of work they are likely to encounter in their professional duties.

Taking these factors and the rest of the research findings into account, the key recommendations emerging from this study are presented in the adjacent table (presented in more detail within the Skills Action Plan in Section 11 of the main report).

1. **Client demand.** Increase awareness among pre-1919 property owners and managers of the importance of implementing routine maintenance, the use of appropriate materials and techniques, and the appointment of highly knowledgeable experienced professionals and trades/craftspeople for all aspects of pre-1919 work.
2. **Building standards.** Improve the relevance of national building standards relating to the conservation, repair, maintenance and improvement of the historic built environment.
3. **Latent demand.** Identify where variables in practice, policy or understanding might impact significantly on the future demand for skills and supplies in traditional buildings and drive demand through links to the sustainability agenda.
4. **Sector support.** Secure sector recognition of the knowledge gaps of existing professionals working on historic buildings, and sector support to address the shortage of specialist building professionals.
5. **Resources.** Improve access to authoritative advice and guidance relating to traditional building skills and materials, to improve levels of understanding among the building professions, especially with a view to the improvement in standards of specification.
6. **Quality assurance.** Establish and propagate standards of best practice for professionals working in the built heritage sector.
7. **Positive image.** Improve the image of the built heritage sector among potential new recruits.
8. **New entrants.** Maximise the student intake for existing higher education courses, and support the development of new providers where appropriate.
9. **Employment opportunities.** Strengthen the sector by ensuring that the best potential new entrants have ready access to information on current vacancies.
10. **Traditional materials demand.** Increase awareness of the need to specify traditional materials on pre-1919 buildings in order to stimulate demand.
11. **Traditional materials supply.** Increase supply by enabling greater cross-fertilisation of ideas and practices among traditional building and material manufacturing companies to improve standards.
12. **Higher education.** Strengthen the traditional building and conservation components of professional courses and higher education study curricula.
13. **Understanding building craft skills.** Strengthen understanding among the professions of traditional building craft skills and their application on site.
14. **Lifelong learning and CPD.** Improve the knowledge base of professionals already working in the sector.
15. **Trend monitoring.** Monitor improvements within the sector.

The NHTG is confident that progress can be maintained towards providing integrated long-term solutions to overcome the current skills and knowledge gaps clearly identified in this report, but this requires combined resources in terms of funding, person hours, thinking and planning. It is therefore vital that the actions of this report are delivered in partnership with all relevant stakeholders, across the building professionals sector.

Building professionals have a fundamental role as the caretakers, project managers and specifiers responsible for the UK's built heritage. They need easy access to detailed knowledge and understanding of traditional materials, techniques and buildings.

This will help to ensure that their work on historic buildings is appropriately informed and can therefore achieve a consistently high standard – balancing the need for a sympathetic approach to construction work on historic buildings with the commercial realities and expectations of contemporary society. This is essential in achieving a sustainable and functioning historic building stock for future generations.

INTRODUCTION 2

introduction

The United Kingdom's rich and varied built heritage, from great medieval cathedrals to more humble Victorian terraces, reflects and continues to shape the way in which people have lived, worked and worshipped over many hundreds of years. The preservation and maintenance of such buildings for future generations is a source of concern within the built heritage sector. However, the work required to refurbish, improve, conserve, repair, maintain and restore such buildings cannot be undertaken without a large network of skilled, knowledgeable building professionals, well schooled in the conservation principles and with an understanding of methods and materials necessary for large and small traditional building projects.

2.1 The UK's Built Heritage

Just over 6 million traditional buildings exist in the UK (see Table 1),[1] representing around a fifth of the total existing building stock in England and Scotland, and a third in Wales.[2]

Notwithstanding the sector's contribution to the revenues of tourism, centred on buildings or wider landscapes and streetscapes of exceptional historic or architectural merit, the amount spent on the conservation and restoration of traditional buildings alone is estimated across the UK at over £5 billion a year.[3]

Various legislative frameworks exist to preserve the most significant buildings, and with almost half a million entries, the UK's system of 'listing' is one of the most stringent systems of protection, with all alterations to listed buildings requiring listed building consent from local planning authorities, except in Northern Ireland, where all applications for listed building consent are made to the Department of the Environment.

The UK listing system includes three basic categories, reflecting different degrees of historical or aesthetic significance (although the Scottish system uses three slightly different categories from the rest of the UK).[4] Brief definitions for each of the categories are provided in Table 2.

In addition, scheduled monument consent is required for all work that is carried out on any scheduled monument in England or Scotland, any scheduled ancient monument in Wales or any scheduled historic monument in Northern Ireland. Such monuments are protected as historic sites or buildings of national importance. Scheduled monument consent is granted by the Department for Culture, Media and Sport (DCMS) in England, the Environment and Heritage Service (EHS) in Northern Ireland, the National Assembly for Wales, or Historic Scotland acting on behalf of Scottish ministers. In England and Wales, the terminology and official procedures associated with 'listing' and 'scheduling' are under review at the time of writing, with any changes likely to apply from 2010.

Work carried out by building professionals (and contractors) on all traditional buildings, and not just those listed or scheduled, is informed by key documents such as the British Standard 7913, *Guide to the Principles of the Conservation of Historic Buildings* (BSI: 1998), as well as a broad range of other forms of guidance, current policy and charters (see Section 5.4). Furthermore, distinguished buildings that contribute to areas of exceptional natural or manmade beauty may be protected by national parks legislation or by belonging to one of over 9,000 designated conservation areas.[5]

Table 1 Approximate Number of Traditional and Listed Buildings, and Scheduled Monuments, in the UK

	Pre-1919 (traditional) buildings[a]	Listed buildings	Scheduled (ancient) monuments
England	4.96 million	372,769[b]	19,711
Northern Ireland	124,000	9,000	1,704
Scotland	501,000	47,329	7,882
Wales	497,000	29,866	3,909
TOTAL UK	**6.08 million**	**458,964**	**33,206**

[a]figures adapted from primary sources giving numbers of dwellings to estimate total stock including non-residential structures.

[b]Please note that this figure relates to the number of listed entries, some of which include groups of structures. It is therefore thought that the actual number of individual listed buildings in England could be as high as 500,000.

Sources: Housing Condition Surveys; see also NHTG Traditional Building Craft Skills, England 2005 and 2008, Scotland 2007, Wales 2007 and Ireland (forthcoming 2008).

Table 2 UK Listing System Definitions

Grade I	Buildings of exceptional interest
Grade II*	Buildings of particular importance and of more than special interest
Grade II	Buildings of special interest and warranting preservation
Category A (Scotland only)	Buildings of national or international importance, or little altered examples of a particular period, style or building type
Category B (Scotland only)	Buildings of regional or more than local importance, or examples of a particular period, style or building type that may have seen some alteration
Category C (Scotland only)	Buildings of local importance, or less significant examples of a particular period, style or building type

2.2 Building Professionals

The term 'building professionals' comprises a wide range of occupations, and encompasses a plethora of organisations, agencies and consultancies involved in the conservation, restoration, repair and maintenance of traditional buildings.

The following brief overview of the typical – but by no means exclusive – roles of some of the main building professions is provided for reference.

2.2.1 Architects

Architects work on the design of new buildings and spaces as well as existing structures. In terms of working on older properties, architects will create a solution to their client's building requirements, giving advice on materials, techniques and costs, as well as drawing up specifications for work appropriate to the building's history and character.

In many projects the architect has a pivotal role, being the principal point of communication between the building project and the client, taking responsibility for administering contracts and liaising with the relevant authorities.

The architect will often be involved with projects from the earliest planning stage through to completion, coordinating a team of other building professionals and monitoring the progress of day-to-day work on site to ensure that it is carried out according to the specifications and standards required, finishes on time and does not exceed the contract figure. The need for them to have vision based on a thorough understanding of a building, group or area is therefore vitally important.

The title 'architect' is protected by statute (Architects Act 1997), and the Architects Registration Board (ARB) is the professional, statutory regulatory body for architects in the UK. Only a person whose name is on the register kept by the ARB may call him- or herself an architect, and as such must comply with the ARB code of conduct.

2.2.2 Surveyors

The nature of a surveyor's role is varied, with building surveyors generally providing advice on all aspects of construction depending on training, skills, experience and specialisms, including appropriate maintenance regimes and recommendations for repairs. Quantity surveyors manage project costs.

'Traditional buildings are all buildings of a solid wall construction, built with a permeable fabric that both absorbs and readily allows the evaporation of moisture. These mostly predate the 1920s, when cavity wall construction and the use of damp proof membranes became widespread.'

English Heritage

For work on traditional buildings, this can include ensuring that any ongoing work is carried out on schedule, to an appropriate standard, on budget, and in accordance with relevant legislation and building regulations; advising on health and safety, and issues such as energy efficiency, sustainability and other environmental concerns; preparing tenders and other contractual documentation.

2.2.3 Engineers

As with surveyors, the role of an engineer on building projects varies according to their specialism, which can include civil, structural or building services engineering.

Civil or structural engineers will take design responsibility for the overall stability of a building. They need to appreciate how a building was constructed and the way it works. They should therefore have a thorough understanding of how the building's loads will be transferred through the structure into the ground, taking into consideration the additional loads that will be imposed on a structure when in use, and other external factors such as wind and snow loads. Their work should include advising and assisting with structural aspects of initial plans and designs, placing particular emphasis on the load-bearing elements of a building, such as the foundations, beams over openings and the roof structure.

Structural engineers will also design structural repairs to a building and will often liaise with contractors to ensure that complex details are implemented correctly on site. For proof of competence to work on buildings of historic interest and for continued professional development in this sector, engineers can apply for accreditation through the *Conservation Accreditation Register for Engineers* scheme (see Section 4.5.1. below)

Building services engineers plan and design aspects of a building that make it comfortable for use, such as drainage, heating and ventilation, energy supply, lighting and communications.

2.2.4 Planners

Planners are responsible for the appropriate development of urban and rural spaces and for land use, having to ensure that any building projects take into account the views of the general public as well as local and county councils, regulatory authorities and heritage bodies. They administer the planning process for individual projects, to ensure that all conditions attached to a planning approval are met.

For work on traditional buildings, the role of the planner is essential in ensuring (in consultation with the conservation officer) that any work is executed in sympathy with the individual building and its historic context, reflecting the needs and aspirations of the local area and keeping in line with national (and sometimes international) legislation and regulations. Planners also have a major role in influencing the design and specification in works carried out in most of the HLF-funded Townscape Heritage Initiatives (THIs).

2.2.5 Conservation Officers

A conservation officer or specialist conservation advisor will generally work for a local authority or private consultancy respectively, advising on and promoting the conservation of the historic environment and, in particular, its long-term care, preservation and, vitally, its enhancement. Much of their work will be with listed buildings or buildings within conservation areas.

The conservation officer works on behalf of the local authority, administering the listed building consent process, and working closely with both the planning officer and the building control officer. Their work may involve examining planning applications and advising the planning officer on additional conditions that any proposed works should meet; setting the conditions for listed building consent; providing advice to the applicant on project design or materials and techniques used; pursuing funding opportunities for regeneration and enhancement schemes; and ensuring adherence to the relevant legislation, best practice and the conditions of listed building consent during any building work with a specific architectural, historical or cultural interest.

2.2.6 Building Control Officers and Approved Inspectors

Building control is a statutory requirement observed by all local authorities. Typically, the role of approved inspectors, building control officers or, in Scotland, approved verifiers and certifiers (termed throughout this report for ease of reference as 'building control officers') will be to ensure that all the requirements of the current building regulations have been met during any construction project. This includes ensuring that the building is structurally sound; that it performs to acceptable modern standards in terms of energy efficiency and fire protection; that it is a safe environment for its proposed end

use; and that suitable provision has been made for disabled access.

Building control officers check and sign off the build on site at key stages. For work on traditional buildings that are for the most part unprotected by listing, this means that their decisions can have a crucial impact on the preservation of the historic character of a building or site. They will also be involved in determining how successfully an existing traditional building can be converted to a new use, while meeting the required functional standards and taking into account the recommendations of the various official technical guidance documents.

From a local authority perspective, it should be noted that housing officers have a major influence on housing renewal performance and specification through schemes such as Pathfinder, which deal with many hundreds of pre-1919 dwellings. However, the skills and training needs of this group fall outside the scope of the current research.

2.3 The Changing Role of the Building Professional

The crucial role played by the building professional is only likely to grow as a result of the increased emphasis on issues such as sustainability and energy efficiency in an era of sensitivity to the issues of climate change and global warming. For example, increased focus on energy efficiency must enhance the already significant role of professionals in the conservation and maintenance of the built heritage stock. This is particularly relevant for building professionals involved in the design and specification of refurbishment projects, the production of conservation plans and, more generally, the verification of compliance with the building regulations and the development and delivery of local development plans.

There is striking evidence that older (pre-1919) buildings have levels of energy efficiency that at least match, and in some respects exceed, those of the most sophisticated modern buildings.[6] Clearly, a vital aspect of the sustainability agenda is an increased understanding of the central role historic buildings can play in encouraging sustainable development, and of the potential environmental benefits of adopting conservation approaches to developing vacant or derelict properties and areas. This has been recognised by initiatives such as the Heritage Lottery Fund's Townscape Heritage Initiative, and has now become a major central government priority in challenging social and economic deprivation.

These changes have important implications. First of all they suggest that the built heritage sector is likely to come under

increasing scrutiny and pressure, especially where planning and protection laws are not modified in order to promote sustainable development, for example by relying on cultural designations such as listings simply to secure good practice in improving traditional structures. Secondly, the complexity and scale of some of the proposed urban regeneration projects – often supported by significant amounts of government money – suggest a greatly enhanced need for professional involvement in heritage projects to secure the potential and added value of historic and traditional build.

Furthermore, ongoing reform of the heritage protection system (particularly in England and Wales) through a series of publications – (including the Heritage Protection Reform (HPR) White Paper *Heritage Protection for the 21st Century* and the Heritage Bill published in draft on 2 April 2008) – aims to create an integrated management system for the historic environment within the planning system, adopting a unified register of all protected national heritage assets and encouraging the planning process to become more responsive and flexible to capitalise on the benefits of heritage protection.

It is envisaged that part of this transformation within the corporate cultures will be made possible by devolving routine decision-making and planning processes to local level.[7] This rationalised, localised process could potentially increase demand for work on historic buildings, and will certainly require more conservation skills to be embedded within the construction industry as a whole, thus making it essential that building professionals possess and are able to apply the relevant skills and knowledge necessary for work on pre-1919 structures (see Section 5.4).

Similarly, as procurement methods are changing, the traditional roles and responsibilities of building professionals are being modified, and the professional will need to retain the important coordinating role in the refurbishment and upgrading of the existing building stock.

2.4 Sector Challenges

The major statement of the skills and labour needs of the construction industry is found in the Sector Skills Needs Analysis, published in December 2004 by

ConstructionSkills, the Sector Skills Council for the construction industry. It found that the expanding industry would need to attract around 88,000 new entrants every year until 2010, yet all sectors reported persistent recruitment difficulties. These were particularly notable among professional services occupations and roles involving sustainable development and project planning–skills that conservation professionals typically possess. Supply issues such as low levels of retention in apprenticeships were identified, and graduate recruitment was a particular challenge, with difficulties centring on securing candidates with appropriate knowledge and understanding in the design and project management fields.[8]

Although the research found little evidence that the skills mix of the construction sector would change dramatically in the near future, it clearly acknowledged the importance of the repair, maintenance and improvement (RMI) sector to the construction industry as a whole. For example, it established that even among the minority of construction firms listed specifically as house builders, only around a third actually built entire houses from scratch, with the rest working on RMI and on improvements to existing property.[9] This implies that most professional building firms work on both traditional and modern properties, and will therefore require at least some specialist knowledge of traditional buildings if their work is to be done sensitively and appropriately, and if it is to capitalise on the environmental benefits such development can bring.

It is therefore of real and current concern that the Construction Industry Council's *Built Environment Professionals Skills Survey* (2007) identified that three-quarters (74%) of professional firms felt that, during the recruitment processes, potential candidates lacked the technical, practical or job-specific skills required for the role for which they applied.[10] These skills deficiencies were also found to be more prevalent among new entrants into the sector than among existing employees.[11]

'[Professionals] effectively..."manage" change to the historic environment. They are therefore at the coalface of sourcing materials and craftspeople to undertake work on historic buildings.'[12]

'Far too few professionals working on historic buildings have had any specialist conservation training...Many do not believe they need it.'[13]

2.5 Sector Skills Councils: Their Role in the Built Heritage Sector

Sector Skills Councils (SSCs) provide employers with a unique forum to express the skills and productivity needs pertinent to their sector. Each SSC is an employer-led, independent organisation, covering a specific sector across the UK.

While each SSC is responsible for a specific sector or footprint (as defined by Standard Industrial Classifications specified within their contract), many have cross-sector interests and share common strategic objectives. This is particularly evident across the built heritage sector, where at least seven SSCs have an immediate interest in terms of conservation, repair and maintenance.

Property Services

Asset Skills is the Sector Skills Council for the management and maintenance of the built environment, which encompasses property, housing, facilities management and cleaning. There are over 147,000 workplaces and 695,000 people in the sector, including 350,000 people in property services and housing and 61,000 in facilities management. Occupations include town planners, facilities managers, surveyors, housing managers, estate agents, cleaners and caretakers.

Construction

ConstructionSkills is the Sector Skills Council for construction. As a partnership between CITB-ConstructionSkills, the Construction Industry Council and CITB-Northern Ireland, it covers the construction industry from crafts through to building professionals.

The construction sector workforce comprises about 2.2 million people and over 203,000 firms. The vast majority of the workforce, over 1.9 million people, are in the contracting sector (SIC 45.11 to 45.25, 45.32, 45.34 and 45.41 to 45.50), with around 300,000 in the professional services sector (SIC 74.20). Approximately 1.4 million are directly employed within 175,000 building companies and 28,000 professional practices. The vast majority (95%) of firms within the sector employ under 10 people. A further 806,000 people working within the sector are self-employed, representing well over a third (37%) of the available labour in the contracting sector.

ConstructionSkills and English Heritage signed their first three-year Sector Skills Agreement in December 2004, and the second agreement is for 2008–11. The National Heritage Training Group was formed by English Heritage and ConstructionSkills in March 2003 to address traditional building craft skills training and development within the built heritage sector, and is therefore an integral part of this Sector Skills Agreement. ConstructionSkills and Historic Scotland signed a similar Sector Skills Agreement in 2006, and further agreements are planned to define partnership working between the Sector Skills Council for construction and the respective heritage agencies in Wales and Northern Ireland.

Creative & Cultural

Creative & Cultural Skills is the Sector Skills Council for advertising, crafts, cultural heritage (i.e. museums, archaeology and built heritage), design, music, performing, and visual and literary arts, in which about 370,000 people work. Employment in the preservation and interpretation of historical sites and buildings is estimated at around 36,000 across the UK.

Environment and Land

Lantra is the Sector Skills Council for the environmental and land-based sector, working across 17 industries. It is responsible for land management and production, land-based engineering, animal health and welfare, and environmental industries (including conservation). About 437,000 people are involved in these industries, of whom about 24,000 are employed in forestry, logging and sawmilling. Two industries relevant to the historic environment are *landscape* (including historic parks and gardens with built structures) and *environmental conservation* (including heritage staff), but separate employment data for those in the heritage sector is not available.

Lantra and English Heritage signed a Sector Skills Agreement in 2006, and the two organisations coordinated the development of a Heritage and Botanic Skills Group.

Process and Manufacturing

Proskills UK is the Sector Skills Council for the process and manufacturing sector, which covers coatings, extractives, glass, building products and printing. The sector employs 319,000 people in 25,000 companies. Employment in the manufacture of building products is estimated at around 106,000 people across the UK.

Science, Engineering and Manufacturing

Semta is the Sector Skills Council for the science, engineering and manufacturing industries. Covering more than 74,000 companies, the sector employs 1.8 million people, including about 21,000 in the manufacture of builders' carpentry and joinery of metal.

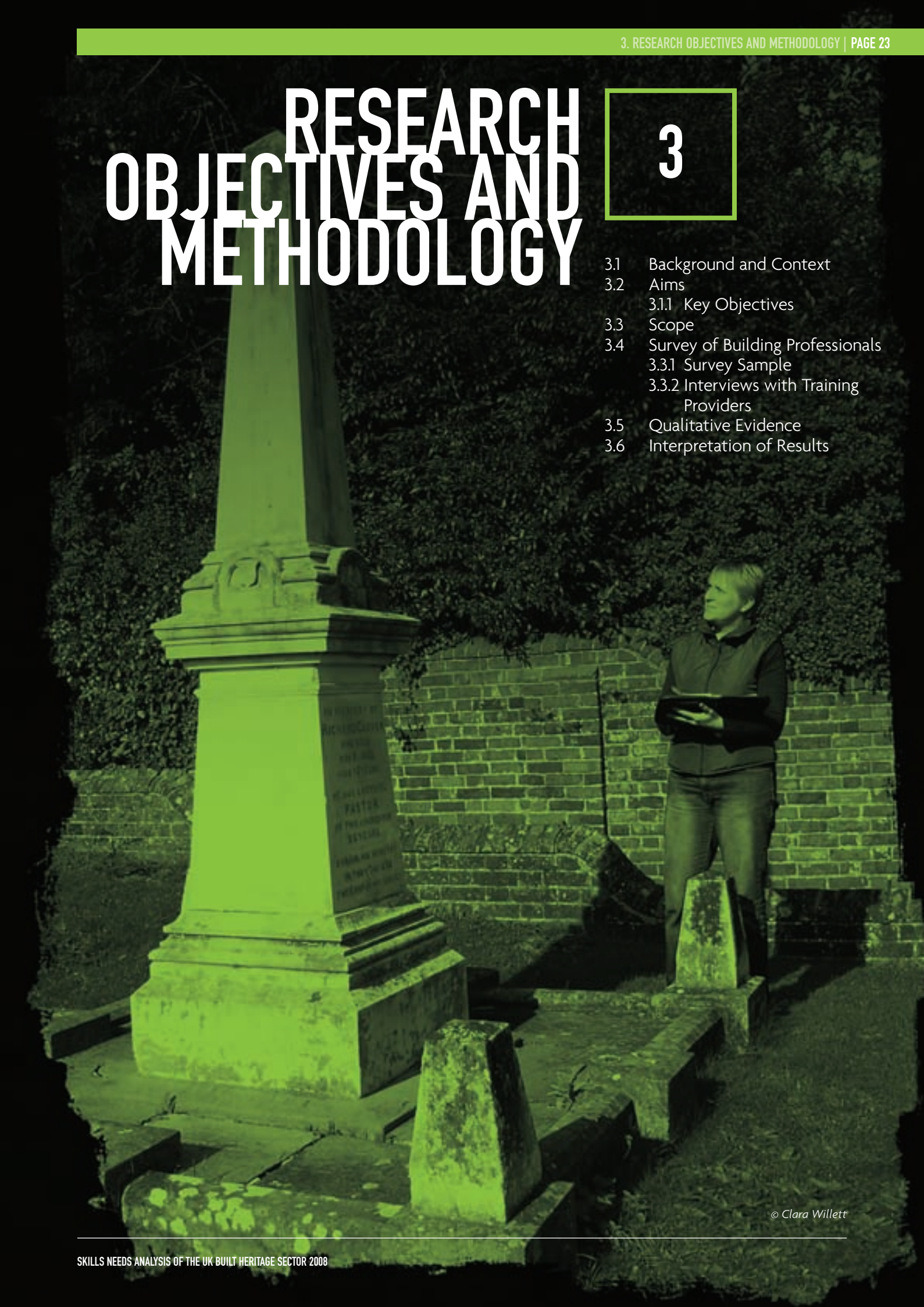
Building Services Engineering

SummitSkills is the Sector Skills Council for the building services engineering sector, covering the electrotechnical, heating, ventilation, air-conditioning, refrigeration and plumbing industries (and including the provision of services for historic buildings). Across the sector there are 56,000 businesses employing some 558,000 people. Of these, 356,000 people are in the electrotechnical field, 95,000 in heating, ventilation and air-conditioning, and 107,000 in plumbing.

Sources: Labour Force Survey and Annual Business Inquiry, except SummitSkills SSC estimate

RESEARCH OBJECTIVES AND METHODOLOGY

3



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research objectives & methodology

One of the major themes of recent research within the construction sector has been a shortage of the traditional building skills necessary for work on historic properties, evident right across the sector and including craft, professional and manufacturing occupations. This section describes the context to the current research, which underlines the importance of undertaking this first ever dedicated and UK-wide skills needs analysis of built heritage sector professionals. It also documents the aims and objectives of the research and explains the research methodology adopted to achieve these outcomes.

3.1 Background and Context

In 2000, English Heritage's review *Power of Place* highlighted the 'serious shortage of traditional craft skills in many areas of the country'.[14] This was reinforced by the publication of the Heritage Lottery Fund's report *Sustaining Our Living Heritage,* which portrayed an impending crisis in the supply of traditional building skills, especially in competencies such as the use of lime mortar, harling, thatching, flint knapping, leadworking and masonry, as well as in rural crafts such as drystone walling.[15]

In Scotland a number of recent reports have highlighted skills deficits threatening the built heritage sector, such as the Historic Environment Advisory Council for Scotland's *Report and Recommendations on the Availability of Adequate and Appropriate Traditional Materials and Professional and Craft Skills to Meet the Needs of the Built Heritage* (2006) and the Scottish Stone Liaison Group's *Safeguarding Glasgow's Stone Built Heritage: Skills and Materials Requirements* (2006).

In Wales the *Review of the Historic Environment in Wales 2003* report and the *Welsh Heritage Protection Review 2006* highlighted the need for, and measures used to improve, traditional building skills training and development. In Northern Ireland the HLF *Sustaining Our Living Heritage* report highlighted the shortage of training courses, limited in-service training and that most conservation specialisms were poorly provided for. *The Directory of Traditional Building Skills*[16] provides advice on appropriate craftspeople, architects, suppliers and other skilled workers.

The NHTG has commissioned built heritage sector Skills Needs Analysis entitled *Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge,* for England (2005 and 2008), Scotland (2007), Wales (2007) and Ireland (forthcoming 2008).

The NHTG reports addressed the issue of demand, supply and training provision, and while the 2005 English report included the views of building professionals, the Scotland and Wales reports went further to examine in detail the commissioning and supervisory role that professionals adopted on built heritage projects. The consistent issues identified prompted the development of a programme of research dedicated to assessing the knowledge, skills and education issues of this sector across the UK.

The work by the Conference on Training in Architectural Conservation[17] (COTAC), whose key objective when formed in 1956 was to obtain recognition of the need for specialists in building conservation, should also be noted. Its first phase led to the establishment of a number of undergraduate and postgraduate courses. In the early 1990s, COTAC encouraged the development of a network of training centres throughout the UK for all disciplines at all levels in building conservation. It provides an independent, UK-wide voice on standards and training within the conservation sector. The Scottish dimension of the network operates through the Scottish Conservation Forum, and COTAC also provides the secretariat for the Edinburgh Group (see Section 4.5.1). Its third age is now responding to new challenges, such as linking conservation, repair and maintenance (CRM) to the broader sustainability agenda and continuing to promote higher level National Vocational Qualifications (NVQs).

3.2 Aims

The main focus for this current research, commissioned by the NHTG in May 2007, has been to obtain baseline data on education, skills and training in respect of UK building professionals working in the heritage sector. The findings will be used to underpin the NHTG's business plan, and to help identify priorities for training and development and highlight any potential areas of further research that may be required to help the NHTG achieve its objectives and inform the Skills Action Plan (see Section 11).

3.2.1 Key Objectives

While involving a wide range of stakeholders, the research has focused on a series of key objectives:

- to identify, quantify and analyse the building professionals' labour market, and demand for building professionals, within the built heritage sector
- to confirm the approximate size of the market for built heritage skills in terms of building stock and heritage sites
- to identify how skills and the need for them will change, while also reviewing building professionals' knowledge and understanding of the supply and use of traditional building craft skills and materials
- to audit skills training provision for building professionals and specifically where the built heritage sector is concerned
- to assess the degree to which the built heritage sector demands different knowledge and skills bases from new build projects
- to make recommendations for improvement in delivering training provision and sustaining a skilled workforce to meet the demands of the sector, and, in doing so, to help to devise a Skills Action Plan.

3.3 Scope

As with the earlier research, the term 'traditional buildings' refers to buildings constructed before 1919 (listed, scheduled or otherwise), and 'traditional building skills' are the skills required to undertake construction work on such buildings, from large-scale conservation and restoration projects to routine repair and maintenance. For statistical consistency, the same 1919 cut-off date is also applied in this research, thus complying with the categories used in the House Condition Surveys carried out by all UK home countries and which form the principal source of statistical information on the national building stock.

The main scope of this research has focused on the activities of building professionals working in England, Scotland, Wales and Northern Ireland who oversee or undertake any work on pre-1919 buildings within their day-to-day activities. The study has in particular examined the experiences of individuals working within several main professions (definitions of each can be found in Section 2.2):

- architects
- building and quantity surveyors
- civil, structural and building services engineers
- planners
- conservation officers
- building control officers and approved inspectors.

In order to evaluate the situation across the whole industry, the survey looked at current practice with regard to work on traditional pre-1919 buildings by all building professionals regardless of background and expertise, and therefore did not simply focus on the specialist conservation sector. It does not therefore try to distinguish between the conservation professional – who would be expected to be fully aware of the planning procedures and specialist skills and knowledge required for work on designated buildings – and a building professional who might work on a traditional building as part of a broader portfolio of work, and may therefore be less aware of the different approaches necessary.

The main professional groups are extremely complex in that they reflect a lengthy historical development of high levels of professional skill and service. This incremental moulding of each professional occupation has been overseen, guided and governed by professional and statutory bodies which set and guard standards of attainment and conduct.

The definitions of the professional groups that were developed at an early stage in the research were, therefore, necessarily of a summary nature. It was recognised that any attempt to define such complex occupational roles in a few paragraphs or sentences would be less than ideal, but that the research required a basic understanding to be formed of the scope of professional work that did not entail a separate discussion document.

The definitions were agreed with the NHTG and have proved reliable for practical purposes. It must be remembered, however, that not only are the roles and activities of professionals with regard to pre-1919 buildings extremely complex, but that there are overlaps and dependencies within and between those roles that cannot be fully explored in a study such as this.

It is worth noting here that questions relating to the remuneration of building professionals working within the heritage sector are outside the scope of this current report. Investigation into the salaries and rates of pay received by building professionals would require a very specific and focused approach – one which would be difficult to fit appropriately within an already detailed skills and training needs analysis.

Such an investigation, if deemed necessary at a later date, would be better conducted as a separate exercise so that all related issues and parameters receive the rigorous examination they warrant. However, a brief examination of costs charged by contractors for pre-1919 work compared with their charges for modern or new build work is reported in the NHTG report *Traditional Building Craft Skills: England 2008 Review.*

The study also captured the views of property owners and managers (otherwise referred to as 'stockholders' throughout this report) in terms of their experiences of working with building professionals.

Detailed qualitative interviews were also carried out with representatives from 18 different professional bodies and organisations from across the UK. These sought comment on the challenges, skills and training issues faced by building professionals working within the heritage sector. Further details on the breakdown of the qualitative interviews are provided in Section 3.5.

Training providers offering courses related to the built heritage sector (or at least including some coverage of the sector within wider construction-related courses) have also been consulted during the research (see Section 3.4.2 below). Details on survey sampling and the quantitative and qualitative methods used for this study are provided in sections 3.4 and 3.5.

Quotations cited in this report are the personal views of the interviewees, and this report does not attempt to distinguish between the relative levels of expertise on conservation matters of those individuals cited. It should be made clear that the quotations herein represent the views of individuals captured during the interview process, and do not necessarily represent the views of the National Heritage Training Group or its partners.

It should be particularly noted that the focus of the research has been made difficult by the fact that work on pre-1919 buildings is not given a specific category within the UK statistical system. While 'construction' and 'engineering' are categorised within the Standard Industrial Classification (SIC) and professional occupations are classified within the Standard Occupational Classification (SOC) system, neither system is sufficiently precise to allow for accurate statistics to be garnered on work on pre-1919 buildings, or, indeed, for those working as professionals within the construction sector to be fully identified.

For example, conservation officers, responsible for historic environment protection and enhancement, are given the same SOC as 'green' environmental officers, responsible for the natural environment. This problem is exacerbated by the fact that many professionals undertake work – in any given period of time – on both post- and pre-1919 buildings.

3.4 Survey of Building Professionals

The main element of the research has been a quantitative survey of 398 professional services firms and building professionals across the United Kingdom who, over the course of the last 12 months, had either managed or participated in any building works contracts on pre-1919 structures. This has been used to generate baseline data on the amount of conservation, repair, maintenance and restoration work carried out involving UK professional practices, the extent to which traditional materials and techniques are specified, skills and recruitment issues, and views on sector training provision. A breakdown of the survey sample follows.

3.4.1 Survey Sample

A total of 1,096 contacts answered a pre-qualification question on whether or not they had carried out any work on pre-1919 buildings during the past 12 months, with 398 responding positively and completing the survey (Figure 1).

More than four out of five (82%) of those completing the survey described their firm as a professional practice working on a

Figure 1 Building Professionals Having Carried Out Work on Pre-1919 Buildings in the Last 12 Months (Percentage of Initial Sample of 1,096)

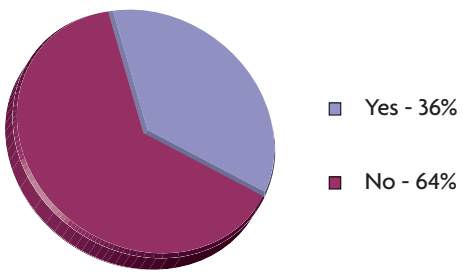


Figure 2 Survey of Building Professionals by Region

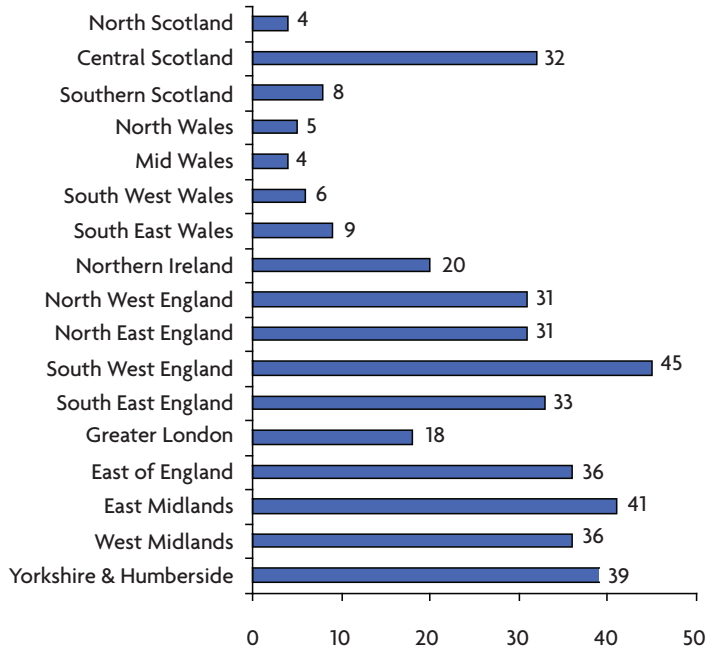
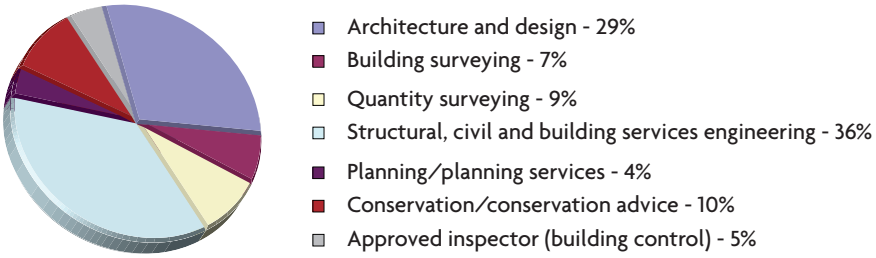


Figure 3 Main Activity of Building Professionals



range of buildings, some of which included pre-1919 structures, while the remainder (18%) described themselves as conservation or heritage specialists.

The geographical distribution of the survey is shown in Figure 2.

As Figure 3 shows, these professionals had undertaken a wide range of activities, particularly structural, civil and building services engineering (36%), and architecture and design (29%).

From the 394 respondents able to provide workforce statistics, a total of 5,655 individuals were employed, an average of just over 14 employees per professional firm (excluding consultants and any outsourced work). This includes 227 individuals employed on a part-time basis. It should be noted for context that across the construction sector as a whole only 5% of firms employ 10 people or more. It is, however, often extremely difficult to engage and consult with the sole traders and small-to-medium-sized enterprises. As shown in Figure 4, engineers make up the largest occupational proportion (42%) of the survey.

3.4.2 Interviews with Training Providers

The main quantitative and qualitative survey of building professionals was complemented by a small study of 20 education and training providers based in the UK and offering courses of specific relevance to built heritage sector professionals. These providers included:

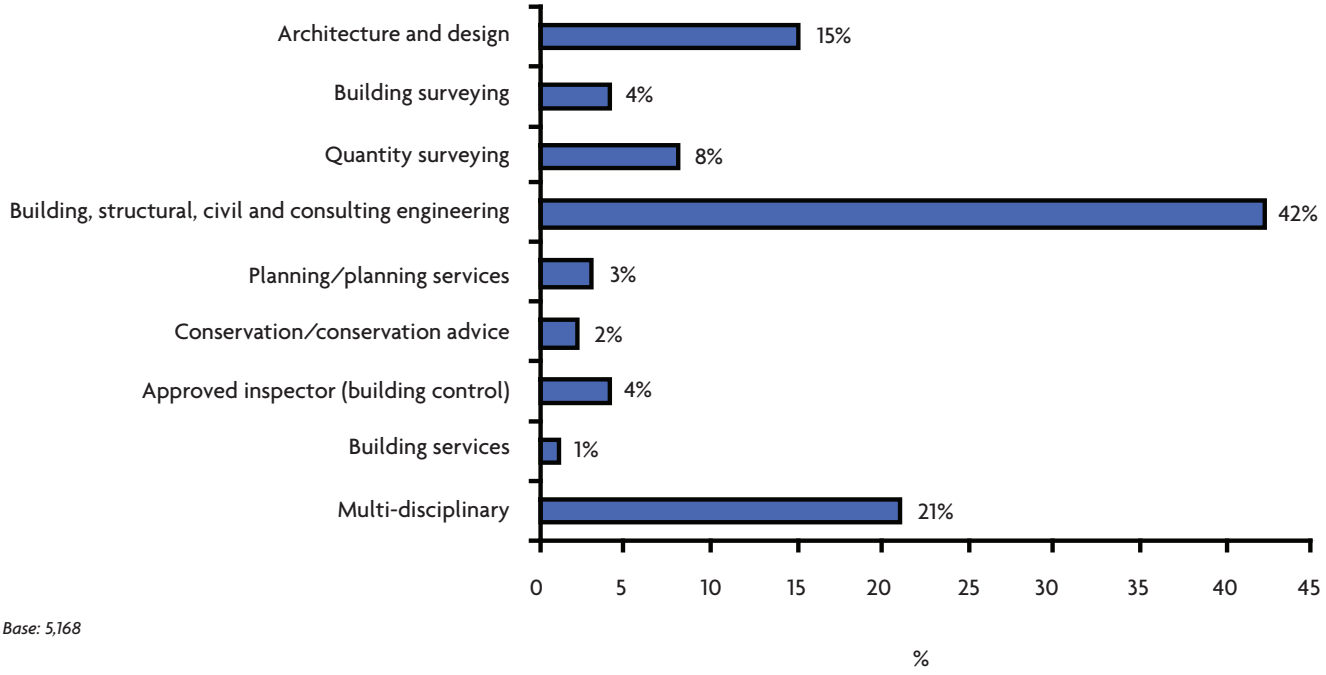
- seventeen universities offering undergraduate and postgraduate qualifications relating to each of the building professions (and including, at least in part, some coverage of the built heritage sector)
- a specialist institute providing taught postgraduate heritage courses
- a specialist art school offering conservation-related programmes
- a college specialising in training for property and construction professionals (including workshops and seminars)
- a museum offering specialist education and training in building conservation and historic building construction techniques.

Findings from the interviews with education and training providers can be found in Section 7.

3.5 Qualitative Evidence

Prior to commencing the quantitative phase of research, round-table discussions were held with the project steering group and key stakeholders from across the built heritage sector. As this is the first research of its kind focusing solely on the skills and training needs of building professionals, these discussions provided an ideal opportunity to gain an initial impression of the issues, problems and attitudes of professionals in relation to working on pre-1919 structures. The outcomes of these

Figure 4 Employees by Occupational Group



Base: 5,168

discussions enabled the design of the main survey questionnaire to reflect pertinent areas of debate within the sector.

The main survey was supported by a further 72 in-depth qualitative interviews with a wide range of stakeholders (Table 3).

As with the quantitative survey, these interviews were distributed proportionately across Scotland, Wales, Northern Ireland and the nine English regions.

Although the quantitative research provides a statistical base for the skills and training issues faced by professionals within the sector, the qualitative interviews were a more appropriate way of obtaining detailed insights as to the concerns professionals might have, for example, regarding their skills (and those of their colleagues) and the adequacy of their formal education and training in preparing them for work on pre-1919 projects.

Table 3 Breakdown of In-Depth Interviews

	Number
Architects (incl. architectural technologists/technicians)	8
Surveyors (quantity, building)	5
Engineers (civil, structural)	5
Conservation officers and specialists	6
Estate managers	5
Town planners and planning consultants	5
Professional bodies and representative organisations	18
Training providers	20

These interviews highlighted issues not captured by the main survey responses, and provided a picture of how professionals work with external agencies such as planning offices, heritage bodies and local authorities.

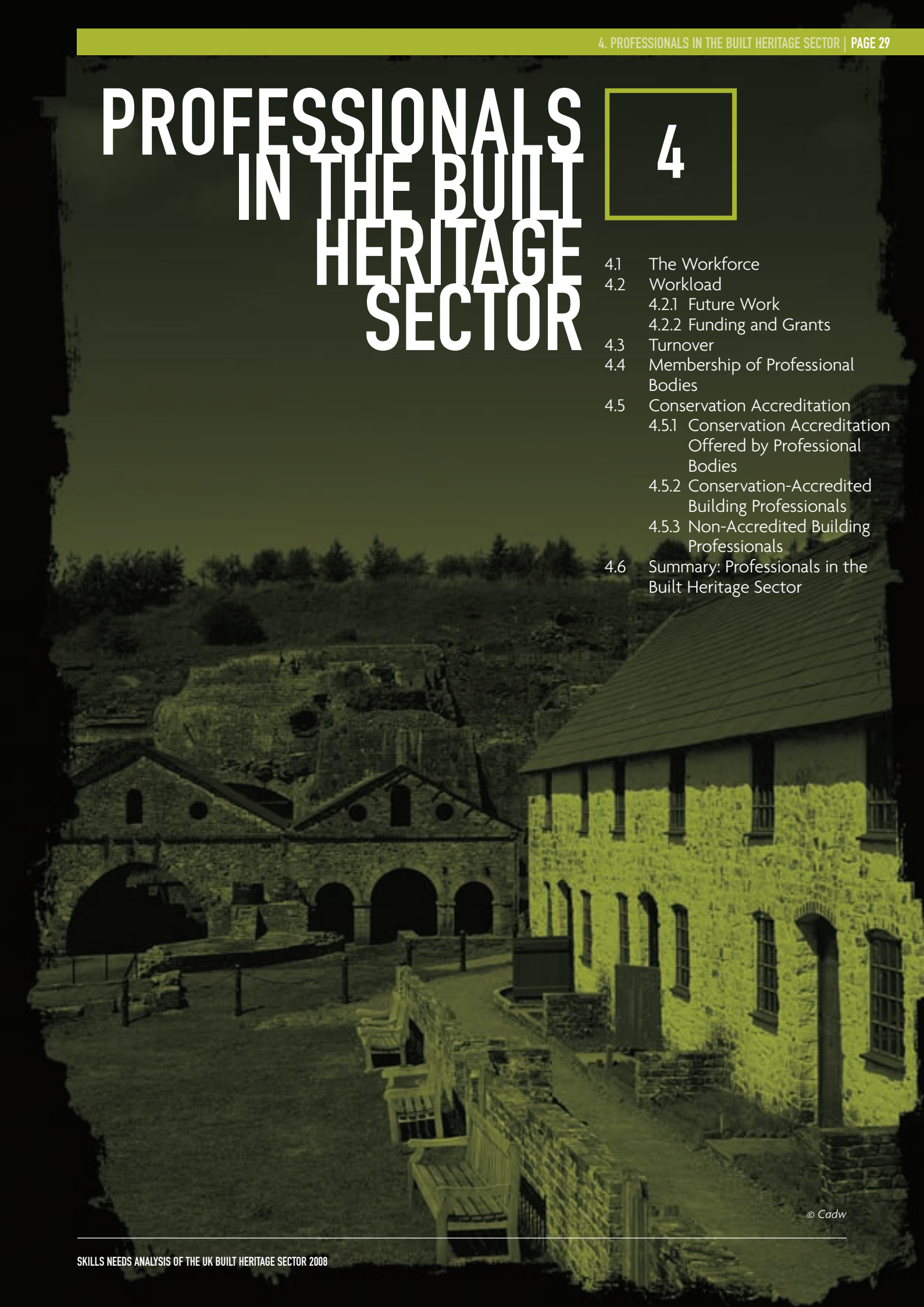
3.6 Interpretation of Results

The findings from the quantitative research are presented throughout this report as the percentage of respondents answering each particular question in the survey. The base figure is given alongside all charts and tables within the main body of the report, except where these relate to responses given to multiple questions.

In some cases a 'mean' value has been calculated, and this is shown as an 'average'. Subsequently, wherever the word 'average' is used, this signifies the arithmetic mean value.

PROFESSIONALS IN THE BUILT HERITAGE SECTOR

4



professionals in the built heritage sector

This section focuses on the amount of work typically carried out by building professionals on pre-1919 projects within the previous 12 months. It reveals the future workload projections for professional firms and the average turnover accrued from work undertaken on different types of pre-1919 structures. It also looks at the membership of professional bodies and highlights conservation accreditation schemes available to building professionals, profiling both the uptake of the various schemes and the perceptions of building professionals towards the issue of accreditation.

4.1 The Workforce

Figures published in the most recent Construction Industry Council (CIC) *Survey of UK Construction Professional Services* reported 27,950 construction professional firms operating in the UK, employing around 270,000 individuals.[18] Approximately 77% of this workforce was male.[19] It should be noted, however, that this CIC research exercise did not include the self-employed or those professionals employed by central government, local authorities or large organisations whose main activity is not the provision of construction professional services (e.g. banks).

Considering that a large proportion of, for example, town planners and conservation officers are employed by local authorities and government agencies, the figure of 270,000 building professionals is likely to be a conservative estimate. This is confirmed when examining the latest UK Labour Force Survey data for employment in non-manual construction occupations. When only including professionals working within SIC codes

Table 4 Employment in Non-Manual Occupations by SIC Code

	45.11–45.50 (construction)	74.20 (architecture, engineering and related consultancy)	ALL
Production works and maintenance managers	23,708	12,410	36,118
Managers in construction	169,911	15,434	185,345
Managers in mining and energy	1,064	841	1,905
Natural environmental and conservation managers	107	–	107
Property, housing and land managers	4,843	403	5,246
Managers and professionals in other services	8,550	5,630	14,180
Civil engineers	39,269	16,867	56,136
Mechanical engineers	3,884	9,434	13,318
Planning and quality control engineers	2,454	1,258	3,712
Engineering professionals	14,657	7,285	21,942
Architects	4,484	39,761	44,245
Town planners	1,300	7,755	9,055
Quantity surveyors	20,555	10,543	31,098
Chartered surveyors (not quantity surveyors)	15,923	14,548	30,471
Engineering technicians	5,152	2,120	7,272
Building and civil engineering technicians	16,079	4,914	20,993
Architectural technologists and town planning technicians	4,876	14,164	19,039
Draughtspersons	8,796	13,872	22,668
Building inspectors	2,041	845	2,885
Estimators, valuers and assessors	8,998	1,664	10,662
Conservation and environmental protection officers	813	5,039	5,852
TOTAL	**357,464**	**184,787**	**542,249**

Source: LFS data.

45.11–45.50 (construction) and 74.20 (architectural and engineering activities and related technical consultancy), the number of individuals working within these occupations rises to 542,249.[20] For a breakdown of employment figures by occupation and SIC code, see Table 4. These figures exclude construction managers and office-based/clerical occupations, which are also considered non-manual, but are outside the scope of this research.

Clearly, not all of these will be involved in work on pre-1919 buildings. Membership numbers on conservation accreditation schemes are also an inadequate gauge for the number of professionals who work on pre-1919 buildings, because only a relatively small number of professionals currently seek to achieve conservation accreditation (this is discussed in more detail in Section 4.5). In addition, the tendency for the majority of building professionals to describe their practice as a 'general firm' conducting some work on traditional buildings makes it very difficult if not impossible to accurately quantify the number of individual building professionals working within the built heritage sector.

Given that 'working on pre-1919 buildings' encapsulates an extremely wide range of work, from processing a small number of planning applications to managing large-scale restoration projects, the number of building professionals involved in pre-1919 projects is potentially very significant.

4.2 Workload

Building professionals taking part in the quantitative survey that had worked on pre-1919 buildings in the past 12 months reported that this made up an average of 35% of their practice's workload during that period. This correlates to the findings of the CIC *Survey of UK Construction Professional Services 2005/06* (see 4.1 above), which reported that 36% of professionals' work was accounted for by refurbishment, repair and maintenance (although this included modern as well as traditional buildings). The studies of architects and surveyors undertaken for the NHTG *Traditional Building Craft Skills* reports published in 2007 for Wales and Scotland also produced similar average proportions of professionals' workloads on pre-1919 buildings, at 38% and 32% respectively.

The current research also shows that the proportion of professionals' workload on pre-1919 projects rises dramatically to an average of 76% when taking into account only those firms considering themselves as conservation or heritage specialists. For more general practices, an average 26% of their work in the last 12 months had been dedicated to pre-1919 buildings.

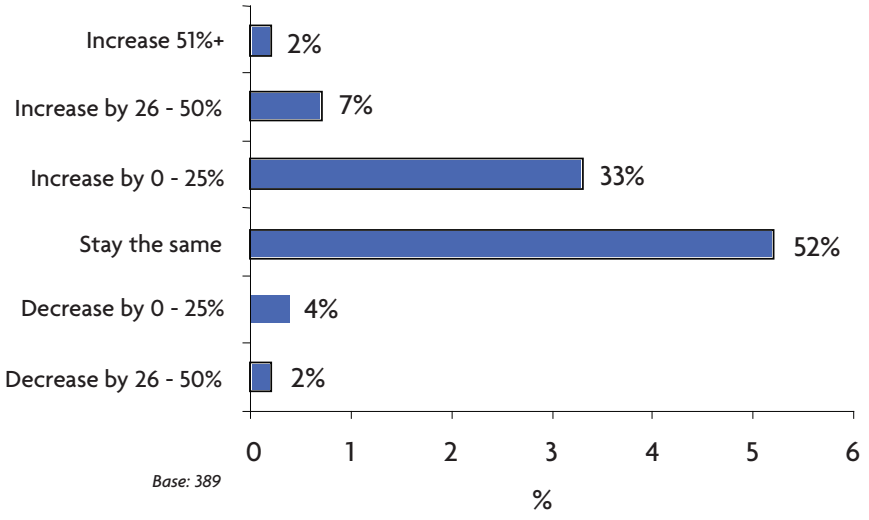
This generally reflects the varying degrees of specialisation that are also found among building contractors working on pre-1919 properties. In the recent NHTG *Traditional Building Craft Skills in England: 2008 Review*, contractors regarding their firm as heritage specialists stated that two-thirds (65%) of their workload was on traditional properties, compared with only a fifth (18%) among more general building firms.

4.2.1 Future Work

As Figure 5 shows, over half (52%) of building professionals surveyed expected that their practice's workload during the financial year 2007/08 would stay the same as it was during 2006/07. A further third (33%) expected this to increase by up to a quarter.

In examining these projections further, firms considering themselves as conservation or heritage specialists were more likely to forecast that their workloads would increase over the coming year (54%, as opposed to 39% of general firms), indicating that there would be some growth in demand in the built heritage sector over the

Figure 5 Workload Projections for Financial Year 2007/2008



coming months. This may well be connected with increased media and public interest in building restoration and major current and forthcoming grant-aided regeneration schemes such as Liverpool's Capital of Culture programme, the 2012 Games in London or the 2014 Commonwealth Games in Glasgow. In areas where such firms are more difficult for stockholders to source, word of mouth from previous clients may also generate more demand for these specialised professionals over time.

In addition, this research reveals that many heritage properties are maintained and cared for by an established team of building professionals who receive repeat employment by a stockholder client over many years. Many firms working in the built heritage sector may therefore already have good awareness of forthcoming projects during the next 12 months, and hence will be able to reliably forecast a potential increase in their workload.

4.2.2 Funding and Grants

For building professionals participating in the qualitative interviews, one of the problems encountered with conservation, repair, maintenance and restoration work on pre-1919 buildings is the difficulty on the part of the client of accessing funding to help support the work.

Building professionals involved in the survey reported that the property owners received funding from a wide variety of organisations, including local civic societies, business communities (generally to attract capital investment), English Heritage and the Heritage Lottery Fund.

Some historic buildings are owned by charitable organisations such as building preservation trusts, and these organisations can face difficulties in raising the required funds to carry out necessary work. Although public grants enable some work to be undertaken, 'the rest of the money has to be found through charitable means'.

It was highlighted by some professionals, and professional bodies, that funding opportunities appear to have decreased in recent years, particularly monies available from local authorities where budgets are being cut and conservation is perceived to be 'a low priority'. While some areas may have local area grant schemes in place, it was reported that funding for work outside the area covered by such schemes has become a greater problem.

Some of the larger heritage projects are reportedly becoming more difficult to finance, with the perception being that the diversion of funding towards large infrastructure projects, particularly those associated with the 2012 London Olympics, are a major contributing factor. One way of combating these problems was suggested to be a larger amount of information being made directly available to stockholders 'in relation to how they should look after their property to stop it falling into disrepair', thereby stemming the need for expensive repair work and reducing the competition for available funding grants.

4.3 Turnover

Professionals participating in the quantitative survey were asked to indicate the percentage of their last year's turnover from pre-1919 structures in four main sectors: private, commercial, public and religious. As Table 5 shows, there were slight differences in turnover depending on the type of practice, although the majority of pre-1919 work was clearly undertaken by professionals on private structures.

Professionals specialising in conservation or heritage activities are more likely to undertake work on public and religious buildings, whereas more general practices are commissioned to work on private and commercial stock. This is probably because stockholders of public or religious buildings are more likely to

Table 5 Average Proportion of Turnover from Pre-1919 Structures, by Type of Practice

	All practices (%)	General professional practice (%)	Conservation/heritage specialist (%)
Private	61	64	56
Commercial/industrial	15	14	12
Public	16	15	20
Religious	8	7	12

Base: 398

have established relationships with appropriately skilled professionals, but it will also reflect the higher complexity and value of work usually involved in larger public buildings.

Requirements of grant-awarding bodies to appoint specialist professionals for works to public and religious buildings may also be impacting upon these figures.

4.4 Membership of Professional Bodies

Table 6 shows the total membership of some of the major building professional bodies in the UK as at March 2008, as well as by each of the four home nations (where these are available).

Cross-referencing Table 6 to Table 4 shows that a large proportion of building professionals choose to become a member of a professional body, and in cases such as chartered surveyors and town planners, there are more members of the professional body than individuals identified within the Labour Force Survey data. This highlights the fact that there are many building professionals working in sectors of the economy other than SIC 45 and SIC 74.20. For example, there is evidence from the Labour Force Survey that there are significant numbers of town planners (38%) and building control officers (building inspectors) (14%) working in General Public Service Activities (SIC 75.11) and surveyors (10%) in Real Estate (SIC 70.11).

4.5 Conservation Accreditation

Recent research, such as that by Bilbrough and Moir in 2005, has concluded that building professionals suffer from a significant shortage of adequate skills and knowledge in relation to work on sensitive buildings and environments. The authors found that this was particularly the case among architects, structural engineers and surveyors.[21]

The launch of conservation accreditation schemes by the Royal Institution of Chartered Surveyors (RICS) and Royal Incorporation of Architects in Scotland (RIAS) in the mid 1990s, were significant responses by professional bodies to the need to acknowledge the specialist skills and knowledge required by professionals working on traditional buildings.

There have been continued calls for the increased involvement of conservation-accredited professionals on built heritage sector construction projects, and in some cases this has now become a condition of grant for public-funded works. Clearly this matter has to be approached with some caution in order to avoid restrictive practice, but at the same time it helps to demonstrate how conservation accreditation is driving demand for building professionals who are in possession of the skills required for working on traditional buildings.

To build upon the previous NHTG Traditional Building Craft Skills research in Scotland and Wales, and to strengthen future initiatives, this current work has examined the issue of conservation accreditation in detail, and aims to reveal how the role of conservation accreditation is perceived by building professionals themselves.

Table 6 Membership of Professional Bodies

	Members				
	Total (including international)	England	Scotland	Wales	N. Ireland
Royal Institute of British Architects	41,421	24,232	257[a]	742[b]	819[c]
Royal Institution of Chartered Surveyors	127,000	80,000	9,000	3,000	–
Royal Town Planning Institute	20,594	15,100	–	1,000	450[d]
Institute of Historic Building Conservation	1,690	1,420	120	84	24
Institution of Civil Engineers	63,000	–	–	–	–
Institution of Structural Engineers	22,796	14,105	1,476	592	441
Association of Building Engineers	7,000	–	–	–	–
Association for Consultancy and Engineering	800	–	–	–	–
Institute of Maintenance and Building Management	1,500	–	–	–	–

*a includes some members of the **Royal Incorporation of Architects in Scotland** of which there are approximately 3,900 total members.*

*b includes some members of the **Royal Society of Architects in Wales**, of which there are approximately 965 total members.*

*c includes some members of the **Royal Society of Ulster Architects**.*

d includes Republic of Ireland.

4.5.1 Conservation Accreditation Offered by Professional Bodies

The Royal Institution of Chartered Surveyors (RICS) makes considerable efforts to support and recognise its members' engagement with heritage and conservation issues. It offers conservation accreditation to suitably qualified and experienced members, ensuring that any individual surveyor being granted such accreditation has received appropriate training and remains up to date with developments in the field. It also runs a nationwide conservation forum and has partnered with English Heritage and the British Property Federation to produce a 'toolkit' of research and documents on the issues and benefits relating to the reuse of historic buildings.[22]

The Royal Institute of British Architects (RIBA) Conservation Group was disbanded in 1999, and attempts to set up a conservation-accreditation register within RIBA were abandoned. In the same year, an independent register of Architects Accredited in Building Conservation (AABC) was established by a company called ACCON. Since 2003 the AABC register has been run jointly by

RIBA and ACCON, and is known as RIBA AABC.

Since early 1995, **The Royal Incorporation of Architects in Scotland (RIAS)**, which has a longstanding Conservation Committee, has adopted a procedure for recognising and accrediting levels of skill and experience in conservation architecture. The **Conservation Architecture Accreditation (CAA)** scheme has three grades of expertise that recognise different classifications of work on historic buildings, from general repair through to specialist conservation and detailed specification.[23]

A different, more universal, approach to accreditation is offered by membership of the **Institute of Historic Building Conservation (IHBC)**. The IHBC originated as a professional association for local authority conservation officers, but it is now open to anyone, regardless of their professional field, who can establish the necessary credentials. Full membership requires a demonstrative and comprehensive understanding of the fundamental fields of competence connected with both building conservation and the planning system that regulates and facilitates it.

The IHBC's areas of competence (one professional and three practical), and their more familiar eight underlying competencies, encompass both the ICOMOS guidelines, referred to below, and the planning tools associated with area-based conservation.[24]

The **Royal Town Planning Institute** (RTPI) has produced a guide to good practice, *Conservation of the Historic Environment (2000),* as well as a range of online learning products for use by planners towards continuous professional development, including several modules on heritage and conservation issues.[25] However, although some town planners will specialise in working on historic buildings or heritage environments, there is currently no formal process by which they become conservation accredited.

The prevalence of RTPI members within the IHBC, alongside the general stipulation of IHBC membership for conservation specialists in planning departments, suggests that IHBC membership is considered as de facto conservation accreditation for planners.

The **Conservation Accreditation Register for Engineers (CARE)** is a joint scheme between the Institution of Civil Engineers (ICE) and the Institution of Structural Engineers (IStructE), administered by the ICE. The scheme is intended to encourage engineers to continue their professional development and expertise in the field of conservation, and to provide clients and professional bodies with a register of suitably qualified engineers who possess the necessary skills and knowledge to work on historic buildings and structures.[26]

Problems with the uniformity of the schemes across the professions have resulted in a continuing need for clients to have a standard source of information. A pan-professional body known as the **Edinburgh Group**, led by Historic Scotland and representing architects, surveyors, civil engineers

'Accreditation has been very beneficial because of the level of recognition it has given me in the external market. It shows I am capable of delivering management on historic projects.'

Estate manager

and client interests, has been established and has since worked to resolve these issues. The Edinburgh Group has developed a common framework of standards and assessment techniques to facilitate the uptake of pan-professional conservation accreditation.[27] This framework is based on the 14 competencies adopted by the International Council on Monuments and Sites (ICOMOS) in 1993, which have been grouped into five defined common areas of understanding specific to conservation professionals (shown below). These also reflect the tests applied to applicants for inclusion on the AABC register.

1. **Cultural significance** – identifying and assessing the components which contribute to the significance of a building or site, which could include historical, cultural, spiritual, technical, social or emotional values.
2. **Aesthetic qualities and values** – understanding the aesthetic qualities and values of a building and its setting, and using that understanding to develop a conservation strategy that sustains those values.
3. **Investigation, materials and technology** – ascertaining the materials and construction of a building, investigating its condition and the symptoms and causes of defects, and developing a strategy for appropriate intervention and repair.
4. **Social and financial issues** – assessing the function, use and ownership of a building or site, and making balanced decisions that resolve the social and financial issues that threaten its significance, taking into account public expectations, legal requirements and other contextual factors.
5. **Implementation and management of conservation works** – ensuring that those responsible for managing and implementing work can do so without damaging the significance of the building or site, and are able to put plans in place for its future maintenance and care.

4.5.2 Conservation-Accredited Building Professionals

As of March 2008, the AABC scheme provides the details of 349 architects assessed as eligible for inclusion through their demonstration of knowledge and experience in conservation work. The scheme targets all UK-registered architects, and currently contains 331 entries for England-based architects, 9 entries from Scotland, 7 from Wales and 2 from Northern Ireland.[28] The Royal Incorporation of Architects in Scotland lists a further 64 conservation-accredited architects.[29] In March 2008 the conservation accreditation scheme of the RICS endorsed 72 conservation-accredited surveyors across the UK: 59 in England, 11 in Scotland and just 1 each in both Northern Ireland and Wales.[30] Finally, as of March 2008, CARE lists 22 members: 21 in England and 1 in Scotland.[31]

This gives a total number of conservation-accredited architectural, surveying and engineering professionals within the UK of 507 – approximately 1 for every 11,992 traditional buildings. This equates to:

- 1 conservation-accredited architect for every 14,722 traditional buildings
- 1 conservation-accredited surveyor for every 84,444 traditional buildings
- 1 conservation-accredited engineer for every 276,364 traditional buildings.

Of the 398 building professionals interviewed as part of this research and identified as working on historic buildings, less than one in five (16%) said that a member of their practice held some form of conservation accreditation. The latter is seen as particularly relevant to companies specialising in the heritage sector, with nearly two-thirds (63%) of all accredited individuals identified found to be employed by heritage specialists.

Accredited professionals interviewed were generally members of the RICS, RIBA or the IHBC. Other professional bodies mentioned include the ICE, IStructE, RTPI and the Royal Society of Ulster Architects (RSUA).

Accreditation was thought to be beneficial among these professionals for a variety of reasons, such as receiving regular updates on issues relating to historic buildings, having the ability to access a 'whole network of like-minded people', and being able to confirm to a potential client that a high standard of work would be carried out. However, building professionals do not always perceive the necessity, or feel able, to become accredited in building conservation (see below).

4.5.3 Non-Accredited Building Professionals

Among the companies working on historic buildings without the benefit of a conservation-accredited employee, the majority view (76%) was that such accreditation was not a requirement for that kind of work (see Figure 6).

Many of the interviewees taking part in the detailed qualitative research said that they had not even considered gaining accreditation. It was a common view that accreditation was not

necessary for them, or that the requirements were perceived to be too 'prohibitive' or complicated for it to be worth their time applying.

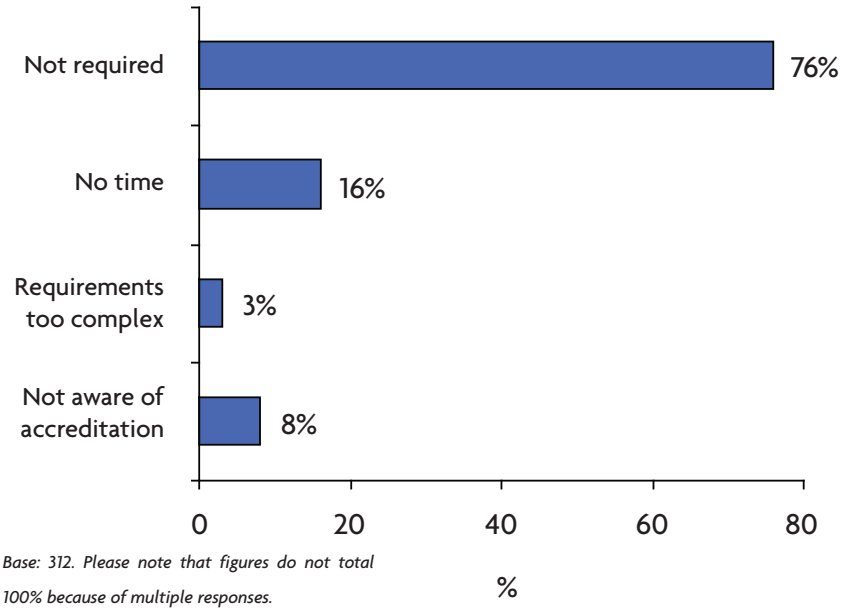
This reflects findings from the previous smaller studies conducted as part of NHTG's *Traditional Building Craft Skills* research in Wales and Scotland (2007), where in both cases accreditation was perceived by architects and surveyors to be either too much effort or unnecessary for the work they undertook on traditional structures.

It was acknowledged that some clients do stipulate a requirement for relevant accreditation when tendering for work, but it was commonly noted that this became less of an issue 'once they see our portfolio'. This suggests that even in situations where the client is aware of the benefits of using accreditation as a method of procuring good-quality professionals, a compelling body of previous work is very often more highly valued.

However, it became clear from the in-depth interviews that building professionals were increasingly recognising the importance of obtaining conservation accreditation, particularly those that work with some of the major historic property stockholders on grant-aided projects. For example, from April 2003 joint Heritage Lottery Fund and English Heritage grants for work carried out on places of worship have been awarded only on the condition that 'grant recipients would be required to employ a conservation accredited architect or surveyor'.[32] This, in turn, is one of the benefits of accreditation most cited by building professionals – that without conservation accreditation 'you cannot get work on grant-aided projects'. Clearly the benefits of grant aid extend beyond the simple investment in the project.

It is therefore encouraging that a number of building professionals interviewed as part of this research said that they were working towards accreditation, had recently applied or were planning to apply in the future, once their company had seen further expansion. Although the majority of professionals still appear to find ample work without the requirement for conservation accreditation, there is some evidence to suggest this is beginning to change.

Figure 6 Reasons for Not Being an Accredited Building Conservation Specialist



Base: 312. Please note that figures do not total 100% because of multiple responses.

4.6 Summary: Professionals in the Built Heritage Sector

Size of the Workforce

- It is difficult to quantify the number of individual building professionals working within the built heritage sector. UK Labour Force Survey data suggests that there are over half a million individuals employed in related non-manual construction occupations (excluding construction managers and office-based/clerical occupations), although not all of these professionals will work on pre-1919 buildings. In our survey of 1,096 building professionals, over a third (36%) said that they had carried out work on pre-1919 buildings in the past 12 months.

- There is a tendency for general professional practices, as well as those regarded as heritage specialists, to take on pre-1919 work, indicating that the actual numbers of professionals working at some point in their careers in the heritage sector are very significant.

Work Profile

- Building professionals that had worked on pre-1919 buildings in the past year reported that this made up an average of 35% of their practice's workload during that period; this rises to 76% for those practices regarding themselves as conservation or heritage specialists.

- There is expectation in the market that demand for pre-1919 work will increase in the near future. More than half (54%) of specialists in heritage work expected their workload to increase in the next year (compared to 39% of the 'general' firms), and most respondents (85%) expected their practice's workload either to stay the same or to increase during that period.

- Building professionals reported noticing a decline in the amount of funding or subsidy available to clients to support work on historic buildings.

- The majority of professionals' turnover from pre-1919 projects (61%) came from work carried out on private properties. Work on public and religious buildings was more likely to be carried out by heritage specialists than general practices.

Professional Bodies and Accreditation

- Membership of a relevant professional body is seen as an integral part of a career as a building professional. Far fewer then go on to attain further recognition through building conservation accreditation, mostly because of a lack of perceived necessity within the professional sector.

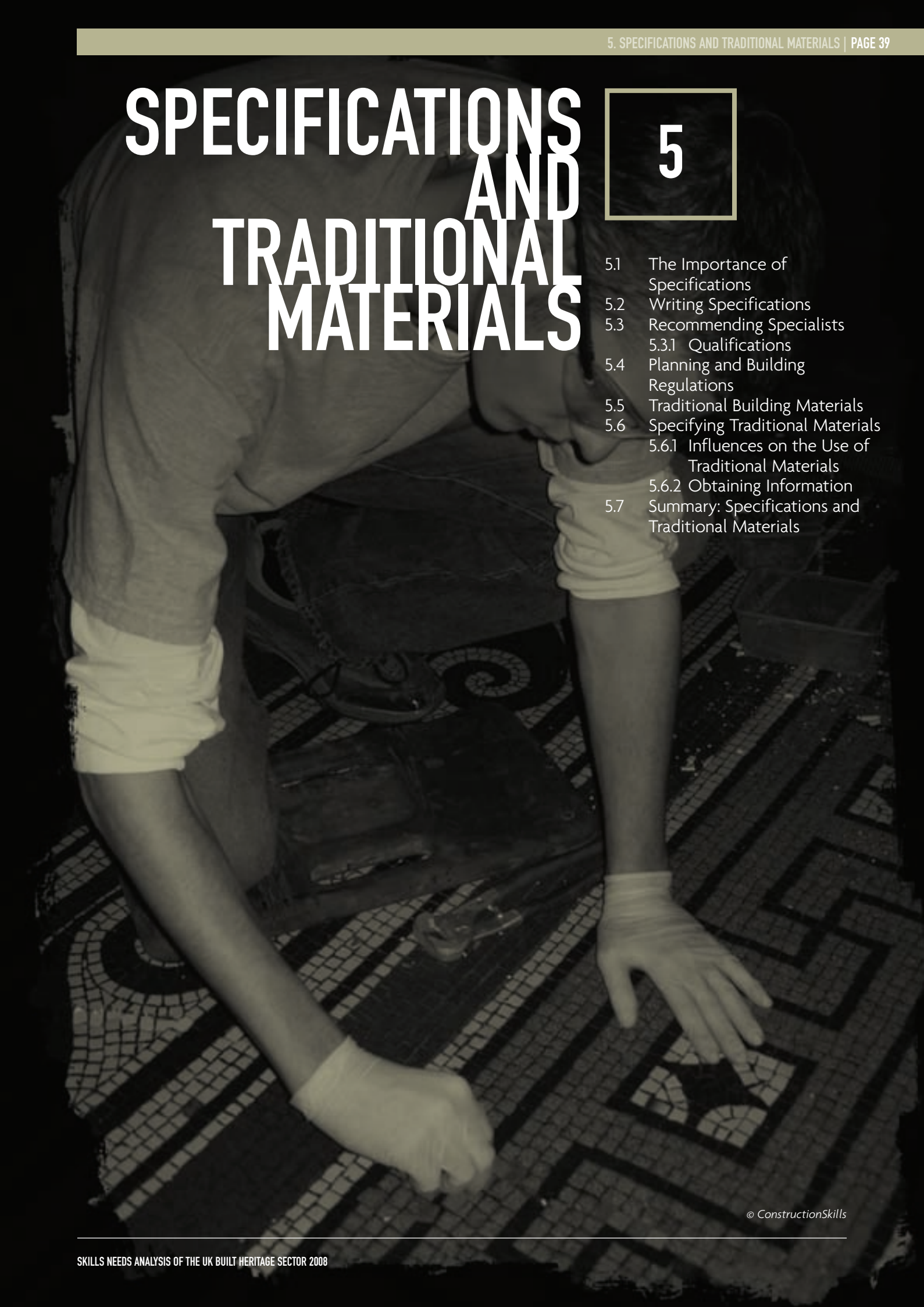
- A total of 507 conservation-accredited architects, engineers and surveyors were identified from the various available schemes.

- This amounts to 1 conservation-accredited architect for every 14,722 traditional buildings, 1 conservation-accredited surveyor for every 84,444 traditional buildings and 1 conservation-accredited engineer for every 276,364 traditional buildings.

- There is encouraging evidence that these numbers may increase, as some interviewees acknowledged the growing necessity for conservation accreditation on grant-aided work. Furthermore, a number of professionals said that they were currently working towards accreditation, or were planning to do so in the near future.

SPECIFICATIONS AND TRADITIONAL MATERIALS

5



specifications and traditional materials

The quantitative research asked professionals to provide details on the information they include when drawing up specifications for built heritage projects. This section examines the extent to which professionals stipulate the use of conservation specialists and experienced or suitably qualified contractors, and the use of traditional building materials on pre-1919 projects.

More specifically, this section focuses on the importance placed upon the characteristics and performance of materials, the barriers to specifying traditional materials, and the issues associated with acquiring information and guidance on their use. The impact of the current planning system and building regulations on construction projects involving historic buildings is also highlighted.

5.1 The Importance of Specifications

Specification is the principal means by which the professional implements control over all works on site, and essentially forms an itemised documentation of a building project (normally in written format supplemented by drawings) containing all the information that contractors and craftspeople need to carry out the proposed works on site.

A specification should effectively document a client's brief in building terms and be informed by an understanding of appropriate building regulations, take into account any planning or listed building conditions imposed on the build, and illustrate the extent and details of all works, where appropriate specifying the materials to be used.

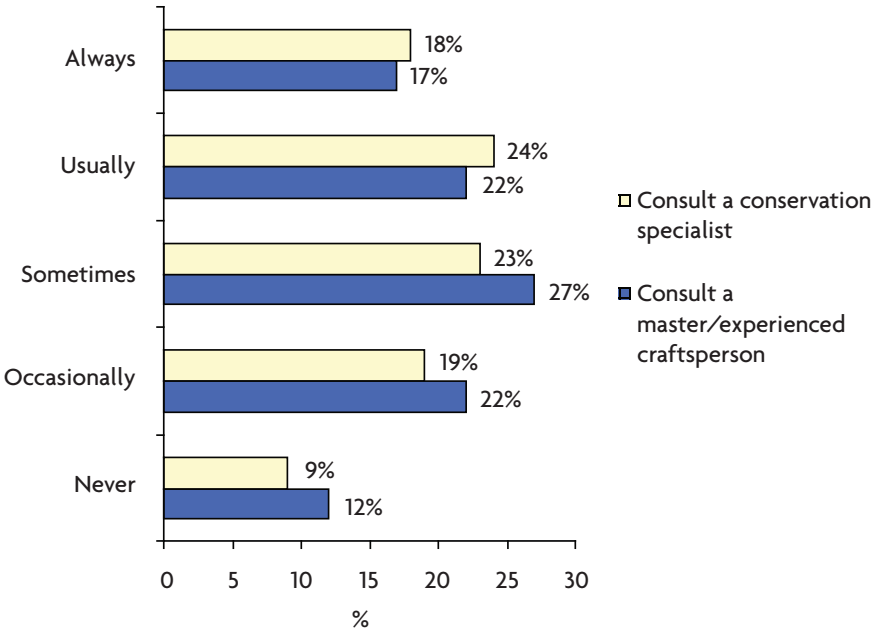
Bilbrough and Moir's 2005 report highlighted that 'weak specification' has been one of the major consequences of skills shortages in the heritage sector.[33] Similar findings regarding specifications were reported in a number of reports published subsequently in Scotland.[34] Among other things, weak specification can lead to budgetary problems, difficulties in the relationship between the contractors and professionals, remedial works when details are not implemented in the desired way and the use of inappropriate materials. For historic building projects, these are exactly the sorts of problems that can result in damage to the building fabric.

5.2 Writing Specifications

Fewer than half (45%) of the professionals who work on pre-1919 buildings said that they prepared specifications for built heritage projects. When writing these specifications, two out of five (42%) said that they usually or always consulted conservation specialists beforehand, and a similar proportion (39%) usually or always consulted master or experienced craftspeople (see Figure 7).

While the consultation with craftspeople appears very encouraging, it is important to differentiate between the carefully written job-specific specification based upon thorough survey and analysis, and the 'standard' or non-job-specific (off the shelf) specifications that are often evident in contract documents today. These might be considered within the category of 'weak specifications' referred to by Bilbrough and Moir in their 2005 report, and may well be a symptom of insufficient remuneration for producing detailed job-specific specifications offered to building professionals.

Figure 7 Individuals Professionals Consult before Writing Heritage Project Specifications



When drawing up a specification for a historic building, over one quarter (28%) of professionals therefore only occasionally or never consulted a conservation specialist, and over one third (34%) only occasionally or never consulted a master/experienced craftsperson. This may be because these specifiers feel sufficiently capable to produce a suitable specification for most historic building projects, but evidence suggests that sometimes this is not the case:

'They are competent when it comes to specifying but poor in understanding the properties and characteristics of the traditional materials.'
Professional body

It is worth noting that courses are available for building professionals to support the development of their knowledge relating to methods and materials used on historic buildings and which will therefore help with specification writing, such as those offered by the Ironbridge Institute, Essex County Council, Charlestown Workshops and Ty-Mawr Lime Ltd.

5.3 Recommending Specialists

Within their heritage project specifications, more than a third (37%) of professionals usually or always stipulated that certain work must be carried out by conservation specialists. A further two-fifths (41%) stipulated this sometimes or occasionally, and a fifth (22%) never (see Figure 8).

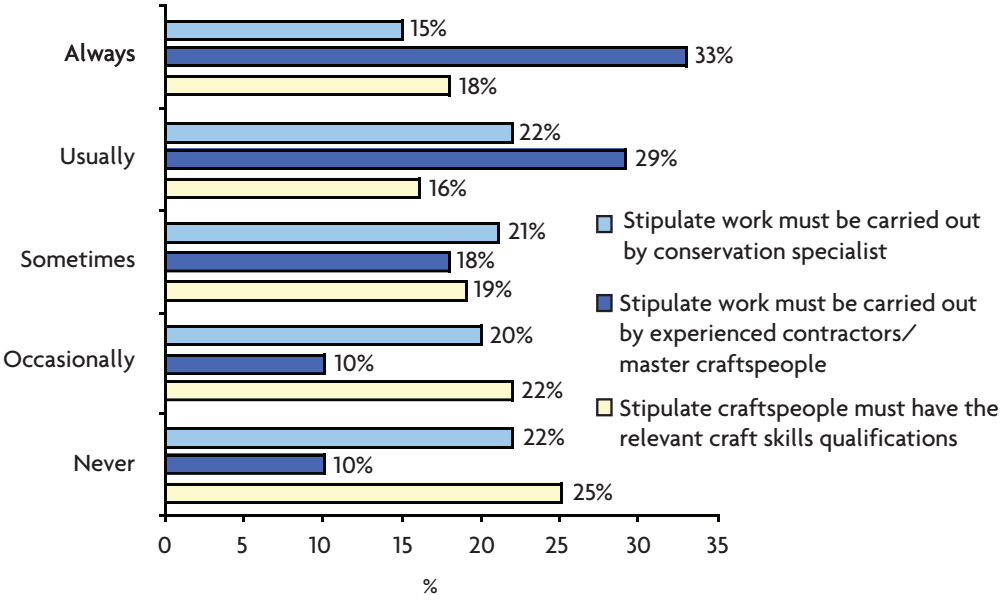
Where professionals do stipulate that conservation specialists should be brought in to carry out some work, this is commonly:
- to ensure quality control
- because the client requests the use of a specialist
- when a project is particularly difficult or demanding.

Where conservation specialists are not stipulated as part of the project specification this is usually because:
- the standard of a general contractors' work is deemed to be high enough
- contractors are left to arrange any specialist requirements
- the work is not thought to always require a specialist.

'They are competent when it comes to specifying but poor in understanding the properties and characteristics of the traditional materials.'

Professional body

Figure 8 Extent to which Heritage Specification Writers Stipulate Who Must Carry Out Work



It is clear that in some cases professionals would prefer to use general contractors that they know 'have a good track record of conservation experience', rather than recommending the appointment of conservation specialists with whom they have not worked before. Other professionals pointed out that they write general performance-based specifications giving only an indication of the work to be undertaken, and presumably leave the details of materials and implementation to the contractor.

This can place more responsibility on the contractors or craftspeople to determine appropriate details, materials and techniques. This point is reinforced by Figure 8, which shows that three out of five (62%) of those building professionals writing heritage project specifications said that they usually or always stipulated that certain specialist work must be carried out by experienced building conservation or restoration contractors and/or experienced (or master) craftspeople.

Although they often specified that work should be carried out by specialists or experienced contractors, many building professionals chose not to make recommendations relating to individual companies, and this is formalised by law in the case of public sector organisations.

Some specifiers did, however, report maintaining lists of contractors who carry out heritage building work, so that they could provide a client with a number of potential contractors on request. However, the production and proliferation of such generalised 'lists', potentially based on unsubstantiated criteria, can be counter-productive to the sector. Therefore, the establishment of the proposed NHTG unified Accredited Heritage Building Contractors Register (see NHTG *Traditional Building Craft Skills: England 2008 Review*) is vital to ensure that suitably qualified and experienced contractors are appointed for this type of work.

5.3.1 Qualifications

Figure 8 shows that only a third (34%) of professionals usually or always stipulated that craftspeople working on a historic building must have relevant craft skills qualifications.

Among professionals where this recommendation was not made, there was an overwhelming consensus that 'experience is more important than the relevant qualifications', and this was found to be the criteron by which the

quality of appointments to undertake construction work on historic buildings was most often defined by the specifier.

Some professionals will rely on an assessment of a craftsperson's overall standard of work 'rather than assuming that a qualification means that their work is good', and a number of professionals suggested that there were 'few appropriate qualifications' for craftspeople to obtain in the necessary heritage skills.

Nevertheless, some professionals do feel that these qualifications can be useful to demonstrate sound background knowledge, particularly when a craftsperson is new to the trade and perhaps lacks experience. In other instances it was highlighted that some clients require that the craftspeople employed possess the 'right' qualifications.

Two-thirds of professionals surveyed (66%) said that there would be no change in the extent to which they stipulate craftspeople must have relevant crafts skills qualifications to work on pre-1919 buildings in the future. However, nearly a third (29%) did say that they would look for qualifications more in the future, as there is recognition that regulations are changing, clients are becoming more interested in who carries out the work on their buildings and experienced craftspeople are retiring. Qualifications will therefore be increasingly relied on to demonstrate 'proof of ability'.

5.4 Planning and Building Regulations

Specifications for all building works, including work on historic properties, need to reflect current building regulations and planning requirements, which are sometimes in contradiction with sound conservation philosophy. For example, compliance with current requirements for thermal efficiency means that solid masonry exterior walls are often insulated (which can restrict the breathability of the historic masonry and cause decay), or that traditional single-glazed sash and case windows are replaced with less durable and aesthetically less appropriate double-glazed units.

These issues are particularly prevalent when historic buildings are being upgraded or refurbished to a new use and are required to achieve modern standards of accommodation and access:

'*When trying to renovate an old building, it has to work in the modern day system...for example, when having to provide disability access in line with the DDA [Disability Discrimination Act] requirement.*'

Architectural technologist

Provision for traditional buildings is currently made within existing building regulations, and associated approved documents and technical handbooks, to acknowledge the special consideration required for work on designated structures – e.g. Part L of the UK Building Regulations for England and Wales, and Part F of the Building (Amendment) Regulations (Northern Ireland) 2006.

In Scotland, where The Building (Scotland) Regulations 2004 apply, the Scottish Building Standards Agency has recently endorsed Historic Scotland's *Conversion of Traditional Buildings* (Guide for Practitioners 6, 2007) as an integral part of the suite of technical handbooks that provide guidance on the application of the Building Regulations. The focus of this guide is on the identification of typical areas of difficulty, where the influence of the regulations is likely to have the greatest impact on historic fabric, namely, fire safety, condensation, noise, access and energy conservation.

Planning Policy Guidance (PPGs), their replacements Planning Policy Statements (PPSs) and in Scotland National Planning Policy Guidance (NPPG) also help to ensure, for example, that any alterations made to historic buildings (such as to their use) are 'compatible with the fabric, setting and character of the historic environment'.[35]

Furthermore, building professionals can refer to documents such as BS 7913, *Guide to the Principles of the Conservation of Historic Buildings*; English Heritage's guidance on *Building Regulations and Historic Buildings*; Historic Scotland's Technical Advice Notes (TANs), such as TAN 2, *Conservation of Plasterwork* or TAN 8, *Guide to International Conservation Charters;* and Northern Ireland's Department of Finance and Personnel Technical Booklets produced to support the requirements of the building regulations.[36]

However, bodies representing the different professional occupations reported that issues relating to building regulations can still create major challenges for the sector. Greater sympathy towards the needs of traditional structures is thought to be required from regulators, but at the same time 'professionals should be realistic in what they demand, as often the client has limited resources for what is being specified'.

Although the current planning system is generally viewed by professionals to have a beneficial impact on the preservation of pre-1919 structures, the processing of planning applications is often perceived as a lengthy and time-consuming business.

Listed buildings and buildings at risk can also pose particular difficulties for planners, who need to ensure that the character of the historic environment is preserved in any proposed works, but that over-zealous planning requirements do not deter potential investment, leading to potentially damaging long-term neglect. In this regard, some interviewees expressed frustration at the perceived lack of 'commercial awareness' among some planning and conservation officials and heritage organisations.

Since 2003 the government in England and Wales, in conjunction with heritage agencies, local authorities and many other organisations, has been working on a process known as Heritage Protection Reform (HPR) which is moving steadily towards a more integrated system for the protection not only of historic buildings but also of parks and gardens, archaeological sites, battlefields and marine assets (see Section 2.3).

The proposed system will see all heritage assets termed 'designated' buildings and sites under a common classification system. It also promises to help ease the problems associated with scheduled monument and listed building designation and consent and planning permission by streamlining the process under local authority control.

Table 7 How Often Professionals Stipulate the Use of Traditional Materials

	Overall (%)	General (%)	Specialist (%)
Always	39	32	64
Usually	38	40	34
Sometimes	12	15	2
Occasionally	5	7	0
Never	5	7	0

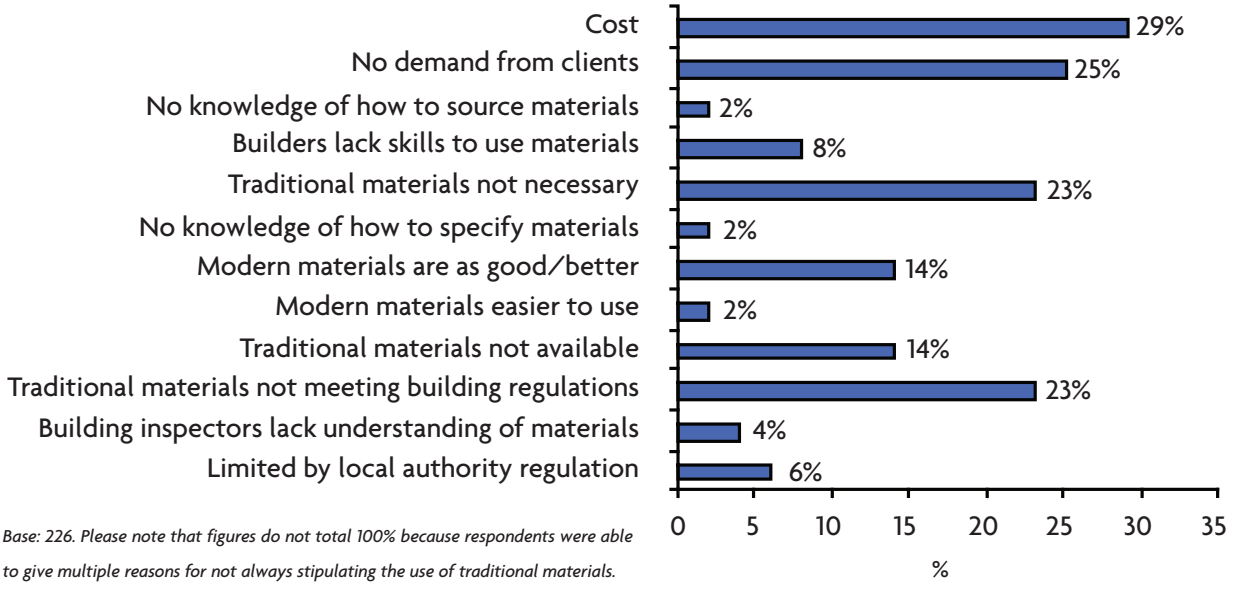
Base: 331

5.5 Traditional Building Materials

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

Buildings constructed before the advent of mass transportation predominately comprised materials that were sourced locally, thus creating the broad diversity in vernacular or local architectural styles prevalent in the historic building stock across the UK. Standardisation of design, mass production and improved transportation gradually eroded the reliance on local sources

Figure 9 Reasons Why the Use of Traditional Materials Is Not Always Stipulated by Professionals



Base: 226. Please note that figures do not total 100% because respondents were able to give multiple reasons for not always stipulating the use of traditional materials.

of material, which means that many of the materials used to construct our historic buildings are no longer available, and suitable equivalents have to be sought for conservation, repair and restoration.

5.6 Specifying Traditional Materials

Among the 348 professionals working on traditional buildings who were able to provide a figure, an average of 55% of the work they carried out on pre-1919 projects in the last year involved traditional materials. Over three-quarters (77%) always or usually stipulated that work must utilise traditional building materials. This is supported by the finding of the NHTG *Traditional Building Crafts Skills: England 2008 Review*, in which just less than three-quarters (71%) of the building contractors interviewed reported that architects always or usually stipulated the use of traditional materials for pre-1919 projects.

As Table 7 shows, however, the professional practices describing themselves as heritage or conservation specialists are twice as likely to specify the use of traditional materials for *all* their work on pre-1919 buildings, compared to professionals who work on pre-1919 buildings as part of a more diverse work profile.

Where professionals did not stipulate the use of traditional materials a variety of reasons were offered as explanation, although the most common were the cost of materials (29%), a lack of demand from clients (25%), a perceived lack of necessity (23%) and performance issues related to compliance with the building regulations (23%) (Figure 9).

Table 7 alludes to the vast amount of work being regularly undertaken on pre-1919 buildings across the UK using inappropriate materials, causing long-term damage and the gradual denudation of our historic building stock through inappropriate specification.

Some professional bodies have endorsed this view, suggesting that one of the biggest challenges faced by the heritage sector is increasing the awareness among stockholders of the benefits and importance of using appropriate and sympathetic materials for works on a historic building, rather than using 'modern materials as a cheaper alternative'.

It is of some concern, however, that Figure 9 also shows that just less than a quarter (23%) of building professionals did not stipulate the use of traditional materials on pre-1919 projects because they did not deem it necessary; the same percentage considered materials did not meet modern building regulations. This indicates a need for greater understanding among professionals about the benefits of using traditional materials for pre-1919 building projects, and also highlights the discord between the performance-related requirements of the current building regulations and the specific needs of a historic building (discussed in Section 5.4).

Other reasons given by professionals for not specifying the use of traditional materials on pre-1919 building projects are:

- not having any involvement in the decisions made about materials
- tradesmen trained in traditional crafts not always being available
- some traditional materials being inappropriate for modern use.

'We put the roof back exactly as it was – it was stronger than it had to be so it wasn't necessary to do this, but we thought what was the point of paring it down? It will last a good three hundred years if we do it this way – and that's the timeline I try to work to [on traditional buildings] – at least one hundred years... sometimes there's a reason to do it to a better standard. For the extra cost you're better off.'

Architect

It is difficult to determine the extent to which the reasons given constitute actual barriers to the specification of traditional materials; they may partly reflect the skills and knowledge gaps of the building professionals themselves. However, improved access to relevant information on traditional building materials and addressing the skills gaps and shortages in the craft skills sector will certainly help to start changing these perceptions.

5.6.1 Influences on the Use of Traditional Materials

During the quantitative survey, respondents were asked to rate a number of factors that may constitute barriers to the

Table 8 Proportion of Professionals Finding Various Factors Fairly Difficult or Difficult When Using/Specifying Traditional Materials

	Percentage
Dealing with obligations from planning authorities/agencies	38
Having appropriate knowledge to guide craftspeople in the use of traditional materials	25
Knowing how to apply modern professional skills to use traditional materials	22
Knowing how to source traditional materials	21
Knowing the properties of traditional materials	19
Being aware of the appropriate traditional materials according to the type of building	17
Knowing how to specify use of traditional materials	17
Being aware of how to source information about traditional materials	15

specification or use of traditional building materials on pre-1919 building projects.

The factor causing the greatest difficulty (for 38% of professionals) was dealing with obligations from planning authorities and other agencies (Table 8), though it should be noted that these respondents were not necessarily conservation specialists.

It must be remembered, however, that, subject to proper resources, the Heritage Protection Reform process for England and Wales will almost certainly streamline the bureaucracy involved in designation and planning. The 2007 HPR White Paper and the Heritage Bill published in draft on 2 April 2008 confirm that the government intends to make local authorities the main agencies and to cut the amount of 'red tape' involved in all levels of the planning and conservation process. It does not however, necessarily follow that this new management system for the historic built environment will lead to an increase in the specification and use of traditional materials, and the levels of expertise within local authorities will need to be addressed in this regard.

As Table 8 shows, one quarter (25%) of building professionals find that their limited ability to guide craftspeople in the use of traditional materials can cause them difficulties when using or specifying them during pre-1919 building projects. This is compounded not only by the cost of the materials (as discussed earlier) but also by knowledge gaps among professionals about the properties and performance of the materials, or about how to go about sourcing them.

This inevitably places more responsibility on craftspeople to understand the application of the traditional materials they are required to work with and has the tendency to blur the lines of responsibility for specifications on site.

As a result, there is some concern for example 'about the increasing use of cement as both a means of cutting cost, and due to a lack of original stonemasonry skill'.

For non-listed domestic properties, the availability of 'alternative' materials also means that traditional materials such as slate are often substituted by cheaper, often imported, alternatives.

5.6.2 Obtaining Information

Over half (59%) of professionals said that it was either easy or fairly easy to obtain necessary information or performance data from manufacturers or suppliers of traditional materials and fewer than 5% of professionals said that this was particularly difficult.

While manufacturers and suppliers seem reasonably good at providing technical information about their own products, some interviewees expressed dissatisfaction with the lack of basic information available on the performance and application of traditional materials in general.

This view is further reflected in Table 8, which highlights that about one in five (17%) of building professionals are not always aware of the appropriate materials to use according to the type of structure they are working upon.

'There is a lack of basic information about the performance characteristics and use of materials on traditional buildings. The result is that many professionals do not know where to start when working on these buildings.'

Civil engineer

5.7 Summary: Specifications and Traditional Materials

Importance of Built Heritage Specifications

- Informed specification is of critical importance on pre-1919 building projects, but the survey respondents suggest that the level of detail and onus of responsibility on the knowledge of the specifier is often mitigated in practice by the employment of – or consultation with – experienced craftspeople and specialists.
- Some professional bodies consider that some professionals may not understand sufficiently the techniques and materials they are including within their specifications.
- Nearly two-thirds (62%) of professionals writing heritage work specifications stipulate that work should be carried out by experienced contractors or master craftspeople.
- Conservation specialists are generally recommended where a project is deemed particularly complicated or challenging, to ensure quality control on a project, or at the client's request.
- For many specifiers, a contractor's portfolio of experience is thought to be a better indication of their ability than the possession of a particular qualification. However, there is a strong recognition, that the demand for appropriate qualifications will increase in the future.

Impact of Planning and Building Regulations

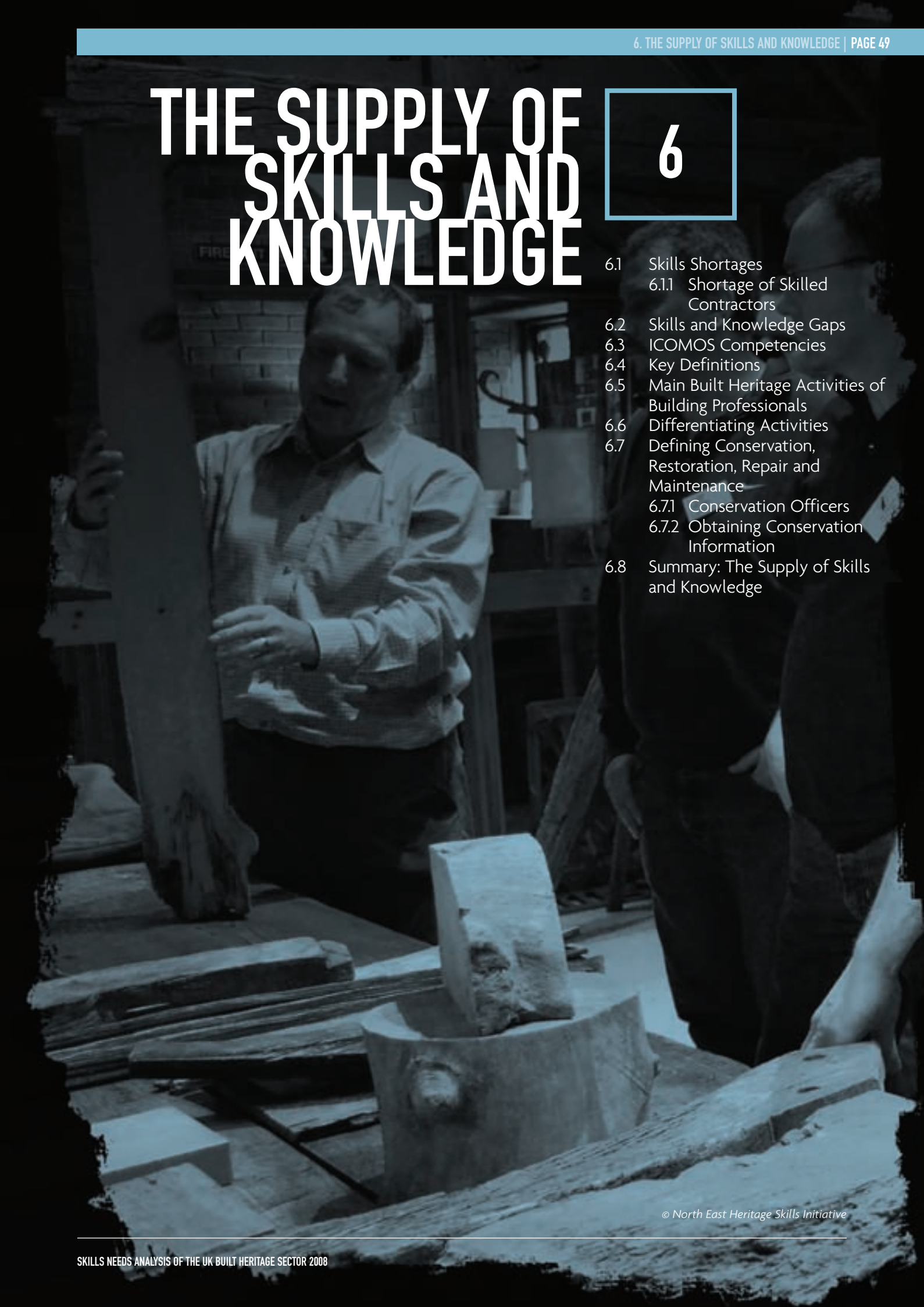
- Although the current planning system is viewed positively by building professionals in ensuring the preservation of pre-1919 structures, certain requirements of the building regulations are considered to be in conflict with established conservation principles, particularly with refurbishment projects.
- Although a considerable body of guidance is available to facilitate the sympathetic application of the building regulations to historic buildings, awareness of its existence needs to be raised and access improved.
- Planners report difficulties in balancing the preservation of listed buildings against the commercial pressures associated with converting a building to a new end use.

Specifying Traditional Building Materials

- On average, more than half (55%) of the work carried out by building professionals in the last year on pre-1919 buildings has involved the use of traditional materials.
- Over three-quarters (77%) of building professional interviewed always or usually specify traditional materials for pre-1919 building projects
- It is much more likely that a specialist conservation practice will stipulate the use of traditional materials than will a more general professional practice.
- Where traditional materials are not specified by building professionals this is mainly due to the cost of the materials (29%) and a lack of demand from clients (25%), although the latter is to some extent a result of the former.
- Other barriers to the specification of traditional materials include a lack of perceived necessity, compliance with planning authorities and other agencies, and a lack of knowledge on how to guide traditional craftspeople in their use.
- Professional bodies have suggested that stockholders – as well as building professionals – need to be more aware of the *benefits* of using traditional building materials as opposed to modern alternatives.
- Over half of building professionals (59%) said that they find it easy or fairly easy to obtain information or performance data on traditional materials from manufacturers and suppliers when required, but there is strong evidence that basic information on the performance and application of traditional materials is not widely available.
- The use of modern alternatives is mainly driven by cost, but in some cases it is also a result of knowledge gaps on the part of building professionals responsible for the specifications and their consequent difficulties in convincing the client of the benefits of using traditional materials.

THE SUPPLY OF SKILLS AND KNOWLEDGE

6



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the supply of skills and knowledge

Previous research into traditional building craft skills across the United Kingdom has brought to light the skills shortages and gaps faced by the built heritage sector. This section examines these issues from the perspective of building professionals and seeks to identify the recruitment difficulties and skills problems faced by professional firms, as well as their experiences of working with suitably skilled and knowledgeable contractors on pre-1919 projects. Comprehension of the core ICOMOS competences and of professionals' perception and understanding of "conservation, restoration, repair and maintenance" are also assessed as a measure of the depth and quality of relevant knowledge within the sector. Sources of guidance used by professionals to compensate for knowledge gaps are profiled, revealing a professional sector that is extremely resourceful, yet frustrated by the lack of formal education and advice available for built heritage projects.

6.1 Skills Shortages

Skills shortages occur when employers encounter difficulties finding staff with the appropriate skills, knowledge, experience or qualifications to fill outstanding vacancies at an appropriate wage. Of professionals working in the heritage sector, about two-thirds (64%) said that in the last 12 months their practice had not experienced any difficulty recruiting staff.

However, over a third (35%) said that they had experienced recruitment difficulties at professional level, and a quarter (25%) at technical level. Where these recruitment difficulties existed, they were considered by over 80% of professionals to be very severe, and skills shortages were most noticeable in the engineering and architectural occupations (see Table 9).

Professionals stated that the areas where specific skills or knowledge gaps existed among those joining their practice, in relation to heritage projects and historic buildings, were in:

- principles of engineering
- conservation (general knowledge, surveying)
- knowledge of traditional and locally available materials
- knowledge of architectural history/built heritage
- quantity surveying
- technical design and drawing.

Most commonly cited by professionals were a 'shortage of qualified engineers with an interest in working on heritage projects' and a shortage of engineers generally. Many professionals, however, also appear to be concerned about a lack of general overall knowledge and 'relevant experience and practical application' of working with historic buildings, as well as the understanding of traditional materials. Some professionals attributed this lack of knowledge and skills to there being 'too much emphasis' in the current qualification framework on modern methods of construction and materials, with insufficient coverage of the knowledge required to work on historic buildings.

These results emphasise headline findings produced by the 2007 CIC *Built Environment Professional Skills Survey,* according to which 79% of firms reporting recruitment difficulties attributed these to a low number of applicants with the required skills; 45% of respondents had also stated that a lack of work experience contributed to recruitment difficulties.[37]

A lack of qualifications, however, was not thought to be significant – 'one possible interpretation of this

Table 9 Occupations Experiencing Skills Shortages during the Last 12 Months

	Professional practices experiencing skills shortages in the last 12 months (%)
Engineers	46
Architects	32
Surveyors	18
Conservation officers/local authorities	10
Building control officers	8
Town planners	7
Estate managers	1

Base: 135 Note: all respondents, regardless of occupation, were asked to comment on skills shortages in the various occupations

data could be that the potential pool of applicants have the recognised qualifications for the job, but lack the appropriate skills which are undoubtedly acquired through the practical knowledge gained with relevant work experience'.[38]

6.1.1 Shortage of Skilled Contractors

Half of professionals writing specifications for heritage projects said that it was usually or always difficult to find qualified or experienced craftspeople to work on pre-1919 projects. Only one in ten (11%) said that it was never difficult to find qualified or experienced craftspeople. For some building professionals the supply of skilled contractors was not as much of a problem as the 'lack of knowledge' among craftspeople as to the application of traditional skills and materials.

Particular problems were noted by professionals interviewed as part of this research with shortages of skills required for stonemasonry (North East England, Wales), specialist joiners, carpenters and glaziers (East of England), plasterers and lime plasterers (Wales and Northern Ireland) and leadworkers (Yorkshire and Humberside). The NHTG *Traditional Building Craft Skills* reports for England (2005 and 2008), Scotland (2007), Wales (2007) and Northern Ireland (forthcoming 2008) should be referred to for a more comprehensive review of geographical variance in the availability of skills for specific crafts.

6.2 Skills and Knowledge Gaps

Skills gaps occur when an employer considers that an existing employee lacks the skills, knowledge, experience or qualifications to be fully proficient at their job. This can include, for example, the understanding of principles and approaches to conservation, as well as core professional competence.

For professionals taking part in the quantitative research, skills gaps were less common than skills shortages, with the majority (86%) saying that they had not experienced any difficulties with skills gaps among the existing

'The basic problem is a lack of expertise. There are plenty of professional codes of practice about how to do things in terms of modern construction, but the knowledge base for traditional buildings is not as good as it could be.'

Civil engineer

Table 10 Occupations Experiencing Skills Gaps during the Last 12 Months

Professional practices experiencing skills gaps in the last 12 months (%)	
Architects	45
Engineers	36
Surveyors	26
Conservation officers	8
Town planners	7
Building control officers	7
Estate managers	0

Base: 58 Note: all respondents, regardless of occupation, were asked to comment on skills gaps in the various occupations

workforce in the last 12 months. This is a slightly better picture than that presented by the 2007 CIC *Built Environment Professional Skills Survey*, where only 63% of firms did not report any difficulties experienced as a result of skills gaps during the previous year.

However, the CIC survey did identify that these skills gaps were most apparent among new recruits – an issue captured during this current research when examining skills shortages among those joining professional practices (Section 6.1).

Where difficulties had been encountered, 52% of professionals said that these had generally been fairly slight, but as with skills shortages, where they did exist they were most prevalent among the architectural and engineering professions (see Table 10).

It is important to recognise that skills gaps are difficult for employers to judge objectively, and some skill gaps may not be identified until the company or firm tries to expand either its workforce or the type of work undertaken. These are referred to as latent skill gaps. For example, if a non-specialist company were to undertake more heritage-related work then skills gaps would become more apparent as an inhibitor to the growth of the business and the pressure on the company to address them would increase.

One possible risk is that the sector adopts a *low skills equilibrium:* the sector does not undertake the work available and so requires no new skills; its lack of new skills in turn prevents it undertaking that work. Consequently, skills gaps do not emerge (apart from those due to people leaving the industry or increased economic demand) and the sector experiences a low skills equilibrium.

Some building professionals believe that a greater breadth of knowledge is required to work on pre-1919 compared with modern building projects, not only because of the differences in construction techniques and materials used, but also because of the necessity to remain aware of the special considerations necessary for working on listed buildings. This perception may of course be partly derived from the apparently disproportionate coverage of the historic built environment within formal higher education courses, in that knowledge pertinent to work on historic buildings often has to be derived outside formal education (see Section 7).

The NHTG's *Traditional Building Craft Skills* research reported widespread knowledge gaps among building contractors working on pre-1919 buildings in the UK, and the present research shows that these gaps in the knowledge base are also strikingly present among building professionals working in the heritage sector. Some of the most common problems currently experienced by professional practices relate to a lack of knowledge of traditional materials, their properties and performance and where they can be sourced, as well as a lack of understanding of some conservation principles.

Further concerns among building professionals working in the built heritage sector relate to a lack of readily available, and easily accessible, information on how best to work with pre-1919 buildings and the materials and techniques required, suggesting that a centralised knowledge base would be highly beneficial to the sector.

6.3 ICOMOS Competencies

The International Council on Monuments and Sites is a non-governmental body of building professionals dedicated to the conservation of historic structures around the world. As part of its work, ICOMOS sets out internationally recognised guidelines for building professionals working on heritage sites and, most relevant to this study, a number of basic competencies that should be expected of any building professional. These competencies are outlined in the ICOMOS *Guidelines for Education and Training in the Conservation of Monuments, Ensembles and Sites* (1993).[39]

To ascertain the extent to which these guidelines are being met across the UK, professionals working on pre-1919 buildings were asked to rate how skilled or competent they considered their staff in each of the core ICOMOS competencies (on a scale of 1 to 10, with 10 meaning very highly skilled). The average ratings given to each are provided in Table 11.

As can be seen from the table, only 3 of the 14 competencies were given an average rating of less than 8. Although the results are necessarily subjective, with building professionals more likely to overestimate than play down their own competence, they do reveal a high level of confidence within the professional sector for work related to the historic environment. This correlates with the findings outlined above, that many building professionals did not report any difficulties relating to skills gaps among their practice's existing workforce.

6.4 Key Definitions

To objectively evaluate these findings further, a series of questions were asked in order to establish the extent to which building professionals distinguished between different types of work typically carried out on historic buildings – *conservation, restoration, repair* and *maintenance.* Different interpretations of the meaning and application of these terms can impact significantly on the building techniques and materials used on a pre-1919 building project.

The working definitions used throughout this research were abbreviated from BS 7913, *Guide to Principles of Conservation of Historic Buildings,* as follows:

conservation: action to secure the survival or preservation of buildings without significant loss of authenticity

'There is a lack of professionals able to specify and use [traditional] materials. There needs to be more awareness of which materials are appropriate for listed buildings in relation to planning applications.'

Branch representative, professional body

Table 11 Competence of Professionals in Relation to ICOMOS Guidelines

	Average rating
Understand a site's emotional, cultural and use value	7
Find and understand all information sources relevant to the site	7
Analyse the behaviour of pre-1919 buildings as complex systems	7
Understand a site's history and technology	8
Understand a site in relation to its surrounding context	8
Diagnose intrinsic and extrinsic causes of decay and take appropriate action	8
Make relevant information intelligible to non-specialists	8
Understand and apply relevant conventions, charters, regulations and guidelines	8
Make balanced judgements based on shared ethical principles	8
Recognise any need for specialist expertise	8
Give expert advice on a site's maintenance and management and on relevant legislation	8
Make an easily accessible record of all work carried out	8
Work in multidisciplinary groups using sound methods	8
Work with local inhabitants, planners and authorities to resolve conflicts and provide solutions appropriate to their needs and resources	8

Base: 398

restoration: reinstating details to return a building to a previous known state
repair: work to remedy damage without alteration/restoration
maintenance: routine work to keep a building in good order.

The recognised definitions were abbreviated to specifically highlight those aspects of the concepts that distinguished them and to evaluate the extent to which professionals understood those differences.

Table 12 Different Types of Work Undertaken by Building Professionals

	Percentage
Repair	53
Restoration	48
Conservation	47
Maintenance	35

Base: 276

6.5 Main Built Heritage Activities of Building Professionals

The subset of building professionals who worked on historic buildings stated that, *in terms of turnover,* an average of 54% of their work on pre-1919 projects involved conservation and restoration activities (this excludes conservation officers).

However, as shown in Table 12, when asked which elements tended to make up most of their work, repair was cited as the most common (53%).

The qualitative research showed that building professionals are less likely to be involved in routine maintenance work carried out on traditional buildings, probably because of the lower financial value of maintenance works, a likely lack of involvement of local authorities, and the fact that many contractors would consider that they had the skills and knowledge to carry out routine maintenance without the involvement of a building professional.[40]

6.6 Differentiating Activities

All professionals (apart from conservation officers) were asked to rate how important they thought it was to differentiate between conservation, repair, maintenance and restoration activities when considering specific aspects of pre-1919 building projects. Table 13 highlights the proportion of professionals rating each aspect as being either quite or very important. Conservation officers were asked the same question separately to establish any differences in understanding between specialists and non-specialists (see Section 6.7.1).

Table 13 Areas of Pre-1919 Work Where Differentiation between Activities Is Important

	Quite or very important (%)
Selecting appropriate materials	83
Selecting appropriate craftspeople	82
Considering building regulations/procedures	80
Writing and designing specifications/work schedules	78

According to some respondents, an awareness of the conservation principles and philosophy associated with working on historic structures is essential, 'as any mistake will result in the original fabric and appearance of the building being potentially lost'. However, some building professionals indicated that the relevance of these principles needed to be considered on a case-by-case basis. Every unique building project relies on the informed decisions of the building professionals involved to achieve the best possible outcome. With so many and varied factors involved, many building professionals appear to subscribe to the view that 'a generic approach would not be appropriate'.

6.7 Defining Conservation, Restoration, Repair and Maintenance

When asked how they differentiated between the four main areas of building work undertaken on pre-1919 projects, it became apparent that this is regarded by professionals working on traditional buildings (except conservation officers) as being of relevance to architects and not other professionals. Some respondents also shared a similar view, that the four activities should be 'all considered together to gain appropriate knowledge for the requirements of an individual building' and that the 'boundaries become blurred' between each.

Long-standing disagreements within the industry regarding these definitions were mentioned by a small number of building professionals, and this was evident during both the survey and the in-depth interviews. More noticeable was that many professionals were unable to provide an individual definition for each of the four areas of work. Some suggested that repair and maintenance activities are much the same thing, and it was also quite common for professionals to consider that 'all of the areas fall partly into conservation – all of them require you to preserve the building's character'.

This view reflects those recorded within the NHTG's *Traditional Building Craft Skills* report for Scotland (2007) where confusion regarding the four main activities was also identified among respondents.[41]

Many interviewees said that they found it difficult to provide a concise explanation for each because the terms were 'so broad', that it would depend on the nature of the individual project being worked upon, or that they had never felt the need to consider this in the workplace.

Other professionals clearly opt to refer back to guidelines published by bodies such as English Heritage when necessary, or consult local authorities on the relevant regulations to be considered.

'The architect is always the first point of contact for all restoration, conservation and repair issues. They have been associated with the building for many years and understand it well. Then, if necessary, the structural engineer will be called in to deal with more significant problems. For minor problems, like loose floorboards, I will deal with it myself, although I will usually notify the architect of all work undertaken as a courtesy.'

Clerk of Works

Table 14 Ease of Obtaining Specialist Information and Advice

	Professionals finding this easy (%)
Collaborating with other external professionals	72
Knowing what specialist help to engage	65
Finding specialist help and advice	50
Locating specialist trainers	32

The uncertainty shown over these definitions should be set against the professionals' own evaluation of their understanding of the core ICOMOS competencies (Section 6.3), which was particularly high, and highlights the need for action to enhance awareness and understanding in this respect.

6.7.1 Conservation Officers

Conservation officers were much more able to provide a definition for each of the four areas of work, although it was generally agreed that – like other professionals – the differentiation would often not be made until the needs of an individual project had been determined:

'Firstly, you would identify what is on site and what has been proposed, and then look at how the work would be undertaken. After this, you can differentiate.'
Conservation design officer

There was also much more consensus among conservation officers interviewed as to the meaning of each individual term, and these responses given were broadly in line with the definitions provided above. This reflects the solid grounding in conservation philosophy that many conservation officers possess and which may, it seems, be lacking in other professions.

6.7.2 Obtaining Conservation Information

When working on built heritage projects specifically, professionals report that they found it fairly easy to collaborate with other professionals (see Table 14). Indeed, for many interviewees, consulting with other professionals on heritage projects is a key way to obtain the knowledge and information they require during their work.

According to interviewees, many formal education courses offer inadequate coverage of the historic built environment. In addition, only a third (32%) of professionals said that they could easily locate specialist trainers, and only half considered it easy to find specialist help and advice. Learning 'on the job', through experience and consultation, therefore appears to be the principal method by which individuals working within the heritage sector develop their understanding of traditional skills and knowledge.

Just over half of the professionals consulted (53%), including conservation officers, sought specialist advice and information before commencing work on pre-1919 projects. This included gathering information on the application and performance of materials such as specialist plasters or paints, and guidance on the use of appropriate materials in historic contexts, traditional building techniques, health and safety issues, and relevant regulations. Many professionals said that they also conducted more general research into the history of an individual building before commencing any practical work.

Areas of information researched by professionals for work on pre-1919 projects included:

- using double glazing on old buildings
- treating pointing
- working with horsehair plaster
- mud and stud technique
- background on lime putty/lime plastering
- lath and plaster ceilings
- cleaning stonework
- timber preservation
- flood damage advice
- masonry repair
- using historic paints – health and safety, composition
- use of thatch and cob
- gilding, bronze casting
- stained-glass windows.

Sources of information and guidance used are extremely varied and potentially inconsistent, reflecting the lack of a centralised resource for guidance on built heritage projects. The Internet and libraries were a frequently cited source, but some professionals also reported contacting experts from local universities, private training providers, other professional firms, and heritage organisations such as English Heritage, Historic Scotland and the Society for the Protection of Ancient Buildings. Professional bodies such as RIBA, ICE and IStructE were also common sources of external expertise.

Expertise from the local area was sometimes accessed, for example through conservation officers, local interest groups such as the East Anglian Historic Buildings Group and Cornish Buildings Group, and in the case of religious buildings the local diocese.

6.8 Summary: The Supply of Skills and Knowledge

Recruitment and Skills Shortages

- Recruitment problems for professional companies working on historic buildings are consistent with those faced by the broader construction professionals sector: a third (35%) experienced recruitment difficulties at professional level in the past 12 months, and skills shortages are most notable among the engineering and architectural occupations.
- Where recruitment difficulties exist, they are considered by the majority (80%) of professionals to be very severe.
- Some professionals point to a shortage of new recruits interested in or working on traditional buildings, which is attributed by some to the limited coverage of traditional materials and techniques in modern qualifications.
- Most professionals report some difficulties in finding qualified or experienced craftspeople for pre-1919 work, because of labour shortages in specialist skills. Particular problems were identified with stonemasons, joiners, carpenters, glaziers, plasterers and leadworkers.

Sector Knowledge

- Skills and knowledge gaps within the existing workforce are less commonly reported than skills shortages, with 86% of professionals saying they have not experienced any difficulties with skills gaps in the last 12 months. Furthermore, building professionals also rate themselves fairly highly across all 14 ICOMOS competencies given in the survey. However, it is difficult for employers to judge skills gaps objectively until the firm tries to expand either its workforce or the type of work undertaken – when latent skills gaps may become apparent.
- Where skills gaps have been encountered, little over a half (52%) of professionals report that they have been fairly slight, and they are also mainly prevalent among architects and engineers.
- However, with the exception of conservation officers, there is little consensus as to the principles behind the four main categories of work, and many found it difficult to provide a specific and concise definition for 'conservation', 'restoration', 'repair' and 'maintenance'.
- Perceived gaps in the skills and knowledge of employees are much more apparent in new recruits than in existing employees. In general terms these include gaps in:
  - knowledge of conservation issues
  - knowledge of the UK's built heritage
  - knowledge of traditional and locally available materials
  - relevant experience and practical application.
- Knowledge gaps where they are perceived to exist relate to the understanding of traditional materials and techniques and to the traditional buildings themselves, how to source materials (local and otherwise), how to obtain performance data on these materials or how to ascertain the differences between conservation, restoration, repair and maintenance activities.

Sources of Guidance

- A reported lack of readily available, easily accessible information relating to traditional building materials, building techniques and their application appears to be a root cause of knowledge gaps among professionals.
- Just over half of all the professionals consulted (53%) sought specialist advice and information before commencing work on pre-1919 projects.
- Sources of information and guidance include the Internet, libraries, academics, training providers, other companies and heritage organisations.
- There is a strong tendency for the sector to self-educate, with nearly three-quarters (72%) finding it easy to collaborate with other external professionals – emphasising the importance of peer consultation and 'on the job' experience for professional development, but suggesting a need to propagate guidance from appropriate heritage organisations more widely.
- Professionals find it difficult to locate specialist training providers, suggesting a need to raise awareness and improve access to existing professional development opportunities appropriate to the built heritage sector.

QUALIFICATIONS, TRAINING AND DEVELOPMENT

7

qualifications, training and development

This section examines the views held by building professionals working in the heritage sector of the formal education they, and new entrants into their respective fields, have thus far undertaken. There is particular reference to the perceived suitability of this training and education to adequately prepare individuals for work on pre-1919 buildings and structures. It also includes the results of discussions with a number of UK education and training providers delivering courses with some built heritage content, to provide a snapshot of the provision currently available to the various professions. Additionally, information is provided on the types of continuous professional development and informal training methods accessed by practising building professionals to improve their skills and knowledge in relation to work on pre-1919 buildings.

7.1 Survey of Education and Training Providers

As part of the research, 20 in-depth interviews were undertaken with education and training providers offering courses relevant to building professionals working in the built heritage sector. These providers were selected on the basis that they delivered courses that, at least in part, provided some coverage of the built heritage sector within their content.

This selection was made to enable the researchers to gather as much feedback as possible on issues relating to built heritage provision. Interviews mainly involved discussions with tutors and lecturers at 17 universities, although interviews were also held with deliverers of courses run by a specialist school, a specialist training institute and a museum.

Interviewees were responsible for delivering a wide range of courses from foundation degrees through to postgraduate qualifications, as well as many CPD workshops and seminars, including:

- **Foundation Degree** in Historic Building Conservation
- **BSc (Hons)** in Heritage Conservation; Restoration and Conservation; Building Surveying; Quantity Surveying; Architectural Technology; Construction Project Management
- **BA (Hons)** in Conservation and Restoration; Architecture; Architecture and Planning; Conservation Studies
- **MA** in Architecture; Historic Environment Conservation; Heritage Management
- **MEng** in Structural Engineering
- **MSc** in Timber Building Conservation; Architectural Conservation
- **Postgraduate Certificate/Diploma** in Heritage Management; Conservation of the Historic Environment
- **CPD courses/workshops** in (as examples): traditional masonry repair; repairs to historic timber structures; gauged brickwork; lime pointing; historic plasters and renders; wattle and daub; lath making; ferrous and non-ferrous metals in conservation; practical leadwork; flint walling; recording vernacular buildings for conservation.

The Universities and Colleges Admissions Service (UCAS) website[42] currently lists more than 500 architecture courses, over 300 civil, structural or building engineering courses, over 100 courses related to surveying, but under 10 courses relating specifically to built heritage or heritage conservation. Of course, these numbers only include higher education provision, and do not begin to touch the number of further education, private and unaccredited training courses available across the UK.

Courses delivered by interviewees ranged from day-long workshops to degrees lasting up to seven years. Between them they attracted as few as 15 students in the smallest classes, and up to nearly 200 per year in some of the largest. Taking only one year's intake into account, the approximate number of students for these 20 providers alone was 1,400 – an average of 70 each. Specialist heritage courses (mainly at postgraduate level, but also undergraduate courses and CPD training) were offered by 11 of the providers interviewed. The approximate total intake for one year on these specialist courses was 466, an average of 42 learners per provider.

For the longer training courses such as degrees, delivery methods were generally varied and included lectures, seminars and presentations as well as field trips, site visits, study tours, case studies, laboratory work and assignments.

The majority of higher education providers included work placements as part of training, ranging from a small number of days per year up to students spending a whole year working in industry as part of a sandwich course – very few problems were cited by providers in terms of finding host employers for such placements.

7.1.1 Specialist Heritage and Conservation Courses

As would be expected, the 11 providers offering courses specialising in conservation, restoration or heritage activities reported a much greater focus on older (pre-1919) buildings in the course content than did the more general courses in, for example, architecture or surveying.

Whereas the latter may consider 'elements' of pre-1919 structures within some modules, or offer optional modules on historic buildings, the more specialised courses will focus on 'all aspects', such as lime technology, timber conservation, historic plasterwork, stone testing, architectural history, statutory frameworks and philosophical issues relating to building conservation and restoration.

The specialist courses offered by the providers interviewed were predominately at postgraduate level (e.g. the MA in Historic Environment Conservation, or MSc in Architectural Conservation), although some were also offered to undergraduates – e.g. the BSc (Hons) in Heritage Conservation or BA (Hons) in Conservation Studies. In addition, this also includes CPD workshops generally offered to those who had already completed university study or had relevant work experience.

Such specialist courses are often *'heavily informed by international conservation standards and accreditation'.* This includes courses being recognised or accredited by bodies such as the Institute for Historic Building Conservation and the Chartered Institute of Building, course development informed by guidance offered through ICOMOS and ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property), and membership of the Conservation Course Directors' Forum. All providers (delivering both specialist and general 'mainstream' courses) profess to employ teaching staff qualified and sometimes accredited in the relevant field.

Some providers offered the opportunity for teaching staff to take secondments within industry; many also said that teaching staff attend conferences, publish their own research and are encouraged to undertake CPD to ensure both that they remain up to date with industry developments, and that they retain their accredited status.

7.1.2 Theoretical and Practical Learning

There is little difference between the course types or providers in terms of the ratio between theoretical and practical learning (generally around 60:40 and at best 50:50). However, it would seem that a specialised course is slightly more likely to contain a greater degree of practical learning (courses in general architecture and surveying were reported to contain as low as 5% and 10% practical learning respectively.)

7.1.3 Resources

Providers made use of a wide range of resources, including:

- laboratories for testing materials
- design studios, lecture theatres, seminar rooms
- wireless laptops, blackboard e-learning facilities (virtual learning environments), specialist software (e.g. CAD facilities), access to online journals

'The whole concept of conservation in this field is not adequately addressed...I learned by being asked to become actively involved in this kind of work, and learning from my mistakes.'

Architect

'Although the course is adequately resourced, there is always a need for more field trips, more practical activities and more lab time.'

Senior lecturer

- extensive libraries, archives, special collections and reference materials, on-site exhibitions
- mortar samples, traditional building materials and tools.

In general, providers appear to be fairly happy with the level of resources they were able to provide students on the relevant construction and built heritage courses, although some would have liked to see more resources allocated to practical learning, such as for field trips or improved lab facilities. Practical teaching is, however, generally more resource-intensive than other teaching activities such as lecturing, so financial considerations will often prevail over its expansion.

All providers reported that they made use of visiting lecturers, often to teach subjects that are particularly specialist or because they are believed to 'enhance' the course. However, difficulties cited by providers include being able to attract working professionals away from their normal job for relatively small sums of money, or finding a way of organising the lecture timetable so that it corresponds with the availability of the visiting lecturer;

'Their flexibility is the problem – it is difficult for them to be available when we want them as they are working people. The school has a very good list of 20–30 visiting industry practitioners and they are not doing it for the money. They offer because they are passionate about what they do, and it is also a good way to tap into the students.'
Head of school


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Many interviewees suggested that it was easy to find building professionals who were willing to speak to students, and some had clearly developed registers of appropriate industry contacts to draw upon. Others were also able to highlight the reciprocal benefits of the relationship to the industry professionals, in that it gave them an opportunity to engage with potential new recruits. Nevertheless, there were some concerns that the professionals that were happy to act as visiting lecturers were 'getting older' and that replacements would be difficult to find once they had retired or decided to stop teaching.

7.1.4 Student Intake

One provider noted that the courses they ran relating to the mainstream building professions were at capacity – 'we are pushed to the limits'. This view was supported by comments from other providers who reported that it was 'easy' to recruit students on degree courses such as architecture or town planning.

Some providers suggested that courses with vocational opportunities are particularly attractive to students, where for instance they may graduate not only with their degree but also in some instances up to a year's worth of experience working on site.

Recruiting learners does not appear to be as easy, however, for the 11

providers offering more specialised courses such as degrees and postgraduate qualifications in conservation disciplines. These courses were more commonly accessed by mature students, specifically designed for 'mid-career professionals working in conservation for a minimum of two years', or for those already possessing undergraduate qualifications.

This situation reflects the widely held view that postgraduate level is the most appropriate point at which individuals should begin to fully specialise in areas such as conservation. Consequently, undergraduate education and at least some industry experience is considered by many to provide the grounding necessary to enable an individual to further develop their interest in a specialist area.

Having a potential impact on this, however, is the recent announcement that 'Second Degree' funding grants from the Higher Education Funding Council for providers in England will start to be reduced and redirected from academic year 2008/2009 to prioritise those not already in possession of a degree or equivalent qualification.[43]

Although existing 'Second Degree' students will not be affected, in the future this will have significant implications for built heritage courses, where typically (as conservation training is often a 'top-up' to an existing qualification) individuals may already hold qualifications at an equivalent level but later in their career make the decision to further their professional interests and specialise in an area related to the built heritage sector.

Other economic factors, such as the strength of the British pound against some other currencies, were also mentioned by a small number of providers as currently affecting the recruitment of overseas students taking up courses.

For providers offering specialist courses at undergraduate level – e.g. BSc (Hons) in Heritage Conservation – the introduction of top-up fees was reported to have had a negative impact on learner numbers, while these providers also suggested that younger students starting undergraduate courses may not be attracted to the subject because of the image of the sector, or a lack of awareness of the opportunities available within it.

7.2 The Formal Education of Building Professionals

Nearly two-thirds (65%) of professionals working within the built heritage sector said that their formal education in their original discipline did not prepare them adequately for working on pre-1919 projects.

By far the most common reason cited for this was that the courses offered little or no coverage of the historic built environment. Many respondents pointed out that mainstream courses relating to the built environment generally focused on contemporary techniques and principles of construction, even those that were undertaken several decades ago.

The perception appears to change, however, where entrants into the industry have achieved a postgraduate qualification in a built heritage specialism. A degree in town planning, for example, is considered by some to be too generalist to enable a new

'Recruitment [for specialist courses] seems to go in cycles and it is low at the moment. Students don't realise the job opportunities that are guaranteed at the end – they don't see down the road.'

Senior lecturer

'New entrants are only adequately prepared for working on historic buildings if they undertake relevant formal education such as a Diploma in Conservation.'

Conservation officer

conservation officer to carry out their role effectively and as a result more specialised training at a higher level can be required.

Many professionals have undertaken additional qualifications in order to develop their skills in relation to pre-1919 work – emphasising the need for these courses to remain financially viable for mature students to access:

- MA in Building Conservation
- architectural history courses
- conservation courses (e.g. run by RIBA)
- CPD courses (seminars, workshops)
- diplomas (architectural conservation, urban design, urban conservation, building conservation)
- MA in Heritage Conservation
- MSc in Architecture Conservation.

Nevertheless, many respondents were of the view that the knowledge required to work with pre-1919 buildings can only really be acquired in the workplace:

'It is difficult to be fully prepared. I have just completed a postgraduate qualification, so I have the fundamentals in terms of conservation principles, history of buildings and towns, and conservation technology. But most of the knowledge can only be picked up with experience, on the job.'

Conservation officer

7.3 Further Training and Development

The Investors in People (IiP) standard is a framework designed to help organisations improve performance and realise objectives through the effective management and development of their staff. Just less than half (43%) of professionals working on pre-1919 buildings said that their practice was not interested in achieving (IiP) status.

A further 21% had already achieved the accreditation and 5% were currently working towards it. Either the remaining 31% did not know their company's stance towards IiP, or they used an alternative approach. The respondents who did not possess IiP accreditation reported that they ensured professional development through the application of alternative standards (e.g. ISO BS 9000) and/or through their insistence on professional development and CPD for their staff.

The majority of professionals (71%) also said that their firm lacked a formal training and development strategy regardless of their position on IiP, but one in ten (10%) did not know.

Furthermore, building professionals reported that staff within their firms had undertaken an average of 1.7 days' training per year, in order to work on pre-1919 projects, with an average expenditure of £80 per person.

This training included attending formal training sessions, as well as informal methods such as conducting background research into, for example, particular materials and techniques. To teach themselves any additional knowledge or skills, professionals often accessed libraries and online resources, although some also mentioned contacting local conservation groups connected to a particular building, or consulting specialists in a given field (see Table 15).

Table 15 Resources Accessed by Professionals for Informal Training and Development

Professional bodies/institutions	Publications	Websites
English Heritage	English Heritage *Conservation Bulletin*	English Heritage
Historic Scotland	*Building Services Journal*	Web search engines
IStructE	*Architectural Review*	Barbour online library
ICE	IHBC magazine *(Context)*	The Victorian Society
CADW	Design Week	
Barbour	RIBA/RICS journals and magazines	
SPAB	*Perspective* magazine (published by	
ICOMOS	Royal Society of Ulster Architects)	
The National Trust	Historic Scotland publications	
RIBA		
RICS		
RSUA		
Ulster Architectural Heritage Society		

Over two-thirds (68%) of professionals interviewed believed that self-tuition was an important route to achieving the skills and knowledge required for work on historic buildings as well as to develop on a personal level – see Figure 10.

Training and education methods accessed recently by building professionals working on traditional buildings included courses, seminars, conferences and workshops in a diverse range of subjects areas, such as:

- leadwork
- plastering
- progressive collapse
- fuel/energy conservation
- agricultural buildings conversion
- sympathetic repair
- cladding
- health and safety regulations
- the Disability Discrimination Act – e.g. working on historic buildings to enable access to disabled people
- sustainable materials
- stonework.

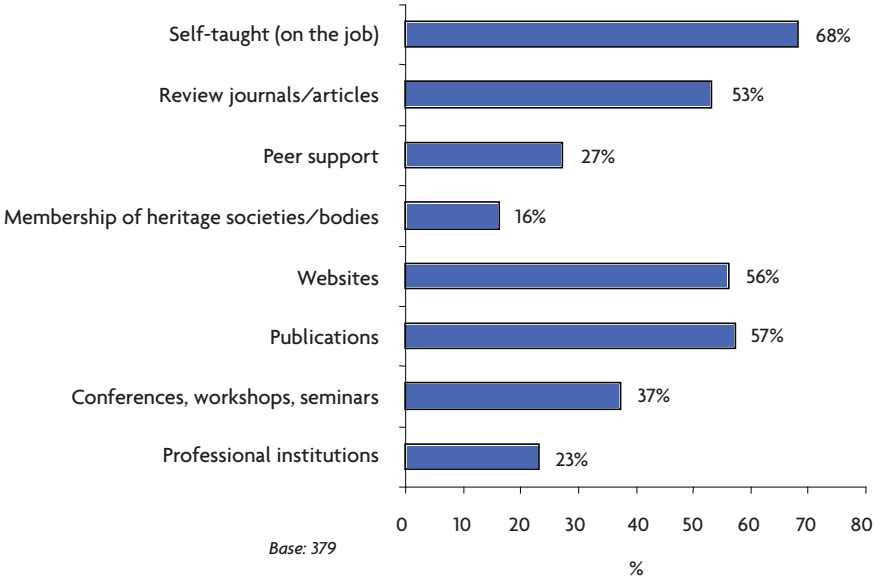
Such seminars and training events were accessed by professionals through heritage organisations, trade journals, professional bodies, training providers, universities and local authorities. Some firms had also taken advantage of local training initiatives offered, for example by the Learning and Skills Council (e.g. in Liverpool some professionals have accessed the SkillWorks programme to receive funding for training). In-house training, secondments (e.g. to English Heritage) and day release for employees to attend university or college were also fairly common.

7.3.1 Approaching Other Organisations

Over the last 12 months, two-thirds (65%) of professional firms working on pre-1919 projects approached a variety of different organisations to access training and development, advice and help. As Figure 11 illustrates, the most popular method was to seek out other in-house expertise (42%), but professional institutions (19%) and heritage bodies (12%) were also quite common sources of information and advice.

The organisations approached were generally the same as those used for informal training purposes outlined in Table 15.

Figure 10 Informal Training and Development Methods Used by Professionals



Base: 379

Figure 11 Sources of Training Information and Advice Accessed by Professionals

Base: 398

7.4 Summary: Qualifications, Training and Development

Formal Education Routes

- Nearly two-thirds (65%) of professionals working in the built heritage sector said that their formal education in their original discipline did not prepare them adequately for working on pre-1919 projects.
- Providers appreciate the value of practical teaching and would generally like to see more of it in formal education, although resource issues may make this difficult.
- Many education providers invite visiting lecturers to cover specialist areas of mainstream built environment courses.
- Many providers suggest that intake is currently high for mainstream built environment courses, but there appears to be less demand for specialist built heritage courses at undergraduate and postgraduate level.
- Training providers believe that the intake for specialist heritage courses suffers as a result of the low profile of the sector among younger students.
- Higher education courses relating specifically to the historic built environment are most commonly taught at postgraduate level, reflecting a widely held view that this is the most appropriate level at which individuals should begin to fully specialise in areas such as conservation.
- There is some concern that the introduction of top-up fees in England, and the impending redirection of funding away from 'Second Degree' students, will have a potential impact on the numbers of new students taking up specialist heritage qualifications in coming years.
- Experience of working on historic buildings is considered integral to the development of a sound knowledge base for the conservation disciplines, but it is acknowledged that opportunities for this within formal education are limited. New recruits are therefore often not believed to be sufficiently prepared for work on traditional buildings until they have undertaken a postgraduate qualification or some other form of training.

Continuous Professional Development

- Less than a quarter of professional practices (21%) have achieved Investors in People status, and 71% lack a formal training and development strategy.
- Individual building professionals undertook an average of 1.7 formal and informal training days in the last 12 months in relation to pre-1919 projects, with an average expenditure of £80 per person.
- Over two-thirds (68%) of professionals interviewed believe that self-tuition is an important route to obtaining the skills and knowledge required for work on historic buildings, and over half of the interviewees said that they used the Internet for this purpose (3% more than used academic journals). Well over half (65%) sought advice and help on pre-1919 projects from other organisations.
- There is great variety in the methods used by building professionals to continue their professional development in relation to understanding built heritage work: from formal education to short duration courses, workshops, conferences and seminars, membership of heritage and professional bodies, to personal research using publications and online resources. Discussions with peers and colleagues still, however, appear to be the most popular route to take when trying to learn more about working on historic buildings.

PROFESSIONAL OCCUPATIONS

8

professional occupations

This section presents key statistics for five main occupational groups – architects, surveyors, engineers, planners and conservation officers. Each sub-section offers a snapshot of the issues reported by building professionals as affecting their work on traditional pre-1919 structures.

These findings are presented as a set of four tables compiled for each occupational group – an overview of the types of professional firm surveyed within each group, the heritage work undertaken by each group in the last 12 months, skills and training issues, and the experience of professionals within each group in using or stipulating traditional building materials for pre-1919 projects. The statistics are also accompanied by results from the qualitative research undertaken during this study.

8.1 Architects

A brief overview of the typical roles and responsibilities of architects on pre-1919 building projects is provided in Section 2.2.1. A total of 124 architects were interviewed as part of the research (including both quantitative and qualitative fieldwork). Table 16 shows the regional distribution of interviews, as well as an overview of the firms in terms of their employees and the nature of the work they carry out.

Apart from conservation officers, the architects interviewed carried out the largest proportion of pre-1919 work over the last year of all the other professional occupations and, following on from this, the greatest proportion of pre-1919 projects utilising traditional materials and skills (see Table 17).

Architects suggested during interviews that some of the greatest challenges they face when working on historic building projects result from the limited understanding by clients or contractors of the appropriate materials and techniques to use on older buildings, the need to approach work sympathetically and the legislative requirements to which the proposals are subject.

Architects are generally in agreement that the practical and philosophical differences which define the terms 'conservation', 'repair', 'maintenance' and 'restoration' are important to consider when planning any construction work on a historic building, although a lack of appreciation of the four categories of work among 'most colleagues' was picked up during interviews. It was suggested by some architects that such definitions were not always relevant to every project, and ultimately could be 'confusing'.

Given that nearly half of the work undertaken by the architects interviewed involved pre-1919 buildings, it is of concern that only just over a third (36%) of architects reported that their formal education prepared them adequately for such work (Table 18).

Architects reported that the preservation of the historic built environment is generally covered as part of architectural history teaching, and therefore tends to focus on architectural style rather than construction methods and materials. In terms of recruitment, although three-quarters (75%) of architects reported not having experienced any difficulties in the past 12 months, 67% of building professionals working on pre-1919 projects in Northern Ireland reported recruitment difficulties

Table 16 Overview of Firms Surveyed (Architects)

	Percentage (rounded)	No.
Regional distribution		
South West England	15	
North East England	14	
Yorkshire & Humberside	13	
North West England	10	
East Midlands	10	
East of England	9	
Central Scotland	8	
West Midlands	8	
Northern Ireland	4	
Mid Wales	3	
Greater London	3	
South West Wales	2	
Northern Scotland	2	
Total number of employees		**864**
Nature of firm		
Conservation/heritage specialist	18	
General, including some work on old buildings	82	

Table 17 Heritage Work Undertaken By Firms in the Last 12 Months (Architects)

	Percentage
Work in last 12 months on pre-1919 projects	43
Pre-1919 projects using traditional materials and skills	65
Turnover in last 12 months on pre-1919 projects	
Private	66
Commercial/industrial	12
Public	10
Religious	12
Elements making up most of pre-1919 work	
Repair	38
Maintenance	25
Conservation	51
Restoration	46
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Always	20
Usually	33
Sometimes	23
Occasionally	13
Never	11

Please note that some figures do not total 100% because of multiple responses

among architects (see Section 9.4).

As Table 18 shows, architects have reported experiencing one of the highest levels of skills gaps over the last 12 months, with one admitting that 'there are always gaps'. To address this, the majority of architects will acquire the requisite knowledge to work on historic buildings 'on the job', or through the Internet, journals or peer support.

'There was absolutely no training on traditional building materials and techniques in my architecture degree. There was some architectural history, but this was studied entirely from an aesthetic point of view rather than from a technical point of view.'

Architect

Table 18 Skills and Training Issues (Architects)

	Percentage	No.
Recruitment difficulties in the last 12 months		
Professional	24	
Technical	21	
None	75	
Skills gaps in the last 12 months	18	
Formal education did prepare adequately for pre-1919 work	36	
Average number of formal training days in the last 12 months (per company) undertaken by staff in order to work on pre-1919 buildings		13
Other methods used to gain knowledge and skills for pre-1919 projects		
Self-taught (on the job)	68	
Websites	59	
Review journals/articles	57	
Publications	55	
Conferences, workshops etc.	43	
Peer support	30	
Membership of heritage bodies etc.	23	
Professional institutions	19	

Please note that some figures do not total 100% because of multiple responses

Table 19 Use of Traditional Materials (Architects)

	Percentage
Stipulating work must utilise traditional building materials	
Always	54
Usually	35
Sometimes	7
Occasionally	3
Never	1
Factors prohibiting the use of more traditional materials	
Cost	34
No demand from client	30
Materials don't meet standards/regulations	19
Lack of availability	15
Limited regulation from local authority	11
Builders lack skills	10
No need/not necessary	10

Please note that some figures do not total 100% because of multiple responses

Second only to conservation officers, architects are most likely to always stipulate that work on pre-1919 projects should involve the use of traditional building materials (Table 19). This is probably because architects are most often responsible for producing specifications for building works.

Costs linked to client demand and the difficulties of specifying traditional materials that meet the requirements of the current building regulations are cited as the major factors that limit a more extensive use of traditional materials.

8.2 Surveyors

A brief overview of the typical roles and responsibilities of surveyors on pre-1919 building projects is provided in Section 2.2.2. During the course of the research, a total of 69 building surveyors identified as doing some work on historic buildings were interviewed, with 92% of respondents saying that their companies were general practitioners rather than conservation specialists. The regional distribution and the profile of respondents' firms are provided in Table 20.

Of all the professional occupations profiled as part of this study, with the exception of engineers, surveyors carried out the least amount of work on pre-1919 projects during the last 12 months (see Table 21). It is nevertheless encouraging that over half of the work carried out by surveyors has involved the use of traditional materials and skills, with respondents displaying concern that work was undertaken in 'sympathy with the building in question'.

In terms of recruitment for their professional practices, surveyors overall have experienced fairly average levels of difficulty in comparison with other professionals (see Table 22), although quantity surveyors appear to have had a particularly difficult year, with 40% citing recruitment difficulties at professional level (compared to 19% of building surveyors). Conversely, existing

Table 20 Overview of Firms Surveyed (Surveyors)

	Percentage (rounded)	No.
Regional distribution		
West Midlands	14	
East Midlands	13	
Greater London	13	
East of England	11	
Yorkshire and Humber	8	
Northern Ireland	8	
Central Scotland	6	
North East England	6	
South East England	6	
South East Wales	5	
South West England	3	
Southern Scotland	3	
Northern Scotland	2	
South West Wales	2	
North West England	2	
Number of employees		816
Nature of firm		
Conservation/heritage specialist	8	
General, including some work on old buildings	92	

Table 21 Heritage Work Undertaken by Firms in the Last 12 Months (Surveyors)

	Percentage
Work in last 12 months on pre-1919 projects	27
Pre-1919 projects using traditional materials and skills	53
Turnover in last 12 months on pre-1919 projects	
Private	61
Commercial/industrial	14
Public	18
Religious	7
Elements making up most of pre-1919 work	
Repair	66
Maintenance	46
Conservation	43
Restoration	50
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Always	23
Usually	27
Sometimes	23
Occasionally	10
Never	17

Please note that some figures do not total 100% because of multiple responses

skills gaps are reported to be higher among building surveyors (16%) than quantity surveyors (11%).

Because many relevant taught courses focus on new buildings and materials, surveyors generally agreed with architects that their formal education had not prepared them adequately for work on historic buildings, with building surveyors being generally less positive (30%) than quantity surveyors (43%) about the relevance of their formal education for this kind of work.

It was suggested by some surveyors, however, that there is insufficient awareness of the courses available to building professionals of relevance to work in the heritage sector, and that promotion of existing opportunities should be improved, rather than the current training on offer being expanded.

Nearly three-quarters (73%) of surveyors interviewed said that they always or usually stipulated the use of traditional building materials on pre-1919 projects (see Table 23). Where these traditional materials were not used, however, building surveyors were more likely to suggest that this was due to the cost of materials (31% compared with 26% of quantity surveyors), whereas quantity surveyors were more likely to blame a lack of demand from clients (37% compared with 19%).

It is interesting that quantity surveyors – the profession most likely to appreciate the cost implications of using traditional materials – put much less emphasis on this factor, perhaps indicating that, in general terms, the costs of traditional materials are not as prohibitive as some would suggest.

'There is definitely an issue with craft skills. They are just disappearing. Traditional materials... are usually second-hand, reused materials, and therefore difficult to source. High quality modern materials of a traditional kind are horrifically expensive.'

Architect

Although many courses contain the odd lecture on the history of buildings, I cannot think of any that focus solely on the technical aspect of pre-1919 builds.'

Quantitys Surveyor

Table 22 Skills and Training Issues (Surveyors)

	Percentage	No.
Recruitment difficulties in the last 12 months		
Professional	32	
Technical	19	
None	67	
Skills gaps in the last 12 months	13	
Formal education did prepare adequately for pre-1919 work	37	
Average number of formal training days in the last 12 months (per company) undertaken by staff in order to work on pre-1919 buildings		25
Other methods used to gain knowledge and skills for pre-1919 projects		
Self-taught (on the job)	66	
Websites	61	
Publications	48	
Review journals, articles	45	
Conferences, workshops	34	
Professional institutions	28	
Peer support	22	

Please note that some figures do not total 100% because of multiple responses

One surveyor suggested that it can be difficult to match the skills of craftspeople available to the traditional materials available: 'although the skills themselves sometimes cause a problem, it is the choice of materials in conjunction with the skill'. This is accentuated for some by further difficulties in terms of liaising with stockholders and planning officials who may not always have the knowledge and understanding of the specialist treatment older buildings require.

8.3 Engineers

A brief overview of the typical roles and responsibilities of engineers on pre-1919 building projects is provided in Section 2.2.3. During the quantitative and qualitative research, a total of 149 civil, structural and building services engineers were interviewed. Engineering firms were on average the largest, with a much higher number of total employees than any of the other professions. They were also the profession to report the lowest proportion of firms specialising in conservation and/or heritage projects, at only 2% (Table 24).

Reflecting the lack of specialist conservation engineering firms, the engineers participating in the research undertook the least amount of work of all the professions on pre-1919 projects in the last 12 months (Table 25).

Engineers also used one of the lowest proportions of traditional materials and skills during pre-1919 projects. While some structural repairs to historic buildings require modern solutions, this finding is somewhat surprising given that a structural engineer's formal education provides an understanding of the structural properties of traditional materials such as timber, brick and stone, as well as the more commonly used steel and concrete for load-bearing components. With some materials, such as hand made brick, the structural properties can be more unpredictable, and in such circumstances the professional

Table 23 Use of Traditional Materials (Surveyors)

	Percentage
Stipulating work must utilise traditional building materials	
Always	33
Usually	40
Sometimes	10
Occasionally	8
Never	10
Factors prohibiting the use of more traditional materials	
No need/not necessary	31
No demand from clients	29
Cost	29
Materials don't meet standards/regulations	29

Please note that some figures do not total 100% because of multiple responses

Table 24 Overview of Firms Surveyed (Engineers)

	Percentage (rounded)	No.
Regional distribution		
South East England	17	
Central Scotland	12	
South West England	11	
Yorkshire & Humber	10	
North West England	10	
East of England	8	
West Midlands	7	
East Midlands	6	
North East England	6	
Greater London	4	
Northern Ireland	4	
South East Wales	2	
South West Wales	2	
North Wales	1	
Southern Scotland	1	
Number of employees		3432
Nature of firm		
Conservation/heritage specialist	2	
General, including some work on old buildings	98	

advice of a structural engineer may influence decisions over the choice of materials and the use of traditional construction techniques.

Engineers reported the least amount of difficulty in finding appropriately qualified or experienced craftspeople to work on pre-1919 projects. This may be because many engineers are generally not directly involved in making decisions regarding the contractors used on a particular job, or it may be a further reflection of the tendency of engineers to be less likely to specify traditional materials and techniques for their work on historic buildings.

This is further illustrated by areas identified by engineers as posing the greatest challenges to their work on historic buildings. Unlike other professionals, who cite skills shortages and gaps, costs or problems using traditional materials, engineers tend to refer to problems with the fabric of the buildings themselves, for example a lack of 'proper foundations' leading to subsidence, or timber and mortar decay, water ingress, frost penetration, plant and insect infestation, and dry rot.

All of these problems present potential difficulties to engineers who may not have had any formal training in the acceptable methods of remediation for such issues affecting historic buildings.

These concerns may go some way towards explaining why engineers report some of the greatest recruitment difficulties at both professional and technical level, and a fairly high rate of skills gaps among the existing workforce (see Table 26), although the recruitment problems may be part of broader issues affecting the engineering sector in general.

'There are plenty of professional codes of practice about how to do things in terms of modern construction, but the knowledge base for traditional buildings is not as good as it could be... The result is that many professionals don't know where to start when working on historic buildings. There is a lack of basic information about the performance characteristics of traditional materials.'

Civil engineer

Table 25 Heritage Work Undertaken By Firms In The Last 12 Months (Engineers)

	Percentage
Work in last 12 months on pre-1919 projects	23
Pre-1919 projects using traditional materials and skills	37
Turnover in last 12 months on pre-1919 projects	
Private	54
Commercial/industrial	19
Public	20
Religious	7
Elements making up most of pre-1919 work	
Repair	67
Maintenance	46
Conservation	41
Restoration	44
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Always	11
Usually	32
Sometimes	25
Occasionally	23
Never	9

Please note that some figures do not total 100% because of multiple responses

Engineers were the least likely of all the professions to agree that their formal education prepared them adequately for pre-1919 work. Although many engineering education providers include some aspects of relevance to historic buildings, the current education system is considered by practising engineers to place too much emphasis on modern building materials and techniques. This is thought to be the case not only for degrees and postgraduate qualifications, but also for apprenticeships and other qualifications such as HNDs.

To further corroborate this view, staff within engineering firms undertook the greatest number of formal training days during the last 12 months in order for them to work on pre-1919 buildings. This training included attendance at seminars and workshops, as well as studying for formal qualifications and conducting any additional personal research (i.e. by consulting relevant journals and websites).

A large proportion of CPD for engineers seems to be carried out on the job, and some reported that they would like to receive more practical training related to pre-1919 buildings, in areas such as understanding the correct application of materials to historic buildings.

Table 26 Skills and Training Issues (Engineers)

	Percentage	No.
Recruitment difficulties in the last 12 months		
Professional	47	
Technical	39	
None	52	
Skills gaps in the last 12 months	13	
Formal education did prepare adequately for pre-1919 work	26	
Average number of formal training days in the last 12 months (per company) undertaken by staff in order to work on pre-1919 buildings		38
Other methods used to gain knowledge and skills for pre-1919 projects		
Self-taught (on the job)	72	
Publications	63	
Websites	60	
Review journals, articles	51	
Conferences, workshops	36	
Professional institutions	26	
Peer support	25	

Please note that some figures do not total 100% because of multiple responses

Table 27 Use of Traditional Materials (Engineers)

	Percentage
Stipulating work must utilise traditional building materials	
Always	17
Usually	41
Sometimes	25
Occasionally	8
Never	9
Factors prohibiting the use of more traditional materials	
No need/not necessary	32
Cost	31
Modern materials as good	23
No demand from clients	23
Materials don't meet standards/regulations	18
Lack of availability	16

Please note that some figures do not total 100% because of multiple responses

It is perhaps not surprising that a lesser proportion of engineers stipulated that their work should be carried out on historic buildings using traditional materials (Table 27), mainly through a lack of perceived necessity or because of the cost. Structural engineers are, however, trained to design load-bearing elements in a variety of materials, so the material of choice for exposed elements may more often reflect the client's requirements or architect's specification that a structural design requirement.

On the other hand, the building services engineer will normally be obliged to use modern materials, both for health and safety reasons and because most services, such as gas or electricity, are in any case modern interventions into historic buildings, so require sensitive installation and generally not the use of traditional materials.

8.4 Planners

A brief overview of the typical roles and responsibilities of planners on pre-1919 building projects is provided in Section 2.2.4.

During the quantitative and qualitative research 21 planners were interviewed; an overview of firms and regional distribution is provided in Table 28. This shows that against the general trend among professional occupations, planners were much more likely to consider themselves conservation or heritage specialists. This is no doubt a reflection of the fact that a planner's remit will often mean that they deal with applications for work to be carried out on a very wide range of historic buildings used for both public and private purposes, listed and non-listed, and will consequently possess a good overview of the issues relevant to the historic built environment.

Planners reported that a fairly high proportion of their work in the last 12 months had been related to pre-1919 projects (see Table 29). The very small proportion (5%) of pre-1919 work utilising traditional materials and skills can probably be best explained by the fact that most planners will not have involvement directly at specific sites of work, and therefore would not consider their role to directly involve the use of traditional materials and skills.

The greatest challenges reported by planners in relation to pre-1919 projects are often related to stockholders or developers 'who don't appreciate historic buildings and see the listing of buildings as a hindrance'. Some examples were reported where property owners did not regard the listing of their building as important and believed that 'it shouldn't be listed', or did not understand the implications of the listing in terms of the building work they could or could not undertake.

Table 28 Overview of Firms Surveyed (Planners)

	Percentage (rounded)	No.
Regional distribution		
South West England	31	
East Midlands	19	
Southern Scotland	19	
Northern Ireland	13	
Yorkshire & Humber	6	
South East Wales	6	
North Wales	6	
Number of employees		152
Nature of firm		
Conservation/heritage specialist	31	
General, including some work on old buildings	69	

Table 29 Heritage Work Undertaken by Firms in the Last 12 Months (Planners)

	Percentage
Work in last 12 months on pre-1919 projects	41
Pre-1919 projects using traditional materials and skills	5
Turnover in last 12 months on pre-1919 projects	
Private	50
Commercial/industrial	23
Public	21
Religious	5
Elements making up most of pre-1919 work	
Repair	75
Maintenance	25
Conservation	92
Restoration	83
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Always	33
Usually	33
Sometimes	17
Occasionally	17

Please note that some figures do not total 100% because of multiple responses

Having to deal with the complexities of individual building projects can also pose real challenges for the planner, as the necessary approach to take will differ depending on building type, listing and usage. These issues, however, are all aspects of the work that planners suggested that they could best pick up 'on the job' rather than through formal training courses (see Table 30).

Planners were generally positive about their experiences of formal education, although many had undertaken postgraduate qualifications where it was felt that any historical content had been better covered, leading to the suggestion that more modules on historic buildings should be included in planning courses at undergraduate level.

Many town planners agreed however, that new entrants were not adequately prepared through their formal education experience for working on historic buildings:

'They are missing basic information related to historic buildings such as the properties of traditional materials. Planning degrees don't cover historic buildings.'

Senior planning officer

It was felt by some that planning degrees and postgraduate qualifications should include a greater level of historic content, as well as

Table 30 Skills and Training Issues (Planners)

	Percentage	No.
Recruitment difficulties in the last 12 months		
Professional	38	
Technical	31	
None	63	
Skills gaps in the last 12 months	29	
Formal education did prepare adequately for pre-1919 work	50	
Average number of formal training days in the last 12 months (per company) undertaken by staff to work on pre-1919 buildings		7
Other methods used to gain knowledge and skills for pre-1919 projects		
Review journals/articles	69	
Self-taught (on the job)	63	
Publications	63	
Conferences, workshops	56	
Websites	44	
Peer support	31	
Membership of heritage bodies etc.	25	
Professional institutions	25	

Please note that some figures do not total 100% because of multiple responses

Table 31 Use of Traditional Materials (Planners)

	Percentage
Stipulating work must utilise traditional building materials	
Always	36
Usually	55
Occasionally	9
Factors prohibiting the use of more traditional materials	
No demand from clients	50
Modern materials as good	38
Modern materials easier to use	25
Materials don't meet standards/regulations	25
Building inspectors lack understanding	13
Lack of availability	13
Builders lack skills	13
Cost	13

Please note that some figures do not total 100% because of multiple responses

information on the use of traditional materials. However, practical experience was also thought to be necessary in order to pick up some of the knowledge required, and in some cases it was felt that it should be left to the individual to access further training and education such as a Diploma in Building Conservation or other less formal training courses.

Planners were fairly unanimous in their view that work on pre-1919 buildings should wherever possible utilise traditional building materials (Table 31). However, as has been previously noted, a lack of understanding among property owners and developers can mean a lack of demand for traditional materials. Other planners also suggested that this lack of demand was due to a major problem in accessing funding for any necessary work, particularly for privately owned residences:

'As a result of limited financial help, works to the property are also limited, and an expensive traditional material such as slate may have to be substituted.'

Development control officer

8.5 Conservation Officers and Specialists

A brief overview of the typical roles and responsibilities of conservation officers on pre-1919 building projects is provided in Section 2.2.5.

A total of 44 conservation officers and specialists were interviewed during the quantitative and qualitative research. As might be expected the vast majority described themselves as conservation or heritage specialists (see Table 32).

Predictably, the majority of the work carried out by conservation officers during the last 12 months was on pre-1919 projects, with 89% of the projects they worked on utilising traditional materials and skills (see Table 33).

What is noticeable is the high level of difficulty that conservation officers reported in finding appropriately qualified or experienced craftspeople to carry out work on pre-1919 buildings. Since these professionals work with historic building projects on a day-to-day basis, they may well have a more informed perception of the difficulties clients often face in procuring appropriately skilled craftspeople, and although they

Table 32 Overview of Firms Surveyed (Conservation Officers)

	Percentage (rounded)	No.
Regional distribution		
East Midlands	21	
West Midlands	13	
South West England	11	
East of England	11	
Yorkshire & Humber	8	
North East England	8	
North West England	8	
North Wales	5	
Northern Scotland	3	
Central Scotland	3	
Southern Scotland	3	
South East Wales	3	
Northern Ireland	3	
Greater London	3	
Number of employees		138
Nature of firm		
Conservation/heritage specialist	97	
General, including some work on old buildings	3	

Table 33 Heritage Work Undertaken in the Last 12 Months (Conservation Officers)

	Percentage
Work in last 12 months on pre-1919 projects	84
Pre-1919 projects using traditional materials and skills	89
Turnover in last 12 months on pre-1919 projects	
Private	61
Commercial/industrial	11
Public	19
Religious	9
Elements making up most of pre-1919 work	n/a
Repair	n/a
Maintenance	n/a
Conservation	n/a
Restoration	
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Always	40
Sometimes	40
Never	20

Please note that some figures do not total 100% because of multiple responses

themselves are unlikely to recommend specific craftspeople or contractors to clients, this statistic may reflect the difficulties that they are aware are being experienced by clients or other professionals with whom they liaise.

Conservation officers reported a relatively low proportion of overall skills gaps among their own profession (see Table 34); however, Section 9.3 highlights that a quarter of building professionals working on pre-1919 buildings in Wales do feel that conservation officers are currently experiencing difficulties relating to skills gaps.

Conservation officers also reported the lowest proportion of overall recruitment difficulties of all the built heritage professions in the past 12 months, although this may be because conservation officers are generally employed by local authorities and therefore may not have any involvement in the recruitment process.

Conservation officers specifically felt that new entrants to the field were generally adequately prepared for work on pre-1919 buildings only if they had undertaken a specialist postgraduate qualification dealing with heritage or conservation issues. General built environment degrees, on town planning, for example, were for the most part not considered to provide sufficient underpinning heritage and conservation knowledge for the role.

Table 34 Skills and Training Issues (Conservation Officers)

	Percentage	No.
Recruitment difficulties in the last 12 months		
Professional	21	
Technical	3	
None	79	
Skills gaps in the last 12 months	11	
Formal education did prepare adequately for pre-1919 work	62	
Average number of formal training days in the last 12 months (per company/authority) undertaken by staff to work on pre-1919 buildings		9
Other methods used to gain knowledge and skills for pre-1919 projects		
Publications	70	
Review journals, articles	68	
Websites	51	
Self-taught (on the job)	49	
Conferences, workshops etc.	38	
Membership of heritage bodies etc.	35	
Peer support	27	
Professional institutions	22	

Please note that some figures do not total 100% because of multiple responses

Table 35 Use of Traditional Materials (Conservation Officers)

	Percentage
Stipulating work must utilise traditional building materials	
Always	71
Usually	29
Factors prohibiting the use of more traditional materials	
Materials don't meet standards/regulations	63
No need/not necessary	26
Lack of availability	11
Modern materials as good	11
Builders lack skills	11
Cost	11

Please note that some figures do not total 100% because of multiple responses

Some conservation officers indicated that there was insufficient support for further training within their current roles:

'If I know what training is needed, I can usually find a training provider, but it can be expensive. I like the idea of spending a defined period of time with an experienced historic building contractor but it's finding the time and the funding. We see our role as a statutory body, and that [training] would be too practical. It would be difficult to argue a case for funding this type of CPD.'

Conservation officer

It is of little surprise that nearly three-quarters (71%) of conservation officers always stipulated the use of traditional building materials for work on pre-1919 buildings. The conservation officer will be dealing with high-value stock so the cost of materials is less of a concern (11%) than to the architect (34%), who has direct responsibility to the client and the project budget. However, in specifying conditions for listed building consent, conservation officers will have to be sensitive to the balance between the aspiration to insist on the use of traditional materials and techniques, and the practical requirements of current building regulations. The regularity with which they face this issue is clearly reflected in Table 35.

8.6 Summary: Professional Occupations

Heritage Work Undertaken by Building Professionals in the Last 12 Months

- In the last 12 months the proportion of conservation officers' work related to pre-1919 buildings was 84%; for architects the figure was 43%; planners, 41%; surveyors, 27%; and engineers, 23%.
- With the exception of conservation officers and specialists, architects were involved on the greatest proportion of pre-1919 projects in the last 12 months that utilised traditional materials and skills (65%).
- Engineers reported the lowest proportion of firms specialising in conservation and/or heritage projects, at only 2%, compared with 18% of architects.

Skills and Training Issues

- Engineers and quantity surveyors reported a particularly difficult year in terms of recruitment, with 47% and 40% respectively experiencing recruitment difficulties at professional level in the last 12 months.
- Although three-quarters of architects did not report any recruitment difficulties, acute shortages have been noted in Northern Ireland.
- Just under a third (29%) of planners reported experiencing skills gaps in the last 12 months, followed by architects at 18%.
- A quarter of building professionals working on pre-1919 buildings in Wales reported skills gaps among conservation officers.
- Although nearly half of their work was reported to have involved pre-1919 buildings in the last 12 months, only 36% of architects said that their formal education prepared them adequately for such work. This view was shared across other professions to a greater or lesser degree.

Using Traditional Materials

- Conservation officers were most likely to always stipulate that work on pre-1919 projects should involve the use of traditional building materials (71%), and engineers were the least likely (37%).
- Building professionals working on pre-1919 buildings mentioned a variety of factors prohibitive to the use of more traditional materials during such work, reflecting the different roles undertaken by each occupational group: architects cited cost of the materials; engineers and surveyors cited the perception that there was no need to use these materials; planners most often cited a lack of demand from clients; and conservation officers most often stated that traditional materials did not meet modern building regulations. Only a quarter (26%) of quantity surveyors cited the cost of traditional building materials as prohibitive to their use.
- Conservation officers recognised the tension between the use of traditional materials and the practical requirements of current building regulations, and saw this as the most significant barrier to more widespread application.

UK CONSTITUENT COUNTRIES 9

UK constituent countries

This section presents key findings from both the quantitative and qualitative research to offer an overview of some of the issues identified within each of the four home countries – England, Scotland, Wales and Northern Ireland.

Each sub-section presents three tables of statistics: a breakdown of the research sample within each of the four home countries, work undertaken by building professionals on pre-1919 projects during 2006/2007, and the main skills issues identified for each nation throughout the course of the fieldwork. These tables are accompanied by information gathered through the qualitative research with building professionals and professional bodies.

Reference is also made within these summaries (for England, Scotland and Wales) to the previous NHTG *Traditional Building Craft Skills* reports, in order to provide further background and context to the issues facing building professionals working within the built heritage sector.

9.1 England

9.1.1 Historic Building Stock

There are approximately 372,769 individual entries on the register of listed buildings, but given that an entry may refer to a group of buildings, it is estimated that the total number of listed buildings in England is closer to 500,000.[44]

Currently, there are 1,235 entries on the English Heritage Register of Buildings at Risk (representing 1,385 individual items). It is thought that £400m in subsidies is required to bring the entries on the 2007 Register back into a state of repair, although 17% of the work will require coercive action as the owner of the property is 'all or part of the problem'.

There are 17 World Heritage Sites in England. In addition, there are over 8,000 designated conservation areas, 1,590 registered parks and gardens of historical interest, and 19,711 scheduled monuments.

9.1.2 Previous NHTG research

In 2005 the NHTG conducted research into the skills and training issues faced by craftspeople working on pre-1919 buildings. This research was the first *Traditional Building Craft Skills* report to be produced and was followed in 2007 by similar reports for Scotland and Wales. The 2005 research in England has recently been reviewed, with the *Traditional Building Craft Skills in England: 2008 Review* published concurrently with this report.

9.1.3 Survey

A total of 339 interviews were undertaken with building professionals working on pre-1919 projects across the nine English regions (and with English professional bodies). These respondents reported the greatest proportion of firms described as conservation or heritage specialists (see Table 36).

Out of all the home countries, building professionals based in England reported carrying out the highest proportion of projects on pre-1919 buildings during the past 12 months, but the second lowest proportion of pre-1919 projects using traditional materials and skills (see Table 37), slightly below the UK average of 55%.

Building professionals in England reported experiencing problems due to a shortage of available contractors with suitable skills to carry out the work, and skills and knowledge gaps among other professional colleagues and contractors on the specification and application of traditional materials.

Table 36 Survey Sample of Professional Firms in England

	Percentage (rounded)	No.
Main activity of practice		
Engineering	37	
Architecture and design	30	
Conservation/conservation advice	10	
Quantity surveying	9	
Building surveying	7	
Approved inspector	5	
Planning	3	
Average number of employees per firm		15
Nature of firm		
Conservation/heritage specialist	20	
General, including some work on old buildings	80	

This concern with skills shortages is emphasised in Table 38, which shows that building professionals in England were least likely to report satisfactory recruitment than any of the other home countries.

Table 37 Work on Pre-1919 Projects in England, 2006/2007

	Percentage
Work in last 12 months on pre-1919 projects	36
Pre-1919 projects using traditional materials and skills	54
Turnover in last 12 months on pre-1919 projects	
Private	58
Commercial/industrial	17
Public	16
Religious	9
Elements making up most of pre-1919 work	
Repair	28
Maintenance	20
Conservation	26
Restoration	26
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Sometimes/occasionally	37
Always	21
Usually	28
Never	14

Please note that some figures do not total 100% because of multiple responses

Table 38 Skills Gaps and Shortages in England

	Percentage
Recruitment difficulties in the last 12 months	
Professional	30
Technical	21
None	49
Occupations experiencing recruitment difficulties	
Engineers	38
Surveyors	15
Conservation officers	10
Building control officers	5
Town planners	4
Estate managers	1
Skills gaps experienced in the last 12 months	14
Occupations experiencing skills gaps	
Architects	40
Engineers	24
Surveyors	22
Conservation officers	8
Town planners	3
Building control officers	3

'The big problem is getting hold of contractors with the adequate skills to use the traditional materials. Craftspeople such as plasterers, painters, blacksmiths and gilders in relation to historic building work are becoming harder to find.'

Head surveyor

'There aren't enough accredited and experienced architects and engineers available to work on pre-1919 buildings.'

Director, charitable trust

9.2 Scotland

9.2.1 Historic Building Stock

According to Historic Scotland's *Historic Environment Audit* (2007) there are 47,329 listed buildings in Scotland, and approximately 422,000 pre-1919 dwellings. Furthermore there are 628 designated conservation areas, 7,882 scheduled monuments including Roman remains, churches and ancient dwellings, and 386 historic parks and gardens.[45] There are also currently four World Heritage Sites in Scotland.

Table 39 Survey Sample of Professional Firms in Scotland

	Percentage (rounded)	No.
Main activity of practice		
Engineering	41	
Architecture and design	25	
Quantity surveying	11	
Planning	7	
Conservation/conservation advice	7	
Approved inspector	5	
Building surveying	5	
Average number of employees per firm		10
Nature of firm		
Conservation/heritage specialist	14	
General, including some work on old buildings	86	

9.2.2 Previous NHTG Research

In 2007 the NHTG published its *Traditional Building Craft Skills: Assessing the Need, Meeting the Challenge* report for Scotland examining the skills and training needs of craftspeople working on pre-1919 buildings. As part of this review, a study was undertaken with 53 architects and 31 surveyors to identify some of the problems faced by building professionals when working with traditional structures.


© Historic Scotland

This found that, on average, a third (32%) of the work carried out by architects and surveyors in Scotland related to pre-1919 buildings. Work on private buildings was reported by the largest proportion of architects and surveyors in Scotland as accounting for over three-quarters of their turnover. Nearly a third (30%) of architects and surveyors reported having to wait over two months for contractors, and a further 48% reported having to wait approximately three weeks; surveyors said that they had more difficulty than architects in finding suitable contractors to carry out work.

9.2.3 Survey

For the current research, a total of 49 interviews were conducted with building professionals working on pre-1919 buildings in Scotland (or with representatives of Scottish professional bodies). A breakdown of the survey sample of professional firms in Scotland is given in Table 39.

Table 40 Work on Pre-1919 Projects in Scotland, 2006/2007

	Percentage
Work in last 12 months on pre-1919 projects	33
Pre-1919 projects using traditional materials and skills	57
Turnover in last 12 months on pre-1919 projects	
Private	75
Commercial/industrial	7
Public	16
Religious	2
Elements making up most of pre-1919 work	
Repair	54
Maintenance	11
Conservation	25
Restoration	39
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Sometimes/occasionally	32
Usually	53
Always	16

Please note that some figures do not total 100% because of multiple responses

Table 41 Skills Gaps and Shortages in Scotland

	Percentage
Recruitment difficulties in the last 12 months	
Professional	34
Technical	27
None	61
Occupations experiencing recruitment difficulties	
Engineers	38
Town planners	25
Surveyors	19
Architects	13
Building control officers	13
Skills gaps experienced in the last 12 months	17
Occupations experiencing skills gaps	
Engineers	43
Town planners	29
Building control offices	29
Conservation officers	29

Professional firms in Scotland had one of the lowest average number of employees per firm (see Table 39), second only to Northern Ireland, and the lowest proportion of respondents describing their firm as a conservation or heritage specialist. Nevertheless, it is encouraging to note that a fairly high proportion of pre-1919 projects in Scotland carried out in the last 12 months used traditional materials and skills (see Table 40).

The proportion of work carried out by building professionals on pre-1919 projects in Scotland over the last 12 months correlates almost exactly with the 32% reported in the NHTG's 2007 research, as does the finding that three-quarters (75%) of building professionals' turnover relating to pre-1919 projects is accounted for by work on private buildings.

In addition to the issues around the supply of traditional materials (highlighted in earlier studies, see Section 3.1), Table 40 shows that one of the main problems for building professionals in Scotland would seem to be the sourcing of skilled craftspeople to undertake the work. This reflects findings from the 2007 NHTG report on Scotland, where over half (54%) of architects and surveyors working predominantly on older buildings reported difficulties in finding suitable contractors to work on traditional structures.

A lack of architects and engineers with the appropriate understanding of traditional materials and techniques was also cited by some professionals in Scotland, and skills gaps and recruitment difficulties among engineers are particularly notable in Table 41.

Building professionals across Scotland reported high incidences of recruitment difficulties in both professional and technical occupations. They also reported the highest proportion of existing skills gaps, alongside Wales. Problems in engineering and planning occupations appear to be particularly prevalent, and it was suggested by some respondents that most professionals are now specialising in new build projects and have 'less passion' for historic structures.

9.3 Wales

9.3.1 Historic Building Stock

In March 2007 the first *Welsh Historic Environment Position Statement* was published, identifying 3,909 scheduled ancient monuments, 359 historic parks and gardens, and 511 designated conservation areas. There are two World Heritage Sites in Wales. In addition, there are 29,866 listed buildings and 2,603 buildings at risk,[46] and in 2007 the NHTG identified 497,000 pre-1919 buildings in Wales.[47]

9.3.2 Previous NHTG Research

In 2007 the NHTG published its *Traditional Building Craft Skills* report for Wales, examining the skills and training needs of contractors working on pre-1919 buildings across the country. Part of this study – as with the Scottish research – included an investigation into the issues faced by 43 architects and 15 surveyors working on traditional structures (81% of whom regarded themselves as general practitioners rather than heritage specialists). This report found that 38% of the work undertaken by architects and surveyors in Wales was carried out on pre-1919 buildings.

Table 42 Survey Sample of Professional Firms in Wales

	Percentage (rounded)	No.
Main activity of practice		
Engineering	29	
Architecture and design	25	
Conservation/conservation advice	13	
Quantity surveying	8	
Building surveying	8	
Approved inspector	8	
Planning	8	
Average number of employees per firm		17
Nature of firm		
Conservation/heritage specialist	17	
General, including some work on old buildings	83	

Table 43 Work on Pre-1919 Projects in Wales, 2006/2007

	Percentage
Work in last 12 months on pre-1919 projects	35
Pre-1919 projects using traditional materials and skills	67
Turnover in last 12 months on pre-1919 projects	
Private	61
Commercial/industrial	9
Public	19
Religious	11
Elements making up most of pre-1919 work	
Repair	47
Maintenance	40
Conservation	67
Restoration	60
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Occasionally/sometimes	44
Usually	33
Always	22

Please note that some figures do not total 100% because of multiple responses

9.3.3 Survey

A total of 29 interviews were conducted with building professionals working on pre-1919 buildings in Wales (or with representatives of Welsh professional bodies).

Professional firms in Wales had the highest average number of employees per firm, and a relatively high proportion of firms described themselves as conservation or heritage specialists (see Table 42), which generally reflects the findings identified in the NHTG *Traditional Building Craft Skills* report for Wales (2007).

Building professionals in Wales undertook one of the highest proportions of pre-1919 projects in the last 12 months, and used traditional materials on the most (see Table 43), perhaps reflecting the higher proportion of pre-1919 buildings to modern building stock identified in the NHTG report. However, as in Scotland, one of the problems facing historic building projects in Wales was a shortage of professionals with a sufficient knowledge of traditional materials to produce sound specifications.

A high proportion of building professionals based in Wales experienced no difficulties recruiting in the past 12 months (see Table 44). Difficulties that did arise

Table 44 Skills Gaps and Shortages in Wales

	Percentage
Recruitment difficulties in the last 12 months	
Professional	17
Technical	8
None	83
Occupations experiencing recruitment difficulties	
Engineers	50
Building Control Officers	50
Skills gaps experienced in the last 12 months	17
Occupations experiencing skills gaps	
Engineers	50
Conservation Officers	25
Surveyors	25

were concentrated on the engineering and building control professions, perhaps reflecting issues with the civil engineering sector specific to Wales.

Some of the interviewees gave the impression that conservation officers were the only profession that developed adequate underpinning knowledge of historic buildings and materials during their formal education, 'because this is where their interest lies' – for other professionals, courses were said to focus mainly on new building design and modern methods and materials. However, a quarter of building professionals based in Wales reported that conservation officers were suffering skills gaps.

'There are definitely not enough professionals to specify the materials. Currently in Wales, around thirty per cent of local authorities are without a dedicated conservation officer. As a result, building control officers have to take on the work. However, they have an inappropriate knowledge of technical issues and traditional materials in relation to pre-1919 buildings.'

Secretary, charitable organisation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9.4 Northern Ireland

9.4.1 Historic Building Stock

There are 1,704 scheduled historic monuments in Northern Ireland, protected by the Environment and Heritage Service within the Department of Environment.[48] EHSNI also records over 9,000 listed buildings in Northern Ireland. As at March 2005 there were 433 entries included on the online Building at Risk Northern Ireland Register (BARNI) – 92% are listed, and 28% are urban dwellings. Furthermore, there are 59 designated conservation areas including cities such as Belfast and Londonderry, as well as around 574 historic parks and gardens.[49] The Giant's Causeway and Causeway Coast is Northern Ireland's only World Heritage Site.

9.4.2 Survey

In total, 24 interviews were conducted with building professionals based in Northern Ireland (and Northern Irish professional bodies).

Professional firms in Northern Ireland had the lowest average number of employees per firm (see Table 45), but a relatively high number of respondents described their firm as a conservation or

Table 45 Survey Sample of Professional Firms in Northern Ireland

	Percentage (rounded)	No.
Main activity of practices		
Architecture and design	25	
Engineering	25	
Quantity surveying	15	
Planning	10	
Approved inspector	10	
Building surveying	10	
Conservation/conservation advice	5	
Average number of employees per firm		8
Nature of firm		
Conservation/heritage specialist	17	
General, with some work on old buildings	83	

Table 46 Work on Pre-1919 Projects in Northern Ireland, 2006/2007

	Percentage
Work in last 12 months on pre-1919 projects	32
Pre-1919 projects using traditional materials and skills	45
Turnover in last 12 months on pre-1919 projects	
Private	64
Commercial/industrial	8
Public	14
Religious	15
Elements making up pre-1919 work	
Repair	71
Maintenance	50
Conservation	43
Restoration	50
Difficulty finding appropriately qualified/experienced craftspeople to work on pre-1919 projects	
Sometimes/occasionally	78
Usually	22

Please note that some figures do not total 100% because of multiple responses

Table 47 Skills Gaps and Shortages In Northern Ireland

	Percentage
Recruitment difficulties in the last 12 months	
Professional	20
Technical	15
None	80
Occupations experiencing recruitment difficulties	
Engineers	33
Architects	67
Skills gaps experienced in the last 12 months	11
Occupations experiencing skills gaps	
Engineers	50
Architects	50

'Building professionals don't have practical hands-on experience, and many don't have adequate training to use and understand traditional building materials.'

Research officer, charitable organisation

heritage specialist. Nevertheless, as Table 46 shows, building professionals in Northern Ireland had carried out the smallest proportion of work on pre-1919 projects during the past 12 months, and traditional skills and materials were used on only 45% of these projects.

It was once again reiterated by respondents that not only were shortages of craft skills causing difficulties for historic building projects, but also that skills and knowledge gaps were prevalent among other professional colleagues and contractors on the specification and application of traditional materials.

Although only one in five (20%) of building professionals reported recruitment difficulties in the past 12 months in Northern Ireland, a particularly high proportion of these (67%) were architects (Table 47).

9.5 Summary: UK constituent countries

Professional Practices

- Professional firms in Wales reported the highest average number of employees (17), with Northern Ireland the lowest (8).
- Building professionals in Scotland were least likely to describe their firm as a conservation or heritage specialist (14%), with the highest proportion of conservation or heritage specialist firms being reported in England (20%).

Work on Pre-1919 Projects during the Last 12 Months

- Building professionals in England reported carrying out the highest proportion of pre-1919 projects within the last 12 months (36%), but the second lowest proportion of pre-1919 projects using traditional materials and skills (54%).
- Building professionals in Scotland reported one of the lowest proportions of work carried out in the last 12 months on pre-1919 projects (33%), but at the same time reported the highest proportion of pre-1919 projects utilising traditional materials and skills (57%).
- Building professionals in Wales used traditional materials and skills on the highest proportion of pre-1919 projects in the last 12 months (67%).
- Building professionals in Northern Ireland carried out the smallest proportion of work on pre-1919 projects during the past 12 months (32%), and traditional skills and materials were used on less than half (45%) of these projects.

Skills Gaps and Shortages

- Building professionals in Scotland and Wales both reported the most skills gaps (17%).
- Over half (51%) of building professionals in England reported experiencing recruitment difficulties, 30% at professional level and a further 21% at technical level – particular recruitment difficulties in England are noted among engineers.
- A high proportion of building professionals in Wales experienced no problems recruiting in the last 12 months (83%), although particular difficulties were reported among engineers and building control officers.
- Although only one in five (20%) building professionals reported recruitment difficulties in the past 12 months in Northern Ireland, a high proportion of these (67%) were architects.

CONCLUSIONS AND RECOMMENDATIONS

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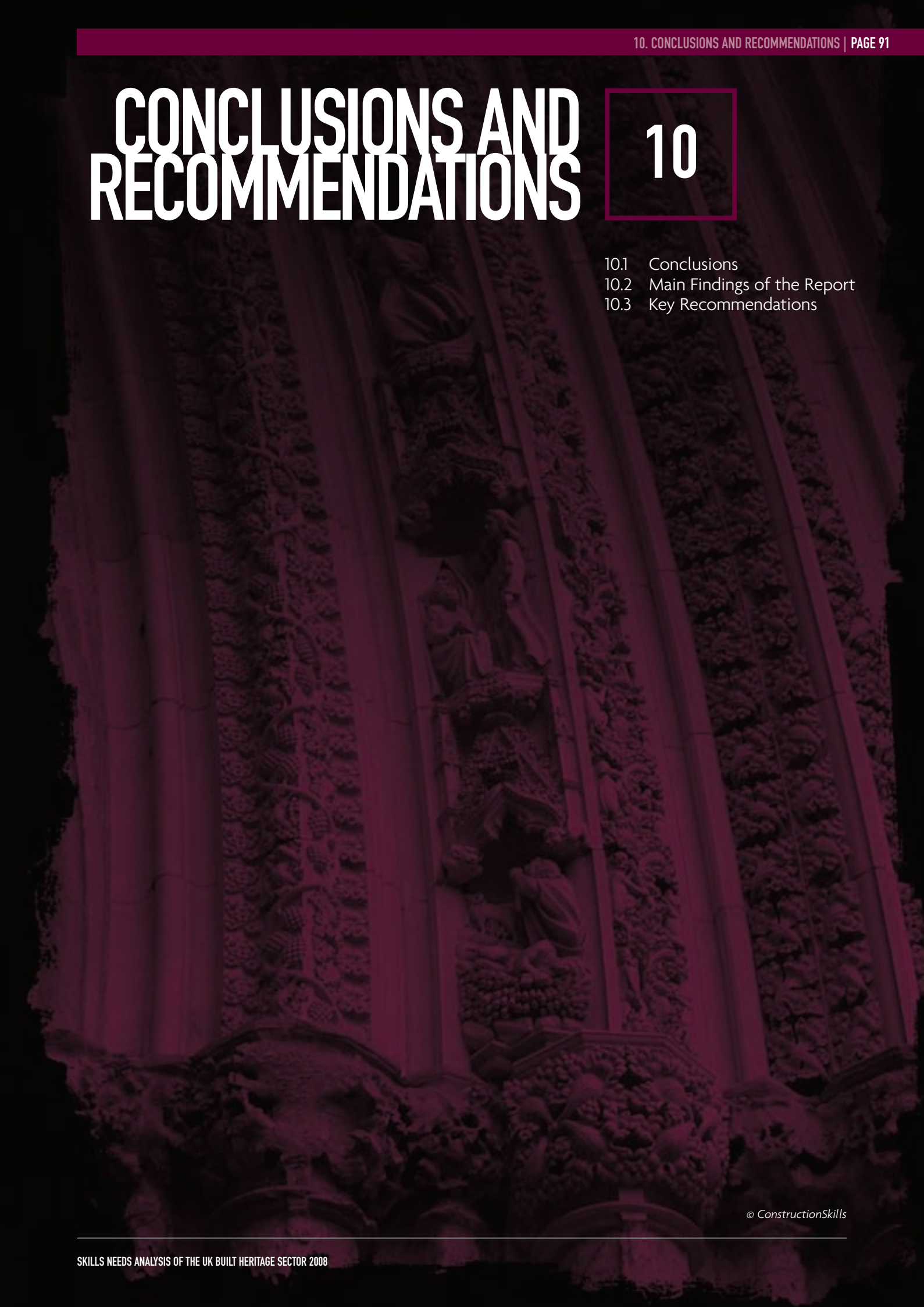

conclusions and recommendations

Building professionals have a fundamental responsibility as the caretakers, project managers and specifiers responsible for the UK's built heritage. They have a crucial role in educating their clients on appropriate methods and materials used for conservation, repair, maintenance and restoration of their buildings, but they need easy access to detailed knowledge and understanding of traditional materials, techniques and buildings.

This will help to ensure that their work on historic buildings is appropriately informed and can therefore achieve a consistently high standard – balancing the need for a sympathetic approach to construction work on historic buildings with the commercial realities and expectations of contemporary society. This is essential in achieving a sustainable and functioning historic building stock for future generations.

10.1 Conclusions

This research has exposed extensive skills and knowledge gaps among building professionals working on pre-1919 buildings, particularly regarding the appreciation and application of conservation principles, traditional materials and building practices appropriate to a historic context.

This research has also revealed the great diversity in resources and guidance that building professionals draw upon to mitigate these knowledge gaps when working on specific heritage projects or when looking to develop professionally. Online resources predictably constitute a major source. However, professionals generally find it difficult to access specialist training and advice as well as basic information on traditional building materials and techniques.

As a result, general knowledge of traditional building materials and the more specific appreciation of material characteristics and properties are areas of particular concern. These issues are further emphasised by the tendency for stockholders to procure the services of the same building professional or team over the course of many years.

It is clear from the research that one of the root causes of these knowledge gaps is an imbalance in the formal education system, which leans disproportionately towards supporting the new build sector of the construction industry. Intake on courses supporting non-manual construction occupations is high, but there is strong evidence to suggest that heritage and conservation issues receive poor coverage as part of many relevant higher education qualifications.

The extent of this problem is so significant that a large proportion of building professionals feel ill-equipped to work on pre-1919 buildings immediately following their formal education. Consequently, the majority of training and development of relevance to the historic built environment takes place 'on the job', as part of informal in-house mentoring or as part of continuous professional development. Competence associated with built heritage work therefore takes time to achieve and tends to be the preserve of the mid-career professional.

This lack of exposure within mainstream built environment courses needs to be addressed to improve the image of the sector, disseminate principles of good practice more widely, inspire younger people to consider a career as a built heritage professional and increase the uptake of formal specialist built heritage qualifications.

Education and training providers will respond to the demands of industry, so building professionals and their membership bodies will have a pivotal role to play in ensuring that building professionals of the future are better equipped to look after our expanding historic building stock.

Improvements in the knowledge base of the sector will also be driven by increased recognition of the value of building conservation accreditation among professionals, the professional bodies and clients.

Improved access to appropriately skilled contractors, craftspeople and to traditional materials will also significantly benefit the sector, but this needs to be accompanied by increased client demand, requiring extensive promotion and awareness-raising.

The Skills Action Plan (Section 11) is the key outcome of this research into the current skills and future training needs of building professionals working within the UK built heritage sector. It is essential that this Action Plan is implemented to ensure that building professionals commissioned to work on the UK's approximately 6 million pre-1919 buildings can do so with a confidence and ability gained from a foundation in good-quality, easily accessible education, training and continuous professional development.

10.2 Main Findings of the Report

	Demand	Supply	Materials	Training
Findings	There are just over 6 million traditional (pre-1919) buildings in the UK, including around half a million listed buildings An average of 35% of professionals' workload in the last 12 months related to pre-1919 projects, rising to 76% for those regarding themselves as conservation or heritage specialists Most professional firms (85%) expect their workload to either stay the same or increase in the next 12 months Building professionals are most likely to be involved in works of repair to historic buildings and least likely to be involved in general maintenance Work relates mostly to private structures (61%) and conservation and restoration activities (54%) Evidence of experience is often seen by clients as more important than accreditation Nearly two-thirds (62%) of built heritage specifications written by professionals stipulate that work should be carried out by experienced contractors or craftspeople – only a third (34%) stipulate that appropriate qualifications should be a requirement It is recognised that demand for qualifications among contractors will increase Most professionals report difficulties in finding qualified or experienced craftspeople for pre-1919 work	Survey data identifies 542,249 building professionals working across the UK – a significant proportion probably work on traditional buildings at some point in their career Out of 1,096 building professionals surveyed, 36% said that they had carried out work on pre-1919 buildings in the past 12 months Many building professionals become members of professional bodies – few become building-conservation accredited A total of 507 conservation-accredited building professionals were identified from various available schemes Over a third of professional practices report difficulties recruiting professionals – most prevalent among architects and engineers, and considered very severe by 80% of professionals The majority (86%) of professionals say they have not experienced skills gaps, but there is a problem relating to the knowledge that building professionals have of appropriate traditional methods and materials for use on pre-1919 buildings There is apparent disagreement and uncertainty about the difference between conservation, restoration, repair and maintenance activities, and whether the difference is relevant New entrants into professional practices are reported to be poorly prepared for, or lack interest in, the built heritage sector	Over half of the work carried out by professionals on pre-1919 projects in the last 12 months (55%) has involved the use of traditional materials Where traditional materials are not specified, this is generally linked to the cost or a lack of demand from clients More than half (59%) of professionals find it easy or fairly easy to obtain performance data on traditional materials from manufacturers and suppliers General guidance on the application of traditional materials for pre-1919 buildings is considered to be lacking One quarter (25%) of professionals find it difficult to specify traditional materials owing to a lack of knowledge on how to guide craftspeople in their usage Perceived complexities with the planning system and the need to meet modern building standards and legislative requirements are a particular challenge for professionals when specifying traditional building materials	The majority of building professionals (65%) do not feel that their formal education prepared them adequately for working on pre-1919 buildings Two-thirds (68%) of professionals believe that much of the skills and knowledge they have required for heritage work has been self-taught Higher education courses relating specifically to the historic built environment are most commonly taught at postgraduate level Demand for formal education specialising in the built heritage sector is currently low, and there are funding concerns that could affect this further Practical 'hands on' learning is integral to the way in which building professionals develop their knowledge and understanding relating to pre-1919 projects Nearly three-quarters (71%) of professional firms report not having a formal training and development strategy in place. On average 1.7 days of formal and informal training were undertaken in the last 12 months by individuals relating to work on pre-1919 projects Only 32% of professionals say that they find it easy or fairly easy to locate specialist training providers There is great variety in the methods used by building professionals to continue their professional development in relation to understanding built heritage work
Implications	There is very significant latent demand for work on pre-1919 buildings There is insufficient incentive for conservation accreditation Insufficient awareness among stockholders regarding the benefits of carrying out routine maintenance and the appropriate use of traditional skills and materials A failure to address weak specification writing could prove detrimental to the supply of skilled traditional craft skills	New recruits may be ill-equipped to replace experienced professionals approaching retirement There is a shortage of conservation-accredited professionals available for projects requiring the input of a recognised specialist Knowledge gaps among existing professionals working regularly on historic buildings will have long-term implications for the buildings concerned	Knowledge gaps exist relating to the characteristics and properties of traditional materials, the techniques required to use them, and the most appropriate application of them The application of inappropriate materials or techniques by professionals and craftspeople is detrimental to the buildings they work with Stockholders unwittingly disregard the long-term benefits to their buildings of using traditional materials	New recruits lacking interest in built heritage sector work and an awareness of the career opportunities available to them Knowledge transfer for the sector is reliant upon peer consultation, online resources and other informal learning methods rather than high-quality formal training and education Insufficient easily accessible specialist training provision exists for professionals looking to develop
Solutions	Increasing the amount of maintenance carried out on pre-1919 buildings and the demand for suitably skilled professionals Promote and develop further training programmes targeted at specifiers Identify where variables in practice, policy or understanding might impact significantly on the future demand for skills and supplies in traditional buildings Drive demand by ensuring that the links between built heritage and the sustainability agenda are understood and promoted	Improve the image of the sector and promote clear progression routes for new recruits and the existing workforce Maximise the number of high-quality new entrants into the sector Raise awareness of the importance of using accredited building professionals to carry out pre-1919 work Establish and propagate standards of best practice Secure sector support to address skills gaps and shortages relating to built heritage work Improve access to authoritative advice and guidance relating to traditional skills and materials	Establish a comprehensive, easily accessible and well-publicised source for building professionals to obtain information and performance data on traditional materials and techniques Promote awareness of the importance of using traditional materials to clients Encourage manufacturers and suppliers to liaise with professionals in order to establish how and where traditional materials meet modern building requirements Encourage knowledge transfer between professionals and craftspeople	Strengthen the traditional building and conservation components of mainstream built environment professional courses and higher education study curricula Demonstrate to employers the essential need for building professionals to remain up to date with built heritage issues, and help them to implement effective training and development strategies in the workplace Further develop and promote flexible training opportunities and CPD available to building professionals

10.3 Recommendations

In its findings and recommendations, this report recognises the widespread need for awareness-raising and education – educating clients so that they appreciate the benefit and importance of using traditional building methods and materials on their pre-1919 buildings - and ensuring that there is a suitable supply of professionals with the right skills and knowledge to work in the sector through improved training and skills development.

It is also essential in the long term to promote the image of the built heritage sector better to potential new entrants. However, this requires existing building professionals to fully understand the most appropriate of ways of working with traditional buildings and the materials they use. Effective communication with experienced craftspeople will assist this process.

The immediate priority is to increase the amount of high-quality information and training available to building professionals in relation to pre-1919 projects. This will help to drive demand for more built heritage and conservation teaching within formal education routes, which in itself will also have to be a parallel driver. These changes will not only help existing building professionals achieve higher standards when working on pre-1919 buildings but will also prepare new entrants better for the type of work they are likely to encounter in their professional duties.

Taking these key factors and the rest of the research findings into account, the key recommendations emerging from this study are presented in the adjacent table (presented in more detail within the Skills Action Plan in Section 11).

1. **Client demand.** Increase awareness among pre-1919 property owners and managers of the importance of implementing routine maintenance, the use of appropriate materials and techniques, and the appointment of highly knowledgeable experienced professionals and trades/craftspeople for all aspects of pre-1919 work.
2. **Building standards.** Improve the relevance of national building standards relating to the conservation, repair, maintenance and improvement of the historic built environment.
3. **Latent demand.** Identify where variables in practice, policy or understanding might impact significantly on the future demand for skills and supplies in traditional buildings and drive demand through links to the sustainability agenda.
4. **Sector support.** Secure sector recognition of the knowledge gaps of existing professionals working on historic buildings, and sector support to address the shortage of specialist building professionals.
5. **Resources.** Improve access to authoritative advice and guidance relating to traditional building skills and materials, to improve levels of understanding among the building professions, especially with a view to the improvement in standards of specification.
6. **Quality assurance.** Establish and propagate standards of best practice for professionals working in the built heritage sector.
7. **Positive image.** Improve the image of the built heritage sector among potential new recruits.
8. **New entrants.** Maximise the student intake for existing higher education courses, and support the development of new providers where appropriate.
9. **Employment opportunities.** Strengthen the sector by ensuring that the best potential new entrants have ready access to information on current vacancies.
10. **Traditional materials demand.** Increase awareness of the need to specify traditional materials on pre-1919 buildings in order to stimulate demand.
11. **Traditional materials supply.** Increase supply by enabling greater cross-fertilisation of ideas and practices among traditional building and material manufacturing companies to improve standards.
12. **Higher education.** Strengthen the traditional building and conservation components of professional courses and higher education study curricula.
13. **Understanding building craft skills.** Strengthen understanding among the professions of traditional building craft skills and their application on site.
14. **Lifelong learning and CPD.** Improve the knowledge base of professionals already working in the sector.
15. **Trend monitoring.** Monitor improvements within the sector.

SKILLS ACTION PLAN 11

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skills action plan

The immensely dedicated work by the NHTG, ConstructionSkills, national heritage agencies and many other sector partners since the formation of the NHTG in 2003 has provided an excellent foundation for maintaining momentum to achieve the key objective of providing a fully qualified workforce to undertake appropriate work in the wider built heritage sector – the more humble buildings as well as the landmark buildings and those protected as being of historic or architectural importance. This work represents a consolidation of that effort, specifically targeted at the professional sector, and a significant milestone in our progress to date.

The NHTG is confident that progress can be maintained towards providing integrated long-term solutions to overcome the current skills and knowledge gaps clearly identified in this report, but this requires combined resources in terms of funding, person hours, and thinking and planning. It is therefore vital that the actions of this report are delivered in partnership with all relevant stakeholders. Hence, core partnerships required to deliver individual actions are identified within the Action Plan, but there is clear scope for these to be expanded and refined as the actual delivery mechanisms are further clarified. This will require continued dialogue with Sector Skills Councils, professional bodies and other key stakeholders.

On 10 March 2008 the key findings of this research were presented to the NHTG Executive Committee and other sector partners. These included representatives of professional bodies, national heritage agencies, trade federations, building professionals and specialist heritage training providers, who focused upon three key areas:

- deliberating upon, questioning and endorsing the findings of the research project
- discussing and agreeing solutions to address the key issues raised in the report
- contributing to and agreeing the Skills Action Plan.

The research was also peer-reviewed by members of the NHTG Executive, representatives of professional bodies and representatives of national heritage agencies. This consultative process has remained a constant and central part of the NHTG Skills Needs Analysis research since 2005.

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This Skills Action Plan embraces the twin aspects of providing an overarching national strategy to create a climate of shared information, advice and guidance for the benefit of the whole sector, and specific deliverable actions with performance measures and key milestones provided to enable progress to be monitored, re-evaluated and where necessary adjusted to meet changing needs. It responds to and provides a cohesive, long-term solution to the current skills issues identified in the report.

The measures in the Skills Action Plan can be delivered and appraised singly, but it is essential that many are pursued collectively, with a read across to ensure coordination on a range of issues from embedment within education curricula to improving career progression opportunities, providing access to relevant guidance and ensuring that a suitably qualified professional workforce is sufficiently developed to be in the right place at the right time.

This Skills Action Plan provides a number of interrelated measures aimed at:

- stimulating client **demand** for appropriate knowledge and standards relating to work by professionals on historic buildings
- building capacity and expertise within the **supply** chain of building professionals relating to work on pre-1919 buildings
- improvements to the **traditional building materials** supply chain for the benefit of the sector
- refining, improving and expanding the **training and education** infrastructure to meet current and future demand.

Action Theme 1: Demand

Dissemination of information and awareness-raising to a range of stakeholders to promote demand for appropriate knowledge and standards relating to work by professionals on historic buildings.

1.1	CLIENT DEMAND **Increase awareness among pre-1919 property owners and managers of the importance of implementing routine maintenance, the use of appropriate materials and techniques, and the appointment of highly knowledgeable experienced professionals and trades/craftspeople for all aspects of pre-1919 work**	
Action	**1.** Develop and implement a UK-wide marketing campaign making fuller use of existing information for clients, such as that developed by Historic Scotland and the Society for the Protection of Ancient Buildings, and ensure that it carries with it clear messages of the importance of maintenance and the use of qualified professionals **2.** Make the establishment of maintenance plans a condition of grant for work on historic properties **3.** Encourage familiarity at an early age with the practical needs of our built heritage by expanding dissemination of educational materials and visits to and involvement of schools to promote key messages to future generations of property owners, their parents and teachers etc. **4.** In line with forthcoming heritage protection legislation, establish credible statistical analysis of public engagement with traditional buildings and historic environment conservation through local government conservation services	
Performance Measures	**2008 onwards:** Continue annual programme of outreach and dissemination of information to schools **2008:** Key messages and signposting as part of web resource **2008 onwards:** Targeted mail-out to identified stakeholders to drive demand **2009:** Assessment strategy in place for establishment of maintenance plans as a condition of grant **2010:** Establish maintenance agreements as condition of grant **2010:** Secure statistical foundation for evaluating client demand through local government conservation services	**Stakeholders:** NHTG, ConstructionSkills and national heritage agencies, national amenity societies, property owners, The Institute of Maintenance and Building Management (IMBM), Asset Skills, local government conservation services and IHBC

1.2	BUILDING STANDARDS **Improve the relevance of national building standards relating to the conservation, repair, maintenance and improvement of the historic built environment**	
Action	**1.** Scope current range of guidance available and provide centralised resource, e.g. BRE reports, British Standards, English Heritage and Historic Scotland Technical Advice Notes and practitioners' guides **2.** Develop a suite of guidance to support the application of the building regulations, and to support interpretation of the Approved Documents (England and Wales), Technical Handbooks (Scotland) and Technical Booklets (Northern Ireland) **3.** Work with the relevant building standards agencies to influence future revisions of the building regulations and supporting Approved Documents/Technical Handbooks **4.** Work with major manufacturers and suppliers to clarify the performance characteristics of traditional materials by modern standards **5.** Evaluate and respond to the impact of the Heritage Protection Reform (England and Wales only) and other significant legislative and policy reform to ensure that professionals in the heritage sector are equipped with appropriate skills and knowledge to meet new demands	
Performance Measures	**2008:** Evaluate the applicability of Historic Scotland's Conversion of Traditional Buildings (Guide for Practitioners 6, 2007) outside of Scotland and advocate to the relevant agencies as appropriate **2008 onwards:** National heritage agencies to increase engagement with the relevant building standards agencies **2008 onwards:** Continue development of UK-applicable guidance to support the application of building regulations to historic buildings **2009:** Establish annual meetings with All Party Parliamentary Groups and their equivalents across the UK **2011–13:** Repeat research shows reduced skills and knowledge gaps among professionals working in the built heritage sector [see also crossover with 1.1]	**Stakeholders:** National heritage agencies, BRE, British Isles Technical Forum, building standards agencies, Proskills, IMBM, Department of Communities and Local Government, manufacturers and suppliers, IHBC

1.3	LATENT DEMAND **Identify where variables in practice, policy or understanding might impact significantly on the future demand for skills and supplies in traditional buildings and drive demand through links to the sustainability agenda**	
Action	**1.** Identify UK-wide resource of Buildings at Risk **2.** Work with national and local government to identify UK needs in traditional building repair and maintenance, e.g. through house-condition surveys **3.** Review impact – and establish figures for – demand where key changes in policy could increase or decrease needs, e.g. whole-life costing; flat VAT; enhanced carbon taxing; increased waste levies **4.** Continue to link the development of traditional building techniques and the material supply chain to the wider issues raised in the sustainability and carbon footprint agenda	
Performance Measures	**2009:** Integrated Buildings at Risk framework for UK **2010:** Potential impact on the sector of major changes in practice, policy or understanding evaluated and risk-managed, e.g. costed scoping of impact of increased climate-change-related levies **2010 onwards:** Sustainability linked to traditional buildings and materials to be recognised as a major factor on the international stage, e.g. climate change summits and treaties	**Stakeholders:** National heritage agencies, IHBC, local government, BRE, IMBM, Asset Skills, manufacturers and suppliers, Proskills

Action Theme 2: Supply

Attracting people with the potential to become accomplished building professionals working in the heritage sector is essential to achieve an appropriately educated professional sector in the future; ensuring that all building professionals have sufficient knowledge of traditional building standards and needs will secure the broad base.

2.1	SECTOR SUPPORT **Secure sector recognition of the knowledge gaps of existing professionals working on historic buildings, and sector support to address the shortage of specialist building professionals**	
Action	**1.** Using this report and its findings, work to ensure support and buy-in from all relevant professional bodies and construction industry stakeholders **2.** Review representation of the building professionals sector within the current makeup of the NHTG and expand if necessary **3.** Build links to mainstream construction sector to facilitate training, sourcing and specification by non-specialists in traditional building works **4.** Develop and agree a national occupational standard (NOS) for professionals specialising in historic environment conservation	
Performance Measures	**2008:** NHTG Building Professionals Research promulgated to all relevant professional bodies **2008:** Review of Action Plan under consultation with all relevant professional bodies **2010:** Support industry-wide awareness-raising conference on role and potential of traditional buildings within the industry **2009–10:** All relevant professional bodies working to an agreed Action Plan, tied to each individual organisation's development plans **2010–11:** NOS established for historic environment conservation professionals	**Stakeholders:** ConstructionSkills, NHTG and national heritage agencies, with IHBC and other professional bodies (e.g. RIBA, RIAS, RSAW, RSUA, CIAT, RICS, RTPI, ICE, IStructE, CIOB, CABE, ACE, ABE, IMBM)

2.2	RESOURCES **Improve access to authoritative advice and guidance relating to traditional building skills and materials, to improve levels of understanding among the building professions, especially with a view to the improvement in standards of specification**	
Action	**1.** Establish a comprehensive, easily accessible, well-publicised 'one-stop' source of information where building professionals can obtain information and performance data on traditional materials, their properties and characteristics, the techniques required to most effectively apply those materials, the types of building on which each can be appropriately used and – with the support of manufacturers and suppliers – how professionals can source traditional materials within the UK. This should be an online resource to take advantage of the high percentage of Internet use for bridging knowledge gaps among professionals that this research has identified **2.** Investigate with partners the formation of a technical advice centre or strengthening of existing telephone advice lines, such as those staffed by SPAB and Historic Scotland, to provide general guidance to building professionals on skills and materials **3.** Develop a system for creating accessible guidance notes for practitioners based on specific technical queries on topics not covered by other resources	
Performance Measures	**2008:** New NHTG website to provide interim solution with signposts to existing guidance **2008:** Consultation and scoping proposal for online resource completed **2009:** Funding secured for development of online resource and to meet operational costs **2009:** Core elements of online resource launched **2009:** Development of new guidance notes under way	**Stakeholders:** Building conservation training groups, NHTG, IHBC and national heritage agencies

2.3	QUALITY ASSURANCE **Establish and propagate standards of best practice for professionals working in the built heritage sector**	
Action	**1.** Work with and support the professional bodies and build upon the work of the Edinburgh Group and COTAC to further promote and increase uptake of conservation accreditation and specialisation, and to consolidate and strengthen existing systems **2.** Support the professional bodies to establish a UK-wide pan-professional system of accreditation **3.** Promote wider use of the 'Understanding Conservation' online resource for building professionals **4.** Promote the relevance of appropriate conservation accreditation and specialisms to property owners and managers, local authorities and funding agencies, and implement through procurement routes **5.** Encourage government departments, national heritage agencies and major clients such as local authorities to set an example by using appropriately accredited practitioners on historic building projects **6.** Work with professional bodies, client groups and other relevant organisations to promote the uptake of the Construction Skills Certification Scheme (CSCS) among conservation specialists and building professionals within the heritage sector	
Performance Measures	**2008:** Secure sector support from relevant professional bodies **2009:** Achieve a 15% increase in the number of accredited individuals on conservation registers **2009:** Secure a 30% increase in HBC's professional membership (including trainee membership) from 2007 levels **2009:** Pan-professional system of accreditation in place **2010:** All building professionals working on historic buildings to be CSCS carded **2011–13:** Repeat research shows improved recognition of understandingconservation.org as a tool to assist in the achievement of conservation accreditation for building professionals	**Stakeholders:** Edinburgh Group, COTAC with professional bodies, IHBC, national heritage agencies, NHTG, local authorities, funding agencies and property owners such as The National Trust, Historic Houses Association, British Waterways and The Churches Conservation Trust

2.4	POSITIVE IMAGE **Improve the image of the built heritage sector among potential new recruits**	
Action	**1.** Develop and promote a clear career progression route for building professionals looking to specialise in traditional building work **2.** Support the delivery of events targeted at 14–19-year-olds to promote careers in building conservation **3.** Establish a cohort of Heritage Ambassadors for the professional sector, to work with schools, colleges and higher education institutions as part of ConstructionSkills' existing programme **4.** Identify and promote the positive environmental and social benefits of traditional buildings to prospective specialists, including the more attractive benefits of reducing climate change (through reducing waste), sustainability, quality outcomes and local distinctiveness **5.** Encourage media and public relations opportunities to promote the image of professional activity in the traditional building and historic environment conservation sectors **6.** Identify high-profile supporters of good practice in traditional building specialisms and historic environment conservation to help support and promote the sector	
Performance Measures	**2008:** Undertake full review of current NHTG careers brochure and improve content relating to building professionals **2008:** Relaunched NHTG website to carry strong, clear and positive messages to potential new recruits at professional level **2008 onwards:** Continue to expand NHTG-supported events targeted at young people, through the support of Regional Heritage Skills Action Groups in England and similar partnerships in other home countries **2008 onwards:** Potential building professionals targeted as a high-priority group for all events planning **2008 onwards:** Development of IHBC's 'Honorary Associates' programme **2009 onwards:** Roll-out of Heritage Ambassadors Scheme for young professionals **2011–13:** Repeat research shows improved perception of heritage sector among potential new recruits	**Stakeholders:** ConstructionSkills, NHTG and national heritage agencies with IHBC and other professional bodies

2.5	INCREASE NUMBER OF NEW ENTRANTS **Maximise the student intake for existing higher education courses and support the development of new providers where appropriate**	
Action	**1.** Provide a package of careers information specifically for heritage sector building professionals **2.** Produce an accessible centralised register of higher education providers supporting the heritage sector **3.** Target information packs and events towards parents, career advisers and employment agencies to highlight the potential for careers in the heritage sector to command a rewarding salary **4.** Work with higher education institutions to facilitate greater inclusion of built heritage modules, specialist lectures and seminars directed at undergraduates and postgraduates, so that students have the opportunity to develop their interest in and knowledge of the sector while still in formal education and training **5.** Work with training providers to develop more courses targeted specifically at building professionals involved in designing and writing heritage work specifications and schedules **6.** Provide coordinated guidance on grants, bursaries and awards available for building professionals to support uptake of relevant HE courses	
Performance Measures	**2008:** Undertake full review of current NHTG careers brochure and improve content relating to building professionals **2008:** Scoping exercise of all relevant grants, bursaries and awards available **2008:** Clearly map out current opportunities for progressing in each profession where the discipline has an impact on the historic built environment **2008:** Redesigned NHTG website to include search facility for higher education providers supporting the built heritage sector **2008–9:** Develop and deliver a national programme of lectures by renowned built heritage professionals aimed at raising awareness of the relevance of conservation, restoration, repair and maintenance to the study of the built environment **2010:** Increase to 15 (from 6) the number of conservation courses in the UK fully recognised by the IHBC under its 2005 assessment programme **2011–13:** Repeat research shows increased number of building professionals working in the heritage sector with appropriate skills and knowledge	**Stakeholders:** NHTG and national heritage agencies, existing HE providers, Conservation Course Directors' Forum (CCDF) and professional bodies

2.6	EMPLOYMENT OPPORTUNITIES **Strengthen the sector by ensuring that the best potential new entrants have ready access to information on current vacancies**	
Action	**1.** Explore improving the current arrangement of signposting for vacancies and provide a centralised resource if necessary **2.** Establish career development structure/models for professionals to specialise in built heritage sector work	
Performance Measures	**2008:** Scoping exercise of current sources of information **2008:** Clearly map out current opportunities for progressing in each profession relating to the historic built environment **2011–13:** Repeat research shows decrease in the percentage of companies finding difficulties recruiting into the sector, and an improved perception of the skills and knowledge of building professionals relating to pre-1919 work, from clients and professional bodies	**Stakeholders:** NHTG, national heritage agencies with professional bodies and Urban Design Alliance

2.7	TREND MONITORING **Monitor improvements within the sector**	
Action	**1.** Carry out a repeat of this initial baseline research in approximately 3 to 5 years' time to identify ongoing trends, changes in priorities and any new emerging skills and training issues among professionals in the built heritage sector	
Performance Measures	**2009:** Achieve full buy-in from all relevant professional bodies **2011–13:** Repeat baseline research	**Stakeholders:** NHTG, national heritage agencies and associations, professional bodies

Action Theme 3: Materials Supply Chain

Improvements to the traditional materials supply chain will impact positively on the heritage sector.

3.1	STIMULATE DEMAND **Increase awareness of the need to specify traditional materials on pre-1919 buildings in order to stimulate demand**	
Action	**1.** Increase awareness within planning authorities of the need to specify traditional materials and techniques in order to stimulate demand **2.** Use the planning and listed building consent process to propagate best practice **3.** Support increase in relevant training, education and CPD opportunities for professionals involved in the planning or listing process **4.** Stimulate client demand for traditional building materials in accordance with Action 1.1	
Performance Measures	**2008:** Distribute existing guidance on the use of traditional materials to all local authorities **2008:** Identify baseline figures for the sale of benchmark materials (e.g. lime mortars) and monitor on an annual basis **2008–9:** Support development of guidance literature for property owners and their agents, promoting the importance of using appropriately skilled craftspeople and traditional materials for work on pre-1919 buildings **2009:** Guidance on the use of appropriately skilled craftspeople and traditional materials to be issued with every listed building consent application form **2012:** Guidance on the use of appropriately skilled craftspeople and traditional materials to be issued to all planning permission applicants or their agents for work on pre-1919 buildings, as soon as applications are registered with local authority **2011–13:** Repeat research shows higher percentage use of traditional materials on pre-1919 projects	**Stakeholders:** NHTG, Proskills, Asset Skills and national heritage agencies working with IHBC, local authorities and their conservation specialists

3.2	INCREASE SUPPLY **Enable greater cross-fertilisation of ideas and practices among traditional building and material manufacturing companies to improve standards**	
Action	**1.** Work with Proskills to address the current barriers to the expansion of the traditional materials supply chain, including the development of the requisite skills **2.** Encourage manufacturers/suppliers to self-help by promoting their products and good practice to building professionals as part of CPD training **3.** Promote reintroduction of sustainable, low-environmental impact snatch quarrying where appropriate **4.** Promote key message on importance of using appropriate building materials for conservation, repair, maintenance and restoration to all stakeholders **5.** Consider means to increase competitiveness and output of locally sourced traditional materials (e.g. stone, slate, timber) over foreign imports linked to the sustainability and carbon footprint agenda **6.** Encourage links between relevant professional bodies and industry to facilitate improved knowledge transfer between manufacturing and specifiers	
Performance Measures	**2008 onwards:** propagate and support the work of the Scottish Stone Liaison Group, the English Stone Forum and the Welsh Stone Forum **2009 onwards:** Facilitate regular and dedicated presence of NHTG at key training events delivered by partners, such as IHBC, SSLG and Proskills [see also crossover with 3.1 above]	**Stakeholders:** Proskills, Confederation of British Industry, NHTG and national heritage agencies, SSLG, IHBC

Action Theme 4: Education And Training

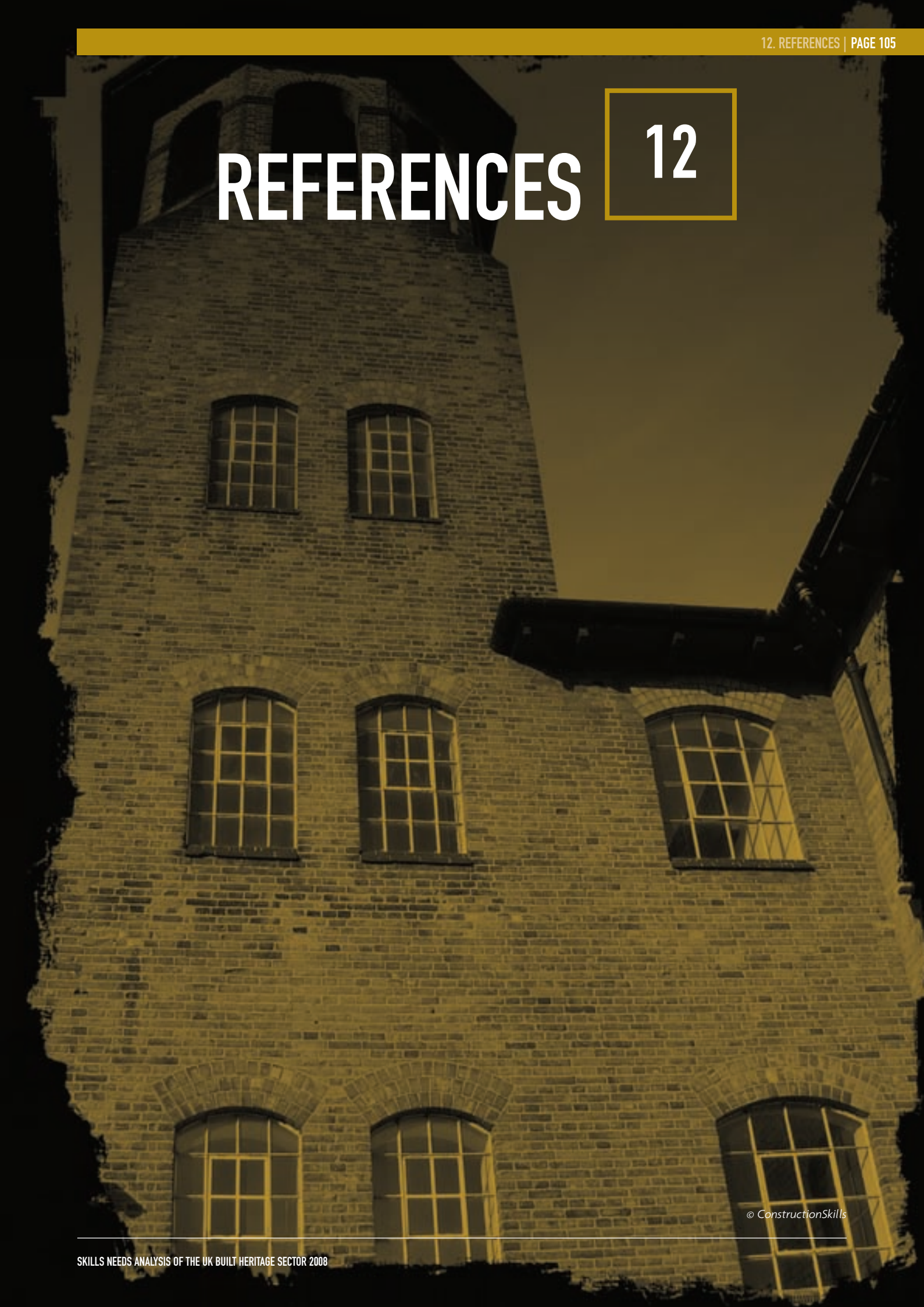
Improvements to the current training and education offers available to building professionals are needed to ensure wider uptake.

4.1	HIGHER EDUCATION **Strengthen the traditional building and conservation components of professional courses and higher education study curricula**	
Action	**1.** Work with higher education institutions to facilitate greater inclusion of built heritage modules, specialist lectures and seminars directed at undergraduates and postgraduates, so that students have the opportunity to develop their interest in and knowledge of the sector while still in formal education and training **2.** Deliver a dedicated CPD programme aimed at HE lecturers of built environment degrees, to reinvigorate interest in teaching conservation as part of mainstream built environment degree courses **3.** Work with providers to develop more courses targeted specifically at building professionals involved in designing and writing heritage work specifications and schedules **4.** Support the development of Foundation Degrees dedicated to the historic built environment **5.** Identify and promulgate teaching and training priorities, to ensure that built heritage education and training is appropriate to the workplace **6.** Expand NHTG mentoring programme to support delivery of built heritage education within mainstream built environment degrees	
Performance Measures	**2008:** Through the English Regional Heritage Skills Action Groups and similar partnerships in other home countries, identify and establish contact with mainstream built environment higher education providers where the existing teaching environment can be augmented with specialist built heritage teaching and training **2008–9:** Develop and deliver a national programme of lectures by renowned built heritage professionals aimed at raising awareness of the relevance of conservation, restoration, repair and maintenance to the study of the built environment **2009:** Scoping study to identify teaching and training priorities **2009:** Identified teaching and training priorities promulgated to existing and potential education providers **2010:** Deliver bespoke pilot CPD programme for HE lecturers **2010–12:** Embedment of identified teaching and training priorities within existing HE provision **2011–13:** Repeat research shows increased demand for undergraduate and postgraduate courses relevant to the built heritage sector	**Stakeholders:** NHTG, national heritage agencies (including HELM in EH) and IHBC, with professional bodies and professional link bodies (such as Urban Design Alliance), FE colleges and HE institutions (in particular the CCDF) and student societies

4.2	UNDERSTANDING BUILDING CRAFT SKILLS **Strengthen understanding among the professions of traditional building craft skills and their application on site**	
Action	**1.** Encourage and support the development and delivery of training models geared towards on-site training, such as the National Skills Academy for Construction (NSAfC), to increase flexibility and relevance of training options for building professionals **2.** Work with higher education institutions to facilitate more opportunities for practical training as part of existing HE programmes, including placements on construction projects and craft demonstrations by NHTG mentors **3.** Fully engage the emerging National Heritage Training Academy framework with further and higher education institutions to maximise opportunities **4.** Engage the relevant higher education institutions, professional bodies and training representatives such as the CCDF with regional and home country initiatives relating to the development of training for the heritage sector **5.** Through the English Regional Heritage Skills Action Groups, the Scottish Conservation Forum in Training and Education (SCFTE) and similar partnerships in the other home countries, encourage liaison with professional bodies to increase access to and numbers of live-site placement opportunities for students of the historic built environment **6.** Establish greater parity of esteem between vocational and academic training and education routes for the benefit of the sector as a whole	
Performance Measures	**2008:** Identify all existing education providers for professionals and current placement provision **2008:** Involvement of building professionals in heritage skills taster days and demonstrations **2009:** Increase by 20% the live-site placements delivered across the UK **2010:** Heritage sector and education providers to fully engage with the National Skills Academy for Construction as a primary training delivery route **2011–13:** Repeat research shows increased understanding of traditional building skills and materials among new recruits to the professional sector	**Stakeholders:** NHTG, ConstructionSkills, Asset Skills, National Heritage Training Academy, SCFTE and national heritage agencies with professional bodies, HE and FE bodies and CCDF

4.3	LIFELONG LEARNING AND CPD **Improve the knowledge base of professionals already working in the sector**	
Action	**1.** Improve awareness among building professionals of the role of professional bodies in accessing, promoting, encouraging and directing CPD for traditional buildings and historic environment conservation specialists, in particular regarding the selection of appropriate CPD courses and additional qualifications and training from the full range available, emphasising the importance to employers of the necessity for such training and supporting them in implementing effective workplace training and development strategies **2.** Support the development of training programmes to address specific gaps in current training available, such as CPD courses for heritage project managers and THI officers **3.** Work with professional bodies to increase the number of CPD accredited short courses available to professionals working in the built heritage sector **4.** Explore and promote as necessary European programmes for exchanges of personnel and experts	
Performance Measures	**2008:** Scoping exercise on current range of accredited CPD of relevance to the built heritage sector **2008:** Confirmation with partners of critical areas of specific training need and agreement of strategy to address **2008:** Launch training provider search facility as part of redesigned NHTG website **2008 onwards:** Develop links with other home countries, Republic of Ireland and European partners on traditional building skills training **2008 onwards:** Implement generic self-assessment CPD planning resources for specialists in historic environment conservation **2009 onwards:** Survey the CPD needs of specialists based on review of CPD practice and returns **2011:** 25% increase in range of accredited CPD of relevance to the built heritage sector, from 2008 figures	**Stakeholders:** NHTG and national heritage agencies and professional bodies, with Heritage Lottery Fund, CCDF and professional bodies (e.g. IHBC, RIBA, RIAS, RSAW, RSUA, CIAT, RICS, RTPI, ICE, IStructE, CIOB, CABE, ACE, ABE, IMBM)

REFERENCES 12



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references

1. NHTG, Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in England, 2005, p. 10; Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in Scotland, 2007, p. 11; NHTG, Traditional Building Craft Skills: Skills Needs Analysis of the Built Heritage Sector in Wales, 2007, p. 10.

2. www.constructionskills.net/news/skillsupdate/20070724-heritage.asp [last accessed 19.03.08]

3. Based on estimates produced through NHTG Traditional Building Craft Skills reports for England (2005), Scotland (2007) and Wales (2007)

4. Listing in Scotland is compiled and maintained by Historic Scotland on behalf of the Secretary of State in accordance with the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. Alterations to listed buildings require listed building consent from the local planning authority in addition, if necessary, to planning permission

5. English Heritage, Heritage Counts, 2007; EHSNI

6. Jon Wallsgrove, Age Energy Research: A Study of the Energy Use of Buildings Relative to Their Age, HMCS Estates, 2007

7. DCMS and Welsh Assembly Government, Heritage Protection for the 21st Century, 2007

8. ConstructionSkills, Skills Needs Analysis for the Construction Industry, 2004, Executive Summary, pp. 6–7; Report, p. 2.

9. ConstructionSkills, Skills Needs Analysis, Report, p. 17

10. CIC, Built Environment Professional Skills Survey, 2007, p. 8

11. Ibid., p. 12

12. Robert Bilbrough and James Moir, 'Heritage Building Crafts', in Crafts in the English Countryside: Towards a Future, ed. E.J.T. Collins, 2005, p. 270

13. Evidence to the Culture Media and Sport Select Committee's Inquiry into Protecting and Preserving the Heritage, House of Commons HC 912-II 2006, Ev 330 para 4b, quoted in John Preston, 'The Context for Skills, Education and Training', Architectural Conservation Issues and Developments, ed. Vincent Shacklock, special edition of The Journal of Architectural Conservation, 12/3 (November 2006), pp. 35–48

14. English Heritage, Power of Place, December 2000, p. 21

15. HLF, Sustaining Our Living Heritage: Skills Training for the Heritage Sector, 2000, p. 7

16. www.uahs.org.uk [last accessed 20.03.08]

17. www.cotac.org.uk [last accessed 20.03.08]

18. CIC, Survey of UK Construction Professional Services 2005/06: Executive Summary, 2006

19. Ibid., p. 23

20. LFS data averaged over four quarters: Summer 2006, Autumn 2006, Spring 2007 and Winter 2007

21. Bilbrough and Moir, 'Heritage Building Crafts', p. 270. See also more recently: Scottish Stone Liaison Group (SSLG), Safeguarding Glasgow's Stone Built Heritage: Skills and Materials Requirements, 2006, and Historic Environment Advisory Council for Scotland (HEACS), Report and Recommendations on the Availability of Adequate and Appropriate Traditional Materials and Professional and Craft Skills to Meet the Needs of the Built Heritage, 2006 (ministerial responses available at www.heacs.org.uk [last accessed 20.03.08])

22. This can be downloaded from www.rics.org/Practiceareas/Builtenvironment/Maintenanceandrefurbishment/Conservation/heritageworks.htm [last accessed 20.03.08]

23. NHTG, Traditional Building Craft Skills...Scotland, 2007, p. 84

24. www.ihbc.org.uk/membership_downloads.htm [last accessed 28.03.08]

25. www.rtpi.org.uk/download/768/Conservation-of-the-Historic-Environment.pdf and www.planningmatters.co.uk/ [last accessed 20.03.08]

26. www.ice.org.uk/downloads/Principles%20of%20Operation.pdf [last accessed 20.03.08]

27. www.understandingconservation.org [last accessed 20.03.08]

28. RIBA AABC Register, www.aabc-register.co.uk/ [last accessed 19.03.08]

29. www.rias.org.uk/content/default.asp?page=s1 [last accessed 20.03.08]

30. www.rics.org/Networks/Forums/Buildingconservation/accreditedlist.htm [last accessed 20.03.08]

31. www.ice.org.uk/downloads/The%20Register%20080108.doc [last accessed 20.03.08]

32. www.hlf.org.uk/NR/rdonlyres/27463A61-CA0D-40CB-9B4E-0D59EBF713E2/4115/ReviewofHLFEHFundingtoPlacesofWorship199620059Dec0.pdf [last accessed 20.03.08]

33. Bilbrough and Moir, 'Heritage Building Crafts', p. 238

34. SSLG, Safeguarding Glasgow's Stone Built Heritage; HEACS, Report and Recommendations; NHTG, Traditional Building Crafts Skills...Scotland, 2007.

35. The Scottish Government, NPPG 18, Planning and the Historic Environment, www.scotland.gov.uk/Publications/1999/04/nppg18 [last accessed 20.03.08]

36. www.english-heritage.org.uk/server/show/nav.1046 [last accessed 20.03.08]. A full list of the Technical Advice Notes available through Historic Scotland can be found here: www.historic-scotland.gov.uk/index/learning/publications.htm [last accessed 20.03.08]

37. CIC, Built Environment Professional Skills Survey 2007, p. 8

38. Ibid., p. 9

39. For further information see: www.icomos.org/docs/guidelines_for_education.html [last accessed 03.04.08]

40. For further details on the experiences of contractors please refer to NHTG Traditional Building Craft Skills reports on England (2005 and 2008), Scotland and Wales (2007) and Northern Ireland (forthcoming, 2008)

41. NHTG, Traditional Building Craft Skills... Scotland, 2007

42. www.ucas.com

43. DIUS, Advanced Notice of Higher Education Funding Changes in England – Second Degree Students, www.dius.gov.uk/publications/hefunding.html [last accessed 25.03.08]

44. English Heritage, Heritage Counts, 2007

45. Historic Scotland, Historic Environment Audit, 2007

46. CADW, The Welsh Historic Environment: Position Statement 2006

47. NHTG, Traditional Building Craft Skills...Wales, 2007

48. Environment and Heritage Service, www.ehsni.gov.uk/built/monuments/owning-a-scheduled-monument.htm [last accessed 25.03.08]

49. Parks and Gardens UK: United Kingdom Database of Historic Parks and Gardens, www.parksandgardens.ac.uk [last accessed 25.03.08]

appendix

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES COVERED BY CONSTRUCTIONSKILLS

SIC 45	**CONSTRUCTION**
SIC 45.1	**Site Preparation**
SIC 45.11	Demolition and wrecking of buildings; earth moving
SIC 45.12	Test drilling and boring
SIC 45.2	**Building of complete construction or parts; civil engineering**
SIC 45.21/1	Construction of commercial buildings
SIC 45.21/2	Construction of domestic buildings
SIC 45.21/3	Construction of civil engineering constructions
SIC 45.22	Erection of roof covering and frames
SIC 45.23	Construction of motorways, roads, railways, airfields and sport facilities
SIC 45.24	Construction of water projects
SIC 45.25	Other construction work involving special trades
SIC 45.3	**Building installation**
SIC 45.32	Insulation work activities
SIC 45.34	Other building installation
SIC 45.4	**Building completion**
SIC 45.41	Plastering
SIC 45.42	Joinery installation
SIC 45.43	Floor and wall covering
SIC 45.44	Painting and glazing
SIC 45.45	Other building completion
SIC 45.5	**Renting of construction or demolition equipment with operator**
SIC 74	**OTHER BUSINESS ACTIVITIES**
SIC 74.2	**Architectural and engineering activities and related technical consultancy**
SIC 74.20/1	Architectural activities
SIC 74.20/2	Urban planning and landscape architectural activities
SIC 74.20/3	Quantity surveying activities
SIC 74.20/4	Engineering consultative and design activities
SIC 74.20/5	Engineering design activities for industrial process and production
SIC 74.20/6	Engineering related scientific and technical consulting activities
SIC 74.20/9	Other engineering activities

Source: UK Standard Industrial Classification of Economic Activities, 2003, Office for National Statistics.

Note: Asset Skills (the SSC for Property and Facilities Management) has a peripheral interest in SIC 74.2 Architectural and engineering activities and related technical consultancy.

ConstructionSkills shares an interest in SIC 45.31 Installation of electrical wiring and fittings and SIC 45.33 Plumbing with SummitSkills (the SSC for the Mechanical and Electrotechnical Services), SIC 14.1 Quarrying of stone, SIC 20.3 Manufacture of builders' carpentry and joinery, SIC 26 Manufacture of other non-metallic mineral products, SIC 28.11 Manufacture of metal structures and parts of structures, and SIC 28.12 Manufacture of builders' carpentry and joinery metal with Proskills (Sector Skills Council for the coatings, extractives, glass, building products and printing industries)

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www.nhtg.org.uk

www.constructionskills.net/research

www.english-heritage.org.uk

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