

## Archival Products

# NEWS

### Ergonomic Considerations for Furniture and Equipment in a New Conservation Lab

by Heather Caldwell Kaufman

CONSERVATION OF LIBRARY and archival materials can be physically demanding work. Depending on the type of techniques needed for particular treatments, conservation staff may find themselves sitting or standing at workbenches, leaning over washing sinks, cranking book presses, or lifting and placing weights to restrain drying items. They may use small hand tools that require precise motor skills or operate large pieces of equipment that require significant strength. This variety of tasks can best be accomplished when the lab design enhances the comfort, safety, and thereby the productivity of conservators and technicians; i.e. when the lab has ergonomic principles incorporated into its design.

The Oxford English Dictionary defines ergonomics as “the scientific study of the efficiency of man in his working environment.” This term is derived from the Greek word for work. Much has been written about the ergonomics of office



Christine McCarthy, Conservator and John O'Regan, Conservation Technician, working in the rare materials conservation area at the MIT Libraries.

spaces, especially as it pertains to computer-oriented tasks. Additionally, there are citations in the bookbinding literature concerning the set-up and design of workbench areas. The library and archives conservation community has begun to synthesize these two streams of information to help conservation staff create adaptable and healthy workspaces that can be customized to suit common conservation tasks as well as meet individual needs.

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In October of 2002, the MIT Libraries officially opened the E. Martin and Ethel Wunsch Conservation Laboratory. During the creation of this new lab, the potential ergonomic benefit of each piece of furniture, equipment, and lighting was seriously considered before the planning committee made any final product selections. The committee researched and specified items that were adjustable and/or mobile, if those qualities added to the ergonomics of individual workspaces as well as the overall flexibility of the room design. Specially adapted pieces are useful, but as ergonomics has come into greater prominence over the past years, many off-the-shelf products have ergonomic features available. This article outlines the final selections and highlights some of the ergonomic features of the furniture, equipment and lighting for the Wunsch Conservation Laboratory.

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**Anti-fatigue mats.** Mats are 24" x 36" which allows ample standing area in front of the workbenches or board shear. They have a double thick (7/8") sponge base for additional support during extended standing time.

**Benches.** Workbenches have telescoping legs so their height can be adjusted from 36" to 42", depending upon the height and preference of the person assigned to that bench. The horizontal support for the bench is located between the two back legs, allowing for the maximum amount of legroom and storage of taborets. The size of the bench top is 70" x 36" to give adequate working surface for a multitude of projects and the bench top color is a neutral pale gray which is relatively comfortable to look at for long periods of time as it is neither too bright nor too dark.

**Board shear.** The bed of the board shear is raised to 30 3/4" high using wooden "shoes" which fit around its feet. This enables one to cut without bending over as far. Newer model shears are built with taller legs for this very reason.

**Fume hood.** The fume hood has a knee space 13 1/2" deep that allows conservation staff to sit or stand while working.

**Lighting, task.** In addition to the overall lighting in the room, small fluorescent fixtures underneath the cupboards illuminate the counter directly beneath them — a space that would ordinarily be in shadow. The task lights on each bench have combination fluorescent and incandescent lights that may be used individually or together. These lamps reduce shadows and aid in color correction. They also have flexible arms that allow the lamp to be positioned in many different ways. Good task lights are especially important as the lab is in a basement.

**Press stands.** Press stands are separate tables affixed to the side of the workbenches for stability. They are of adjustable height, but situated slightly lower than the bench top, so that conservation staff can crank the press without reaching unduly high to the press wheel. They have an upper and lower shelf for storage of pressing boards and weights. A steel plate was added beneath the top surface for additional strength. The presses are bolted to the surface by screws that have been drilled in and extend down through the metal plate.

**Stools, sitting.** Stools for sitting at the workbenches have features that allow them to be adjusted to the individual: seat height, angle, and depth; back



View of the MIT Libraries Collection Conservation workstations.

height, lumbar support and footrest ring. The stools are mounted on a pedestal base with wheels.

**Stools.** A sturdy step stool at each workstation enables staff to easily and safely reach cabinets and upper shelves. The depth of the counters was carefully considered and averages 2 1/2', so that conservation staff does not have to reach excessively far to access items at the back or cupboards above.

**Table, board storage.** A table with five large plastic laminate shelves is quite heavy, especially when loaded with binder's board. For this reason, it has been mounted on wheels for easy moving as needed. Each caster has a total lock brake to ensure stability once the table is in position.

**Table, mobile.** An adjustable-height movable workstation positioned between the fume hood and ultrasonic welder is an area for staging work in progress. Its wheels allow it to be moved to any location in the workspace should a particular project require additional surface area. Each caster has a total lock brake on it, to ensure stability once the table is in position. Since this table's height can be

adjusted anywhere between 30" and 39" using a hydraulic hand crank, it is possible for conservation staff to sit for one task and then easily adjust the same table to standing height for another task.

**Table, ultrasonic welder.** A custom-made table for our ultrasonic welder has the same wheels and hydraulic hand crank as the mobile table. The table surface can be tilted up to 20 degrees in order to increase visibility of work and lessen the amount of leaning necessary for the machine operator.

**Taborets.** Mobile storage units are on wheels to enable conservation staff to easily bring them to any of the work locations in the room. Each caster has a total lock brake on it to ensure stability once the taboret is positioned.

**Trash cans.** All of the trash cans are plastic, which is lighter weight than metal and thus easier to empty. Also, these cans will not rust and are less expensive. The cans at the workbenches are tall, so that one can easily dispose of something while sitting or standing and not have to bend far down or interrupt work to do so.

**Treatment sink.** The treatment sink is 36" tall overall and 6" deep. The depth is shallow enough that conservation staff can lean over and work comfortably while standing or sitting, but deep enough to prevent spills and splashing. There is bracing on three sides, with one end left open so that staff has the option to pull up a stool and sit if necessary.

**Treatment sink tray storage.** The tray storage rack rolls under the sink saving space in the room and enabling conservation staff to readily access trays as needed.

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## Archival Products Update

Since few have the opportunity to visit us, we are often asked about our process, facilities and methodologies. Throughout our process, our objective is to keep our production and servicing systems as simple as possible while making improvements. Fulfilling your needs and your satisfaction is our goal. Our cost effectiveness plan and internal controls encompass eliminating waste, improving service, efficiency and quality. We plan our materials procurement and control the flow of materials based on your needs. Although order requirements fluctuate throughout the year, we strive to service your needs consistently and are responsive and flexible using the lowest cost method of meeting demand.

Archival Products employs seven people as well as utilizing people in our corporate office accounting, purchasing and product design. LBS Book Components Division employs 25 people, our corporate office employs 10 and the Corporate Image Division and printed Book Covers Division employs 50 people.

Recently, Archival Products developed machinery to reduce stress on employees giving repeatable, qualified process to produce quality products. In all processes, we consider our employees, the materials used, methods, machines and the specific requirements of your needs. We have been able to reduce production staff through attrition from ten to five. In standardizing operations, personnel are trained and empowered to work anywhere in the process. Positions alternate weekly to enable everyone to function well in all positions, from materials preparation to assembly and shipping. All areas are then covered during vacations and leaves. At times we are able to recruit a production person temporarily from another division whose familiarity with the company, our products and methodologies helps them to fit in well.

Empowering our employees to facilitate flexibility, quality and continuous improvement helps increase throughput and refines movement of materials. As they take ownership of the production process, waste is reduced and eliminated. Involving our team in materials management and machine maintenance averts shortages of materials and machine downtime and optimizes effectiveness of equipment for proper use and reliability. Preventive and productive maintenance downtime is reduced to a minimum.

Standard procedures produce properly manufactured products. Error proofing techniques eliminate inspection. We pledge to keep our methods simple, strive for continuous improvement to give you quality products while reducing our costs to keep your costs down.

Contact Millie Knee, Customer Account Representative, or Janice Comer, Division Manager, at [info@archival.com](mailto:info@archival.com) or 800-526-5640 with questions and to discuss your preservation needs. We are delighted to speak with you.

The wire construction allows air to easily circulate around the trays; thus they dry completely, even if they are slightly damp when they are put away.

For the purposes of this article, I have focused on the ergonomic features of some of the main pieces of furniture, equipment, and lighting that were purchased for the Wunsch Conservation Laboratory; however, additional steps were taken to ensure proper ergonomics. Once the conservation staff were actively working in the new space, a representative from the Industrial Hygiene Office gave each person an in-depth ergonomic evaluation and suggestions for improving the ergonomics of the workspaces, including both bench and computer stations. Staff ordered a selection of padded grips so they could augment the handles of their small hand tools to prevent a clenched hand position when doing fine work. There is also a computer program available to employees which prompts stretching at regular intervals.

Addressing ergonomic issues is an ongoing process that requires the vigilance of all conservation staff. With flexible furniture, equipment, and tools tailored to the task whenever possible, we can all minimize staff injury and strain and maximize productivity in the workplace.

### FURTHER RESOURCES

Babin, Angela. "Ergonomics in Conservation: How to Limit the Risk of Injury." *AIC News* 19.1 (1994): 1-3.

Biofit. "Ergonomic Sites and Resources of Interest." Accessed August 14, 2003. <http://www.biofit.com/newergoes.htm>

Business.com. "Ergonomic Office Furniture." Accessed August 18, 2003. [http://www.business.com/directory/retail\\_and\\_consumer\\_services/office\\_supplies/furniture/ergonomic/](http://www.business.com/directory/retail_and_consumer_services/office_supplies/furniture/ergonomic/)

McCann, Michael. "Overuse Injuries in Museum Conservators." *AIC News* 25.5 (2000): 1-6.

Stavroudis, Chris. "Facts about Cumulative Trauma Disorders." *Waac Newsletter* 15.2 (1993). Accessed August 13, 2003. <http://palimpsest.stanford.edu/waac/wn/wn15/wn15-2/wn15-211.html>

Westmoreland, Rosamond. "Cumulative Trauma Disorders: Some Cautions for Conservators." *Waac Newsletter* 15.2 (1993). Accessed September 2, 2003. <http://palimpsest.stanford.edu/waac/wn/wn15/wn15-2/wn15-210.html>

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# CAPitalize On Your Investment: CAP Grants for Small Museums

by Laura A. Vannorsdel and Brian J. Baird

**A**CROSS THE COUNTRY THERE are many small museums struggling to stay afloat. Many rely on a few big-hearted volunteers to keep the doors open and often have little or no help from the professional museum community. Financial help can be obtained by applying for grants. However, grant writing is difficult and sometimes a bigger challenge is locating grants for which to apply.

The Institute of Museum and Library Services (IMLS) and Heritage Preservation sponsor a grant that is first come, first served with a minimal matching requirement that has been very helpful for small museums across the country. The Conservation Assessment Program (CAP) is administered by Heritage Preservation and provides eligible museums with funds for a general conservation survey consisting of a two day visit by one conservator to assess conservation and preservation issues. In addition, funds are provided for the conservator(s) to spend three days writing the report. Institutions in an historic structure, may also be approved for a visit by an architectural conservator or preservation architect.

Matching estimates are determined based on the number of assessors you bring into your institution and on the budget of your museum (p.1.8 of the 2003 IMLS Conservation Assessment Program Application). Generally the matching amount ranges from \$400 to \$950 (CAP application packet, p.1.8). While most small museums do not have excess funds to bring in a conservator, the CAP grant can provide a thorough and quality assessment for a minimal investment.

A CAP grant assessment will give staff and volunteers expert advice on what areas of the museum need improvement. The report can be used as a strategic to-do list where simpler suggestions are completed first before larger projects. An expert report from a conservator can be used to garner support from people involved with the museum and the community where the museum is located. A staff member or regular volunteer can say something needs done but it is more readily accepted when an “expert” states the same.

A CAP grant can also be a starting point for getting other grants. An assessment will bring attention to projects that granting agencies and donors may find interesting enough to fund, especially if the museum has already invested time and money in having a conservator examine the collection and the museum.

The eligibility criteria for CAP grants are included in the IMLS Conservation Assessment Program application. To qualify for the grant, a museum must:

- Be a public or private nonprofit institution.
- Exist on a permanent basis.
- Exist “essentially” for educational or aesthetic purposes.
- Have tangible objects in the museum collections, and “care for, and own or use tangible objects” (CAP application, p.1.5).
- Exhibit these objects on a regular basis.
- Have at least one staff member devoted to the collections of the institution. This staff person may be paid or volunteer, or

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can be several people who together work the equivalent of forty hours a week.

- Be open to the public.
- Be located in either a state or territory of the United States, the Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, or the Republic of Palau.
- Be small enough for the conservator to complete the assessment in a two-day period.

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*Because conservators specialize in preserving specific types, you will want to select a conservator who has experience working with the objects that make up the majority of your collection.*

The application contains more detailed information about the requirements. After determining your institution's eligibility, you are ready to apply for the grant.

While there are several different kinds of conservators who preserve various kinds of cultural artifacts from paintings, to books, to art on paper, they have similar characteristics. Conservators are concerned with the preservation of objects, have extensive training in chemistry and hands-on treatment or restoration of artifacts, and are concerned with the long-term preservation of objects (AIC Guidelines for Selecting a Conservator, at <http://aic.stanford.edu/select/select.html>). You will want to select a conservator who has experience working with the objects that make up the majority of your collection. Even if your collection is very diverse, basic conservation and preservation principles will still apply to your collection and the conservator will be able to provide you with a meaningful assessment.

Before applying for a CAP grant, consider the following:

- What objects are most important to your collection?
- Do these objects have symbolic meaning that may affect their care? For example, objects that may fall under Native American Graves Protection and Repatriation Act (NAGPRA)

- What are your long-term plans for the collection?
- Do you exhibit every object or just a few artifacts at a time? Do you rotate objects on exhibit?
- Are there current or future plans for temporary, permanent, or traveling exhibits?
- How fast does your collection grow?
- Are there any special circumstances relating to your facility, special events, or exhibition schedule?
- What type of weather do you experience and how drastic are the changes of seasons?
- Are staff or volunteers available to work with collections should major projects (rehousing, moving, cleaning) arise as a result of the conservation assessment?

This will not only provide important information for the conservator, but will also help you assess your collections and goals for your institution and help you prepare a better CAP grant application.

Download an application at the IMLS web page ([www.imls.gov](http://www.imls.gov)) or Heritage Preservation's web page ([www.heritagepreservation.org](http://www.heritagepreservation.org)), or call Heritage Preservation at 888-388-6789 to have the application packet mailed to your institution. Included are all the forms and instructions you will need to apply for the grant. Heritage Preservation has also provided information that you may find helpful as you decide when to apply for the grant ([www.heritagepreservation.org/PROGRAMS/CAPFAQ.HTM](http://www.heritagepreservation.org/PROGRAMS/CAPFAQ.HTM)).

You can either print out the application forms or fill out a PDF version and then print out the completed application. Currently you cannot submit the application on-line but detailed instructions about how to submit the application are included. You will also need to include one original copy and one photocopy of all the required documentation. Be sure to check deadlines,

for example, applications for 2003 grants had to be post-marked by December 1, 2002. Since awards are made on a first-come, first-served basis, it is wise to return your grant application as soon as possible.

It is important to have the application completed several weeks before it is due to have several people read the application packet in its entirety to be sure it is prepared properly and provide time for a thorough review so that nothing important is overlooked. Museums receiving the grant will be notified approximately two months after the application deadline has passed. When you receive your acceptance, instructions for acquiring the CAP funding will be provided.

Once you have received the grant, you will need to select a conservator. The American Institute for Conservation (AIC) includes “Guidelines for Selecting a Conservator” on their website (<http://aic.stanford.edu/select/select.html>) that may be very helpful. AIC also provides a referral service.

Ask your candidates for conservator several questions before you invite one to come to your museum. AIC includes questions to ask potential conservators in their “Guide for Selecting a Conservator” (<http://aic.stanford.edu/select/select.html>). Be well prepared before contacting the conservator. You will want to know about the conservator’s training and experience, how long they have been a conservator, what their area of specialty is, and their availability. Ask for references and previous clients. Many conservators work freelance and will appreciate you being prepared.

Consult AIC’s web page to conduct a search of AIC approved conservators in your area. Talk to other museum professionals who have either gone through the CAP Grant process or who have experience working with conservators. They can offer suggestions as well as references of good conservators.

Once you have selected a conservator, talk about your concerns and goals to help guide the process and produce a more meaningful report for your institution. Make sure that someone with access to all collection areas and a detailed general knowledge about the facility, museum policies and procedures and the institution’s history, can be at the museum during the entire time of the conservator’s visit.

After the assessment, your conservator will leave and spend up to three days writing a condition assessment report of preservation problems faced by your museum and suggestions for addressing them. When you receive the report, examine it carefully. Make it accessible to your staff, volunteers, board, donors and the community. The board should consult the report to determine what preservation issues relating to the building and collections they can help solve by raising money and public awareness. You may want to share the report with donors and the community to elicit donations and support for changes. You will also want to consult the report often in the months and years following. It should be used as a strategic planning document to guide your efforts and to determine if your museum is making improvements. Many problems identified in the report will be long-term issues to be addressed as time and money allow. Do not file the report and forget about it. If it is worth the effort to apply for the grant and bring a conservator into your institution, it is worth using the results to better your institution.

IMLS and Heritage Preservation require institutions receiving funds to provide a final report including an account of how funds were spent. This is standard practice for grants. Be sure to keep track of these costs when they occur to save time and frustration when it is time to return the final report.

After receiving a CAP grant, many

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*Once you have selected a conservator, talk about your concerns and goals so they have that background information before they begin their assessment, so that they can help guide the process and produce a more meaningful report for your institution.*

*Make the report accessible to your staff, volunteers, board, donors, and the community. They should determine what practices and policies they can change to address preservation issues.*

resources are available to provide information about preservation and other museum management issues. The National Parks Service has an excellent website (<http://www.cr.nps.gov/museum/>) with many valuable resources. Under the publications tab you will find links to both the National Parks Museum Handbook and to the Conserve-o-gram Technical Leaflet Series. Both contain information that may help you as you continue to preserve your collections.

There are many museum organizations that you or your institution should utilize. The American Association of Museums (AAM) and the American Association for State and Local History are two national organizations with large and diverse memberships. You may want to start with a smaller, more local group. There are regional organizations like Mountain-Plains Museum Association (MPMA) that have similar conferences, resources and publications to AAM. Most states have a state museum organization. These will help you network with others who face similar problems and provide helpful information about environmental conditions common to your area, local suppliers, and contractors.

Some problems are too big to solve simply through networking and require real money to address them. Many national and local foundations are often willing to fund museum preservation efforts. National organizations like the Institute of Museum and Library Services (IMLS) ([www.imls.gov](http://www.imls.gov)) provide a wide variety of museum-oriented grants to “promote leadership, innovation, and a lifetime of learning by supporting the nation’s museums and libraries” (see IMLS web page). Preservation grants are offered by the National Endowment for the Humanities (NEH) and require a large written grant proposal but NEH provides the necessary guidelines ([www.neh.gov/grants/guidelines/pag.html](http://www.neh.gov/grants/guidelines/pag.html)).

One resource that many museums fail

to take advantage of is university museum studies programs and other related disciplines. Museum studies students, as well as history, anthropology, natural history and other undergraduate majors, are often looking for internships and opportunities to gain experience in the museum field. If your CAP grant reveals that you need to conduct a major rehousing part of the collection or moving objects, call the local university to see if there are students willing to help with the project.

Whether you are part of a large or small museum, you have the common interest of preserving your collections to the best of your ability. Often the most difficult struggle is understanding what the preservation and conservation concerns are and how to address them. A CAP Grant can help. Even if you do not get the grant, looking at the application process, thinking about the conditions and your goals for the institution can help you preserve your collection for generations to come.

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