

## **First and Second Floor of Richardson Hall: Conservation Assessment of Preservation (CAP) Survey of the American Philosophical Society**

### **Conservation Assessment Objective**

The objective of this Conservation Assessment for Preservation survey is to assess the current condition of Richardson Hall in order to advocate for the best and realistic care for the American Philosophical Society's collection.

Within this broad scope, this report focuses on the goals of the Associate Director of Collections and Exhibitions Mary Grace Wahl for the improvement of the current facilities to house the museum collection. These goals include:

- Improved accessibility by increasing space for mobility within storage areas and identifying transportation routes that can be navigated with carts (without stairs)
- Proximity to a mount and storage preparation area and an object examination area
- Unification of museum objects in rooms 216 and 216U in a single storage space

### **Strengths of Richardson Hall First and Second Floors Overall:**

1. The temperature and relative humidity conditions seem well regulated based on measurements taken throughout the building on May 13<sup>th</sup> with an ELSEC 765 Environmental Monitoring Device and readings from PEM2 data loggers in rooms 112, 216, and 216 U.
2. The security systems in place at the entrances and points of vulnerability are well maintained and appropriate for the current use of the building.
  - a. The front entrance has a magnetic security lock with code entry, and there is a system to relinquish employee access upon termination. A camera system is used to buzz in guests without an entry code. There are two security cameras: one in 101 facing the exterior of the front entrance, and one in 102 facing the door. There are bars on the windows in 112 and a tall, barbed, metal fence over the alleyway on the east side of the building off of Ranstead Street.
3. The lighting systems are being updated from fluorescent to 90W PAR38 reflectable, dimmable, LED bulbs which will reduce heat, UV, and maintenance (Image 1).<sup>1</sup>
4. Housekeeping of Richardson Hall and the other three buildings associated with the American Philosophical Society is maintained by a team of four staff who manage janitorial duties, basic system maintenance, security, and A/V needs.
5. The integrated pest management system is to be imminently updated to a more intensive monthly inspection with pest traps and deterrents tailored to the use of each space. This will consist of dry bait in mechanical areas, pheromone-free glue traps in collection areas, and liquid spray in

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<sup>1</sup> Images shared separately via google drive  
(<https://drive.google.com/drive/folders/1Fvsan-iLKptNZ3LqnpaiWARK2rNJfM9M?usp=sharing>).

restrooms. Pest events are reported to the CFO, who records them in a centralized log. The institution has no history of major infestation.

6. Smoke detectors and fire extinguishers are installed and appear maintained.
7. APS maintains a Collections Management Policy outlining the mission and collection of the museum and procedures for accession, deaccession, loans, photographic services, risk management, insurance, and access to collections. The institution also has an umbrella policy on Collection Recovery for Disasters, a Library Disaster Plan, and guidelines for safe handling of library collections for public services staff.

#### **Weaknesses of Richardson Hall First and Second Floors Overall:**

1. Mobility to other buildings in the APS campus is limited and poses risk of physical damage to collection objects.
  - a. There are short flights of steps at the front and back entrance to Richardson Hall as opposed to ramps or loading docks that would be more conducive to transporting collection objects in and out of the building.
2. The first and second floors lack automatic fire suppression systems such as sprinklers.
3. Ceiling registers over air circulation vents have accumulated significant dust.
4. The building envelope is secure overall but has localized vulnerabilities.
  - a. Cracks have formed between the bricks on the exterior wall facing Ranstead Street above the windows in room 112 (Image 2).
5. Proximity to the food hall The Bourse across Ranstead Street from Richardson Hall poses elevated risk for pest infestations.
6. Vibrations are generated by the congested traffic on Chestnut Street and the intermittent movement of large delivery trucks on Ranstead Street. There is also frequent construction work in the area. These mild but sustained physical forces pose risk to museum collections.

#### **First Floor (Rooms 101-112)**

The first floor of Richardson Hall includes a lounge, two vestibules, office and conference space, restrooms, and a kitchenette. The space is currently unused by the American Philosophical Society but may be renovated to accommodate conference and study spaces for APS fellows in rooms 104 and 106, and an area for library processing in rooms 111 and 112.

#### **Strengths:**

1. The space on the first floor of Richardson Hall is abundant and currently unused. Rooms 104 and 106 also offer the benefit of high ceilings.
2. Fire detection systems are installed in the ceiling in every room. Fire extinguishers are conveniently located and up-to-date.
3. The space appears recently renovated with new construction materials including drywall, tinted glass partitions, shelving, and flooring. Rooms 104, 106, 109, 111, and 112 are carpeted.
4. Wall-mounted HVAC registers have been fitted with filters.
5. The lights in rooms 111 and 109 face upward, providing indirect light that is sufficient to examine objects, and the light switches in rooms 103-107 allow fixtures to be dimmed.

**Weaknesses:**

1. Natural light from the windows in rooms 101 and 112 is not filtered by blinds or UV films. [UV levels of 1138 mW/cm<sup>2</sup> and visible light levels of 1400 lux were detected inside the window of room 101 on a rainy day.]
2. Airborne particulates can be assumed to be circulating through the space as the ceiling registers have accumulated significant dust.
3. Automatic fire suppression systems such as sprinklers are not in place or were not detected.
  - a. There are cut wires, possibly phone lines, hanging from a hole in the wall in room 111.
4. The fireplace in room 112 is capped but has developed rust. Fallen debris from the chimney is visible below the seams (Image 3).
5. The plumbing access panel in the wall of room 112 contains old ductwork and rubble (Image 4).
6. Water damage and flooding potential can be ascribed to the restrooms and kitchenette with active water lines central to the space.
  - a. There is a fire department connection on the exterior below room 112 which presumably houses considerable standing water (Image 2).

**Second Floor (Rooms 201-221)****Offices/Reception Area on South End (Rooms 201-204)**

This area includes two offices at the south end and a reception area, including a small restroom and a water fountain. There are two entry points: one by stairs and another by elevator. A security code is required for the door by stairs, but not for the elevator. In both offices, there are big windows along the south wall, and a couple of them were covered with a sheer blind. The area is carpeted throughout and is climate controlled. Both the offices and the reception area have indirect light fixtures.

**Strengths:**

1. On the day of the survey, this area had well-regulated temperature and relative humidity.
2. There is a fire extinguisher in the reception area, a smoke detector in room 201, and an emergency evacuation map by the entrance.
3. The door from the stairwell is locked by an electronic keypad.
4. The windows appear to be inoperable, having been painted shut.

**Weaknesses:**

1. The windows do not have a UV filter and are selectively covered with a sheer blind (Image 5).
2. The ceiling register in room 201 has accumulated dirt and does not appear to have a filter.
3. No security code is required in the elevator to enter this second-floor area.
4. Foods, drinks, and plants are not regulated in this area which may lead to pest risks.
5. There is a water source in the area—restroom and water fountain.

**Offices under Skylight Area (Rooms 206-213)**

This area is used as offices and a meeting space. There are two massive skylights through which the sub-attic and another skylight above are visible. The second floor is divided into a lower and upper level by the stairs in room 213. A closet where electrical wiring related internet connectivity is also in room 213, right before the stairs down to room 215. In room 208, hanging light fixtures are suspended from the ceiling. The hallway (214) has light fixtures that provide indirect light. This whole area is carpeted.

**Strengths:**

1. On the day of the survey, this area had well-regulated temperature and relative humidity.
2. The electrical room's temperature and relative humidity is in the same range of other areas.
3. There are smoke detectors in the hallway, but no sprinklers. The closest fire extinguisher is in the reception area, described in the previous section.
4. Overall, the area appears to be well-maintained and clean.

**Weaknesses:**

1. The skylight is a major source of UV and visible light. There are some concerns around the skylight, including broken glass panes, debris accumulated on top, peeling paints, and water staining from previous infiltration (Image 6). The second skylight above the stairs has accumulated significant grime and debris (Image 7).
2. The sub-attic area was not accessed during the visit. It appears to be not accessed frequently and may pose issues for maintenance.
3. Foods, drinks, and plants are not regulated in this area, which may lead to pest risks.
4. Debris and small cracks in the architectural element in room 208 were observed.
5. One of the old HVAC system vents no longer in use below the skylight (208) is covered and has a peeling paint or paper around it.

**Corridor (Room 215)**

This room is a small corridor located at the north end of the 2nd floor. It is accessed by a short staircase equipped with handrails on the west and east walls leading downstairs from corridor 213. It contains a shelving/storage unit (not used for collection storage) and printer. There is a fire alert strobe, an emergency light, an emergency exit sign, a fire extinguisher, and a smoke detector in the space. The paint behind the printer on the west wall is peeling due to damage from a water leak from the upstairs bathroom (219U). The ceiling tiles over the printer are stained as a result of the leak as well, and some panels have been removed to expose piping (Image 8). The room is lit by fluorescent lights and has no windows. The floor has wall-to-wall carpeting. The door to the adjacent museum storage room (216) is on the east wall.

**Strengths:**

1. A fire extinguisher, smoke detector, alert strobe and emergency exit are adjacent to collection storage area (216), facilitating evacuation of personnel and collection objects.

**Weaknesses:**

1. Peeling paint and wall staining indicate a history of water intrusion from the upstairs bathroom (219U), potentially endangering adjacent storage areas.

2. The stairwell separating storage (216) from the collection care, packing, and preparation space (216U) and the handling and display/study area (208) poses danger to objects and personnel.
3. The ceiling register has accumulated dirt and does not appear to have a filter (Image 9).

### **Museum Storage (Room 216)**

A museum storage space is located at the north end of the second floor on the east side of the building which houses paintings, paper, textiles, wood furniture, marble sculpture and other assorted objects. The space is accessed by a door secured with a double cylinder deadbolt. Access is restricted to two staff members: Anne Downey, Head of Conservation, and Mary Grace Wahl, Associate Director of Collections and Exhibitions. The north and west walls are lined with powder coated steel shelving for object storage. The east wall has powder coated steel storage racks for upright storage of paintings and prints and a rolling step ladder to facilitate access to upper shelves. There is a raised wooden pallet in the center of the room for additional storage of large objects. In the center of the south wall there is a Canatal HVAC unit for environmental regulation. A PEM2 datalogger consistently records environmental data. There is a security camera against the south wall. The space is equipped with a smoke detector, but no fire suppression system. Glue boards have been placed against the south and west wall for pest management. The room is lit by fluorescent lights when in use. Carpet floor coverings have been removed due to past water damage except in the area below and directly surrounding the Canatal unit.

### **Strengths:**

1. The Canatal unit within the storage space maintains optimal conditions for preservation.
2. The PEM2 datalogger has recorded stable values for temperature and RH in the storage space over the past five years.
3. Security cameras are installed.
4. Collection storage is protected with a double cylinder deadbolt. Keys are held by two staff members.
5. Collection objects are stored off the ground on powder coated stainless steel Metro Shelving with Volara polyethylene foam padding to protect from water events, grime, and pests.
6. Currently there are two glue traps in storage for pest management. An upgraded integrated pest management policy will be implemented throughout the collection in the coming weeks.
7. Most objects are stored in archival boxes or covered with cotton muslin to protect from grime, pests, and light exposure.
8. Most objects are labeled in a system devised by Mary Grace Wahl. Labelling for new acquisitions is ongoing to prevent dissociation of objects from identifying information.
9. Mary Grace Wahl has developed procedures for locating objects within collection storage, removing objects for research, and handling supervision.
10. The storage space is visually assessed daily by Mary Grace Wahl.

### **Weaknesses:**

1. Inadequate storage space poses risk to collection objects and personnel. Areas at the back of the storage space are not easily accessible (Image 10). Large objects cannot be removed without rearranging the rest of the storage space. There is insufficient space for large paper objects, which are currently left in the open and exposed to potential water damage.

2. The Canatal HVAC unit contributes to limited mobility and security risks.
  - a. Objects must be rearranged and removed from storage in order to perform maintenance on the Canatal unit.
  - b. Maintenance for the Canatal unit requires unverified personnel to enter collection storage for sustained periods of time.
  - c. A recent leak required carpeting in the storage space to be removed after mold spores were detected (Image 11). The carpeting directly around the unit could not be removed, and was dried with an electric fan.
3. Smoke detectors are present and there is a fire extinguisher outside the storage space in room 215; however, there is no fire suppression system within the storage space itself.
4. A gap under the door to the storage space could cause objects to be exposed to water, smoke, fire, pollution, pest damage.
5. The space is currently lit with fluorescent lights, although transition to LEDs which emit less UV radiation and heat is planned. Lights are kept off unless museum staff are entering the space.
6. Three museum databases are currently used to manage various collections at APS, which are not compatible with one another.
7. While most objects are labeled, some have detachable labels that could be replaced with a more secure option to prevent dissociation of information.

### **Philadelphia Area Consortium for the History of Science, Technology and Medicine (PACH) Office Annex (Rooms 217, 218, 220, 221)**

Rooms 217, 218, 221 and 220 are located at the extreme north end of the second floor and can be accessed by passing through corridor 215. They make up an annex of offices currently rented by the Philadelphia Area Consortium for the History of Science, Technology and Medicine (PACH). The conditions of this space are suitable for its current use as an office. Nevertheless, it has been evaluated for its suitability as a storage area for collection objects in case of future reconfiguration of the second floor offices and museum space.

#### **Strengths:**

1. Temperature and RH seem stable throughout the space.
2. The kitchenette appears well maintained and clean, with no evidence of pest activity.

#### **Weaknesses:**

1. The kitchenette/ food prep area poses risk of pest infestation. Employees working in this space may also eat at their desks, exacerbating risk of pest activity adjacent to museum storage.
2. Plants create a potentially pest-friendly environment.
3. The bathroom adjacent to museum storage bears potential for flooding/water damage to collection objects.
4. Windows allow unfiltered ultraviolet (UV) light to enter the space.
5. Fluorescent light fixtures could pose risk to collection objects in the event of prolonged exposure.

### **Second Floor Upper Level (Rooms 216-U, 217-U, 219-U)**

A mezzanine level directly above the main collections storage area (216) includes a kitchen (217-U), a bathroom (219-U), a stairway to the upper level and roof, and a room divided between a collection care, packing, and preparation space and a storage area. This storage area contains furniture from the museum collection along with boxes of documents, paintings, and other miscellaneous objects (216-U). There is a skylight above the kitchen and a similar skylight above the collection care area. There is a paneled drop ceiling above the entire mezzanine area which contains lighting panels and HVAC registers. The sub-divided collections care and storage room is separated from the adjacent kitchen by a wall and accessed through a door with a key-operated locking handle.

**Strengths:**

1. Ceiling-mounted smoke detector is located near the door between the kitchen and collection care/storage area.
2. A PEM 2 environmental data logger has recently been installed in the collection storage space.
3. The collection care/storage area is secured by a locked door.
4. The collection care space is located near collection storage.
5. The skylights appear to be weathertight, although faint staining on the adjacent drop ceiling panels may be evidence of past moisture infiltration.
6. Kitchen appears well-maintained and clean. No evidence of pest activity was noted.

**Weaknesses:**

1. The location of the kitchen and bathroom position significant sources of water directly above main collection storage (216).
2. Collection storage is tightly packed, with limited accessibility. Objects are stored directly on the floor or are stacked on top of one another. The ceiling height does not adequately accommodate all objects, and a ceiling panel has been removed to allow a clock case to extend into the ceiling cavity (Image 12).
3. Mezzanine level is accessed by stairs only. This makes transportation of objects awkward and poses risk of harm to objects and personnel.
4. Dust and debris have accumulated on storage boxes below the removed ceiling panel (Image 13).
5. The HVAC ceiling register above the collection storage does not appear to have a filter installed, has accumulated dirt and dust, and shows signs of moisture condensation, drips, and possibly mold.
6. Natural light from the skylight is not controlled in the collections storage area, although it does not shed light directly on collection objects. The fluorescent lights within the collection storage area cannot be operated independently of the kitchen lights and are therefore often switched on unnecessarily.
7. A gap below the door to collection storage could allow easy infiltration by pests.
8. There was no fire suppression system or fire extinguisher present on the mezzanine level.

**First and Second Floor Overall Recommendations**

**Short Term Recommendations:**

- Clean HVAC registers and install appropriate filters to reduce pollutants and airborne particulate matter.
- Block natural light through the windows (112) with retractable curtains to reduce exposure and regulate temperature and humidity.
- Replace the cap in the fireplace (112) to create a better microenvironment, regulate temperature and relative humidity, and block pollutants and pests.
- Remove the rubble contents within the access panel (112), and ensure that the panel remains closed to deter pests.
- Install a fire extinguisher on the mezzanine level in an accessible and clearly marked location.
- Install a sweep on the door to collection storage (216 and 216U) to reduce risk of infiltration by pests.
- Remove debris which has accumulated below the open ceiling panel (216U).
- Continue to monitor the newly-installed data logger (216U).

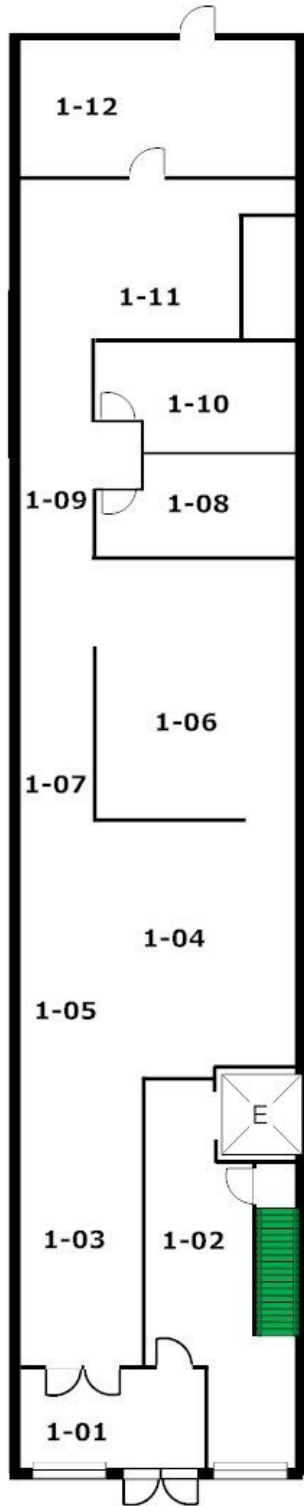
**Intermediate Term Recommendations:**

- Evaluate collection storage (216U) and implement improvements as possible.
  - Raise objects off of floor using shelves or platforms.
  - Consider alternate locations for some collection objects, especially those not adequately accommodated by the ceiling height, and replace the ceiling tiles.
  - Use plastic covers to protect collection objects from dust or moisture infiltration.
- Add a switch to allow independent operation of collection storage lights (216U).

**Long Term Recommendations:**

- Consider relocation of both floors of collection storage (216 and 216 U), to improve accessibility and facilitate safe transportation of objects by cart and elevator, provide adequate space for safe storage and ease of removal, incorporate examination areas into storage space, and encourage use of the collection.
- While museum staff have developed procedures for locating and removing collection objects from storage for research/study, these have not been recorded as formal policies and procedures. A “Safe Handling Tips” document is recommended for collection storage.
- If the first floor of Richardson Hall is renovated for library processing or collections storage, please consider expanding the team in charge of housekeeping, maintenance, security, and electrical connectivity to ensure the needs of the objects, fellows, and staff are met.





**Staff Lounge**  
1-12

**Vestibule**  
1-11  
1-03

**Rest Rooms**  
1-10  
1-08

**Corridor**  
1-09  
1-07  
1-05

**Office**  
1-06

**Conf. Room**  
1-04

**Inner Lobby**  
1-02

**Outer Lobby**  
1-01

**Richardson Hall - 1st Floor**  
431 Chestnut St.

