



HOUSES OF PARLIAMENT
R&R DELIVERY AUTHORITY

Skills Assessment Research Digest

**P1. Skills for the heritage construction
sector**

November 2021

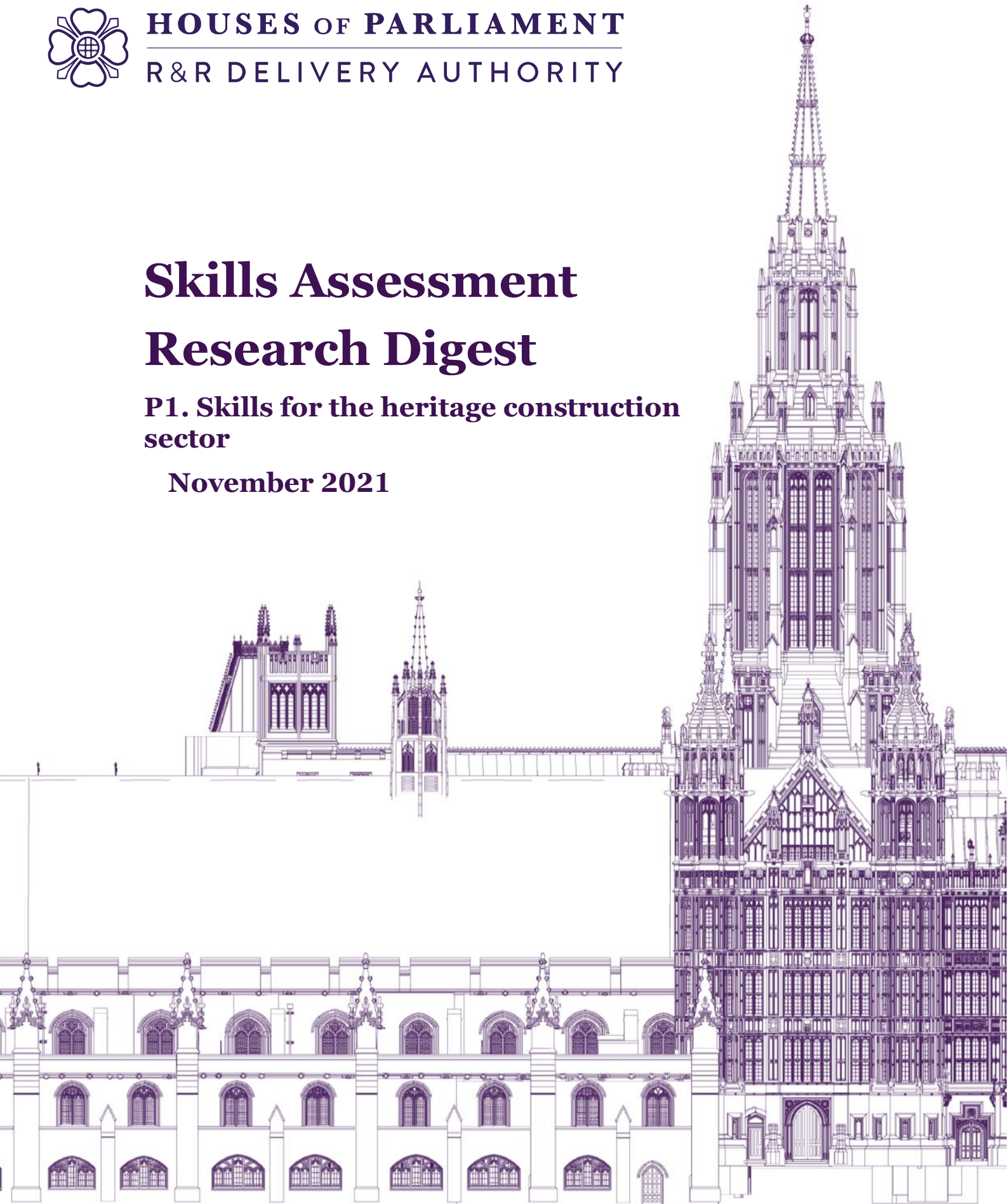




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1 About the research digests

The House of Parliament Restoration and Renewal Programme's Skills Assessment Research has been published as a series of Research Digests. These cover a number of distinct areas of the assessment as follow:

- P1: Skills for the heritage construction sector;** and
- P2: Skills for conservation and conservators
- P3: Training and provision in construction and heritage

The purpose in doing so is to add to the overall volume of knowledge and information available to organisations working in the wider heritage sector to support the approach to addressing the skills challenges ongoing within the sector.

In this or any other of the series of Skills Assessment Research Digests, where reference is made to outcomes from research findings, unless otherwise stated, these will have arisen as a result of the primary research conducted specifically for the 2020/21 Skills Assessment. The primary research comprised a survey of over 6,000 UK-based heritage and construction contractors, supplemented with 40 contractor depth interviews, and a separate survey of over 500 training providers also across the UK. This primary research followed on from early research in the Skills Assessment involving stakeholder interviews conducted in Summer 2020.



2 Introduction

For the purposes of the Restoration and Renewal (R&R) Programme, the term ‘heritage construction’ is defined as relating to any construction work on pre-1919 buildings - a date used to distinguish ‘traditionally constructed buildings’ by the National Heritage Training Group. This differs from ‘mainstream construction’ which focuses on buildings from 1919 onwards. However, not all heritage companies work exclusively on pre-1919 buildings, while not all mainstream companies work exclusively on post-1919 buildings – see Section 4.1.

This Digest focuses specifically on heritage construction, while collections conservation is the focus of Research Digest P2.¹

2.1 Heritage construction

Work on pre-1919 buildings is undertaken by a mix of mainstream construction and specialised heritage construction companies with what appears to be the bulk of the work undertaken by the former. The stock of pre-1919 buildings in the UK includes many domestic houses and small work buildings constructed from Elizabethan times onward, with large numbers having been built in the Victorian and Edwardian eras. Much of the work on these buildings – even though they are technically part of the nation's heritage stock – is undertaken by mainstream construction companies using non-heritage-trained operatives.

For listed buildings and stock which is owned or managed by the nation (through bodies such as Historic England, English Heritage or the National Trust – and their equivalents in Scotland, Wales, and Northern Ireland) the work is tightly controlled and is conducted by specialist heritage construction companies skilled in heritage-specific roofing materials, stained glass glazing, traditional bricks and brick patterns, specialist cements and plasters, etc.

2.2 The Palace of Westminster

While a large proportion of the work needed on the Palace will be related to internal structures and its mechanical and electrical services, one of the key strategic themes of the R&R Programme is ‘to conserve and enhance the fabric of the Houses of Parliament’ which will be met, in part, by ‘conserving and safeguarding heritage collections’.²

Most of today's Palace of Westminster was built in early to mid-Victorian times following the fire of 1834. That work incorporated some even older building elements. Heritage judgement will also be required for post-1919 aspects, for example when assessing and preserving WW2 bomb damage. Heritage construction skills will therefore be required internally as well as externally for building work, while conservation skills will also be required to handle heritage collections.³

¹ Research Digest P2. – Skills for Conservation and Conservators

² R&R Programme Vision and Strategic Themes

³ For more detail on this latter aspect, see Research Digest P2. – Skills for Conservation and Conservators



3 The heritage construction sector

3.1 Economic Footprint

According to ONS data, Great Britain's construction output for March 2021 was £14,251 million of which heritage construction, per se, is a proportion.⁴

Buildings

- In England, there are over 400,000 built heritage assets according to the National Heritage List for England which provides the official record of nationally designated heritage assets.⁵
- However, including numbers of domestic dwellings, as well as industrial and commercial buildings, would take this figure much higher to around 5.4 million, as estimated in 2012.⁶
- In 2019 there were 27,463 listed building consent applications in England, which is a form of planning permission required via the local planning authority to alter or extend listed buildings. This is usually a good indicator of demand for heritage construction activities.⁷

Economy

Heritage work (including both construction and collections conservation) makes an important contribution to the UK economy but accurate figures are difficult to come by.

- In 2012, estimated UK construction output attributable to 'built heritage' contributed almost £12.5 billion to UK GDP.⁸
- More recently, in 2019, England's heritage sector (as a whole) directly contributed around £14.7 billion to UK GDP.⁹
- The heritage sector grew by £1.2 billion (9%) between 2018 and 2019. Including indirect and induced contributions, the sector's contribution to GDP was estimated at £36.6 billion.¹⁰
- England's heritage sector (including tourism) generated a larger GVA than each of the UK security industry, defence industry, aerospace industry, and the arts and culture industry.¹¹

Employment

Employment figures can also give an indication of the scale and impact of the heritage construction sector.

- In 2012, the UK built heritage construction sector supported around 530,000 FTE jobs (direct, indirect, and induced).¹²

⁴ Office for National Statistics (2021) *Construction output in Great Britain: March 2021, new orders and Construction Output Price Indices, January to March 2021: March 2021*

⁵ Heritage Counts (2020) *Heritage indicators*

⁶ Ecorys (2012) *The Economic Impact of Maintaining and Repairing Historic Buildings in England*

⁷ Ministry of Housing, Communities & Local Government (2019) *Table P124A: district planning authorities - planning decisions by development type and local planning authority (yearly)* <https://www.gov.uk/government/statistical-data-sets/live-tables-on-planning-application-statistics> (Accessed: June 2021)

⁸ Ecorys (2012) *The Economic Impact of Maintaining and Repairing Historic Buildings in England*

⁹ Centre for Economics Business Research (2020) *The heritage sector in England and its impact on the economy An updated report for Historic England*

¹⁰ *ibid*

¹¹ *ibid*

¹² Ecorys (2012) *The Economic Impact of Maintaining and Repairing Historic Buildings in England*



- More recently, in England only, the heritage sector (including conservation) directly employed around 206,000 workers in 2019 (194,000, 2018) - a 24% increase since 2011's estimates of 167,000.¹³

Tourism

The economic value of the heritage sector is also reflected in tourist income.

- There were over one million visits to the Houses of Parliament in 2019.¹⁴
- In the case of overnight heritage-related trips within England, a report by Centre for Economics Business Research found around 15.1 million in 2019, with a spend of £3.4 billion on domestic overnight heritage related trips.¹⁵
- 18 million international heritage-related visits drew in £10.4 billion in 2019.¹⁶

However, the Heritage Fund reported that 98% of heritage organisations have been impacted by the Covid-19 pandemic, and 69% were affected by loss of revenue. Furthermore, 82% of organisations reported high or moderate risk to their long-term viability which rose to 90% for charity, third sector or private organisations.¹⁷

3.2 Skills & Training

To ensure that heritage buildings are properly restored, repaired, and maintained, an educated, experienced, and skilled workforce is vital. In 2018, there were 51,150 people enrolled on heritage-related construction courses.¹⁸

In 2019, The Heritage Crafts Association put together a "Red List" of heritage skills considered to be at risk of being lost.¹⁹ It included crafts which have become 'extinct' as well as those deemed 'critically endangered'. The shortage of skilled craftspeople is a concern for 47% of the heritage industry and 90% agree that investment in skills is crucial for the future.²⁰

A skills analysis carried out by the Centre for Economic Business Research in 2019 revealed that:²¹

- 11% of firms in the heritage sector in England have skills gaps in their workforce,
- 4% of all workers in England's heritage sector are 'not fully proficient' at their job roles,
- 6% of firms in the heritage sector have at least one skills shortage vacancy, and
- 1.1% of all jobs in the heritage sector are vacant due to a skills shortage.

¹³ Centre for Economics Business Research (2020) *The heritage sector in England and its impact on the economy An updated report for Historic England*

¹⁴ Visit England (2020) *Visitor Attraction Trends in England 2019 Full Report*

¹⁵ Centre for Economics Business Research (2020) *The heritage sector in England and its impact on the economy An updated report for Historic England*

¹⁶ *ibid*

¹⁷ Heritage Fund (2020) *How the coronavirus (COVID-19) is affecting the heritage sector* <https://www.heritagefund.org.uk/blogs/how-coronavirus-covid-19-affecting-heritage-sector> (Accessed: May 2020)

¹⁸ Heritage Counts (2020) *Heritage indicators*

¹⁹ The Heritage Craft Association (2019) *Red List of Endangered Crafts*

²⁰ Ecclesiastical (2021) *Heritage sector insights*

²¹ Centre for Economics Business Research (2019) *Skills Gap/Needs in the Heritage Sector A Report for Historic England*. See report for its definition of "heritage sector".



The most common skills lacking among heritage workers are:

- “ability to manage own time and prioritise own tasks” (an estimated 59% of all heritage employers with a skills gap have workforces lacking in this skill), and
- “specialist skills or knowledge needed to perform the role” (an estimated 55% of all heritage employers with a skills gap have workers lacking this skill).

The same report estimated that approximately £140 million of potential GVA was ‘lost’ in the Heritage Sector due to skills shortages in 2016.

Research conducted in 2013 into the skills needs of contractors working on the repair and maintenance of traditional (pre-1919) buildings has revealed that the bulk of repair and maintenance work on traditional buildings in the UK is carried out by non-specialist contractors.²² It also showed:

- across England and Scotland, 91.6% of contractors who work on traditional buildings describe themselves as mainstream or general contractors; between 89% (England) and 97% (Scotland) of contractors working on pre-1919 buildings are general, non-specialist contractors, and
- only 8.4% of those companies classify themselves as specialist heritage contractors.

This is also the case in Wales. A separate report for Wales revealed that 94% of contractors working on traditional buildings are mainstream/general contractors.²³

In England, Scotland, and Wales surveyed contractors highlighted two key areas of skills gaps: skills gaps relating to specialist activities, and an over-arching concern regarding diminishing knowledge and awareness across the sector regarding traditional (pre-1919) building methods and materials. Skills gaps cited by contractors who work on traditional buildings include:^{24,25}

- carpentry/joinery,
- plastering (including lime plastering),
- stone carving,
- traditional glazing,
- traditional bricklaying,
- leadwork,
- decorating and wallpapering, and
- roofing (stone, metal)

Owners and managers (to the extent of some 73%) said that they had limited or no confidence that they themselves understood the needs of heritage work.²⁶

²² Pye Tait (CITB; English Heritage; Historic Scotland) (2013) *Heritage in Transition: Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland*

²³ Pye Tait (CITB) (2015) *A ‘Material’ Issue: Understanding and Responding to the Traditional Building Skills Challenge in Wales*

²⁴ Pye Tait (CITB; English Heritage; Historic Scotland) (2013) *Heritage in Transition: Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland*

²⁵ Pye Tait (2015), *A ‘Material’ Issue: Understanding and Responding to the Traditional Building Skills Challenge in Wales* (CITB)

²⁶ Pye Tait (CITB; English Heritage; Historic Scotland) (2013) *Heritage in Transition: Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland*



- In England, Scotland, and Wales heritage occupations considered ‘hard to recruit’ include blacksmiths, painters and decorators, stone masons, roofers, joiners, and skilled lead workers.
- Only 10% of contractors who work on traditional buildings have a member of staff with qualifications or experience relating to heritage or traditional craft skills.

A detailed and up-to-date overview of the heritage training available in the UK is covered in Research Digest P3.²⁷

²⁷ Research Digest – P3. Training and provision in construction and heritage



4 Skills Assessment

The Skills Assessment has included detailed desk research, interviews with a range of stakeholders, a survey of over 6,000 heritage and construction contractors, 40 depth interviews with contractors, and a survey of more than 500 training providers, across the UK.

Contractors were provided with a list of primary activities and asked to self-define the area in which they worked. For the purposes of this research, contractors defined as working in “heritage” include firms whose primary business was one of the following.

- Architectural metal work
- Blacksmith
- Cabinet maker
- Cast iron work
- Heritage Decorating/painting
- French polisher
- Gilding
- Heritage tiler
- Heritage joinery
- Heritage brickwork
- Heritage carpentry
- Heritage glazing
- Lime harling
- Lime pointing
- Plastering (fibrous)
- Plastering (lime)
- Heritage plastering (other)
- Roofing (lead work)
- Roofing (stone/slate/tiles)
- Roofing other metals – copper, aluminium, zinc
- Scaffolding for heritage buildings
- Stone carver
- Stonemasonry – general
- Stonemasonry – banker masons
- Stonemasonry – fixer masons
- Window workers (glaziers)
- Wood Carving

4.1 Shape of the Heritage Construction Sector

4.1.1 Number of heritage firms

In the Skills Assessment survey, 1,622 contractors said that they primarily work in a heritage-related activity (see table below). A number of heritage databases put the number of heritage specialist firms as high as 6,000. Surveyed firms are spread across the UK.



Specialism	Number	Specialism	Number
Architectural metal work	14	Plastering (fibrous)	61
Blacksmith	92	Plastering (lime)	32
Cabinet maker	137	Heritage plastering (other)	7
Cast iron work	7	Roofing (lead work)	165
Heritage Decorating/painting	32	Roofing (stone/slate/tiles)	185
French polisher	79	Roofing other metals – copper, aluminium, zinc	37
Gilding	11	Scaffolding for heritage buildings	118
Heritage tiler	17	Stone carver	23
Heritage joinery	14	Stonemasonry – general	204
Heritage brickwork	8	Stonemasonry – banker masons	13
Heritage carpentry	13	Stonemasonry – fixer masons	11
Heritage glazing	7	Window workers (glaziers)	312
Lime Harling	-	Wood Carving	22
Lime pointing	1		
		Total	1,622
Other related categories:			
Architects	271		

Table 1 Contractors Survey 2021 – distribution of heritage responses by primary activity

NB: There are an estimated 1,253 “blacksmiths” working in the UK, but not all have heritage specialisms. This will hold true for other activities too.

4.1.2 Turnover

Those companies self-defining as having a primary activity in heritage – hereafter referred to as “heritage companies” – tend to be small - two-thirds turn over less than £1m per annum and over half less than £500,000, which may have implications for size of contracts and difficulty in tendering.

- **64% of heritage companies turn over less than £1m, 55% less than £500,000, and 29% less than £100,000. Only 13% have a turnover above £1m.** (A fifth do not state their turnover.)

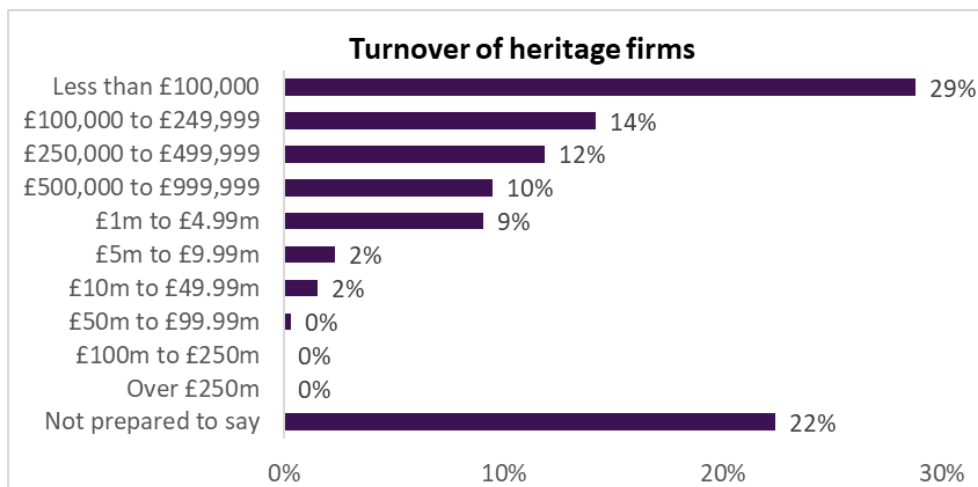


Figure 1 Turnover of heritage contractors. Base: 1,586 respondents



4.1.3 Capacity

Around two thirds (60%) of heritage companies say they can take on more work without additional staff or other resources.

- Of these, 36% say they could take on up to 10% more work.
- 36% say they could take on up to 20% more work.
- 20% say they could take on between 20% and 50% more work.
- 8% say they could take on more than 50% more work.

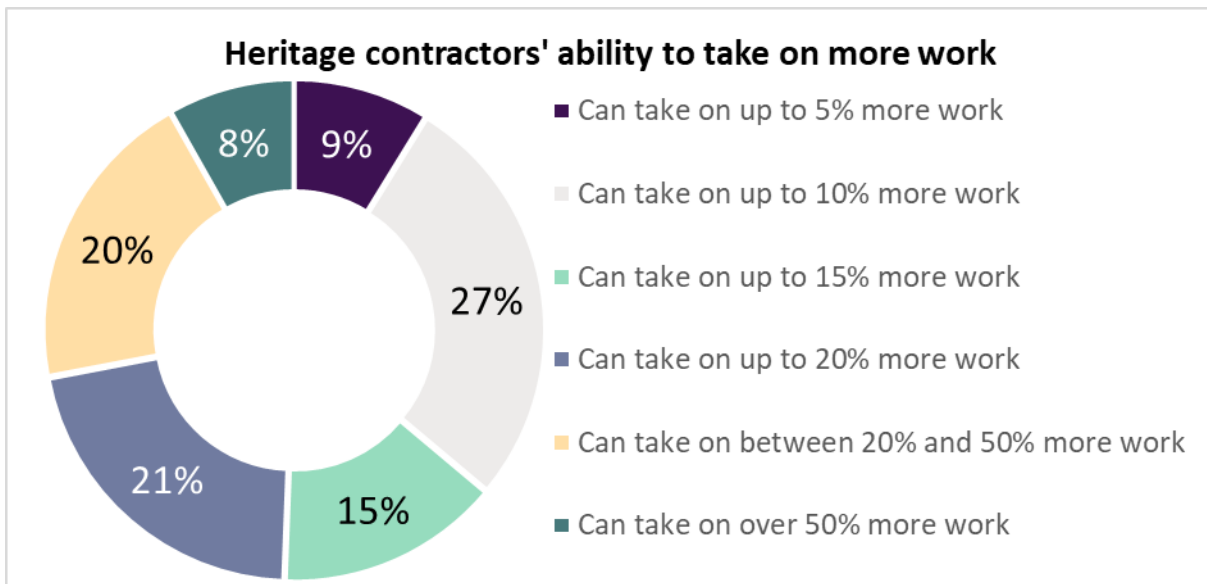


Figure 2 Additional work, by value, that heritage contractors could take on based on current staffing levels. Base 959 respondents

Around 500 of the surveyed heritage companies say they are able to take on more than 10% more work without further resources.

4.1.4 Employment/workforce demographics

- The average heritage company employs 14 staff, while most commonly employ just 1 member of staff (30% of surveyed heritage firms).
- 84% of employees are male; 16% are female.
- There is evidence that the sector employs relatively older staff - the 43% of heritage companies that reported employing staff in the over 50 age group said that this represents over half of their staff on average.
- Only 276 heritage companies (18%) report employing staff aged under 25. The mean percentage of staff of this age group is 22.5%.

Interviews with stakeholders earlier in the Skills Assessment also revealed that heritage workers tend to be older partly due to the need in the sector for basic and higher skills to have been acquired prior to a move into heritage and also because such workers have the experience to see the benefits of such work (e.g. less time pressure and more certainty of work).



4.1.5 Age of buildings worked on

- The sector is not as specialised as it may appear from its title.
- Around two thirds of heritage construction company work is on post-1919 buildings and only a third on pre-1919.
- Post-1919 work accounts for around 69% of the work of heritage companies.

4.1.6 Location

- Roughly half of the surveyed heritage companies undertake heritage work in London - and for these - the work represents about a quarter of their turnover. This varies substantially by region.

Region	% firms in region undertaking work in London
London	88%
South East	69%
East Midlands	54%
South West	52%
East of England	42%
West Midlands	40%
North West	34%
Yorkshire and the Humber	32%
North East	30%
Wales	26%
Northern Ireland	21%
Scotland	12%

Table 2 Proportion of heritage contractors undertaking work in London by region

- About a quarter (27%) of the total work that all heritage companies do annually is conducted in London.
- A little less than a fifth (19%) of the heritage work that heritage companies do is conducted on pre-1919 buildings in London or remotely.

4.2 Workforce skills and qualifications

The survey asked contractors to rate from 1 to 10 (where 1 is very poor and 10 is excellent) the current skill levels of their managers and supervisors in various skillsets.

- Heritage companies self-rate their current levels of management skills as being high (all were rated at over 8 out of ten). The median and modal scores were all between 8 and 9. This was also the case for supervisory role skill levels.



Management	Mean
Operations management	8.7
Process management	8.6
Logistics	8.5
Project management	8.6
Contracts management	8.6
Site management	8.7
Planning	8.6
People management	8.5
Change management	8.5
Costings & budgeting for small projects	8.6
Costings & budgeting for larger projects	8.7

Table 3 Average responses relating to 'Management' skillsets

Supervisors	Mean
Operations management	8.5
Process management	8.5
Logistics	8.4
Project management	8.5
Contracts management	8.5
Site management	8.5
Planning	8.4
People management	8.4
Change management	8.3
Costings & budgeting for small projects	8.4
Costings & budgeting for larger projects	8.4

Table 4 Average responses relating to 'Supervisors' skillsets

Contractors were also asked to estimate how many each of their staff hold a heritage-related qualification.

- Only around 10% of heritage companies reported any heritage-specific qualifications at all.

For surveyed heritage businesses as a whole, (note: modal employment is 1) the average number of heritage qualifications per company is 2.44. Half of these are Heritage CSCS Cards. When discounting CSCS cards, the average is 1.4 relevant qualifications per company.

This apparent lack of qualifications might, potentially, indicate a historic lack of training and qualifications provision. Furthermore, this low level of formal qualifications does not necessarily denote a lack of skills, but may in fact reflect a lack of opportunity to professionalise, or indeed a lack of necessity to undertake such qualifications. This corroborates earlier findings that the heritage sector operates predominantly without formal qualifications, but may instead place greater value on practical experience and/or non-accredited short courses.²⁸

²⁸ Pye Tait (CITB; English Heritage; Historic Scotland) (2013) *Heritage in Transition: Skills Needs Analysis of the Repair, Maintenance and Retrofit of Traditional (pre-1919) Buildings in England and Scotland*

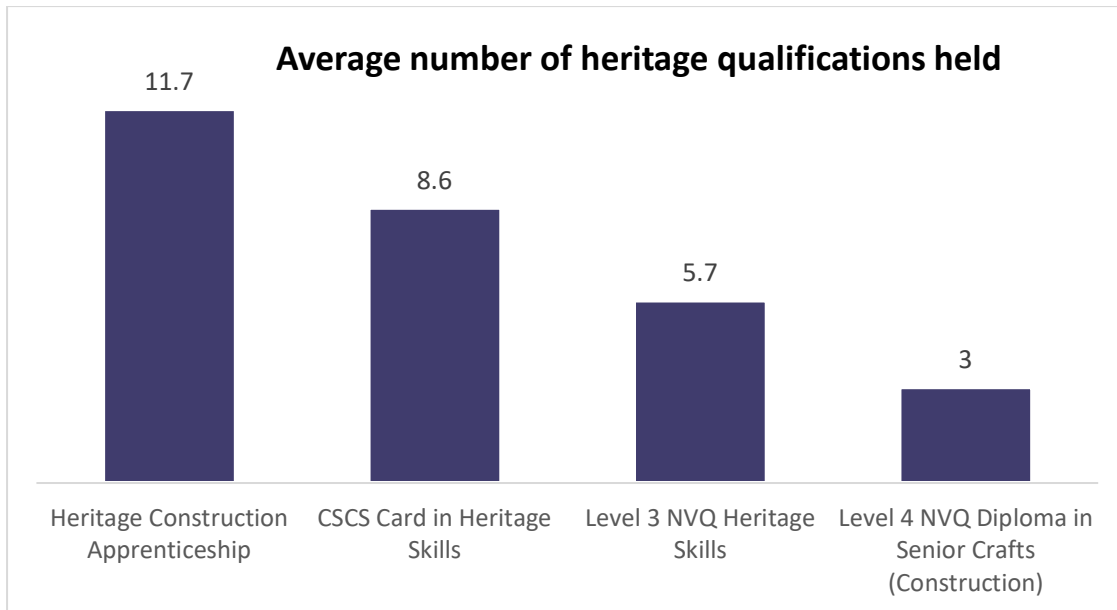


Figure 3 Mean (average) number of heritage qualifications held by heritage contractors. Base: variable from 136 to 403 contractors.

Of all 6,000 surveyed firms (i.e. heritage and others), around one in ten contractors (12%) also mention employees with university degrees of varying qualification level (BA, BSc, Masters, PhD, and postgraduate).

Earlier findings from Phase 1 of the Skills Assessment (interviews with stakeholder organisations) highlighted:

- It takes 5 to 10 years for workers to become skilled and confident in heritage work, needing training and experience/exposure – the trend towards shorter training periods could, therefore, be counter-productive when it comes to such deep skills.
- Wider concerns about the quality of heritage provision – this means that any further assessment of heritage courses and qualifications should not only focus on numbers of providers and courses but on tutors, course content, and depth. More detail can be found in Digest P3.²⁹

4.3 Skills shortages and hard-to-fill roles

The contractors responding to the survey were asked to rate how difficult they anticipate certain roles will be to fill in the coming year, from 1 (very easy) to 10 (extremely difficult). For heritage companies:

- Where management roles are concerned - the median difficulty is 6 to 7 and the mode around 5 to 7. These indicate that companies anticipate only moderate difficulty filling the roles. (However, around two thirds of heritage companies did not answer this question – this

²⁹ Research Digest – P3. Training and provision in construction and heritage



could be due to the fact that most heritage companies have only 1 employee, and/or are self-employed.)

Difficult to fill roles (Management)	Mode	Median	Mean
Senior managers (e.g. Directors, Board members)	7	7	6.4
Operations managers	7	6	6.3
Project managers	7	6	6.2
Logistics managers	5	6	5.7
Contracts managers	7	6	6.0
Site managers	7	6	6.0
Site supervisors (e.g. assistant site managers, construction site supervisors)	6	6	5.8
Team leaders (e.g. chargehands, gangers)	7	6	5.6
Other construction process manager	5	5	5.3

Table 5 Average responses relating to anticipated difficulty to fill 'Management and supervisor' roles

- Where technical/specialist roles are concerned - the median and mode are virtually the same as for management, indicating only moderate anticipated difficulty.
- As most heritage firms have just one member of staff, only about 10% of companies responded to the question about filling operative roles. The median and modal anticipated difficulty were 5 for all roles (indicating that even the few companies that could answer the question only anticipate average difficulty).

Operative roles	Mean
Roofers	5.6
Plant operators	5.1
Glaziers	5.1
Plasterers	5.1
Floorers	5.0
Scaffolders	4.9
Shuttering	4.9
Steel fixers	4.9
Joiners	4.9
Electricians	4.8
Plumbers	4.8
Labourers	4.8
Bricklayers	4.8
Specialist building operatives (fire/cladding/etc)	4.8
Carpenters	4.8
Other	5.7

Table 6 Anticipated difficulty in filling 'General construction operative' roles

- Where specialist heritage roles are concerned - the median and modal levels of difficulty in filling roles lay between about 4 and 8 using the most commonly used score, the most difficult to fill roles are cabinet making, roofing and stonework. A number of other heritage



skills showed relatively high third quartile boundaries - indicating a relatively high measure of concern.

Specialist heritage roles	Mode	Median	Mean
Stonemasonry	8	7	5.9
Stonemasonry - banker masons	8	5	5.6
Stonemasonry - fixer masons	8	6	5.6
Roofing (stone/slate/tiles)	8	6	5.5
Stone carver	8	5	5.5
Cabinet making	8	5	5.3
Window workers (glaziers)	5	5	5.8
Roofing (lead work)	5	6	5.7
Roofing other - copper, aluminium, zinc	5	5	5.5
Blacksmith	5	5	5.3
Plastering (lime)	5	5	5.2
Scaffolding for heritage buildings	5	5	5.1
Plastering (fibrous)	5	5	5
Polishing (French or other)	5	5	5
Plastering (other)	5	4.5	4.5
Heritage tiling	4	5	5.1
Heritage carpentry	4	5	5
Lime pointing	4	5	5
Heritage joinery	4	4.5	4.9
Architectural metal work	4	5	4.8
Heritage brickwork	4	5	4.8
Lime Harling	4	5	4.8
Wood carving	4	4.5	4.8
Cast iron work	4	4.5	4.7
Decorating/painting	4	5	4.7
Asbestos work	4	4	4.5
Gilding	4	4	4.3

Table 7 Anticipated difficulty in filling 'Specialist heritage' roles



Table 9 indicates the various difficulties for finding specialist heritage skills by region and nation.

1 (very easy) to 10 (extremely difficult)	EM	East	Lon-don	NE	NW	SE	SW	WM	Y&H	Scot	Wales	NI
Architectural metal work	6.0	6.3	4.3	5.0	6.5	5.5	4.2	5.9	4.9	4.6	1.5	-
Asbestos work	3.5	5.7	4.2	4.6	4.7	5.2	4.9	4.4	4.7	3.1	4.5	2.0
Blacksmith	5.8	4.6	4.3	5.2	6.0	6.1	4.8	5.8	5.4	4.9	5.8	-
Cabinet making	4.9	6.0	4.3	5.1	4.9	6.2	5.4	5.7	5.2	2.7	7.0	8.0
Cast iron work	4.2	6.0	4.3	5.0	5.5	5.7	4.2	4.8	5.0	5.0	2.0	-
Decorating/painting	6.3	6.3	4.4	5.2	5.2	5.3	5.8	5.1	5.1	4.3	2.5	2.0
Gilding	6.0	5.7	4.2	5.2	5.3	5.5	4.4	4.4	5.0	3.6	2.5	2.0
Heritage tiling	6.0	6.2	4.2	5.1	5.7	5.6	5.3	5.5	5.2	3.4	2.0	1.0
Heritage joinery	5.8	5.9	4.4	5.0	6.8	5.9	5.9	3.8	5.5	4.5	5.8	5.7
Heritage brickwork	6.4	5.5	4.2	5.1	5.6	5.6	5.2	5.0	4.9	3.1	5.0	4.6
Heritage carpentry	5.5	5.6	4.2	5.0	6.0	5.9	5.7	4.4	5.3	3.8	5.8	5.7
Lime Harling	6.0	6.3	4.1	5.1	5.8	5.4	4.8	4.4	5.4	3.1	4.0	7.0
Lime pointing	5.4	6.0	4.1	5.0	5.6	5.2	6.1	4.4	5.2	3.1	4.2	7.0
Plastering (fibrous)	5.3	6.8	4.1	5.3	5.9	5.3	6.2	4.0	4.8	3.3	2.0	2.0
Plastering (lime)	6.3	7.5	4.1	5.3	5.9	5.5	6.3	4.2	5.0	3.1	3.5	6.3
Plastering (other)	5.0	5.7	4.1	5.2	5.4	5.1	5.8	4.0	4.9	3.3	2.0	2.0
Polishing (French or other)	3.8	6.7	4.0	5.1	5.8	5.6	5.2	5.2	4.9	3.8	2.0	-
Roofing (lead work)	7.0	6.8	4.1	5.3	5.9	6.1	5.9	4.3	5.4	5.0	6.4	7.3
Roofing (stone/slate/tiles)	6.1	6.9	4.0	5.2	5.8	5.6	5.5	5.7	5.2	4.3	5.4	6.0
Roofing other materials – copper, aluminium, zinc	5.5	7.2	4.0	5.3	6.0	5.6	5.0	4.3	5.3	3.8	6.0	8.0
Scaffolding for heritage buildings	6.0	6.7	4.0	5.4	5.2	5.8	5.8	6.0	5.3	3.8	6.0	8.5
Stone carver	5.7	5.6	4.1	5.3	5.8	5.9	6.2	4.7	4.6	5.3	7.0	6.0
Stonemasonry	6.7	5.9	4.0	5.6	6.1	5.9	6.0	6.2	5.0	5.9	6.5	6.6
Stonemasonry - banker masons	6.7	5.2	4.1	5.4	5.1	5.7	6.3	5.4	4.5	5.4	6.8	7.0
Stonemasonry - fixer masons	6.6	5.0	4.1	5.3	5.6	5.4	6.1	5.4	4.8	5.4	6.5	6.6
Window workers (glaziers)	5.3	6.0	4.5	5.0	6.1	5.8	4.8	4.9	5.0	4.5	5.3	-
Wood carving	5.0	7.6	4.0	5.0	5.0	5.1	4.1	4.7	4.9	3.9	7.0	-

Table 8 Anticipated difficulty in filling 'Specialist heritage' roles by region/nation

Examining this table by region, London and Scotland appear to reveal less concern about heritage skills shortages than several other regions. By contrast employers in the East appear to have more concerns for certain heritage skills. Note that the sample size in N. Ireland is small and so the data here should be interpreted with caution.

Examining this table by heritage occupation, stonework roles (masonry and carving) appear to be most difficult to fill, followed closely by heritage joinery, cabinet making and roofing. On the other hand, more mainstream activities such as asbestos removal, decorating/painting, and plastering (other) appear to be easier roles to fill.



In terms of sourcing people with heritage skills, if heritage companies need to source additional skills:

- only 1% will look outside the UK (compared with 21% that will always source from within the UK),
- 30% will rely on their own heritage staff, and
- 47% - almost half - will simply rely on their own generic staff with no specific heritage training/qualifications.

When asked, in the follow-up contractor interviews, about specific skills gaps within their businesses, responses to this question were very much split. Around 30% of interviewed contractors said that they had no instances where outside help was required to plug company based skill gaps; they claimed that they *“have got everything covered”* and they *“are the experts in [the] heritage sector [so they] do all the training.”*

However, a quarter of interviewed contractors note that they have needed to bring in other people. They claim that skilled people in the following areas were required from external sources outside the company:

- wood carvers (particularly detailed work),
- stone masons,
- joiners,
- specialist roofers,
- heritage brick layers and plasterers (including lime rendering), and
- gilders.

In fact, there was a lot of cross over with those who claimed the skills were specialist and those who believed the skills were disappearing, with a common consensus being that the inherently specialist nature of the specific field was partly the cause for the disappearance. One respondent who works in cabinet making, and on occasions requires specialists trained in ornate wood carving and upholstery, stated that:

My upholsterer retired last year, and I haven't been able to find one since. They retire and they've not retrained anyone...youngsters aren't interested.

Cabinet maker (North East)

Three other respondents agree with the notion that younger generations are either not interested in completing training in the specialist work, or the training itself is not of high enough standards, with each of them claiming:

[Specialist skills are] massively disappearing, [there is] low interest in training for the specialist carving.

Stonemason (Northern Ireland)



The skill [stone masonry] isn't really taught properly – it requires roughly 7-8 years of training to do it right and most people do a basic 1-2 year training course and that's it, they don't have the right skills.

Restoration company (Wales)

The skills were very specific but it's also because there is a lack of students doing practical, hands on work.

Conservation company (Wales)

However interviewed contractors were also asked about skills gaps in the sector more generally. Of the 39 contractors participating in depth interviews, around half (18) suggest that certain heritage skills/trades may be considered highly specialist and are difficult to find or are disappearing in the field. Of these, examples include:

- heritage glasswork,
- lime plastering/work,
- wood carving and carpentry,
- stone masonry and general repair,
- French polishing,
- gilders,
- traditional blacksmithing, and
- basic traditional skills.

Several suggestions were made as to the reasoning behind this decline in skills. Five respondents felt that people, in particular students, were not interested or trained enough within the fields of work, with two stating:

It goes for whole heritage sector; young people don't know much about this sector and they're not interested.

Heritage joinery (East Midlands)

For the last 20 years or so there haven't been apprentices. Everyone is using computers now and going into jobs like that.

Cabinet maker (North East)

Four respondents believed that there was a definite “*lack of demand*” for certain skills (leaf work, lime plastering and stone masonry are specifically mentioned) due to the fact the cost for such skills (including cost of materials needed) is high. With skills such as French polishing being seen as too expensive and time consuming, one respondent remarked that people may attempt to go for cheaper, faster, lower quality restoration solutions, and another suggested that people may even neglect to restore items completely based on cost; “*it [leaf work] is expensive, so most restoring and repair work like that gets left and goes into disrepair.*”

Two respondents mentioned that, in particular, wood and stone carving are at risk due to the implementation of modern machines that can do the same job at a lower quality but faster;



It's seen as better than by hand as it takes less time and costs less, but I don't think it looks the same.

Stonemasonry – fixer mason (Northern Ireland)

4.4 Heritage-specific occupations mismatch

A mismatch analysis was carried out which shows for the following occupations there is a demand on the programme which could account for a significant proportion of all the relevant workforce currently available in the UK:

- Heritage windows
- Plastering
- Heritage joinery and carpentry

Given the early stage of the R&R Programme, further labour forecasting will be required in future to support a more accurate picture of the likely skills mismatches. To support this activity we have estimated the UK annual turnover of the work undertaken in each heritage activity, as shown in Table 9. Whilst this does not provide an indication of the mismatch *per se* it would allow for comparison against the levels of forecast spend on the Programme (once known) to understand the likely impact on the wider market. There are no firm thresholds over which a spend in a particular activity would become a tipping point. We would suggest that a rank order of potential impact is obtained once the spend in each activity is known to understand those activities where the Programme will have the biggest impact.

Heritage activity	Estimated approximate annual UK-wide turnover (£m – 2020 prices)
Architectural metal work, blacksmith, and cast iron work	350
Asbestos work	1,350
Cabinet making	90
Decorating/painting	40
French polishing	40
Furniture restoration	20
Gilding	60
Heritage brickwork	150
Heritage joinery	20
Heritage carpentry	40
Wood carving	10
Heritage tiling	<10
Heritage glazing	40
Plastering (fibrous)	10
Plastering (lime)	10
Roofing (stones/slate/tiles)	1,090
Scaffolding for heritage buildings	30
Stone carver	110
Stonemasonry - general	250
Stonemasonry - banker masons	20

Table 9 Estimated turnover UK-wide



4.5 Apprentices

When surveyed heritage companies were asked about hiring (mainstream construction) apprentices, the following themes emerged from the research.

- Only a small proportion of heritage companies said they would recruit such apprentices in the next 12 months (around 1.5% to 3%). The range for this small number of companies is between 0.5 and 1.5 apprentices.
- Only one trade (roofing) exceeded 3% - in that case 7.5% of companies said they would be recruiting at least one apprentice roofer.
- The total number of apprentices said to be recruited in the next 12 months was 711 - roughly half an apprentice for each surveyed company.
- In the following year, the total number of apprentices predicted to be recruited is 802, with window installers, scaffolders, roofers and glaziers being the most common.
- These figures are much higher than for the broader construction industry, where there are about 25,000 apprentice starts per year across approximately 1.2m companies.

When surveyed heritage companies were asked about heritage-specific apprentices in particular, the following was revealed.

- The number of heritage apprenticeship starts is relatively low, at approximately 0.26 apprentices per firm. The most commonly mentioned specialisms are in the table below.

Top 6 heritage specialisms	Number
Stonemasonry (all)	51
Lead roofing	25
Plastering (all)	14
Blacksmithing	13
Slate/Stone roofing	11
Cabinet making/Joinery	9

Table 10 Number of heritage apprentices said to be hired in the next 12 months, by top specialisms

- In the following 12 months, these heritage companies expect to recruit at approximately the same rate of 0.28 heritage apprentices per company.

When asked whether they would be interested in a shared apprenticeship scheme, a third of heritage employers comment that they would jump at the chance (31%) while a quarter (24%) would be wary but willing to consider the possibility. Nearly half of heritage firms (45%) say they would avoid shared apprenticeships. The reasons for this are explored in more detail in Research Digest P3.³⁰

However, if a quarter of those companies no interested in such a scheme (150) could be convinced to take on one shared apprentice between two companies (75 new apprentices) it would increase total heritage apprenticeships next year by 30%.

³⁰ Research Digest – P3. Training and provision in construction and heritage



4.6 Involvement in R&R

When (all 6,000) surveyed contractors were asked if there was anything related to skills and training that they would need from the R&R Programme in order to be able to participate in it, over two thirds (69%) welcome the idea of training that would equip them to participate on R&R. Contractors specifically identify the following training and skillsets that would be useful for them to develop:

- courses in specific heritage fields,
- broader heritage (awareness) training,
- restoration work training,
- health and safety training,
- management training, and
- IT/digital skills

We would need training on how best to approach to certain areas of our work when dealing with historical buildings.

HVAC, West Midlands

Site induction. We would need to know the area and limitation of work. Someone would need to put in place a site process training manual in order that all companies working on the restoration programme follow the same guidelines.

Electrical, Yorkshire and the Humber

Earlier findings from Stage 1 of the Skills Assessment (depth interviews with stakeholder organisations) also revealed that:

- heritage contractors are often small firms, who may be less 'polished' administratively, and also less willing to move around UK – perhaps a strong justification for spreading work across the nations, and
- people with specific heritage skills will be in demand and they can pick and choose their work. Money is not always a motivation – our stakeholder interviews reveal that individual skilled craftspeople and conservators prefer to work in their own or local workshops and do not like to have to travel and reside elsewhere. They tend to prefer "interesting" and "challenging" work to run-of-the-mill jobs.

It is generally thought among heritage contractors that the R&R Programme offers a major chance to consolidate and map the heritage skills training sector – to offer a single point of access map of the sector and careers in it.

It was also proposed that the Programme is a chance to create nationally-valuable short awareness courses for construction workers, supervisors, and managers in such topics as heritage as well as digital, offsite, and new technology.



5 Overarching thoughts

Heritage buildings remain an invaluable asset to the UK, both for the public good, but also as an integral part of the construction sector's work.

While most contractors work on heritage buildings, very few are specialist, with the "heritage sector" work on pre-1919 buildings accounting for one third of its work by value. Taken as a whole, the heritage sector has an older workforce, with most firms being micro or small businesses. Across the whole construction workforce (including mainstream), there is a lack of broad awareness and understanding relating to heritage considerations, and only a minority of the heritage workforce hold formal qualifications.

Roles which are most hard to fill include stonework, roofing, and cabinet making, and modelling suggests potential pinch-points for the R&R Programme relating to heritage plastering, heritage windows, and heritage joinery. Regions where recruitment issues appear to be most acute are the East of England and East Midlands. However, heritage contractors do have capacity to take on more work without having to take on additional staff.

There is generally a good appetite among the heritage sector to be involved in shared apprenticeship schemes, provided their concerns and considerations are addressed. Similarly, heritage contractors are eager to be involved in the R&R Programme, but – being smaller – can have reservations and less experience when it comes to procurement.