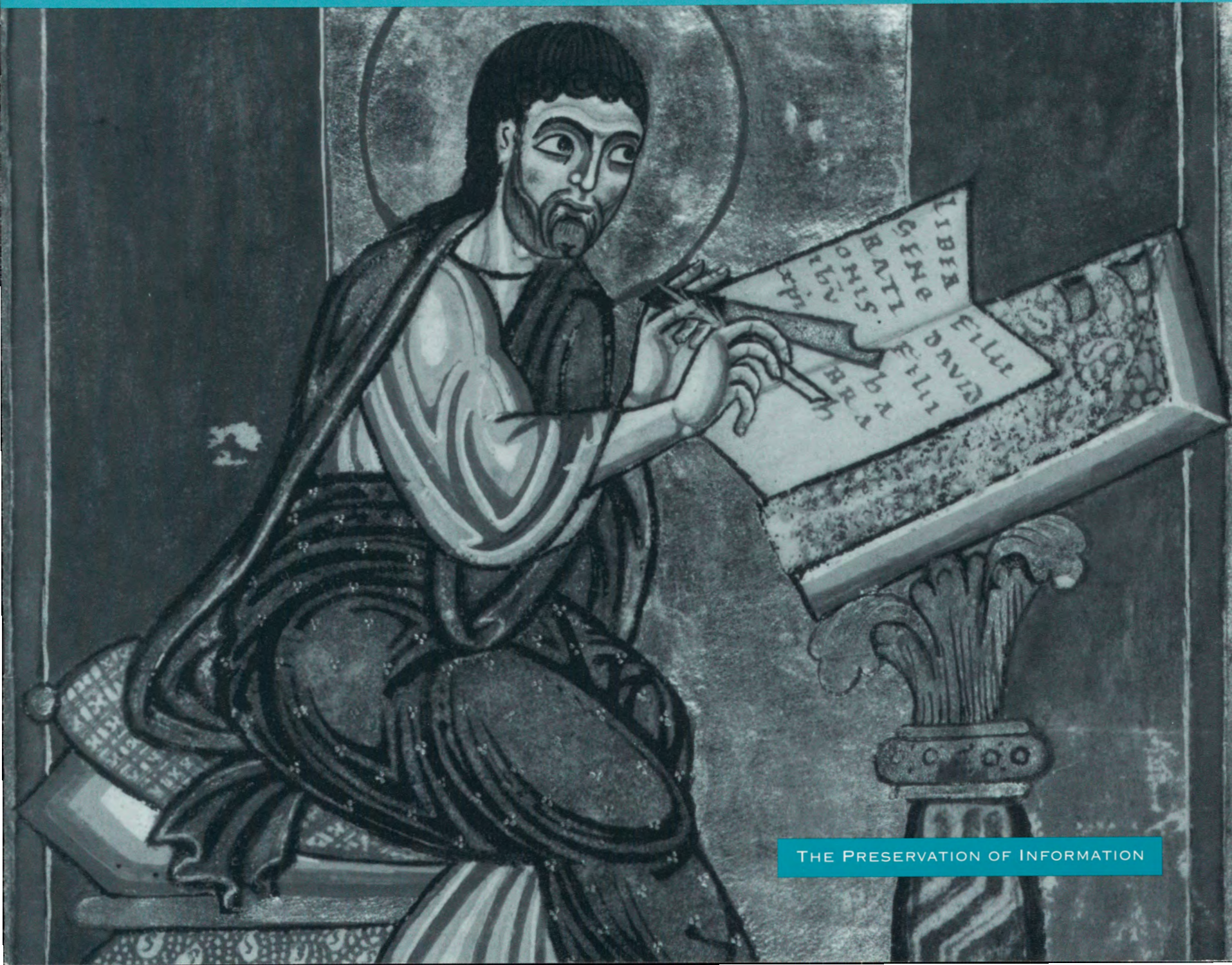


Volume VIII Number 11

CONSERVATION

The GCI Newsletter



THE PRESERVATION OF INFORMATION

The Getty Conservation Institute Newsletter

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THE GETTY CONSERVATION INSTITUTE

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Front cover: Illuminated manuscript, c. 1120-1140, Benedictine Abbey of Helmarshausen, Germany. Photo: The J. Paul Getty Museum. Back cover: Globe photo by Dennis Keeley.

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As we near the end of the 20th century, our large public and university research libraries are grappling with the problem of preserving enormous collections that continue to grow. The range of materials in these collections and the diverse methods needed to maintain those materials complicate the preservation task. While new technologies may ultimately preserve the intellectual content of some materials, no technology is likely to prove to be the one solution to the multiplicity of problems.

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The Preservation of Information



by Jeffrey Levin

“Knowledge,” said 18th-century English lexicographer and critic Samuel Johnson, “is of two kinds. We know a subject ourselves, or we know where we can get information upon it.”

If he were with us today, doubtless Dr. Johnson would agree that there is no greater single source of information than libraries — particularly our large public and university research libraries. Within their walls is a cornucopia of material, documenting the history and culture of living societies and peoples long vanished. In addition to printed books, everything from illuminated medieval manuscripts and ancient maps to gramophone recordings and early cinema form a part of library collections around the world. Each of these items is a piece of information in the puzzle of civilization.

Unfortunately, as we near the end of the 20th century, a time dubbed by some as “the information age,” our major repositories of information are grappling with the substantial problem of preserving enormous collections that continue to grow. The staggering accumulation of items, the range of materials used, and the diverse methods needed to maintain those materials have complicated the task of preserving information. New and developing technologies may ultimately preserve the intellectual content of vast amounts of materials, yet no technology is likely to prove to be the one solution to the multiplicity of problems. In addition, the new technologies themselves raise their own preservation issues, broadening the responsibilities for those charged with their safekeeping.

A Mountain of Material

The sheer quality of materials makes the preservation task daunting. Less than a century and a half ago, the number of volumes in the libraries of U.S. colleges totaled little more than 270,000. The Library of Congress acquired well over that amount in new volumes last year alone.

The kinds of material housed in libraries goes well beyond books. Indeed, at the Library of Congress books constitute perhaps only a quarter of the collections. Manuscripts, maps, periodicals, microfilm, motion pictures, photographic prints and negatives, video tapes, and audio materials are housed not only in the Library of Congress, but in major public and research libraries around the country, adding to the massive custodial responsibilities of these institutions. As of 1989, for example, the New York Public Library had over 34 million cataloged items.

The storage of materials in environmentally controlled conditions remains a prime concern for library preservation officers, according to Carolyn Morrow, who heads preservation efforts at the Harvard University Library. “I would say that our major challenges

are the same as they’ve always been — to provide a proper environment for our collections, which is a constant struggle, and to decide on our priorities for the preservation of materials since everything that we’d like to be done cannot be done.”

Among the priorities for many U.S. libraries is finding ways to cope with brittle books. The problem is the result of changes in manufacturing that occurred back in the mid-19th century when paper began being mass produced on machines that used wood pulp rather than rags. Wood pulp paper has chemical constituents that acidify over time when exposed to oxygen and other elements, and it becomes brittle much more quickly than rag paper.



“You can take two documents — one created 20 years ago and one created 200 years ago — and the chances are the one that’s 20 years old is in worse condition,” says Kenneth Harris, Director for Preservation at the Library of Congress. “From the late 19th century to the present, the volume of printing increased so greatly that we’re faced with a paper mountain, so to speak, of acidic materials, not just in the United States but throughout the world.” This unfathomable amount of paper is undergoing inexorable deterioration, a phenomenon commonly described as “slow fires.”

Because of U.S. Environmental Protection Agency regulations and certain other changes in the paper industry, the percentage of alkaline paper today manufactured by U.S. mills has risen dramatically. Ellen McCrady, Editor of the *Alkaline Paper Advocate* (a publication for users and makers of alkaline paper), reports that about 75% of all printing and writing paper now produced in the United States is alkaline, over three times what it was less than 10 years ago.

However, worldwide the production of poor quality acid paper remains prevalent. For example, according to Ms. McCrady, none of the paper presently produced in Russia is alkaline. The pervasive use of acidic paper poses a continuing problem for libraries around

the world, including U.S. institutions like the Library of Congress, where over half the book acquisitions are foreign publications. This combined with existing collections of books and other paper material produced in the last 150 years forms a significant deacidification challenge.

If the deterioration of wood pulp paper materials constitutes a “slow fire,” the degeneration of collections of other more modern materials such as film and magnetic-based media is considered by some to be a “fast fire.” Many of these materials are degrading more quickly than paper, yet the issue has gotten less attention than brittle books.

“It’s a big, expensive problem,” says Mr. Harris of the Library of Congress. “Right now motion pictures and video recordings have to be recopied every 10 or 15 years. Institutions like this one that have massive collections of these things are not going to be able to afford to copy them [that frequently]. A decade or two from now we’re going to have a major cultural crisis on our hands.”

Chris Coleman, Library Preservation Officer for the University of California, Los Angeles (UCLA), agrees that not enough attention has been paid to the preservation of nonpaper media. “The major effort

has been on printed material," he observes. "Certainly the preservation of sound recordings and photographic material has not been given the attention it should have." The range of materials, he points out, complicates the preservation task.

A concern for motion picture preservation is high in Latin America, according to Susan Benson, Coordinator of Multinational Projects of Libraries, Information & Communication for the Department of Cultural Affairs of the Organization of American States (OAS). The OAS has a film archive project under way in Latin America devoted in part to film conservation training.

"The Latin Americans really care a great deal about films they've produced," says Ms. Benson. "Films may be less taken for granted there than they are here [in the United States]." Cinematecas, or film libraries, can be found throughout the region, and the sophistication of the film conservation effort is proportional to the size of the country's film industry. In Mexico and Argentina much attention is paid to preservation of film. While storage facilities are improving, throughout the region poor storage in the past has resulted in the loss of films.

The issue of storage transcends cinematecas. "The biggest problem in conservation [for Latin American libraries] is poor storage," Ms. Benson reports. A number of national libraries are housed in historic structures that lack environmental controls, and even many newer facilities have not been designed with the needs of collections in mind.

Allert Brown-Gort, Program Coordinator of the Preservation and Conservation Studies programs at the University of Texas in Austin, considers library design to be an important issue for Latin America. "There needs to be some very serious research done on appropriate architecture," he says.

A Mexican by birth who has traveled extensively in Latin America, Mr. Brown-Gort perceives an emphasis in preservation in the region that differs from that in the United States. Latin America is the repository of countless historical documents from the Spanish colonial period dating back to the 16th century. "In so far as institutions think about preservation of their collections," he explains, "they tend to think about

that material....The issue [in the United States] is the disintegration of modern research collections." Modern research collections in Latin America receive less attention, he continues, in part because their size is typically less than that found in the United States, and in part because the poor quality of paper used in Latin America has rendered the preservation of books produced during this century extremely problematic at best.

PRESERVATION OPTIONS

One approach to the problem of large numbers of brittle books is a mass treatment system called mass deacidification. The process retards deterioration by neutralizing the acid contained in the paper. During the 1970s, the Preservation Research and Testing Office of the Library of Congress developed and patented a mass deacidification method using diethyl zinc (DEZ). Since that time other mass deacidification techniques have been developed not only in the United States, but also in Europe and Japan.

The Library of Congress licensed the DEZ mass deacidification process to Akzo Chemicals, a Houston-based company which in 1987 designed and built a pilot Book Preservation Facility in Texas. Since then over two dozen institutions throughout the United States have sent items to the facility to be treated with the DEZ process.

Among them is the Harry Ransom Humanities Research Center, a scholarly research institution with 19th- and 20th-century Western materials, located at the University of Texas. The Center was the recipient of a grant from the National Endowment for the Humanities (NEH) to evaluate the use of the process on archive and manuscript collections. James Stroud, Head of Conservation at the Center, considers the process to be very applicable to paper records and manuscripts, but more problematic for bound materials which are "much more complex objects."

"We are talking about a process that starts right out dehydrating the materials to about 2% moisture content, which is bringing it down 6% to 8%," says Mr. Stroud. "You set up all kinds of tensions just in the dehydration phase: adhesive bonds can separate, covers can pull loose from boards, boards can warp. Without

the binding you just don't have as many problems. I find it eminently more applicable to paper records."

Other university libraries, including those at Johns Hopkins and Harvard, have also made extensive use of the DEZ process at Akzo's Texas facility. During 1992 and 1993, the Harvard University Library mass deacidified approximately 16,000 maps and 10,000 books.

"We're very pleased with the process," says Harvard's Carolyn Morrow. "It's not perfect, but we're very pleased with it."

While use of the Akzo's Texas facility by major research libraries has been growing, that growth apparently failed to meet the company's expectations. In December 1993 Akzo notified the Library of Congress that because of "limited prospects for the adoption of DEZ in the near future," it would be closing the facility in early 1994. The facility's closure would have an extremely serious impact on the ability of research libraries nationwide to deacidify large amounts of material. Discussions are now under way with the company to help them identify a subcontractor willing to continue the facility's operation.

Neither mass deacidification nor any single procedure can be considered the ultimate solution to the problem of brittle books. Because of the monumental number of endangered volumes now housed in the largest libraries of the United States (estimates range as high as 77 million), a multiplicity of approaches will be necessary.

Mass deacidification is designed to preserve both the object and the information it contains. But technology now makes it possible to preserve information apart from the original object. For many librarians today, "preservation" has come to mean saving the intellectual content of an object as opposed to the object itself. In practice this means copying or "reformatting" the material.

The most established and standardized method of reformatting, both in the United States and elsewhere, is microfilming. First used in the 1930s, microfilming was originally utilized to increase access to materials that were not widely held. Only more recently has it been employed as a preservation tool. Today, for example, a book too brittle to sustain frequent handling can be microfilmed, thereby preserving the

book's content as well as affording broader access to the information it contains.

Retrieval and handling of microfilm can be more cumbersome than books, and while considered archival, microfilm itself is subject to wear and tear. In addition, it is not a reformatting option for many other media.

One reformatting option of increasing interest to libraries is digital technology. A wide range of materials, from printed pages and photographs to sound recordings and motion pictures, can be translated into laser-readable information and stored on optical disks where material can be copied electronically with no loss of quality. Optical disks provide easy access to the material and unlike other media do not suffer perceptible damage from frequent use. The technology permits originals to be removed from handling and to be preserved in environmentally controlled storage conditions. Among the storage devices utilizing digital technology are CD-ROMS (Compact Disk Read Only Memory) and WORM (Write Once, Read Many) optical disks, which can be recorded on once by the user and cannot be erased.

The potential of digital technology for vastly increased information access and preservation is significant, but problems remain. Equipment costs are expensive, and archival standards for optical disks have yet to be established.

Ironically, in the long term the life span of an optical disk may end up being far greater than the equipment that can read it. Today, the pace of technological change is so swift that machine obsolescence is a regular occurrence. Kenneth Harris, who spent over 20 years at the National Archives before coming to the Library of Congress, says that large institutions with materials on outdated media have to maintain obsolete equipment to retain access to items not reformatted on the latest technology. "At the National Archives and Library of Congress we have literally museums of audio, video, and imaging equipment to reformat materials that have been produced in the last 150 years," he adds. Some experts have suggested that librarians and archivists using digital technology should be prepared to make reformatting digital material onto newer technology a regular part of collections management.

Another solution for books and other paper materials may be doing no reformatting at all, or at least waiting until demand or condition justifies the copying. Improved storage conditions and microhousing of materials can lengthen the life of even brittle books and help postpone the day when reformatting becomes essential for preserving intellectual content. Called "phased conservation" by the Library of Congress, a maintenance program that targets deteriorating material for a variety of microhousing options can "buy time" for items in a way that efficiently utilizes limited resources. (See *News in Conservation*, page 12.)

Libraries are also seeking to cope with financial constraints by exploring ways to share the burden of responsibility for preservation. For example, by coordinating reformatting programs to avoid excessive duplication of efforts, a broad range of material can be preserved and costs spread.

MAKING CHOICES

Ultimately, it seems, library preservation officers will have to astutely employ a multisystem preservation approach that is flexible and relies on a diversity of methods and technologies. An important component of this approach appears to be an expanded use of passive, preventive conservation measures that can preserve objects collectively.

However, even with increasing technological and administrative options for information preservation, major libraries will remain faced with tough decisions as they confront immense and expanding collections.

"Sometimes I feel that a large part of our job is presiding over decay, rather than doing preservation or anything more active," observes Carolyn Morrow of Harvard. "The job is too large, and we have not yet admitted to ourselves the constraints. We're still acting under the assumption that we're going to be able to do it all. We're not making hard choices."

UCLA's Chris Coleman, who worked for many years in public libraries in Britain, sees "a long tradition" of librarians making judicious decisions regarding what should be kept and what should be discarded. This generation, he believes, must be prepared to do the same.

"There's no real need to preserve everything," he asserts. "No one has done that for any of the past high points of civilization. There's no reason to suppose that the 20th century is so absolutely marvelous that everything we've produced should be kept. I don't think we'll be able to, simply because of the largeness of the job and the inadequacy of the funds." That being the case, he says, the losses should be planned and not the result of circumstance. "I would prefer to lose things by making decisions rather than by accident." ←

Jeffrey Levin is the editor of Conservation, The GCI Newsletter.

Rising from the Ashes: The Los Angeles Public Library



A conversation with
Elizabeth Gay Teoman

On October 2, 1993, the Los Angeles Public Library opened its renovated and expanded Central Library in downtown Los Angeles after a 10-year development campaign that has endured two fires, economic challenges brought on first by inflation and then by recession, and, most recently, an increasingly tight government budget.

Rising like a phoenix from the ashes, the Library is busily readying itself for a month of festivities that will celebrate and pay tribute to its remarkable resilience and broad-based community support. The Library's Director, Elizabeth Gay Teoman, talks about what may be the cultural community's most successful story of the 1990s.

“THE OVERSIZED CANVAS MURALS IN THE ROTUNDA
TELL THE STORY OF THE CITY’S DEVELOPMENT—
THE PERIOD OF EXPLORATION, THE MISSION
PERIOD, THE CITY’S FOUNDING, AND ITS RICH HIS-
TORY OF IMMIGRATION OVER BOTH LAND AND SEA.”

Jane Slate Siena: The Los Angeles Public Library has received enormous support from the community to overcome the fires of 1986 and also to build an expanded and renovated facility. What is your secret?

Elizabeth Gay Teoman: It’s the Library’s, not mine. For over 100 years, the Library has held a position of respect in the city. Its architectural and decorative elements show that it was conceived as a place where all cultures come together. The oversized canvas murals in the rotunda, for example, tell the story of the city’s development — the period of exploration, the mission period, the city’s founding, and its rich history of immigration over both land and sea. The “Goddess of Civilization” sculpture on the second floor is flanked by two sphinxes representing knowledge that is hidden and that which is revealed. The Goddess is decorated with elements borrowed from Egyptian pyramids, Viking ships, Greek and Roman temples, Indian dancers, a Renaissance cathedral, a covered wagon from the American southwest, the Liberty Bell, and finally angels representing the city of Los Angeles. The cultural diversity of the past and present was thought to be significant and maybe even unique when this building was built in 1926. This, of course, remains an important message today.

The Library’s collections have a stronger regional focus than most major urban libraries. For example, we have an extensive Californiana collection and materials related to western American history. Our rare book collection focuses on voyages and exploration, natural history, costumes, performing arts, cooking, patents, and other subjects of significance to the Pacific rim countries. We are a valuable resource to businesses, and have a complete collection of U.S. patents.

Your new facility combines the renovated five-story building dating from 1926 with an eight-story new wing. How long has it taken to make this a reality?

It has been more than a 10-year process. It became clear in the 1960s that the building was no longer adequate. By then, the collections had reached double capacity and we were dealing with electrical and environmental problems. The Library needed a major expansion, or it needed to move to new premises. In 1983, we started developing a plan to expand and renovate the Library on its original site because the city thought it was important to keep the Library in the central part of Los Angeles. By 1985, we had a “public-private” partnership



among local businesses and community development agencies for financing. Our present reality is the direct result of the visionary and committed business communi-

ty responding to the need to save an important cultural resource for the city.

How did your plans compare with other building developments of the 1980s?

At the time, there was literally a proliferation of building programs around the country. The big central libraries had long ago reached critical mass. Interest in historic preservation was high, and communities were improving their museums and libraries. We visited the other large public libraries with major building programs — Dallas, Houston, Miami, Atlanta, Boston, Chicago, and New York — and networked heavily through the American Library Association’s Buildings and Equipment Section with our colleagues in similar situations. One experiences this sort of challenge perhaps once in a lifetime. We looked at everything from sick air syndrome to personal computer access from offsite. I feel as though I’ve earned the equivalent of a doctoral degree in facility restoration and expansion, but in all probability will not do this again in my lifetime.

How are you blending the historic needs of the old building with the technological needs of the new “information age”?

This is really exciting. We have restored the historic building in compliance with the Secretary of the Interior’s guidelines and those endorsed by our local historic preser-

vation groups. Further, the architects, Hardy Holzman, Pfeiffer Associates, adapted design concepts from the old building for the new wing, resulting in a coherent environment that respects but does not confuse the old and the new. The Library reflects the city’s culture and history, but it also reflects its future. We are integrating technological services in the building that make it easier for people to learn and to find information.

Where exactly were you in this process when fire struck in 1986?

We were one year away from moving into temporary space so construction could begin. Suddenly things changed. Immediately, we were psychologically removed from the building

Facing Page: The Los Angeles Public Library. Left: Elizabeth Gay Teoman during renovation and new construction at the Library. Photos: Dennis Keeley.

“THE LIBRARY REFLECTS THE CITY’S CULTURE AND HISTORY, BUT IT ALSO REFLECTS ITS FUTURE. WE ARE INTEGRATING TECHNOLOGICAL SERVICES IN THE BUILDING THAT MAKE IT EASIER FOR PEOPLE TO LEARN AND TO FIND INFORMATION.”

process and placed in emergency circumstances. Our priority was to save the building and the collections. We went into triage, and could save only that which was salvageable in a very limited time frame. Our greatest enemy was the fear of mildew. For three days, over 1500 volunteers worked around the clock and sometimes without light to pack water-soaked books in boxes for freezing. Within one week, everything was boxed and out of the building and in appropriate storage facilities.

What were your losses?

We estimate a loss of 400,000 books from the fires; water damage to 700,000; and smoke damage to the remaining collection. The rare book collection was immediately evacuated. But several important collections were destroyed. Ironically, the seismology collection was lost to fire.

Sometimes disasters turn out to be clouds with silver linings. Is there one here?

Absolutely. Since the fire, the Library has established a high-profile and well-funded “Save the Books” campaign, a network of committed volunteers, renewed corporate support for educational outreach, and a new understanding of the significance of our physical environment. But perhaps most importantly, we have stronger ties with the experience of others. The fire brought experts in conservation and disaster recovery

from the Library of Congress, the Getty Conservation Institute, and many other places to help us during the emergency. Their good advice has helped us take advantage of the new facility to do things differently. We now have sprinklers and other disaster preparedness and mitigation procedures.

And our environment is at the proper temperature and humidity levels for the first time.

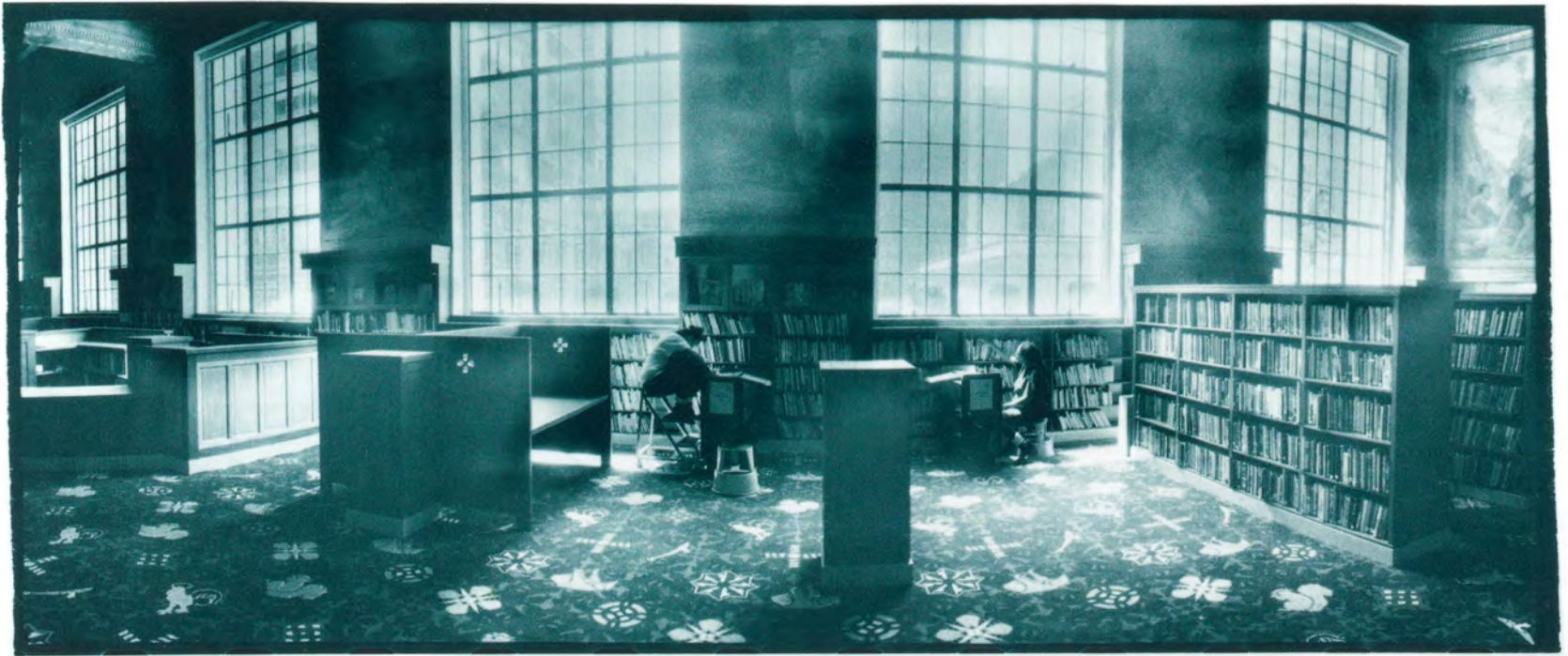
Tell us more about your new environment.

The original building has been restored and renovated to integrate those services we need to make it easier for people to find information. The new wing houses a dramatic eight-story atrium that provides access to numerous discrete departments that are actually rather intimate — open in design yet personal in scale. The development also includes an outdoor garden, named for our generous benefactor Robert Maguire, with about 160 trees, many of which are noted specimens. A public art program has allowed us to commission art throughout the interior and also in the garden. We have tried to create an artistic, natural, and perhaps spiritual environment that can be an important enclave for intellectual activity and reflection in the midst of this very busy city. I think people are going to love to come here.

What are the major issues facing libraries in 1993 and beyond?

Funding, which leads to access. We must keep our libraries in the forefront of public





education and information, and public funding. Planners have said that we will be replaced by technology. We don't believe this. People still seek the pleasures that can only be obtained by reading books, and we are keeping pace with technological developments. A significant portion of our budget for the renovation is for upgrading our systems, developing access to home computers, and establishing more access points for our readers. We see no decline in use and, if anything, anticipate a substantial increase given our new facilities and services. But we have to stay with developments to avoid obsolescence.

Librarians in other countries are very concerned with security and safety issues. Are these also problems for you in Los Angeles?

Given our arson experiences in 1986, we are very sensitive to these issues. Broader access certainly involves additional risks. Increasing the availability of material means that more people will be handling more items, thereby increasing chances of physical damage and loss. We monitor visitors and ask them to follow standard regulations — no sharp objects or ink pens in the rare book area, for example. Unfortunately, theft is a reality in most large cities the world over. Our state-of-the-art security program includes a book detection system, video monitors, and professional staff to prevent theft.

“PLANNERS HAVE SAID THAT WE WILL BE REPLACED BY TECHNOLOGY. WE DON'T BELIEVE THIS. PEOPLE STILL SEEK THE PLEASURES THAT CAN ONLY BE OBTAINED BY READING BOOKS.”

Now that you have this spectacular new physical environment, with public openings attracting large numbers to the Library, what's next?

It is time to develop new programming opportunities. We have increased our space by over 30%, but we are not able to hire additional staff. One of our most pressing needs is in preservation. Can you imagine that our 2.1 million holdings have survived disaster and normal aging without the support of a professional conservation department. It's time to turn our attentions to the books! ☒

Elizabeth Gay Teoman has served as Central Library Director of the Los Angeles Public Library since 1984. She is past president of the California Library Association and served as Chair of the American Library Association's Buildings and Equipment Section in 1991-1992.

Jane Slate Siena is Managing Editor of Conservation, The GCI Newsletter.

Above and facing page: Large canvas murals in the rotunda of the Los Angeles Public Library recount the rich history and development of the city. Photos: Dennis Keeley.

PHASED CONSERVATION



REVISITED

Personal reflections on phased
conservation and preservation theory

by Peter Waters

Preserving our cultural heritage is no less important than preserving rain forests and endangered animal species. If society recognizes that books, manuscripts, maps and atlases, graphic arts, paintings, photographs, recordings, and a host of related material contain the essence, history, culture, and creativity of the human race, then we must begin to place a priority on their preservation if we expect future generations to be able to study and enjoy these vast and often irreplaceable resources.

How will the next generation judge our attempts to preserve the varied types of material in our major library collections? Have we assessed the preservation challenge adequately to be comfortable about a successful outcome, or do we need to take a closer look at some of the existing strategies?

To be faced with the overwhelming task of conserving the immense collections of rare and valuable material in a great library such as the Library of Congress, with a conservation staff of 30 members, is like looking through a tunnel which has no end. The single item conservation treatment approach, while important, is expensive and time-consuming and does not provide attention to the vast majority of the collections. The concept of phased treatment, which is a departure from single item treatment, seeks to secure a protective environment until such time as the object may be singled out for individual treatment — an element of preventive conservation.

The massive response to the Florence flood of 1966 marked the first recorded mass deacidification treatment of books and related material. The flood waters contained a high percentage of calcite and although the paper may have benefited from such an exposure, no one would recommend exposing library collections to such an aggressive one-shot treatment! The restoration work was extensive. Over 20 years later, 75% of the 80,000 or so volumes damaged by water, mud, and oil from the Magliabecchi and Palatino rare book collections have been restored.

The experience of this disaster was invaluable. A close study of previous repairs, binding structures, and conservation practices revealed that not all damage was caused by the disaster itself. Restoration practices had to be reevaluated. Out of this experience came the avoidance of adhesives where practical — an early conceptual breakthrough in a “phased” approach to conservation.

This new approach to conservation, called “phased conservation” by its proponents, is the art and science of delaying the inevitable moment when material will perish. It identifies the degree of deterioration and seeks to provide projections of future decay rates. It responds to these factors in a planned, logical sequence of phases within the restraints of available resources. And it protects material from unnecessary restoration treatments. Above all, phased conservation stimulates a new realism in assessing the current state of deterioration and provides thoughtful alternatives to hasty or short-term actions that might otherwise be taken to save a precious object.

The foundation of a comprehensive phased conservation program is to provide physical protection to objects, which can be achieved by placing them in “archival” quality housing or boxes. Work is usually carried out jointly by conservation and curatorial staffs. Controlling the environments of books is the first line of defense in retard-

ing their deterioration. As a means of balancing the needs of the disparate items of entire collections, phased conservation should become the principal management approach to the conservation of collections in both libraries and museums. It is proactive rather than reactive, and it is cost-effective and efficient.

“Phased conservation stimulates a new realism in assessing the current state

In 1988, another disaster struck which further challenged our basic approaches to preservation of collections. The Library of the Academy of Sciences (BAN), in St. Petersburg, Russia, suffered the most devastating library fire of this century. Approximately 180,000 17th-, 18th-, and 19th-century volumes were badly damaged. It was estimated that restoration would require 50 restorers over 40 years to complete. Such a prospect was daunting so the idea of phasing the work over a long period of time, based on priority needs, became the only viable option for this severely damaged collection.

of deterioration and provides thoughtful alternatives to hasty or short-

The phased program at BAN was originally conceived to provide individual protective, handmade boxes for each damaged volume. Providing individual physical protection with an improved microclimate housing in a less than satisfactory macroclimate seemed at first to be a straightforward task. But there was no additional shelf space at the Library to accommodate traditional book boxes, which require several kilometers of extra space per book. Measurements of 10,000 books revealed no consistencies in book sizes. But manufacturing 180,000 individual custom-fitting boxes, in order not to

term actions that might otherwise be taken to save a precious object.”

require additional shelf space, seemed an impossible task. The answer to this seemingly unsolvable problem came with the understanding that because the volumes had been substantially soaked with water and dried, their original thickness had increased. By a random remeasuring of some 60 volumes with the addition of a kilogram of weight resting on the volume, we found that the average compression between the books with and those without a weight was 4.5mm. So the task was to find an automated method to produce custom book boxes which would

Facing page: Construction of “phase boxes” in the Getty Center Book Conservation Lab. Right: Books from the Getty Center Library awaiting treatment. Photos: Dennis Keeley.

not add more than 3 to 4mm to the thickness of each book, when weighted with a one-kilogram weight.

To solve BAN’s problem, a computer-controlled manufacturing system was invented to automatically produce boxes using E-flute corrugated board stock, adding no more

than 3mm to the thickness of each book. A total of 11,500 book containers were made with this technology in the United States and delivered to BAN for quick assembly. The result of this work has shown that less than one meter of additional shelf space was needed to house the 11,500 damaged volumes. This technology can produce at least 200 individual and infinitely variable-sized book containers per day, about 50,000 per year, inexpensively with one operator. This systems phased approach to the challenging problem presented at BAN has prompted the Library Director, Dr. Valerii P. Leonov, to

propose that phased conservation should be included as a subject of library science.

What lies ahead in our search for meaningful solutions to the preservation of library and archive material? We might first define what it is that we are struggling to preserve, in what manner and in what time frame. We must develop new philosophies that might be based on the Bauhaus concept of “fitness for purpose,” on policy approaches based on “preservation on demand” and “preventive preservation” measures, including the means to monitor and control environmental conditions.

As we look to the future with some optimism, let us constantly remind ourselves to ask of each other, “What are we doing and why are we doing it? Given the choice, most of us would prefer preventive medicine to a surgeon’s knife or aggressive drug therapy! Should we not adopt a similar attitude for the preservation of cultural property?”

Peter Waters is the Preservation Strategic Planning Officer at the Library of Congress, Washington, D.C. He played a leading role in the rescue of cultural property after the 1966 Florence flood, and developed the phased conservation program in response to the 1988 fire at the Library of the Academy of Sciences in Russia.



A Research Initiative for Preservation in Libraries

by James R. Druzik

In 1986 the Council on Library Resources, seeing a need for a national strategy on preservation in libraries and archives, established the Commission on Preservation and Access. Its purpose was to outline and promote a national agenda to preserve our intellectual heritage and to insure its availability into the future.

In January 1992 the Board of the Commission approved a scientific research initiative aimed at bringing together conservation scientists and preservation administrators. The Board set for the group the task of identifying those critical preservation issues where comprehensive research needed to be done. As part of the process, the Board considered a real collaboration between scientists and administrators to be critical: "A necessary component of collaborative preservation activities is a close working relationship among preservation administrators and scientists, with a shared understanding of how scientific research can be designed, interpreted, and used in preservation decision making. With this common ground, preservation managers and researchers can work together to build a prioritized, cooperative scientific agenda to address some of the most critical technical issues faced by preservation programs in the nation's colleges, universities, and archives."

It was clear from the beginning that simply creating another list of "research needs" was insufficient. This approach, taken frequently in the past, had proven productively barren. Instead, the Commission wanted its effort to result in fully developed proposals for which funding could be sought.

The initiative's first step was a two-day event in September 1992 at the Belmont Conference Center in Maryland. Here, four scientists and 14 preservation managers discussed such issues as how to use scientific information, the design of research, the strengths and limitations of the scientific process, and interactive seminars on specific technical subjects. The four scientists participating were Peter Sparks, formerly of the Library of Congress and the Conservation Graduate Program, University of Delaware at Winterthur; Donald Sebera, the Library of Congress; James Reilly, the Image Permanence Institute, Rochester Institute of Technology; and James Druzik of the Getty Conservation Institute. The event helped bring administrators "up to speed" on the

process by which scientific research projects are typically developed.

At a February 1993 meeting in Washington, D.C., the group began identifying the most important research topics. Scientists and managers broke up into four teams and selected a broad palette of future projects dealing with environmental and storage concerns for various types of materials in collections. The selection was based in part on each project's impact, its scientific validity, its cost feasibility, and its application to a larger context.

Following a September 1993 workshop, six projects were selected for development, including: 1) assessing the influences of lignin in a paper on its permanence; 2) evaluating the role of the moisture reservoir in paper and book collections under fluctuating relative humidity and temperature; 3) using accelerated aging experiments to better predict the life expectancy of five types of paper found commonly in libraries and archives; 4) conducting research to determine the best storage containers for microfilm, movie film, and sheet film; 5) developing management tools for preserving information on magnetic media; and 6) designing a laboratory process to accelerate the natural aging of polyvinyl acetate adhesive films in order to test their performance.

The Getty Conservation Institute is participating in this initiative for several reasons. First, the Institute is committed to preserving cultural heritage; its Mission Statement specifically calls for it to "provide relevant information to those responsible for conservation policies." Second, the GCI encourages the multidisciplinary team approach to problem solving employed in this initiative. Third and finally, while the GCI conducts no scientific research on materials and problems unique to libraries and archives, its environmental research is as relevant to these institutions as it is to art museums and other cultural institutions.

Those wishing more information regarding the Commission on Preservation and Access should contact Maxine Sitts, Program Officer, at 202-939-3402. ☉

James R. Druzik is a Conservation Scientist in the GCI's Scientific Program.



G C I N E W S



U P C O M I N G C O U R S E S

Methods in Scientific Examination of Works of Art: Thin-layer Chromatography

February 28 to March 4, 1994 • Marina del Rey, California

This workshop is intended to familiarize conservators and conservation scientists with thin-layer chromatography (TLC) as a method of binding media analysis.

TLC analysis is an easily accessible technique that can be established in many conservation or conservation science laboratories at minimal cost. The workshop, divided into sessions of lectures and laboratory practice, will focus on theory, practical techniques, and standard operating procedures for the use of TLC in the identification of binding media. The general aim of the course is to provide participants with a low-cost, simple, and effective method of analyzing a range of binding media materials including proteins, carbohydrates, waxes, and resins.

Preference in the selection of participants will be given to those applicants whose job responsibilities include a large percentage of binding media analysis and teaching of analysis techniques, and whose laboratories lack the facilities to carry out more sophisticated analysis techniques.

For further information, please contact the GCI Training Program at 4503 Glencoe Avenue, Marina del Rey, CA 90292, USA. Telephone: 310-822-2299 / Fax: 310-821-9409.

R E C E N T C O U R S E S

Preventive Care of Historic Photographic Prints and Negatives, Part II

Held March 15-19, 1993, at the GCI's Marina del Rey facility, this was a follow-up course for professionals who had already taken the GCI's first course on "Preventive Care of Historic Photographic Prints and Negatives."

Among the course topics were: identification, deterioration, and preservation of color photographic materials; film base deterioration and current preservation alternatives; the stability of silver images; recent environmental and storage parameters for all types of photographic materials; basic care of photographic materials; and long-term preservation concerns, disaster recovery plans, and surveying of collections.

The course's 19 participants included curators, conservators, archivists, and collections managers. Its principal instructors were Debbie Hess Norris, Assistant Director, Art Conservation Program, University of Delaware and Winterthur Museum; and James Reilly, Director, Image Permanence Institute, Rochester Institute of Technology. The assistant instructor was Deborah Derby, a private conservator based in Chestertown, Maryland.

Preventive Conservation: Museum Collections and Their Environment

The fifth offering of this annual GCI course took place in London on April 18-May 1, 1993. The course was offered in partnership with The Conservation Unit of the United Kingdom's Museums & Galleries Commission. Preventive conservation has been one of The Conservation Unit's principal areas of endeavors over the past several years.

The preventive conservation course focuses on the technical and organizational factors that affect implementation of preventive conservation, combining technical information on the museum environment with a review of strategies for working with colleagues and consultants to integrate preventive conservation into museum policies and operations. This was the first time the course was held outside the United States for participants from a specific region — in this case the United Kingdom and other countries in Europe. Attending the London course were 20 senior-level conservators from the United Kingdom, Finland, France, the Netherlands, and Norway.

NEW PROJECTS

The Library of La Merced

To address the problems of preserving cultural property within an urban environment, the Getty Conservation Institute and the Municipality of Quito in Ecuador are collaborating on several endeavors, including a conservation project at Quito's Library of La Merced.

The project, funded by the J. Paul Getty Trust, is being conducted jointly by the GCI, the Getty Center for the History of Art and the Humanities, the Instituto de Conservación y Restauración de Bienes Culturales of Madrid, and the Municipality of Quito.

The GCI will assist in the conservation of the Library's collections where needs include book cleaning and repair, protective acid-free casing for materials, and treatment for insect infestation. The Getty Center will undertake the cataloging of the collections, while the Municipality of Quito will repair the Library building to eliminate water damage to books. Two members of the Library staff will receive training in several subjects including cataloging, basic book conservation, and library management.

In 1990 La Merced was the recipient of a preparation grant from the Getty Grant Program.



RECENT EVENTS

Imaging Technology Workshop

As part of the International Institute for Conservation-Canadian Group's 19th Annual Conference, the GCI's Documentation Program coorganized a workshop on imaging technology in conservation. Held May 26, 1993, at Dalhousie University in Halifax, Nova Scotia, it was attended by over 50 conservation professionals from throughout North America.

The workshop focused on all aspects of imaging technology for the conservator and museum professional — from the basics of imaging technology to the use of sophisticated technologies such as 3-D imaging. Offering presentations at the workshop were Katharine Untch of the Asian Art Museum, San Francisco; Henry Lie from the Center for Conservation and Technical Studies, Harvard University Art Museums; Eric Lange and Barbara Snyder from the GCI; Chris Gallagher of the Art Institute of Chicago; and Réjean Baribeau of the Canadian Conservation Institute.

Conservation Imaging Consortium Meeting

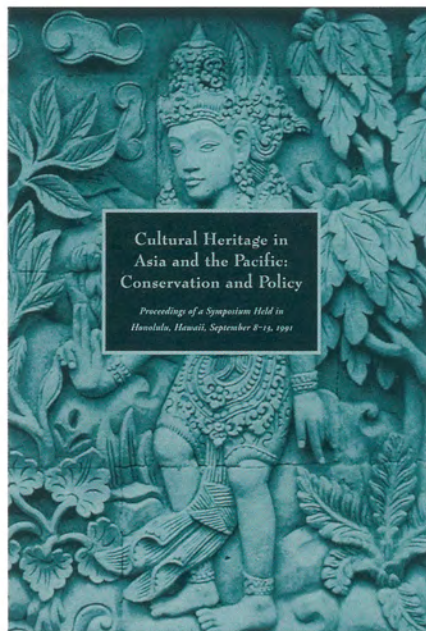
The Conservation Imaging Consortium (formerly known as CRESSIDA) held its third semi-annual meeting at the Rochester Institute of Technology (RIT), May 27-28, 1993. Collaborators in the consortium included the Scientific and Documentation Programs of the Getty Conservation Institute; The Metropolitan Museum of Art, New York; the National Gallery, Washington, D.C.; the National Gallery, London; the Art Institute of Chicago; the Center for Conservation and Technical Studies, Harvard University Art Museums; and the RIT.

In addition to discussing the consortium's operation and adopting its new name, the group heard presentations by two RIT staff members, Dr. Jonathan Arney and Dr. Robert Johnston, on imaging research being conducted in condition documentation of daguerreotypes and the conservation of Dead Sea Scrolls, respectively. In keeping with one of the consortium's goals of actively seeking industry participation, invited speaker Michael Axman of the Eastman Kodak Company gave a talk on photo CD and image archiving.

NEW PUBLICATIONS

Cultural Heritage in Asia and the Pacific: Conservation and Policy

This book contains the proceedings of a five-day symposium in September 1991, sponsored by the U.S. Information Agency, organized by US/ICOMOS, and designed in consultation with the Getty Conservation Institute, that focused on conservation issues in Asia and the Pacific, with particular attention to policies and conditions specific to the region. Two keynote papers by international experts explore legal aspects of cultural heritage protection, and management of cultural sites. Three background papers cover the legislation of the 15 nations represented, regional professional training opportunities, and tropical environmental conditions that challenge managers of sites and collections. The discussion summary includes suggestions for enhancing conservation awareness, legislative action, and policy implementation.



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800-223-3431.*

The Getty Conservation Institute Library

The GCI Library was established in 1985 to support the activities of the Getty Conservation Institute. The Library serves the staff of the J. Paul Getty Trust's programs, as well as the international conservation community, by providing access to the literature of conservation and restoration. It advances the Institute's objective to further scientific knowledge and practice in the conservation of all types of cultural property — movable and immovable — including fine art collections, historic buildings and sites, and archaeological and ethnographic materials.

The Library supports the research and development and bibliographic needs of all GCI programs. In addition, it houses documentation generated by projects undertaken by the Institute.

Focusing on a core collection of art conservation, historic preservation, and applied science and technology, the Library collects books, monographs, serials, and nonbook materials such as video cassettes, microfilm, and CD-ROMS. The Library's current collection is estimated to be 25,000 volumes. It is slated to eventually house approximately 100,000 volumes.

Library staff devote much of their attention to reference services. To support the research needs of the Institute, the Library maintains access to hundreds of databases that cover a broad range of topics.

As an integral part of the GCI's Documentation Program, the Library works with Art and Archaeology Technical Abstracts (AATA) and the Conservation Information Network to facilitate the collection and dissemination of relevant information to conservators, art historians, archaeologists, and other professionals in related fields. The Library serves as a repository for literature cited in AATA and the Network by collecting hard copy, photocopy, and microfiche of these works.

Outside readers may use the Library by appointment. For appointments, phone 310-822-2299, extension 230.



Julie Radoyce

Librarian, The GCI Documentation Program

The daughter of an Air Force officer, Ms. Radoyce had lived in four U.S. states before she was six. The frequent moving and varied environments became a source of inner strength that matured into a love of travel, a respect for different cultures, and a desire for new experiences. Working at the GCI in many ways satisfies these needs.

Ms. Radoyce earned her undergraduate degrees in art history and psychology from the University of California, Riverside, and later completed a master's degree in library and information science from the University of California, Los Angeles, with a focus on emerging information technologies. During and after her university education, she worked in a variety of libraries. She spent a year studying Italian art and architecture at the University of Padua, and a year in Paris working for the *International Herald Tribune*.

Ms. Radoyce was first hired by the GCI in 1989 as a user services coordinator for the Conservation Information Network, which disseminates information to the conservation community electronically. The work combined her interest in art and cultural heritage with her information science skills.

Early this year, Ms. Radoyce became head of the GCI Library. She is both excited by the possibilities this new role offers and challenged by the interdisciplinary nature of the field. A self-described library user advocate, Ms. Radoyce sees tremendous potential in new technologies such as CD-ROM, CDI, and electronic networks such as the Internet, and is particularly interested in making electronic databases more available to patrons. She plans to continue the work of her predecessors — creating a world-class conservation library — while further cultivating relations with other conservation libraries in an effort to provide greater international access to conservation literature.

For Ms. Radoyce, it is the mission of the Institute — to help preserve the world's cultural heritage — that makes it such an exciting and gratifying place to work.

STAFF PROFILES

James Druzik

Conservation Scientist, The GCI Scientific Program

Mr. Druzik studied chemistry at Santa Clara University, and it was there that he first became drawn to art. Art was, as he says, more exotic than chemistry. Though he continued his studies in science, he also found time for several art history courses, as well as a part-time job at the university's gallery.

After graduation, he was hired to do exhibition design at the Pasadena Museum of Modern Art. When industrialist and art collector Norton Simon took over the museum in 1974, Mr. Druzik became the sole in-house technical assistant to conservators employed on a contractual basis. In subsequent years he developed an expertise in the conservation of paper, and in 1980 was hired by the paper conservation department of the Los Angeles County Museum of Art (LACMA). Two years later he began working in conservation research for Dr. Pieter Meyers at LACMA. Prior to and during his tenure at LACMA, Mr. Druzik worked on his first major research project, a contract study with the Jet Propulsion Laboratory in Pasadena. The study used digital image processing to do textural analysis of paintings, drawings, and bronzes.

In 1985 he joined the GCI with responsibilities for coordinating the outside research contracts of the Scientific Program. One important involvement since coming to the Institute has been his work with the Materials Research Society. In conjunction with the Society's annual spring conferences, he has helped organize three meetings concentrating on the materials science aspects of conservation. The papers produced by these meetings and the dialogue that has been established between materials research and conservation have made, he believes, a real contribution to conservation science.

This activity reflects a personal and professional passion of Mr. Druzik's — to help those in conservation reach out to the larger research community and the public at large.



IN ACCORDANCE WITH THE GCI'S CONCERN FOR THE ENVIRONMENT THIS NEWSLETTER IS PRINTED ON RECYCLED PAPER



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