

## Tamworth Castle: Collections Care Review



Tamworth Borough Council

12 April 2021

Drakon Heritage and Conservation

DHCI48

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## I Collections care summary

The collections care survey has been undertaken alongside the review and update of accreditation documentation, in order to identify actions for the Collections Care and Conservation Action Plan, and the Documentation Plan, to update working practice to meet policies and plans; and to identify areas where it is a priority to improve collections care and documentation overall.

The primary issues and recommendations identified are:

- Need to improve environmental conditions and reduce pest activity at Amington to remove risks to the collections: current the environmental conditions are a threat to their long-term future.
- Need to increase personnel capacity: lack of capacity is a significant hindrance to improving collections care, resolving documentation issues and improving the public and engagement benefit they deliver.

## 2 Survey method

The survey was conducted on the basis of physical site visits to the storage locations at Amington and Holloway Lodge during January – March 2021, as well as meetings with staff and analysis of supplied documents. The castle itself has no collections storage, and only limited display of collection items (one case and items on open display as dressed rooms).<sup>1</sup>

Each store was photographed and measured, and a number of key indices recorded, including the volume of the store, its floor area, percentage estimate of the floor space taken up by collections, and a range of other observations.

A sample of items across each store were visually inspected for a range of collections hazards, including physical risks (e.g. those arising from overcrowding such as contact, abrasion), inappropriate loading, placement and packing materials. Objects and stores were also checked for visible evidence of hazards such as dirt, dust, pests and mould, and staff consulted about pest monitoring procedures and concerns.

Health and safety hazards and security concerns were noted during site visits and recorded.

Assessment of the suitability of the stores for staff, research and public access was made with reference to the relevant indices recorded, to establish in each case whether stores had the potential to be visited safely and whether such visits would facilitate a meaningful engagement with the collections.

### 2.1 Environmental assessment

Environmental conditions are being monitored at Amington and Holloway Lodge using Tiny Tag loggers. Summaries of this recorded data were provided by staff in the form of annual and quarterly environmental reports for both sites. Maximum and minimum figures are noted, as well percentages of readings falling within Government Indemnity Standards (GIS). Sections of recorded Relative Humidity (RH) and Temperature data from the period March – August 2020 were converted into graphs by staff and delivered for review as PNG image.

The environmental data was assessed in comparison with published standards which provide guideline levels for the storage and display of museum collections.<sup>2</sup> They specify the ideal conditions for objects based on material type, to prevent/ slow deterioration.

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<sup>1</sup> A separate project to assess fabric and conditions at the castle is underway, collections survey was not undertaken: recommendations would be likely to be minor or duplicate those generated by that project.

<sup>2</sup> BS 4971: 2017 *Conservation and care of archive and library collections*; PAS 198:2012 *Specification for Managing Environmental Conditions for Cultural Collections*.

Quarterly pest monitoring reports were supplied for both locations.<sup>3</sup>

## 2.2 Documentation and benchmarks

*Benchmarks in Collection Care for Museums Archives and Libraries, Benchmarks in Collections Care 2.0.* (MLA 2011, revised 2018) was used as the standard for comparison for this project. These benchmarks include standards for policy, buildings, storage, housekeeping, handling and use, environmental monitoring, environmental control, conservation, surrogates and emergency preparedness.

Only those benchmarks relating directly to collections care were assessed, in line with the brief. The self-assessment checklist is provided separately, and the summary of the results provided in this document.

Outputs from the collections management system Modes were also reviewed, along with existing collections care and documentation documents.<sup>4</sup>

## 3 Survey results

### 3.1 Documentation

All collections, both archive and objects, are documented via the collection management system Modes, as well as physical records. The quality of the Modes records is reasonable, but there are areas where they would benefit from improvement. Historic numbering issues have left a backlog of documentation grey areas: the primary issue is the large number of temporary accession numbers issued to items for which original accessioning information has become separated. Addressing this is already included within the rolling programme of collections care, but progress is limited because of lack of capacity.

There is not currently any rights management and GDPR/ access information available via the collections management system.

There are lists of vulnerable and significant items, but there is no high priority salvage list.

The council holds two Modes licences: these are used to access the system via the council's internet provision at each location. There are fixed computer terminals with internet at the Castle and Holloway Lodge, and a laptop with wifi is used at Amington. Modes can also be accessed by collections staff working remotely. Backups of data are provided via the main council IT system, no independent backup system is used by the museum.

There are a number of groups of items awaiting assessment and accessioning or disposal/ repurposing (at Amington and Holloway Lodge): more than one small photographic archive; several boxes from TBC planning department; large group of material from the Friends of the Castle.

### 3.2 Personnel

Tamworth has one full time collections officer, whose duties involve collections care, of both archives and object collections, as well as a wide range of cleaning and housekeeping duties at both stores and the castle. Other staff members are part of the operational or engagement teams. There is no other curatorial or conservation expertise available in-house. A Museum Manager is intended, but not yet recruited.

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<sup>3</sup> Latest available reports: *Amington Store Pest Monitoring Combined Spring – Summer 2020 Report*; *Holloway Lodge Store Pest Monitoring Combined Spring – Summer 2020 Report*

<sup>4</sup> Tamworth have supplied the primary documents and appendices used during their 2014 accreditation process, with more recent action plans, mostly dating up to 2019 (i.e. Covid has interrupted forward planning).

Lack of staff capacity and specialist expertise presents a definite limit on the level of active collections management, improvement and knowledge that can be achieved, and is thus a risk to collections.

There is a small pool of volunteers: these are a dedicated, long-term group who are familiar with the collections and collections care tasks such as store cleaning and monitoring. However, they are generally not confident using the collections management system, do not undertake heavier physical tasks, and the ability to facilitate them has been impacted by covid. Lack of staff capacity presents a definite limit on the level of volunteer input that can be effectively deployed, limiting resource.

Volunteering is undertaken on an individual, ad hoc basis: there is no active volunteer programme in which benefits and impact on individuals and the organisation can be evaluated and enhanced. It is understood that new volunteers are being recruited, and a framework within which to do this is essential.

### **3.3 Amington store**

#### **3.3.1 Capacity and object storage**

Amington is a modern industrial unit, with areas of good quality storage conditions and adequate security. However, the neighbouring unit is an industrial chemicals producer, and there is a unit which includes hotwork processes nearby: this is a significant potential risk to the collections, one which council emergency and disaster planning should explicitly address.

The store is well organised and not over capacity, although currently the store is full, with no capacity to receive further material. There is a small amount of storage on the floor in one aisle, but this is primarily architectural salvage material recommended for disposal. There has been some use of the store for non-collections items (display cases and other items from castle refurbishment). There is no dedicated working or visitor space in the downstairs area of the store, some table space on the mezzanine.

#### **3.3.2 Environment**

The store is not climate controlled: there is no heating and it is not well buffered against external weather conditions. Very high relative humidity (RH) levels well in excess of recommended levels for the collections housed here have been recorded. Data from 2020 showed RH levels only fell within GIS (Government Indemnity Standards) c. 25% of the time. The majority of the time RH levels were above 65%, which can have a detrimental effect on collections such wood (swelling, warping), textiles (dyes run) and metals (corrosion) and increased pest activity.

RH at this elevated level (above 65%) promotes mould growth, and evidence of this was observed affecting two boxes containing wood and metal objects (site visit February 2021). Paper and archive materials stored here are particularly vulnerable.

Temperatures within the store also fluctuate depending on external weather conditions. In 2020, temperatures ranged between 3–29°C, and only fell within GIS 57.5% of the time (average of the 4 Tinytag locations). Similar readings were recorded in 2019 and 2018. Temperatures in excess of 20°C can accelerate degradation in some types of museum object, for example it can cause softening waxes, lacquers and varnishes, and can speed up chemical reactions. Low temperatures do not necessarily have a detrimental effect on museum objects, however are uncomfortable for staff working on site.

There are no issues with light levels affecting objects in this store as there is no natural light and it is in darkness for the majority of the time. All accessible fluorescent strip lights have been covered with UV film and the lighting only comes on when staff/contractors are working on site.

The store is not well-sealed. The fire doors and roller shutter have gaps around them, increasing the level of air exchange and the potential for increased dust and pest ingress.

### 3.3.3 Collection hazards and pests

The objects are generally well protected, stored on purpose built Metalrax Storage and Brunyzeel racking and either boxed or covered with fabric covers to help prevent from dust build up. There are a number of unwrapped bound volumes (rate books etc) which would benefit from dustcovers.

Integrated pest management is being carried out. Blunder traps (25 total) located around the store are inspected and replaced quarterly. There is a designated quarantine area in the lobby area by the door. Store visits are usually undertaken weekly, but are dependent on volunteer input and has thus been significantly impacted by covid. Vulnerable and significant items are listed and checked annually. Pest activity is managed by isolating affected items.

Evidence for pest activity has been observed within the store. There are significant numbers of clothes moth, although numbers are not quite considered to be at infestation level. There are also high numbers of springtails and booklice, which indicate damp. Recorded numbers of furniture beetle have been at infestation level, severe enough to have led to disposal of collections objects in the past. The high RH is a critical factor. Some evidence of pest damage was noted during site visits (February 2021).

The moths and furniture beetle are a significant threat to the furniture and textiles within the store. Entry points are not well sealed and encourage the entry of dust, dirt and pests into the store, and the environmental conditions promote pest activity.

There is potential for airborne pollutants from unit next door, scale unknown.

### 3.3.4 Health and safety hazards

There are no significant health and safety hazards. The store is well lit and well laid out with clear walkways. There is dedicated office space and welfare facilities. Nature of airborne pollutants from next door units unknown.

The store can reach extremes of temperature which are not comfortable for staff working on site. HSE recommend a minimum temperature of 16°C for a workplace and 13 if the work involves rigorous activity. Temperatures within the store regularly drop below this recommended level, and temperatures as low as 1°C have been recorded.

There are some large, heavy objects stored at height at Amington, which can only be safely accessed with a forklift.

There are a few collections objects with potential hazards, however these are already known to staff and have been stored/flagged appropriately:

- Unsprung mantrap
- Asbestos (sheets in cine projectors; baby-sized gas mask)
- Creosote- already flagged for disposal.

### 3.3.5 Security

The store is alarmed, however it has no CCTV. There is a halogen security light above the front door to the unit and an ADT external alarm unit on the wall beneath. Window in office is barred. There is emergency lighting throughout the building.

The combination of lack of CCTV, location of unit and infrequent visits by staff (usually limited to once per week, less during covid) is a security risk.

One core staff member (Sarah) has keys, however there is a spare set at castle marked restricted and kept securely in the staff room, so wider pool of staff could access them.

### **3.3.6 Accessibility**

The store is purpose built, with well-organised racking. The store is accessible on ground floor level via pedestrian doors and the roller shutter. Some of the collections stored at height are not readily accessible (via forklift). Collections housed on the mezzanine are only accessible via stairs.

External visitor access (e.g. researchers) to the stores must be facilitated by a single staff member, therefore public access is very limited. No general public access to the store (e.g. tours etc) is undertaken, but there is potential for with some reorganisation and introduction of working and discussion space. Given access restrictions at Castle/ Holloway Lodge, this would extend museum accessibility.

## **3.4 Holloway Lodge**

### **3.4.1 Capacity and object storage**

Holloway Lodge Archive is the castle gatehouse, dating to 1810, which includes storage areas of high quality conditions and good security. However, the storage spaces are confined, on an upper level, with restricted window access and only one staircase: in the event of fire, the risk to the collections is extremely severe, and potential for salvage minimal to non-existent. There are no surrogates for the archive. In this sense, the overall archive storage is a significant potential risk to the collections.

The dedicated storage rooms are well organised and not over capacity. However they are full, and there is overspill of collections items into areas not designated for collections storage (offices below, corridor), and some archive collections stored at Amington as a result. Thus overall, collections storage at Holloway Lodge is over capacity. There is no dedicated working space in the collections area.

### **3.4.2 Environment**

Temperature and relative humidity levels for the archive store are good and on the whole stable. Daily RH fluctuations of less than c.5% (read from PNG graph) are well within recommended levels. In 2020, temperature readings were within GIS levels 94% of the time and RH 97.5% of the time. The levels are appropriate for the collections housed there.

The stable RH appears to be the result of a new boiler and heating management system which is helping to control the RH and buffer against external climatic conditions by providing continuous background heat within the store.

There has been a water leak in one of the storage rooms. This does not appear to be a regular problem, but does suggest some risk here.

There are no issues with light levels affecting objects as the stores are in darkness for the majority of the time, with lighting only coming on when staff/contractors are on site.

### **3.4.3 Collection hazards and pests**

The objects are well protected, stored on purpose-built racking and either boxed or covered with fabric covers to help prevent from dust build up.

Integrated pest management is being carried out onsite. Data was provided covering the period January – October 2020. Blunder traps (10 in total) located across the two archive store rooms are inspected and replaced quarterly. Store inspection is usually undertaken weekly, but is dependent on volunteer input and has thus been significantly impacted by covid. Vulnerable and significant items are listed and checked annually.

Pest numbers are low: clothes moths are found in small numbers, which are a concern as they feed on bindings and cloth within books. Booklice are the highest number of pests, along with springtails and plaster beetles, which are a sign of damp

#### 3.4.4 Health and safety hazards

There are no significant health and safety hazards within the storerooms. The store is well lit and well laid out with clear walkways, although these are narrow. There is dedicated office space and welfare facilities, and a disused office that may become a collections workspace. However, the store rooms are accessed via a narrow, steep staircase which represents a hazard, particularly when carrying collection items.

There are a few objects with potential hazards, however these are already known to staff and have been stored/flagged appropriately:

- Very slightly radioactive object (watch).

#### 3.4.5 Security

No significant security concerns at Holloway Lodge. The site is alarmed, has CCTV and storage areas securely locked and all access points (doors, windows) are secure.

Access to keys is restricted. One core staff member (Sarah) has keys, however there is a spare set at castle marked restricted and kept securely in the staff room, so wider pool of staff could access them.

#### 3.4.6 Accessibility

The Holloway Lodge Archive has well organised collections storage, however the two storage rooms are up a steep set of stairs and space within the storage rooms is confined.

External visitor access (e.g. researchers) to the stores must be facilitated by a single staff member, therefore public access is very limited. No general public access to the store (e.g. tours etc) is undertaken, and this is not feasible due to restricted access.

### 3.5 Digital collections

Tamworth plans to increase its digital collections through a digitisation programme. The digital collections will not be accessioned, but will represent a significant asset which will require a care and management plan. This is explored in the digitisation strategy, policy and plan, not here, but a recommendation is provided below for completeness.

## 4 Collections care recommendations

Recommendations should be read in conjunction with the workstrands in the rationalisation and digitisation action plans as there is some overlap. These recommendations are high level and/or address significant issues only. The *Care and Conservation Plan 2019-2022* outlines collections tasks and targets across several accreditation areas in detail and that is not repeated here.

The accreditation workstrand includes the creation of an updated *Collections Care and Conservation Action Plan*, and *Documentation Plan* which should draw on these recommendations and existing documentation.

As an overall recommendation, existing planning and documentation, although thorough, does not distinguish effectively between the execution and recording of regular/ essential collections care targets and tasks, and priorities which require discrete workstrands or strategic investment to resolve. Maintenance or improvement tasks are listed individually at a level and detail which obscure



where action outside normal activity is needed to address significant strategic aims or risks to the collection. The effect of this is to obscure the gap between current capacity and need and make progress difficult to evaluate: the scope of essential maintenance and improvement tasks is considerable, and attempting to 'fit in' additional aims and tasks simply creates a work programme in which key targets are continually deferred.

The addition of new priorities for the collections, through the digitisation and rationalisation programmes, places greater pressure on collections care and documentation tasks, because these are the foundations on which the success of these initiatives is built. As examples: creating a digital archive which includes temporary numbers only increases backlog tasks to be resolved in future; it potentially reduces the information provided with images reducing public benefit; lack of active conservation programme may create reputational risks (showcasing objects in poor condition to wider audience, or inability to showcase significant items because of condition). Enhancing the rights management and GDPR/ access information available via the collections management system is essential to ensure it is an effective tool for the digitisation programme in particular.

With current investment in different museum areas, now is an opportunity to think critically and develop plans for collections care and documentation that work more effectively for the organisation and its aims.

Objective	Task	Notes
Improve documentation	<ul style="list-style-type: none"> <li>See documentation plan.</li> </ul>	<ul style="list-style-type: none"> <li>Highly recommended.</li> <li>Necessary for success of digitisation/rationalisation workstrands.</li> </ul>
Ensure safety of digital assets	<ul style="list-style-type: none"> <li>See digital policy, strategy and action plan</li> </ul>	<ul style="list-style-type: none"> <li>Highly recommended.</li> <li>Necessary for success of digitisation workstrand.</li> </ul>
Establish conservation priorities through improved condition checking programme and plan to address them	<ul style="list-style-type: none"> <li>Formalise identification of conservation priorities in order that plans can be made to address specific issues.</li> <li>Currently, external advice is sought informally, but formal mechanism for alerting managers/ planning funding avenues is not in place to address known issues.</li> </ul>	<ul style="list-style-type: none"> <li>Highly recommended.</li> <li>Implement an internal process to identify, prioritise and address issues.<sup>5</sup></li> <li>External support to provide condition assessments and recommendations may be needed.</li> <li>Quantifying priorities will assist with fundraising where necessary.</li> </ul>
Reduce risks to collections at Amington by improving environmental conditions: adapt entry	<ul style="list-style-type: none"> <li>Improve door and roller shutter seals: addition of seals/brush strips on the doors and roller shutter.</li> </ul>	<ul style="list-style-type: none"> <li>Strongly recommended.</li> <li>This reduces external air exchange, dust and pest ingress to create more controllable conditions.</li> <li>A fairly simple and inexpensive solution which would have an immediate positive impact on the environment within the store.</li> <li>Requires external contractor.</li> </ul>
Reduce risks to collections at Amington by improving	<ul style="list-style-type: none"> <li>Install heating system: humidistat controlled heating (for the collections).</li> </ul>	<ul style="list-style-type: none"> <li>Strongly recommended.</li> <li>Wall mounted electric panel heaters are linked to a humidistat, which is</li> </ul>

<sup>5</sup> This is required by the Collections Care and Conservation Plan 2.1-3, and needs practical system for actioning.

environmental conditions: reduce temperature and RH fluctuations, reduce RH levels overall.		pre-programmed to acceptable RH range. If the humidistat detects an RH in excess of 65% it triggers heaters to turn on which will reduce the RH. When the RH falls within an acceptable range, the heaters switch off.
Increase capacity to enable greater levels of active collections management	<ul style="list-style-type: none"> <li>▪ Collections at both sites more regularly inspected and condition issues such as pests flagged up more quickly, reducing the need for objects having to be disposed of due to pest damage in future.</li> <li>▪ Increase staff activity at Amington, which would also lower the security risk there.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strongly recommended.</li> <li>▪ Covid has interrupted usual processes, prioritising new monitoring would be beneficial.</li> <li>▪ Consider ways to make monitoring programme more resilient: covid is an extreme situation, but low staff capacity also presents a risk.</li> </ul>
Ensure emergency and disaster planning is up to date	<ul style="list-style-type: none"> <li>▪ Ensure the two significant external risks are considered in relevant plans</li> <li>▪ Create salvage list and plan.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strongly recommended.</li> <li>▪ Tamworth are redoing relevant documentation currently.</li> </ul>
Reduce pest risks at Amington	<ul style="list-style-type: none"> <li>▪ Furniture beetle: remove wooden storage pallets from the original pallet racking.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Good practice.</li> <li>▪ Will require a pallet truck. Technicians and access space.</li> <li>▪ This would be good practice, but needs to be completed in conjunction with improving overall store conditions.</li> </ul>
Evaluate risks at Amington from airborne pollution	<ul style="list-style-type: none"> <li>▪ Gather information from neighbouring unit to establish nature of potential pollution.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Good practice.</li> <li>▪ Action dependent on information obtained.</li> </ul>
Improve store working conditions at Amington	<ul style="list-style-type: none"> <li>▪ Additional plug in heating (e.g. oil filled radiators) to provide 'comfort heating' for staff.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Good practice.</li> <li>▪ Requires investment in new equipment.</li> </ul>
Improve store working conditions at Holloway Lodge	<ul style="list-style-type: none"> <li>▪ Explore potential of disused office as collections workspace</li> </ul>	<ul style="list-style-type: none"> <li>▪ Good practice.</li> <li>▪ Confined space reduces ability to use collections, additional workspace would help.</li> </ul>
Improve security at Amington	<ul style="list-style-type: none"> <li>▪ Add CCTV</li> </ul>	<ul style="list-style-type: none"> <li>▪ Good practice.</li> <li>▪ Particularly if increased visitor access is planned.</li> <li>▪</li> </ul>
Create active volunteer programme and evaluation framework	<ul style="list-style-type: none"> <li>▪ Plan and implement</li> </ul>	<ul style="list-style-type: none"> <li>▪ Good practice</li> <li>▪ Ensures maximum benefit of volunteering support.</li> </ul>

#### 4.1 Collections movements

On the assumption that the rationalisation project might generate new capacity at both Amington and Holloway Lodge, and that as a result collections movements might be contemplated, the following principles/ recommendations are offered:

- Location and movement of archives to Holloway Lodge, should be considered in conjunction with fire risk identified above.
- Movement of archives overspill from Amington to Holloway Lodge would offer improved environmental conditions for them.
- All collections movements should follow quarantine protocols: in particular, it is noted that the prevalence of pests and moulds is much greater at Amington, and any movement of archives from Amington to Holloway Lodge should take account of this.
- Amington offers significantly less good quality environmental conditions than Holloway Lodge, and is not appropriate for the storage of archive materials or botanical specimens presently, because of Relative Humidity fluctuations. Improvement of storage conditions at Amington, either via a discrete climate controlled 'pod' or via overall improvement of conditions would be needed to move this material here.
- Amington does not provide secure storage for high value items, such as coins and medals, without the addition of specific control measures (e.g. a locked cage) and a higher level of overall security and monitoring.

## 5 Appendix: detailed store assessment

Amington		
Issue	Description	
Contents	The collections include a wide range of object types and materials: framed, glazed and unframed artworks in oils, watercolour and print; documents; textiles and costume; furniture; domestic, agricultural, industrial and social history objects; individual items of local and civic significance; products of local businesses; archaeology; architectural features and metalwork; coins and medals; transport; glass and ceramics; natural history; geology; paper and bound archive volumes; photographic materials.	
Environment	No environmental control – no heating and temperature fluctuates very cold and hot. RH regularly exceeds recommended levels.	
Capacity	c.345m <sup>3</sup> (collections volume).	
Inventory	Everything is documented via Modes, all boxes and items securely labelled.	
Security	No major concerns, site is alarmed, however no CCTV and site located on remote industrial estate.	
External	Neighbouring unit is industrial chemicals producer.	
Packing	Well-ordered racking (Metalrax Storage and Brunyzeel)/boxes/drawers/cabinets. Unboxed objects protected with fabric covers, boxes well-packed.	
Welfare/ H&S	No issues. Toilet (separate mens and womens facilities). Kitchen facilities available – with sink unit and on-demand hot water point, cupboards, double electric socket and kettle and further tubular frost protection heater. Internet access via laptop only, no landline phone.	
Environmental data provided	2018 – 2020	
Relative Humidity	Very high levels. In excess of recommended levels for the majority of the time. The latest data from 2020 showed annual RH averages only fell within GIS 24.5% of the time, meaning the vast majority of the time collections were exposed to higher relative humidities which cause damage to the materials. Poor results have resulted in an increase in pest activity in the past, notably furniture beetle.	
Temperature	Seasonal fluctuations: extremes of temperature in winter and summer months.	
Light	No issues as the stores are in black out for the majority of the time. Only light sources are fluorescent lights, with UV filters, which are only on when staff/contractors are working in the building	
	Lowest recorded	Highest recorded
RH (%)	39	100
Temp (°C)	1	30

Holloway Lodge		
Issue	Description	
Contents	The collection includes paper, parchment/ vellum, plastic and other films, bound volumes, printed matter, framed and glazed items, stone, wax and metals, textiles, glass negatives, slides, photographs (historic and modern formats), and other ephemera; botanical specimens.	
Environment	No environmental control – no thermal buffering or insulation. Boiler and heating system was replaced in August 2018. Radiators are fitted with TRVs and can be regulated independently. Upstairs in the archive store there are 2 radiators in the first store and 1 in the second store.	
Capacity	21m <sup>3</sup> (collections volume), 7m <sup>3</sup> collections records and other items awaiting assessment/ accessioning. This includes overspill material: volume of collections within designated collections storage (HL3 and HL4) is c.16 m <sup>3</sup>	
Inventory	Everything is documented via Modes, all boxes and items securely labelled.	
Security	No major concerns, site is alarmed and has CCTV.	
External	No fire access: limited window access and only one staircase.	
Packing	Well-ordered racking/boxes/drawers/cabinets. Unboxed objects protected with fabric covers, boxes well-packed.	
Welfare/ H&S	Separate office spaces with desks – computers, internet access, printers, landline phones Small kitchen space with sink unit and on-demand hot water point, fridge, microwave, kettle.	
Environmental data provided	2018 – 2020	
Temperature	Temperature on the whole stable, some seasonal fluctuation.	
Relative H	Daily RH fluctuations of less than c.5% (read from PNG graph) are well within recommended levels. In 2020, temperature readings were within GIS levels 94% of the time and RH 97.5% of the time.	
Light	No issues as the stores are in black out for the majority of the time. Only light sources are fluorescent lights with UV filters, which are only on when staff/contractors are working in the building.	
	Lowest recorded	Highest recorded
RH (%)	30	70
Temp (°C)	8	29

## 6 Appendix: capacity and collections assessment

Amington			
What	Dimensions (approx)	Contents	Vol (m <sup>3</sup> )
<b>Lower floor</b>			
Brunyzeel racking area (AMPR1-4)	4x4mxc.3m wire racks, all with dust covers c.4x6.5m floor space	1 side: tools and implements 1 side: clocks 6 sides: framed art	78.0
Art racking area AMPR5	4.4mx3m unit with 2 shelves and internal partitions	Framed and unframed art (small)	13.2
Blue plan cabinet	8 drawers, estimated 1.5mx1.5mx1m	Objects (small), domestic, local history, curiosities	2.5
Gun safes	2 freestanding gunsafes, c.2m <sup>3</sup> occupied each	Weapons	4.0
Racks AM1, AM2	7.5mx1.7mxc.3m, containing 12 bays, 4 shelves each	AM1, 24 shelves: boxed and unboxed ceramics and glass. AM2, 24 shelves: boxed and unboxed ceramics and glass; domestic, social and industrial	39.0
Racks, AM3, AM4	8.75mx1.7xc.3m, containing 14 bays, 4 shelves	AM3, 7 shelves: boxed archaeology AM3, 21 shelves: unboxed domestic, industrial and social AM4, 1-2 shelves: geology, natural history AM4, 2-27 shelves: archaeology	45.0
Pallet racks AMPAL	14mx1.2mx3.7m, containing 5 bays, 3 shelves each	Architectural items, sculpture, transport	62.5
Floor standing	in Brunyzeel racking area, between racks below stairs, and at aisle ends	Doors and other large items Photographic equipment, domestic items (all large), large archaeology	10.0
Floor standing	in aisle between racking, estimated at 8x1m floor area, c.1.5m high	Primarily architectural salvage	12.0
On top of blue cabinet	6 x 19l boxes, estimated at 1m <sup>3</sup>	Slides and audiovisual material	1.0
<b>Total Lower Floor</b>			<b>c.270.0</b>
<b>Mezzanine</b>			
Costume racks	4 freestanding rails with dust covers, est. 6m	Hanging costume	6.0

Furniture	4mx5mx1.5m freestanding with dust covers	Furniture	30.0
Racks, AM2, 5	3mx0.65mx1.7, containing 3 bays, 8 shelves total	6.5 shelves: archive, loose books no dustcovers 1.5 shelves: large objects	3.4
Boxes	4 RU boxes	Archives	0.5
Racks, AM2, 6	13.2mx0.65mx2m, containing 3 bays, 3 shelves each; 10 bays, 5 shelves each	3 shelves: furniture 56 shelves: costume and accessories, boxed or dust covers	17.2
Racks, AM2, 7	2.8mx0.5mx1.8m, containing 3 bays, 9 shelves total	9 shelves: toys	2.5
Racks, AM2, 8	1.9mx0.5mx1.8m, containing 2 bays, 4 shelves each 6.5mx0.5mx2m, containing 8 bays, 5 shelves each	8 shelves: toys, costume and accessories, boxed 19 shelves: costume and accessories, boxed 2 shelves: empty 19 shelves: archive, boxed	8.2
Floorstanding	Small amount of freestanding objects and un-accessioned items	Large	5.0
<b>Total Upper Floor</b>			<b>c.73.0</b>

<b>Holloway Lodge</b>			
<b>What</b>	<b>Dimensions (approx)</b>	<b>Contents</b>	<b>Vol (m<sup>3</sup>)</b>
<b>Room HL3</b>			
Racks, 1	1mx0.45mx1.8m per bay, 1 bay, 5 shelves total	Planning applications; castle visitor books	0.8
Racks, 2-5	1mx0.45mx1.8m per bay, 4 bays, 21 shelves total	Allsopp book collection	3.2
Racks, 6-7	1mx0.45mx1.8m per bay, 2 bays, 12 shelves total	Miscellaneous book collections	1.6
On top of 6		Large format cemetery plans	0.5
Racks, 8	1mx0.45mx1.8m per bay, 1 bay, 5 shelves total	Real estate records, historic	0.8
Racks, 9	1mx0.45mx1.8m per bay, 1 bay, 5 shelves total	WW1, WW2, organisations and societies	0.8
On top of 9		Outsize maps and plans	0.5
Coin cabinet	30 drawers, plus loose box	Coins and medals	0.5
<b>Room HL4</b>			
Racks, 1-2	1mx0.45mx1.8m per bay, 2 bays, 10 shelves total	8 shelves: TBC records; 2 shelves: Ferrars papers	1.8
On top		Willington pedigrees	
Racks, 3-4	1mx0.45mx1.8m per bay, 2 bays, 9 shelves total	5 shelves: photographs (oversize); 2 shelves: parish information; 1 shelf: archaeological reports	1.6
		1 working shelf	

Racks, 5	1mx0.45mx1.8m per bay, 1 bay, 5 shelves total	Newspapers (bound volumes and boxed). Maps on top	1
Racks, 6	1mx0.45mx1.8m per bay, 1 bay, 5 shelves total	Archives of local trades and businesses	0.8
Racks, 7-8	1mx0.45mx1.8m per bay, 2 bay, 10 shelves total	Tamworth QEM school records; local family papers; including photographs Large format plans and drawings	1.6
Racks, 9	1mx0.45mx1.8m per bay, 1 bay, 5 shelves total	Tamworth images, guides, plans	0.8
<b>Corridor</b>			
Bookshelves	2 bays, 14 shelves total	TBC minutes and papers, mostly bound; Common Hall bokos	1.6
Bookshelves	1 bay	Non-accessioned administrative papers/ slides, slides to be accessioned	0.8
<b>Office (inner)</b>			
On top of filing cabinets	11 small metal drawer boxes	2 boxes: small glass negatives; 2 boxes: large glass negatives, 7 boxes: negatives all accessioned	0.5
Filing cabinet 5		Accessioned photographs/ postcards	0.5
In corner/ under desk	2 RU boxes and loose parcel	Glass negatives waiting for accessioning	0.5
Filing cabinets/ corner/ under desk	Cabinets 2-4, 6-7, small metal drawers	Object record cards; history files; collections records; SHIC cards; donor cards; archaeology index cards; duplicate history/ object cards.	3.0
<b>Office (outer)</b>			
Plan cabinet	1 metal plan cabinet	Maps and plans, all accessioned	1.2
Under stairs	1 large stack RU boxes and loose	Friends material from Castle, unaccessioned to be sorted.	2.2
Filing cabinet 1		Collections and administrative paperwork	0.5
<b>Total Upper Floor</b>		<b>Accessioned items</b>	<b>c.21.0</b>
		<b>Unaccessioned/ collection records</b>	<b>c.7.0</b>