

Program. His software usability and database design background includes developing databases for the Kasemake automated enclosures system and assisting in usability testing and development of the Indiana University Libraries Intranet system.

Helga Borck, Head of the Collections Care Unit of the Barbara Goldsmith Preservation Division, will directly supervise and facilitate the work of the project manager (10% FTE). In addition, Ms. Borck will chair the oversight committee of this project (described at the end of the Staff section). Since Ms. Borck joined the professional staff of The New York Public Library in 1973, she has served in a number of capacities within Technical Services and Access Services, and has provided oversight for numerous projects, gaining a firm understanding of the Library's spaces and collections, their organization, and their history. In her current position, Ms. Borck manages preventive preservation activities, book repair, housing of materials, collection stabilization, environmental monitoring, disaster preparedness and recovery, and field services operations. Ms. Borck was involved with the pilot environmental monitoring project conducted at the Library several years ago with the Image Permanence Institute and Herzog/Wheeler and Associates, and continues to work with both consultants on ongoing environmental data collection at the Library.

The project involves the coordination of activities at multiple sites, and will require ongoing communication between project staff and Library staff at all levels. An **Oversight Committee** will be convened to review all aspects of project work and ensure successful completion of each stage of the project. The committee will meet monthly to review project progress and the results of user group discussions and quarterly data collection, making project adjustments as necessary. It will be chaired by Helga Borck, Head of the Collections Care Unit, and will include the Project Director and Project Manager, as well as the Directors of the four Research Libraries, the Director for Technical Services, and the Director of Facilities Operations for all four Research Libraries and 85 Branch Libraries.

In addition, a **Facilities Working Group**, comprised of the building managers for the four Research Libraries, will meet quarterly, following the collection and upload of data, in order to review the state of the overall building environments and plan for changes in the operations of the appropriate systems. Members of the facilities working group will coordinate their efforts with the Library's Office of Capital Planning and Construction and the Director of Facilities Operations.

Image Permanence Institute

The non-profit **Image Permanence Institute**, based at the Rochester Institute of Technology, is one of a small number of organizations involved in research and development of preservation technology. Its staff works in six principal areas: research on information media stability, collection management and environmental standards, ISO standards development for imaging media preservation, testing of archival and imaging materials, training photograph conservators, and outreach through publications and consultation. The Background and Project History sections of this proposal discuss IPI's relevant experience and expertise in environmental monitoring and software design.

James Reilly, Director of the Image Permanence Institute, will oversee all aspects of the research not performed by Library staff (25% in Year 1, 20% in Year 2). He will direct the work during IPI's site visits and oversee the participation of Herzog/Wheeler and Associates and Zak Software. He will advise the Library on the placement of PEM dataloggers in the storage spaces, work on the design on the web prototype with Leon Zak, collaborate with Peter Herzog and June Wheeler on the monitoring of the mechanical systems in the five NYPL buildings, and work with Jacob Nadal and Library staff on the data models and evaluation of the user interface. He will also assist the Library in creating the documentation of best practices in the overall environmental optimization effort, and participate in publishing and disseminating information.

Patricia Ford, IPI staff scientist, will be involved in the design of the prototype web system and take the lead in capturing the information on storage spaces, mechanical systems, and collection objects that needs to be in the web database (20% in Year 1, 15% in Year 2). She will participate in site visits, making sure that all the steps in the process are documented and that the database meets the needs of the Library. Her nearly twenty years of experience as a collections manager, and her experience in helping design the National Museum of Denmark web environmental database, will be used to ensure the functionality of the web based environmental systems. Ms. Ford also worked with The New York Public Library during IPI's Andrew W. Mellon Foundation-funded project.

Edward Zinn, IPI staff scientist, will be directly involved with the infrastructure monitoring aspects of the project, including PEMS and ACR dataloggers and their calibration, repair, and placement, as well as data collection and upload to the web (15% in Year 1 and Year 2). He will participate in site visits and work on data interpretation in the periods between visits. Mr. Zinn had a large role in the creation and success of IPI's hardware and software for environmental monitoring, and worked with the Library during IPI's Andrew W. Mellon Foundation-funded project.

Beverly Murrell Frasier, IPI senior accountant, will be responsible for all of the expense tracking, Rochester Institute of Technology internal reporting and grant accounting, invoicing of The New York Public Library, and other aspects of the financial side of the project (10% in Year 1, 5% in Year 2).

Jane Pestke, IPI business manager, will oversee all of the administrative tasks of the project on behalf of IPI, including travel arrangements, purchasing, coordination with Herzog/Wheeler and Associates and Zak Software, and report generation (5% in Year 1 and Year 2).

Herzog/Wheeler and Associates

Herzog/Wheeler and Associates specializes in systematic energy cost management and brings general expertise in building systems and facilities management to the project. Herzog/Wheeler's approach emphasizes long-term solutions to cost reduction utilizing a management-based approach and staff training. Herzog/Wheeler has collaborated with IPI in the past on the Preservation Environmental Monitor and Climate Notebook software field trials. It regularly participates in preservation workshops and presentations for the humanities community, and its work on optimizing preservation environments was featured at the National Archives and Records Administration's 2006 Annual Preservation Conference.

In this project, Herzog/Wheeler and Associates will provide information on the function of mechanical systems in the Library buildings and share its knowledge of diagnostic methods and performance analysis. Peter Herzog will investigate the mechanical systems and analyze system performance and energy savings, while June Wheeler will be responsible for placing the ACR dataloggers in the mechanical systems, and organizing and interpreting the data from the dataloggers. Together, they will work together with all project staff to determine the optimum climate possible and provide suggestions for improvement to existing mechanical systems. Like IPI, Herzog/Wheeler endorses a management-based approach to environmental monitoring and analysis, which includes information sharing and staff training.

Zak Software

IPI's Climate Notebook desktop software is widely used in the cultural and preservation communities, and its work with the National Museum of Denmark has led to the development of a prototype web-based environmental data management system that will be adapted to meet the goals of this project. For

software development, the Image Permanence Institute will contract with **Zak Software**. Zak Software has been involved with the creation of numerous software packages for the heritage community, including Climate Notebook, Zpests, Artifact Tracker, and the myclimatedata web system for the National Museum of Denmark. Leon Zak of Zak Software will work with IPI and Library staff to develop, test, evaluate, and refine software for the collection storage information system to meet the needs of a range of Library stakeholders.

Dissemination

Through the project, the Library will define the process of implementing environmental control methods by documenting the decision-making of preservation stakeholders, from choosing locations for monitoring to arriving at recommendations for improvement. This research will advance a set of best practices for evaluating environmental conditions and realizing the best possible environment for collections. Project materials and tools produced will be made available at the end of this project on a public website hosted and maintained by The New York Public Library. A number of these tools will be made available on IPI's website, as well.

In this Research and Development project, the Library and the Image Permanence Institute agree that IPI will retain the rights to the actual structure and implementation of the prototype system, but not to the generic designs and XML data models, which will be published for any institution to use. IPI has the intention in the future to create a nonprofit, cost-recovery basis service for any institution to keep their data and preventive conservation database on the web, and this project prototype is a necessary step along the road to creating such a system in the future.

The results of the Research and Development project will be presented to the library community through publications in library and preservation literature, and through presentations at the meetings and conferences of groups such as the American Institute for Conservation, Society of American Archivists, Association of Research Libraries, and American Library Association, including to the Preservation Administrators Discussion Group and the Library Administration and Management Association Building and Equipment Section. Articles will be submitted to journals such as *Restaurator*, *College and Research Libraries*, *D-Lib Magazine*, *Library Administration and Management*, and *Library Resources and Technical Services*, as well as the publications of the Library Information Technology Association, Society of American Archivists, Heritage Preservation, and Council on Library and Information Resources. The presentations, publications, and the availability of resources will be promoted through the Preservation Administrators Discussion Group, Conservation DistList, Archives, DigLib, JISC digital preservation, and museum community electronic listservs.

Notes

¹ Heritage Preservation, Inc. *A Public Trust At Risk: The Heritage Health Index Report on the State of America's Collections*. Washington, D.C., 2005. pp. 51-55.

² Nielsen, J. *Heuristic evaluation*. In Nielsen, J., and Mack, R.L. (Eds.), *Usability Inspection Methods*. John Wiley & Sons: New York, NY, 1994.

³ Virzi, R.A., "Refining the Test Phase of Usability Evaluation: How Many Subjects is Enough?" *Human Factors*, 1992. 34(4): p. 457-468.)

⁴ World Wide Web Consortium. *XML Schema 1.1*. <http://www.w3.org/XML/Schema>