

Keeping the Beast at Bay: Fighting Mold at the University of Missouri-Columbia Journalism Library

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Keeping the Beast at Bay: Fighting Mold at the University of Missouri-Columbia Journalism Library

Cynthia Dudenhöffer

SUMMARY. This article illustrates the course of action taken by the staff of the University of Missouri Journalism library during a mold outbreak in the Fall Semester 2006. While the parent library system, the University of Missouri-Columbia Libraries had a disaster plan in place, multiple issues occurred that subsequently changed the course of action over the 3 weeks of the cleanup. Those involved took swift action to save a unique journalism collection, and the ultimate results were positive. Consequences of these decisions are discussed. Suggestions for other libraries facing similar circumstances are provided. doi:10.1300/J118v25n03_12 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2006 by The Haworth Press, Inc. All rights reserved.]

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INTRODUCTION

On Wednesday, August 23 2006, during the training of a student library assistant, visible mold growth was discovered in the stacks of the University of Missouri-Columbia (MU) Journalism Library. At first glance, the mold growth seemed to be isolated in the back corners of the stack space, where ventilation and temperature control were practically non-existent, but as library staff examined the stack area more closely, it was clear the damage went far beyond the first estimates. The interim head of the Journalism Library immediately contacted the library director and the journalism building coordinator, and began searching for measures to deal with mold contamination. Throughout the next 3 days, the groundwork was laid, procedures were put into place, and clean-up began. Over three weeks later, the library stacks re-opened to users and all visible mold growth was gone.

BACKGROUND

The MU Journalism Library is a small branch of the MU Libraries system. The main purpose of the branch is to provide information resources and support for the Missouri School of Journalism, a college within the University of Missouri-Columbia. In May of 2005, the Journalism Library moved into temporary quarters anticipating the building of a new library space within the Reynolds Journalism Institute, to be completed in summer of 2007. The temporary space was located in the basement of a building called Neff Annex, which also housed the printing presses of the newspaper produced by the school, the *Missourian*. The rooms converted to hold the library consisted of two converted classrooms for a circulation/reference area and reading room, and the old darkroom, used to house the print collection. Only minimal renovations were done to convert the space and subsequently, the entire area, especially the collection space, was poorly suited for library habitation. The bare concrete floor and walls were not sealed; large holes were left in the ceiling from asbestos abatement. There was no temperature, air movement or humidity control; only one small dehumidifier was located in the space, due to a lack of power outlets. The space was damp, drafty, and confined, and was

not highly utilized by the library's potential users, despite the presence of study areas. Still, the rationale was that the library would only occupy the space for about two years, subsequently moving into a state-of-the-art facility.

The specialized collection at the time of the mold numbered around 30,000 volumes, and included a photography collection (with many volumes printed on clay-based paper), an original complete run of *LIFE* magazine, and an historic typography section, to name a few highlights. In order to fit into the space, books were shelved on interior and outside walls, on bottom and top shelves of ranges, and much more tightly than in the previous library space, though this practice is contrary to library policy. About 12,000 items were housed off-site, at the University of Missouri Library Depository. The Journalism branch functioned somewhat independently, but all technical services were performed at the main library.

The summer of 2006 was extremely hot. Record heat indexes upward of 100 degrees were recorded though the first week of August. Neff Annex was cooled by a chilled water system, consisting of cycling cold water through pipes, in order to lower temperatures throughout the space. While this system works, clearly it's not the most effective way to maintain temperature control within a library. In the middle of August, pipes in the first floor cooling system became blocked, and temperatures went up to the low 80s. The collection space, housed underground in unsealed concrete several degrees cooler than the floor above, became extremely damp, with humidity ranging about 70 percent. All these conditions created the perfect environment for mold growth.

ACTIONS AND DECISION-MAKING

After the mold was discovered, several key figures were immediately contacted. The library director was not on campus, so the assistant director took charge. The building coordinator for Neff Annex, the dean of the School of Journalism, and the campus Environmental Health and Safety (EH&S) department were all contacted within the first few hours after the mold was discovered. A preservation staff member was immediately dispatched to the Journalism Library and began assessing damage; likewise, a member of the EH&S staff arrived shortly after. The journalism staff were rightly concerned that the mold could be toxic or otherwise hazardous to the health of those exposed, but the EH&S assessor assured those involved that the mold was not toxic, and should only cause

respiratory distress in people with existing allergies. With this in mind, the stack space was immediately closed to users and signage stating the risk to those with allergies was posted at the entrance to the library. Staff working in the infected space were given access to respiratory equipment and training.

After EH&S assured the staff that the mold was not a considerable health risk, the next step concerned stopping the mold growth and cleaning the collection. The author and the preservation staff member began to assess the extent of the mold growth within the collection. Selecting a range in the middle of the space, each book was opened, smelled, and visually examined for mold. These observations were then recorded, and used to extrapolate the extent of damage within the entire collection. After calculating this data, it was estimated that over 60 percent of the collection had visible mold growth, with some areas closer to the ceiling drafts or damp walls in the 90 percent range. The examination of special areas of the collection, such as bound photography magazines, also showed that the dampness was causing warping and solidification of some volumes. Luckily, the photography collection was housed in an area that was only minimally affected. Relative humidity and temperature readings were taken via special monitors, and showed uncontrolled spiking up to 78 percent in both areas (Figure 1).

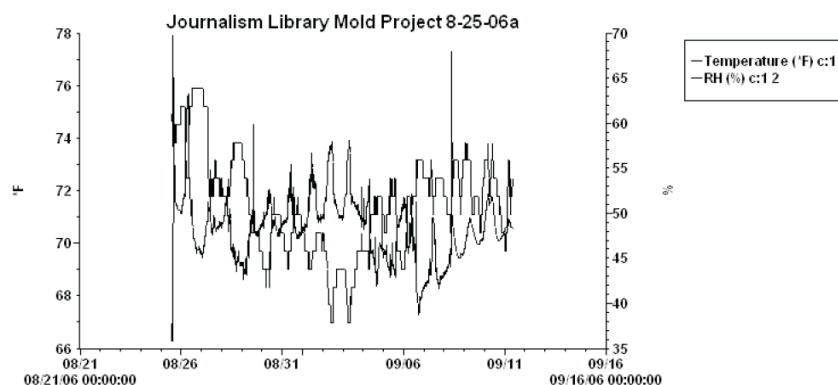
The preservation staff member, along with the head of the Special Collections, Archives, and Rare Books (SCARaB), recommended that the entire collection be removed from the space and frozen, in order to arrest the growth and force the mold spores to become dormant. This was the course of action outlined in the MU Libraries disaster plan for dealing with the salvage of paper-based items (MU 2005, 4.1), but at the time, the library system did not possess or have access to any freezing facility. In order to follow this course of action, an outside contractor would have to be solicited.

In the meantime, staff had already begun taking measures to combat the mold, using guidelines provided by the websites for SOLINET, Harvard University, and the University of Hawaii. Plastic sheeting was taped over the ceiling holes, in order to stop the humid drafts from enhancing mold growth. Fans were introduced to circulate air, and a closed system HEPA vacuum was borrowed from SCARaB to begin removing the visible mold from the worst areas. Only the outside covers were vacuumed at this time, since no official instructions on how to proceed with clean-up had been handed down.

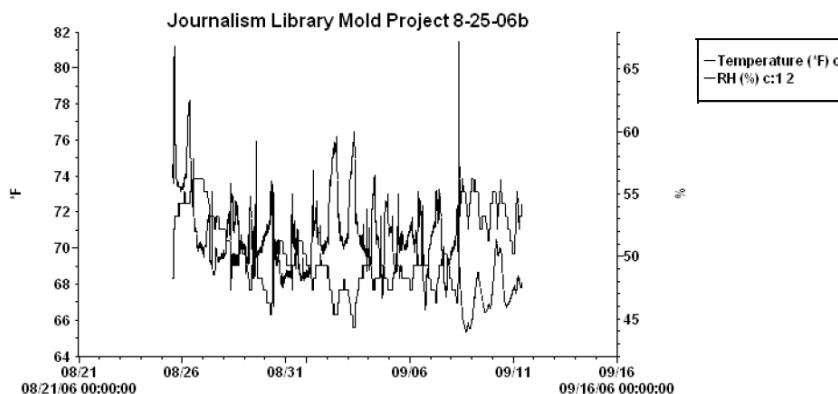
At this point in the process, disagreements began to arise in how best to deal with cleaning the collection. Both the Preservation Department

FIGURE 1

HOBO Monitor 1



HOBO Monitor 2



and the head of SCARaB agreed that cleaning should cease and the entire collection should be frozen to stop the mold growth. However, estimates to follow this procedure reached the million dollar range; fiscally, the library could not pursue this option. Alternate recommendations were made for cleaning the items in house using anti-microbial cleansers, and ultimately, these guidelines were followed. The assistant director, aware of the financial repercussions, made the final decision. A list of cleaning and preventative measures was outlined as follows:

1. Continue to vacuum all items in the collection space using the closed system HEPA vacuums.
2. Add additional power outlets to support several dehumidifiers and fans.
3. When possible, wipe the covers of books with isopropyl alcohol or antibacterial spray. Floors, wall, and shelves were to be wiped down with a bleach solution.
4. Books with mold in the inside binding and pages were to be exposed to sunlight to kill spores.
5. Books too badly damaged were to be withdrawn or rebound.
6. Freezing facilities would be purchased, to be available for the worst affected items.

These steps were agreed upon by all parties involved, though everyone was aware that these steps were not the best solution for clean-up or stopping mold growth.

At the same time, the Access Services and Technical Services Departments were developing measures to deal with a suddenly inaccessible popular collection, and to stop the mold contamination from spreading to other parts of the library. The Cataloging Department immediately changed the status of all Journalism items to “temporarily unavailable” and added a message to each item that warned circulation workers to “check for probable mold” during processing. Items transiting back to Journalism were placed into holding rooms by Access Services and lending was restricted. Newspapers and periodicals were still delivered to the infected site, but were kept in a secure location to guard against further infestation. These steps greatly assisted the Journalism Library staff, whose efforts were forced away from user services by the cleaning effort.

The actual cleaning of the collection took place over the next two and a half weeks. Books were removed to carts one shelf at a time. The empty shelf was then wiped down with a bleach solution and dried. Each book was vacuumed separately with a HEPA vacuum. The books were then rubbed with an alcohol moistened micro-fiber cloth to remove any mold spores and placed back on the shelves. Items that were bound in cloth and could not be wiped were exposed to sunlight in order to kill mold spores. Some items, however, were too badly affected to clean. These books, if the pages were still intact, had their covers removed and were placed in tubs for freezing to arrest mold growth before being sent to the bindery. Items too badly damaged even for rebinding were withdrawn. Overall,

about 150 books required new bindings; only fifteen sustained sufficient damage to require withdrawal.

By running four dehumidifiers 24 hours a day, the library staff was able to reduce the relative humidity to safe levels. Permanent fans were added to the collection space to encourage air movement, and temperature controls were added specifically for the collection space. The gaps in the ceiling remain, but are blocked by plastic sheeting and are sealed with duct tape to prevent drafts. Even with these additional measures, the collection space must be vigilantly monitored to ensure appropriate environmental conditions.

CONCLUSION: WHAT CAN WE LEARN?

The mold infestation at the MU Journalism Library occurred because of an unusual combination of factors, most of which were weather related and impossible to control. However, the poor renovation of the library space significantly exacerbated the disaster. Repairing the ceiling, added humidity and temperature controls, and fans for air movement have completely arrested mold growth in the collection space. Had these environmental controls been added during the initial renovation phase, it's very likely that the mold growth would not have occurred. This might be a hard lesson for a library with minimal financial resources, but environmental controls should be planned into library space. Prevention will save money, staff time, and materials.

Likewise, the disaster plan of the library system, while comprehensive and structurally sound, was not adequate for this type of disaster. The plan called for action, i.e., the freezing of materials, that was impossible to take at the time. MU Libraries has since purchased freezing facilities to meet the guidelines of the plan, but without this option, the Journalism Library staff were forced to search for other options. All libraries should have a thorough disaster plan in place, with guidelines for dealing with fire, flood, mold, and other issues, but the plan must be realistically within the scope of the library. A non-workable plan does nothing. Planning within the library's means, using readily accessible resources as much as possible, and working with practical solutions are the most important points when crafting a disaster plan. It is also important to establish lines of communication, so each department has full awareness of the situations and can respond appropriately. Designating a primary contact who can make final decisions, a person who has expertise with library

disasters, preservation, or other related procedures, is also important, so staff know whom to contact and ask for assistance.

Ultimately, the damages and costs associated with the mold bloom at the MU Journalism Library were kept to a minimum. Quick action by every library department ensured user services continuing as smoothly as possible. Research into alternative cleaning methods proved fruitful and adequate. While communication could have been improved, and the actions taken were not the most ideal course of action, a major disaster was averted and library services were restored relatively quickly. The Journalism Library staff continue preventative measures to protect against further outbreaks, and the collection remains mostly intact as it waits for the new library to open.

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