Heritage Economic Impact Indicators 2017: Technical report

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Economic research, data and analysis

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Introduction

In 2016, Historic England commissioned the creation of an interactive data workbook that evidences the impact of the heritage sector to regional and national economies. The workbook was revised and updated in 2017. It builds on initial work commissioned in 2015 by the North East Historic Environment Forum (NEHEF) in partnership with Historic England, which resulted in the development of a similar workbook focused on heritage in the North East of England.

This document aims to share experiences from these projects so that other interested parties can benefit from this work and determine the feasibility of commissioning similar workbooks. Specifically, it aims to describe:

- A rationale for the creation of an interactive workbook
- The challenges faced
- The approach taken
- Relevant data sources and where they can be accessed

The rationale for an interactive data workbook

The aim of developing an interactive workbook was to enable the ongoing collection of data on the regional economic impact of the heritage sector in England. Prior to this there was a dependence on drawing evidence from stand-alone reporting, or nation-wide research. The former becomes out-dated quickly; the latter does not always provide the granularity required to understand how the regional economy differs to that of the country overall. The solution was to empower the heritage sector with a mechanism and process by which they could extract meaningful data outputs relating to the regional economic impact of heritage, but also continue to add data to ensure the analysis is current.

It was recognised that the economic value and impact of heritage can come from a variety of areas: from tourism, economic activity in historic buildings, the demand from the construction sector to service heritage buildings[1], conservation and preservation and education. The direct economic impact must also be complemented by the indirect value that heritage contributes. Models to date for heritage impacts make distinctions between direct (revenue and employment); indirect (impacts of the heritage supply chain); and induced impacts (employment and expenditure due to consumer spending out of staff wages)[2].

Specifically, this workbook was commissioned to provide the following:

- To be developed as a *reusable* framework for data collection, analysis and reporting with minimum maintenance needs, providing longevity that a one-off report could not.
- To allow Historic England to develop a longitudinal picture of impact with a workbook which they can continue to update.
- To assess both direct and indirect impacts of heritage.
- To identify regional variations.
- To provide robust/credible evidence for use by Historic England when advocating the value of heritage to those outside the sector.

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1 Historic England (2014) *Heritage Counts*.

2 e.g. HLF (2013) *Economic Impact of Heritage Tourism*; Arup (2005) *An Economic, Social and Cultural Impact Assessment of Heritage in the North East.*

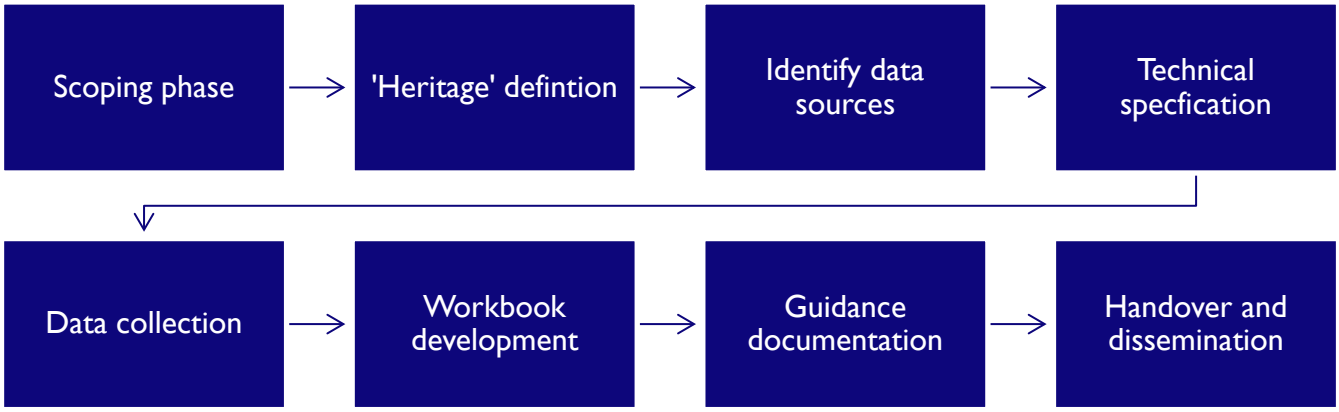
Challenges

This section provides an overview of the key challenges faced during the development of the workbook .

- **Defining heritage**: The heritage sector has an inclusive definition. Instead of defining heritage, The Heritage Lottery Fund encourages people to identify their own heritage and explain why it is valued by themselves and others. However, a clearly defined scope is needed for this type of workbook. Existing research varies in its sector coverage, so the approach taken for this work was to seek to ensure the breadth of the heritage sector is captured. Producing a theoretical definition, however, is only part of the process and ensuring data are available to fulfil this definition can prove an additional challenge.
- **Secondary data availability:** A key challenge of working with secondary data sources is in trying to isolate heritage within broader categories. For example, Standard Industrial Classification (SIC) and Standard Occupational Classification (SOC) codes are limited in their ability to define heritage. Similarly, where heritage-specific data are obtained it is not always available, or robust, at regional or sub-regional levels.
- **Stakeholder/steering group engagement:** Engagement is an important part of facilitating data collection. It is also key to ensuring acceptance and the subsequent use of the analysis that is delivered through the workbook. It is also, however, important to identify an individual responsible for the ultimate sign off of each aspect of the work during the development process.
- **Meeting the needs of different users:** As well as end users of the workbook, there will be some users who are required to make updates to it in the future and who will require separate guidance on how to do this. There may be additional groups to consider, for example individuals working outwith the heritage sector may use it also.
- **Skills and capacity of users to update the workbook:** It is important to recognise potential limitations in the skills of those who will need to update the workbook and how often there will be resources available to make updates.

Approach

The workbook development process consisted of the following broad stages:



The following sections provide an overview of each of these stages together with the resulting outputs.

Scoping Phase

This was considered one of the most important stages during the development and resulted in a detailed set of recommendations for the workbook. It was critical in defining what the workbook would look like, what it would include and how it would measure the impact of the heritage sector. It took the form of desk research and consultation with key stakeholders and the themes and questions that were explored are outlined in Table 1.

Table 1: Themes to consider when scoping the workbook

Theme	Example questions
User requirements	What will the workbook be used for? How will it be used? What indicators are needed? Who will use the workbook? What user skills do they have/need? Is there a preferred format? How frequently are updates required? What capacity exists to maintain and update the workbook following handover to the client?
Defining heritage	What definitions exist? How and why do they differ? How do definitions relate, in practical terms, to the indicators needed, and the available data?
Data availability	What secondary data (national, regional and local) relating to the economic impact of heritage is available? How robust is this data in the context of the region? How robust is the data at sub-sector level? What gaps in the available data are evident? Is primary data (potentially) available to fill the gaps identified?
Example workbooks	Are similar workbooks already used by stakeholders? What are they used for? What are their (perceived) strengths and weaknesses?
Methodologies	What methodologies are used to measure the economic impact of heritage? Are both direct and indirect impacts measured? Are other methodologies used (e.g. in other sectors) which can be adopted?
Engaging data providers	What data are already collected and reported by stakeholders? At what points is it collected? Who is it reported to? Are there examples of good/best practice in engaging local or regional organisations in data sharing, which we might learn from?

This phase resulted in a number of outputs and recommendations as follows:

Definition

An inclusive definition of heritage was formed, as shown in Table 2.

Table 2: Heritage definition

Sector	Sub-sector	Segment (where relevant)
Archaeology	Archaeology: businesses	All archaeology businesses together with all freelance/self-employed archaeologists
	Archaeology: specialised teams	University departments and Local Authorities
Conservation	Conservation: art and artefacts	
	Historic Buildings: Conservation Architects	
	Historic Buildings: Conservation Engineers	
	Historic landscapes: Landscape Architects	
	Historic Buildings: Building Craft Skills	
Planning and other related services for the historic built environment	Town planners	Local authority teams
		Specialised teams in planning businesses
	Chartered surveyors with a conservation specialism	
	Conservation officers	
	Analysing and recording buildings history	
Cultural Heritage institutions and organisations	Museums and Galleries	Museums
		Galleries
	Historic sites	Historic buildings
		Historic landscapes
	Libraries and archives	
	Heritage craft	
Managing public and government interaction with cultural heritage	Cultural Heritage membership organisations	
	Statutory staff at Cultural Heritage related organisations.	

This definition was then applied, where possible, to all relevant data sources in order to isolate the heritage sector.

Identification of data sources

A data matrix was created in Excel to present all relevant sources that had been identified. These were grouped into five broad themes:

- Economy
- Workforce
- Tourism
- Property
- Public Investment[3]

Information captured in the matrix for each data source included:

- The data source and measure
- Availability (i.e. is it published or does it need to be commissioned)
- The spatial coverage and levels available
- Frequency of the data and if a historic time series is available
- If, and how, heritage could be isolated from the data

This was then refined in consultation with the steering group and used to define the final data specification for the interactive workbook.

As highlighted previously, applying the definition of heritage to data was a challenge. For some sources, however, the data were not manipulated at all. This was because either:

- It was deemed unnecessary as the data source related wholly to heritage, or
- No suitable method to isolate heritage was identified, but the data were still considered useful for capture in the tool. For example, the steering group considered that identifying the most prevalent countries of residence for international inbound visits would provide useful contextual information even though the data were not specific to heritage tourism.

Where steps were taken to isolate heritage from data, this was done either by selecting relevant categories within specific data sources (e.g. for Great Britain Day Visits Survey[4], collating data *only* for responses that suggested the visits were heritage-related), or a coefficient was calculated from a secondary source and applied to apportion the data (e.g. Output in the Construction Industry[5] were apportioned by calculating a regional coefficient based on the proportion of pre-1919 buildings from VOA[6] data)

[3] Though information relating to private investment was also of interest, relevant data were not available.
[4] https://www.visitbritain.org/gb-day-visits-survey-latest-results accessed on 23/04/2017.
[5] https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/ accessed on 05/04/2017.
[6] https://www.gov.uk/government/collections/valuation-office-agency-council-tax-statistics accessed on 22/04/2017.

Arguably the most complex method used to apply our heritage definition was in calculating employment (and subsequently GVA) for the sector. This approach reflected the DCMS Creative Industries Economic Estimates[7] methodology of combining Standard Industrial Classification (SIC) and Standard Occupational Classification (SOC) codes to consider embedded workers (regardless of organisation) as well as organisational workers. This method was incorporated as follows:

- For sub-sectors of heritage for which we are predominantly concerned with the individuals involved rather than their wider organisations (for example, conservation officers) we utilised the relevant SOC codes (e.g. 2141: conservation professionals) for employment figures. In these instances, data from the Annual Population Survey (APS) were used.
- For sub-sectors where we consider whole organisations relevant (e.g. historic sites, museums, etc.) we used the relevant SIC codes to obtain employment figures. In these instances, data from the Business Register & Employment Survey (BRES) were used.
- Where a SIC or SOC code was too broad we looked to a secondary source to apply a percentage we deemed best represents the heritage share of the category. The preference was to identify proportions specific to each region, however national proportions were used in the absence of this as the next best measure. For example, *Skills Needs Analysis 2013 Repair, Maintenance and Energy Efficiency Retrofit of Traditional (pre-1919) Buildings in England and Scotland*[8] provided an estimate for how many people were involved in heritage building craft skills in the UK. This was used to create a percentage that could be applied to the relevant SICs to try to isolate heritage from non-heritage building craft skills.
- For sectors which we could not feasibly collate through either SIC or SOC, we looked to secondary sources to obtain employment figures. For example, regional employment figures for Archaeology were extracted from Landward Research's series of archaeological labour market intelligence reports[9].

Further detail of this method and a full list of data sources used for this workbook can be found below.

Technical specification

A recommendation was made for the platform of the interactive workbook to be used at this stage. Microsoft Excel was deemed the most appropriate for the following reasons:

- The interface allows for a mixture of charts and tables, which can subsequently be copied and pasted into reports and other spreadsheets, if required.
- Worksheets can be populated with refreshed data with ease and minimal instruction to facilitate future updates.
- The software is widely accessible.

Screenshots of existing workbooks were also produced to help define the exact format and style (i.e. colours and types of charts) of the workbook.

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7 https://www.gov.uk/government/collections/creative-industries-economic-estimates accessed on 22/01/2017. The Creative Industries Economic Estimates are now part of the DCMS Sectors Economic Estimates: https://www.gov.uk/government/collections/dcms-sectors-economic-estimates, accessed on 22/01/2017.

8 English Heritage, Historic Scotland and CITB (2013) *Skills Needs Analysis 2013 Repair, Maintenance and Energy Efficiency Retrofit of Traditional (pre-1919) Buildings in England and Scotland* http://content.historicengland.org.uk/content/docs/education/skills-needs-analysis-2013-repair-maintenance-energy-efficiency-retrofit.pdf accessed on 22/03/2016.

9 http://www.landward.eu/ accessed on 23/04/2017.

Development of the interactive workbook and user guidance

The workbook was then created in line with the agreed specification. Due to the quantity of information included, the data was separated into the themes identified. To assist users further, key messages were extracted from the data and presented at the top of each page with links to the underlying data tables. This was intended to help promote consistency in how users are interpreting key results, as well as to encourage further exploration of the data beyond the key findings.

Two sets of clear guidance notes were also developed:

- Data guidance notes incorporated into the interactive workbook to inform users where the data are from and any manipulation applied.
- Update guidance notes in the form of a step-by-step guide to making data updates.

Review and update

Historic England commissioned an update of the workbook in early 2017. The update provided an opportunity to review and refine the scope of the workbook.

A sixth theme was added: Volunteering. Following a similar process to the development of the workbook, a scoping exercise identified an appropriate methodology for estimating the value of heritage volunteering, taking account of the data sources available. A replacement cost approach was agreed, based on the method used by ONS in the Household Satellite Accounts[10], and drawing on data from the DCMS Taking Part survey, which was identified during the scoping exercise as the only available source to report on heritage volunteering.

A revised methodology for estimating heritage GVA was adopted. Previous estimates drew on earnings data from the Annual Population Survey. Estimates were revised and updated using earnings data from the Annual Survey of Hours & Earnings, which was considered a more robust source.

Other indicators were also reviewed and in some cases, the approach to isolating heritage within the source data was refined:

- For Tourism indicators, a narrower definition of the types of trip that relate to heritage was adopted.
- The categories of Local Authority revenue expenditure used to measure public investment relating to heritage were extended to include Conservation and Listed Buildings Planning Policy as well as Cultural and Related Services expenditure on Heritage, Archives and Museums and Galleries.

As part of the review, a number of tables relating to Historic England and Heritage Lottery Fund investment were removed from the Public Investment theme to reduce the volume and complexity of information presented to end users. These tables replicated information published in Heritage Counts[11].

The specification for the updated workbook was set out in an updated data matrix. All indicators were updated with the latest available data, and historic data updated where revised methods or definitions had been adopted. Guidance notes accompanying the workbook were also updated.

[10] http://webarchive.nationalarchives.gov.uk/20160105160709/http:/www.ons.gov.uk/ons/dcp171766_345918.pdf
[11] https://historicengland.org.uk/research/heritage-counts/

Data sources

The following list provides information relating to data sources used in the Heritage Economic Impact Indicators.

<table>
<tr><th>Data sources:</th><th>Types of indicators available and, where necessary, how to extract heritage specific data:</th></tr>
<tr><td>Accredited Museums, Arts Council England</td><td>Employment in accredited museums.</td></tr>
<tr><td>Business Register & Employment Survey and Annual Population Survey, all ONS</td><td>Employment (heritage, heritage by activity, broad sector, etc.). The main sources used are the ONS Business Register & Employment Survey (BRES), and the ONS Annual Population Survey (APS). BRES data can be accessed via Nomis with the relevant Notice from ONS[12].
A variety of sources were used to create multipliers to apply to the data from the main sources, as detailed in the following table:

<table>
<tr><th>Heritage sector</th><th>Data source</th><th>SIC or SOC</th><th>Multiplier(s) source</th></tr>
<tr><td>Museums</td><td>ACE Accredited Museums database</td><td>n/a</td><td>n/a</td></tr>
<tr><td>Historical sites and buildings</td><td>BRES</td><td>SIC 9103</td><td>SIC x SOC matrix</td></tr>
<tr><td>Archives</td><td>BRES</td><td>SIC 91012</td><td>SIC x SOC matrix</td></tr>
<tr><td>Gardens</td><td>BRES</td><td>SIC 9104</td><td>SIC x SOC matrix</td></tr>
<tr><td>Building completion and finishing</td><td>BRES</td><td>SIC 433</td><td>SIC x SOC matrix and English Heritage's Skills Needs Analysis 2013 Repair, Maintenance and Energy Efficiency Retrofit of Traditional (pre-1919) Buildings in England and Scotland</td></tr>
<tr><td>Other specialised construction</td><td>BRES</td><td>SIC 439</td><td>SIC x SOC matrix and English Heritage's Skills Needs Analysis 2013 Repair, Maintenance and</td></tr>
</table>
</td></tr>
</table>

[12] Rounded estimates can be accessed without a Notice.

activities			*Energy Efficiency Retrofit of Traditional (pre-1919) Buildings in England and Scotland*
Archaeologists	Provided by Historic England from a variety of sources and from the Landward Research report *Archaeology Labour Market Intelligence: Profiling the Profession 2012–13*[13]	n/a	n/a
Conservation professionals	APS	SOC 2141	SIC x SOC matrix and regional proportion of pre-1919 buildings (VOA data)
Architects	APS	SOC 2431	SIC x SOC matrix and regional proportion of pre-1919 buildings (VOA data)
Town planning officers	APS	SOC 2432	SIC x SOC matrix and regional proportion of pre-1919 buildings (VOA data)
Chartered surveyors	APS	SOC 2434	SIC x SOC matrix and regional proportion of pre-1919 buildings (VOA data)
Building and civil engineering technicians	APS	SOC 3114	SIC x SOC matrix and regional proportion of pre-1919 buildings (VOA data)

The English Heritage report *Skills Needs Analysis 2013 Repair, Maintenance and Energy Efficiency Retrofit of Traditional (pre-1919) Buildings in England and Scotland*[14] reported that 86,880 people were involved in heritage building craft skills in England in 2012. This was divided by total employment in built environment sectors, to give a multiplier of 0.31. The same multiplier is used for all years.

For Architects, Town planning officers, Chartered surveyors, Building and civil engineering technicians, multipliers are calculated based on the proportion of pre-1919 building stock in each region. These are derived from Council Tax: Stock of properties data from the VOA[15]. The multiplier is updated each year.

Where appropriate, these multipliers were combined with regional multipliers derived from the APS in order to avoid double-counting between APS and BRES. Using APS data at regional level, SIC x SOC matrices were constructed to examine

13 http://www.landward.eu/Archaeology%20Labour%20Market%20Intelligence%20Profiling%20the%20Profession%202012-13.pdf
14 https://content.historicengland.org.uk/content/docs/education/skills-needs-analysis-2013-repair-maintenance-energy-efficiency-retrofit.pdf
15 https://www.gov.uk/government/collections/valuation-office-agency-council-tax-statistics

	the distribution of employment by SIC and SOC, and to identify the intersection. APS microdata are required , accessed in the ONS Virtual Microdata Laboratory with Approved Researcher status, as this is the only version of the data which includes both Standard Industrial Classification (SIC) and Standard Occupational Classification (SOC) codes in the required detail. To minimise potential issues relating to the reliability of data for small sample sizes, data for all years examined was collated for analysis and averaged to derive multipliers. For each heritage sector, the same multiplier is then applied to all years. Employment estimates are averaged over three years to minimise potential issues relating to sampling variability.
Regional GVA Estimates (income approach) and Annual Survey of Hours & Earnings, both ONS	Economic output from heritage is estimated using a method adapted from that used in the DCMS Creative Industries Economic Estimates, and requires heritage employment estimates to have been calculated. Estimates for output from heritage are derived from Regional GVA Estimates (income approach) published by ONS, by apportioning the regional estimate based on our employment estimates and earnings data from the Annual Survey of Hours & Earnings (ASHE). ONS' Regional GVA Estimates provide estimates at regional level which are broadly in line with the National Accounts (Blue Book) methodology. ASHE microdata is required, as this is the only version of the data which includes both SIC and SOC codes in the required detail. Data are accessible in the ONS Virtual Microdata Laboratory with Approved Researcher status. ASHE data are used to calculate median earnings for relevant heritage sectors and occupations. Due to small sample sizes at regional level, national estimates are used; these are weighted by region according to the ratio between overall median earnings per region (all sectors/occupations) and the overall national average. Median earnings are then multiplied by estimated employment in heritage sectors and occupations to derive weighted earnings in heritage. This estimate of heritage earnings is then divided by total weighted earnings to calculate the percentage of total earnings which heritage accounts for. This percentage is then applied to the ONS regional GVA estimate in order to estimate heritage GVA.
Input-output tables, Scottish Government; ONS Input-Output Analytical Tables	Indirect and induced employment and GVA are estimated using multipliers. This requires estimates for direct employment and GVA to have been calculated, as detailed above. A Type II multiplier is calculated using the method described in Ecorys' report *The Economic Impact of Maintaining and Repairing Historic Buildings in England, 2012*[16]. This method combines multipliers published at UK level by ONS, and multipliers published by the Scottish Government. The calculations are as follows: • (Output multiplier in the UK / Output multiplier in Scotland) * GVA multiplier in Scotland • (Output multiplier in the UK / Output multiplier in Scotland) * employment multiplier in Scotland Multipliers for SIC 91 are applied across all Heritage sectors. The multiplier is updated each year, based on the latest ONS multipliers (2010 and 2013) and the relevant Scottish Government multiplier for each year (with the latest – 2013 – used for subsequent years).
Council Tax: stock of properties, VOA	Heritage property has been defined for the purposes of this work as pre-1919. The property build period indicator can be used to calculate the proportion of housing stock in each region that dates to pre-1919. This indicator is used as a multiplier

[16] http://closedprogrammes.hlf.org.uk/aboutus/howwework/Pages/EconomicHistoricBuildingsEngland.aspx

	in estimating heritage employment and construction outputs.
Local authority revenue expenditure and financing England: 2015 to 2016 individual local authority data - outturn; Local authority capital expenditure, receipts and financing, both DCLG	Total revenue expenditure, total income and net expenditure on heritage, museums and galleries, archives, and conservation and listed buildings planning policy, as well as total cultural and related services and all services. A 'total heritage sector' figures is created by summing heritage, museums and galleries, archives and conservation and listed buildings planning policy. Also, capital expenditure on culture and heritage, total culture and related services, and all services.
GB Tourism Survey (GBTS), Visit Britain	Three-year averages of domestic overnight / holiday trips (total and heritage) and domestic overnight / holiday spend (total and heritage). The approach taken to apportion the figures for Heritage-related tourism uses an activities-based definition. GBTS provides a national breakdown of the data by activities undertaken, which allows us to derive a proportion for Heritage activities undertaken as a portion of all activities undertaken by visitors. The following categories were classed as 'heritage' in order to create this proportion: • Visiting a historic house, stately home, palace • Visiting a cathedral, church, abbey or other religious building • Visiting a country park • Visiting a garden • Visiting a castle/other historic site • Visiting an art gallery • Viewing architecture and buildings • Visiting a museum

Great Britain Day Visits Survey (GBDVS), Visit Britain	Volume / value of visitors by destination, average spend per visit. The approach taken to apportion the figures for heritage-related tourism uses an activities-based definition. GBDVS provides a national breakdown of the data by activities undertaken, which allows us to derive a proportion for heritage activities undertaken as a portion of all activities undertaken by visitors. This figure has been used as a multiplier to estimate the heritage-related portion of trips and spend. The following categories were classed as 'heritage': • Visited a country park • Visited a garden • Visited an art gallery • Visited a cathedral, church, abbey or other religious building • Visited a historic house, stately home, palace • Visited a museum • Visited a castle/other historic site • Viewed architecture
International Passenger Survey, ONS	Inbound visits (visits and total spend), international inbound visits by country of origin. The approach taken to apportion the figures for heritage-related tourism uses an activities-based definition. IPS provides a national breakdown of the data by activities undertaken, which allows us to derive a proportion for heritage activities undertaken as a portion of all activities undertaken by visitors. The following categories were classed as 'heritage': • Went to countryside or villages • Visited religious buildings • Visited museums or art galleries • Visited castles or historic houses • Visited parks or gardens
Output in the Construction Industry, ONS Also using Council Tax: Stock of properties 2015, VOA	Construction outputs. Heritage specific figures are obtained using a multiplier (the number of pre-1919 buildings as a proportion of all buildings in the region using the Council Tax: Stock of Properties, VOA data as described above) which is applied to the Output in the Construction Industry data.
Taking Part, DCMS	Proportion of people who have visited a heritage site, museum or gallery, or archive. Estimates are extracted from published data.
Taking Part, DCMS, National Minimum	Estimates of the economic value of heritage volunteering are calculated using a replacement cost approach. This approach measures the cost of replacing a volunteer's input with the work of a paid employee. Volunteering input is measured as the

Wage rates, Low Pay Commission and Annual Survey of Hours & Earnings, ONS	mean number of hours spent volunteering in connection to heritage per year, multiplied by the number of adults who volunteered in connection to heritage (i.e. 'volunteer hours'). The number and percentage of adults volunteering in connection to heritage and total number of adults volunteering is extracted from Taking Part data. Data is accessible under End User License arrangements from the UK Data Service. Taking Part data is also used to estimate the mean number of hours spent volunteering in connection to heritage per individual, grossed up from the four-week period covered by the survey to an annual equivalent using a multiplier of 13. Replacement costs are estimated by multiplying volunteer hours by hourly earnings figures. Two different estimates are calculated, using National Minimum Wage rates and median hourly earnings per region estimates from published Annual Survey of Hours & Earnings data[17]

[17] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/placeofresidencebylocalauthorityashetable8

Further information

For anyone considering the creation or commission of an interactive workbook and who would like further advice, please contact

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