Skills Research in the Historic Environment Sector

Output 2: Narrative Report

Final Report – July 2013

Pye Tait Consulting
Royal House, 110 Station Parade, Harrogate, HG1 1EP

Tel: 01423-509433 Fax: 01423-509502
Email: info@pyetait.com Web: www.pyetait.com

Cert No: 5120

Contents

1. Introduction

1.1 Background and Context

Heritage Counts is an annual survey of the state of England's historic environment and is produced by English Heritage on behalf of the Historic Environment Forum (HEF).

Each year Heritage Counts explores the social and economic role of the historic environment and focuses on a different theme; the theme of Heritage Counts 2013 is heritage and skills.

A number of organisations have conducted research into skills in the historic environment; however, the existing research is somewhat piecemeal and needs to be brought together into a coherent narrative. To inform Heritage Counts 2013, English Heritage together with the Heritage Lottery Fund (HLF) require the existing body of recent literature on this topic to be drawn together, including a narrative outlining current skills needs and gaps facing the sector, the implications for the historic environment, as well as an understanding of actions currently underway in support of the skills agenda.

In agreement with English Heritage, the scope of this research project has been limited to the built heritage sector, including archaeology and historic gardens.

The results of this project will be summarised in the Heritage Counts 2013 report, with the full reports available on the Heritage Counts' website.

1.2 Aims and Objectives

The key overall aims of this project are to provide a concise and coherent:

a) overview of research into skills issues in the built heritage sector conducted over the last five years; and

b) analysis of the implications of this research for the sector.

The specific objectives of the research are to provide two key outputs:

- **OUTPUT 1 - Literature Review:** A summary of all relevant research reports, outlining research methods used, key findings, recommendations and outcomes;

- **OUTPUT 2 - Narrative Report:** A coherent overview and critical synthesis of the literature

that identifies: the key skills issues for the built heritage sector; how these issues have evolved over the past five years; the effectiveness of attempted interventions; and the formulation of recommendations for addressing these issues in the future.

This document forms OUTPUT 2 – Narrative Report

1.3 Research Methodology

The first task was to develop a full list of potential sources to inform the literature review (Output 1 report), drawing on the following sources:

- Heritage Lottery Fund (HLF) report 'Further information on the heritage workforce' (dated November 2012) containing a list of recent literature;
- English Heritage's list of Historic Environment Sector Labour Market Intelligence and Skills Gap Studies;
- Searches using keyword "heritage" and "heritage AND skills" using the Culture and Sport Evidence Programme (CASE) database;
- Searches through bibliographies of existing reports.

An initial high-level review of all sources was performed in order to exclude those not relevant to historic environment skills in England. The remaining shortlisted sources were then interrogated and assigned scores using an assessment framework[1] based on the following criteria:

- Relevance;
- Robustness;
- Comprehensiveness;
- Influence.

This narrative report is based on a review of all sources identified as being within in scope of the research.

[1] The assessment framework is set out in full in the literature review report – output 1.

2. Approaches to Defining and Profiling the Historic Environment Workforce

2.1 Overview

The economic and cultural importance of the heritage sector is now well-recognised both within the major heritage agencies and within government as a whole[2]. Playing a crucial role in attracting both domestic and international tourism, the historic environment serves to generate income and provide employment to a substantial proportion of the workforce[3]. It is also recognised that it plays a fundamental role in creating social cohesion and fostering a sense of belonging and identity both locally and nationally.

This rich heritage can only be sustained with a large and skilled workforce. In addition to direct employment at heritage sites and museums, it should be remembered that there is also a diverse heritage of historic buildings, sites and designed landscapes that needs to be conserved, repaired and maintained, interpreted and understood. This extends beyond the core of designated heritage assets to include the 5-6 million public, commercial and domestic buildings that were built using traditional rather than modern construction methods (for the purposes of research and analysis, usually defined as those that predate 1919).

There have been longstanding concerns that the current workforce lacks the necessary skills to manage and conserve the historic environment. According to *The Power of Place*, published by English Heritage in 2000, there was a 'serious shortage of traditional craft skills in many areas of the country'[4]; and in the same year, the Heritage Lottery Fund's report, *Sustaining our Living Heritage*, concluded that the impending loss of these skills was so serious that 'There needs to be a radical shift in attitudes to training and development in the heritage sector'[5] .

Since the early 2000s there has been a growing body of 'grey research' commissioned by English Heritage, the Heritage Lottery Fund, the National Heritage Training Group and other heritage organisations. These have attempted to ascertain the nature of these skills issues, both by defining which skills are most in need and also by quantifying the supply and demand for these skills. Considerable investment in training and skills has followed as a result of this research.

The following discussion aims to give a coordinated account of this research and subsequent investment in training and skills. It begins by providing a brief overview of available data on the overall size and profile of the historic environment workforce. It then goes on to consider skills issues relating to specific sub-sectors of the historic environment in section 3. The discussion gives

[2] HM Government (2010) *The Government's Statement on the Historic Environment for England 2010*
[3] Visit Britain (2010) *Investing in success: heritage and the UK tourism economy*.
[4] English Heritage (December 2000) *Power of Place,* p.21.
[5] Heritage Lottery Fund (2000) *Sustaining our Living Heritage: Skills Training for the Heritage Sector* (2000), p.9.

special attention to evidence of 'market failures'– defined here broadly as the factors that have given rise to skills issues. Consideration is then given to whether attempts to address those failures have been implemented and, if so, how successful they have been in addressing these failures. Finally, the report makes recommendations on areas that would benefit from additional research.

2.2 Sector definition, size and workforce profile

Defining skills issues in the historic environment workforce is challenging for a number of reasons. At the most basic level, there is a lack of clearly defined consensus about the definition and profile of the historic environment sector. According to English Heritage, 'There is no single definition on what constitutes the heritage sector'[6]. In practice a number of explicit and implicit definitions are used.

Another fundamental difficulty encountered by researchers is being able to obtain robust data on the market size, employment levels, and skills levels among those who work within the historic environment.

The main official bodies charged with defining and addressing sectoral skills issues in the UK workforce are the Sector Skills Councils (SSCs). The heritage sector officially falls within the footprint of Creative and Cultural Skills, the Sector Skills Council for the 'UK's creative and cultural industries, encompassing craft, cultural heritage, design, literature, music, performing arts and visual arts'[7]. However, there is also clear crossover between the historic environment sector and a number of other Sector Skills Councils. The most relevant of those are:

- The Construction Industry Training Board (CITB) – the SSC for the construction sector, since many construction employees work on historic and traditional buildings;
- SummitSkills, the SSC for building services engineering, a significant segment of the construction sector that includes many of those working on retrofitting traditional buildings, for example on improving thermal efficiency;
- ProSkills, the SSC for the process and manufacturing sectors, which includes the supply of building materials (including traditional materials such as building stones and other quarry products, bricks and tiles, lime plasters and mortars);
- LANTRA, the SSC for the agricultural and horticultural sectors, which include England's numerous historic designed landscapes and botanic gardens;
- SEMTA, the SSC for science, engineering and manufacturing technologies.

[6] http://www.english-heritage.org.uk/professional/research/social-and-economic-research/heritage-labour-market/ last accessed 07/05/2013.
[7] http://ccskills.org.uk/about

Creative and Cultural Skills defines 'cultural heritage' as:

- **Archaeology; Museums and Archives** (this appears to correspond to SIC[8] codes 91.01 and 91.02);
- **Built heritage** (this appears to correspond to SIC code 91.03 'operation of historical sites and buildings and similar visitor attractions' and SIC code 94.44 'related membership organisations')
- **Heritage Crafts**, which have recently been defined for analytical purposes as 'Practices which employ manual dexterity and skill and an understanding of traditional materials, designs and techniques in order to make, repair, restore or conserve buildings, other structures, modes of transport, or more general [sic], portable objects'[9]

Using these definitions and data from the Annual Population Survey produced by the Office for National Statistics (ONS), Creative and Cultural Skills has published estimates of the cultural heritage sector workforce. The latest statistics, reported in 2012, stated that 46,620 people were employed in the cultural heritage sector in 2010/11, and estimated their average hourly wage at £8.27. [10]

Sub-Sector	%[11]	Equivalent number of employees
Museums and Archives	68.7%	32,030
Archaeology	16.6%	7,730
Built Heritage	14.3%	6,650
Related Membership Organisations	0.5%	210

The strength of these statistics is that they are based on the most robust data currently available – the large scale official surveys conducted by the ONS such as the Labour Force Survey (LFS), Business Register and Employment Survey, and Annual Business Survey (ABS). Their main limitation for the present analysis is that they are not restricted to the historic environment sector alone, but include the full range of museums and archives employees, who form the overwhelming majority of the cultural heritage workforce but only some of whom are likely to be directly concerned with the historic environment. On the basis that the definition of 'built heritage' includes only those employees in SIC 91.03 'operation of historical sites and buildings' and SIC 94.44 'related membership organisations', it seems that the built heritage workforce is very narrowly defined and focuses primarily on those employed in public-facing visitor attractions. The statistics also omit certain important employment areas that are directly concerned with the historic environment, such as botanic gardens and designed landscapes, and, perhaps most notably, the traditional building construction and heritage craft workforces.

[8] Standard Industrial Classification (SIC) – subject to further discussion later in this section.
[9] Creative and Cultural Skills (2012) *Mapping Heritage Craft*, p. 6.
[10] Creative and Cultural Skills (2012) *The Creative and Cultural Industries: Cultural Heritage 2012-13. A workbook.*
[11] Percentages do not sum to 100% due to rounding.

Another significant challenge associated with compiling an overview of the historic environment using ONS-produced statistics (most large-scale skills research use LFS and ABS data) is that such surveys are generally based – and are invariably reported – using standardised classifications of business activities (the Standard Industrial Classification (SIC) system) and using defined occupational categories (the Standard Occupational Classification (SOC) system).

The SIC and SOC systems present considerable difficulties because even their most detailed, disaggregated categories do not correspond directly to a definable heritage sector. Even where they do, this does not provide an exhaustive representation of the workforce directly engaged in working on heritage assets.

The heritage craft workforce presents particular issues in terms of definition and analysis, and has therefore recently been subjected to separate research for Creative & Cultural Skills. The conclusion of that research suggested that a very substantial workforce is employed by the heritage craft sector. Some 209,000 people were reported as being employed by heritage craft businesses, of which nearly 170,000 'use Heritage Craft skills and knowledge for the majority of their time'[12]. The sector was estimated to generate turnover of approximately £10.8 billion, of which £5.5 billion was directly attributed to the Heritage Craft elements of the businesses. However, in a similar fashion to Creative and Cultural Skills' heritage sector workforce statistics, the research does not separately identify that part of the Heritage Craft sector that is directly concerned with the historic environment.

Similar problems apply to the wider construction workforce, much of which is likely to be engaged in work on the historic environment. For example, the research undertaken by the NHTG on *Traditional Building Craft Skills* in 2008 established that a significant proportion of general construction contractors, and therefore of the general construction workforce, were engaged in work on traditional buildings, and these workers would be reported in ONS statistics only as core construction employees. The research therefore sought to estimate the proportion of the total value of work undertaken by the construction sector that was concerned with traditional (pre-1919) buildings[13]. Again, the same issues apply to construction professional services, where in addition to those members of the workforce with a specific concern with heritage and conservation work a large number of other professionals can be expected to undertake work on historic and traditional buildings[14].

Limitations can also be found with the representativeness of data, particularly in business surveys. The chief problem with business surveys is that they can under-represent small and micro-businesses and the self-employed. For example, the Annual Business Survey is based on the Inter-Departmental Business Register (IDBR), which is a unified list of all businesses registered a) for PAYE tax b) for VAT c) at Companies House. This is regarded as an exhaustive enumeration of larger companies in the UK, but excludes those small businesses not VAT-registered, or paying employee taxes through PAYE, or registered as limited companies or partnerships.

[12] Creative and Cultural Skills (2012) *Mapping Heritage Craft*, p.7.
[13] NHTG (2008) *Traditional Building Craft Skills. Reassessing the Need, Addressing the Issues*, pp. 40-44.
[14] NHTG (2008) *Traditional Building Craft Skills. Reassessing the Need, Addressing the Issues*, pp. 40-44.

Almost all research on the historic environment sector suggests that it is characterised by relatively high levels of self-employment and small or micro-businesses, meaning that relying on research methods that do not cover these groups is likely to lead to biases in the data. As English Heritage reports, "the heritage sector includes many small businesses which are not picked up by statistics and those people that work in other sectors but often work on heritage projects (such as those in the construction trade)"[15].

In English Heritage's *Heritage Counts* 2012 'Caring and Sharing' datasheet, a wider variety of sources are used. Workforce statistics are separately reported for the following employment areas, largely on the basis of data in grey literature[16]:

- Heritage tourism employment;
- Local authority historic environment staff;
- Membership of the Institute for Historic Buildings Conservation (IHBC);
- Archaeology employment;
- Traditional building skills employment;
- Voluntary heritage sector employment.

Sub-Sector	Employees	Date	Source Cited
Heritage tourism (1)	10,400	2010	Business Register and Employment Survey
Heritage tourism (2)	14,600 (permanent) 6,000 (seasonal)	2009	Historic Houses Association
LA Historic Environment Staff	909	2012	Fourth Report on Local Authority Staff Resources[17]
IHBC Members	1,821	2012	IHBC
Archaeology	6,012	2012	Aitchison, State of the Archaeological Market Report, April 2012
Heritage Craft Skills	108,800	2007	NHTG, Traditional Building Craft Skills in England
Employment in the Heritage Voluntary Sector (Heritage Alliance Members only)	11,400 (total headcount inc. full and part-time, permanent, seasonal and temporary)	2007/08	Heritage Link

[15] http://www.english-heritage.org.uk/professional/research/social-and-economic-research/heritage-labour-market/ last accessed 07/05/2013.
[16] http://hc.english-heritage.org.uk/content/pub/2012/caring-sharing-2012.xls downloaded 08/05/2012.
[17] Incorrectly cited in the source document as the Second Report on Local Authority Staff Resources, which does not include figures for 2012.

The strength of these statistics is that they are more broad-ranging than those used in the Creative and Cultural Skills analysis. The limitations are that they are: a) based on a wide range of sources produced at different dates and using different methodologies[18]; and b) that there is likely to be double-counting, for example, many Local Authority historic environment staff are likely to be members of IHBC. There are also some apparent inconsistencies in some of the statistics. In Heritage Tourism, there is a notable disparity between the workforce figures given by the Historic Houses Association (HHA), which are larger than those given for the sector as a whole derived from the official Business Register and Employment Survey even though the HHA forms only a small part of the heritage tourism sector as a whole. It also omits estimations on the substantial volunteer workforce – it is estimated that something in the region of 470,000 (1.1% of the adult population) 'regularly volunteer' in the historic environment – with the National Trust alone reporting 66,018 volunteers in 2011/12[19].

For all these reasons, it is not possible to aggregate these figures to give an accurate overview of employment or the wider workforce in the historic environment sector. Instead, they clearly indicate the need for more systematic and sophisticated research into the historic environment sector and, indeed, the wider cultural heritage sector.

[18] See below for detailed discussions of some of the source documents cited.
[19] Heritage Count, 'Using and Benefiting', http://hc.english-heritage.org.uk/content/pub/2012/using-benefiting-2012.xls

In addition to the occupational areas included above, a combination of search methods has established that there are a wide range of other occupational areas and subsectors covered by skills research relevant to the historic environment. A more comprehensive listing would therefore include fields such as:

- Archaeology;
- Buildings history;
- Botanical and horticultural skills for historic designed landscapes and botanic gardens;
- Conservation services (concerned with historic buildings, sites and designed landscapes);
- Curatorial services (concerned with historic buildings, sites and designed landscapes);
- Historic environment management and administration;
- Manufacture, processing and supply of traditional building materials;
- Traditional building professional skills;
- Traditional building craft skills;
- Planning services – including conservation officers, other local planning officers;
- Visitor services.

There may also be the need to consider skills issues in the field of scientific and engineering research into traditional buildings and traditional building materials. There are numerous areas where current knowledge of the performance of traditional building materials remains weak[20].

There are, therefore, a variety of data and definitional issues that currently make it extremely difficult to develop a robust overview of the workforce, skills and employment profile of the historic environment sector. These can be summarised as follows:

- There is no standard or agreed definition of the historic environment sector or even of the broader heritage sector;

- Even if such a definition were available, there are problems mapping sub-sectors of the historic environment to the Standard Industrial Classification (SIC) and Standard Occupational Classification (SOC) codes that are typically used to organise national statistical data;

- Even if this mapping could be accomplished, the high level statistics are particularly weak in the areas of small- and micro-businesses and self-employment, which are known to represent an important proportion of the historic environment workforce;

- Detailed research offers the best available data, but this is not collected on a consistent basis – making it difficult to aggregate findings and make robust comparisons about the relative size, workforce profile and skill levels of the various historic environment subsectors.

[20] See research and guidance issued by the Sustainable Traditional Buildings Alliance, which highlights areas of uncertainty. Available from http://www.stbauk.org/what-we-do/index

Until such challenges can be addressed, we must therefore turn to the more detailed literature on the specific subsectors of the historic environment workforce in order to understand the skills profile and issues. These questions are explored in the following section, which considers in turn each of the main subsectors relevant to the historic environment where substantive research has been completed.

3. Skills Issues in the Historic Environment Sector

3.1 Overview

While it is difficult to gain a clear understanding of the overall size and skill levels of the historic environment workforce, there is now a considerable amount of detailed research on skills issues in particular subsectors or occupational areas. There is also some limited research on skills needs that affect the historic environment as a whole. The following sections provide an overview of this research, much of which takes as its primary focus either archaeology or traditional building skills. These areas are therefore given extended consideration. There is then a brief outline of the major issues identified in other parts of the historic environment workforce.

3.2 Archaeology

Archaeology has been subject to extensive analysis of supply and demand, educational and skills levels, workforce profile and skills needs. This research includes a series of reports authored or led by Kenneth Aitchison of Landward Research Ltd for a range of sector clients; large-scale survey studies on archaeology graduates sponsored by the Higher Education Academy; and other reports sponsored by sector professional and employer bodies such as the Institute for Archaeologists and the Council for British Archaeology. Of the twenty-nine reports identified for coverage in the literature review that accompanies this narrative report, seven are entirely concerned with archaeology and others are indirectly concerned with it.

These reports suggest that professional archaeology operates across three distinct markets:

- National and local government archaeological services;
- Universities and other educational establishments;
- Private sector provision of archaeological services.

The evidence shows a long-term transition in the profile of the archaeological profession since the Second World War to the present. In the 1950s and 1960s, archaeology was dominated by amateurs and enthusiasts on the one hand, and provision of public archaeology services through museums, local authorities and national agencies (such as the Royal Commission on Historical Monuments) on the other[21].

The provision of Local Authority archaeology seems to have increased from the 1970s onwards, but the real driver for change came in 1991, with the publication of the government's Planning Policy

[21] Aitchison (2012) *Breaking New Ground*.

Guidance 16 (PPG 16). This made it necessary for developers seeking planning permission to develop archaeologically sensitive sites to conduct appropriate exploration and documentation of those sites at their own expense, as part of the planning and development process. This led to an explosion in the market for professional archaeology services. The result was a sustained increase in archaeology employment, from only a few hundred to around 6800 in 2007[22]. The total value of the market is difficult to estimate, but the organisations that have responded to the regular *State of the Archaeological Market* surveys have collectively reported a total turnover approaching £40 million per year, and this only relates to 21 out of an estimated total of around 110 private sector archaeological organisations (although these are likely to include most of the largest enterprises)[23].

The broad evidence suggests that in spite of this substantial increase in demand for archaeological services, the supply of basic archaeology skills still outweighs demand. This is largely due to the large numbers of students who graduate from archaeology courses in the higher education sector every year – currently around:

- 920 graduating from humanities based undergraduate archaeology degrees;
- 720 graduating from humanities based graduate archaeology degrees;
- A proportion of the 1940 graduating from science-based archaeology & forensic science area undergraduate degrees;
- A proportion of the 130 graduating from science-based archaeology & forensic science area graduate degrees[24].

This would suggest that every year English universities produce something in the region of 2-3,000 archaeology graduates. Survey evidence suggests that many of these graduates are actively seeking professional careers in the field of archaeology, with 57% of respondents to a major survey of archaeology first degree graduates reporting that they finished their degrees with the intention of pursuing a career as an archaeologist[25]. This would suggest that something in the region of 1,000 or more new graduates are seeking entry to an employment sector which is estimated to employ only around 6-8,000 people in total and which generally advertises for around 300 positions a year[26].

With such high levels of supply to what is a very small employment area it is unsurprising to find that archaeology graduates report that recruitment into archaeology occupations is highly competitive while working conditions and wages are consistently reported as being poor, with salaries not only lagging behind other forms of graduate employment but behind average salaries for all employees. For example, at the time of Aitchison's major 2007-8 research project, *Profiling the Profession*, the average full-time archaeological salary was found to be £23,310 per annum, at a time when the UK

[22] Aitchison (2008) *Profiling the Profession* p. 41.
[23] Atichison (2012) *State of the Archaeological Market*, p. 14; for the total number of organisation, see Aitchison (2008) p. 35.
[24] HESA (2012)Table 16 - HE qualifications obtained by subject of study(#1), level of qualification and class of first degree 2011/12, http://www.hesa.ac.uk/dox/dataTables/studentsAndQualifiers/download/qualsub1112.xls, downloaded 08/05/2012.
[25] Jackson and Sinclair (2009)
[26] Aitchison (2008) *Profiling the Profession.*

average full-time wage was £29,999.

It appears that substantial fieldwork experience during a degree course provides a significant recruitment advantage and also offers an insight into the realities of archaeological employment, with many graduates reporting that if choosing their degree course again they would want to take those courses which develop fieldwork skills[27]. In addition, a number of graduates suggested that they had received insufficient or even misleading information about the likelihood of securing paid employment in archaeology after graduation[28].

The leading professional associations for archaeology – the Institute for Archaeology (IfA), the Federation of Archaeological Managers and Employers (FAME) and the Council for British Archaeology (CBA) – have attempted to confront the issue of wages by first encouraging and increasingly requiring member employers to pay recommended minimum wage rates for archaeologists working at specific levels of professional responsibility. Even these, however, remain substantially below wage rates for comparable graduate employment, and it is recognised that straightforward issues of commercial competitiveness mean that it will not be possible to increase wages significantly beyond their natural market rate.

This reflects the structure of the market, which is driven by developers seeking to discharge their responsibilities within the planning system at the lowest possible cost. This inevitably tends to prioritise cost over other variables and consequently reduces profit margins, often to below 5% of turnover even in large outfits[29]. In this context, wages will naturally tend to be driven down in order to minimise the overheads of archaeological contractors.

There is *prima facie* evidence of market failure in the provision of archaeology skills for initial entry, with the combination of a broadly demand-led education system and 'information asymmetries' between applicants to undergraduate courses, their teachers and sector employers, leading to a considerable oversupply of skills. This in turn leads to suppression of wages to levels well below other graduate occupations requiring a similar range and depth of specialised skills and knowledge, and associated attempts to remedy the consequences of oversupply by introducing a voluntary sector-wide recommended wage structure.

However, there is also evidence that in spite of this general position of oversupply, there are some skills gaps within the current workforce and some difficulty maintaining levels of training and CPD to address them. Kenneth Aitchison's comprehensive 2008 report identified issues with:

- Conducting and contributing to surveys of historic buildings;
- Conducting and contributing to geophysical survey;
- Desk-based research and assessment;

[27] Jackson and Sinclair (2009) *Archaeology Graduates of the Millennium – A Survey of the Career Histories of Graduates*.
[28] Jackson and Sinclair (2009) *Archaeology Graduates of the Millennium – A Survey of the Career Histories of Graduates*.
[29] Aitchison (2012) Breaking New Ground: How Professional Archaeology Works

- Conservation of artefacts or ecofacts, artefact research and ecofact research.

Information technology and report writing were also identified as areas where there were potential non-archaeological skills issues[30].

Within mainstream commercial archaeology in 2012 the areas that have been identified as showing some evidence of gaps and shortages include:

- Fieldwork;
- Post-fieldwork analysis;
- Artefact or ecofact conservation;
- Desk-based or environmental assessment;
- Providing advice to clients[31].

It should be noted that the 2012 research is based on a much smaller sample than the 2008 data. Nevertheless, it is worth noting that there appear to be persistent issues with artefact and ecofact conservation and desk-based research and assessment. Perhaps the most striking development over this time-period, however, is the increasing shortage of fieldwork skills. Strikingly, recent reports suggest that archaeological employers have been losing more employees in this area than in others. This is also an area that employers are trying to address through training existing staff[32].

The emphasis on fieldwork skills is of particular interest as it correlates with the perceptions of archaeology graduates that these are insufficiently developed in some archaeology degrees yet are essential for securing employment in the sector. It may also suggest that in spite of oversupply issues many archaeology courses are failing to develop the skills needed by sector employers, although it should be noted that providers of HE archaeology consistently state that they are primarily concerned with developing broad transferrable skills and not teaching pre-employment vocational courses. This emphasis of HE archaeological courses on transferable skills may also be the cause of some of the other skills areas that are reported as being in demand, as in most cases they relate to practical and commercial aspects of archaeology rather than the broader intellectual and analytical skills characteristically developed in degree courses.

There is also some evidence– though of limited statistical robustness – that the supply of specialist archaeological skills, such as measured survey, photography, illustration and archiving, is vulnerable due to the extremely small size of the market for many of these skills. There is also some evidence that many specialists are planning to stop working in the next few years. Furthermore, it appears to be difficult to access both initial specialist training and CPD in some of these areas, particularly in archaeological illustration. There may, therefore, be growing difficulties with the supply of these

[30] Aitchison (2008) *Profiling the Profession* pp. 103-117.
[31] Skills that are reported by archaeology employers as either a) skills shortage areas b) areas where training for existing staff has been provided; and c) areas where skills have had to bought in from external suppliers; based on Kenneth Aitchison, Landward Research (2012) *State of the Archaeological Market April 2012.*
[32] Aitchison, Landward Research (2012) *State of the Archaeological Market April 2012,* p. 22.

skills in the future[33].

There may also be some specific issues with Nautical Archaeology, where there is a considerable amount of postgraduate educational provision but a lack of defined standards and a paucity of short course training to develop fieldwork skills. The research into skills gaps and shortages in this field is limited in quantity[34]. However, the evidence available suggests that the sector is sceptical about the value of National Occupational Standards and NVQs as evidence of competence. The preference is for university postgraduate education for developing theoretical knowledge, combined with on-the-job experience for developing practical skills[35]. In this light it is striking that no universities reported benchmarking their courses against external standards. There were also felt to be particular skills and training gaps for dealing with certain types of maritime archaeological site, principally seaplanes and crashed aircraft, inland waterways and flooded caverns[36]. The relatively small size of the market for these areas of archaeology is likely to play a role in constraining the supply of appropriate training.

The archaeology workforce has amongst the lowest representation of Black and Minority Ethnicity (BME) groups in the historic environment workforce, which is itself considered to be significantly unrepresentative of the population as a whole[37]. The analysis undertaken by University College London (UCL) for the CBA indicated that the causes of this under-representation are complex, and reflect a combination of attitudes within the sector. There is a tendency to assume that 'mainstream' historic environment heritage is of little interest to BME groups whose concept of heritage is often felt to centre more on community and identity than particular physical spaces. Economic issues are also believed to play a part in under-representation of BME groups, with the relative economic disadvantage of some BME groups correlating to lower rates of progression to, and lower attainment within, degree courses; that progression tends to be to post-1993 universities that are less likely to offer archaeology degrees. Furthermore, the cultural preference of some BME groups – often those represented among high attainment achievers at Russell Group universities – is to choose degrees that lead to professional occupations perceived to have high pay and prestige.

This complex array of issues suggests that imbalances in the ethnic profile of the historic environment workforce are unlikely to be susceptible to resolution in the near term, although there is evidence of a modest but sustained increase in BME participation in the sector. This evidence suggests increased participation of BME groups in some higher education courses relevant to the historic environment, principally those connected to planning. As well as movement of BME groups towards equitable representation in the workforce of one major sector organisation, the National Trust and incremental increases in BME employment within archaeology (although from an extremely low base)[38].

[33] Aitchison (2011) *Survey of Archaeological Specialists 2010-11.*
[34] The main report is by the Nautical Archaeology Society (2009) *Benchmarking Competence Requirements and Training Opportunities related to Maritime Archaeology*
[35] Ibid., pp. 90-91.
[36] Ibid., pp. 17, 41.
[37] Doeser et al (2012) *Diversifying participation in the historic environment workforce.*
[38] Doeser et al (2012) *Diversifying participation in the historic environment workforce.*, pp. 48-9. 53

On the basis of the available research, it seems that the market for archaeological services is ensuring that considerable amounts of archaeology are being undertaken, principally at the cost of developers. The market appears to be competitive and efficient, but oversupply of skills at entry level is leading to suppressed wages and minimal profit margins. In this context, the strategy of coordinated action by the sector to define standards and minimum salaries appears to be having some impact, with Aitchison's research into the archaeological market suggesting that rates of salary increases had come to match those of the workforce as a whole in the five years to 2008[39]. However, it is unlikely to lead to significant further progress without changes that serve to restrict levels of supply, and it is noteworthy that the IfA has recently abandoned its attempt to make compliance with the minimum salary recommendations a prerequisite for being an IfA registered organisation due to issues of legality[40].

There is little current evidence of the systematic implementation of recommendations to resolve issues with the representativeness of the workforce, although it should be noted that systematic research into this issue is a relatively recent development.

3.3 Traditional Building Skills (Construction Sector)

Supply and demand issues related to traditional building skills in the construction sector have been heavily researched in recent years. A series of major survey-based projects commissioned by the National Heritage Training Group (NHTG) and partners – most notably CITB and English Heritage – have sought to identify skills shortages and gaps related to work on traditional (pre-1919) buildings.

This research has gone through several iterations:

- The first report was published in 2005 and focused on traditional building craft skills;
- This study was repeated and extended in 2008 when an additional, separate study was carried out on the needs of professional occupations;
- The most recent update (2013[41]) was commissioned by CITB (in association with English Heritage and Historic Scotland) and examines professional and craft skills needs with a particular new focus on skills needed for the retrofit of traditional buildings to meet energy efficiency requirements.

This research series has targeted construction employers – both those working in the mainstream construction sector and those with a heritage speciality. It has consistently found that construction contractors give high estimates of their own and their employees' skills levels, and that they are largely confident to work on traditional buildings, including those that are listed or otherwise subject to statutory protection.

[39] Aitchison (2008) *Profiling the Profession.*
[40] http://www.archaeologists.net/IfAsalary2013to14
[41] Forthcoming at the time of writing.

The 2008 research also found that employers did not, on the whole, report significant issues with skills shortages, with only 3% of contractors reporting long-term vacancies. This represented a significant change from the situation reported in the first NHTG skills report in 2005, where the comparable figure was nearly 25%[42]. Carpenters and joiners were particular problem trades, both in terms of recruitment and subcontracting, although this is likely to reflect in part the predominance of these trades within construction employment. There was evidence of specific regional issues with the supply of some particular occupations, such as thatchers. Stonemasons are also consistently reported as being in short supply, and in the 2008 research stonemasonry, stone carving and stone fixing were reported as the areas where skill levels were weakest. These findings were echoed in Bilbrough's 2009 evaluation of the Heritage Lottery Funded Traditional Skills Training Bursaries Programme, which identified stonemasonry, roofing with asymmetric and natural materials, and thatching as particular problem areas.

The most recent, 2013, iteration of the research has also identified thatching as a particular issue, and has also highlighted shortages of blacksmiths. Blacksmiths were reported as the single hardest trade both to recruit and to subcontract[43]. It is however challenging to provide robust and consistent analysis of trends in skill shortages and gaps due to changing approaches to methodology and reporting in the NHTG reports[44].

It should also be noted that the views of expert stakeholders have consistently called into question the relatively high skills levels that contractors believe they possess. In the 2008 iteration of the research, for example, it was found that manufacturers of traditional building materials estimated that skill levels among contractors were substantially lower than contractors believed. There were also findings from the survey research that suggested there may be issues that are not evident in contractors' self-estimates of skills levels. For example:

- Most contractors reported that experience is far more important than formal training for working on traditional buildings, meaning that many skills and techniques are likely to be acquired empirically rather than on the basis of formally identified best practice;

- There is a widespread perception that existing training for entrants to the construction trades and occupations give little attention to the specific needs of traditional buildings;

- A repeated finding from both the 2008 and the most recent (forthcoming) iteration of the research has been that more contractors report they would be more confident with working

[42] NHTG (2005) *Traditional Building Craft Skills. Assessing the Need, Meeting the Challenge*, p. 55.
[43] It should be noted that the report urges caution in interpreting figures due to low respondent bases (p54 section 5.2.2)
[44] For example, the NHTG (2005) report gives information on skills issues by region only, but these figures are based on very small subsamples of respondents, whereas in the NHTG (2008) research the figures are given nationally and the regional figures are reported as 'indicative only'; the NHTG (2008) research changed the sample profile significantly to emphasise contractors rather than sole traders, reducing the value of direct comparisons; in the CITB (2013) research, recruitment difficulties are reported by subsector – i.e. as the proportions of employers recruiting that particular trade who have difficulty recruiting – whereas in the NHTG (2008) research the figures appear to be the proportion of all employers surveyed.

on Grade I listed buildings than on Grade II* buildings, even though the former are more important, often older and more complex buildings; this suggests poor understanding of the basic features of heritage protection among some sections of the construction industry.

It would therefore seem that there are significant limitations with using self-reported data on skills levels from contractors as the basic measure of skills gaps and shortages in the construction crafts and trades. It may, for example, be of value to supplement the contractor survey with more extensive analysis of the opinions of those with specific expertise on the repair and maintenance of traditional buildings, such as those with statutory responsibilities for the historic environment, at both local and national levels. Alternatively, it may be of value to analyse the quality of recent construction work undertaken on a representative sample of traditional and historic buildings.

Other findings from the NHTG research suggest that such alternative approaches may be illuminating. For example, it has also found that the quantity of traditional skills and materials applied to traditional buildings appears to be relatively small in comparison with the large number of traditional buildings in the current building stock. For example, the NHTG's 2008 research found that only 30% of the work on pre-1919 buildings made use of traditional materials, even though it is well understood that there are significant compatibility issues between traditional and many modern building materials.

There appear to be related issues with professional skills, where the number of conservation accredited building professionals – though growing – appears to be extremely limited. The 2008 NHTG research identified a total of 507 conservation accredited building professionals in the core construction professions across the UK. The 2013 iteration of the research identified a total of 857 conservation accredited construction professionals, and a further 736 professionally accredited conservators, some of whom will have specialisms related to the historic environment. This is a substantial increase but still a relatively small number relative to the stock of traditional and historic buildings. This does not in itself necessarily mean that those who are not accredited lack the necessary skills; but in the absence of widespread use of accreditation mechanisms, there are obviously likely to be increased risks of inconsistent standards being applied and that professionals are writing inappropriate specifications for work on traditional buildings.

A basic problem appears to be that most of the available construction training systematically neglects the needs of the existing building stock in favour of the needs of new build. This was reported both with general construction training, where providers consistently stated that courses prioritise the needs of new build; and also with professional education, where a clear majority of building professionals reported that they have had to develop an understanding of traditional buildings through on-the-job experience because their professional education did not cover these issues[45].

There appears to be a fundamental disjunction between the kind of training available and the actual

[45] NHTG (2008) *Built Heritage Sector Professionals*, p. 63.

shape of the construction market, where repair and maintenance work forms a very large proportion of the total market for construction goods and services. Moreover, it is notable that broader exploration of skills supply in the construction industry emphasises that the needs of new build are likely to diverge further from those of traditional buildings in the future, with attendant demands that training should respond to these changes[46]. This clearly carries the risk that mainstream construction training will diverge even further from the traditional skills needed to maintain, repair and conserve the historic environment.

The research has therefore consistently identified evidence of significant divergences between the actual, 'active' demand for traditional building skills; the underlying need or 'latent' demand for those skills; and the supply of skills needed to undertake this kind of work. This entails significant risks for England's stock of traditional buildings, which may be damaged by the application of inappropriate techniques and materials. This implies that there is a substantive market failure in the demand for traditional building skills, a failure which is attributed in the reports to lack of awareness among clients and contractors of the need to make use of appropriate techniques and materials when working on traditional buildings.

This naturally leads to consideration of the precise degree of mismatch between active and latent demand, and skills supply, in order to assess the scale of intervention that may be needed if the situation is to be remedied. At the most basic level, this requires estimates to be made of:

- The total value of construction work undertaken on pre-1919 buildings (using both traditional and modern techniques and materials); and

- The amount of work on pre-1919 buildings currently undertaken using traditional skills and materials (the current active demand for traditional building craft skills)

These figures can then be used as a basis for estimating the supply of workers who need to be trained in order to fulfil the demand for labour generated by both these types of demand.

Various methodologies have been used to calculate these figures. The initial stage is to calculate the size of the market for construction work on pre-1919 buildings. One way of doing this is to work 'bottom up' and ask a representative sample of owners of pre-1919 buildings how much they spend on those buildings to obtain the average expenditure on each traditional building; this can then be multiplied by the total number of traditional buildings to yield an overall spend. This technique – although with many adjustments – was used in the 2005 NHTG research, and yielded an estimate that total expenditure on pre-1919 buildings in England was £3.54 billion, and on listed buildings £1.72 billion.

An alternative approach is to start with a robust overall estimate of the size of the total market for construction work (which is available from official statistical series) and estimate the proportion of

[46] CITB-ConstructionSkills (2010) Sector Skills Assessment for the Construction Sector, England Report, pp. 52-3.

the total market which can be attributed to work on pre-1919 buildings. This approach was used in the 2008 NHTG research, which took the known size of the market for construction repair and maintenance. This was then reduced to reflect the proportion of work undertaken on pre-1919 buildings as reported by contractors surveyed for the research; this was then further reduced to reflect the fact that only 42% of contractors contacted had actually undertaken work on pre-1919 buildings. This yielded an estimate that the total value of the market for construction work on pre-1919 buildings amounted to £4.7 billion (in constant prices using the year 2000 as a baseline), equating to 15% of the national spend on repair and maintenance or 7% of the total construction market. Since the surveyed contractors reported that 30% of the work they undertook on pre-1919 building used traditional materials, this yielded a final estimate that the current market for work using traditional techniques and materials worth £1.4 billion in England.

A related 'top-down' technique has recently been used by Ecorys in a 2012 research project for the Heritage Lottery Fund. As an alternative method they used data from contractors on the proportion of their work accounted for by pre-1919 buildings, it makes use of assumptions based on the proportion of the total building stock accounted for by pre-1919 buildings (22% of the housing stock and approximately 25% of the stock of public and commercial buildings) and the relative cost of maintaining these buildings (assumed to be approximately 1.75 times greater than post-1919 buildings)[47]. On this basis it concludes that in the region of 33% of the total expenditure on the repair and maintenance of domestic buildings and 38% of the total expenditure on public and commercial buildings is accounted for by traditional buildings. The total expenditure is estimated at £10.6 billion[48]. Even allowing for inflation (with 2000 vs. 2010 prices differing by a factor of approximately 1.3 on the basis of Retail Price Inflation as reported by ONS), this represents a very substantial divergence from the NHTG estimate.

These estimates yield similarly divergent estimates of the size of the workforce supported by work on pre -1919 buildings. In the 2008 NHTG research, it was estimated that around 109,000 workers undertook work on pre-1919 buildings and that there was a current training requirement for around 1,100 new workers. Using the coefficients presented in the 2008 research and adjusting them for inflation, the 2012 Ecorys research suggests that the figure in 2010 was 181,000 full-time equivalent (FTE) workers, a difference of around 66% (itself an understatement given that the 2010 figures is FTEs whereas the 2008 research refers to all workers).

All of the methodologies used are subject to certain limitations. The bottom-up approaches used for the 2005 English and 2007 Scottish NHTG research projects, uses base expenditure estimates on reports from small samples of owners of traditional building stock (156 and 81 respectively). The top down approach used in the 2008 research makes an implicit assumption that the turnover of firms reporting that they worked on pre-1919 buildings is wholly made up of repair and maintenance. The Ecorys calculations, too, appear to be affected by significant difficulties estimating the precise proportion of the building stock constituted by pre-1919 buildings and relative expenditure on pre-

[47] This has been calculated for domestic buildings on the basis of a weighting factor of 1.5 (i.e. the assumption that the 22% of the housing stock predating 1919 accounts 33% of the expenditure).
[48] Ecorys (2012) *The Economic Impact of Maintaining and Repairing Historic Buildings in England.*

and post-1919 buildings[49]. Quite modest revisions in either of these figures could potentially have a large impact on the final estimates.

These calculations are all in themselves legitimate attempts to make 'best possible' estimates in conditions of highly imperfect information; but it is important to be aware of their very considerable limitations. The only safe overall conclusion to draw is that there are significant uncertainties in current estimates of the demand for traditional building skills. This may point to the need for the development of more robust and systematic estimates of the market size and employment profile represented by this part of the historic environment sector. Until such robust estimates are made current figures should be regarded as indicative only. Even the most conservative estimates, however, suggest that the number of construction employees working on pre-1919 buildings at some point in their career is likely to be very large, and it seems that few of these will have received specific education and training on how to approach such work. For example, if 190,000 people are directly employed undertaking craft work on pre-1919 buildings, this amounts to nearly 10% of the entire construction workforce of around 2,000,000 people[50].

The most significant attempts to address the skills challenges presented by traditional buildings have been led by the NHTG, Heritage Lottery Fund and CITB. The NHTG has worked with CITB to develop a National Vocational Qualification (NVQ) at Level 3 Diploma for those working in heritage construction occupations. These are now available across a wide range of traditional construction occupations and are being delivered by a number of Further Education Colleges and private training providers[51]. It should be noted however that only 10% of employers responding to the 2013 Traditional Building Skills research reported that their workforce held an accredited qualification relevant to this area[52]. A linked Heritage Construction Skills Certification Scheme (CSCS) skills card has also been developed.

The Heritage Lottery Fund has provided funding to support two skills-focussed programmes across the UK (Training Bursaries and Skills for the Future) and has committed a total of £2.16 million to projects delivering training in England[53]. Taking one of the largest projects, the Traditional Building Skills Bursary Scheme project managed by English Heritage, National Trust, CITB and NHTG The scheme attracted 832 applications and awarded a total of 138 placements between 2006 and 2012[54], spending £1.78 million[55]. This means that the average cost of each placement was just under £12,900; the annual management cost of each bursary has been calculated as £4,556[56]. An

[49] For these difficulties see NHTG (2005) *Traditional Building Craft Skills.*
[50] See ONS tables JOBS02: Workforce Jobs by Industry, available from http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/november-2012/table-jobs02.xls. Precise numbers vary depending on definitions of employment used, but are currently reported as being approximately 2 million.
[51] Gerard C. J. Lynch (2006) *The History of Gauged Brickwork*, p. 368.
[52] CITB (2013) *Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland (Draft).*
[53] http://www.hlf.org.uk/HowToApply/Pages/trainingbursaries.aspx; http://www.buildingbursaries.org.uk/about.html; both accessed 15/05/2013.
[54] HLF (2012) *Traditional Building Skills Bursary Scheme for England and Wales. Evaluation Report March 2012*.
[55] HLF (2012) *Traditional Building Skills Bursary Scheme for England and Wales. Evaluation Report March 2012*.
[56] HLF (2012) *Traditional Building Skills Bursary Scheme for England and Wales. Evaluation Report March 2012.*

evaluation report was submitted to the HLF which found numerous beneficial impacts from the project, with high retention of recruits both in the programme and then into employment in the heritage sector and a willingness of even micro-businesses to invest time in training when provided with a financial incentive and recruitment support structures. However, it is not clear whether the project has been evaluated on a cost-benefit basis or whether there has been systematic research to identify potential alternative interventions.

This overview of skills research has not been able to identify the number of Heritage Skills NVQs or CSCS cards issued or the impact they are having on the sector. In the field of lead-work, English Heritage has recently moved to require specialist lead-workers working on significance projects on its estate to hold the Heritage CSCS card as numbers in this trade with this card have been proven to have reached significant 'critical mass'[57]. However, the research for the forthcoming 2013 CITB Skills Needs Analysis report suggests that overall the card has had less impact than intended[58].

In addition, it should be noted that the context for these initiatives appears to be one of persistent long-term decline in the number of recruits entering heritage-related construction crafts and trades. Data from the CITB survey of apprentice and trainee numbers presented in the NHTG's most recent report suggest a pattern of dramatic decline – of more than 70% - over the last six years. These figures must be treated with some caution as they are survey-based and do not represent a census and must also reflect in part the impact of the sustained period of recession and slow growth experienced by the UK economy and by the construction sector in particular. Nevertheless, if these do reflect a substantive, long-term decline in training, it is clear that there are likely to be serious issues with supply of traditional building craft skills in the future, especially given a long-term trend towards an older construction workforce that seen the number of older construction workers (aged 55 years and over) increase 150,000 since 1990, and the number of younger workers (aged 24 and under) decrease by 200,000 over the same period[59].

[57] http://premierconstructionnews.com/2012/01/24/english-heritage-backs-cscs-heritage-skills-card/
[58] CITB (Forthcoming 2013) *Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland (Draft).*
[59] CITB (2013) *Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland* (Draft); CITB (2010) *Sectors Skills Assessment for the Construction Sector 201 – CosntructionSkills UK Report*, p. 39.

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

Source: CITB (2013) *Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland* (Draft)

Other initiatives that NHTG has been taking are intended to improve client awareness of the need to apply appropriate materials and techniques to traditional buildings. There is currently little evidence by which to assess the progress or effectiveness of these measures.

The 2013 iteration of the NHTG research has suggested that in addition to the longstanding issues with traditional building craft skills, a new set of concerns is emerging due to recent policy developments. Changes to planning policy are of primary relevance to local authority planning services and are dealt with separately in section 3.4 below.

The issue of retrofit is generally acknowledged to be a serious one. Traditional buildings (mostly those built before 1919) have a flexible, 'breathable' fabric that contrasts with the relative hard and impermeable materials used in modern buildings.

The application of modern materials to improve airtightness and reduce thermal transfer risks disrupting the flow of moisture through the building. This can cause serious problems for the health of the building's inhabitants and for its long-term structural integrity. The retrofit of traditional buildings therefore poses complex challenges that can only be addressed with appropriate skills[60].

In England, it appears that very few contractors – less than 4% – are currently engaged in this type of retrofit work. However, policy measures such as the Green Deal – a loan scheme to encourage the installation of energy efficiency measures – may well lead to a dramatic expansion in the retrofit market. It appears that around 11% of contractors are not confident to undertake this kind of work; a further 28% are unsure whether or not they could do so; and the remaining 61% are quite or very confident. It is not clear, however, whether such confidence is justified, and it is notable nearly half of contractors reported that they did not know whether current training provision is able to develop

[60] STBA (2012) *Responsible Retrofit of Traditional Buildings*

the skills needed for the retrofit of pre-1919 buildings[61]. This would tend to support concerns expressed by expert stakeholders that the required skills are not yet in place. Particular concern has been expressed in relation to the Green Deal, which it is feared may lead to inappropriate installation of energy-saving measures in traditional buildings that are either less effective than expected or positively harmful[62].

The overall conclusions that these findings would seem to point towards are as follows:

- Estimates of the demand for building craft skills generated by pre-1919 buildings are highly uncertain; however the market is probably large, and may well even exceed recent estimates of £10 billion per year;

- There appears to be a significant shortfall in the application of traditional materials and techniques relative to the total amount of work carried out on pre-1919 buildings. There is evidence that this is due to inadequate awareness of the need to use appropriate materials and techniques on the part of both clients and contractors, and an aging existing workforce which is leading to a loss of skills from the sector;

- Mainstream construction education and training provision gives inadequate consideration to the needs of traditional buildings; this applies across craft and professional occupations;

- There appear to be significant long-term issues with skills supply that are likely to grow worse as a result of declining numbers of apprentices and trainees;

- The training initiatives, specialist qualifications, and heritage skills cards for which information was available for the purposes of this report appear to be having only a very small impact relative to the scale of the issue, and it would seem that there is considerable unmet demand for training (i.e. people who would like to enter the sector and who are unable to do so due to financial constraints).

However, it should be noted that this picture may be incomplete, as there are likely to be current training initiatives that have not yet been evaluated or reported upon. It should also be noted that a major gap in the existing research is a thorough examination of the client perspective. If lack of demand is indeed a major issue – as the NHTG research has suggested it is – then there is clearly a need to undertake systematic research into ways of raising client awareness of the need to use appropriate materials and techniques on pre-1919 buildings.

[61] CITB (2013) *Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland* (Draft)
[62] CITB (2013) *Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland* (Draft); STBA (2012) *Responsible Retrofit of Traditional Buildings*

3.4 Other Historic Environment Subsectors

Beyond construction employment related to traditional and heritage buildings and archaeology, research into skills needs in the historic environment sector is fragmentary. However, some important issues have emerged and these are set out below.

Local authority planning services:

The availability of specialist archaeology and conservation staff in local authorities has reduced considerably in recent years at precisely the time planning reforms are placing increased reliance on expertise at local level. The House of Commons Culture, Media and Sport Committee has indicated its strong concern that Local Authority Conservation expertise is under threat due to consistent reductions in capacity as a result of funding cuts, stating that:

> *We are concerned that the Government does not realise that effective management of the historic environment at local level cannot be adequately undertaken without sufficient numbers of local authority conservation officers. The lack of conservation officers was a matter of particular concern to our predecessors in both 2006 and 2008 and we are concerned that the position may deteriorate further in the light of local government spending cuts. This will inhibit protection of the built heritage and hamper proper consideration of development proposals in the planning system when the economy recovers*[63].

In 2012 alone, it was reported that the previous year had seen an overall reduction in conservation staff, with a reduction of 6% for conservation officers and 3% for archaeological officers. This continued a trend that began in 2006, when numbers of Local Authority conservation staff peaked at 1224 FTE staff compared to 909 in early 2012. At the same time, planning applications and listed building consent have remained relatively steady[64].

In addition, it has been suggested that evidence on the rates at which listed building consents are made relative to the number of listed buildings in different local authority areas show large variations that cannot readily be explained. This may suggest that the enforcement of planning regulations and heritage protection legislation is inconsistent in different parts of the country[65].

Together these suggest that there may already be substantial issues with the functioning of the heritage protection system that have not yet received substantive research or analysis, and the additional pressures of heritage protection reform may makes these issues still more acute given the

[63] House of Commons Culture, Media and Sport Committee (2011)*Funding of the Arts and Heritage*, http://www.publications.parliament.uk/pa/cm201011/cmselect/cmcumeds/464/46406.htm#a21

[64] English Heritage, Association of Local Government Archaeological Officers, Institute of Historic Building Conservation (2012) *A fourth report on Local Authority Staff Resources.*

[65] Richard Griffith (2010), 'Listed Building Control? A critique of historic building administration', *Cultural Trends* 19(3), p. 190.

pressures on skills and expertise at local level.

English Heritage has for many years run the HELM (Historic Environment Local Management) programme of largely free training to develop skills at local authority level, but this is designed for those already employed in the sector[66]. English Heritage did begin a programme of Historic Environment Traineeships (HETs) intended to increase specialist skills supply at local authority level, but this has had to be suspended due to cuts in EH's budget after only 14 trainees had been through the programme, meaning that this is unlikely to have had a significant impact on addressing skills issues at this level[67].

English Heritage has also recognised the need for Local Authorities to increase the effectiveness and efficiency of local heritage protection. It is therefore actively monitoring the situation and developing initiatives in partnership with other sector bodies to help address it. The most notable is the Historic Environment: Local Authority Capacity (HELAC) project. This worked with five Local Authorities to support innovative ways of delivering local historic environment services[68].

Buildings history:

Changes to the planning system are expected to lead to increased demand for professional assessment of historic assets, since a duty is being placed upon those applying for planning permission to ensure that appropriate assessments of the significance of those assets are submitted as part of any application for planning consent[69].

Research by Atkins undertaken in 2007-8 suggests that the buildings history profession is very small, with around 1,700 practitioners generating a total turnover of around £37-51 million per year; that there is a lack of integration between those who approach buildings history from the different perspectives of buildings archaeology, buildings history and architectural history; that there is little availability of specialist training provision for building history, with most practitioners being self-taught; and that the current age profile of buildings historians is biased towards those who are older, meaning that there may be significant skills losses just as planning policy is increasing demand for building history services[70].

A new two-year long Master of Studies degree in Buildings History has now started at the University of Cambridge, with substantial support from English Heritage in the form of expertise, guidance and three six month placements[71]. There is currently, however, little financial support available for those wishing to undertake the course, leading to the risk of substantial inequity in accessibility. Given the

[66] http://www.helm.org.uk/about-us/
[67] http://www.english-heritage.org.uk/professional/training-and-skills/training-schemes/professional-placements/het/ accessed 15/05/2013.
[68] http://www.helm.org.uk/managing-and-protecting/delivering-heritage-advice/helac/
[69] http://www.english-heritage.org.uk/content/imported-docs/a-e/comparison-pps5-nppf-pt1.pdf, referring to paragraph 128 of the National Planning Policy Framework (NPPF).
[70] Atkins (2008) *Identifying activity and skills needs in buildings history – final report.*
[71] English Heritage (2012) *National Heritage Protection Plan 2011-15. Overview Report April-September 2012.*

small size of the sector, however, such a course may have substantial benefit in improving skills supply relative to demand.

Skills for historic and botanic gardens:

Recent research has suggested that due to the increasing pressure of visitors, public parks and historic/botanic gardens may require a different range of management skills than before. As a result it is possible that existing training is not meeting current and future needs[72].

At the most basic level there is a call for a broader base of skills and knowledge for all those working in the sector. It is particularly notable that 67% of respondents to Lantra's 2012 research (drawn from a wide variety of designed landscapes, parks and gardens, and botanic gardens) agreed with the statement that 'the education system does not supply enough people with the skills they need to start working with us'[73]. A number of areas were identified where there is a particular need for enhanced skills and training, with the five most frequently reported comprising of:

- Plant identification;
- Knowledge of pests and diseases;
- Technical and practical skills;
- Horticultural maintenance;
- Historic gardens appraisal.

These were all cited by 25 or more of the 134 respondents, with 'plant identification' and 'knowledge of pests and diseases' by more than 50. In addition, more than 40 respondents suggested that it was difficult to find employees with sufficient experience.

It is important to note the particular severe effect local authority spending cuts appear to be having on the availability of botanic and horticultural skills. Budgets for parks and gardens departments are being severely cut – sometimes by 20% or more in a single year – with inevitable impacts on staffing levels[74]. Given the importance of the public sector as an employer in this field, it is likely that this will have a significant long-term impact on skills supply.

In their 2010/11 UK Skills Assessment, Lantra reported on the lack of priority given to 'green infrastructure' (including historic parks and gardens), resulting in poor perceptions of the sector and a resulting in low take-up of formal education and skills. This has transferred itself to the gradual reduction in training provision or access, especially that linked to public funding. Optimism has also been dampened due to the lack of training providers to meet the training and assessment

[72] LANTRA/English Heritage (2012) *Cultivating skills in historic and botanic gardens: Careers, occupations and skills required for the management and maintenance of historic and botanic gardens Cultivating Skills*
[73] LANTRA/English Heritage (2012) *Cultivating skills in historic and botanic gardens: Careers, occupations and skills required for the management and maintenance of historic and botanic gardens Cultivating Skills*, p. 24.
[74] http://www.hortweek.com/Parks_and_gardens/article/1126339/parks-hit-again-council-budget-cuts/

requirements[75].

The impact of poor perceptions and the lack of training is likely to affect not only the skills of the existing workforce (including technical and management roles) but also the ability of the sector to attract new entrants.

The existing network of providers delivering botanical and horticultural training has been supplemented by a series of HLF-funded bursary placements to enable trainees to gain skills through targeted training and work experience at major historic and botanic gardens (active 2006 to date). The Historic and Botanic Gardens Bursary Scheme (HGBGS) offers guided placements at historic gardens which may provide a pathway into professional practice. The scheme supplies only a fraction of the number of people required for the industry

Industrial heritage:

Research from 2008 by Neil Cossons suggests that there may be some serious skills issues among voluntary and local authority funded organisations concerned with the preservation of industrial heritage sites, particularly in respect of maintaining basic security and preservation of sites; balancing the need to make sites accessible and show machinery in action, and the need to conserve them[76].These claims appear to be based on site visits and the personal expertise of the author, rather than systematic research against defined standards. Nevertheless, they clearly suggest that this is an area that requires additional consideration in skills research.

The main recommendations of the 2008 report included reconstituting the English Heritage Industrial Archaeology Panel as a full panel reporting directly to the Executive Committee and establishing an industrial archaeology unit. These recommendations do not appear to have been implemented[77].

Conservation:

In recent years there have been concerns that the conservation sector is becoming vulnerable to significant skills and training issues[78]. In particular, there have been persistent concerns that conservation training has come under considerable pressure due to changes in the funding of the higher education sector. Perhaps in part responding to these concerns, The Institute for Conservation (ICON), the lead professional body, has begun a series of sustained initiatives to sustain, enhance and document workforce skills. ICON has developed an accreditation programme, Professional Accreditation of Conservator-Restorers (PACR), to ensure that conservators are

[75] Lantra (2010-2011) UK Skills Assessment
[76] Cossons N (2008) *Sustaining England's Industrial Heritage. A Future for Preserved Industrial Sites in England. English Heritage Sustaining England's Industrial Heritage*
[77] https://www.english-heritage.org.uk/about/who-we-are/how-we-are-run/committees-and-panels/industrial-archaeology-panel/;
[78] Jones & Holden (2008) *It's a material world. Caring for the public realm*

assessed to consistent standards and that experienced, competent practitioners can be readily identified. It has also recently published a skills strategy and action plan for the development of training and skills in the sector[79].

As part of this action plan, the first systematic research to profile the sector, its workforce and its education and training needs has recently been undertaken by Kenneth Aitchison, and the finding presented in Icon's 2012-2013 Conservation Labour Market Intelligence report [80]. Aitchison concluded that the sector is relatively small, employing around 5,125 people of whom 3,175 are professional conservators and the remainder volunteer conservators or support and administrative staff. Median salaries were reported at £26,000, slightly below the UK average but substantially below the £36,359 average salary for professional occupations. The workforce is very highly qualified, with some 78% of professional conservators having a first degree and 46% with post-graduate qualifications.

The research identified extensive skills shortages and gaps in the conservation professions, with difficulties reported across conservation specialisms, including archaeological materials. It also found serious skills gaps and shortages across specialisms in key cross-cutting professional skills for both existing staff and new entrants, including business skills; leadership; and project management. It also identified serious skills gaps among existing employees in information technology; and for new entrants in people management.

English Heritage has attempted to support the development of the conservation workforce through its English Heritage Professional Placements in Conservation (EPPIC), which offered a small number of specialist, fully funded one-year long placements.

Other Employment Areas:

There is a notable lack of research into certain important sections of the historic environment workforce. For example, there appears to be little information on the availability of appropriate site management and visitor services skills for the historic environment, even though this is a significant provider of employment within sector (considerably larger than archaeology). In addition, one of the major sector organisations, the National Trust, is increasingly devolving decision-making to the management staff of individual properties[81].

Cross-Cutting Skills Issues:

There is some evidence of cross-cutting skills issues applicable to several areas of the historic environment sector. One issue, briefly cited by Bilbrough and explored in more depth by Janet Davies, concerns use of new technologies and, in particular, social media to interact with a broader

[79] ICON (2011) *National Conservation Skills Strategy*
[80] ICON (2013) Conservation Labour Market Intelligence 2012-13,
[81] National Trust (2010) Going Local. Fresh Tracks Down Old Roads. Our Strategy for the Next Decade.

public[82]. Particular issues identified by Davies include lack of knowledge of how new technologies can be used; inflexible attitudes towards their use from senior staff; and lack of appropriate training provision. English Heritage has responded by cooperating with ALGAO and IHBC to support a series of training workshops for local Historic Environment Records (HERs) on the use of social media[83].

[82] Bilbrough Associates (2009) *Training Bursaries Programme Evaluation Report*; Janet E. Davis, David Kelly (2009) *The Social Web: Opportunities, Barriers and Solutions for Cultural Heritage Institutions.*
[83] http://www.english-heritage.org.uk/professional/protection/national-heritage-protection-plan/plan/activities/5c1

4. Evidence of Market Failure

There appear to be numerous failures in the market for historic environment skills and a number of recurrent issues:

- Problems with the actual underlying need for skills greatly exceeding the current market demand, due to
    - information asymmetries (for example in the construction market, where many clients and contractors appear to lack a clear awareness of the need for traditional building craft techniques and materials)
    - funding constraints (for example in apparently inadequate recruitment to Local Authority conservation advice and planning positions).

- Challenges that are only just emerging associated with the retrofit of traditional (pre-1919) buildings to enable them to meet current energy efficiency targets. For example, energy assessors, installers, building services engineers and other specialist trades may be undertaking work without full knowledge and appreciation of the unique characteristics and material sensitivities of traditional buildings.

- Endemic mismatches between the training available and the need and/or demand for specialist skills. This applies at secondary level in building craft skills, where the current FE sector training provision does not reflect the large proportion of the construction market represented by repair and maintenance work. It also applies in Higher Education, where research indicates that:

    - education for construction professionals gives little consideration to dealing with traditional buildings;
    - there is an oversupply of archaeological education at undergraduate and postgraduate levels;
    - there is insufficient supply of buildings history provision; and
    - there are difficulties sourcing appropriate, accessible CPD training in construction craft occupations and archaeology - only at Local Authority level is provision systematically available through HELM.

- Difficulties with significant oversupply of archaeology skills leading to wages in commercial archaeology being suppressed to levels well below what might be expected for complex graduate level employment;

- Difficulties with very small markets for specialist skills in archaeology and certain areas of the construction trades, making it difficult for a) economically sustainable and accessible training provision to grow in the open market; and b) market supply of skills to be stable and appropriately remunerated;

- Evidence of wage levels in conservation that again do not compare to graduate occupations that requires similar levels of theoretical education, professional experience and practical skill

The result is that there remain serious concerns about skills issues at all levels of the historic environment sector, especially in construction related trades and professions – numerically and economically the most important component of the historic environment sector.

These concerns might further be extended should the research base be expanded to include systematic and proportionate consideration of skills issues outside the relatively well understood areas of the archaeological and construction workforces.

5. Addressing the Skills Issues

The research has shown that various stakeholders have attempted to introduce measures to address skills issues, including:

- The introduction of Heritage Skills NVQs in the construction sector, and the associated introduction of the Heritage CSCS card;
- Attempts to secure employer commitments to improved pay and conditions in commercial archaeology by adherence to voluntary recommended wage rates;
- The funding of Traditional Building Skills bursaries and the Skills for the Future Programme by HLF and partner organisations;
- The funding of Historic and Botanic Gardens Bursaries;
- The provision of 14 Historic Environment Traineeships by English Heritage, and the provision of short placements in other fields such buildings history;
- The introduction of a Buildings History MSt degree offered through by the Department of Architecture at the University of Cambridge.

It is difficult to avoid the conclusion that, while laudable in themselves, these initiatives are very small scale relative to the size of the well-recognised problems and are unlikely to have a major national impact on the short-term supply of the skills required.

In addition, there is currently little evidence of the introduction of significant measures to remedy underlying information asymmetries where these have been identified as an issue[84].

[84] NHTG (2008) *Traditional Building Craft Skills*. Internet searching has failed to find a register of this kind.

6. Conclusions and Recommendations

Based on a review of literature (listed and summarised within the separate Literature Review - Output 1) concerning skills issues in the historic environment sector, primarily spanning the past five years, the following conclusions and associated recommendations may be drawn:

1. The major stakeholders involved with the historic environment have not as yet developed a coherent definition of the sector, making it difficult to provide consistent and reliable estimates of its workforce size and profile.

Recommendation: *Major stakeholders should develop a coherent definition of the sector and commission robust research to define its overall size, value and workforce profile.*

2. More of the skills research in the historic environment sector has focused on archaeology, even though there is little evidence of substantive skills issues in this field.

Recommendation: *New publically funded **s**kills research should particularly focus on buildings history, areas and landscapes.*

3. Significant research has been undertaken on the construction sector, but there are still major gaps in our understanding of core issues associated with work on traditional buildings, such as sector size and workforce profile.

Recommendation: *Specific, adequately funded research should be undertaken by an expert consultancy or agency to robustly quantify market size, employment levels and training demand generated by traditional (pre-1919) buildings and by designated heritage buildings.*

4. Serious skills issues appear to remain among voluntary and local authority funded organisations concerned with the management of industrial heritage sites.

Recommendation: Consider *how to improve the skills base of voluntary and local authority funded organisations through training and broadening active participation in such groups.*

5. There is evidence of widespread lack of awareness of the need to apply traditional materials and techniques to pre-1919 buildings, limiting the potential demand for traditional building skills.

Recommendation: *Ensure that appropriate research resources are directed into understanding client demand for traditional building skills and how it can be most effectively enhanced through the provision of information, advice and guidance.*

6. There are indications of significant problems with the management of heritage protection at local authority level, yet this area appears to have been subject to little or no skills research other than the annual English Heritage/ALGAO/IHBC survey of staffing levels.

Recommendation: *Substantive research could explore what specific skills Local Authority staff require to be able to deliver efficient, balanced and proportionate advice that delivers strong heritage protection outcomes.*

7. There appears to be inadequate availability of information about employment prospects in, the HE sector, evidenced by the oversupply of archaeology graduates seeking employment in professional archaeology; and undersupply of training in buildings history.

Recommendation: Work to improve flows of information to the HE sector and potential HE entrants on skills needs and likelihood of employment in these areas of the historic environment sector.

8. There is evidence of serious neglect concerning the needs and special characteristics of pre-1919 buildings in all types of mainstream construction education.

Recommendation: Undertake research to establish the extent to which traditional construction is being neglected in mainstream construction education and training, with a view to remedying this problem.