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**“Developing Intentional Collections Storage”
NEH Sustaining Cultural Heritage Collection Planning Grant FY 2013
White Paper**

Background

The Rochester Museum & Science Center’s (RMSC) Long-range Collections Preservation Plan (LCPP), completed in 2010, identifies the RMSC’s most urgent preservation challenge as “the need for a storage area that provides safe, secure and appropriate environments for the museum’s collections.” The Museum’s largest and least professionally acceptable collections storage area is the off-site Museum Support Facility (MSF). It has poor building envelopes and inadequate environmental controls, storage furniture, and lighting systems. Storage areas in the Museum Building achieve much higher standards for preservation but are plagued by persistent problems with the maintenance of antiquated HVAC systems. Environmental control is complicated by the fact that materials with very different environmental needs—both environmentally robust and sensitive—are stored within the same areas of both buildings.

Priorities identified in the LCPP focus on replacing aging HVAC systems with more energy-efficient alternatives and reorganizing the collections so that materials with similar environmental and physical needs are housed together, lessening the need for tight environmental controls in all spaces. To address these challenges in an economically feasible way, consulting conservator Barbara Moore and curatorial specialist Patricia Tice recommend transforming the Museum Building’s basement into a space efficient, sustainable collections storage facility where the most environmentally sensitive collections from the MSF can be relocated. RMSC was awarded \$50,000 in an NEH Sustaining Cultural Heritage Planning Grant to develop a plan to better preserve the community’s at-risk humanities collections through sustainable initiatives.

Project Overview

The recommendations outlined in the LCPP were the starting point for this project. They assisted staff in conceptualizing a successful collections facility planning project.

The NEH Sustaining Cultural Heritage Collections planning grant enabled RMSC to hire a conservator, a museum space planner, and two preservation engineers to examine the collections and their storage and management spaces.

Major activities identified in the project plan of work were to:

1. Plan an on-site consultant visit
2. Provide consultants with required information about collections and collections areas



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3. Conduct the on-site visit with consultants, including a kick-off meeting and tour and assessment of collections areas
4. Complete a volumetric analysis of humanities collections requirements
5. Work with consultants remotely to finalize collections storage and management needs
6. Develop written recommendations and schematic plans for storage reorganization and improvements based on the site evaluation and current standards for sustainable collections storage
7. Review, critique, and refine written recommendations and schematic plans based on telephone and email conversations/information sharing between consultants and RMSC staff
8. Finalize recommendations and build institutional consensus in support of phased implementation plan
9. Chronicle project through monthly Facebook posts

Project Team

RMSC staff carefully hired consultants based on their previous experience with similar projects:

- Barbara Moore, Conservator in private practice
- Jeff Weatherston, WeatherstonBruer Associates, Museum Space Planner
- Paul Kreidler and Thomas Newbold, Landmark Facilities Group, Preservation Engineers

RMSC staff assigned to the project team included:

- Kathryn Murano, Registrar/Project Director
- George McIntosh, Director of Collections
- Sarah LeCount, Collections Manager
- Joseph Graves, VP Operations and Exhibits
- Paul Ryan, Maintenance Supervisor
- Kate Bennett, President

Project Activities

A two-day on-site meeting with the entire project team introduced the consultants to the current storage challenges through a comprehensive tour through storage spaces in the Museum Building and the MSF. Staff described the difficulties of working with current storage challenges (e.g. similar collections scattered in different rooms and buildings, constant breakdown of aging equipment) and brainstormed solutions with consultants. Staff also gave the consultants extensive data sets to work with, including base-line temperature and relative humidity readings from storage area data loggers in the MSF and Museum Building; descriptions of the approximate numbers of objects in the humanities sections of the collection and their significance to RMSC's constituents; accurate floor plans



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of the storage areas in both buildings; and information on the current mechanical systems located therein.

At the conclusion of the site visit, the museum space planner tasked staff with carrying out a volumetric study of the entire RMSMC collection to inform his work in re-designing humanities collection storage areas. This work involved classifying and measuring types of storage furniture throughout the 20 on- and off-site spaces used for collections storage. The types of material each piece of furniture holds, the degree to which each was crowded, and a determination of whether the storage furniture fits modern collections storage standards (and therefore could be reused) was also recorded. Staff compiled this data for about six months, digitized it, and sent it to WeatherstonBruer for analysis.

After completing the volumetric study needed by consultants, web-based meetings allowed conversations to take place between team members at a distance. Difficult discussions centered on determining the most impactful and realistic solutions to improving storage conditions for humanities collections in light of long-term institutional space use priorities, economic feasibility and sustainability, and collections needs overall. The team considered a variety of possible solutions, including: renovating current storage space in the Museum Building basement; renovating mixed use space in the basement of the Planetarium Building; renovating one or more sections of the MSF; leasing or purchasing an existing off-site structure and renovating it; and creating a purpose-built collections storage facility off-site.

As space needs and the costs involved in creating off-site storage solutions were calculated, it became clear that renovating existing space in the Museum Building basement would be the most sensible plan for the first phase of implementation. The volumetric analysis of collections confirmed the approach suggested in the 2010 Long-range Collections Preservation Plan. Although use of compact storage solutions would result in a net increase in storage capacity, the collections facility requirement analysis also demonstrated that basement areas would not be able to accommodate all at-risk humanities collections. It was therefore important that the team prioritize the most vulnerable and frequently used humanities collections for the first phase of storage improvements. Using the high-risk/high-use selection criteria, the team decided to focus on ethnology, household textile, painting, and industrial technology collections for the first phase of sustainable storage upgrades.

Once these important decisions were made, consultants focused on developing a thorough plan to renovate and reorganize basement storage areas to accommodate targeted humanities collections. These project deliverables included detailed concept plans and equipment layouts, equipment lists and specifications, sustainable environmental parameters, and costing. A more general concept was also developed to address lower priority humanities collections in subsequent phases of implementation.

Final Results

By the close of the project and with the assistance of the consultants, the RMSC staff:

- identified humanities collections with the most urgent environmental needs in problematic storage at the MSF;
- identified humanities collections utilized most frequently for research and exhibition;
- determined physical storage needs of targeted humanities collections;
- developed an energy-efficient and rational space use plan for the Museum Building's basement storage to accommodate the collections that will be moved there; and
- identified sensible and sustainable environmental parameters for the upgraded collections storage spaces.
- established a high level concept to address the remainder of humanities collections in subsequent implementation phases.

These extensive team efforts resulted in the study and identification of collections storage requirements for nearly 30,000 square feet of collections storage and over 1.2 million collections objects. With the help of consultants, RMSC now has a comprehensive plan for renovating storage areas and staff work spaces that will guide collections priorities for years to come. The first phase of implementation prioritizes humanities collections considered most at-risk and best utilized by rehabilitating approximately 5925 square feet in the Museum Building's basement to prepare ethnology, household textiles, paintings, and industrial technology collections objects for rehousing in upgraded, sustainable collections storage areas.

In this plan, space efficiency is ensured by compacting storage furniture; energy efficiency is ensured by updating HVAC and lighting systems, organizing collections so that objects with similar environmental needs are stored together, and using more sustainable environmental parameters now accepted by conservators (e.g. allowing for seasonal drift). Storing like collections together, and organizing staff work areas according to task and proximity to objects, ensures greater staff efficiency. Moreover, preservation conditions are augmented through the addition of fire suppression and new equipment that will produce reliable results. This plan will allow staff to remove most of the at-risk items from the least appropriate storage environments and improve their long-term care. It also includes a high level concept to address lower priority humanities collections in future phases of storage upgrade implementation.

Communication and Reporting

The project kicked off with a press release announcing receipt of the grant award in 2013. Staff communicated incremental steps in the planning process to museum trustees and administration at meetings of the Collections Committee and the Building and Grounds Committee. In January 2015, the museum planning consultant presented the entire plan to

the full Board of Trustees. Throughout this process, staff collected feedback from stakeholders, discussed it with the project team, and improved the plan accordingly.

The team also communicated directly with the public about the project through monthly Facebook posts. These efforts included discussions of: the sustainable storage improvement initiative in general terms, a related project to outfit the museum with energy-efficient LED lighting fixtures, the process of measuring and counting existing collections storage furniture, and analyzing the volumetric collections data.

Lessons Learned and Evaluation

Although this project was not externally evaluated, it was a learning experience for all RMSC staff involved. Key lessons learned include:

- Conservators now agree that environmental parameters for general collections can be broader than once believed.
- Internal (buffered) building spaces have better passive environmental controls than external building spaces. Using internal spaces for collections storage, and external spaces for other functions, is one way to maintain a more stable environment and improve energy efficiency in areas that must be conditioned for collections. Where external spaces must be used for collections storage, a vapor barrier and adequate insulation are important for maintaining a stable environment.
- Unlike the outdated Liebert units currently in use by the Museum, new models are designed for the type of work required in museum storage areas and a top choice for replacing old HVAC equipment.
- Analyzing the storage requirements for different types of collections was much more difficult and time consuming than anticipated. By contrast, we believe that WeatherstonBruer would have gathered the data more quickly, and possibly more accurately. In the future, we would make sure that similar projects include funding to outsource this work to a museum planning expert.
- A planning project of this magnitude requires a full two years to complete. Since we had planned only for a one-year project, the team had to ask NEH for an extension.
- Although a net gain in space will be achieved by adding compact storage units to the Museum's basement areas, the volumetric analysis demonstrated that there would still not be enough room to bring all at-risk humanities objects into these renovated spaces. This led to long and difficult discussions about prioritizing collections.

- Collections priorities should be established using criteria that all stakeholders can agree upon. We used the criteria 1) “most vulnerable to a poor environment” and 2) “most utilized for research and exhibition” to decide that the ethnology, painting, household textile, and industrial technology collections will be housed in the renovated storage facility.
- Although staff found this process very interesting, Facebook posts about the project failed to receive much attention no matter how engagingly they were written. We believe that people who care about collections preservation are actually more interested in the ways in which collections are used to benefit museum audiences. As a result, we have tried to better link collections stewardship activities with improved ability to utilize the collection in subsequent communications about the project.
- Selection of outstanding consultants is extremely important in the success of a project like this. The greatest strength of our project was the highly qualified, well-rounded and dedicated team of consultants. They proved constantly available to respond to questions and support staff in work that was new to them (e.g. volumetric collections requirement study). Moreover, consultants’ fluency with current practices and standards, and their representation of different perspectives in the field, allowed for thoughtful discussion that resulted in the best and most realistic plan for phasing RMSC collections storage improvements.

Continuation and Long Term Impact

Even as the Sustaining Cultural Heritage Collections Planning Grant came to a close, staff began writing grants to fund the implementation of these plans. RMSC was subsequently awarded an NEH grant, which will fund a large portion of the first phase of implementation described herein; additional funding necessary to support implementation is being raised through a capital campaign.

The long-term impact of this project is to ensure that ethnology, household textile, painting, and industrial technology collections are preserved so that they will continue to benefit current and future stakeholders. Use of these collections in exhibitions and programs, inquiry-based learning and scholarship, loans to other institutions, and virtually through the online RMSC Library and Collections catalog, LibCat (collections.rmsc.org), is a major way in which the Museum interacts with its public. All of these abilities will be sustained and enhanced through implementation of improved storage conditions. By developing accessible and sustainable storage solutions for the preservation of high-risk and high-use humanities collections, the RMSC is fulfilling its charter to hold these collections in trust for the community and make them accessible to the public.

In addition, the RMSC is furthering its goals of educating the public about collections management and sustainability, especially the responsible use of energy, through this



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project and the implementation projects that follow. Upgraded HVAC and lighting systems will ensure that the areas are far more energy efficient in providing the appropriate environment for the collections. Compactor systems will enable RMSC to house a larger portion of its collection in an appropriate environment. Collections reorganization and consolidation into new storage areas will allow staff to work with them more easily and provide better public access. All of these messages are being conveyed through regular posts to RMSC social media outlets emphasizing the connection between collections management activities and the public benefits of collections.

Grant Products

For further information about this project, including examples of grant deliverables, please contact:

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