Managing missing and uncertain data on the UK museum sector

www.mappingmuseums.org

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Joint work with Fiona Candlin, Andrea Ballatore, Jamie Larkin, Nick Larsson, Val Katerinchuk, Mark Liebenrood
“Mapping Museums: the history and geography of the UK independent sector 1960-2020” AHRC, 2016-2021

- the UK museum sector has a problem with data
- over the last 40 years several reports have noted the lack of an authoritative list of museums
  - no way of knowing how many museums there are in the UK
  - where they are, what they are about, when they opened, what levels of visitors they have
  - particularly acute for small independent museums
- the Mapping Museums project is in part a response to this
Mapping Museums

- the MM project aims to analyse the emergence and development of the UK museum sector from 1960 to 2020
- particular emphasis on the wave of small independent museums opening from mid 1970s
- the MM research team has gathered and codified data on 4000+ UK museums – twice that of any previous study/dataset
- we have developed an RDF database to store this data
- in parallel, we have developed a Web Application comprising **Browse, Search and Visualisation facilities** for researchers to explore and analyse the data
During the late twentieth century, the number of museums in the UK more than tripled. The Mapping Museum research project was devised in response to the absence of coherent data on that expansion. Our aim was to document and analyse how the sector changed between 1960 and 2020.

This website provides access to a database, key findings, transcripts of interviews with museum founders and staff, films and podcasts, and other resources linked to the project.

The database contains information on over 4,000 museums. That data can be viewed on a map or as a list, and can be searched, browsed, or visualised.

All the resources are free to use.

The Browse page under the Database tab and the Edit Museum Data page under the Contact Us tab both take some time to load so please be patient.
Garden ornaments made by inmates for Dartmoor Prison Museum, Devon
Database → About

Database Browse, Search and Visualisation

You can search, browse, or visualise the museums data collected by the project. Please choose the appropriate tab from the Database drop-down menu.

**Browse** allows you to explore the museums data in a structured way according to various categories. You can view the information as a list, on a map, or via the details of individual museums.

**Search** allows you to choose your own search terms and to filter museums using any combination of categories.

**Visualise** allows you to generate graphs showing numbers of museums, growth and closure patterns, and inter-relationships between pairs of categories.

There is a Help section for each of Browse, Search and Visualise that gives more information. Our [online guide](https://www.museweb.dcs.bbk.ac.uk/aboutapp) gives an introduction to using these facilities. This [short video](https://www.museweb.dcs.bbk.ac.uk/aboutapp) also shows how to use the Browse, Search and Visualise facilities.
Database → Browse
<table>
<thead>
<tr>
<th>Name of museum</th>
<th>Lyn And Exmoor Museum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address line 1</td>
<td>St Vincent Cottage</td>
</tr>
<tr>
<td>Address line 2</td>
<td>Market Street</td>
</tr>
<tr>
<td>Town or City</td>
<td>Lynton</td>
</tr>
<tr>
<td>Postcode</td>
<td>EX35 6AF</td>
</tr>
<tr>
<td>Admin hierarchy</td>
<td>/England/South West (English Region)/Devon (English County)/North Devon (English District or Borough)</td>
</tr>
<tr>
<td>Accreditation</td>
<td>Accredited</td>
</tr>
<tr>
<td>Governance</td>
<td>Independent.Not for profit</td>
</tr>
<tr>
<td>Size</td>
<td>small</td>
</tr>
<tr>
<td>Subject Matter</td>
<td>Local Histories</td>
</tr>
<tr>
<td>Year opened</td>
<td>1962</td>
</tr>
<tr>
<td>Year closed</td>
<td>Still open</td>
</tr>
<tr>
<td></td>
<td>Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>ACE size designation</td>
<td>Independent - type one</td>
</tr>
<tr>
<td>ACE size source</td>
<td>mm.ace.590</td>
</tr>
<tr>
<td>Accreditation source</td>
<td>mm.ace.590</td>
</tr>
<tr>
<td>DOMUS Subject Matter</td>
<td>agriculture</td>
</tr>
<tr>
<td>DOMUS identifier</td>
<td>1098</td>
</tr>
<tr>
<td>Deprivation index</td>
<td>4</td>
</tr>
<tr>
<td>Deprivation index crime</td>
<td>5</td>
</tr>
<tr>
<td>Deprivation index education</td>
<td>4</td>
</tr>
<tr>
<td>Deprivation index employment</td>
<td>7</td>
</tr>
<tr>
<td>Deprivation index health</td>
<td>7</td>
</tr>
<tr>
<td>Deprivation index housing</td>
<td>1</td>
</tr>
<tr>
<td>Deprivation index income</td>
<td>6</td>
</tr>
<tr>
<td>Deprivation index services</td>
<td>2</td>
</tr>
<tr>
<td>Geodemographic group</td>
<td>Remoter Coastal Living</td>
</tr>
<tr>
<td>Geodemographic group code</td>
<td>3br</td>
</tr>
<tr>
<td>Geodemographic group name long</td>
<td>3br-Remoter Coastal Living</td>
</tr>
<tr>
<td>Geodemographic subgroup</td>
<td>Ageing Coastal Living</td>
</tr>
<tr>
<td><strong>Geodemographic subgroup code</strong></td>
<td>3b1r</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td><strong>Geodemographic subgroup name long</strong></td>
<td>3b1r-Ageing Coastal Living</td>
</tr>
<tr>
<td><strong>Geodemographic supergroup</strong></td>
<td>Countryside Living</td>
</tr>
<tr>
<td><strong>Geodemographic supergroup code</strong></td>
<td>3r</td>
</tr>
<tr>
<td><strong>Geodemographic supergroup name long</strong></td>
<td>3r-Countryside Living</td>
</tr>
<tr>
<td><strong>Identifier used in source database</strong></td>
<td>SW000159</td>
</tr>
<tr>
<td><strong>Latitude</strong></td>
<td>51.228856</td>
</tr>
<tr>
<td><strong>Longitude</strong></td>
<td>-3.834398</td>
</tr>
<tr>
<td><strong>Primary provenance of data</strong></td>
<td>domus</td>
</tr>
<tr>
<td><strong>Region country</strong></td>
<td>South West</td>
</tr>
<tr>
<td><strong>Size prov</strong></td>
<td>domus</td>
</tr>
<tr>
<td><strong>Visitor Numbers Data 0 at 1996 from domus</strong></td>
<td>0 at 1996 from domus</td>
</tr>
<tr>
<td><strong>Visitor Numbers Data 2818 at 1997 from domus</strong></td>
<td>2818 at 1997 from domus</td>
</tr>
<tr>
<td><strong>Visitor Numbers Data 2987 at 1998 from domus</strong></td>
<td>2987 at 1998 from domus</td>
</tr>
<tr>
<td><strong>Visitor Numbers Data 3085 at 1999 from domus</strong></td>
<td>3085 at 1999 from domus</td>
</tr>
<tr>
<td><strong>Visitor Numbers Data 3281 at 1994 from domus</strong></td>
<td>3281 at 1994 from domus</td>
</tr>
<tr>
<td><strong>Visitor Numbers Data 3281 at 1995 from domus</strong></td>
<td>3281 at 1995 from domus</td>
</tr>
<tr>
<td>Devon [99]</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>A LA RONDE</td>
<td></td>
</tr>
<tr>
<td>Subject: Buildings Houses Medium houses</td>
<td></td>
</tr>
<tr>
<td>ALLHALLOWS MUSEUM</td>
<td></td>
</tr>
<tr>
<td>Subject: Local History</td>
<td></td>
</tr>
<tr>
<td>ALSFORD FARM MUSEUM</td>
<td></td>
</tr>
<tr>
<td>Subject: Rural Industry Farming</td>
<td></td>
</tr>
<tr>
<td>ARLINGTON COURT &amp; NATIONAL TRUST CARRIAGE MUSEUM</td>
<td></td>
</tr>
<tr>
<td>Subject: Unknown</td>
<td></td>
</tr>
<tr>
<td>ASHBURTON MUSEUM</td>
<td></td>
</tr>
<tr>
<td>Subject: Local History</td>
<td></td>
</tr>
<tr>
<td>ASHLEY COUNTRYSIDE COLLECTION</td>
<td></td>
</tr>
<tr>
<td>Subject: Rural Industry Rural Life</td>
<td></td>
</tr>
<tr>
<td>AXE VALLEY HERITAGE MUSEUM</td>
<td></td>
</tr>
<tr>
<td>Subject: Local History</td>
<td></td>
</tr>
<tr>
<td>AXMINSTER HERITAGE CENTRE</td>
<td></td>
</tr>
<tr>
<td>Subject: Local History</td>
<td></td>
</tr>
<tr>
<td>BARNSTAPLE HERITAGE CENTRE</td>
<td></td>
</tr>
<tr>
<td>Subject: Local History</td>
<td></td>
</tr>
<tr>
<td>BAROMETER WORLD AND MUSEUM</td>
<td></td>
</tr>
<tr>
<td>Subject: Other</td>
<td></td>
</tr>
<tr>
<td>BICTON PARK COUNTRYSIDE MUSEUM</td>
<td></td>
</tr>
</tbody>
</table>
## Database Search

### Mapping Museums

**Quick search:**

- **Text Input:**

**Search query:**

- **Filter:**
  - **Select attribute:**
    - **Year opened:**
  - **Comparison criterion:**
    - **Possibly After:**
  - **Value:**
    - **1970**

**Select output attributes:**

- **Add Filter**
- **Submit**
- **Clear All**

### Results (93)

<table>
<thead>
<tr>
<th>Name of museum</th>
<th>Village, Town or City</th>
<th>Postcode</th>
<th>Accreditation</th>
<th>Governance</th>
<th>Size</th>
<th>Subject Matter</th>
<th>Year opened</th>
<th>Year closed</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940s Swansea Bay Museum</td>
<td>Swansea</td>
<td>SA1 8PT</td>
<td>Unaccredited</td>
<td>Independent:Private</td>
<td>small</td>
<td>War and conflict: Event or site</td>
<td>2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aberystwyth Yesterday</td>
<td>Aberystwyth</td>
<td>SY23 1LH</td>
<td>Unaccredited</td>
<td>Independent:Private</td>
<td>small</td>
<td>Local Histories</td>
<td>1971</td>
<td>1996</td>
<td></td>
</tr>
</tbody>
</table>
Database ➔ Visualise

Under **Number of museums** in the left hand menu:

**Open at a given time:**
Use this bar chart to see the number of museums in existence in a specific year (it excludes museums closed at that point).

**That opened up to a given time:**
Use this bar chart to see the total number of museums that had opened up to a specific year (it includes museums that may have since closed).

**That closed up to a given time:**
Use this bar chart to see the total number of museums that have closed up to a specific year.

**Open over time:**
Use this graph to see the number of museums in existence across time.

**Openings over time:**
Use this graph to see how many museums opened in each year.

**Closings over time:**
Use this graph to see how many museums closed in each year.

**Openings and Closings over time:**
Use this graph to compare the numbers of museums opening and closing in each year.

Use the left hand menu to view the bar charts and graphs according to the categories of governance, location, size, and subject matter. Where relevant, you can also use the date slider beneath the chart to change the year in view.

Under **Table** in the left hand menu:

Use this heat map to generate numbers of museums in two categories: for example, to see numbers of museums according to size and subject matter.

Select a category for X and a different category for Y from the menu. Set the year by using the slider beneath the chart.
Number of museums open at a given time, by Subject Matter
Number of open museums over time
Number of museum openings over time
Number of museum openings over time, by Governance type
X=Location, Y=Governance, drilling down into England and into Independent museums
Problems with the data

• Lost e.g. the UK Database project of the Museums Association (1987)
• Poorly archived e.g. lack of explanation of the coding in the 100s of spreadsheets making up the Digest of Museum Statistics (DOMUS) (1994-9)
• Inaccessible e.g. commercial data behind paywalls
• Dispersed: collected and managed separately by many different organisations
• Inconsistent e.g. different sources assume different definitions of “museum”, “visitor numbers”; different standards for recording locations, subject matter, opening/closing dates
• Uncertain e.g. opening/closing dates
• Incomplete e.g. missing addresses, governance, visitor numbers, subject matter; focus on open, accredited museums
Primary data sources

- Digest of Museum Statistics (DOMUS), 1998, by the Museums and Galleries commission
- Standing Commission on Museums and Galleries, Survey of Provincial Museums, 1963
- Arts Council England list of accredited museums, 2017
- Museums and Galleries Scotland museums list, 2016
- Scottish Museums Council, A Collective Insight: Scotland’s National Audit; report, 2002
- Association of Independent Museums members list, 1982, 2016
- Association of Independent Museums non-members list, 1982
- Museum Association ‘Find a Museum’ website, 2017
- Museums Association’s Museums Calendar, 1970
- Historic Houses & Castles in Great Britain and Northern Ireland, Index Publishers 1959
- Kenneth Hudson and Ann Nicholls, Directory of Museums and Living Displays, Macmillan 1985
- Micromuseums Archive, Bishopsgate Institute, London
- Wikipedia lists of museums by country/county
Data Collection

- Digest of Museum Statistics (DOMUS) used as starting point due to its greatest coverage – approx 1800 accredited museums.
- Additional data added from other contemporary and historical datasets:
  - Official government surveys, e.g. 1963 Standing Commission Survey of Provincial Museums; Arts Council England data on accredited museums.
  - Information from historic and specialist guidebooks and gazetteers, from tourist boards, from web searches.
- Also consulted online resources such as museums' websites, TripAdvisor, Wikipedia to give comprehensive coverage of entities considered as being “museums” by the public.
Data Collection

• to improve instances of missing and uncertain data, the project team put out appeals for information on social media and used personal contacts
• made hundreds of telephone calls and sent hundreds of emails to museums staff, local history societies, tourist boards, cultural heritage organisations
• consulted search engines and other online resources (e.g. BBC 1986 Domesday project), and museum specialists including staff from all regions of the UK’s Museums Development Network

• for more details see About → Data Collection
Semantic Web

- first phase of data collection took 15 months
- the data continued to be expanded, added to, and corrected for a further 9 months
- the gradual collection of diverse data and gradual development of the researchers’ conceptualisations pointed to the use of **semantic web technologies** to develop the database, specifically
  - RDF for the data (Resource Description Framework)
  - RDFS for the schema (RDF Schema)
- and to the use of a **Triple Store** to manage the data and the schema (Virtuoso)
Core MM schema
Semantic Web

• evolving relationships between entities are captured in detail through (subject, predicate, object) triples, stored as edges in the schema graph or the data graph e.g.

   MuseumClass – hasSubjectMatter \rightarrow SubjectMatterClass
   The Science Museum – hasSubjectMatter \rightarrow Science & Technology

• the schema can be extended by addition of triples, and amended by replacement of triples as new understanding and knowledge emerge
• the data can similarly be extended/amended by addition/replacement of triples throughout the data collection and improvement process
Semantic Web

• also easy to extend the evolving MM schema with other taxonomies as need becomes apparent e.g.
  – UK Administrative Area Hierarchy (for museum locations) from the UK Office for National Statistics
  – Deprivation Index and Geodemographic Group/Subgroup data, also from the ONS
  – the DOMUS Subject Matter Classification
  – the MM project’s own new Subject Matter taxonomy

• the user interface of our Web Application automatically adapts to changes in both the data and the schema
Subject matter schema
Data completeness

• after 20 months of data collection, we had a core s/sheet comprising 50+ items of data relating to approx. 4000 museums
  – plus two s/sheets of historical data on changes in Governance and in Visitor Numbers over time
• there was full coverage of all attributes except
  ▪ opening dates: known for 88% of museums
  ▪ closing dates: known for 68% of museums that were known to have closed
  ▪ governance: 92%
  ▪ visitor numbers: 67%
Handling missing data

- **Option 1:** exclude museums with missing attributes from searches/visualisations on these
  - not adopted as not acceptable for researchers
  - only exception is missing Visitor Numbers

- **Option 2:** explicitly record a value “Unknown” for missing attributes
  - adopted for missing Governance
  - not adopted for missing Opening/Closing dates as we could do better than this
Handling missing data: opening/closing dates

• **Option 3:** record an interval
  
  [ earliest possible year, latest possible year ]

  – tried to make these intervals as small as possible
  – searched for references to the museum being open/closed/visited in a given year within the historical and digital resources
  – used experts’ specialist knowledge during the data validation exercises held with stakeholder groups
Handling missing data: visitor numbers

• **Option 4:** *derive a less fine-grained attribute*

  – disparities in how visitor numbers are recorded in different sources makes it hard to compare them
  – researchers' primary requirement was to use visitor numbers as an indication of museum *size*
  – we defined a new derived attribute Size with values Huge (1M+ visits per year), Large (50K-1M), Medium (10K-50K), Small (0-10K)
  – initially Unknown was recorded for museums with no recorded visitor numbers
Handling missing data: museum Size

- for the 33% of museums with Unknown size, we then used a machine learning approach to estimate size from other known attributes
- best-performing model derived size from accreditation, governance, subject matter, region, country, geodemographic classification
- left only 1.6% of museums with Unknown size, considered satisfactory for the project’s research aims
Dates in Browse
## Dates in Search

### Mapping Museums

#### Quick search:
- Text Input: [Search]

#### Search query:
- **Filter 1**
  - **Select attribute:** Year opened
  - **Comparison criterion:** Specific year only
  - **Value:** 1960

#### Results (19)

<table>
<thead>
<tr>
<th>Name of museum</th>
<th>Village, Town or City</th>
<th>Postcode</th>
<th>Accreditation</th>
<th>Governance</th>
<th>Size</th>
<th>Subject Matter</th>
<th>Year opened</th>
<th>Year closed</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athelhampton House &amp; Gardens</td>
<td>Dorchester</td>
<td>DT2 7LG</td>
<td>Unaccredited</td>
<td>Independent: Private</td>
<td>small</td>
<td>Buildings: Houses: Large houses</td>
<td>1960</td>
<td>Still open</td>
<td>The House was opened in 1960 and still in use as of the date of the image.</td>
</tr>
</tbody>
</table>

[Screen capture of search results on the Museum Snapshots Archives website]
### Dates in Search

A screenshot of the Museum Snapshots Archives website showing a search for museums opened in 1960. The search results include three museums:

1. **Abergynolwyn Village Museum**
   - Village, Town or City: Abergynolwyn
   - Postcode: LL36 9YB
   - Accreditation: Unaccredited
   - Governance: Independent: Private
   - Size: Small
   - Subject Matter: Local Histories
   - Year opened: 1960
   - Year closed: 2007

2. **Agricultural & Rural Museum**
   - Village, Town or City: Atherstone
   - Postcode: CV9 3PX
   - Accreditation: Unaccredited
   - Governance: Unknown
   - Size: Unknown
   - Subject Matter: Rural Industry: Farming
   - Year opened: 1960
   - Year closed: 1982

3. **Agricultural Museum**
   - Village, Town or City: Eastbourne
   - Postcode: BN26 5SW
   - Accreditation: Unaccredited
   - Governance: Independent: Not for profit
   - Size: Small
   - Subject Matter: Rural Industry: Farming
   - Year opened: 1920
   - Year closed: 1960
Dates in Search

• supports Definitely and Possibly modalities for all of the date comparison operators:
  – year of opening/closing \textit{Before} \( y \)
  – year of opening/closing \textit{After} \( y \)
  – year of opening/closing \textit{Between} \( y_1:y_2 \)
  – year of opening/closing \textit{Before and including} \( y \)
  – year of opening/closing \textit{After and including} \( y \)
  – year of opening/closing \textit{Specific year} \( y \)
  – year of opening/closing \textit{Apart from} \( y \)

• the date comparison operators as implemented in Search satisfy the classical Modal Logic equivalences:
  – Possibly \( X \leftrightarrow \neg (\text{Definitely} \ (\neg X)) \)
  – Definitely \( X \leftrightarrow \neg (\text{Possibly} \ (\neg X)) \)
Suppose a museum opens/closes during an interval of years \([f, t]\), and \(d, df, dt\) are year values that are entered by the user through the Search GUI (if the museum has a precise year of opening/closing \(y\) then we take \([f, t]\) to be \([y, y]\)):

<table>
<thead>
<tr>
<th>operator</th>
<th>implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>([f, t]) Before (d)</td>
<td>(t &lt; d)</td>
</tr>
<tr>
<td>([f, t]) After (d)</td>
<td>(f &gt; d)</td>
</tr>
<tr>
<td>([f, t]) Between ([df, dt])</td>
<td>(f \geq df) and (t \leq dt)</td>
</tr>
<tr>
<td>([f, t]) Before and including (d)</td>
<td>(t \leq d)</td>
</tr>
<tr>
<td>([f, t]) After and including (d)</td>
<td>(f \geq d)</td>
</tr>
<tr>
<td>([f, t]) Specific year (d)</td>
<td>(f = d) and (t = d)</td>
</tr>
<tr>
<td>([f, t]) Apart from (d)</td>
<td>(t &lt; d) or (f &gt; d)</td>
</tr>
</tbody>
</table>
## Dates in Search

Suppose a museum opens/closes during an interval of years \([f,t]\), and \(d, df, dt\) are year values that are entered by the user through the Search GUI (if the museum has a precise year of opening/closing \(y\) then we take \([f,t]\) to be \([y,y]\)):

<table>
<thead>
<tr>
<th>operator</th>
<th>implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>([f,t]) Possibly Before (d)</td>
<td>(f &lt; d)</td>
</tr>
<tr>
<td>([f,t]) Possibly After (d)</td>
<td>(t &gt; d)</td>
</tr>
<tr>
<td>([f,t]) Possibly Between ([df,dt])</td>
<td>(t \geq df) and (f \leq dt)</td>
</tr>
<tr>
<td>([f,t]) Possibly Before and including (d)</td>
<td>(f \leq d)</td>
</tr>
<tr>
<td>([f,t]) Possibly After and including (d)</td>
<td>(t \geq d)</td>
</tr>
<tr>
<td>([f,t]) Possibly Specific year (d)</td>
<td>(f \leq d) and (d \leq t)</td>
</tr>
<tr>
<td>([f,t]) Possibly Apart from (d)</td>
<td>not ((f=d) and (t=d))</td>
</tr>
</tbody>
</table>
Dates in Visualise

- In Visualise, for greater statistical accuracy than just taking interval mid-points as in Browse, the probability of an opening/closing event is divided over the years comprising the interval
- e.g. if a museum is known to have opened during \([1965,1969]\), this 1 museum opening event is divided equally over the five years
- so 0.2 openings are assigned to each of 1965, 1966, 1967, 1968, 1969
- our definitions are “well-behaved” in that
  \[
  \text{OpenedUpTo}(Y+1) = \text{OpenedUpTo}(Y) + \text{OpenedIn}(Y+1) \\
  \text{ClosedUpTo}(Y+1) = \text{ClosedUpTo}(Y) + \text{ClosedIn}(Y+1)
  \]
For a museum that opens during \([fo, to]\) and closes during \([fc, tc]\) the contribution to the count of museums that are \textit{open at time} \(t\) is:

- \(t < fo : 0\)
- \(fo \leq t \leq to : \frac{t-fo+1}{to-fo+1}\)
- \(to < t < fc : 1\)
- \(fc \leq t \leq tc : \frac{tc-t}{tc-fc+1}\)
- \(t < fo : 0\)
For a museum that opens during \([fo, to]\) and closes during \([fc, tc]\) the contribution to the count of museums that opened up to time \(t\) is:

- \(t < fo : 0\)
- \(fo \leq t \leq to : t - fo + 1 / to - fo + 1\)
- \(to < t : 1\)
Graph 3

For a museum that opens during \([fo, to]\) and closes during \([fc, tc]\) the contribution to the count of museums that closed up to time \(t\) is:

- \(t < fc : 0\)
- \(t < fc : 0\)
- \(t < fc : 0\)
- \(fc \leq t \leq tc : t-fc+1 / tc-fc+1\)
- \(tc < t : 1\)
For a museum that opens during \([fo, to]\) and closes during \([fc, tc]\) the contribution to the count of museum openings at time \(t\) is:

- \(t < fo : 0\)
- \(fo \leq t \leq to : 1 / (to-fo+1)\)
- \(to < t : 0\)
Graph 6 and Graph 7

For a museum that opens during $[fo, to]$ and closes during $[fc, tc]$ the contribution to the count of museum closings at time $t$ is:

$t < fc : 0$

$t < fc : 0$

$t < fc : 0$

$fc \leq t \leq tc : \frac{1}{tc-fc+1}$

$tc < t : 0$
Research Results

• ours is the first comprehensive database of UK museums opening and closing during a period of rapid change
• the project’s humanities and social science researchers have used the database to explore
  – the periods during which museums opened
  – variations in openings/closures depending on location, governance, accreditation size, subject matter
  – distribution and density of museums in the different countries of the UK, and the English regions
• findings are detailed in “Mapping Museums 1960-2020: A report on the data” at Resources→2020 Report
• summary of key findings at Resources→Key Findings
Other outcomes

- two User Evaluation Studies were held with a diverse group of 25 independent museum experts (see JCCH 2020 paper, JCH paper forthcoming)
- broad endorsement of the system and approach
- identification of additional applications beyond MM project’s historical research aims:
  - fostering networking between similar museums
  - setting regional development strategy
  - targeting training for museum professionals
  - understanding museums' collections management practices
  - assisting the work of organisations such as AIM, ACE, MDN
  - informing government policy
Ongoing work

• ongoing analysis of geodemographic context of museums’ openings/closings, hence charting of **new geographies of museums**

• detailed **archival research** into areas showing large numbers of new independent museums, and subject matters showing largest growth e.g. local history – Dr Jake Watts

• **in-depth interviews** with founders of selected independent museums (40+) – Dr Toby Butler

• **Contact Us → Edit Museum Data / Add museum** allow the community to correct or update data about existing museums / add data about new museums
Availability
www.mappingmuseums.org

- database and Web Application freely accessible
- dataset is freely available in RDF/XML form
- schema diagrams also downloadable
- Web Application is open-source, licensed under GPL
- because our data contains substantial new information, particularly on small museums, hard copies of the dataset will be deposited in the Micromuseums Archive at the Bishopsgate Institute, London, at the end of 2020
- all interview materials, sound recordings, other printed materials collected by the project team will also be deposited at Bishopsgate
Resources → Publications

Articles

Links to the articles will be provided on publication. Further details will be added for subsequent articles.


Some of these articles are behind paywalls. Final drafts of each article will be made available on BIRON once the journal’s embargo period has expired. Alternatively, contact the team for an eprint.

Report

Thank you. Questions?
Types of museum closure

29th April 2020  ubmlie001

The rapid spread of coronavirus has forced museums in the UK to close. Although those closures are temporary, some museums face financial difficulties as a result, and have raised the prospect that they might close permanently. But not all museums close in the same way. My own research into museum closure in the UK over [...]
Frequently Asked Questions

Can I use the data for my own study?
How do I credit the data in my work?
I’ve spotted a mistake: can it be corrected?
Can I add a museum to the database?
How up to date is your data?
Will the data continue to be updated?
Why do we need a database of UK museums?
What is a museum?
How did you decide which museums to include in the dataset?
What did you exclude from the dataset?
How have you listed museums with several branches?
How have you listed local authority museums that have transferred management to trusts or have outsourced management to businesses?
How have you listed places where there is more than one museum on the premises?
Why does the project begin in 1960?
How did you build the database?
When I search under subject matter, the results do not show all the museums with collections in that area.
Browse, search, and visualise sometimes give slightly different results to the same question. Have I made a mistake?
Garden ornaments made by inmates for Dartmoor Prison Museum, Devon
The Edit form is the same, except it does not allow editing of Visitor Numbers data.