Preservation Needs Assessment for the Department of Anthropology, Texas A&M University

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Submitted to
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Introduction
The Anthropology Department (Department) at Texas A&M University (TAMU) houses the Archaeology Repository, a state curatorial facility. The initial incarnation of the Repository began in 1971 with the establishment of a cultural resources management contract program and research laboratory. The contract archaeology program operated between 1971 and 2001 under five different titles.

Collections held by the Repository are the product of over 30 years of research in Texas on private (i.e., non-permitted), state and federal (permitted), outside of Texas, and abroad.

In 2008, the Department received a Preservation Assistance Grant from the National Endowment for the Humanities. The grant partially funded this assessment, conducted by Paragon Research Associates, LLC (PRA) of Seattle, Washington. The goals for this grant funded assessment were:

1) conduct an on-site assessment of the status of Repository heritage collections (records and materials) in the planning area and the factors that affect the resources and their preservation;

2) describe the cultural and heritage collections in the planning area addressing preservation needs, critical issues, threats, and opportunities facing those resources;

3) provide short-term planning recommendations for physical building improvements including improvements to existing storage space, equipment, and conditions;

4) provide long-term planning recommendations (floor plans, equipment plans and environmental parameters) for future building improvements to house collections;

5) provide clear goal statements and guidance for implementation of the plan; and

6) provide a specific and explicitly stated time frame to implement the plan.

Paula Johnson, PRA Curation Specialist, conducted an on-site visit of Department collections storage locations on July 16 and 17, 2008. Johnson met with Patricia Clabaugh, Curator of Anthropology to tour the storage facilities, observe the condition of the collections, and learn about staff concerns.

Repository Mission
“The Repository’s mission and fiduciary responsibility is to house in perpetuity, care for, and maintain the Department’s permanent research, reference, and teaching collections” (TAMU Draft CMP 2008:9).

Collections
Collections held by TAMU include privately owned materials on long-term loan to TAMU, state held-in-trust (resulting from a state permit), and collections owned by TAMU. There are no federally associated collections held by TAMU. The volume of collections held by the
Repository is estimated at just over 1,000 cubic feet (cf). Approximately 8% of these are fully rehoused and meet current curation standards (i.e.; 36 CFR Part 79). Associated records for these collections are estimated to include over 2,000 linear inches of records, maps, photographs, and analytical information. While the associated records are currently stored in secure storage, none have been rehoused to meet current curation standards and there are no duplicate copies stored off-site as is standard practice. The volume of collections is not expected to increase, and there is a possibility that some of the collections might be transferred to the University of Texas, Texas Archaeological Research Laboratory (TARL).

Active rehousing is being conducted on the State of Texas’ held-in-trust (HIT) collections. The Curator of Anthropology estimates that 35% of HIT collections have been rehoused to current curation standards and that there is funding available for 40% of the remaining HIT collections. The curation for approximately one third of the HIT collections is unfunded.

Several of the large collections at the Repository are privately owned and have been loaned to TAMU professors since the 1970s and 1980s. The legal status of these collections should be resolved as soon as possible. There are two main reasons to resolve the legal status. First to meet the wishes of the now elderly owners for the final disposition of the collections before the issue is complicated by the claims of multiple heirs. The second reason is to avoid the devotio of limited resources to collections that are not owned by the public.

Which owned by TAMU vs. loaned?

Storage Facilities
The Repository stores collections in three facilities. The primary location is the Anthropology Building. There are also two off-site facilities: the Dulie Bell Building and Riverside. Evaluation of the adequacy of these facilities is based on sections of the standards for curation of federally-owned collections (36 CFR Part 79), widely used by professionals as guidelines for the curation of federal and non-federal collections alike. Facilities will be assessed against section 36 CFR 79.9(b)(3) “Standards to determine when a repository possesses the capability to provide adequate long-term curatorial services”.

Anthropology Building
Repository spaces in the Anthropology Building include the main storage space (Room 237), the records room/curator’s office (Room 236), the collections work room (Room 235D), and the collections foyer (Room 235). Collections overseen by the Curator are also stored in research laboratories throughout the building. Inventoried human remains are stored in Room 302.

The Anthropology Building was constructed in the 1950s. It is a three story building. (More on construction methods).

Shelving and cabinets in Room 236 and Room 237 are appropriate for the long term storage of archaeological materials. Both Room 236 and 237 are locked when no one is present. Lights are off when no one is in Room 237; blinds are closed at all times. The fire marshall inspects
the building monthly. The Curator of Anthropology indicates there is an ongoing issue with mold on the windows in Room 237. The HVAC units in Room 237 have leaked in the past. A standard hygrothermograph is in use in Room 237 but it is not regularly monitored. The entire building is sprayed quarterly for ants.

**Finding**

Despite concerns with mold and potential issues with the HVAC system, the Anthropology Building is considered adequate in meeting security, pest control, health and safety, environmental monitoring, housekeeping, lighting, and fire detection requirements for storage of archaeological collections.
Figure 1. Fully curated collections in Anthropology Room 237.
Figure 2. Collections awaiting processing in Anthropology Room 237. Note the available capacity.
Figure 3. Anthropology Room 236 (curator’s office and records storage). Boxes of associated records were staged for transfer into newly acquired filing cabinets.

Figure 4. Evidence of leaking air conditioning unit in Anthropology Room 237. This situation is being monitored.
Dulie Bell Building

Collections are stored in Room 015 in the basement of the Dulie Bell Building. The Dulie Bell Building was constructed in 1941; it is a three story building with a basement.

The Repository shares this space with the Center for the Study of First Americans (CSFA). Anyone who accesses Room 015 has access to both the Repository and CSFA storage areas.

There have been multiple floods in Room 015; this is evidenced by water stains on the walls and doors, buckling flooring, and mold on overhead pipes. There is a fire extinguisher in Room 015 but the tag indicates it has not been serviced since 2001. There is no fire detection system in place. An overhead light has collapsed onto a collections box; this is considered a fire hazard. Shelving is predominantly utilitarian metal frames with particle board shelves; these are not considered appropriate for long-term collections storage.

Collections stored at the Dulie Bell Building are predominantly unprocessed soil samples and light fraction from the Richard Beene Site (41-BX-831). The Repository stores approximately 250 boxes in Room 015; it is estimated that ten of these boxes could be transferred to another regional repository and that approximately one-third of the remaining collections could be deaccessioned as redundant samples.
Finding
The Dulie Bell Building is considered inadequate in meeting security, pest control, health and safety, environmental monitoring, housekeeping, lighting, and fire detection / suppression requirements for storage of archaeological collections.

Figure 6. Dulie Bell Building Room 015, mold on top of pipe. Pipe runs over top of collections. Note water damage from past floods on door in background.
Figure 7. Dulie Bell Building 015. Light fixture collapsed on collections.

Figure 8. Dulie Bell Building 015. Evidence of past flood damage on walls and floors.
**Figure 9.** Dulie Bell Building 015, overview of space. Note pipes running over collections storage.

**Riverside**

Collections are stored at the Riverside Facility owned by TAMU. Collections have been stored here since the early 1980s. Until several years ago, the University charged the Department an annual fee of $800 to use this space.

Riverside is a WWII-era warehouse. The warehouse has wood frame construction on a concrete slab foundation. The building has eight storage units, each with a roll up garage door. Interior partitions divide the eight spaces; partitions are constructed of 2” x 4” framing covered with wire garden mesh. Therefore when one of the units is open, all units are open to the elements.

The storage unit adjacent to the Department’s contains a variety of chemical products and apparently petroleum related equipment. Based on labels visible on product containers, these materials are rated as “Class 5.1 Hazard”. The US Department of Transportation (2004) defines Class 5.1 products as oxidizers, which are “a material that may, generally by yielding oxygen, cause or enhance the combustion of other materials” (49 CFR 173 (127)(a)). TAMU Biology Department policy is to store these materials away from organics and flammables and not on wooden shelves (TAMU 2001:31).

There are window frames along the back of the building which are boarded up. Each unit has an individual light switch. There is no heating or air conditioning in the building and the
building is not insulated. There is no fire detection system. A fire extinguisher is located in the Department’s unit; it is unknown if there are extinguishers in all eight units. The effectiveness of the extinguisher is limited to instances when someone is at the unit when a fire is discovered.

Access to the storage unit must be gained through the Riverside main office. Riverside personnel retain the keys to open the unit; the door locks automatically when it is closed.

Collections stored at Riverside include lithics, basketry, and coprolites from NAN Ranch, Hinds Cave, and several international sites (including internationally-loaned material). Approximately half of the collections are stored on the floor with the other half stacked on tables or desks. Based on visual inspection, there are roughly 500 cubic feet of collections stored at Riverside.

**Findings**

Riverside is considered **inadequate** in meeting security, pest control, health and safety, environmental monitoring, housekeeping, lighting, and fire detection / suppression requirements for storage of archaeological collections.

Figure 10. Overview of Riverside off-site storage.
Figure 11. Interior overview of Riverside off-site storage. Note boxes on floor.

Figure 12. Security concern with incomplete room divider.
Figure 13. Note general jumble of archaeological collections. Boxes in circle are botanical samples analyzed by TAMU faculty and could be discarded.

Figure 14. Exposed electrical wiring in Riverside offsite storage facility.
Figure 15. “Class 5.1 Hazard” rated materials stored in adjacent unit. Class 5.1 materials are flammable.
Figure 16. Wasp nests near entry and on collections box. Wasps were observed entering and exiting the nests during the site visit.
Figure 17. Disintegrating box stored on the floor at Riverside off site facility.

Figure 18. Shirt boxes used to store basketry, cordage, and other perishables from Hinds Cave. Note the crushed boxes.
Figure 19. Collections information is becoming disassociated from the collections. Note the pest holes on the label.

Figure 20. Box content lists are included in many of the boxes. The arrows show areas of pest damage to the box content lists. Note deteriorated condition of boxes in background.
Staffing
The Curator of Anthropology is responsible for all aspects of collections care and management, including daily tasks such as cataloguing, accessioning, inventory, security issues; use of the collections (research, exhibit, education); and oversight of long-term planning for collections issues.

The Curator is assisted by Graduate Research Assistants, work study students, and volunteers. The Curator directs the collections work of all assistants. All assistants require training and supervision; quarterly turnover is relatively common.

Accreditation
The TAMU Repository is applying for accreditation as a certified curatorial facility with the Texas Historical Commission (THC):

The Antiquities Code of Texas designates the Texas Historical Commission (THC) as the entity charged with ensuring the proper care and management of archeological collections obtained under a Texas Antiquities Permit on non-federal public lands. These public lands include lands owned by the state of Texas or by political subdivisions of the state, such as cities, counties, school districts and other special districts... the THC...transfers stewardship of [collections] to curatorial facilities across the state.
To make certain these "held-in-trust" collections are cared for properly, the THC has initiated a certification program for curatorial facilities. The Curatorial Facility Certification Program ensures that the facilities meet current museum standards pertinent to the care and management of collections. ... All curatorial facilities wishing to continue to accept state-associated, held-in-trust collections must be certified (THC 2008).

While TAMU can continue to house the HIT collections it currently holds, it would not be allowed to accept any new collections without being certified by THC. Since the certification process requires time to complete, the Repository is seeking certification proactively.

**Observations**

Six main themes emerged during the site visit. They are discussed individually in the following sections.

**Unique Nature of Collections**

Archaeological collections from Texas make up bulk of Repository holdings, mostly generated between 1971 and 2004 from sponsored and other scholarly research. The focus and significance of the collections attest to the pioneering work carried out by the Department, the archaeological research history of the University, and the rich cultural heritage of Texas and beyond. The Repository houses one of the most extensive pollen and macrobotanical reference collections that are available to researchers for paleoenvironmental and other studies. The Repository also house one of the largest collections of human coprolites.

The Richard Beene site, one of the Repository’s largest collections, yielded over 80,000 artifacts, some of which were buried under 45 feet (14 meters) of overbank (i.e., flood) sediment. In all, 20 distinct archeological layers were excavated at the site yielding over 40 radiocarbon ages. This makes the Richard Beene site one of only a handful of sites on the entire US Gulf Coastal Plain to yield a nearly complete record of occupation spanning the last 10,000 years.

**Benefits of Consolidating Collections into One Facility**

There are many benefits associated with consolidating the collections storage into one facility. The major benefit would be the ability to concentrate resources on improvements to the most appropriate curatorial space.

Neither the Riverside nor Dulie Bell storage facilities are considered even minimally adequate for collections storage. The deficiencies of each facility are numerous and neither facility has the potential to be rehabilitated into an appropriate repository facility. Moreover, both facilities have a strong potential to cause irreversible loss or damage to the collections stored there. Efforts should be focused on consolidating all collections at the Anthropology Building.

The Curator of Anthropology estimates that she visits each facility once per month to monitor conditions and more often to retrieve samples. By consolidating into one facility,
staff time previously spent on locating particular collections stored off-site or monitoring the various known risks to the collections (i.e., flooding), can be instead used to rehouse the collections.

**General Adequacy of On-Site Storage**
The Repository space in the Anthropology Building is considered overall to be adequate for the long-term storage of archaeological collections. Estimates indicate there is adequate storage capacity. Denser storage may be possible with compactor or other storage methods to increase capacity. Further discussions with a structural engineer should explore whether the floor load capacity will support compact storage in Room 237.

**Capacity Analysis**
The estimated current storage capacity of Anthropology Room 237 is 1,071 cf. This amount is derived from the 51 shelf units that have a per unit capacity of 21 boxes. The capacity estimate assumes that no boxes will be stored on the floor or on the top of the shelf unit (doing so would violate fire code).

The Curator of Anthropology has estimated that after rehousing collections, the initial volume of the collection can be reduced by one third. In order to provide conservative estimates for the total amount of space needed to house all collections held by the Repository this report has estimated a one-quarter reduction in overall volume after rehousing.

Table 1 summarizes data on the volume of collections held by the Repository and the capacity to store those materials. To gather this data, the number of fully rehoused collections and non-rehoused collections were tallied. The majority of collections are stored in banker’s boxes which are generally regarded as 1 cf. Some collections, both rehoused and non-rehoused, are stored in trays or smaller boxes. For the estimates, each tray or smaller box was considered to occupy 0.5 cf.

<table>
<thead>
<tr>
<th>Collection Location</th>
<th>Anthropology</th>
<th>Dulie Bell Room 015</th>
<th>Riverside</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Capacity</td>
<td>1,071 cf</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Fully Rehoused</td>
<td>74 cf</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Non-rehoused</td>
<td>542 cf</td>
<td>237 cf</td>
<td>Est. 500 cf</td>
</tr>
<tr>
<td>Estimated Volume After Rehousing</td>
<td>406 cf</td>
<td>178 cf</td>
<td>375 cf</td>
</tr>
<tr>
<td>Total Estimated Volume</td>
<td>1,033 cf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free Space</td>
<td>38 cf</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Areas for Improvement
The Anthropology Building, while generally adequate, does have areas where improvements can be made. Improvements should be made to environmental monitoring (such as adding data loggers) and monthly records should be kept documenting environmental conditions in Rooms 236 and 237. These records will provide staff with baseline information and can serve as documented support for needed upgrades. Repository staff should continue to monitor AC units for leaking and windows for mold.

An Emergency Management Plan and an Integrated Pest Management Plan specific to the concerns of the Repository should be developed.

Use of space should be evaluated in Room 235, 235D, and 236. The security needs and frequency of use should guide where materials are stored. For example, since the comparative collections are only accessed ten times per year by the Curator, less accessible storage should be sought for these collections. Likewise, curation supplies need not be stored in the same limited areas as collections.

Continued Need for NAGPRA Compliance
There is a continued need for compliance with the federal Native American Graves Protection and Repatriation Act (NAGPRA) (43 CFR 10). There are multiple reasons, both legal and practical, to move forward on this compliance work. Grant funding may be available for some of the tasks identified below.

Continued Consultation
Compliance with NAGPRA does not end with completion of the NAGPRA Inventory. TAMU must continue to consult with tribes to comply with this legislation.

Future Applicability Rule
In March 2007, NAGPRA Regulations were updated to define future applicability of NAGPRA (43 CFR 10.13). New reporting requirements must be met by TAMU.

Identification of Human Remains in Unprocessed Collections
Human remains have been identified during rehousing; these remains have not yet been reported to National NAGPRA. National NAGPRA must be notified of these additional remains.

Unprocessed collections have a potential to contain additional human remains. If additional human remains are identified, additional reporting is required to National NAGPRA to update the TAMU NAGPRA Inventory.

Potential to Reduce Collections
Further work to successfully repatriate NAGPRA collections would free up valuable space in the Anthropology Building; it is estimated that half of the human remains could be repatriated with renewed consultation.
Use of NAGPRA Collections
Many repositories throughout the nation have decided that due to the uncertain legal status of items addressed by NAGPRA, the repository is ethically required to restrict research use of these items. Therefore, TAMU is committing resources to housing collections that are of very restricted research potential.

Need for Secure Funding
With a fully funded curator position, the Repository would be in a better position to promote the use of the TAMU collections. Additionally, funding should be sought for the curation needs of the currently unfunded collections.

Potential for Increased Research
The potential for increased research use of TAMU Anthropology Collections is quite extensive. There are large assemblages of unique collections that have not been analyzed at all, much less using modern techniques or revisiting research questions. Improving storage and access to collections will allow TAMU to provide increased information electronically, promote research opportunities, and draw in outside researchers. Currently there are approximately 20 outside requests each year.

Recommendations

Short-Term

Riverside Triage
The Repository should perform triage on collections stored at Riverside. Because of the health and safety concerns, it is not appropriate for students to conduct this work. It is estimated that this work will require four people supervised by the Curator of Anthropology working for a week. This work will require a dumpster and University surplus pick up.

At a minimum the following tasks should be conducted:

- Discard, transfer, or surplus non-collections materials. Furniture and equipment should be relocated to a non-collections storage space. Samples analyzed by TAMU staff (i.e., Phil Dering) should be discarded.
- Replace disintegrated boxes (salvage provenience information that may be on disintegrating paper within). Standardize box size if possible (for example, put two shirt boxes into a banker’s box). Standard office supplies will be adequate for this purpose; archival supplies would be contaminated and could not be reused for storage with other collections.
- Any wasp nests should be sprayed and the floor should be swept out.
- At a minimum, any boxes on the floor should be elevated onto pallets.

The goal of this triage is to minimally protect the collections from further loss of data and flood damage. In addition, this process will allow Department staff to better understand the
volume of collections that require rehousing. Intermediate storage will be necessary before the Riverside collections can be stored in the Anthropology Repository.

**Dulie Bell Transfer**
The Repository should conduct the following tasks to transfer collections from the Dulie Bell Building to the Anthropology Building:

- Assess Richard Beene collections (3-4 days): cull as appropriate then transfer to Anthropology Department.
- Facilitate transfer of approximately ten boxes to TARL.
- Salvage shelving that is not constructed of particle board. Shelving constructed of particle board could be saved for future use in storing collections from Riverside or surplused depending on the judgment of Repository staff.

**Transfer of Other Materials**
There are approximately 105 boxes of curated materials from the Bonfire Memorial that should be transferred to the TAMU Library.

**Rework Anthropology Building Spaces**
Repository staff should consider reallocating space to improve functional use of Rooms 235, 235D, and 236.

- Add locking storage cabinets in Room 235.
  - Potential for storage of curation supplies.
  - Staging area for collections to be processed.
- Utilize available space on walls above desks in Room 235D for reference materials or curation supplies; if possible, remove standing bookshelves to reconfigure tables to increase collections workspace.
- Move comparative collections from Room 236 to a less accessible space.
- Move all records to Room 236.
- Surplus unused map cases and light table.

**Monitor Environmental Conditions in Rooms 236 and 237**
Data loggers should be placed in Rooms 236 and 237 to collect data on environmental conditions. This information should be reviewed regularly to identify any harmful fluctuations or other concerns. Baseline data will allow Repository staff to better determine if upgrades to the HVAC system are necessary.
Mid-Term

Transfer Collections from Riverside to Commercial Storage Unit
Once triage tasks are conducted at Riverside and the volume of collections is better defined, funding can be sought for temporary commercial storage. While not meeting all of the requirements for archaeological collections storage, a commercial storage facility will provide a more stable environment (integrated HVAC) and better fire suppression. The goal of moving collections to a transitional storage facility is to conduct preliminary rehousing or inventory tasks away from the Anthropology Building to prevent cross-contamination of collections.

Develop Integrated Pest Management Plan and Emergency Preparedness Plan
The TAMU Repository should develop an Integrated Pest Management Plan and Emergency Preparedness Plan. Grant opportunities exist for each of these types of projects and TAMU may be able to hire consultants to create these documents.

Continue to Conduct NAGPRA Compliance Tasks
TAMU Repository staff should continue to support the Anthropology Department in conducting NAGPRA compliance activities. The Curator of Anthropology can oversee NAGPRA compliance while the Bio-Anthropology Head is on leave.

Resolve Status of Old Loans
There are several long-term loans that should be resolved. The largest of these loans is the NAN Ranch collection which includes approximately 500 cf of materials. Other loans include international loans. The scale of this effort is still to be determined as the number of outstanding loans is not known.

Evaluate Storage Density Options in 237
A structural engineer should be consulted to determine the load bearing capability of the floor in Room 237. If sufficient load capability exists, options for the layout of a compactor storage system should be explored and cost estimates obtained.

Long-Term

Upgrade HVAC System
If environmental monitoring data demonstrates the need for improved HVAC, the system should be upgraded. This will likely be a building wide improvement and not all spaces in the building will have the same HVAC requirements. The more information Repository staff can have about their HVAC requirements the more likely an upgrade will be appropriate to curation needs.

Data Migration
The TAMU Repository holds a wide variety of 5" floppy disks, 3.5" floppy disks, and other obsolete media. Not all of the information contained on these media is of equal importance, but without the appropriate hardware, the data cannot be accessed. Grant opportunities may exist for migration of the data into an accessible format.
Rehousing / Duplication of Associated Records
A plan to rehouse associated records should be prepared. Priorities for rehousing tasks should be developed and space should be secured for the off-site storage of duplicate records. Options for digitizing records should be evaluated. Grant funding may be available for these tasks.
Bibliography

Texas A&M University (TAMU)

Texas Historical Commission (THC)

US Department of Transportation