

IPI WebERA

Environmental Risk Analysis

The WebERA Project

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ABSTRACT

Responding to the key finding of the Heritage Health Index that environmental control is the highest need for collections' preservation, this project will investigate a novel web-based system for environmental risk analysis called WebERA. Using a representative pilot group of ten museums and five libraries, the project will determine if a web-based environmental risk analysis and management system can make preservation quality assessment and collection risk management easier, more effective and more affordable. The project makes use of IPI's extensive laboratory and field research on the preservation of cultural heritage and will incorporate new datalogger technology with simplified preservation metrics to evaluate the quality of environmental conditions.

CONCEPTS & GOALS

The conceptual framework of the WebERA project comes from fifteen years of environmental research, but the use of the internet to store and analyze environmental data marks a new evolution in IPI's resources for preservation management. Because most museums and libraries lack the necessary staff time and in-house expertise to manage their environments effectively and efficiently, this project sought to implement a system to help collecting institutions organize, evaluate and report on their environmental conditions. The premise is that environmental risks can be managed and mitigated if they can be identified, quantified, and communicated to museum leadership and facilities managers.

WebERA is designed to overcome the obstacles that most often prevent museums and libraries from managing environments effectively and efficiently :

- Lack of necessary staff time and in-house expertise
- Difficulty in determining the degree of risk (or benefit) to collections by the environment
- Challenge of organizing, maintaining and reporting on large amounts of environmental data

The research questions addressed by the WebERA project are:

- Can a web-based environmental management system make preservation management easier, more effective and more affordable?
- What functions and features in a web-based environmental risk management system will be most valuable?
- How much useful information can be derived by users of this system, and how much additional expertise will still be required to make meaningful adjustments to the preservation quality of storage environments?

The resulting website, MyClimateData, will serve the field by helping preservation staff to:

- Quantify and identify the preservation quality of the environmental conditions
- Manage collection environments and mitigate collection risks
- Communicate problems effectively and implement improvements efficiently

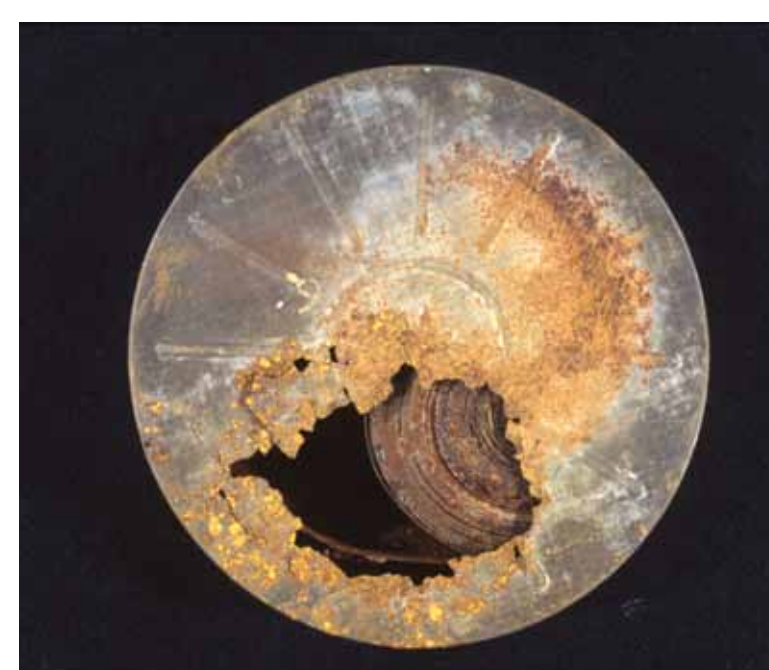
IPI'S PRESERVATION METRICS

The project used IPI's Preservation Metrics - algorithms that transform temperature and relative humidity data into standardized estimates of decay risks - to evaluate the preservation quality of the environment for four types of decay:

Natural Aging



Metal Corrosion



Mechanical Damage



Mold Risk



PROJECT ACTIVITIES

The WebERA activities took place over the course of two years. Part of the design philosophy of this project is that environmental risk analysis is a long-term, ongoing process because the majority of damaging environmental circumstances occur over a time scale measured in months, years, and decades. It was also necessary for this project to give the research partners ample time to understand the concepts, implement their monitoring programs and have a full year of data to analyze.

Training Workshop

Representatives from each institution attended a two-day workshop at IPI to learn how to use the project tools, design a monitoring program for their collections, and create a MyClimateData account. To monitor the temperature and relative humidity in their institutions, each participant received 20 of IPI's PEM2 datalogger.

Continuous Monitoring

Once they had implemented their monitoring programs, the research partners were responsible for uploading their data and using MyClimateData to evaluate their environmental conditions. Research partners were asked to respond to discussion topics and research questions posted on the WebERA blog to share their progress, resolve common problems and communicate feedback to their fellow participants and the project team at IPI.

Closing Meeting & Final Reports

After a year of continuous monitoring, the research partners shared their experiences and final thoughts with the project team at another onsite meeting at IPI. Suggestions were made for further improvements to the website functionality and implementation, but overall the research partners felt MyClimateData was a powerful tool for managing the environment for preservation.

Remaining Tasks

IPI will visit two partners' institutions to evaluate how the program was implemented onsite. IPI will also prepare Environmental Risk Assessment reports for each participating institution, with suggestions for both short and long-term improvements.

PROJECT PARTICIPANTS

From 86 applications received, 10 museums and 5 libraries of various size and geographical location were chosen to participate in the project:

- Museum of Fine Arts, Boston
- The Metropolitan Museum of Art
- Detroit Institute of Arts
- The Museum of Modern Art
- The Morgan Library and Museum
- Shelburne Museum
- Smithsonian, National Museum of Natural History
- American Museum of Natural History
- Museum of History and Industry, Historical Society of Seattle
- California Department of Parks and Recreation
- University of Wisconsin Libraries
- Yale University Library
- University Libraries, University of Colorado
- University of Illinois Preservation Working Group
- Peabody Essex Museum, Phillips Library

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