Mold Remediation in the University of Illinois' Rare Book & Manuscript Library: Our Successes & Compromises



# Presentation Overview

- The Discovery
- Assessing the Damage
- Evaluating Recovery Options
- Setting up Working Procedures with Vendor
- The Cleanup
- Facilities Upgrades
- Post-Vendor Work on Collections

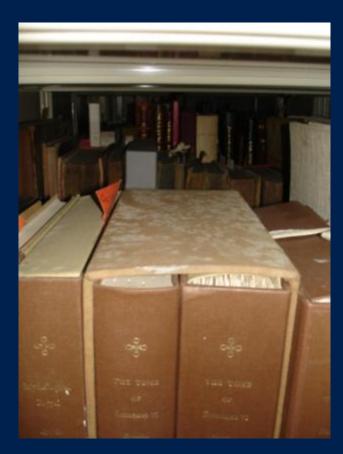


# The Discovery





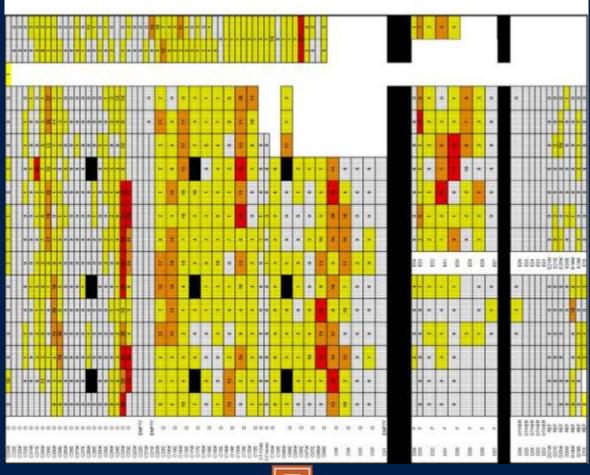
# The Discovery





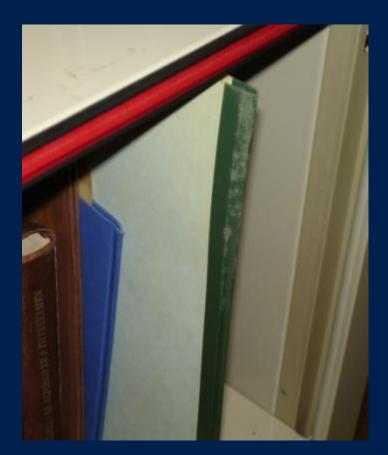


# Assessing the Damage





# Assessing the Damage

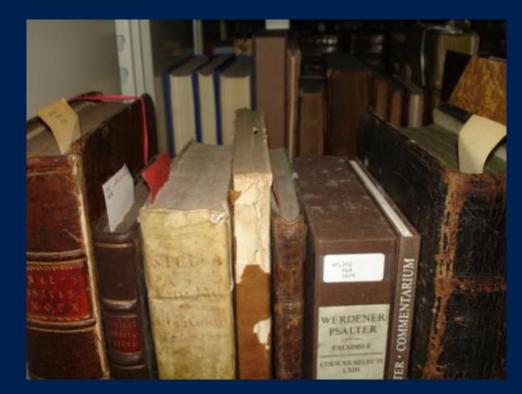






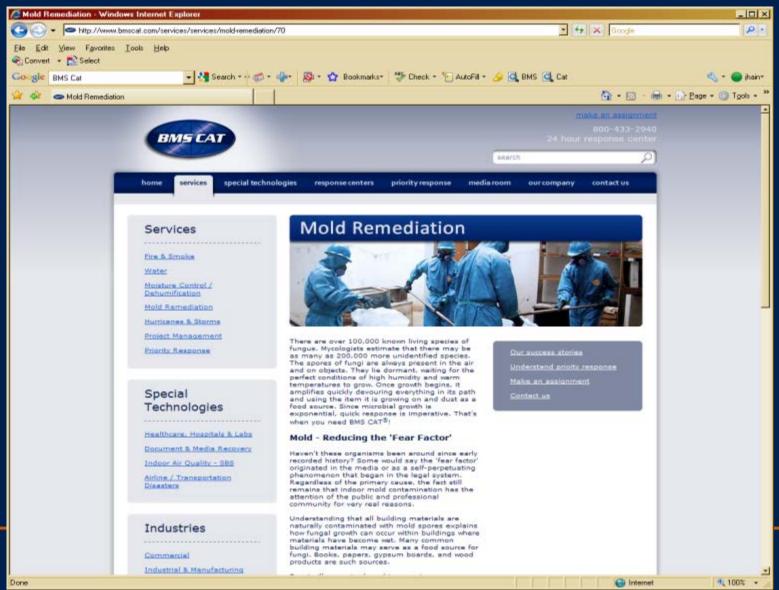
# **Evaluating Recovery Options**



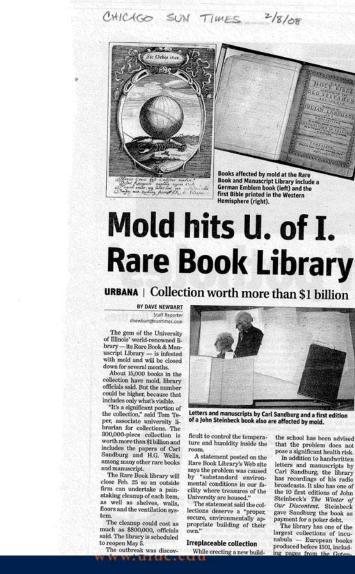




# **Evaluating Recovery Options**



# **Evaluating Recovery Options**



# **Rare Book Library**



largest collections of incunabula - European books produced before 1501, including pages from the Gut

that the problem does not pose a significant health risk. In addition to handwritten letters and manuscripts by Carl Sandburg, the library has recordings of his radio broadcasts. It also has one of the 10 first editions of John Steinbeck's The Winter of

Our Discontent. Steinbeck gave Sandburg the book as payment for a poker debt.

The library has one of the

# **Evaluating Recovery Options**

United Press International - NewsTrack - Top News - U of I rare books plagued with mold Page 1 of 1



U of I rare books plagued with mold

URBANA, III., Feb. 8 (UPI) -- The University of Illingia' priced Rare Book & Manuscript Library is being shut down temporarily due to mold infestation Approximately 15.000 of the 300.000 books in the university's library, have grown mold, the Chicago-Sun Times reported Finday

The collection is said to be worth more than \$1 billion.

"We are really toking to protect this collection that is implaceable and really a gen in the state of fillinois. People come from all over to look at this material," Associate University Literators Tom Typer aud. The facility is set to be shut down Feb. 25 so the structure and its contents can be undergo an \$8000,000 clear

The mold was reportedly first noticed in November after high humidity outdoors caused molecure and temperature problems inside the building which has a 25-ye © Under Press International, AR PigMx Related. This material may indice reproduced, reducidated, or exemutated in any term.

http://www.upi.com/NewsTrack/Top\_News/2008/02/08/u\_of\_i\_rare\_books\_plagued\_with... 2/10/2008



### Mold hits U. of I. **Rare Book Library**

BANA | Collection worth more than \$1 billion

Staff Reporter dnewbart@suntimes.com he gem of the University linois' world-renowned liy - its Rare Book & Manipt Library - is infested mold and will be closed n for several months. bout 15,000 books in the ction have mold, library als said. But the number i be higher, because that des only what's visible. 's a significant portion of collection," said Tom Teassociate university li. an for collections. The 00-piece collection is h more than \$1 billion and des the papers of Carl burg and H.G. Wells, g many other rare books nanuscript. e Rare Book library will Feb. 25 so an outside

BY DAVE NEWBART

firm can undertake a painstaking cleanup of each item, as well as shelves, walls, floors and the ventilation system.

The cleanup could cost as much as \$800,000, officials said. The library is scheduled to reopen May 5. The outbreak was discov-

WWW during lease of



Letters and manuscripts by Carl Sandburg and a first edition of a John Steinbeck book also are affected by mold.

ficult to control the tempera- the school has been advised ture and humidity inside the room A statement posted on the Rare Book Library's Web site says the problem was caused by "substandard environmental conditions in our facility where treasures of the University are housed." The statement said the collections deserve a "proper, secure, environmentally appropriate building of their

Irreplaceable collection

While erecting a new build-

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United Press International - NewsTrack - Top News - U of I rare books plagued with mold Page 1 of 1



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# Evaluating Recovery Options



### Evaluating Recovery ptions

course, there is also a significant contribu-

tion from the University Library in the form

of services and faculty, staff and student

time being put into managing the project,

completing secondary work to mitigate the

risk, and replacing damaged protective en-

cleaning the ventilation systems Feb. 14.

Beginning Feb. 18, the company moved to

cleaning books, shelving and storage envi-

ronment using high-efficiency particulate

air vacuums and magnetic cleaning cloths.

Cleaning crews will work with personnel

from Conservation and Rare Books to en-

sure that no items are damaged in the pro-

Teper said the university has cooperated

"I for one, have been grateful for the

Teper said the collection, which includes paper and letters of Carl Sandburg,

H.G. Wells and Marcel Proust and first edi-

tions of titles by Charles Dickens and Mark Twain, is irreplaceable and invaluable to

"The collection is a valued scholarly re-

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The statement said

While erecting a new build-

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and supported the cleanup efforts.

Teper said BMS Catastrophe began

closures on books and pamphlets."

United Press International - NewsTrr News - U of I rare books plagued with mold Page 1 of 1

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By Jack Inches

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### **United Press Inter**

Top News

U of I rare books plagued v URDANA, II., Feb. 6 (UPI) - The Universi viscalarly 15 000 of the 300 000 hor The collection is said to be worth more "We are really looking to protect thin Librarian Tom Teper said. The facility is set to be shut dow The mold was reportedly first

### Feb. 21, 2008

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Inside

### **Rare Book and Manuscript** Library closes to combat mold

By Roxana Ryan News Rureau Intern

he UI's prized Rare Book and Manuscript Library will close Feb. 25 to combat a mold outbreak that has spread throughout the vault. There are approximately 300,000 volumes in the collection, which is valued in excess of \$1 billion. The library is scheduled to reopen May 5.

Only a fraction of the items have active mold blooms on them but mold spores have permeated the entire vault, according to Tom Teper, associate university librarian for collections and associate dean of libraries. According to Teper, mold likely entered

the library through the ventilation system. which was installed at the same time the library branch was constructed in the mid-1980s. Teper said the mold was discovered in fall 2007.

"We took advantage of the dry winter support given to us by the library, campus climate in Central Illinois to plan our reand university administration," Teper said sponse," Teper said. "We needed to deter-"This could be a very demoralizing time, mine how extensive the damage was, plan but their timely response has been very for recovery operations that would be perheartening. We are beginning this recovformed completely by university personnel ery operation and are in discussions about or assisted by contracted employees, and long-term fixes for this problem. This type secure support for the recommended course of recovery operation is the type of project of action one doesn't want to repeat.'

Teper said in similar instances, libraries have closed for years to recover a collection. In the UI's case, a slightly more expensive process that requires contracted support was recommended, which has enabled the university to minimize impact on academic needs of students, faculty members and scholars

Texas-based BMS Catastrophe has been Teper said. "It attracts scholars from around contracted to clean the collection at a cost the world and is part of what makes Illinois MON MAY She

2/10/2008

the university

#### ADVERTISING, CONTINUED FROM PAGE 6 ing is color-blind," used by the blackowned firm Zebra Associates in a 1970 ad to solicit clients.

The accompanying text makes the case that mass advertising "approaches the Black consumer as if he were somebody's fair-haired boy" and was therebetween white advertiser and Black consumer."

This period also brought the promotion of "positive realism" by Tom Burrell, the African-American co-owner of the Burrell-McBain agency, Chambers said. Avoiding the extremes of wealthy black celebrities or destitute ghetto dwellers, Burrell sought to portrav blacks who were in the economic middle and "dying to see themselves as

they really are." His ads showed blacks in everyday situations, brushing their teeth, washing their cars, doing laundry - just like everyone else, except in an African-American context.

PAGE 7

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Since the "golden age," "what rafore ineffective with that audience. Ze- cial changes have occurred within the bra, it said, could help "bridge the gap (advertising) agency business have advanced in fits and starts." Chambers wrote. Blacks remain seriously underrepresented in mainstream agencies even as black athletes, entertainers and

music play a larger role in advertisements Black-owned agencies continue to do creative work, but also must con-

tinue to fight to justify their existence and the necessity of specific advertising aimed at the black consumer market. +

### Inside **Illinois**

### 2008 SPRING PUBLICATION SCHEDULE

Publication Date	Briefs Deadline	Adv. Deadline
-Jan. 15		
Feb. 7	100.30	
Feb. 21	- Feb. 13	- Feb H
March 6	Feb. 27	Feb. 28
March 20	March 12	March 13
April 3	March 26	March 27
April 17	April 9	April 10
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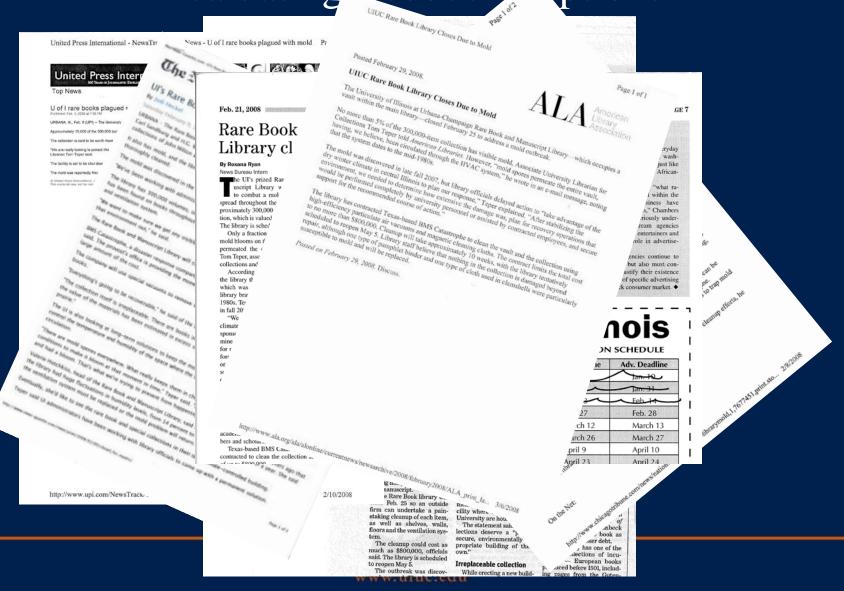
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# Evaluating Recovery Options



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BMS cleaning (campus)	\$800,000
equipment (dehumidifiers/vacuum/ dataloggers) (library)	\$4,500
stabilization supplies (library)	\$4,000
replacement enclosures (library)	\$37,500
staff time (equivalent \$) (library)	>\$70,000
Total	\$916,000



# Setting up Working Procedures with Vendor

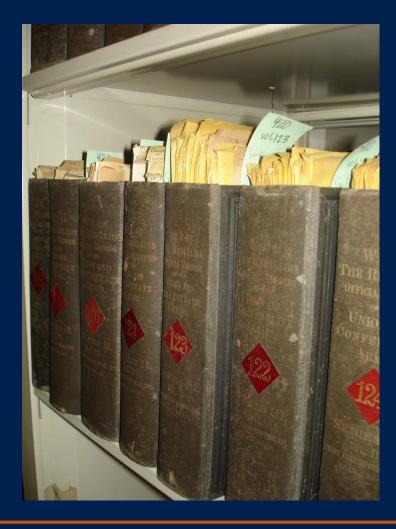




# Setting up Working Procedures with Vendor

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN





# Setting up Working Procedures with Vendor

③ Stable and retained

- Optimize Potentially unstable use caution (retained or discarded per UIUC staff only)
- ⊖ Unstable (discard by BMS)



# Setting up Working Procedures with Vendor

#### 2.9.2 Guidelines for Repairs and Stabilization Techniques

#### a. String Ties

For items that have broken or very weak cover-to-text attachment or have text blocks that are not intact and cannot be tipped in, string ties are used to hold the book together until a more permanent repair can be performed.

### Tools and Materials Required:

Scissors Cotton twill tape

#### Directions:

 Start with the book laying flat in front of you and wrap the cotton twill tape around the height of the book starting at the top of the front and wrapping around to the back.

a) Bring the twill tape half way down the front board, to the right of the free end and then twist the twill tape so that two tapes cross, leaving the free end at the fore edge of the book. Continue to wrap the long end of the twill tape around the spine edge. And back of the book, to meet the free end at the fore edge. Cut the twill tape at a length sufficient to ite a bow.



3) Tie a bow on the fore edge (top edge is also OK) and check that the twill tape is tight enough to secure the book without pinching any fragile pages or cover materials.



# The Clean-up

### **Challenges/Issues**

Security Compact shelving Lack of electricity in vault area No elevator between the two levels Various non-book formats (art, A/V, sculpture, etc.) Nature of materials

Age Fragility Incunabulum Vellum distortion



# The Clean-up





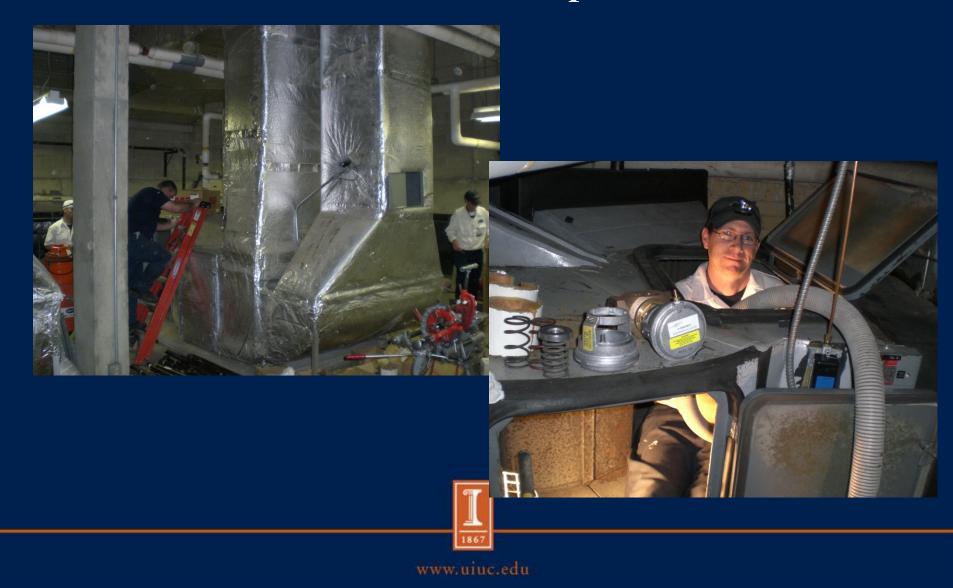
# The Clean-up





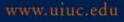


# The Clean-up



# The Clean-up

**The Project In Numbers** 3 months of cleaning 300,000+ items vacuumed 31,000 yards of string tie 6,200 archival pamphlet binders 1,100 pairs of gloves 1,000 sheets of binder board 800 Tyvek suits 200 pounds of microfiber cloths 25 extension cords 20 gallons of Microban 12 Microtrap 2000 Air Filtration units 8 Nilfisk HEPA vacuums



# Facilities and Space Upgrades

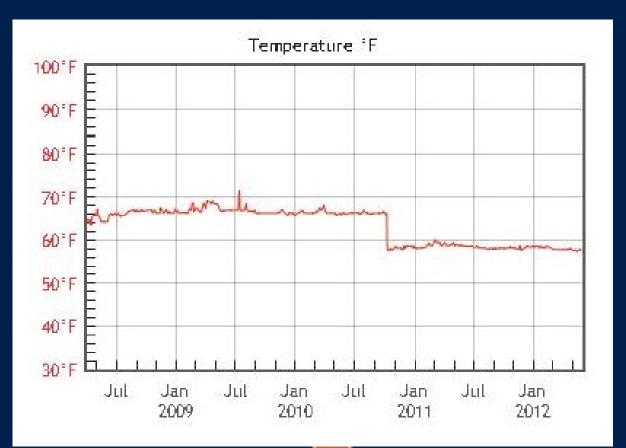
In 2009 started complete HVAC overhaul to get tighter controls – completed in 2011.

New layout and systems offer:

- Vapor barrier on internal building surfaces
- More shelving space (expanded footprint)
- Tighter temp and humidity control
  - Temp = 60 degrees F, plus/minus 2
  - RH = 45% RH, plus/minus 5%
- In-duct UV light system (fungicidal)

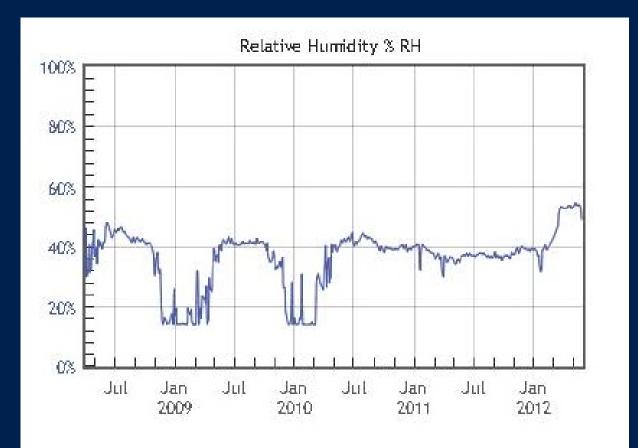


# Facilities and Space Upgrades





# Facilities and Space Upgrades





### Post-Vendor Work on Collections

• Stabilization, rehousing and hand cleaning







# Thanks!

Jennifer Hain Teper jhain@illinois.edu 217.244.5689

### **Thanks to:**

BMS-Cat managers and staff

University of Illinois Board of Trustees

All the UIUC Library preservation, conservation, and RBML staff working on the cleanup: Laura Larkin, Melissa Straw, Tom Teper, Emma Saito Lincoln, Alvan Bregman, Jody Waitzman, Jane Somera, Dennis Sears, Melissa Nykanen, Marten Stromberg, Kathie Veach, Jeff Schrader, and Matt Emmert.

