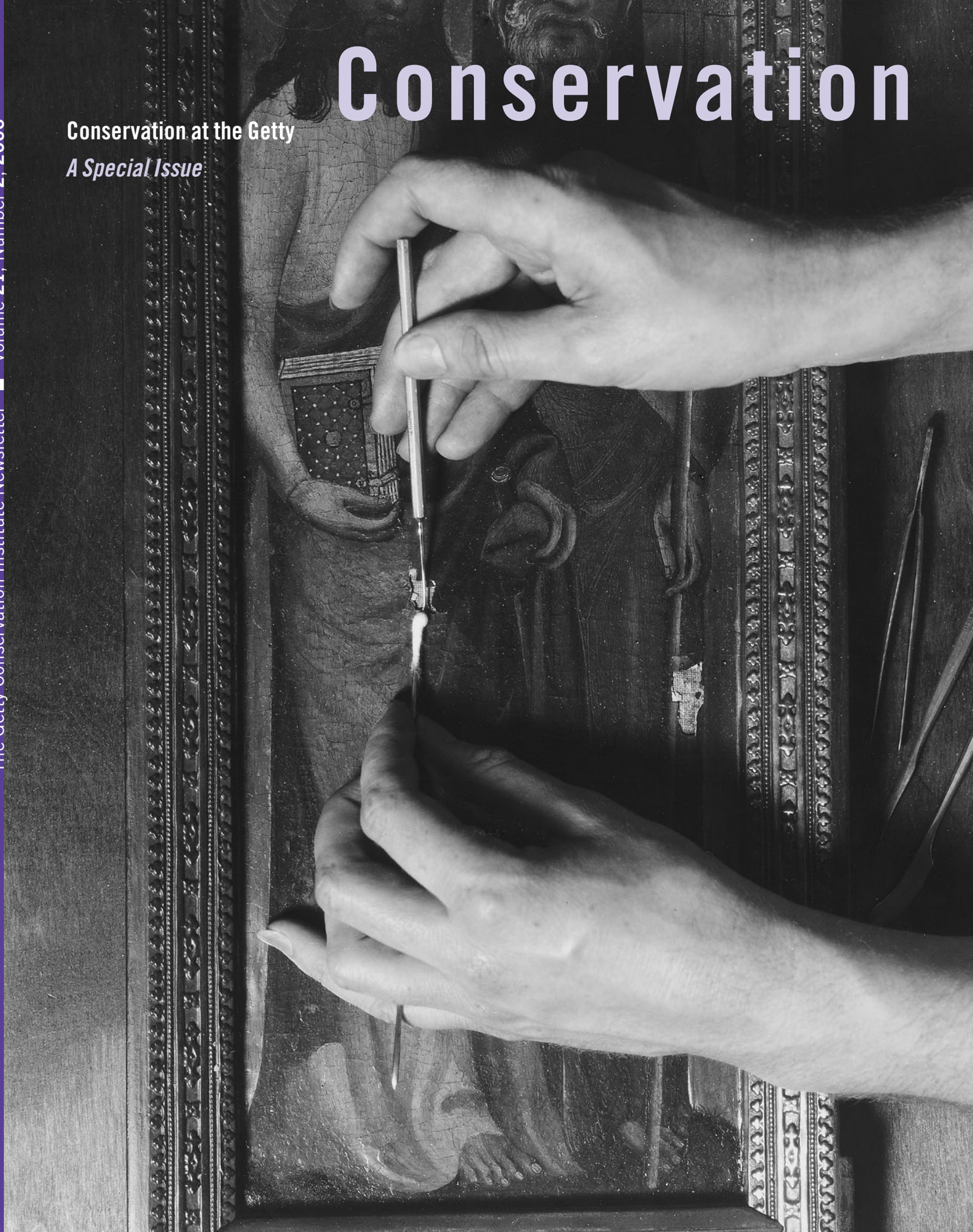
The Getty Conservation Institute Newsletter ■ Volume 21, Number 2, 2006

Conservation

Conservation at the Getty

A Special Issue



The Getty Conservation Institute

The Getty Conservation Institute Newsletter

Volume **21**, Number **2**, **2006**

The J. Paul Getty Trust

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Conservation, The Getty Conservation Institute Newsletter

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The Getty Conservation Institute (GCI) works internationally to advance the field of conservation through scientific research, field projects, education and training, and the dissemination of information in various media. In its programs, the GCI focuses on the creation and delivery of knowledge that will benefit the professionals and organizations responsible for the conservation of the visual arts.

The GCI is a program of the J. Paul Getty Trust, an international cultural and philanthropic institution devoted to the visual arts that also includes the J. Paul Getty Museum, the Getty Research Institute, and the Getty Foundation.

Conservation, The Getty Conservation Institute Newsletter, is distributed free of charge three times per year, to professionals in conservation and related fields and to members of the public concerned about conservation. Back issues of the newsletter, as well as additional information regarding the activities of the GCI, can be found in the Conservation section of the Getty's Web site.
www.getty.edu

Front cover: A photograph of a conservator at work, circa 1930, from the William Suhr archive of the Research Library at the Getty Research Institute (GRI). Suhr was a conservator at the Detroit Institute of the Arts from 1927 to 1933, before moving to New York to become conservator to the Frick Collection (he also maintained a private practice and after World War II worked closely with dealers and other clients active in the art market). The Suhr archive, which includes photographs and treatment notes from a nearly sixty-year period (1920–1979), is one of a number of collections relevant to conservation that are housed among the extensive holdings of the Research Library at the GRI. *Photo:* Courtesy the Research Library, Getty Research Institute. © circa 1930, The Detroit Institute of the Arts.

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A Note from the Director

By Timothy P. Whalen

At the core of the mission of the J. Paul Getty Trust is a profound belief in the enriching character of works of art. The dimensions of that enrichment are broad. Art has aesthetic and cultural value, yet it is also a source of knowledge, offering tangible evidence of past aspirations, achievements, and attitudes. Art can delight the eye, but in addition, it can provide important information about how we once lived and how we might reflect on our own times.

Value, in and of itself, does not ensure survival. Objects of art need care and protection. These treasures are ours only temporarily, and we carry the responsibility to pass them on to future generations.

The Getty Trust has long understood the importance of conservation in fulfilling this responsibility. Since the early 1980s, it has made a substantial contribution to the conservation of the visual arts, providing both expertise and financial resources. This commitment to conservation is manifest not only in the care and conservation of its own collections but also in work done around the world.

The Getty takes a strategic approach to conservation, seeking ways to strengthen conservation's infrastructure and to advance conservation practice. It conducts research—for example, the Getty Conservation Institute's scientific investigation of new techniques for illuminating light-sensitive old master drawings, and the Getty Museum's technical studies of works of art. It also supports conservation initiatives such as the Getty Foundation's architectural conservation program. It offers expertise to the visual arts community through efforts such as the Museum's conservation partnerships that provide for the study and restoration of major works of art from other institutions. It demonstrates best practices in the conservation of a wide variety of materials, as exemplified by the work of the Getty Research Institute. It shares knowledge by providing resources such as the GCI's AATA Online—a free database of conservation literature abstracts—and through the organizing of conferences and workshops by Getty programs, such as the recent symposium on modern paint materials, coorganized in London by the GCI, Tate, and the National Gallery of Art in Washington, D.C. And it works in partnership with colleagues in the field—for instance, the GCI's field projects in places such as China and Tunisia. In all of these efforts, the Getty programs seek to adhere to a standard of excellence.

Our goal in this edition of *Conservation* is to reveal some of the ways that the Getty's four programs engage in conservation. We at the GCI have asked our colleagues in the Museum, the Research Institute, and the Foundation to join us within these pages to offer a glimpse of the variety of conservation work in which the Getty engages. The statements from the program leaders and the examples that follow illuminate the extent of the Getty's commitment to conservation and to the values that drive this important work. At the heart of this work is an abiding respect for the intrinsic importance of art—its insights, its history, and its ability to enhance our vision of the world.

The Getty Conservation Institute (GCI) works internationally to create and deliver knowledge that will benefit the professionals and organizations responsible for the conservation of the visual arts in all their dimensions—objects, collections, architecture, and sites. The ultimate goal of the GCI is to advance conservation thinking and practice through research, education and training, model field projects, and the dissemination of information in a variety of forms.

To achieve our objectives, we rely on a strong, multidisciplinary staff that includes over sixty conservators, architects, archaeologists, scientists, educators, and other professionals. Over the years, the GCI has developed expertise in a number of core areas that include preventive conservation, monitoring and control of museum environments, conservation and management of archaeological sites, methodologies for materials analysis, earthen architecture, and the conservation of architectural surfaces, such as wall paintings and mosaics.

However, what perhaps distinguishes the GCI from many other conservation organizations is our capacity to identify conservation needs outside conventional boundaries. Because we are not a political or governmental institution, we have the opportunity to tackle questions of broad theoretical and practical significance to the conservation profession, even those that have resisted solution for many years. We select our projects based on their potential for impact or resonance beyond a particular artifact or initiative, and we always look for a strong research and/or educational component. Of course, we continue to work in the thematic areas where we have expertise and experience, but we are also free to explore new areas in light of identified needs.

In all its endeavors, the GCI is greatly enriched by working in collaboration with a broad variety of partners, both at the Getty and beyond in the international community. Through cooperation with governments, universities, and other conservation organizations, we both extend our mission and leverage our resources to better serve the conservation profession at large. Through our collaborative relationships, we also attempt to build capacity where it does not exist and to forge institutional alliances that complement our own expertise and experience.

Organizationally, the GCI is divided into four departments that work together to advance particular aspects of its mission. The Field Projects group collaborates with a variety of international partners to develop and implement model projects that incorporate strong research, planning, and educational objectives. The Science group carries out applied research across a broad spectrum of thematic areas to address unsolved conservation problems, understand the deterioration of historic buildings and sites, develop analytical methodologies, and advance the field's research agenda. The Science group also works in close cooperation with colleagues at the both the Getty Museum and the Getty Research Institute to better understand particular objects and to provide information valuable for their conservation, interpretation, and use.

The Education group works across departmental boundaries to develop courses and other midcareer educational opportunities, produce publications and didactic materials, convene educators, and advance conservation pedagogy. Finally, the Dissemination and Research Resources group oversees the dissemination of information in a variety of media, manages the GCI's guest scholars and interns, and develops public initiatives at both the Getty Center and the Getty Villa.

The short articles that follow describe a few of the GCI's projects, past and present, illustrating how we have worked in a number of areas and with diverse partners to advance thinking and practice in the conservation field. Our cultural heritage, from museum collections to archaeological sites, is increasingly threatened by competing economic interests, rapidly expanding cities, political instability, and mass tourism, to name just a few factors. It is our hope that the work of the GCI will assist those entrusted with the care of our cultural patrimony to have the knowledge and skills needed to ensure its survival for future generations.

Jeanne Marie Teutonico, Associate Director, Programs
The Getty Conservation Institute

Museum Lighting Research

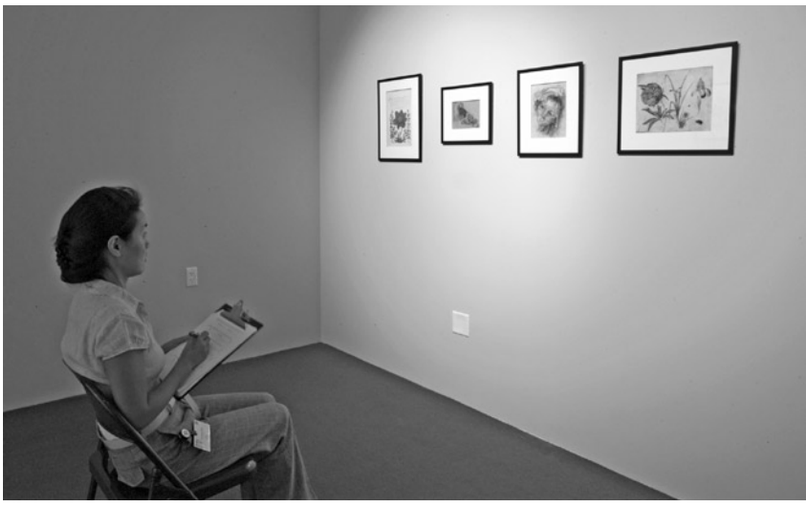
Damage to objects caused by light is the only environmental hazard that museums cannot completely eliminate while maintaining their mandate to exhibit their collections. To fulfill this obligation one must accept some level of inevitable damage. It is therefore imperative to limit that damage to the absolute minimum.

Highly light-sensitive artifacts have always been troublesome to display. Minimizing exposure for these works while providing display environments that render light-sensitive color palettes literally in the best possible light is far trickier than for more robust, light-stable objects, such as paintings and sculpture. To make light-sensitive artifacts last for as long as possible with as little change as possible, exhibitions are shortened, artifacts are put on a low-travel diet, and lighting is distinctly warm and dim—a condition that sacrifices the color relationships in these compositions. There are few, if any, other options.

The GCI's collaborative Museum Lighting project, begun in 2002, asks if other possibilities can be offered for the display of these works. The GCI undertook this project because solutions, if they are to be found, would necessarily involve many collaborators, sophisticated engineering and scientific support, and the ability to persist in the face of a high risk of failure.

Old master drawings are the focus of the research. Some light-sensitive artifacts have a naturally limited color range. Some have less light-sensitivity, and some are so valued for their artistic and art-historical merit that they are frequently requested for exhibition.

Volunteers assisting in the evaluation of new light sources for the Museum Lighting Research Project are tested for color blindness prior to beginning their evaluation of the lighting. *Photo:* Jim Druzik.



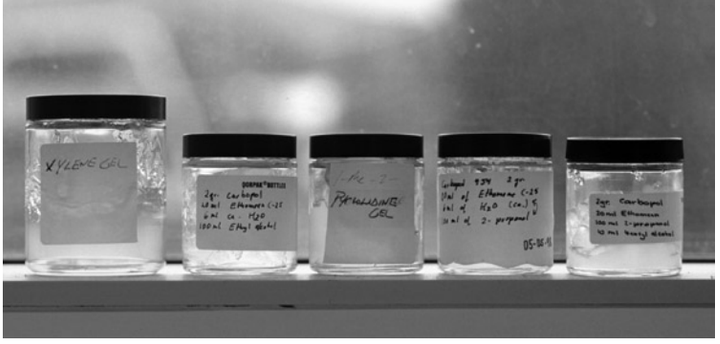
A volunteer evaluates perceived color differences in illuminants along green-red, blue-yellow, and brightness scales in the specially constructed experimental lighting facility at the Getty Center. *Photo:* Jim Druzik.

Because old master drawings encompass these three conditions, they allow researchers greater latitude than most light-sensitive artifacts for research into new ways of thinking about lighting.

The project is investigating the possibility of altering the *visible* spectrum of display lighting without sacrificing the viewer's experience. In exhibition lighting, removing wavelengths to which the human eye is insensitive has been acceptable practice for forty years. But removing light energy within the visible portion of the light spectrum is fraught with potential aesthetic problems. The GCI and its project partners are undertaking the substantial research required to determine how to optimize color rendering while reducing overall energy to acceptable levels. This includes investigating the use of three-band filtered light sources (e.g., red-green-blue, the approach used in computer monitors), primarily with thin coatings applied to glass. The project—which has demonstrated that such complex coating systems, involving fifty or more layers, can actually be made—is currently testing the aesthetic results of the first three filter models on a group of conservators, curators, and other museum professionals.

In addition to altering the spectrum of the illuminant, the project is also conducting large-scale surveys of colorants (artistic and biological) under oxygen-free atmospheres, to better understand the extent to which differences exist in reducing the risks of photo-oxidation and photo-reduction color change.

The findings from this project's research can potentially aid a full range of institutions—from fine art museums to natural history collections—in meeting their mandate to display the objects in their care while preserving them for future study and enjoyment.



A series of newly mixed solvent gels. *Photo:* Herant Khanjian.

The Gels Cleaning Research Project

Proper cleaning of museum artifacts is among the most basic and important treatment processes conducted by conservators. Typical cleaning procedures involve the use of common organic solvents to selectively remove aged varnishes or overpaints. Unfortunately, it can be difficult to remove these layers without damaging underlying original layers, due to limited control over the solvent cleaning process. Toxic solvent vapors also pose health risks to conservators. For these reasons, the search for optimal cleaning methods has been a significant part of conservation research.

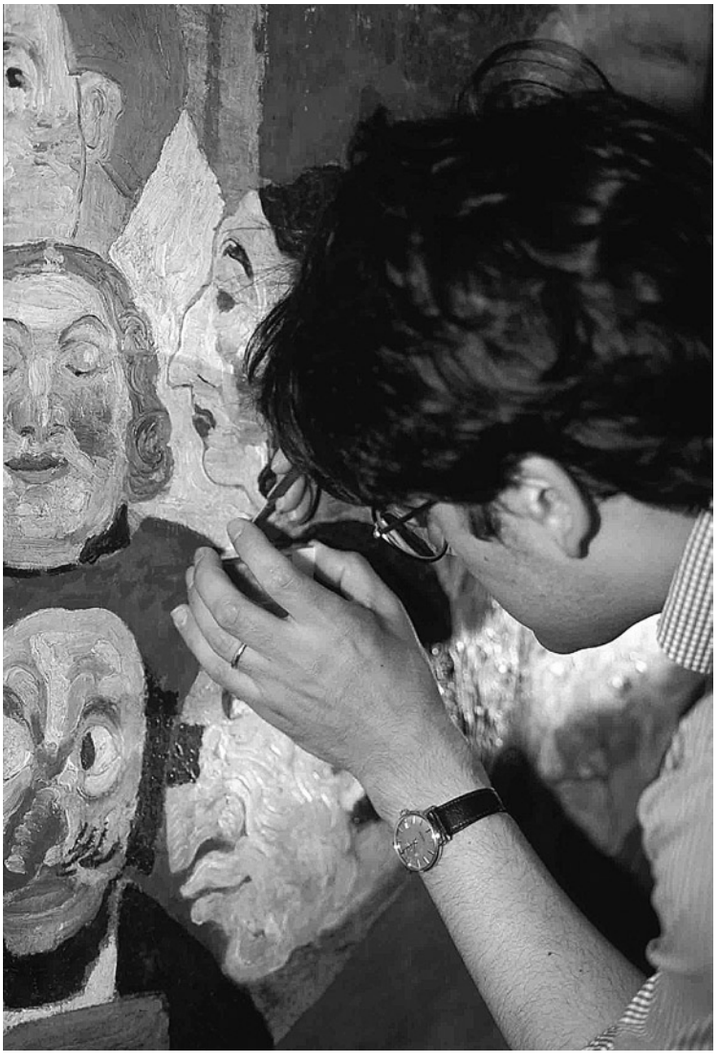
In the early 1980s, Richard Wolbers at the University of Delaware introduced gels cleaning systems to the conservation community. These systems offered conservators greater control by allowing the preparation of mixtures tailored to remove specific layers while minimizing exposure to harmful solvent vapors. However, widespread adoption of gels systems was tempered with concerns regarding potential long-term effects of residues that may remain on surfaces after cleaning.

A core aspect of the GCI's mission is enhancing the ability of conservation professionals to do their work. Recognizing that research on gels systems could facilitate the use of this unique conservation tool, the GCI undertook a major project in 1998 to address questions related to this cleaning approach, in partnership with the Getty Museum; the Winterthur Museum, Garden, and Library; the Winterthur University of Delaware Program in Art Conservation; and the Department of Chemistry at California State University, Northridge.

The five-year Gels Cleaning Research Project tackled a number of significant issues, including identifying and quantifying gel residues remaining on surfaces and assessing their potential for long-term damage to artworks. The project's findings, which were periodically disseminated to the conservation community, culminated in the book *Solvent Gels for the Cleaning of Works of Art: The Residue Question* (Getty Conservation Institute, 2004).

As a result of the project, the impact of gels cleaning systems on works of art is now much more clearly understood. The solvent gels book has become an important reference for selecting the best methods for cleaning artworks while minimizing risk. The project and the book have renewed interest in gels systems, and have also stimulated interest in their applicability to modern paintings. An important outcome of the project is the development of a methodology to assist conservators in preparing solvent gels for use on various surfaces. A decision tree was designed to simplify the procedure for developing an appropriate cleaning strategy; private conservator Chris Stavroudis further tested and revised the decision tree to create the Modular Cleaning Program (MCP), an online database tool available to conservators (palimpsest.stanford.edu/byauth/stavroudis/mcp/). To date, over four hundred registered users from around the world have accessed the database.

The Gels Cleaning Research Project satisfied basic goals of the Institute—to advance conservation practice by adding to the body of knowledge available to conservation professionals and by facilitating the use of more effective conservation tools.



Former GCI scientist Narayan Khandekar removing a sample for testing from James Ensor's *Christ's Entry into Brussels in 1889,* which had been cleaned with the gels process several years earlier. *Photo:* Herant Khanjian.

The China Principles

Over the last two decades, China watchers have been awed by that nation's speed of development. Hand in hand with this development has been the rise of domestic tourism to historic sites, with dire and accelerating consequences for China's heritage. With much already lost to development, over-restoration, and compromised authenticity, what is the future of China's vast heritage of temples, palaces, gardens, archaeological sites, and grottoes?

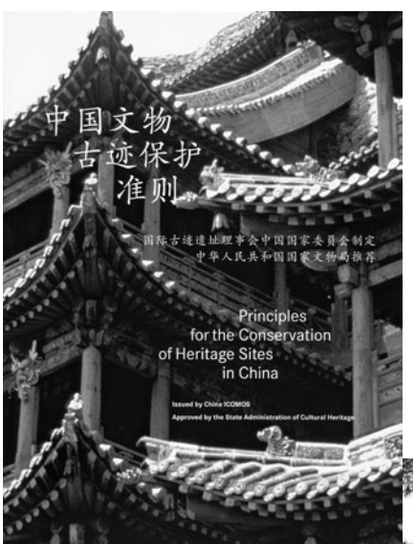
On the positive side, the opening of China in the late 1970s allowed renewed engagement with the international cultural and scientific community—China ratified the World Heritage Convention in 1986, joined ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property), and plays an increasing role in ICOMOS (International Council on Monuments and Sites), forming its own chapter. China's State Administration of Cultural Heritage (SACH) has also welcomed partnerships with institutions such as the GCI, which began collaborative projects in China in 1989. This work ultimately led to the development of the Principles for the Conservation of Heritage Sites in China (the China Principles), a comprehensive set of national guidelines for the conservation and management of immovable cultural heritage. Partners in the development of the principles were SACH, the GCI, and the Australian Department of Environment and Heritage (DEH). SACH leadership recognized that an international perspective would benefit the development of the guidelines—hence the tripartite partnership. Three years in drafting, the principles were approved by SACH and issued by China ICOMOS in 2000.

In essence, the principles rest on the identification of a site's explicit values, primarily its historic, artistic, scientific, and social values. In addition, heritage management decisions and interventions should in no way degrade the site's values. These two concepts underpin the principles and are consonant with other countries' guidelines—for example, the Burra Charter of Australia.

The GCI is collaborating with Chinese site authorities at two World Heritage sites—the Mogao Grottoes and the Chengde Imperial Mountain Resort—to demonstrate the principles in planning, conservation, and management. In addition to undertaking these demonstration projects, the partners recognized that training a new generation of heritage professionals in the ethos of the China Principles and their application was essential. The GCI with the DEH and SACH recently completed a workshop designed to initiate a systematic program of national-level training courses in the principles (see page 30).

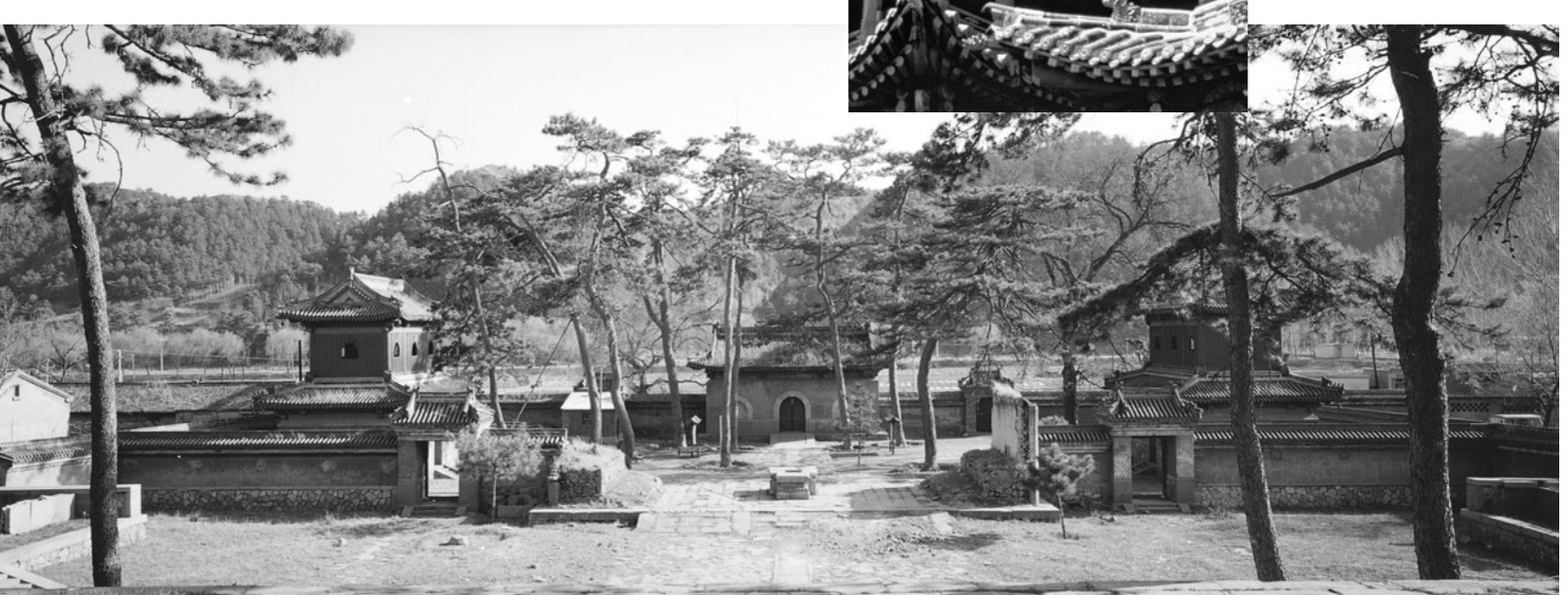
The China Principles stress the integration of conservation and site management, previously viewed within China as separate activities. Their promulgation has begun the process of moving heritage conservation in China away from the purely scientific or technical approach that often leads to ill-considered decisions or to excessive restoration with a consequent loss of authenticity.

Given the size of China and given its vast and ancient cultural heritage, this project, in terms of potential impact, is perhaps the most ambitious undertaken by the GCI. The China Principles, a response to a crisis in heritage management, is now well rooted within the heritage system and acknowledged in China as a methodology of great flexibility and power.



Right: The cover of the published version of *Principles for the Conservation of Heritage Sites in China.*

Below: View of the gate and courtyard of Shuxiang Temple, part of the Imperial Summer Mountain Resort at Chengde in China. *Photo:* Richard Ross.



The Royal Bas-reliefs of Abomey

Africa is a continent with a vast and diverse cultural heritage, as seen in its historic sites and living traditions. The Royal Palaces of Abomey, a World Heritage Site, constitute a noteworthy example of both. The city of Abomey, the capital of the historic kingdom of Dahomey, located in Benin, West Africa, is rich in the cultural traditions of building in earth and embellishing palaces and temples with wall paintings and bas-reliefs.

The polychrome earthen bas-reliefs of the *ajalala* (palace) of King Glélé, believed to date from the late nineteenth century, are among the last remaining original bas-reliefs at the Royal Palaces of Abomey. They constitute an important archive of the history of the Fon people, who, prior to French colonization, had no written language and recorded their history with images and oral tradition. Following their removal from the facade of the ajalala in 1988, the bas-reliefs showed damage and deterioration. Facing the loss of these bas-reliefs, the Benin Ministry of Culture and Communication asked the GCI—with its expertise in the conservation of earthen architecture and wall paintings—to assist them in saving this significant piece of Benin's cultural heritage. In 1992 the GCI and the ministry began a project to conserve fifty of the bas-reliefs.

Benin has been one of the leading countries in West Africa to embrace conservation and to train museum professionals to care for the country's cultural heritage; it was active in ICCROM's Preventive Conservation in Museums in Africa Initiative (PREMA) and is the only country in the region to establish a school for cultural heritage preservation. The GCI project provided an important opportunity to further train Beninois museum professionals in a specialized area of conservation, and to build capacity in conservation at a local and regional level.

The Abomey project included the study, documentation, conservation, and exhibition of the bas-reliefs, as well as training. At the end of the project in 1997, an international conference, "Past, Present, and Future of the Royal Palaces of Abomey" (organized with the Benin Department of Cultural Patrimony and ICCROM), aimed to raise the awareness of local and national authorities to the site's significance and to the importance of conservation and site management. Subsequently, the Council of Royal Families of Abomey, traditional caretakers of the Royal Palaces, became much more involved in the site.

Since 1997 the Beninois trained by the project have gone on to positions in the Department of Cultural Patrimony as decision makers for sites and museums in Benin. The methodology developed to conserve the ensemble of bas-reliefs serves as a model for other conservation projects in the region. Polychrome bas-reliefs on the ajalala of King Behanzin, also on the site of the Royal Palaces of Abomey, were conserved in situ by museum staff trained during the project, and a permanent exhibit of the conserved bas-reliefs from the ajalala of Glélé was installed in the museum.

The Abomey project enabled the GCI to help Benin build capacity, to advance the principles and practice of conservation in a place where conservation is an emerging interest, and to raise awareness of the significance of this unique World Heritage Site.

Above: **The reconstructed ajalala (or palace) of King Glélé in Abomey, Benin. *Photo:* Susan Middleton.**

Below: **Conservator Léonard Ahonon working on a polychrome earthen bas-relief from the Royal Palaces of Abomey. *Photo:* Francesca Piqué.**

The Directors' Retreats for Conservation Education

Like the field of conservation itself, conservation education is relatively young. In recent decades there has been an increase in the number of academic programs in conservation, as well as myriad short courses that deal with conservation topics. There has also been growing interest in the pedagogy of conservation—the aims and methods of teaching and learning. However, there are still few opportunities for conservation educators to meet for the sole purpose of discussing conservation education and how it relates to the field's changing needs.

The GCI, involved in conservation education and training since its inception, launched the Directors' Retreats program in 2002 as a way to promote strategic thinking and collaboration among conservation educators within the United States and internationally, convening meetings that bring together people with common goals to explore ideas vital to conservation education development.

The retreats, an ongoing series of meetings for directors of academic programs and professional organizations involved in conservation education, provide opportunities for participants to meet and discuss, in an informal environment, issues they consider most urgent to conservation education. For several days, in quiet and congenial settings away from the demands of work life, participants are able to exchange ideas and information and to consider avenues of cooperation that can benefit their own programs and the field at large.

To date, the GCI has held three retreats, each in partnership with another organization. The first—held in 2002 with the American Institute for Conservation of Historic and Artistic Works (AIC)—concentrated on the need for continuing education opportunities for North American conservators. The discussions during this retreat were helpful in the formation of AIC's successful continuing education program.

The second retreat was coorganized in 2004 with the Centre for Cultural Materials Conservation, University of Melbourne. In Melbourne, discussions focused on conservation education needs in the Asia-Pacific region and included participants from thirteen Asia-Pacific countries. By sharing their own experiences, participants took the first step toward identifying regional needs and resources for conservation education.

The most recent retreat—a partnership of the GCI, the AIC, and the Association of North American Graduate Programs in Conservation—examined Web-based teaching and learning for conservation. Held in May 2006 in Austin, Texas, the retreat brought together nineteen educators from North America, Europe, and Australia to consider the potential of Web technology for conservation education. Since several of the institutions represented in the retreat had experience using the Web for classroom and distance education, participants could reflect on these experiences and consider how they might shape their own work. Participants also looked at ways to take advantage of the growing use of educational technology and the Web for achieving conservation teaching and learning goals. Specific ideas for collaborative activities were identified during formal and informal gatherings, including the possibility of cooperative research on blended learning (i.e., combining classroom-based and online teaching), an online resource for conservation education, and online conservation science tutorials.

By providing educators with occasions to meet for focused thinking and discussion, the retreats contribute to achieving an important GCI goal—strengthening the infrastructure for conservation education.

Participants discussing Web-based teaching and learning at the 2006 Directors' Retreat. *Photos:* Foekje Boersma.

Museums Emergency Program Education Initiative

Natural and human-made emergencies are as inevitable in the cultural field as they are in every other aspect of life. Recent disasters—hurricanes in the United States, tsunamis in Southeast Asia, and military conflicts in many regions—have demonstrated the vulnerabilities of cultural resources. Unfortunately, most of the world's museums do not understand the range of risks that can affect them and are unprepared to guard against the devastating losses that can occur from even a relatively small emergency.

Acquiring knowledge and skill—particularly in such a complex and interdisciplinary area as emergency management—is a long-term process. While a short course can offer basic information, effective emergency management entails changes in institutional policy and practice. This requires moving beyond short courses to a more sustained effort at capacity building.

The GCI—long active in promoting emergency preparedness in the cultural field—has sought to develop education models that appropriately address the learning needs of professionals. Most recently, through an innovative teaching approach, the GCI has focused on museum personnel training in emergency preparedness. Over the past year and a half, the Institute has partnered with ICOM (International Council of Museums) and ICCROM on an initiative that is part of ICOM's Museums Emergency Program (MEP), a multi-year project to assist museum and other heritage professionals to prepare for and respond to natural and human-made threats. The GCI and its project partners developed a three-phase pilot course, Teamwork for Integrated Emergency Management, which combined a classroom-based workshop with a seven-month period of practical work. Teams from eight national museums and two museum studies programs in Asia attended the workshop phase of the course in Bangkok in August 2005. The workshop was followed by the second phase, which ran from September 2005 through March 2006. Over seven months of practical work, each team, via e-mail, regularly reported its progress to course mentors who commented on the achievements and, if necessary, provided advice or information. In addition, there was a course Web site that contained teaching materials along with links to emergency management Web sites and course contact information. During this period, course participants began implementing practical changes with colleagues at their institutions. The mentoring phase also helped to reinforce the bonds among the institutions and to provide the basis for a regional network.

The third and final phase of the course was a meeting in Seoul, in June 2006, to review the achievements of each museum team. The teams discussed the substantial progress they had made over the course of the year: undertaking risk assessments, re-examining or revising institutional emergency plans, reviewing security protocols, and conducting staff drills and training.

Course participants engaging in emergency response exercises at the National Museum, Bangkok, in 2005 as part of the workshop Teamwork for Integrated Emergency Management. *Photos:* Courtesy MEP partners.

The learning model used in Teamwork for Integrated Emergency Management—traditional classroom-based workshop and extended mentored practice—may be adapted to other GCI training efforts. Facilitated by new communication technologies, it extends the classroom into the workplace and aids the growth of a sense of community among practitioners, essential to the development of the field.

The following GCI staff contributed to this article:

James Druzik, senior project specialist
Herant Khanjian, assistant scientist
Neville Agnew, principal project specialist
Martha Demas, senior project specialist
Leslie Rainer, senior project specialist
Francesca Piqué, former GCI project specialist
Kathleen Dardes, senior project specialist

The focus of the J. Paul Getty Museum's conservation activities is the care and study of the Museum's collection of Greek, Roman, and Etruscan antiquities; European paintings, drawings, sculpture, illuminated manuscripts, and decorative arts; and European and American photographs. An essential component of the Museum's mission is to collect, preserve, exhibit, and interpret important works of art. More than thirty conservators and support staff in four conservation departments perform a broad range of services that not only ensure the best care of the Museum's collection for the enjoyment and education of future generations, but also contribute to the expanding body of knowledge in the conservation field.

While the Getty Museum's conservation efforts serve the needs of the collection with preventative conservation as well as treatment, they also reflect the broader missions of the Getty Trust as a whole. Museum conservators collaborate closely with the curators, educators, and exhibition planners to provide the public with a deeper understanding of the works of art entrusted to our care. We are fortunate to work with the Getty Conservation Institute and benefit greatly from our collaboration with colleagues in the GCI's Museum Research Laboratory. We are fortunate, as well, to have access to the colleagues and resources at the Getty Research Institute (GRI); the GRI Research Library is a particularly valuable repository of information regarding artists' working methods and materials, and the history and provenance of the objects in our care.

This culture of partnership reaches beyond the Getty's two campuses—the Getty Center and the Getty Villa. It has led to work that supports the conservation field and to a successful program of collaborative projects that provides conservation services to other institutions. In partnering with other institutions, our shared interest in specific conservation problems can be approached and examined from several points of view. The Museum's conservators and curators benefit from the opportunity to work with experienced professionals from other institutions, all of whom bring new perspectives to the conservation activities that take place in our studios. Very often the unique conservation challenges presented by these artworks require expertise or resources not otherwise available to the partnering institution. In many instances, the completion of the partnership includes exhibiting the objects in the Museum's galleries, either as part of a larger exhibition, in the regular permanent collection galleries, or as part of a more focused exhibition highlighting the collaboration and modern conservation processes and approaches.

Beyond these programs, the Museum's conservation departments are involved in activities that have helped advance the conservation field, from developing state-of-the-art mounts that protect objects from seismic events, to working with outside colleagues to develop a new retouching paint (a material that has found wide use and acceptance in the field). We also contribute to the field by and through disseminating research with other institutions and colleagues in the conservation community through publications, and by sponsoring or cosponsoring symposia and advanced training workshops. Described in the following pages are just some of the significant projects carried out by the Museum's four conservation departments, highlighting the various ways in which they work to advance the field, to aid and collaborate with other institutions, and to care for the Museum's collection.

Michael Brand, Director
The J. Paul Getty Museum

The J. Paul Getty Museum

Associate conservator Eduardo Sanchez and assistant conservator Erik Risser in the Getty Museum's Department of Antiquities Conservation work to stabilize and restore a Roman portrait statue of Marcus Aurelius from the Pergamon Museum of Berlin. *Photo:* Courtesy J. Paul Getty Museum.

Ceramic replicas of ancient vases mounted in a variety of ways on a testing table that mimics seismic activity. *Photo:* Courtesy J. Paul Getty Museum.

Antiquities Conservation

Beyond its primary duties to ensure the long-term care and preservation of the Getty Museum's collection of antiquities, the antiquities conservation department engages in conservation partnerships with institutions and collections from around the world. The department currently is stabilizing and restoring several vases from the Antikensammlung in Berlin and stabilizing several Roman mosaics from Tunisia (in partnership with the Bardo Museum in Tunis and the Archaeological Museum in El Jemm). With respect to the mosaics, the Museum's conservators are pursuing a stronger and more stable approach to their rebacking. The approach being developed utilizes materials easily available to technicians in Tunisia while meeting the structural needs of the large mosaics and assuring their stability over time.

The department also conducts research that enhances its ability to protect the Getty's collections and that ultimately contributes to the advancement of the conservation profession. Such research includes studies in the history of the restoration of antiquities; this research resulted in an international conference at the Getty Center in 2001 and another in 2002. Research also focuses on the processes of conservation and the philosophical underpinnings of decision making before and during those processes.

Long-term preservation is, of course, one of the primary efforts of the department and includes collections care and disaster mitigation. Given the seismic activity of Southern California, the conservators and mount makers for antiquities have worked for over two decades to develop a variety of methods aimed at reducing the risk of earthquake damage to the collection. The Getty is not alone in facing this threat and has made an effort to share with a wider audience this information and the approaches it has developed. Consultations, lectures, and workshops have been provided throughout the United States and internationally, with advice given to museums in Turkey, Greece, Australia, and Taiwan, and to many museums in the United States. In May 2006 the department hosted a two-day international conference on protection of collections from earthquake damage, with speakers from India, Japan, Turkey, Greece, and the United States. The first of its kind, the conference reviewed the current understanding of seismic threats to collections and the efforts made to protect collections from damage. The conference featured the work of the antiquities conservation department, including the design and production of effective seismic isolators, plans for which have been shared with a number of institutions over the last several years.

Decorative Arts and Sculpture Conservation

The department of decorative arts and sculpture conservation, like the other Museum conservation departments, is active in many aspects of conservation, from treatment to research to preventive conservation. Perhaps its most significant recent endeavor has been to increase understanding of works of art through technical study. The department has conducted detailed investigations of a broad range of works of art, including items from the Museum's collection and loans from other institutions. For the forthcoming three-volume catalog of the furniture and gilt bronzes in the Museum's collection, the department is undertaking comprehensive technical studies of each object, including materials identification, analysis of fabrication techniques, and documentation of prior restorations or alterations. A part of this project is a database of the alloys of gilt bronze furniture mounts and furnishings.

A model for the technical study of decorative arts in the Museum's collection has been the study carried out on our French Renaissance cabinet, in which the department was able to demonstrate, through a variety of scientific and investigative methods, the authenticity of this important cabinet, long considered a fake. In the exhibition and online presentation, *A Renaissance Cabinet Rediscovered,* the engaging and complex story of its authentication is shared with Museum visitors. Both use the cabinet as a case study on how we learn about objects through conservation and technical analysis (see www.getty.edu/art/exhibitions/cabinet/). Two papers on the

A view of *Juggling Man* by Adriaen de Vries and an X-radiograph of the same sculpture. *Photo:* Lou Meluso. *Radiograph:* Jane Bassett.

Left: Karen Trentleman of the GCI's Museum Research Lab and Viviane Meerbergen of the Getty Museum's Education Department join Arlen Heginbotham and Brian Considine of the Getty Museum's Decorative Arts Conservation Department in examining construction details of a French Renaissance cabinet. *Photo:* Courtesy J. Paul Getty Museum.

Below: Arlen Heginbotham photodocumenting details of the cabinet. *Photo:* Courtesy J. Paul Getty Museum.

work have already been presented to professional audiences, and articles will be published in both English and French in the *Burlington Magazine* and *L'Estampille—L'Objet d'Art*. In addition, for the broader public, we have offered a number of short courses on the technical aspects of furniture connoisseurship.

The decorative arts and sculpture conservation department has also used the Museum's temporary exhibition program as an important opportunity to carry out technical studies on discrete groups of objects on loan to the Museum. Our first and largest effort was a series of technical studies on the bronzes of Dutch sculptor Adriaen de Vries, conducted in conjunction with the monographic exhibition held at the Museum in the fall of 1999. Through X-radiography, alloy analysis, petrographic analysis of the casting cores, and close visual examination, we gained a deep understanding and admiration for this remarkable artist's working techniques. The opportunity to examine twenty-one examples of his works, as well as five related casts, brought together for the first time, allowed for far more nuanced analyses than if these studies had been done separately at each of the lending institutions. This research will be published by the GCI in 2007.

The department's technical studies work has fostered close collaborations with curators, conservators, and scientists. They have led to new methods and new research in many unexpected areas. It is the hope of the decorative arts and sculpture conservation department that by building a strong body of work and by sharing it fully with the field, we will build a new and deeper understanding of the works of art and the working methods of their creators.

Paintings Conservation

The paintings conservation department has been very successful in creating partnerships that provide for the study and restoration of major works of art from an international array of museums and cultural institutions. As with the Museum's other conservation departments, the collaborative work is provided by the Getty free of charge in exchange for the opportunity to exhibit the works of art in the galleries after completion of the treatments. Over one hundred paintings have been studied and treated in the Museum's paintings conservation studios. Collaborations range from recent work with the Kröller-Müller Museum in the Netherlands to a multiyear partnership with the Yale University Art Gallery (which also culminated in 2002 in a symposium and accompanying Yale publication, *Early Italian Paintings: Approaches to Conservation*).

The department has most recently engaged in a partnership with the Budapest Museum of Fine Arts. Two paintings—*Madonna and Child in an Archway* (ca. 1450) by Petrus Christus, and *The Martyrdom of Saints Paul and Barnabus* by an anonymous sixteenth-

Mark Leonard, conservator of paintings at the Getty Museum, working on Petrus Christus's *Madonna and Child in an Archway* from the Budapest Museum of Fine Arts. *Photo:* Jack Ross.

Tiarna Doherty and Sue Ann Chui of the Getty Museum's Paintings Conservation Department retouching Jean-Baptiste Oudry's *Lion* from the Staatliche Museum Schwerin in Germany. *Photo:* Jack Ross.

century Flemish artist, both keystones of the Hungarian museum's collections—came to the Getty in the spring of 2006 for study and treatment. András Fáy, a senior restorer from the Museum of Fine Arts, accompanied the pictures and worked as a guest conservator in the paintings conservation studio for a period of three months. Both paintings are currently on view in the Museum galleries at the Getty Center, where they will remain until late November 2006. In December, they will return to Budapest in time to be featured in the celebrations surrounding the centenary of the founding of the Museum of Fine Arts.

A similar partnership with the Staatliche Museum Schwerin in Germany has been under way for several years. Two life-size animal portraits by Jean-Baptiste Oudry—the enormous *Rhinoceros* and large *Lion* (which went to Schwerin directly from Oudry's studio in the early 1750s, as part of an impressive group of thirteen of Oudry's animal portraits)—had been removed from their stretchers, rolled, and placed in storage in the basement of the museum in Schwerin at the end of the nineteenth century, where they remained until 2002. The paintings conservation department at the Getty Museum offered to study and treat the pictures, and this initiative in turn catalyzed the development of an exhibition, *Oudry's Painted Menagerie,* which will reunite the two paintings with all of Oudry's other animal portraits from the collection in Schwerin. The exhibition will open at the Getty Center in May 2007 and travel to the Museum of Fine Arts in Houston later that year. The two paintings will ultimately return to public view in Schwerin, where they will join their companions, in early 2008.

András Fáy, from the Budapest Museum of Fine Arts, carrying out structural work on a painting from the Budapest museum's collection in the paintings conservation studio at the Getty Center. *Photo:* Mark Leonard.

The rewards of these multifaceted partnerships are many. The lending institutions not only benefit from the restorations that are provided, but they often receive new insights into the works in their collections. Many of the projects catalyze exhibitions or lead to publications of important new findings for the field. The Getty benefits from the presence of what has proven to be an extraordinary group of works of art, which, in their own way, contribute to the vibrancy of life in the paintings conservation studio, the scientific laboratories at the Getty Conservation Institute, and, most important, the public galleries.

Paper Conservation

The primary focus of the department of paper conservation is the care of the Museum's collections of drawings, manuscripts, and photographs. Although these three collections are quite different in nature, their conservation is placed under the umbrella of one conservation department because of their common sensitivity to light. The focus of the department, staffed by specialists in each of these disciplines, has been to conserve the collections for a constant rotation of new exhibitions every three to four months in each of these areas (as well as for extensive loan and publication programs), a substantial endeavor. Permanent galleries are devoted to each of these areas, including a gallery dedicated to pastels. As a result, hundreds of manuscripts and old master drawings, as well as thousands of photographs from the Museum's collection, have been conserved.

Research into the materials, techniques, and construction of eighteenth- and nineteenth-century pastel drawings is an ongoing focus of the paper conservation department as the Museum continues to expand its collection. An international symposium on the conservation of pastels, "Issues in the Conservation of 18th and 19th Century Pastels," was held at the Getty Center in 2004. Experts in pastel conservation from around the world presented their pioneering researches into pastel technique, including the Museum's paper conservation department's recent discoveries in the media technique and construction used by Maurice-Quentin de La Tour and Jean-Etienne Liotard in their pastels. An international audience of over fifty participants from both the conservation and the curato-

rial disciplines attended. The department's conservators have provided consultation on treatment or have actually treated pastels from a number of other institutions, including two in California—the Huntington Library, Art Collections, and Botanical Gardens in San Marino and the Norton Simon Museum in Pasadena.

The paper conservation department is also active in the area of professional development, having offered, taught, or sponsored over fifty major workshops, classes, and seminars that have attracted hundreds of conservators. The numerous topics covered have included digital printing processes, color compensation, and techniques and practices for the storage and display of graphic arts. In 2001 and 2004, a course, Color Compensation for Damaged and Deteriorated Photographs, was held at the Getty Center, in collaboration with the Andrew W. Mellon Foundation. Participants came from countries around the world, including the United States, Mexico, Australia, New Zealand, Germany, the United Kingdom, Japan, Brazil, Denmark, and Slovakia.

Karen Brynjolf Pedersen (front left), a photographs conservator at the National Museum of Denmark, shares her work with other participants of the color compensation workshop organized by the Getty Museum's Paper Conservation Department. *Photo:* Martin Salazar.

Nancy Yocco, associate conservator in the Getty Museum's Paper Conservation Department, carefully cleans the fragile surface of the eighteenth-century pastel *Gabriel Bernard de Rieux,* by Maurice-Quentin de La Tour. *Photo:* Elisabeth Mention.

The course was taught by a group of experts assembled from the conservation, science, and art history disciplines. It investigated compensation techniques through a combination of presentations and practical hands-on work, including demonstrations of currently accepted techniques and practices. Experimentation with new methods in the lab was also encouraged during practical sessions, resulting in numerous innovative treatment solutions to challenging compensation problems. Topics addressed included color and light theory, inpainting media and techniques, insert-fill methods for losses in photographic paper, historic coating procedures, isolating layers, work space design, ethics, photographer's intent, and exhibition aesthetics. Photographic processes examined included salted paper, albumen, collodion-chloride, silver gelatin, platinum, and contemporary color.

More information about the Museum's conservation partnerships can be found on the Getty Web site at www.getty.edu/museum/conservation/partnerships/index.html.

The following Getty Museum staff contributed to this article:

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Mark Leonard, head, paintings conservation
Marc Harnly, head, paper conservation
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The Getty Research Institute (GRI) exists to gather, preserve, and disseminate knowledge about the visual arts. The documents in the special collections of the Research Library, which cover a chronological range extending from the present back into the sixteenth century, constitute the most important repository of this knowledge in the Getty's possession. And the store of information that each one carries rests on its condition. Physical deterioration of any kind brings with it an erosion of the object's eloquence—that is, its capacity to speak about the time, place, and conditions of its making.

Collections of paintings and sculpture, assembled for permanent display in a gallery setting, require their own stringent standards for conservation. When collection materials exist for the express purpose of being studied and handled by researchers, their survival and continued accessibility depend on extensive treatment techniques designed to withstand exposure to air, light, physical movement, and human contact. In addition, the multiple objects and documents in an archive often consist of various relatively unstable media that range from handwritten notes to newspaper press clippings to Polaroid snapshots. While microfilming and digitizing can protect the most fragile items from overuse, the goal of the GRI is to provide primary source materials whenever possible, as these speak to researchers with subtle cues that reproductions cannot ever fully convey.

A great deal of the work undertaken by GRI conservation staff is directly akin to that of paper conservation in the J. Paul Getty Museum, entailing the same array of techniques required for illuminated manuscripts and old master drawings. But some of the more acute problems arrive with documents created recently—not with those from centuries past. The word *library* may connote documents on paper; indeed, GRI's conservation staff is responsible for everything from the expert construction of archival boxes for our vast Photo Study Collection to making mounts for exhibitions of rare books to conserving fragile correspondence dating to the Renaissance. But the Research Library's special collections also contain a large number of three-dimensional objects made of cardboard, wood, glass, metal, plastics, and more esoteric materials, and we find that traditional scholars are eager to examine and interpret these unconventional items, which are available in few other library holdings. Often damaged or dismantled over their lives prior to entering the Research Library, such complex objects demand precise detective work, painstaking craft, and scrupulous recording of the restoration process on the part of the GRI conservators charged with their care.

They receive exactly that, and the wide expertise carried throughout the Getty's conservation community ensures that if a problem with a special collections document or object has a solution, someone here will know how to find it. Conservation forms a key link in the chain of knowledge production. When a fragile piece is needed by a scholar or is slated for exhibition, it moves to the head of the line for treatment, in the course of which new information often comes to light. The process of repair and restoration also entails the creation of an archival photographic record—high-resolution documents that can be used in any number of digital applications. In this way, one unique object can have many uses and many lives in a worldwide network of communication and information sharing. And our present and growing responsibility is to ensure the effective conservation of documents already encoded in electronic form, from outmoded analog tapes to streaming digital data.

Thomas Crow, Director
The Getty Research Institute

The Getty Research Institute

Treating Archival Materials

Among the GRI's recent acquisitions is a gift of correspondence, ephemera, audiotapes, and videotapes chronicling the importance of a prominent journal devoted exclusively to performance art and its international development. The various media in the archive, dating back to the 1970s, posed a number of conservation and reformatting challenges; in addition, inspection of the collection revealed that it contained numerous paper-loving silverfish and cockroaches.

GRI conservators consulted with scientists from the GCI to determine the best means of treatment. The decision of the conservators and scientists was to contain the infested collection materials and introduce nitrogen into the containment to produce an anoxic environment, lethal to the adults, larvae, and eggs of the insects.

Boxes of pest-infested archival material awaiting conservation treatment. *Photo:* Courtesy Getty Research Institute.

GCI assistant scientist Vincent Beltran (left) and members of the GRI's Conservation and Preservation Department review treatment and safety procedures during the initial stage of work on the pest-infested archival material. *Photo:* Courtesy Getty Research Institute.

Treatment with this inert gas was the safest option for the materials' handlers and for this particular collection, which includes documents, photographs, and audiovisual materials.

All one hundred fifty boxes were wrapped with heavy-duty plastic sheeting, taped up, and transported to a dedicated receiving room at an off-site warehouse. Conservation staff from the GRI and GCI set up a mobile treatment unit, developed by GCI scientists. An adapted cubical treatment bubble was loaded with the boxed materials. At this stage a nitrogen generator was used to provide a virtually unlimited source of nitrogen—an innovation when compared to the more commonly used liquid nitrogen tanks. A humidification system was integrated, preventing the material from drying out during treatment. A telephone modem was installed and attached to a number of sensors inside the bubble to allow for automated hourly remote monitoring of the oxygen level, relative humidity, and temperature within the bubble.

Conserving Objects on Loan

In 2001 the Getty Research Institute opened an ambitious multimedia exhibition entitled *Devices of Wonder: From the World in a Box to Images on a Screen,* that featured almost four hundred objects from the seventeenth century to the present, selected from the collections of the GRI, the Getty Museum, and other institutions and collectors worldwide. Objects included rare natural history books; zoological, botanical, and mineral specimens; educational toys; early cameras; historical prints; a seventeenth-century German *Wunderkabinett*; and works of contemporary art. The exhibition explored how old and new visual technologies foster new perceptions of the universe.

While the exhibition included numerous items from the Research Library's Werner Nekes collection of optical devices, prints, and games, there were also several significant loans, such as an English traveling peep show dating from the eighteenth century. Constructed primarily of soft wood, the forty-two-inch peep show was equipped with a large magnifying lens and an inclined mirror, creating a viewer through which a perspective view was simulated. Concealed within were sets of cutout prints depicting various scenes, such as a German town.

The peep show, lent to the exhibition by Universal Studios, was at the time on loan to the California Science Center in Los Angeles. Damage and repairs sustained over the centuries to the main cabinet and its components and to some of the prints testified to the device's provenance as a traveling show. Extensive testing of

Left: An eighteenth-century English traveling peep show lent for the GRI-organized *Devices of Wonder* exhibition. *Photo:* Courtesy Universal Studios, Inc., Archives and Collections, Universal City, California.

Right, top: GRI conservator Albrecht Gumlich performs conservation treatment on architect Daniel Libeskind's model, originally constructed for the 1988 exhibition *Daniel Libeskind: Line of Fire. Photo:* Courtesy Getty Research Institute.

Right, bottom: Wim de Wit, head of Special Collections and Visual Resources at the Research Institute, leads a class of students from the Southern California Institute of Architecture on a tour of architectural models stored in the Getty's off-site warehouse. *Photo:* Courtesy Getty Research Institute.

the solubility of the varnish and the delicacy of the paper elements was followed by conservation efforts, which entailed restoration of kickplates, application of cellulose filler to gaps and fissures, facsimile constructions and replacement of missing elements in the internal works, and cleaning of the prints. In restoring the peep show and prints for exhibit, the GRI was able to return the piece to the lender in a more stable condition, ensuring its accessibility to future audiences. The GRI's conservation staff also conserved and cleaned fragile paper handbills and applied delicate cleaning to numerous glass stereoslides on loan to the *Devices of Wonder* exhibition.

Conservation of Architectural Models

Of all the items contained in archives of architectural materials, models are probably the most problematic to preserve. Not only do they occupy considerable storage space, but they are also inherently fragile, constructed quickly and generally not meant to survive much longer than the time needed to realize an architectural commission. They often require custom housing to safely store, transport, and protect the delicate components. Their conservation requires knowledge of the properties of plastics, wood, metals, paper, and adhesives.

In determining a conservation treatment, the GRI's conservators follow guidelines established by the code of ethics of the American Institute for Conservation (AIC) regarding reversibility; thorough documentation before, during, and after treatment; and adherence to maintaining the integrity of the object as initially created—taking into consideration, of course, changes implemented by the architect. Models often are works in progress representing a preliminary vision, a rough, three-dimensional sketch of a design in development containing layers of changes reflecting the intellectual process of the architects as designs are developed. Identifying what constitutes this dynamic original intent requires thoughtful consideration on the part of the conservator to differentiate materials original to the object's initial purpose from what may have been added later (tape to mend a weakened area, for example). Frequently, less intervention and more stabilization is the path that conservators follow.

In preparation for the 1988 exhibition *Daniel Libeskind: Line of Fire,* the architect created a scale model that was subsequently acquired by the GRI in 1992. It is assumed that the original crate for the model was custom-made in the shop where the models for Libeskind were constructed. Unfortunately, the crate was not high enough to fully contain the model, and prior to shipment to Los Angeles, twenty of the model's conical elements were broken off to accommodate the crate's size. Then, shifting of the model occurred in transport, causing more elements to dislodge. What arrived at the GRI was a three-dimensional puzzle consisting of the base of the model, red metal rods, stepladders, and the conical elements made of painted balsa wood.

The original position of each of the twenty conical elements could be determined by matching fragments with the old adhesive's residue patterns on the broken surfaces. The decision to re-adhere the wooden elements with a reversible adhesive was made in accordance with the AIC guideline to keep treatment reversible. The uprooted metal rods were pressure fitted into their original holes.

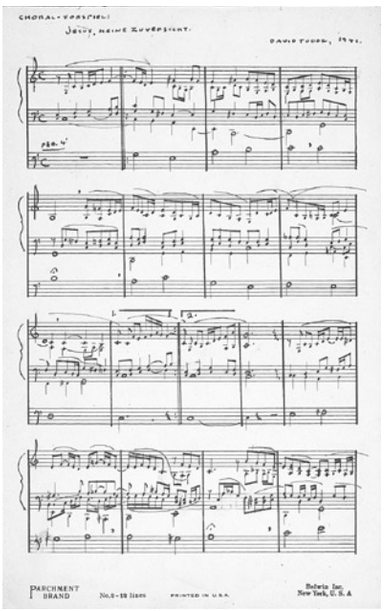
The GRI holds over one hundred models by a number of well-known architects, such as Frank Gehry and Libeskind, and firms such as Coop Himmelb(l)au, to name just a few, and the institution makes these available to researchers. Conservation priorities are influenced, in part, by requests for study, publication, or exhibition.

Reformatting Audiovisual Materials

The collections of the Research Library at the GRI include extensive holdings of audiovisual materials that document artists' works through the recording of live performances, oral histories, and interviews. In most cases, the original, nonpublished version of these AV materials—whether a sound recording, video, film reel, or another more obscure or more recent digital format—is the object acquired by the GRI. For purposes of preservation and dissemination, the original must be reformatted to produce both archival and user copies.

The GRI houses an audiovisual reformatting lab, where the conservator in charge of reformatting oversees the safe storage and handling of audiovisual analog and digital materials in the collections. Specialized conservation of the original audiovisual materials, procurement and maintenance of playback equipment for these original formats (which are sometimes obsolete), and advanced technical expertise to produce archival and user copies that will migrate to future formats are examples of the expertise required of the audiovisual conservator.

Both analog archival masters and digital copy masters are generated for each item slated for reformatting. Along with the archival preservation of audiovisual collections, the GRI is committed to making the materials accessible to researchers, and schedules reformatting often at the request of individual scholars. Sound and video recordings are copied onto CD or DVD for use by patrons in the Research Library. Notable among collections recently reformatted are musical selections from the vast archive of American composer David Tudor and the complete transfer of artist Allan Kaprow's filmed Happenings and works of video art. Hundreds of cassette tapes in the Kaprow archive are slated for reformatting as well, and will eventually be available to researchers.



A page from pianist-composer David Tudor's 1941 autograph score of *Choral-Vorspiel: Jesus, Meine Zuversicht,* from the Research Library's David Tudor collection. *Photo:* Courtesy Getty Research Institute.

More information about the Getty Research Institute and how to access its collections can be found on the Getty Web site at www.getty.edu/research/.

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Selected Collections of Conservation-Related Material in the Research Library at the Getty Research Institute

Franklin Institute Library Collection

Tracked in the catalog by provenance, the collection includes approximately 1,300 items from the Franklin Institute Library, established in 1824 in Philadelphia, to serve the Franklin Institute and general public as a resource for information on science and technology.

F. Weber & Company Collection, Records, 1865–1973

The archive of F. Weber & Company, Inc.—one of the largest manufacturers of art materials in the United States—contains printed catalogs, sample books and brochures, ledgers with financial and technical information, including paint formulas, a small amount of correspondence and other business papers, manuscripts of lectures given by F. Weber, and photographs from trade fairs.

Getty Grant Program, Reports Submitted by Recipients of Conservation Grants, 1988–2001

The records consist of final and annual progress reports—correspondence, reports, surveys, architectural drawings, publications, specifications, print and slide photographic documentation, CD-ROMS, video, and floppy diskettes—submitted to the Getty Grant Program (now the Getty Foundation) by recipients of conservation grants.

William Suhr: Photographs and Treatment Notes, ca. 1920–1979

The collection includes photographs and treatment notes documenting the work of William Suhr, restorer to the Frick Collection who also served a private clientele. He was the chief conservator for the New York World's Fair in 1939, and after World War II worked closely with dealers and other clients active in the art market in New York.

The Getty Foundation

As the philanthropic arm of the J. Paul Getty Trust, the Getty Foundation supports the fields in which the Getty is active by making grants in the areas of scholarship, conservation, and education. Since 1984 this commitment has translated into funding for more than four thousand projects in one hundred eighty countries on every continent. Through core program areas and special initiatives, we seek to strengthen professional leadership, increase access to knowledge in the visual arts, and improve the practice of conservation.

Providing support for conservation projects has always been one of the priorities of the Getty Foundation. Each year approximately one-third of our funds is dedicated to the conservation of objects in museum collections and to the preservation of historic buildings and landscapes, as well as to conservation training and professional development. Through grants to professional organizations, we also bring together conservation professionals from around the world to share expertise, exchange ideas, and build community. In addition, many of our special initiatives focus on issues in conservation, such as our Campus Heritage grants, which assist colleges and universities in the United States in planning for the preservation of their significant historic buildings, sites, and landscapes.

To achieve our goals, we rely on an extensive network of conservation professionals. This network begins with our professional staff and includes colleagues in the other Getty programs, who deepen and expand our knowledge of the conservation field. We also benefit enormously from the advice of hundreds of conservation experts around the world, who help assess the proposals that we receive each year by serving as peer reviewers or advisory committee members.

Over the years, we have supported the efforts of hundreds of dedicated individuals and organizations working to preserve the world's cultural heritage for the benefit of future generations. The projects are diverse and span the globe; they range from preventive conservation for museums in sub-Saharan Africa to research and treatment of an outdoor sculpture by Louise Nevelson in Philadelphia, and from preservation of Sir Ernest Shackleton's hut in Cape Royds, Antarctica, to historic preservation in Los Angeles. The common thread that runs through all these projects is an emphasis on research and planning—the crucial behind-the-scenes work that is often overlooked yet is essential to the success of any project. Most grant-funded projects also incorporate a significant training component, designed to enhance professional skills, reinforce sustainability, or promote the practice of conservation in a region or discipline.

The pages that follow highlight just a few of the conservation projects that recently received Foundation grants as part of our efforts to support the conservation community in its important work. We look forward to continuing our work with colleagues at home and abroad to advance the practice of conservation.

Joan Weinstein, Interim Director
The Getty Foundation

The Getty Foundation

Museum Conservation Grants

Conservation Survey
Research and Treatment

The National Textile Museum in Thimphu, Bhutan, holds an extraordinary collection of traditional Bhutanese textiles. A grant to the Friends of Bhutan's Culture in Washington, D.C., in 2003 supported a conservation survey of this important collection and provided crucial conservation training to museum staff. Grant funds allowed a consulting conservator to visit the museum for five weeks to evaluate the storage needs and conservation requirements of the entire collection. In addition to basic training in textile conservation techniques, staff received training in preventive conservation, treatment documentation, pest management, and environmental monitoring. A second grant in 2005 extended the conservation survey to include *thangkas,* Buddhist religious paintings on cloth that are a significant component of Bhutanese artistic and religious tradition. As part of this grant, conservators provided additional training for museum staff as well as for monks, who are responsible for the care of textile treasures housed in Bhutanese monasteries.

National Textile Museum staff member Choegho Kunzan working on a fabric in the museum's laboratory in Thimphu, Bhutan. ***Photo:*** Julia Brennan.

A front view of the seventeenth-century Mazarin chest, depicting scenes from *The Tale of Genji. Photo:* Victoria & Albert Museum/V&A Images.

Museum conservation grants awarded by the Foundation have also supported projects that extend beyond intervention to include interdisciplinary research about materials, manufacture, or historic context. At the Victoria and Albert Museum (V&A) in London, a collaborative conservation treatment project is in progress to preserve the museum's seventeenth-century Mazarin chest, one of the foremost examples of Japanese export lacquer (urushi) in the world. Made of black-lacquered wood, the chest is sumptuously decorated with scenes from *The Tale of Genji* and *The Tale of the Soga Brothers.* The lavish ornamentation includes metal inlay, mother-of-pearl, carved gold and silver figures, and gilded copper corner and lock plates. Centuries of exposure to light as well as cyclical changes in temperature and relative humidity have caused a gradual deterioration in the chest's condition, and poor adhesion of its lacquer and decorations made it too fragile to display. To remedy this situation, conservators at the V&A brought together an interdisciplinary team, including art historians, conservation scientists, and conservators from Japan. As they study the aging characteristics of urushi surfaces exposed to various light sources and changing humidity cycles, they also seek to develop an integrated approach that respects both modern international conservation ethics and traditional Japanese conservation values.

Training and Professional Development

Photograph Conservation
Museum Professionals in Southeast Asia
Degree Programs in Conservation Training

Three recent Getty-funded projects have focused on training and professional development for photograph conservators. Photo conservation is a relatively recent field of specialization, and there has been increasing awareness of the need for skilled professionals who can recognize and address the unique characteristics and patterns of deterioration of different photographic processes.

Four years ago, the Australian Institute for the Conservation of Cultural Material received Getty support for midcareer training workshops for photograph conservators in Australia and the Pacific

Paintings conservation student Blanka Kielb examining a painting using a stereomicroscope with attached camera. *Photo:* Courtesy Art Conservation Program, Queen's University, Ontario, Canada.

region. More than one hundred ninety professionals participated in workshops conducted over three years that focused on preventive photo conservation, color photography and digital print conservation, and traditional photographic and digital methods for duplication.

A 2005 grant to the Northeast Document Conservation Center (NEDCC) in Andover, Massachusetts, provides support for a three-year training exchange program in photography conservation for midcareer professionals from Eastern Europe. Intensive training sessions at NEDCC combine formal classroom sessions, hands-on practice in the laboratory, and visits to photographic collections. After each monthlong course in Andover, NEDCC provides follow-up training in Bratislava, Slovakia, at the Academy of Fine Arts and Design. The goal of the program is to build the expertise of a group of conservation leaders who can teach photographic conservation in their respective countries. To date, conservators from Poland, the Czech Republic, Bulgaria, Hungary, and Slovakia have participated in the program.

This year the University of Delaware was awarded a Getty grant to support a two-week photograph preservation institute in the Middle East, to advance the practice of photo conservation in the region. Working in partnership with the Fondation Arabe pour l'Image, a nonprofit foundation in Lebanon dedicated to promoting and preserving photography in the Middle East, the program will provide participants with a basic understanding of preventative care issues, the importance of risk assessment, best practices in photograph preservation, and the technological developments of photography. Just as important, the institute will allow the stewards of collections in the region to establish international professional relationships, which may foster future collaboration and support.

In the area of professional development, ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property) in Rome, received support in 2004 for CollAsia, a seven-year initiative to help museums in Southeast Asia develop appropriate conservation strategies to care for their collections. With Getty support for the initial phase of the program, ICCROM developed two workshops for heritage professionals from the region. The first took place in Leiden, the Netherlands, and focused on textile conservation; the second, held in Manila, the Philippines, addressed collections storage needs. All program activities have been planned and implemented in partnership with heritage institutions in the participating countries: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Grant funds are also supporting the participation of museum staff in scientific conferences, the translation of resource materials in national languages, and a field project in Vietnam.

The Foundation also provides support to strengthen graduate degree programs in conservation training to augment an institution's ability to train the next generation of conservators. At the Art Conservation Program of Queen's University in Ontario, Canada, a Getty grant allowed for the upgrade of thirty-year-old laboratory equipment. Funds were used to acquire teaching stereomicroscopes and other instruments needed to train the program's graduate students. The new microscopes and attached monitors make it possible to demonstrate particular features of a work of art to an entire class, generating group discussion and enhancing the faculty's ability to interact effectively with its students.

Architectural Conservation

Planning/Implementation

While the Foundation occasionally funds implementation projects in architectural conservation, the majority of our resources are devoted to the development of comprehensive conservation plans, which are fundamental to the success of conservation projects. In 2005 the Getty awarded a grant to the Universidad Politecnica de Puerto Rico for the preparation of a comprehensive preservation plan for the Capilla del Santo Cristo de la Salud in San Juan. Constructed of rubble masonry and brick, the Spanish colonial–style chapel dates to the second half of the eighteenth century and is situated on the southern portion of the city walls. The planning project included new historical research on the chapel, a condition assessment of the historic fabric of the building, and chromochronology—the study of paint history on surfaces—to confirm the previous existence of decorative patterning on the facade. As part of the project, participating students from the Universidad Politecnica

Above: Entrance to the Capilla del Santo Cristo de la Salud, San Juan, Puerto Rico. *Photo:* Courtesy Adam Malin.

Right: Exterior view of Le Corbusier's La Maison Blanche. *Photo:* © 2002 Artists Rights Society (ARS), New York/ ADAGP, Paris/FLC.

and the University of Pennsylvania Graduate Program in Historic Preservation received training in architectural drawing and conditions assessment.

Training was also a key component of a 2004 architectural conservation implementation project at the Villa Jeanneret-Perret, known as La Maison Blanche. Located in the hills of La Chaux-de-Fonds, Switzerland, La Maison Blanche was designed by Le Corbusier at the age of twenty-four. Created for his parents, the house demonstrates the architect's early interest in structural rationalism. After years of private ownership and benign neglect, a multidisciplinary team of specialists recently completed restoration of the house to its original appearance. The project involved treatment of the facades, replacement of roof tiles with ones modeled on the originals, treatment of historic interior finishes and linoleum floors, and floor reinforcement. Graduate and post-graduate students in conservation, architecture, and art history from schools in La Chaux-de-Fonds, Zurich, Geneva, and Fribourg participated in the project, using the house as a case study for issues surrounding the conservation of Modern architecture. The Association La Maison Blanche has published the results of the project and their training strategies and has hosted events to disseminate their research to specialists and the general public.

More information about Getty Foundation grants can be found on the Getty Web site at www.getty.edu/grants.

The following Getty Foundation staff contributed to this article:

Antoine Wilmering, program officer

Conservation Resources at the Getty

AATA Online

This database of over 100,000 abstracts of literature on the preservation and conservation of material cultural heritage is available free of charge.
www.aata.getty.edu

Conservation Collection in the Research Library at the Getty Research Institute (GRI)

The Conservation Collection includes approximately 30,000 titles and 45,000 volumes, including over 750 serial subscriptions.
www.getty.edu/research/conducting_research/library/conservation_collection.html

Conservation-Related Material in the Research Library of the GRI

The library houses special conservation-related collections—among them, the archive of F. Weber & Company, photographs and treatment notes from conservator William Suhr, and approximately 1,300 items from the Franklin Institute Library.

Project Bibliographies

Bibliographies produced for the GCI's conservation projects are available, free of charge, for browsing, searching, printing, and downloading.
gcibibs.getty.edu

GCI Information Center

Conservation information specialists provide expertise and support to conservation staff throughout the Getty and to conservation professionals worldwide.
www.getty.edu/conservation/research_resources/infocenter.html

PDF Publications on the Web

Books, reports, guidelines, short papers, bibliographies, and glossaries published by the GCI are available without charge and are searchable by title, author, or category of material.
www.getty.edu/conservation/publications/pdf_publications/index.html

Reference Collection in GCI Science

The GCI Science department has assembled a database of over 9,000 reference materials for use in the analysis of art objects.
www.getty.edu/conservation/science/about/reference.html

Conservation Documentation in Digital Form

A Dialogue about the Issues

By Angelica Zander Rudenstine and Timothy P. Whalen

In an important moment for the conservation field, representatives from over a dozen major museums in the United States and the United Kingdom—including museum directors, curators, conservators, and scientists (see sidebar)—convened at the Metropolitan Museum of Art in New York on April 27, 2006, for a frank dialogue regarding the current state of conservation documentation.

The meeting, organized by the Andrew W. Mellon Foundation and preceded by several years of careful planning and discussion,[1] provided a unique opportunity for the leadership of major collecting institutions to reconsider the ways in which treatment and other conservation documentation are created, managed, and disseminated. The wide-ranging, daylong conversation also covered professional and public access to such documentation, as well as digital management as a preservation strategy for aging paper and media documentation.

Conservation research and treatment have historically, of course, been documented in print form, including paper files; typed, handwritten, or printed documents; and film-based images. At the New York meeting, the participants grappled with both the problems and the opportunities posed by these existing archives and by the shift to digital forms of documentation. They considered the advisability of retrospective digitization of existing records, in addition to future digital documentation. The complex issues of access to conservation information were also considered. How, under what conditions, and when might such information be shared with professional colleagues and with members of the public? What are the primary questions of policy, of ethics, and of values involved? How will the daunting matter of costs and resource allocation be addressed?

The meeting was notable not only for the forum it provided for the sharing and comparing of experiences and priorities but also for the fact that directors, curators, conservators, and scientists from a group of significant institutions joined in devoting attention to a critical aspect of conservation work, and to the potential benefits of sharing information to enhance scholarship and learning. In his closing comments, Philippe de Montebello, director of the Metropolitan Museum, remarked, "The very fact that we have participated with our colleagues from conservation today was important. What we have discussed could conceivably—and probably should—become institutional priorities, and what is really left is for us to come up with the will and the resources to begin the process."

Pinpointing the Issues

Since the 1980s, many museums have established digital collections management systems. In addition to facilitating the day-to-day tracking and management of institutional holdings, these automated systems enable museums to better collect and present information to the public via the Web and other means. But conservation information typically is not yet incorporated into these internal management systems—either because it has not been digitized at all, or because it is held in stand-alone databases or files—and it is therefore likely to be increasingly isolated and unavailable for study.

The objective of the New York meeting was to focus on principles, values, priorities, and levels of access, as well as on the methodologies that would be required if such information is to usefully serve the evolving needs of the conservation and scholarly communities. An effort was made to pinpoint salient issues that could serve

as a framework for broader exchange with the wider community of colleagues in the European Union, the United Kingdom, the United States, and elsewhere in the world.

Months in advance of the meeting, participating institutions were provided with a series of questions for their curators, conservators, scientists, and administrators to consider in internal discussions. The questions addressed the status of digital conservation record keeping; accessibility of records; integration with other collection information; future plans; and related concerns. Summaries of these internal deliberations were circulated prior to the April meeting so that all participants arrived with a clear understanding of the attitudes and experience of the other institutions.[2] During the discussion, many of the same topics were addressed in greater detail.

Paper versus digital record keeping: There was general agreement that while paper records are still considered the formal archival record by many, most museums are now to some degree engaged in digitizing. All participants considered this activity inevitable and desirable, while conceding that it was unlikely that digital records would entirely replace paper in the foreseeable future. There is a growing concern about the preservation of historic, often ephemeral conservation records (including color photographs, transparencies, and radiographs), some of which are disappearing rapidly. While the cost of retrospective digitization of such records is clearly daunting, it was generally acknowledged that selective digitization of deteriorating materials must be considered for preservation purposes.

Information access: There was considerable consensus that sharing information with professional colleagues (conservators, curators, university-based art historians, scientists, and other scholars) was one of the most striking potential benefits of digital record keeping, encouraging collaboration in solving problems, offering greater understanding of works of art (their conservation history, materials, and techniques), and deepening many aspects of scholarship and other productive developments in the field. At the same time, it was recognized that there would be major intellectual issues involved; these include the risk of misinterpretation or misuse of raw, uninterpreted data. A consensus was reached that information would need to be carefully explicated in order to avoid such risks and to be useful as well as accessible. Institutional sensitivities regarding treatment policies and histories were also raised. There was substantial, though not unanimous, agreement that on balance, wider professional knowledge of such histories should be welcome, since it could further understanding and generate healthy, informed discussion of current or earlier methodologies. Intellectual property questions were also discussed, especially as they relate to proprietary authorship and to works in progress that are destined for publication but not yet adequately advanced for dissemination.

Meeting Participants

Art Institute of Chicago
James Cuno — *Director*
Francesca Casadio — *Conservation Scientist*
Martha Tedeschi — *Curator, Department of Prints and Drawings*
Frank Zuccari — *Executive Director of Conservation*

British Museum
Hayley Bullock — *Conservator*
Antony Griffiths — *Keeper, Department of Prints and Drawings*
David Saunders — *Head of Conservation*

Buffalo State College
Dan Kushel — *Distinguished Teaching Professor*

Courtauld Institute of Art
Aviva Burnstock — *Director, Department of Conservation & Technology*

J. Paul Getty Trust
Michael Brand — *Director, J. Paul Getty Museum*
Tim Whalen — *Director, Getty Conservation Institute*
Mark Leonard — *Conservator of Paintings, J. Paul Getty Museum*
Kenneth Hamma — *Executive Director for Digital Policy and Initiatives*

Harvard University Art Museums
Thomas W. Lentz — *Director*
Narayan Khandekar — *Senior Conservation Scientist*
Henry Lie — *Director, Straus Center for Conservation*
Sam Quigley — *Director, Digital Information and Technology*

Metropolitan Museum of Art
Philippe de Montebello — *Director*
Larry Becker — *Sherman Fairchild Conservator-in-Charge*
Marco Leona — *Scientist-in-Charge*
Jack Soultanian — *Conservator*

Museum of Modern Art
Glenn Lowry — *Director*
Jim Coddington — *Agnes Gund Chief Conservator*
Chris McGlinchey — *Conservation Scientist*

National Gallery, London
Charles Saumerez-Smith — *Director*
Jill Dunkerton — *Conservator*
Susan Foister — *Director of Collections*
Ashok Roy — *Director of Scientific Research*

National Gallery of Art, Washington, D.C.
Earl A. Powell — *Director*
Alan Shestack — *Deputy Director*
Alan Newman — *Chief, Division of Imaging & Visual Services*
Merv Richard — *Deputy Head of Conservation*

Philadelphia Museum of Art
Anne d'Harnoncourt — *Director*
Nancy Ash — *Senior Conservator*
Andrew Lins — *Chair of Conservation*
Carl Brandon Strehlke — *Curator, John G. Johnson Collection*

Tate
Leslie Carlyle — *Head of Conservation*
Jacqueline Ridge — *Head of Paintings Conservation*

Yale University Art Gallery
Jock Reynolds — *Director*
Mark Aronson — *Chief Conservator*
Patricia Garland — *Senior Conservator*
Laurence Kanter — *Curator*

The extent of access to conservation documentation that would be desirable for professional colleagues was seen by most participants to be different in kind from what might be appropriate for (or sought by) members of the general public. Whereas the 2000 UK Freedom of Information Act mandates a considerable level of access to those who request information about works of art held in public collections, this law does not appear to have prompted an increase in requests for conservation information from the public, which remain rare (as reported by Tate, the National Gallery in London, and the British Museum). Some participants stated that museum visitors tend to be more interested in conservation information while they are actually looking at works of art in the galleries, and that audioguides, podcasts, or Web sites might offer the best delivery vehicles for such audiences.

Management of information: Internal management of documentation is the critical prerequisite for dissemination and sharing. The institutions represented at the April meeting are at very different stages of digitization, some barely beginning, others far advanced. The Philadelphia Museum is perhaps the closest to integrating its conservation records with the rest of its automated information holdings. It has developed a conservation database that will be integrated with its collection management system, allowing it to transfer information between the two systems. The museum is also developing enhancements that will include a flexible survey screen and that will allow it to import information from other databases.

First Steps

Central to the discussions at the meeting was a high level of commitment to the digitization and ultimate sharing of conservation information. There was general agreement that the primary challenge for the museum community would be the formulation of a coordinated effort to create new digital assets that are readily able to interface with those of other institutions. The development of a universal conservation data model that could be integrated with any existing collections management systems was proposed as a desirable—indeed an essential—first step. Retrospective conversion of earlier conservation records was also discussed, and in view of the scope and costs associated with such an effort, it was suggested that in-house indices might be created as an alternative to digitizing entire files in those cases where immediate preservation was not urgent. Other means of sharing information, and other categories of data to be shared, were proposed, including the development of online listings of current conservation research, thereby fostering potential collaborations and preventing duplication of effort.

Immediate next steps: In order to make progress in implementing some of the ideas that emerged during the meeting, some pilot projects were proposed for consideration:

1. A survey of museum needs for optimal creation and management of documentation in digital form could form the basis of discussions between conservators and software developers.

2. A survey of the state of conservation documentation in key European museums could help to identify important priorities for attention and funding.

3. A study of best practice methodologies for the digitization of media such as X-rays and for the digitization of existing handwritten documentation would be useful.

4. An experimental pilot project that would integrate the complete conservation history of one or two important works of art into the collections information already available on an existing Web site or other online system would be a useful test. Public response to such a model integration could generate feedback for broader consideration of the pros and cons of various levels of public access to conservation material.

As the meeting concluded, unanimous agreement was expressed that the digitization of conservation documentation and the sharing of such information among conservators, scientists, museum curators, art historians, and other scholars was highly desirable and of vital importance. It was also acknowledged that while public access to such information ultimately would be important, the immediate priority should be the development of mechanisms for the exchange of information among professionals, and that effecting change in institutional practice would be essential if these emerging priorities were to be adequately recognized and served.

It was further agreed that the broader museum community throughout the world must be brought into this discussion as soon as possible. To that end, it was agreed that additional meetings and consultations should be organized and the results broadly disseminated, so that collective progress on a number of fronts might be made.

Angelica Zander Rudenstine is program officer for Museums and Art Conservation at the Andrew W. Mellon Foundation. Timothy P. Whalen is director of the Getty Conservation Institute.

Notes

1 A smaller exploratory gathering was convened in May 2003 by the Mellon Foundation, working with staff members of the Getty Trust, to begin a consideration of these issues.

2 Complete transcriptions of these summaries can be found on the Andrew W. Mellon Web site at mac.mellon.org.

Organic Materials in Wall Paintings

Results from the first phase of the Organic Materials in Wall Paintings (OMWP) project were presented at a daylong symposium in May 2006 at the new Centro di Conservazione e Restauro La Venaria Reale near Turin, Italy. In attendance were experts from the field of wall paintings conservation, including art historians, architects, conservators, and conservation scientists.

The OMWP project is a partnership among the GCI and a number of scientific laboratories whose goal is to develop a set of guidelines to facilitate the study of organic materials in wall paintings. The project has two parts: first, to evaluate various investigation techniques and develop a series of guidelines for organic materials identification, and second, to apply these guidelines to wall paintings conservation case studies in order to illustrate the guidelines and their practical benefits.

At the symposium, each of the OMWP partner teams presented results from its method of analysis and showed the extent of the method's ability to detect organic materials in the wall paintings replicas tested. The evaluation of the techniques was based on the level of information obtained and the accuracy of this information against the known composition of the replicas. Four levels of information were considered: presence, class, type, and mixture of organic materials. Not all of the analytical techniques provided information at each level.

This first phase of work has shown that the study of organic materials in wall paintings must include an understanding of the paintings' inorganic pigments, since these affect the results of some of the techniques being tested. For example, noninvasive methods such as UV fluorescence photography or fiber optic fluorescence spectroscopy (FOFS) may show the presence and location of fluorescent material but may not distinguish between different types of organic binders, and the absorption of fluorescence by pigments can give a false negative result—the absence of fluorescence does not mean absence of organic material.

Results presented at the symposium confirmed that invasive analytical methods, such as gas chromatography and immunological testing (for the extremely specific identification of proteins), provided the highest level of information and accuracy. However, within the advocated methodology, noninvasive investigations remain essential to the preliminary study of the painted surface in order to point out sample locations representative of other areas in the painting.

Testing samples of known composition allowed for improved interpretation of the results provided by each technique. This was especially important for new methods. Results from these investigations will be made available in a reference database.

The second phase of the OMWP project will apply information gathered in the first phase to the study of mural paintings currently under restoration. All studies will be carried out in close collaboration with conservators.

For further information on the OMWP project, visit the Getty Web site at www.getty.edu/conservation/science/omwp/index.html.

China Principles Workshop

In May 2006 a workshop for nineteen senior Chinese heritage professionals was held in conjunction with the China Principles project. The China Principles, a set of national guidelines that integrate conservation and management, were developed collaboratively by China's State Administration for Cultural Heritage (SACH), the GCI, and the Australian Department of the Environment and Heritage (DEH).

Recently it became clear to the project partners that training was needed to embed the China Principles among the heritage community in China. SACH, the GCI, and the DEH agreed to prepare a select group of senior professionals to teach SACH-sponsored courses on the use of the principles to heritage professionals in China. Ten courses for three hundred professionals are planned.

The May workshop began at the Port Arthur Historic Site, Tasmania, and continued at the Mogao Grottoes near Dunhuang. The workshop examined planning, management, decision making, conservation interventions, interpretation, and a host of other issues. Presentations by Port Arthur staff, followed by group discussions, compared and contrasted the situation in China with that at Port Arthur.

At Mogao, discussions focused on the recently completed master plan and on undertakings such as the Cave 85 wall paintings conservation project of the Dunhuang Academy and the GCI. The assessment report of Shuxiang Temple—an imperial Qing architectural complex and a component of the China Principles application at Chengde—was also presented, to provide depth to discussions of conservation planning. En route to China, the workshop was further enriched during a three-day stopover in Sydney, where important heritage places—including the Rocks historic precinct, the Opera House, and Hyde Park Barracks—were visited and presented by managers and staff.

A teaching manual, written by Chinese participants, will serve as the basis for teaching in the ten courses (to begin in fall 2006), which will, it is hoped, further expand the influence and impact of the China Principles.

China Principles Workshop at the Dunhuang Academy, with Fan Jinshi, director of the academy, addressing participants. *Photo:* Courtesy Dunhuang Academy.

GSAP Colloquium

Last April, the Getty Seismic Adobe Project 2006 Colloquium was held at the Getty Center. The three-day event, organized by the GCI Earthen Architecture Initiative, brought together a select group of sixty-two international professionals with expertise in conservation, seismic retrofitting methods, and earthen structure building standards. The colloquium was a forum for discussion of key issues in preserving earthen cultural heritage in the world's seismic regions while ensuring life safety.

The GCI has a long-standing commitment to the preservation of earthen architecture. The Getty Seismic Adobe Project (1992–2002) conducted research and testing of adobe structures to evaluate retrofitting methodologies that would ensure adherence to safety standards while preserving the historic architectural fabric. The Getty Seismic Adobe Project 2006 Colloquium is an extension of this work.

The colloquium program included formal presentations, panel discussions, and site visits, providing for informal information exchange and discussion. Individual sessions addressed the evolution of earthquake-resistant design criteria and testing methods for earthen buildings, building codes and standards specific to earthen architecture, traditional earthquake-resistant construction techniques for earthen buildings, and retrofit case studies. Participants toured Rancho Los Cerritos in Long Beach, California, with the preservation

architect, structural engineer, and contractor who designed the structure's retrofit. The final day of the colloquium was devoted to a series of roundtable discussions to identify knowledge gaps in the field and to articulate methods to fill those gaps.

A post-colloquium tour to several historic adobes in Ventura and Santa Barbara counties permitted continued discussion of retrofit and rehabilitation measures with project architects, engineers, archaeologists, site managers, and contractors at these sites.

In September 2006 the GCI Earthen Architecture Initiative, in conjunction with the California Preservation Foundation (CPF) and the California Office of Historic Preservation, is organizing a follow-up workshop aimed at building officials, building owners, site managers, architects, engineers, conservators, and allied professionals interested in earthen architecture. Entitled "Seismic Retrofit of Historic Adobes and Earthen Structures," this event, to be held September 14, 2006, at the Getty Center, will present background research and recent case studies describing alternate strengthening methods for these structures. A public evening lecture will follow. Registration for the workshop can be made through the CPF Web site at www.californiapreservation.org.

Modern Paints Uncovered

Tom Learner of Tate delivering keynote address. *Photo:* Andrew Dunkley, Tate Photography.

Tate Modern in London was host to "Modern Paints Uncovered," a four-day symposium in May 2006 coorganized by the GCI, Tate, and the National Gallery of Art in Washington, D.C. It was the first symposium ever to be focused exclusively on conservation issues of modern paints, including recent analytical, scientific, practical, and historical research in this area. Over two hundred fifty people attended, including conservation scientists, conservators, paint formulators, art historians, and artists from over thirty-five countries.

"Modern Paints Uncovered" was presented under the auspices of Contemporary Art Research: Modern Paints, a collaborative project among Tate, the National Gallery of Art, and the GCI to address questions regarding the character of modern paint materials through the development of analytical techniques for identifying modern paint media and the evaluation of cleaning methods and techniques for modern paintings.

Keynote addresses began each day's proceedings and included presentations by Tom Learner, senior conservation scientist at Tate; Stuart Croll, professor of coatings and polymeric materials at North Dakota State University in Fargo; and Jim Coddington, chief conservator at the Museum of Modern Art in New York.

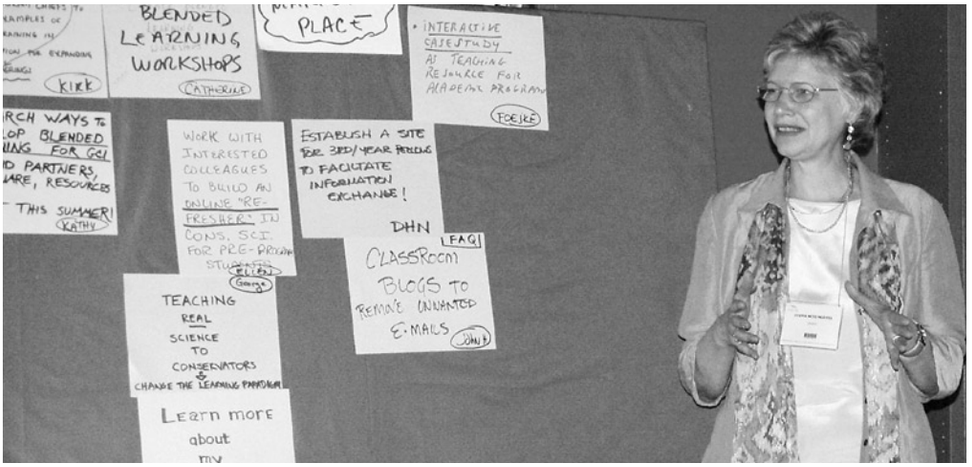
Symposium sessions ranged from talks describing recent advances in analytical techniques and protocols, to reporting on experimentation with novel practical treatments. Presentations on the second day focused on research conducted into the effects of cleaning acrylic emulsion paints, the synthetic paint most widely used by artists since the early 1960s.

The final day included poster presentations and tours of local artists' materials suppliers, including the Winsor and Newton paint factory, Cornelissen paint shop, and Russell and Chapple canvas suppliers. "Modern Paints Uncovered" concluded with two public events: a panel discussion among artists, curators, and conservators on how each considers the surface of a painting or painted object, and a discussion between British pop artist Sir Peter Blake and newscaster and Tate trustee Jon Snow.

"Modern Paints Uncovered" enabled cutting-edge research to be openly discussed and shared within the profession. It served as a useful overview of the substantial amount of work conducted over the last several years. The ideas generated from the symposium and the ensuing dialogue will help shape the future directions of the Getty's scientific research commitment to modern and contemporary art.

For more information on the project, Contemporary Art Research: Modern Paints, visit the Getty Web site at www.getty.edu/conservation/science/modpaints/index.html.

Directors' Retreat



Debbie Hess Norris of the University of Delaware leading a discussion at the retreat. *Photo:* Foekje Boersma.

The third Directors' Retreat for Conservation Education was held in Austin, Texas, from May 23 to May 25, 2006. The Getty Conservation Institute partnered with the American Institute for Conservation of Historic and Artistic Works and the Association of North American Graduate Programs in Conservation in offering the retreat, which focused on ways to employ Web-based technology more effectively to achieve teaching and learning goals in conservation education.

The program was supported by experts from the University of Texas System TeleCampus and School of Information. The retreat participants came from primarily academic conservation programs in North America, with several participants from Europe and Australia. Different approaches and tools used in e-learning were explored in both plenary and small-group sessions, taking into account classroom-based teaching, as well as blended and distance education. By the end of the retreat, the group had proposed several ideas for further investigation (see page 10).

The participants also visited the University of Texas at Austin campus, including the Kilgarlin Center for Preservation of the Cultural Record at the School of Information, the Harry Ransom Humanities Research Center Conservation Department, and the new Blanton Museum of Art.

Further information on the Directors' Retreats for Conservation Education can be found on the Getty Web site at www.getty.edu/conservation/education/drsretreat/.

Fall Lectures

The GCI announces its fall 2006 schedule for "Conservation Matters: Lectures at the Getty"—a public series examining a broad range of conservation issues from around the world. Lectures are held Thursday evenings at 7:00 p.m. at the Getty Center. Events are free, but reservations are required. To make a reservation or for further information, visit the Getty Web site at www.getty.edu/conservation/public_programs/lectures.html. Reservations can also be made by calling 310 440-7300.

September 21, 2006

Stone conservator Simon Warrack discusses "Decay at Angkor Wat: Problems and Solutions," with a special focus on the restoration of a religious statue that holds special meaning for the Cambodians—Ta Reach (Vishnu).

October 19, 2006

Leslie Carlyle, head of conservation, Tate, London, will present "Van Gogh's Paint: Was It Special?" a lecture on recent research into the paint materials and techniques used by van Gogh and how these may have contributed to the characteristic paint surfaces that distinguish his works.

November 9, 2006

Robert Grenier, manager, Underwater Archaeology Section, Parks Canada, will speak about the importance of preserving the world's underwater cultural heritage.

Postdoctoral Fellowship

The Postdoctoral Fellowship in Conservation Science is a two-year position in the GCI's Museum Research Laboratory (MRL), open to those with recent doctoral degrees in chemistry or the physical sciences.

The postdoctoral Fellow will be an integral part of the MRL and will work closely with conservators and curators to address questions of authenticity, provenance, and artists' technique. The Fellow will assist in the evaluation of conservation treatment programs and conduct research on the properties and behavior of materials found in works of art. The Fellow will be exposed to the wide variety of materials composing works of art, as well as to the different needs and priorities of the various conservation subdisciplines (paintings, decorative arts, sculpture, antiquities, and works on paper). The Fellow will also be encouraged to develop an independent research project stemming from or relating to works of art.

The application deadline for the 2007–09 postdoctoral fellowship is November 1, 2006.

Getty Graduate Internships

Applications are now being accepted for Getty Graduate Internships at the GCI for the 2007–08 program year. The Graduate Internship program offers full-time paid internships for graduate students currently enrolled in a graduate course of study or for students who have recently completed a graduate degree who intend to pursue careers in art museums and related fields of the visual arts, humanities, and sciences.

Internships are also offered in the conservation laboratories of the J. Paul Getty Museum and the Getty Research Institute. The application deadline for the 2007–08 program is December 15, 2006.

Conservation Guest Scholars

The GCI is pleased to welcome its 2006–07 conservation guest scholars. The Conservation Guest Scholar Program is a residential program that serves to encourage new ideas and perspectives in the field of conservation, with an emphasis on research in the visual arts (including sites, buildings, and objects) and on the theoretical underpinnings of the field. This competitive program provides an opportunity for conservation professionals to pursue interdisciplinary scholarly research in areas of general interest to the international conservation community.

Scholars—in residence at the GCI for periods of three to nine consecutive months—are given housing at a scholar apartment complex, a work space at the GCI, a monthly stipend, and access to the libraries and resources of the Getty.

Applications for the 2007–08 scholar year are currently being accepted. The application deadline is November 1, 2006.

2006–07 Conservation Guest Scholars

Gilberto Artioli, University of Milan
March–August 2007
Analytical Methods and Techniques in Cultural Heritage

Brian Egloff, University of Canberra
September–October 2006 and April–July 2007
Drafting ICAHM Charter Guidelines: A Theoretical Review and Applied Process

John Fidler, English Heritage
October 2006–March 2007
Raising the Bar: Setting Standards for the Achievement of Competency in Building Conservation by the Design of Model Curricula, Lesson Plans, and Resources Guides for the Training of Architects in Higher Education and Continuing Professional Development

Sophia Labadi, World Heritage Centre, UNESCO
November 2006–April 2007
Outstanding Universal Value: Contradictions, Problems, and Perspectives

Bertrand Lavédrine, University of Paris, Panthéon-Sorbonne
May–July 2007
Reshaping a Conservation Science Program for Conservators

John McElhone, National Gallery of Canada
May–August 2007
Photographic Printing Media from the 1850s

Maria Nuria Sanz, World Heritage Centre, UNESCO
December 2006–March 2007
Research for the nomination of the Qhapaq Ñan to the UNESCO World Heritage List

Iwona Szmelter, Academy of Fine Arts, Warsaw
January–March 2007
Advanced study on the contemporary theory of conservation-restoration for the forthcoming textbook "History and Theory of Conservation versus Specific Role Conservation: Restoration as a Branch of Science and at the Same Time of Art"

How to Apply for the Fellowship, Internship, and Scholars Programs

Detailed instructions, application forms, and additional information are available online at
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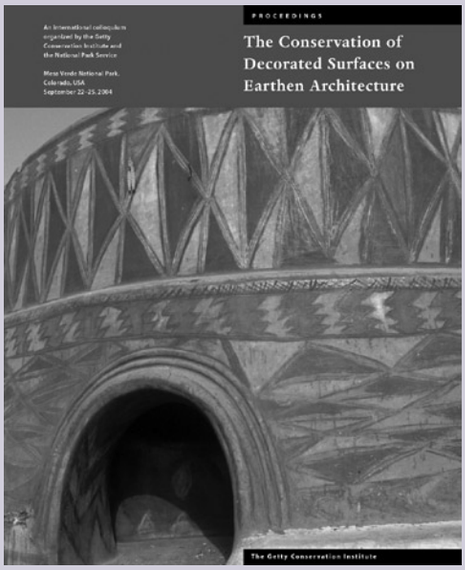
Fax:
310 440-7703

E-mail:
gradinterns@getty.edu or researchgrants@getty.edu

The Conservation of Decorated Surfaces on Earthen Architecture

Edited by Leslie Rainer and Angelyn Bass Rivera



For millennia, people of all cultures have decorated the surfaces of their domestic, religious, and public buildings. Earthen architecture in particular has been, and continues to be, a common ground for surface decoration such as paintings, sculpted bas-reliefs, and ornamental plasterwork. This volume explores the complex issues associated with preserving these surfaces. Divided into four themes—archaeological sites, museum practice, historic buildings, and living traditions—it examines the conservation of decorated surfaces on earthen architecture within these different contexts through case studies from Asia, Europe, Africa, the Middle East, and the Americas.

The publication is the result of a colloquium held in 2004 at Mesa Verde National Park, Colorado, coorganized by the Getty Conservation Institute and the U.S. National Park Service (NPS). The meeting brought together fifty-five conservators, cultural resource managers, materials scientists, engineers, architects, archaeologists, anthropologists, and artists from eleven countries to present recent conservation work and discuss possibilities for future research and collaboration.

Leslie Rainer is a senior project specialist and wall paintings conservator at the GCI. Angelyn Bass Rivera is an architectural conservator with the NPS at Bandelier National Monument.

220 pages, 9 × 11 inches
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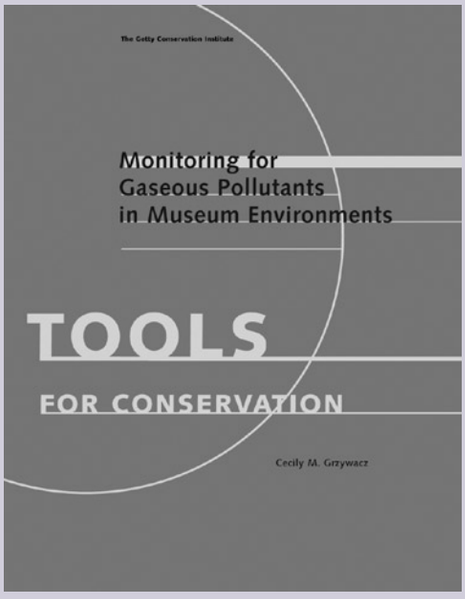
Monitoring for Gaseous Pollutants in Museum Environments

By Cecily M. Grzywacz



Cultural property inside museums can be threatened by outdoor pollutants, such as automobile exhaust fumes, and by pollutants generated from indoor sources, such as gases from cleaning products. Indoor-generated pollutants generally pose the greatest threat to artifacts because of their continuous and close proximity.

The focus of this volume, based on the Getty Museum Monitoring Project and case studies, is environmental monitoring for common gaseous pollutants, with an emphasis on passive sampling. The volume begins with an overview of the history and nature of pollutants of concern to museums and a discussion of the challenges facing scientists, conservators, and collections managers seeking to develop target pollutant guidelines to protect cultural property. Subsequent chapters address passive sampling, the planning and conducting of an air quality monitoring program, and the interpretation of results and mitigation considerations. The appendix is a comprehensive compilation of the major gaseous pollutants encountered in museums, their sources, and the materials at risk.

Cecily M. Grzywacz is a scientist at the Getty Conservation Institute.

160 pages, 8½ × 11 inches
17 color and 19 b/w illustrations, 13 tables
paper, $65.00