

Issues in Conservation Documentation: Digital Formats, Institutional Priorities, and Public Access

London

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Issues in Conservation Documentation: Digital Formats, Institutional Priorities, and Public Access

Conservation documentation has historically been created in print form (including paper files, typed or printed documents, and film-based images). The shift to digital forms of documentation poses new problems and offers new opportunities that must be confronted as we consider the future. While crafting a set of expectations for future digital documentation, we must also consider the advisability of retrospective digitization of existing print records.

The complex issues of access to conservation information must also be considered. How and when should information be shared, and what kinds of audiences—professional? public?—should have access? What are the primary issues that must be taken into consideration in the areas of policy, ethics or values, and resource allocation?

All of these topics are matters of institutional priorities, requiring discussion and decision making at a variety of levels, including directors, curators, conservators, educators, and all who have an interest in museum collections information.

This meeting will provide a forum for a variety of museums to share and compare their experiences and priorities, and to learn whether or not there is a consensus concerning the value of providing access to this kind of information.

Preliminary Questions Circulated in Advance

I. Past and Current Practices: Issues of Access to Conservation Information

Is any or all documentation in its current form shared with other professionals in your own museum? Is it important that this be facilitated?

Is any or all documentation in its current form shared with conservation professionals in other museums? Is it important that this be facilitated?

Is any or all documentation in its current form available to any interested individual such as a freelance conservator, scholar, or reporter, or to the general public?

Are there new or changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

Should a distinction be made between treatment-related conservation documentation and technical studies of artists' materials?

Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience? Are there specific exceptions in an affirmative or negative response to this question?

Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

Are there publications issues that result in individual or departmental protection of information (i.e., refusal to share or release information for fear of someone else publishing it)?

II. Digitization of Conservation Information

Is conservation documentation woven into the broader context of collections information? Purely technical issues aside, should conservation information be treated differently than other types of object-cataloguing information? Is conservation documentation more like the non-public financial information—such as price paid and current insurance value—also tracked in collection information systems?

Should all previous records ideally be digitized? If so, should the original documents (which obviously have intrinsic value) also be preserved? What are the financial implications of these decisions, and would retrospective digitization be practical even if it is desirable?

Are there aspects of traditional documentation or of the process of creating it that deserve attention so that valuable information does not get lost in the creation of documentation as digital files? The current practice of adding comments from visiting professionals to the file as a note, for example, might be more difficult in digital documentation. On the other hand, if conservation documentation is publicly available to some extent, should submitting comments and questions be more easily facilitated?

Issues in Conservation Documentation:

Institutional Summaries

Addendum to April 2006 Summary

While the state of conservation documentation policy and practice at the Art Institute is largely the same as was reported in the first submission, a number of developments have occurred since the April 2006 meeting.

Partially as a result of the Mellon foundation's conservation documentation initiative the museum's director, Jim Cuno, created a new vice presidency for collections management, imaging and information technology to provide leadership and strategic vision in this critical area.

The initial review of our collections information management system, conducted as result of the new vice presidency, has resulted in a number of decisions regarding the strategic direction of future developments for the Art Institute collections information management system, CITI (Collection Images, Text and Index). First implemented in 1992, with substantial improvements added in 1997, 1999, and 2004, the most recent version, CITI III, handles data related to collection objects, agents (artists and donors), places (geographical and object locations), loan transactions and exhibition management.

Among the future enhancements to CITI is the plan to build a robust digital asset management system based upon the open source software, DSpace, which was developed by MIT and Hewlett-Packard. The system will be capable of handling digital files of all kinds including images, text documents, PDF files, audio and movie files, spreadsheets, and an array of technical output from analytical instruments in the conservation science labs. The system will allow multiple users to associate digital records with object records in the database, and therefore the system effectively provides a way of interconnecting curatorial and conservation records.

These plans to build a digital asset management system grow out of a recently completed Art Institute project to develop a functioning software system that archives and manages digital architectural design drawings, images, and related files. The plans for the system, DAArch, were described in 2004 and an executive summary can be found in the following document: http://www.artic.edu/aic/collections/dept_architecture/dddreport/OC.pdf.

Another enhancement to CITI will be the addition of several text fields in the database for critical conservation information, summary condition statements, and display, storage, and handling requirements. These additions are an enhancement of the existing object description metadata intended to work in conjunction with and point to the digital asset management system; they do not constitute a comprehensive data model to handle detailed conservation information.

Allied with these enhancements to the internal CITI system, the Art Institute has recently redesigned its Web presence to support better public access to a selection of records representing the permanent collection. The publicly searchable database on the Web is linked to the internal CITI system such that changes made by the curatorial and conservation staff will be reflected immediately on the World Wide Web. As such, we now have a vehicle to disseminate any kind of information we choose to make available for public consumption. We plan to begin internal

discussions which we hope will lead to a new policy of making selected conservation information, and technical images available to the general public. In the coming year we also plan to add a “zooming” tool with the potential to allow user access to high-resolution images.

April 2006 Summary

Access to Conservation Documentation

Is any or all documentation in its current form shared with other professionals in your own museum? Is it important that this be facilitated?

Conservation files in hardcopy form are readily available to the museum’s curators. Information is freely shared as needed. Much, but not necessarily all of the information in the conservation files is duplicated in the curatorial files. The reasonable proximity of most curatorial and conservation offices facilitates communication and sharing of information. A file server has been used to provide internal museum network sharing of digital text and image files for catalogue projects.

Is any or all documentation in its current form shared with conservation professionals in other museums? Is it important that this be facilitated?

We make a great effort to share information with independent scholars, and conservators and curators from other museums. If the request first comes to Conservation, we contact an appropriate curator and discuss the request to decide how to proceed. Requests for information range widely in respect to specificity and complexity. The number of requests varies from one part of the collection to another. Painting Conservation receives 5 to 10 requests per year, though the frequency appears to be increasing. Objects Conservation receives approximately 10 inquiries per year and Paper Conservation receives 10 to 15. Only rarely does Photo Conservation receive requests for technical information. Fulfilling requests requires a staff member to review the conservation file in order to collect the relevant information. When the existing documentation is not adequate to respond to the request, the artwork is sometimes brought to Conservation for new examination. Some inquiries can be answered with little time and effort, while others may require days for examination and documentation. Collection catalogue projects have provided important opportunities to compile documentation that can be shared with a minimum of new effort.

Is any or all documentation in its current form available to any interested individual such as a free-lance conservator, scholar, reporter? or to the general public?

Not necessarily. Inquiries are dealt with on an individual basis. Requests for specific information might be answered via letter or e-mail. Files are generally reviewed to check for sensitive content before they are shared with a visiting scholar. Sensitive content might include negative comments on previous treatments. Trusted professional colleagues are generally given the most open access to information, including the opportunity to read the complete conservation file, make notes, view technical images, and photocopy selected material, including treatment and examination reports. Students might be given the same kind of access if their research interests appear to be serious. A journalist would probably not be given free access to conservation files. Providing access to files and responding to inquiries may take significant amounts of staff time.

Are there new or changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

Not sure.

Should a distinction be made between treatment-related conservation documentation and technical studies of artists' materials?

Both treatment documentation and technical studies might contain sensitive information related to condition, authenticity, and previous treatment. There may be valid reasons for limiting access to this information or at least for controlling how the information is shared.

Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience? Are there specific exceptions in an affirmative or negative response to this question?

There are educational benefits, possibilities of broadening the museum audience, stimulation of new research. The result may be new information about pieces in the museum's collection. Certain kinds of information may be difficult to understand or can be readily misinterpreted by the general public. Professionals are better able to assimilate and interpret technical information.

Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

Yes, absolutely. This kind of information is integral to gaining a thorough understanding of a work of art. Better overall understanding of techniques and materials leads to more effective preventive conservation measures and preservation initiatives.

Are there publications issues which result in individual or departmental protection of information (i.e., refusal to share or release information for fear of someone else publishing it)?

This question comes up, especially when examinations and technical studies are done in preparation for exhibition or a scholarly catalogue. Conservators and/or curators may wish to protect certain information until research may be published. This kind of situation would be addressed on an individual basis.

Digitization of Conservation Information

Is conservation documentation woven into the broader context of collections information? The purely technical issues aside, should conservation information be treated differently than other types of object cataloguing information? Is conservation documentation more like the non-public financial information – such as price paid and current insurance value – also tracked in collection information systems?

Yes, conservation documentation is an integral part of collections information and should be treated similarly.

Conservation documentation at AIC exists in both paper and digital form. Pre ca. 1990 material is almost entirely hard copy. This includes written reports, brief notes, annotated images

and diagrams, technical images, and analytical information. We have an extensive collection of x-rays of AIC and non-AIC paintings, but only recently have we begun to digitize newly taken x-rays.

Post ca. 1990 documentation is mostly both hard copy and digital. Hard copy is still considered the most reliable backup. Conservation documentation is not generally contained in the AIC's collections management database. We are working toward adding conservation documentation capabilities to the database, but making this system a universal repository for conservation documentation seems a distant goal.

We have made technical progress in developing a means of sharing technical images and reports via the museum's intranet. Image and document files are placed on a computer server that may be accessed via the intranet by any staff member having the requisite privileges. This system is being used for our ongoing modern catalogue project, so curators may read reports and view IR and x-ray images from their office computers. In the future, one can envision a collections management database that would provide access to the text and image files on a server.

Access to this information would need to be tailored to the status of the individual.

Should all previous records ideally be digitized? If so, should the original documents (which obviously have intrinsic value) also be preserved? What are the financial implications of these decisions and would retrospective digitization be practical even if desirable?

In an ideal world, all earlier records would be digitized, but this seems like a time-consuming and costly task, with limited benefits for the museum's staff. There would almost surely be some loss of quality in the transposition of image files from analog. Some information may lose contextual meaning when it is transferred to digital. Access to the original would certainly remain important in critical instances.

Are there aspects of traditional documentation or of the process of creating it that deserve attention so that valuable information does not get lost in the creation of documentation as digital files? The current practice of adding comments from visiting professionals to the file as a note, for example might be more difficult in digital documentation. On the other hand, if conservation documentation is publicly available to some extent, should submitting comments and questions be more easily facilitated?

One can look at a file folder to grasp the scope of information that it contains. That can be more difficult to do with a database, where one needs to be familiar with the structure of the database and adept at using it to find the necessary information. It is easy to file a piece of paper in a folder. Adding data to a database can be more difficult and must be done accurately and consistently for it to be reliable, thus requiring dedicated staff members for this purpose. Conservators report that updating databases takes away from the time they have available for bench work.

Addendum to April 2006 Summary

The British Museum Position

The position of the British Museum towards conservation documentation and wider issues of documentation has not changed greatly in the year that has passed since the initial submission was made. The text prepared before the New York meeting covered two broad areas: the digitisation of conservation documentation and the Museum's views on questions of access.

Conservation Documentation

The practices for digitisation described in the section 'Digitisation of Conservation Information' are still current, although a recent analysis has been made of the long-term usefulness of recording and retaining some classes of information, with a view to simplifying the processes to free more time to concentrate on recording essential data. The analysis is the prelude to the Mellon-funded pilot project, the progress on which is described below.

Access

The Museum is moving forward with plans to release curatorial information in the Merlin system in a series of stages in conjunction with the development of the new British Museum website. The first phase, scheduled for launch at the end of May 2007, will include about 240,000 Merlin records of which 93,000 will have attached images. The records included in the first phase are for 'flat art', almost all works on paper, from across the collections.

The Museum has also decided to adopt the approach to copyright proposed by Mark Jones at the Victoria and Albert Museum, which is to deem all publications with a print run of less than 4,000 as being non-commercial and to waive all reproduction fees on such cases. It will also later this year install a system of 'help-yourself' downloading of image files of a size suitable for most scholarly reproduction. This will mean that available images of works in the collection can be made available to scholars free of all costs, both of supply and of reproduction fee. The same principle will be adopted with conservation images when they are added to the website.

Mellon Pilot Project on Conservation and Science Documentation

This pilot project has recently been launched. Sam Wood, the Technical Support Officer in the Documentation Group, has been appointed project manager and he is at present gathering information about how data are recorded and used in the Science and Conservation Groups with a view to adapting the present system, or identifying a new system. Sam Wood is working closely with a team of conservators and scientists to ensure:

- that the system is integrated into the current Collections Management System;
- that the system allows all data recorded to be compatible across the collections, conservation and science databases;
- compatibility with current systems in use at the Museum (the Merlin, Digital Assets DataBase (DADB) and Loans) and future upgrades to the Collection Management System;
- efficient, accurate and comprehensive recording of incoming and outgoing objects and the data generated;
- that the conservation and science information can be published on the Web as part of the Merlin plan.

As some conservation data are already recorded on the Merlin system, while no science data are stored digitally, two options are being considered:

- to amend the data structure for the conservation records to be more relevant and more useful and to produce a new standalone science database that is compatible with current and future British Museum database systems;
- to develop a new standalone conservation and science database that is compatible with current and future British Museum database systems and to migrate existing conservation records to the new system.

Once the first phase of the project is complete, a plan for the implementation of the next phase will be produced and staff engaged to work on the development of the databases and the transfer of some records to the new system(s). Staff recruitment is expected in the second quarter of 2007, with the next phase beginning in the third quarter.

April 2006 Summary

The Merlin System

Conservation documentation at the British Museum forms a part of the wider information system for object information, which has been developed since the late 1970s. The current primary database for the management of information about registered objects in the museum collections is dubbed Merlin. This system was developed in 2000 by System Simulation Ltd (SSL), using the MUSIMS information management system developed for Museums, Galleries and Image Libraries, which is based on Index+ search and retrieval software. Data were successfully imported into Merlin from the previous museum database, called Magus. Merlin has a common set of fields (some 500 in total) for all objects. Some are core fields that are used for every object, such as object number, location, description, materials, techniques, dimensions, date, acquisition details and production information. In addition, varying supplementary fields are used for different objects depending on their type, such as find spot, ethnic group etc. The depth and quality of information available on Merlin for a particular object varies, depending on how much is known about it and the quality of

the data entry. But the system allows for unlimited real-time updating, and for texts of unlimited length. Merlin is backed by thesauri / authority files to which a great deal of care has been given. The major such files are of personal names (c.135,000 records), materials, techniques and geography. Other files, such as ethnic group names and subject matter, are still in a rudimentary state and need development.

The Merlin database currently holds a total of nearly 1.5 million records, representing some 2.5 million objects. To these have so far been added images of nearly 68,000 objects since the facility was introduced in late 2004. Half of the museum's curatorial departments now have records for all their objects, with the possible exception of very recent acquisitions. Records are still being created for the other four departments (Prints & Drawings, Coins & Medals, Ancient Near East and Prehistoric & Europe). The latter two should be finished within a few years; the first two will take many years longer because of the huge size of their collections.

The Merlin database is currently available only inside the museum, although a small selection of 5,000 objects forms the core of the COMPASS online introduction to the collection, available through the museum's Web site: <http://www.thebritishmuseum.ac.uk/compass/index.html>. A five-year scheme has just been launched to make the entire database available through the Web as soon as possible, but in any event no later than 2010. The scheme also aims to add the entire existing stock of photographs of objects to the database (250,000), and scan directly about 150,000 more objects. It will also add by OCR technology almost all existing published catalogue texts from the past century.

Digitisation of Conservation Information

Conservation Merlin

Detailed conservation records are held within the Merlin system, but on a separate database (Conservation Merlin), which is linked to the curatorial records held in the main Merlin database. The linking works in both directions: the Conservation module draws on information in the main Merlin record, while certain fields are exported back and are visible within the main Merlin record. The full conservation record is currently only accessible to (and editable by) conservators; curators see the abridged version on Merlin. These computerised records contain information relating to conservation investigation and treatment; the data structure of the module includes fields for condition, treatment, conservation recommendations, and details of X-radiograph and photographic record numbers.

In the past (pre-1990), conservators at the British Museum recorded their observations and conservation treatments on paper records. Supplementary information including simple diagrammatical representations of objects was drawn on paper – known as Technical Information Records (TIR). Currently there are approximately 42,000 existing paper treatment records with text, and approximately 900 TIRs. In addition, there are approximately 2,500 x-radiographs.

Computerisation of conservation documentation began in 1990 using the Magus database. At this point the paper treatment records were no longer produced, although the creation of TIRs continued. When Merlin superseded the Magus system in 2000, all records in Magus were transferred to Merlin.

Legacy Conservation Documentation

For almost all the older conservation records, before the advent of Magus/Merlin, only paper-based documentation exists. When, prior to the establishment of a museum-wide conservation department in 1975/6, examination and treatment was conducted within the curatorial departments, these records were made on cards in formats developed by each department, and individual to that department.

Later post-1976 card records of conservation treatments are more uniform and are stored in an envelope containing the conservation history of a particular object. In addition to the treatment report, this envelope often contains photographs, X-radiographs, annotated drawings or technical drawings of the construction of an object. However, each conservation section has a separate system for filing X-radiographs and photographs.

Current Practice in Conservation Documentation

All new conservation processes, including visual examination or condition checking, are now recorded on the Conservation Merlin system. If an object comes for re-conservation, its previous conservation details are entered on the Merlin system from the paper records and the paper records are then destroyed. There is, however, currently no systematic programme of transferring information from the paper record into the Merlin system.

Most images made in the Conservation, Documentation and Science Department since 2005 are digital; after 1 April 2006, all new visible images made during examination or treatment will be digital. The digital images are entered on the Digital Asset Database (DAD) and a link is created between the record on DAD and the entry for the object on the Merlin system, so that these images are visible when consulting the Merlin record. X-radiographs will continue to be made photographically, but the images are always scanned at high resolution and the digital file will be stored on DAD and linked to Merlin. Where they exist, the TIRs are scanned, stored on DAD, and the image is linked to the Merlin database.

Access to Conservation Information

Within the Museum

As explained before, at present, curators see only part of the conservation record and have no 'write' access to it. We believe that increased access for professional colleagues in the museum will improve standards of conservation documentation, as the records will be under more direct scrutiny and this will create greater professional accountability. Such shared access prevents duplication and allows errors in the information to be identified more readily. So, from early 2006, designated representatives in the curatorial departments have been able to alter the information in Conservation Merlin where this is at variance with the main Merlin. Wider access facilitates interdisciplinary study of the collection. Sharing conservation documentation with professionals within the museum can also promote good internal decision-making. For example, providing access to condition information could aid curators who are beginning to consider the suitability of objects for loan or display. Finally, allowing and encouraging increased access to conservation records will help to raise the profile of conservation within the museum itself. The next upgrade / replacement

of the Merlin system will integrate the fields from Conservation Merlin into the main Merlin system and will include provision for the inclusion of scientific reports.

Outside the Museum

Although the Merlin and Conservation Merlin documentation systems are not currently accessible outside the museum, the information they contain is already in practice shared with professionals outside the museum by sending paper printouts or by downloading sets of records electronically. One of the purposes of the Merlin Web project is to make these data more readily available, and it is intended in due course to make the conservation information available along with the rest of the curatorial information.

Sharing the conservation database will allow conservators to provide information to colleagues in a quick and efficient way and promote dialogue between different professional groups within and outside the museum. For example, objects excavated from Dover Buckland Anglo Saxon cemetery site in 1994 were sent to Conservation directly from the field. Conservators treated the objects and entered their observations and treatments onto Merlin. Copies of this initial work were supplied to British Museum curators and external find specialists, and formed the backbone of what was to become the catalogue for the published excavation report. This information provided an axis for discussion among conservators, curators and scientists, and promoted the work of conservation and demonstrated the benefits of internal collaboration.

Allowing other museum professionals access to conservation records can promote a dialogue between institutions – either to challenge or to share similar experience on particular common concerns of deterioration or treatment. Sharing information can allow smaller organisations with fewer staff or resources to forge partnerships with large institutions and enable them to participate in a wider debate. Sharing conservation information may help to influence treatments where conservators are not always available, for example, in developing countries or areas of conflict or war. Conservators at the British Museum helped to train a group of Iraqi conservators in 2004. On their return home, reference to British Museum treatment records aided the Iraqis' learning and acted as a reminder of materials and conservation techniques.

Large collections, particularly archaeological collections, are often split between museums. For example, material from the Layard excavations at Nimrud is split among a number of museums including the British Museum and Bristol City Museum. Sharing conservation information relating to split collections can forge new relationships with relevant partners and encourage new debate and discovery.

Sharing conservation information promotes learning at all levels. Making information available to schools and universities would promote and extend the use of the collection (both database and objects) as a research tool and foster an interest in conservation. Wider access to detailed, subject-specific information would promote the development of individual professionals. For example, a group of coins treated recently at the British Museum was made principally of zinc, a material with which the conservators had little experience. Accessible databases would allow searches for similar material and provide a point of contact for conservators to facilitate a mutual exchange of information with other experts.

Finally, sharing information outside the British Museum promotes its duty to be open and accessible.

Public Access

The British Museum has an obligation to make its collections available to the public, so allowing access to records can be seen as an extension of this policy. There is general agreement that since the objects to which these records refer are held by a publicly funded museum and the research or treatment on which the record is based is also publicly funded, the information should be freely accessible.

As the Merlin system is not accessible outside the museum, public access at present is through individual enquiry. However, over the next few years, development work will be taking place to allow the entire Merlin system to be placed online. As part of the development, the number of records will be increased, conservation records will be fully integrated and many more images incorporated.

There is often little visual presence of conservation in galleries and little interaction between conservators and the general public. Having access to conservation information would go some way to redress this imbalance as well as promote further interest in conservation.

As with enquiries from other museum users, the knowledge that records may be scrutinized has the added advantage that it increases professional accountability and responsibility, and leads to improved standards of documentation.

The Freedom of Information Act 2000 imposes a statutory duty on all public bodies to disclose information that is requested, subject to certain exclusions. The scope of the Act is well documented in the briefing document produced for this meeting by Sue Breakell, while the British Museum's policy is summarised in a separate document. Quite apart from this, the trustees have stated that as a matter of policy, all museum information should be made available on request. Indeed, the policy is to make information freely available so that requests for information are to an extent pre-empted. It is in this light that the museum has released all its files on the cleaning of the Parthenon sculptures, although this put the museum in a bad light in a highly sensitive area.

It is expected that access to some sensitive information will have to be restricted. This will include precise find location, in order to deter metal detectorists. Addresses and details about living donors will also be held back as personal information. This is in any event exempt from disclosure under the Act. Although this is not finalised, our current thinking is that the prices paid and the names of donors or vendors will be published. The museum does not make or keep current valuations of objects in its collection.

The museum has drawn up a comprehensive set of guidelines for dealing with FOI enquiries. These are on the museum intranet and include templates for several types of standard letter to deal with issues such as acknowledging enquiries, explaining that information is exempt from the Act or that the information requested is not held, supplying information, and dealing with appeals against non-disclosure or complaints.

Disadvantages of Access

To set against the advantages expressed above are some potential disadvantages. Once the information is in the public domain, the ownership of the intellectual content is difficult to protect. Concerns have been expressed about the use of unpublished work, or work-in-progress. The museum takes the view that such study is largely publicly funded and it is the museum's duty to make it available freely, with an indication of the author of the information. With changes in the nature of publishing, the act of posting data on the museum Web site is taken to constitute a form of publication in its own right. The British Museum research board is encouraging the production of good Web entries for objects as a form of permanent cataloguing and is promoting electronic publication as an appropriate route for scholarly publication. As only completed material will be included in Merlin, there remains the possibility of limiting access to 'work-in-progress'. The decision taken some decades ago that no parts of the museum collection should be considered 'reserved' led to a great increase in the use of the student rooms and a flourishing of the scholarly life of the museum. In the same way, it might be anticipated that opening all parts of the collection through freely available documentation might have a similar effect.

Other disadvantages may derive from unwitting or willful misinterpretation of the records. These will include the misinterpretation of incomplete treatments or condition assessments, or of conflicting information between curatorial records and conservation records. Experience suggests, however, that limiting access will not limit willful misinterpretation. Another danger is that untrained individuals may use the conservation methods and treatments described in reports to conduct treatments that are inappropriate for the object on which they are used.

There will inevitably be records referring to treatments applied in the past that are now considered inadvisable or unethical. It would seem best to be honest about these at the earliest possible stage in order to dissipate any suggestion that they are 'covered up', for example in the case of the cleaning of the Parthenon sculptures mentioned earlier, which has been largely defused by the release of all the surrounding information. It may be best to avoid naming individuals in these reports.

Mellon Pilot Project: An Online Collaborative Tool for Research

The Courtauld Institute of Art is currently preparing a proposal to undertake a pilot project which will produce an online collaborative tool for research use. This online tool will be used to investigate the oeuvre of the Master of the Fogg Pietà/ Master of Figline, a major but little-studied artist, active in Florence and Assisi, c.1310 – c.1330. The website will collate existing technical material and initiate fresh technical investigation. The project will focus particularly on a group of works which have been connected together as a putative polyptych. Two of the panels from this ensemble belong to the Courtauld Institute, London (*Saint Lawrence*) and the Harvard University Art Museums (*Pietà*). Other related works are located in the following collections:

- Worcester Art Museum, Worcester, MA: *Saint Francis* and *Saint Philip*
- Avignon, Musée du Petit Palais: *God the Father*
- Parma, Magnani-Rocca Foundation: *Saint John the Baptist's* Heerenbergh, C.J.H. Van Heek Collection: *Saint Paul* and *Saint Lucy*
- London, Private Collection (on long-term loan to the Courtauld Institute of Art Gallery): *A Bishop Saint*
- Rome, Private Collections: *Saint Cosmas/Damian*, *A Bishop Saint*, *Saint James the Greater* and *Saint Peter*

Thus far, the project has secured access to seven of thirteen works, and has ensured the participation of members of the Harvard University Art Museums, the conservation department of the Worcester Art Museum, the Opificio delle Pietre Dure, Florence (OPD) and Instituut Collectie Nederland (ICN) as partners in the technical study of works. Colleagues from the OPD have visited the Courtauld to discuss and examine the *Saint Lawrence* panel, and will be sharing their planned studies of the Master's Crucifix (Florence, S. Croce) and of fresco paintings in S. Croce attributed to the same artist, currently being conserved in Florence. Contact remains to be made with the Musée du Petit Palais, Avignon, and a private collection in Rome. Dr Joanna Cannon and Dr Caroline Campbell have recently made an extremely fruitful visit to Harvard University Art Museums and Worcester Art Museum, exchanging information regarding the methods and materials of the Master, viewing conservation records, x-radiographs and infrared reflectograms. Concurrently talks have begun to initiate collaboration in the development of the online tools required, working with an expert partner in the digital arena.

The questions raised by the Mellon Foundation regarding access to conservation documentation highlight the importance of such collaborative tools for the research environment of the Courtauld Institute of Art. Whilst the Courtauld has long enjoyed excellent relationships with scholars across both conservation and art historical disciplines, in the past, collaboration has been best facilitated by physical proximity. The Web-based tool developed will facilitate the sharing of

images and text, and promote an online discussion of the material gathered together by the project. It is hoped that the experience of using this research website will be some substitute for the close examination of objects in person, through the scrutiny of high quality images and technical material. The opportunity to invite colleagues to participate actively in ongoing research online is ideally suited to the study of objects whose constituent parts have become scattered over time, by an equally geographically scattered group of experts.

Conservation Documentation

Technical and Conservation Documentation at the Courtauld Institute of Art is primarily the responsibility of the two conservation departments in the Institute: the Department of Conservation and Technology and the Wall Paintings Conservation Department. These two departments offer a three year postgraduate education in conservation, awarding a Postgraduate Diploma in the Conservation of Easel Paintings and MA in Painting Conservation (Wall Painting) respectively. The Department of Conservation and Technology is also responsible for the study, care and conservation of paintings in the Courtauld Institute of Art Gallery, and hosts the Gallery's Paintings Conservator in its studios. Works of art on paper are conserved by the Gallery's Prints and Drawings Conservator, who retains the associated conservation records.

The relationship between the Courtauld Institute of Art Gallery and the Department of Conservation and Technology is perhaps most pertinent to a discussion of the issues related to sharing and access to conservation related data. Records relating to the Gallery collections are held within the vast and diverse range of conservation and technical documentation held in the Department of Conservation and Technology. This includes:

- over 2000 condition, technical and treatment reports produced by students both as part of their examination process and for the owners of works, describing work undertaken as part of their training and assessed by annual *viva voce* examination;
- treatment reports produced by staff of the department;
- a considerable archive of some 10,000+ photographic negatives taken during conservation treatments including glass negatives dating back to the 1930s;
- research into conservation methods and materials, with associated materials samples, usually undertaken as part of final year research projects or as part of doctoral research;
- technical studies of paintings undertaken by students and staff of the department, including final year research projects, and their associated paint cross-sections;
- over 11,000 uncatalogued x-radiograph plates of paintings in public and private collections dating from the mid 20th century to present day.

Amongst the material held in the department archives, a significant proportion relates to works from other public collections and private owners. No standardised access or use agreement currently exists between the department and its external clients. Documents related to other collections would ordinarily be treated as private and non-publicly accessible, although other

institutions, such as the National Trust, have in the past signalled their interest in making materials such as x-radiographs of their paintings available through digitisation.

Currently the only records which are treated as standard library holdings rather than archive are the final year research projects. These are made available in a similar manner to other research theses within the Institute, through the Institute's libraries. The intellectual property rights of the author over this material are asserted, which protect against the contents being published without the author's permission.

Access to Conservation Documentation

Access to documentation on Courtauld Gallery paintings to internal and external parties is governed largely by a desire to share information, and is only restricted by the considerable issues of staff resources to make this material available. The variability of the existing documentation and the necessity to provide additional interpretation for useful access demands more specialist time and resources.

It is part of the Institute's strategic plan to capitalise on the unique position of the Institute, with its Gallery, art history and conservation departments, to promote internal sharing of information to contribute to excellence in teaching and research. As part of this policy the Department of Conservation and Technology makes available x-radiographs and infrared reflectograms for MA study. Gallery dossiers and conservation records are made available to students researching objects in our own collections as part of their MA 'mystery object' essay. BA students have studied in the department as part of a course entitled 'Object Lessons', taught jointly by art history and conservation staff, based on early Netherlandish and early Italian painting. These activities all rely upon the availability of department staff to interpret and contextualise material.

To promote sharing of information with other conservation professionals, the recent 'Visiting Conservator' programme, under the auspices of the Research Forum, invited Elke Oberthaler, Head of Conservation of the Kunsthistorisches Museum, Vienna, to examine the conservation material related to 16th century Venetian paintings in our collections. In addition we regularly host visits from conservation students from other international and national programmes, most recently from the Copenhagen programme.

To enable public access to conservation materials the digitised x-radiograph mosaics of 23 paintings from across the galleries collection have been put online as part of the Art and Architecture collections online website. In 2006, Art and Architecture had over 950,000 individual visitors to search its collections. On a smaller scale, the Department of Conservation and Technology has hosted visits from school groups, viewing work in progress in the studios as well as technical examination materials. This year the Courtauld Institute of Art Summer School will study early Italian painting techniques in the department, engaging with technical material and making replica panels.

It is our general belief that sharing of conservation documentation more widely has great benefits for our students and the profession as a whole.

The principle restrictions to access are staff time and resources. Besides the important work of interpreting and contextualising data for the non-conservator, data retrieval alone presents

enormous challenges. A database of all paintings treated in the Department since 1989 and their related conservation documentation is currently available to staff within the Department via the server and it is intended that this be extended to cover all paintings treated in the department since the mid-twentieth century. Currently much of this earlier material is catalogued in paper records, if at all. A database of paint cross sections was created in 2000 but is only accessible via one work station in the department.

In order to manage requests to view conservation and technical documentation, much of our archival material is treated as 'Closed Access' enabling it to be viewed by appointment by students and staff of the Institute. Visiting scholars use the Institute Book Library as a 'library of last resort', and this policy is generally applied to our conservation library and archival holdings. We receive few requests to view conservation reports that relate to works in our collections, and supervised access has been agreed on an individual basis. This may be a result of the lack of an easily available catalogue of our holdings in this area. We are currently aiming to publish a complete catalogue of our paintings collections, and as part of this cataloguing it is likely that details of when and where paintings were last conserved would be published. This may lead to an increase in requests to view the records.

An important ethical proviso is raised in the context of an educational institution: the balance between accessibility and student privacy must be maintained in allowing more public access to our conservation documentation. Conservation reports written by students describing treatments undertaken are often written with a degree of candour and reflective self-criticism that must be seen in the educational context in which they have been created. As such, it may be appropriate to remove student names from the conservation records before making them publicly available. Records may also contain original technical research undertaken by students. Treating this material in a similar manner to research projects, by asserting the author's intellectual property, would protect such reports from being quoted in publications without permission.

Digitisation of Conservation Records

Ideally the complete digitisation of our legacy conservation documentation would be undertaken to conserve this archive for future scholars. Access would be greatly improved by at a minimum producing a digital catalogue of conservation records related to our own collections. Attempts to extend our existing database are restricted by staffing levels.

At present there is no indication from gallery dossiers that a painting has been conserved, or an x-radiograph has been taken. A synopsis of conservation history would ideally be added to curatorial records currently held in databases. Archival materials are actively degrading – the condition of our x-radiograph archive and early photographic negatives is deteriorating. The digitisation of this material must be a priority.

In the future, a transition must be made to an entirely digital record, including treatment report and digital photographs. Currently it is felt that the quality afforded by large format black and white negatives cannot be matched by affordable digital photography, but this situation is unlikely to continue. Since 2004 students have submitted reports in both paper and digital form (on CD-Rom), but the storage of the digital record is as problematic as that of the paper record, with restrictions on server space and a lack of cold-storage.

Once materials have been digitised, access to them is theoretically simpler, although it is likely that we would still wish to retain a degree of closed access. The department, as a teaching institution, has received requests for advice on how to undertake conservation work by the general public, and there is a danger that by making the very detailed descriptions given by student reports publicly available online we would be putting a how-to guide in the hands of non-conservators. The human interaction that is afforded by the supervised access to materials allows for a degree of contextualisation and explanation from the staff member to interested members of the public.

Access to Conservation Information

Is any or all documentation in its current form shared with other professionals in your own museum or institution? Is it important that this be facilitated?

The Doerner Institut has two archives: one contains conservation documents, the other, documents and images of technological examinations. This information is shared among curators, conservators and scientists in-house on a regular basis, without difficulty.

Based on the punch-card system of the 1950s, basic information on available images and pigment reports is stored in a DBASE[®]-programmed database, which was introduced by the Doerner Institut between 1986 and 1992. The database is updated regularly; it was last updated in May 2002 and currently contains information on 6,054 paintings and 17,712 paint samples or cross-sections. A sophisticated search function enables users to search the basic object data and the results of pigment analyses. The complex search function and statistical tools make it possible to answer complex requests within a few minutes. The DBASE[®] database is accessible by staff in the scientific department, and by others on request.

The collections management database MuseumPlus[®], introduced in 2004, contains general information on technological examinations, thus providing an easy overview of existing documentation in the archive for all in-house users. MuseumPlus[®] also contains a “conservation” module, where additional information about condition, treatment, links to scientific reports etc. can be entered. In agreement with the curators, access to this module is restricted to museum staff.

Is any or all documentation in its current form shared with conservation professionals in other museums? Is it important that this be facilitated?

Due to its well-organized databases and the rich holdings of more than 25,000 art objects of its parent institution, the Bayerische Staatsgemäldesammlungen, the Doerner Institut receives approximately 50 – 100 requests each year from conservation professionals worldwide. Requests are answered individually and a determination is made regarding the level of access and cooperation that can be granted. In close cooperation with the curators, the Institute attempts to answer every request, but the degree of support and cooperation varies, mainly due to limited time and staff resources. There is no explicit policy governing the extent or nature of such responses.

Is any or all documentation in its current form available to any interested individual such as a freelance conservator, scholar, or reporter? or to the general public?

A large amount of the information stored in the DBASE[®] database relates to reports on privately owned paintings, in which case legal restrictions do not allow for accessibility of this information except by the legal partners. Only if published somewhere (usually with the permission of the legal partner), is this information accessible.

Technological and conservation information on the holdings of the Bayerische Staatsgemäldesammlungen is accessible to scholars working on specific projects which are deemed to be conducted at a serious level. In our experience, most of the archival information requires careful explanation or even interpretation, so digitization would have little effect on our documentation access policy in our opinion.

Are there new or changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

We are not aware of any. Although there are political attempts to open access to all information held by the public service in general, so far the Doerner Institut is not obliged to open its archives, but must answer any request to the best of its ability. In some cases this may include the refusal to provide further information.

Should a distinction be made between treatment-related conservation documentation and technical studies of artists' materials?

Regulations governing accessibility should be the same for both. With regard to the archival structure, our existing subdivision into two archives has worked well in the past.

Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience? Are there specific exceptions in an affirmative or negative response to this question?

For a broader audience, exhibitions or publications on painting techniques and conservation issues seem more appropriate than unrestricted access to unprocessed information. In our experience, most information is probably too specific and requires an in-depth knowledge of the field to avoid misinterpretation. However, when access to such information is given, this is complemented by our comments and the opportunity for detailed discussions.

Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

If access to conservation or technical documentation is granted, this is usually supervised by a member of the Institute's staff. Discussions regarding the matter in question regularly lead to the provision of additional information such as bibliographic and other contextual information. Provenance information is made available for works from our own collection.

Are there publications issues that result in individual or departmental protection of information (i.e., refusal to share or release information for fear of someone else publishing it)?

Yes, due to negative experiences with the violation of copyright issues, e.g., of technical images. Generally, because of their rich collections the Doerner Institut and its parent institution are asked to provide information far more often than they seek it. This situation requires special tact in treating the requests. Usually, research work at the doctoral thesis level and above is supported. Generally, the Institute aims for joint publication of shared results and observations. Restricted access is allowed in the case of ongoing projects. The final decision to provide open access or not lies with the Institute.

Digitization of Conservation Information

Is conservation documentation woven into the broader context of collections information?

Yes, via the above-mentioned MuseumPlus[®] database, which also contains reports or remarks on condition, materials, treatments, and examinations. However, until now the conservation module of the electronic database has not been well accepted by conservators and usually does not cover early conservation documentation, which goes back to the late 19th century. Therefore, the traditional archives still remain our most comprehensive documentation sources.

Purely technical issues aside, should conservation information be treated differently than other types of object cataloguing information?

No, it should be treated in the same controlled way as all other object-related information.

Is conservation documentation more like the non-public financial information – such as price paid and current insurance value – also tracked in collection information systems?

Yes, via MuseumPlus[®], as described above.

Should all previous records ideally be digitized?

Yes.

If so, should the original documents (which obviously have intrinsic value) also be preserved?

Of course! This is also explicitly recommended by the company that created the MuseumPlus[®] database. The institute and its parent institution continue to hold carefully kept files of all the information collected, most of them on paper. A great concern is information on digital storage media, which has turned out to be less durable if it is not regularly copied to a more current storage media platform. Limitations of staff and financial resources seem to preclude this as an option.

What are the financial implications of these decisions, and would retrospective digitization be practical even if it is desirable?

Since 2004 a number of older reports on pigment analysis have been scanned, digitized and attached to the MuseumPlus[®] database so as to be available for curators, conservators and scientists. These paper records, some of which date back to the 1950s, in many cases are already significantly faded or the paper is no longer in good condition. However, the process is extremely time-consuming and requires additional budget and staff resources, which are not currently available at the level required. Digitization of historic conservation documents has not been started yet for the same reasons.

Are there aspects of traditional documentation or of the process of creating it that deserve attention so that valuable information does not get lost in the creation of documentation as digital files?

The resolution of scanned XR images is an issue that might be considered. Depending on the quality of technical digitization equipment available, there should be guidelines specifying the required resolution per area of the original to avoid too much loss in quality (although presumably there will always be some).

As mentioned, the long-term storage of digital data is a major concern. Generally, the durability of digital media is far less than that of paper, with the exception of paper used in facsimile machines from the 1980s on. Moreover, the density of these digital storage media is much higher than that of paper. In case of a loss, the loss of information on a piece of paper is less than with, for example, a digital tape.

What are the financial implications of digital data storage media?

This question still needs to be answered. Because most European museums are badly understaffed, guidelines and future support are required.

The current practice of adding comments from visiting professionals to the file as a note, for example, might be more difficult in digital documentation. On the other hand, if conservation documentation is publicly available to some extent, should submitting comments and questions be more easily facilitated?

Often these comments are very specific; sometimes they represent only personal opinions. Although the Doerner Institut would not promote the idea of free public access to conservation documentation, in relevant cases comments and/or correspondence are now added to the archive file and it would be easy to add a brief summary to an already-existing comment field in the MuseumPlus® database.

Addendum to April 2006 Summary

Getty Pilot Project: Image Database of the Works of Lucas Cranach the Elder

During the meeting at the Mellon Foundation in April 2006, a number of pilot projects were discussed as next steps in implementing some of the ideas that emerged. At the Getty, plans were made to design, launch and develop an image database focused upon the works of Lucas Cranach the Elder and his workshop.

During the forty years that Cranach worked as the court painter to the elector of Saxony in Wittenberg, he – and his studio – produced over one thousand paintings. His most successful compositions were repeated and copied in the workshop, resulting in multiple versions of identical subjects. The field of Cranach scholarship – notably questions of attribution – presents exceptional challenges due to the complex and prolific nature of Cranach's studio.

The Web provides an ideal venue for virtual examination of Cranach's paintings, allowing for a focused study of painting techniques based upon a microscopic viewing of the surfaces. Cranach's detailed technique and stylistic development lends itself readily to close comparison. Comparisons of relevant details between paintings are easily made, and such studies can provide a valuable tool for research. The Cranach database will be an ever-expandable repository that should eventually include not only works attributed firmly to Cranach the Elder himself, but all of the works associated with the workshop. It might eventually include works that are not accepted as either autograph or workshop productions.

It is hoped that the Cranach project will provide an occasion to construct a template that could be used for similar projects in the future. Although the initial project is based upon image comparisons, it may become possible to include technical information about the paintings as well. It would be particularly useful to build in the capability for conservators, curators, art historians and conservation scientists around the world to be able to contribute materials to the Web pages. It is also hoped that some of the content will be structured so as to be interesting and accessible for the general public.

April 2006 Summary

The J. Paul Getty Trust has at the core of its mission – which focuses upon the presentation, enjoyment, study, and conservation of the visual arts – a stated educational purpose for both general audiences and specialized professionals. The conservation departments at the Getty Museum are committed to carrying out their work within the context of this mission; as a result, there is general agreement among the conservators that broad accessibility to conservation information, in all of its varied formats, should be provided. However, there is also general agreement that there is a real need for a carefully developed institution-wide policy for development, management, appropriate use, and dissemination of the information contained within the conservation files.

Conservation information exists primarily as hard copies in individual object files within each department. Some conservation departments have routinely sent copies of condition reports and treatment records to their respective curatorial departments for inclusion in the curatorial files. The Paintings Conservation department began, in 2004, to enter all of its new conservation information into the museum's collections management system (TMS); hard copies are produced from the database for the department files.

Conservation documentation is routinely shared with interested professional colleagues, both within the museum and from other institutions. In general, information is provided when requested. Information within TMS is accessible by anyone with access to the system. All of the conservation departments noted that the most sensitive and problematic materials were to be found in condition reports for potential acquisitions. In some departments, those reports are shared with the dealer or owner of the work of art, regardless of whether or not the object is ultimately acquired; in other departments, such reports remain for internal use only, as they often contain frank assessments of quality and condition, and may address complicated issues of attribution and date.

Conservation information is also generally considered to be available for interested individuals, including the general public. There is some concern that technical information could be misused by a non-professional; this prompted repeated comments that there may be a need for editing of material before it is made available. However, inquiries from the general public for treatment reports or similar information on specific objects are (and have been historically) virtually non-existent. Curatorial departments also noted that similar requests for access to their files were extremely rare. More common requests come from undergraduate and graduate students; this information is provided upon request, usually with some editing involved. Journalists also occasionally request technical information or technical photographs to be used for articles about the ongoing work of the Getty, ranging from scientific projects at the Getty Conservation Institute to museum exhibitions. Again, this information is provided when requested, with appropriate editing.

In general, requests for access tend to focus primarily upon technical studies of artists' materials rather than treatment-related conservation documentation. In many instances, though, this information is intimately intertwined, for example, within a treatment record or condition report; again, this may require editing and interpretation before the information is disseminated.

The questions of advantages to be gained from sharing conservation documentation with a broader audience and the specific exceptions that might be made in response to this issue provoked the broadest comments with regard to the need for an institutional policy as to how this could and should be done. Concerns ranged from worries as to whether or not technical studies on thermoluminescent dating could provide sophisticated information for forgers, to worries as to whether or not both professionals and members of the general public would try to treat their own works of art using materials and methods described in existing (and often outdated) treatment records.

Yet there is a general consensus that sharing of information – beyond the immediate obligation of keeping and maintaining conservation records as part of an object's long-term history – is critical to the general mission of the Getty Trust. It is also considered to be a fundamental responsibility for the conservators, and their colleagues throughout the Getty, who produce this information. Underscoring this commitment were several comments noting that our obligation to

the public goes beyond simply making information accessible: it must be presented in a way that is educational.

There is general agreement among the conservators that any information should be shared with other professionals, regardless of whether or not it is to be used in the conservator's own planned publications. However, there is acknowledgment of the fact that this open sharing is not always paralleled in the curatorial departments, or in the Getty Conservation Institute scientific department, where information may be withheld until it has been published (and fears of losing the "right to publish" were repeatedly noted). There is also concern that a conservator's interpretation of technical information – based upon individual experience and understanding – is a critical part of conservation documentation, and that this might preclude disclosing unedited information.

There is general agreement that conservation information should be digitized – including retroactive digitization of so-called 'legacy information' – to improve access. There is also an understanding that doing so will only come about with an institutional mandate, and with institutional compliance and support. Such has proven to be the case with projects in the Paintings Conservation department, where retroactive digitization of the legacy information has finally begun (and has proven to be much less daunting and complicated than originally thought), but only after months of considerable effort to enlist the technical support necessary to undertake the process.

Finally, there is general optimism that digitization of information, if it is entered within an intuitive and flexible system, could provide a service to all interested audiences. Conservation documentation should not be managed within rigid or isolated boxes, but should interact fluidly with other collections information, thus weaving it into the programmatic life of the institution.

The Metropolitan Museum of Art

Addendum to April 2006 Summary

Mellon Pilot Project

In the wake of the April 27, 2006 meeting in New York, the Museum concluded that without completion of a systematic inventory of its conservation documentation, it would be impossible to determine a path forward. It is now undertaking a one-year pilot study of its holdings, supported by an Andrew W. Mellon Foundation Officer's Grant. The project has three essential components:

1. A complete written report of the 2004 survey of the Museum's conservators mentioned in the April 2006 summary, including the results of updated discussions with curatorial and conservation staff.
2. A detailed inventory of existing conservation documentation using three Museum departments as test areas: Egyptian Art, European Paintings, and Photographs. The Paintings and Objects Conservation Departments will also be involved in this project. The inventory will be a qualitative and quantitative analysis of the documentation. Because the documentation is accessed by a diverse pool of users, including curators, conservators and scientists at the Museum, and scholars and colleagues in other institutions, access-tracking data will also be gathered.

The Departments of Egyptian Art and European Paintings each have a long history of conservation and technical study involving conservators, scientists, and curators. This has produced a wealth of conservation and curatorial documentation of different types, the majority of which is well preserved and accessible in paper form (e.g., treatment, examination, and excavation reports, photographs, x-rays, infrared reflectograms, etc.), but not generally integrated with the curatorial records in TMS.

Photograph Conservation, while relatively new, has been a leader in the integration of conservation and curatorial information in its collections management system.

3. An evaluation of digitization and cataloguing requirements for this material, based upon sampling selected types of documents within the areas inventoried. This will provide preliminary cost models, necessary for the Museum to establish priorities for any future cataloguing and retrospective digitization initiative.

At the end of the one-year project, the Museum expects to have a clear sense of the scope, methodologies, and formats of the documentation that it has created and will continue to create in its twelve conservation and science facilities. From this data, the Museum will extrapolate the costs associated with creating, cataloguing, digitizing, and managing the documentation, and a plan for prioritizing the activities of the next several years. This will likely also include crafting recommendations for future documentation practice throughout the Museum.

In addition, the results of the pilot inventory will provide an opportunity for continued engagement with colleagues addressing these issues at other institutions, and for discussions of how our plans and priorities integrate with theirs.

The Museum recognizes the fundamental importance of its conservation documentation as a resource for conservation and scientific research and for art historical studies for its staff and for the art historical community in general. Effective tools and guidelines are a key need for managing information, as demonstrated by current efforts by the Museum to store and share its collection of digital images. This project will provide an important platform from which to base future efforts for conservation documentation management and sharing efforts, both within the Museum, and in collaboration with other institutions.

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Conservation of the collection is entrusted to five departments reporting to the director (Objects, Paintings, Paper, and Textiles Conservation, plus the Department of Scientific Research), and seven conservation laboratories within curatorial departments (Arms & Armor, Asian Paintings, Books, Textiles from Africa, Oceania, and the Americas, Costumes, Musical Instruments, and Photographs). More than one hundred scientists and conservators in twelve separate facilities are thus responsible for producing and managing conservation documentation (a term that will henceforth be used to include treatment, examination, and scientific information, including photography, unless otherwise specified).

Standards for organizing and managing this information vary from facility to facility, reflecting the traditionally high degree of independence afforded to individual departments, curatorial and conservation alike.

With a few specific exceptions (whole records for Photographs and for Textiles from Africa, Oceania, and the Americas, and outgoing loan condition reports for all objects in the collection), conservation documentation is not entered in the museum-wide collections management tool (TMS), although some departments have established their own digital catalogues. In 2004, the museum initiated a survey of conservators with a goal of determining the scope of current and retrospective conservation documentation and cataloguing; detailing the extent to which shared access is desired; and outlining next steps, which might include conducting a complete inventory of existing conservation information, setting priorities for digitization and cataloguing, developing a centralized repository (or catalogue), and building the necessary workflow tools to support documentation activities.

While standards for conservation information vary across the institution, some generalizations can be made. Information is object-centered, with files identified by accession numbers; most documentation is not filed or indexed according to treatment type, examination result, or document type. All files are open-ended, with notes, analyses, and reports added as further work is done on the objects; some types of documentation are stored separately from the main files (this is the case for radiographs, original instrumental readouts, etc.). Files are generally catalogued in logbooks, with digital databases (Excel or FileMaker Pro) increasingly being used for new files.

Conservation documentation currently includes paper files, digital texts (the transformation from paper reports to digital documents mirrors the move from the typewriter to the word

processor), instrumental readouts (including both printouts and digital records in a variety of formats), photographs, radiographs, and digital images. A final but very important component of conservation information is represented by extemporaneous handwritten notes, typically taken when examining an object, or when comparing an object to others in texts or from photographs. Individual files can sometimes be quite large: the Gubbio Studiolo documentation fills several folders, and the digital reproduction of the Unicorn tapestries is stored on two hundred CD-ROMs.

Archiving and Distribution of Conservation Documentation

Conservation files and conservation documentation in general are stored in the relevant conservation department: 95% of the conservation documentation does not circulate outside of its department.

This is not to say that conservation documentation is sealed: conservation reports are routinely used in certain administrative transactions (for instance, when an object is considered for acquisition); scientific reports (but not the raw data on which they are based) are always forwarded to the conservator or curator requesting a scientific examination; and finally, conservation reports – and in some cases whole records – are forwarded, following treatment, to those curatorial departments that request them.

The general policy across conservation departments is that conservation documentation is freely shared with the professional staff of the Museum. Records are generally held in the individual conservation departments and are available to be read, ordinarily by appointment. When conservation records are part of TMS for that curatorial department, they can be viewed by anyone who has access to the departmental database (as a museum policy, each curatorial department maintains its own TMS database, and grants or denies access to individual staff members outside of the department). Basic information on accessioned objects can be seen by anyone in the museum using a separate tool, e-Museum, which draws selected information from the various TMS databases. At present, this information does not include conservation information of any kind.

The current access policy works well for the institution, although there is a general consensus among conservators and scientists that a more centralized repository would have great benefits. Even a simple initial step such as a digital catalogue or index of conservation information would be extremely desirable. Curators have generally expressed interest in greater access to conservation documentation, although actual requests for conservation records have been relatively few.

Documentation is readily shared with conservation professionals in other museums. Appointments may be made to read a conservation file, although usually, for reasons of expediency, this information is disseminated to our colleagues by telephone or e-mail. Although the importance of this type of exchange is clear to all those interviewed, there are a variety of opinions as to how and whether these exchanges need be facilitated further. The issue of what type of information should be freely available and at what level access should be restricted seems to be a decisive factor in forming individual opinions on information sharing.

Conservators and scientists at the Metropolitan Museum of Art consider the education and training of the next generation of conservation professionals as an important part of their mission. Students at all levels of development are welcomed into the conservation departments as interns and

fellows, and documentation is readily shared with these individuals. The same openness generally applies to visiting professionals, who are often invited for the specific purpose of exchanging and sharing knowledge with staff members.

Documentation is available to freelance conservators, scholars, and the general public on a case-by-case basis and has rarely, if ever, been denied (although in fact there are few inquiries from members of the general public). All inquiries from the press, including any request for information regarding documentation, need first to be fielded by the museum's communications department. Conservators have expressed a strong opinion against giving complete access to records to reporters. This opinion is based on a few cases in which information was seriously mishandled by the requestors.

Editorial Control and Access to Conservation Documentation

Maintaining some editorial control over the diffusion of information is seen as a priority by all conservators interviewed. A system offering open and uncontrolled access to a broad public is not seen as a benefit to the Museum or to the public by the conservation professionals at the Metropolitan Museum of Art. Three factors play a part in shaping the Museum's stance on this issue. Treatment information is generally seen as sensitive and as deserving of some level of confidentiality protection. This is especially true for older treatments and for methods that are now considered outdated or simply incorrect. While there is no wish to hide damaging information – controversial practices are openly discussed with professional colleagues – we see no need to disseminate information without interpretation to an untrained audience. The potential for information to be taken out of context far outweighs any possible benefit. A second objection to free, unfettered, and uninterpreted access to our archives stems from the nature of some of the information. Conservators are encouraged to jot down thoughts in the form of quick notes. Over the years, these notes can form a considerable corpus – a work-in-progress – on the subject under examination. This is seen as an integral component of the profession of the conservator in this Museum. While objections could be raised that all information should be edited and finalized so that any reader could interpret it without needing assistance from the extender, a logical counter would be that it is only these finalized reports, once prepared, and not the notes they are based upon, that should be shared. Finally, every conservator and scientist interviewed objected to broadening access to unpublished data when publication is under way. Conservation documentation is in some sense analogous to scientific information: while scientists in academia and industrial research share information by publishing articles and by presenting work-in-progress at conferences, laboratory notebooks are considered privileged information, and disclosure of notes is requested only in case of controversy (intellectual property, priority of discovery, fraud, or misattribution).

The objections to free and automatic access to conservation documentation listed above could perhaps be analyzed to extract some distinctions between how treatment and technical examinations records are perceived. Overall, treatment information is seen as slightly more sensitive than technical examination reports. In the latter case, only data awaiting publication and examinations of objects with questions of authenticity (very often objects that have not been or will never be acquired) are universally considered as privileged. Disseminating treatment notes without commentary to the public, however, is seen as counterproductive. A case apart is that of notes related to the examination of objects that do not belong to the Museum: the number of such objects is quite substantial, given the very active acquisition and exhibition schedule of the museum. Because

of confidentiality issues, the museum does not share the results of these examinations with a broader audience.

The Museum has not yet created a general policy for conservation along the lines of its policy on provenance information. At present there are no legal or ethical issues that seem to compel the museum to automatically disclose conservation records in their entirety. Nonetheless, the institution is willing to consider arguments in favor of a policy of disclosure for certain types of conservation information, where a significant benefit might derive from making information known (for example, we believe that genuine educational value is attached to a full understanding of the state of a work).

Suggesting a parallel between conservation documentation and bibliography or provenance information is, to a certain extent, misleading. Museum publications (the *Journal*, the *Bulletin*, the Objects Conservation department's own newsletter, *MetObjectives*, and the exhibition catalogues) are increasingly featuring essays based on conservation information. Articles published by staff in the conservation and scientific literature make available to a wide audience detailed studies on objects in the collection. And finally, an initiative is under way to include articles by conservators and scientists in the Museum's *Timeline of Art History*, a Web-based publication visited by four million readers every year. This is indeed analogous to providing provenance information and bibliographies in art historical essays. Whether the analogy should be extended to the original record-level documentation that conservation publications are based upon, is a matter for the upcoming discussion and further debate.

Technical Issues Related to Conservation Documentation Management

The Museum is only now starting to consider how to reorganize conservation documentation. The Science and Intellectual Property Inventory recently carried out at the Met highlighted what is already known to all those engaging in the present discussion. Conservation information is, by its own nature, extremely complex and quite different from curatorial information: the technical difficulties implicit in an indexing effort are enormous, and are eclipsed by the complications and costs associated with a digitization project. It may not be possible in the immediate future to have all of conservation documentation available in an electronic format: some documents are still best viewed in the original (this is the case for radiographs of three-dimensional objects, or for physical specimens such as pigment slides and paint cross-sections). Yet, a tool as simple as a catalogue of conservation information detailing which objects have been radiographed, analyzed for alloy composition, had their pigments identified, and so on, with pointers to the location of actual physical records, would be invaluable.

There is a general consensus among originators of documentation and information systems professionals at the museum that a conservation documentation archive may have to be a completely new system, distinct from the current collections management system. The two systems will of course need to be able to interact and it is probable that cataloguing information for conservation documentation, such as record identifiers, descriptions, and so on, will be drawn from the collections management system.

There is a good agreement that conservation records should be made more broadly available, with the understanding that parts must be kept confidential, just as price paid and insurance valuations are not generally shown to anyone outside the specific curatorial department.

The current absence of any cataloguing system for conservation documentation at the Museum, the simple criteria used to classify files (by accession numbers), and the increasing use of digital records as the primary documentation format, make a transition to a completely digital system relatively easy, going forward. Some records, as stated previously, will remain analog because of the loss of information when going to a digital format. Improvements in technology will eventually change this, as they have changed the field of photography. As for past records, everyone interviewed expressed a wish for digitization, although the resources required for cataloguing, editing, and digitizing the material would be prohibitive. The original documents, which in many instances are still the preferred format for consultation, would need to be retained.

Access to Conservation Information

Introduction

At present, the care and management of conservation documentation is the responsibility of two departments: the Registrar and Documentation Department, headed by Andrés Gutiérrez, and the Restoration Department (which includes the Technical Documentation Cabinet – where all the technical studies of artworks are done – and the Chemistry Laboratory), led by Pilar Sedano. Both Departments report to Associate Director, Gabriele Finaldi. The Deputy Director for Collections and Research is responsible for policy regarding information access.

The Prado Museum is currently developing a project to gather, organize, classify and computerize all of its conservation documentation. This is a broad and important project as the institution stores a considerable volume of information in different formats.

Moreover, the provenance of the Museum's collections means that there are other institutions with significant document holdings related to its history and artworks (for example, the *Royal Academy of Fine Arts of San Fernando* and *Patrimonio Nacional*).

Furthermore, the Museum's growth in recent years, the increasing number of photographs, and the development and evolution of research and technical examinations carried out on the collection have generated a large quantity of information that calls for a new system of organization and analysis.

In fact, we consider that we are responsible not only for compiling all data relating to each artwork, but also for verifying, analyzing, and classifying the data, as well as completing information which is lacking, and preparing all data for its eventual computerization. This requires the involvement of skilled personnel as well as the means, both technical and financial, to carry it out.

The artworks themselves are the central axis of the documentation system. In the middle ground is all the information generated about them in different fields. The Museum's main goal with regard to this type of documentation is that all the information generated by and relating to an artwork be brought together in a single file, which will be organized according to different levels of access.

Information about the artworks is categorized as follows:

- Historical documentation (original source)
- Art historical and technical information (publications and technical data)
- Iconography and thesaurus
- Images
- Administrative (file data)

Its consolidation in a single file has the following objectives:

- a. Facilitating the localization and consultation of data
- b. Controlling access to information

Besides information relating to the works themselves, the Museum also has other types of documentation, including images, data and plans relating to the building, and images and data concerning events that have taken place at the Museum. Moreover, there are confidential data about donors, lenders, the former owners of artworks and collectors.

Is any or all documentation in its current form shared with other professionals in your own museum or institution? Is it important that this be facilitated?

Generally, information is shared within the museum. Often this is related to specific projects. Yes, this should be facilitated.

Levels of Access

We are currently working to organize documents (artwork dossiers on paper, excluding original documents) into three levels, corresponding to three levels of access:

Level I: This is the most basic level of access, containing basic information about a selection of the artworks. It will be accessible on the Museum's website beginning in the summer of 2007. It is intended for a public that has not visited the Museum and seeks to gain a general idea of the collections and how they are organized, or even to prepare an itinerary for a future visit.

Level II: Contains historical information on the works, which is of interest mainly to university students. It can be consulted physically, and is organized in files that contain bibliographic information, references, images of the work and acquisition history. Access to this level is available only by request, but there are no restrictions as this information is essentially historical and iconographic.

Level III: This level includes a very broad range of documents that are kept in different departments of the Museum, in a great variety of supports and formats. It includes artistic and historical information on the works (studies and reports carried out by the curators), data and technical images (x-rays, reflectography, infrared, ultraviolet fluorescence, chemical analysis, high-resolution images, etc.), reports and images concerning restoration processes, and a vast archive of photos with images from the 19th century through the present day. These are not only of artworks, but also of the building and its galleries, people, and activities carried out there over that period. We are currently compiling this information in order to computerize and make it available electronically. Access will require authorization, which will be granted principally in cases where the information required is linked to specific research projects. This tool will be intended mainly for Prado staff (i.e., curators and restorers).

At present, the general public has access to levels I and II. Level I will soon be available online. Access to level II must be requested and approved by the Department of Documentation and Registration. Access to level III must be approved by the department's director and is done under the supervision of a curator from the relevant department.

It is also possible to access level II through the Museum's intranet, SIMA (Sistema de Información Museográfica Automatizado), and various departments of the Museum have different degrees of access. At this level the Museum responds to all requests from both the general public and specialized researchers. The Department of Documentation and Registration answers a great variety of questions posed by the general public both by letter and online.

The questions asked by researchers and specialists are answered by curators, by the Department of Restoration, and by the Cabinet of Technical Documentation. There are some restrictions on access to data concerning recent restoration, as this type of information requires greater control and should be consulted with a restorer who can explain it accurately.

In the future, the information on levels I through III will be available online; however, access to level III will require a password. These passwords must be issued by the Museum; authorized researchers will be able to access information from anywhere in the world. Currently SIMA is an internal museum management system; however, it is being adapted so that it will be possible to consult it in tandem with the three levels of information access described above. The adaptation of this system will be related to the functioning of the new *Escuela del Prado* currently under development at the Prado Study Centre. At present, this upgrade does not depend on external funding.

Is any or all documentation in its current form shared with conservation professionals in other museums or institutions? Is it important that this be facilitated?

This type of information is shared on request. For example, there is a documentation project underway in collaboration with the CSIC (Superior Council for Scientific Research) and the University to describe the glass and ceramic objects that appear in paintings at the Prado at a very basic historical and technical level.

Is any or all documentation in its current form available to any interested individual such as a free-lance conservator, scholar, reporter? or to the general public?

Yes, on level II, for the general public. Depending on their content, questions are answered by the Department of Documentation and Registration, the curators, or the Department of Restoration.

Are there new changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

There are not many restrictions on the use of specific data, except with regard to the copyright of works of art by artists who died after 1937. Theoretically, this restriction exists with regard to 19th century artists, but in practice it is not applied. As to ethical restrictions, the Museum has nothing to hide.

The Museum responds to all requests from the press, supplying all the information needed for correct and factual reporting. Information is both supplied and explained.

Restricted information includes personal data concerning previous owners of artworks, donors, curators' reports, technical data that could be incorrectly interpreted, and reports on recent restoration. Access restrictions to data older than fifty years have expired. Access to Level III is authorised by the curators and the Museum trusts that this information will not be used in a fraudulent way. This level is not intended for general access, but solely for limited authorised access. The access policy and protocols are described in the Spanish *Ley de Archivos* (Archives Law).

Another important task for the Museum is the management of historical and administrative information. The problem that arises when approaching this subject is that not all the data contained in the files can be made available to everyone. The solution is to have a list of the complete contents of each file so that the researcher can decide which data are needed, or so that the archivist can keep better track of what is being supplied. The Museum's general archive receives all information generated by the administrative archive, including confidential data on persons who have had some sort of administrative relationship to the Museum's activities. Such information is governed by legal restrictions and cannot be consulted.

Information on the acquisition of works – specifically, recent acquisitions – is often public knowledge in Spain and is customarily published in the BOE (Official State Bulletin). Moreover, the value assigned to works in the past appears in inventories and register books. Such data, which are often expressed in currencies no longer in use, are important as they reflect the changing financial value attributed to works of art in different periods. It is usually only academic researchers who are interested in this information.

Should a distinction be made between treatment-related conservation documentation and technical studies of artist's materials?

No. The central element of research and information is the collection itself, but no distinction should be made among different fields of documentation as all of them are related to the collection. The distinction should be made in terms of access. Moreover, the analysis of data contained in a file is the responsibility of those departments charged with their generation and safekeeping. Access criteria are defined by the Deputy Director for Collections and Research, in consultation with the Heads of Department.

Conservation information must be treated differently, especially when it is technical or scientific in nature. It may be misunderstood, and access to it should therefore be more carefully controlled and, if necessary, explicated.

Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience? Are there specific exceptions in an affirmative or negative response to this question?

There are interesting advantages to sharing documentation information on levels II and III, especially because this favors the generation of new data and the possibility of sharing information with researchers who consult us.

Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

Yes. The museum does this, taking into account the fact that the provenance of artworks and their bibliographic data are essential for many types of research, and that this information is accessible in levels II and III. We are seeking to make this available on the Museum's intranet. In the future, this information will be accessible through the Internet.

Are there publications issues which result in individual or departmental protection or information, (i.e., refusal to share or release information for fear of someone else publishing it)?

Customarily, information is not disclosed until it is published, or as long as research is being carried out. Occasionally, when the information labels that accompany artworks in the galleries are renewed, new data are included.

Digitization of Conservation information

Is conservation documentation woven into the broader context of collection information? Purely technical issues aside, should conservation information be treated differently than other types of object cataloguing information? Is conservation documentation more like the non-public financial information – such as price paid and current insurance value – also tracked in collection information systems?

Computerization of all documentation began in 1987 and continues today. At first, on the occasion of an outside evaluation, all of the artworks were reviewed and basic data were placed in a simple database. In 1996, digitization began on all documentation relating to artworks and to the Museum itself (the building and all the activities that take place therein), which includes all images of the artworks, both old and new, images of works related to them, technical documents and all the data mentioned above.

Therefore, digitization has two objectives:

1. Making it easier to compile and access data.
2. Conserving the original documents. Often these are historic images, which are fragile and extremely vulnerable, or information contained in old documents, which should be handled as little as possible.

Currently, all archival information is computerized up to level II. The files concerning artworks must be reviewed because they often contain documentation that does not exactly pertain to the artwork itself, such as advertising that was found in some of the artwork dossiers describing a type of 19th century machine.

The project of cataloguing and digitizing involves two different tasks:

1. Cataloguing all the files, which involves reading, but not interpreting them (the latter must be done by art historians, curators, conservators, and scholars).
2. Digitizing all documentation.

This work generates a very large digital archive that will contain all historical documentation related to the collections, which must be linked to the general database (SIMA), the contents of which are the responsibility of the Registrar and Documentation Department.

Should all previous records ideally be digitized? If so, should the original documents (which obviously have intrinsic value) also be preserved? What are the financial implications of these decisions and would retrospective digitization be practical even if desirable?

Yes. We believe that the original documents should be kept. Their intrinsic value demands this. In Spain, the tendency is to store all documentation, destroying none of it. In the Prado, for example, only photocopies of original documents are destroyed. Images of all the works of art have been digitized and our intention is to digitize all relevant material, current and retrospective, beginning with documentary material. The Museum will be seeking funding for this program.

Are there aspects of traditional documentation or of the process of creating it that deserve attention so that valuable information does not get lost in the creation of documentation as digital files? Current practice of adding comments from visiting professionals to the file as a note, for example might be more difficult in digital documentation. On the other hand, if conservation documentation is publicly available to some extent, should submitting comments and questions be more easily facilitated?

If digitization of the correct quality is done – high definition of an adequate size – there should not be problems in that sense. The Museum is carrying out the complete digitization of its documentary sources (data, old and new documents and images). This process is being done with the highest resolution we can attain, so that we can obtain all the necessary images derived from the master files.

Moreover, we have discovered that high-resolution digital images customarily offer more information than is visible at first glance (inscriptions, signatures, watermarks on paper and other small details of painting). Documents for the general public (published on the Internet) require less than the maximum resolution.

Making notes directly on documents is prohibited. Sometimes, however, certain researchers leave written comments on added notes that are included in the file (level II). At other times, there are notes alluding to curators' comments about certain works which, being matters of personal opinion, are not intended for publication. Such notes, if they are particularly informative and or contain interesting insights by great authorities, will be transcribed and preserved in the digital record.

Digitization is being carried out in annual campaigns that take place at the same time as the photographic campaigns. The digital archive is a source of important, but additional, information. The digital files have four main functions:

- Digitizing images is a means of protecting the original photographic material (except for the materials mentioned below);
- It makes it easier to deal with enquiries related to the collection;

- The high-definition digital files are already used for Museum publications;
- These high-definition digital files are a fundamental research tool. They often enable us to see details which are not visible to the naked eye. They can be consulted in conjunction with other digitized technical material, thereby allowing for more integrated research.

This type of work implies some restrictions. We feel that certain materials are too sensitive to be digitized, such as glass plate negatives, albumin prints and other ancient books and documents. Our main concern is preserving the originals. We are working on two procedures: on the one hand we are trying to locate a scanner which will digitize the original document without touching it, and at appropriate lux levels; on the other we are taking photographs of light-sensitive documents (albumin prints, for example) in order to digitize them.

Moreover, an excess of work has kept us from digitizing some of the documentation. We do not have the staff resources or technical means to computerize, classify and organize all of the information.

Access to Conservation Documentation

History

In August 2000 we converted our object data from a homemade database to TMS™ (The Museum System) software. For the past six years we have had either a full-time or part-time position dedicated to conservation documentation. This staff member has been responsible for training staff in six conservation labs and one scientific research lab in the use of TMS™ and, since 2003, in the procedures we use to add images and other files to conservation reports.

In that year, we began linking conservation images and other media to specific reports. This was particularly useful when we documented the dismantling of 18 period rooms and two architectural doorways. Contracts with outside vendors, annotated architectural drawings, detailed instructions for reinstallation, and more are all linked to the conservation section of the object record and will be especially valuable at the time of reconstruction.

Curatorial, collections management, and administrative staff can read the conservation reports and view linked images for all works of art. Conservation and collections management staff can view, create, and edit conservation records and can download conservation-related images (which they often do for PowerPoint presentations). Our conservators share information with others in the profession on a case-by-case basis. Through CAMEO (Conservation Art Materials Encyclopedia Online) we share information about materials used in creating works of art, using images from our collections to illustrate certain points.

Our Furniture and Framing Lab has undertaken a project to survey and photograph all frames in our collection. Frames are given unique identification numbers, and electronic records for frames are created in TMS™. Frames that have been examined or treated by a conservator have conservation reports linked to them. When a frame is associated with a particular painting or group of paintings, the records for the frame and painting are linked. To date we have 3,919 frame records; of these more than 3,400 are linked to painting records.

More than fifty diagrams showing details of mounts and mount-making procedures are scanned and entered into the conservation section of TMS™.

Extending the Usefulness of TMS™

Using simple software programs that were developed in-house, and which work in tandem with TMS™ data, staff have conducted conservation surveys and recorded both current storage methods and re-housing needs for 53,675 objects in four collections. Because of the temporary nature of this information, we did not add this data to the TMS™ data tables.

Our Manager of Collections Information Systems created an Access database with fields that match the conservation fields in TMS™. This database has records for objects on tour, each with core data and images. The Access database is used by members of our Asian Lab when they travel to

check the condition of objects on tour. When conservators return to the MFA, conservation data is transferred from their laptops to TMS™.

Retrospective Work

In 2001, about 10,000 conservation records were created from electronic files (Word documents) that were created before we converted to TMS™.

Some retrospective projects currently underway include the scanning of all Furniture Conservation Lab media such as written reports, photographic slides, accompanying digital images, and other media including large radiographs that have been scanned in sections, “stitched” together, and linked to the appropriate reports.

Our Asian Conservation Lab is scanning slides that were taken prior to our use of TMS™ and linking them to conservation records. This ongoing project will continue until all slides are scanned. Our Paintings Lab is using a new, large flatbed scanner to scan their x-rays and they are linking these scans to their conservation records.

Our Paper Lab has scanned all beta-radiographs of watermarks; the digital scans are now linked to corresponding object records in TMS™. In addition, this Lab has scanned about 25% of their hardcopy photography, which documents their work over the past years.

In September 2006 we began data entry from index cards stored in the Scientific Research department and the Objects Conservation Lab. The cards contain information regarding an object’s condition, treatment, and sometimes loan status. With the help of four work-study students, 12,807 conservation survey records were created. These records are now being proofread before the data is transferred to Artemis, the name for the museum’s collections management system.

Work has started on the transfer, from FileMaker Pro, of 1,200 records of conservation work done on our musical instrument collection by outside conservators.

How We Use Conservation Data

We have created dozens of Crystal Reports™ which pull together information from various data fields throughout the database. These reports support the processes of accessioning, deaccessioning, loans, exhibition installations, conservation planning, the conservation history of objects, and so on.

Preservation of Resources

For preservation and research purposes, we have scanned 22,000 glass plate negatives and accompanying photo registers, all diary pages, and all object register pages from forty years of excavations at Giza. Our Digital Image Resources Department has scanned all our chromes of MFA objects, all black-and-white installation photography (and linked them to exhibition records), and about one-third of all other black-and-white photography.

Future Plans

Collaboration

The George Eastman House, the MFA, Boston, and the Metropolitan, in combination, hold the largest repository of daguerreotypes from the renowned studio of Albert Sands Southworth and Josiah Johnson Hawes.

Previous reports of daguerreotype deterioration and recent observation of deterioration of several daguerreotypes in the exhibition “Young America: The Daguerreotypes of Southworth and Hawes” (2005-2006) have led the three institutions to join together to plan and conduct an extensive condition survey of their whole-plate Southworth and Hawes daguerreotypes. The whole plates (6.5” x 8.5”) are considered the most significant group from the Southworth & Hawes studio and provide an ideal subset for establishing documentation procedures and developing preservation strategies, not only for images from the Southworth and Hawes studio but for all daguerreotypes.

Augmenting the high-resolution digital-imaging system established during the “Young America” exhibition will be non-destructive analysis designed to examine and map the surface of the daguerreotypes. Selected conditions will be analyzed to associate visual data with potential agents of deterioration. All imaging information will be placed in a database for joint institutional access. The development of a quantitative and analytical protocol and a collaborative database as part of the documentation process is considered essential to the understanding of these unique, fragile and exceptional objects of our cultural heritage. It is the shared belief of the three institutions that this project will serve as a valuable resource and a groundbreaking model for the field.

The target start date for this project is September 2007.

- Documentation to include full digital documentation of condition using PhotoShop software to isolate and layer condition issues
- New analytical equipment to map the surface of daguerreotypes
- Survey records specific to daguerreotypes
- All images and written records to be linked to a shared database – possibly TMS™

Standardization

MFA has begun the process of trying to establish standards for various kinds of digital media (i.e., x-rays, ultraviolet and infrared capture, photography) used in materials and object analysis, and to document object treatments.

We are examining issues of image quality, file size, file form, capture and storage equipment type and quality, and software platforms. We are aware that the AIC has recently created a task force to address these questions as well. Examination of standards such as these brings to light the issue of

the wide range of quality seen in digital image collections. Collectively we need to discuss these issues as we contemplate releasing this material to a broader audience.

Addendum to April 2006 Summary

Letter from Malcolm Rogers, Director, MFA Boston, to The Andrew W. Mellon Foundation, 20 April 2007

Conservation documentation is a subject of high priority for the MFA Boston – in particular, the policies that will govern access to information and the ways in which we will make our holdings accessible and usable within the museum and, ultimately, beyond our walls.

I believe passionately that technology has the capacity to transform the ways in which we share information, and that it will ultimately lead to much more collaborative research practices – a trend that is already evident in the medical field.

Flying under the banner of ‘one museum’, at the MFA we’ve been working since the mid-1990s on the sharing of collections information, first internally, and then externally. We have moved from many collections databases (each particular to a department) to one shared collections database, and last summer we ‘pressed the button’ and made the collections database accessible on our public website: some 335,000 records with 205,000 digital images. We still have about 50,000 collections records to add.

At each stage along the way, fears were expressed by respected colleagues about the dangers of releasing information, at first across departmental boundaries within the Museum, and then beyond Museum walls. It is fair to say that these fears have not been realized, and also fair to say that this reality is now recognized by my colleagues. A culture of openness prevails, and is seen to bring substantial benefits. It has resulted in increased respect among colleagues and far greater sharing of knowledge and expertise, with enormous benefits for the many scholarly projects within the Museum.

The same will, I believe, be true the more widely we are able to share conservation documentation and research. This process began for us in August 2000 when we converted to TMS™ (The Museum System) software. Since that time:

- all newly created conservation examination and treatment records have become part of our database;
- all media records (images) have been linked to conservation records in the database;
- all conservation reports are linked to individual object records;
- curatorial staff has access to the reports and related images for their department’s works of art.

In 2003 we began linking images and documents in Word, Excel, PDF and AutoCad formats to specific reports. This has included significant progress towards the digitizing of extant analog

media, such as treatment reports, handwritten notes, documentation, x-rays and photographic slides. At the present time we have linked to the database:

- 75,000 conservation survey reports
- 115,000 descriptions of treatments (linked to 56,000 object records)
- 25,000 images (linked to 4,000 descriptions of treatments).

In 2005 we created the searchable database called SciRex, which is available to *all staff* through our staff intranet, and we have been working retrospectively through our records. From 40 binders of handwritten materials dating from 1937-1980, electronic records have been created for 9,000 scientific examination records.

In short, there has been much progress, and arguably the system now has the ability to be comprehensive in its coverage and linkage.

How do we and the profession take this a stage further? When all is said and done, I have difficulty accepting that information that is held by a public institution ought not to be made publicly available for the public benefit, and, indeed, there may be a fiduciary obligation to do so. I fully appreciate that conservation documentation can seem ‘sensitive’ to those most closely involved, but I believe the benefit of making it broadly available outweighs that concern. The educational value is potentially enormous, and conservation – so often presented as controversial or damaging – is certainly an area of specialism that needs de-mystification. We are finding at the MFA that conservation documentation can be a wonderful avenue of approach to the collections for students of all ages. This will ultimately lead to an increase in those who see conservation or scientific research in a museum as a possible career.

In terms of access to conservation documentation I have some sympathy with the approach of the National Gallery, London: the two tier system – one tier for the specialist, another for a more general audience. I believe, like them, that the tier system ought to relate to the level of understanding and digestibility, not to the level of perceived ‘sensitivity’ of the materials in hand. If a world-famous painting is *not* in good condition everyone has a right to know; no one would question this notion if the work of art were in *good* condition! Of course, there is always the danger that unscrupulous or ignorant press will distort or sensationalize the matter, but so far as I know, this may be equally true of professors of art history or rival conservators and scientists. Fear ought not to rule on issues of access. It is always better to lay out the evidence voluntarily in a spirit of openness. Evidence is knowledge and leads ultimately to understanding.

It follows from all this that we at the MFA view increased access to conservation and scientific records as appropriate (and my definition of ‘appropriate’ is broad). Above all, of course, this is true at the professional level, but we would like to see it go beyond that. I believe the MFA has shown a strong commitment to this initiative, for it involves substantial investment, and will continue to do so – particularly in the area of retrospective capture of data. That is my commitment. You also have our commitment – subject to the availability of human and financial resources – to partner with like-minded institutions around the world in this critical initiative.

National Galleries of Scotland

Conservation Documentation: Digital Formats, Institutional Priorities, and Public Access

The National Galleries of Scotland (NGS) is a multi-site organization with a collection that comprises works from the early Renaissance to the present day. Objects range from paintings, works on paper, historic and modern photography and sculpture (both indoor and outdoor), to artist archives and smaller collections including medals, miniatures, glassware, furniture, and books. Although the collection as a whole is owned by the nation, for administrative purposes, the objects are allocated to one of three major groupings: the National Gallery of Scotland, which includes artworks from the early Renaissance to 1900 and the national collection of Scottish art c.1600-c.1900; the Scottish National Portrait Gallery; and the Scottish National Gallery of Modern Art and Dean Gallery, which comprise modern and contemporary art, plus Dada and Surrealist collections. In addition, the following sites are used for display and storage of works from across the collection: Royal Scottish Academy Building, Paxton House, Duff House and the Grantor Centre for Art, a purpose-built storage facility. The conservation department dates back to the 1950s and is housed in the Gallery of Modern Art. It currently comprises paintings, frames and paper conservation. Treatment outside these disciplines is achieved through collaboration with other institutions and through the private sector.

Access to Conservation Information

Is any or all documentation in its current form shared with other professionals in your own museum or institution? Is it important that this be facilitated?

- Conservation information is held primarily as paper copies, centralized in the conservation department.
- The collections management system Mimsy XG currently holds little conservation information other than elements that relate to loan recommendations. Our newly launched website has the beginnings of conservation case studies. Digital information is held on internal drives, to which access can be restricted.
- In principle all documentation is shared. As a national, publicly owned institution, our records are public and as such are available to all our NGS colleagues and to the public.
- In practice, as our records are primarily in hard copy and are stored at one site, interested individuals must visit the department and request information. This is generally confined to curators and is usually part of a discussion with a conservator rather than a matter of independent viewing. The process of putting the information into a mutually understood context is felt to be as important as the raw information itself. Others more frequently access conservation files relating to paintings and frames than information pertaining to works on paper.

- It is felt to be extremely important to facilitate this. There is little duplication of conservation information in other parts of the galleries.

Is any or all documentation in its current form shared with the conservation professionals in other museums or institutions? Is it important that this be facilitated?

- Again, as the conservation files are public records, access is possible for any interested party. Usually we have a small number of visiting conservation professionals (estimated at 10-15 per year) who access them directly. We respond to about the same number of external enquiries. Enquiries come directly through the Web page or through an information enquiry server. This is more frequent for paintings and frames conservation than for paper conservation. Conservation decides autonomously in most cases what information is sent out.
- It was felt that sharing such information was extremely important.
- In order to care for the breadth of object types in our collection, the NGS engages conservation expertise in other disciplines from outside institutions and the private sector. This has resulted in quite a varied style of report and information type in the conservation files.
- NGS is home to a significant number of important loans. These records are not subject to the same provisions of open access and as such are restricted.

Is any or all documentation in its current form available to any interested individual such as a free-lance conservator, scholar, reporter? or to the general public?

- Again, as our records are public records, access is legally required; however, no proactive mechanism is currently in place to promote this.
- Interpreted conservation treatment information and technical studies are available on the NGS Web page, through gallery publication (exhibition catalogues) and conservation conference papers.

Are there new or changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

- See UK Freedom of Information papers put together by this contributor for the April 2006 meeting. Scotland sits within the UK framework for Freedom of Information (FOI).

Should a distinction be made between treatment-related conservation documentation and technical studies of artists' materials?

- It was felt that no distinction should be made. However, as an institution we give technical studies of artists' materials and condition information a higher priority for the public

domain. It was felt that interpreted information in a clear context is more readily digestible for general consumption. In the case of the conservation profession, the priority is less clear.

*Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience?
Are there specific exceptions in an affirmative or negative response to this question?*

- It is always better to share. The advantages always outweigh the disadvantages in the long run. Sharing facilitates understanding and access.

Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

- The NGS includes condition information as part of its catalogue entry, and this is seen as a means of clarifying the authenticity of the work. It sits therefore alongside bibliography and provenance as a significant part of the object's 'passport'.

Are there publications issues which result in individual or departmental protection of information (i.e., refusal to share or release information for fear of someone else publishing it)?

- The sharing of information within the gallery is very open. There are concerns about primary information that is yet to be fully interpreted being 'taken' or altered from conservation files and published by others outside the organization without due credit. There are also concerns regarding anonymous Web publishing.

Digitization of Conservation Information

Is conservation documentation woven into the broader context of collections information? The purely technical issues aside, should conservation information be treated differently than other types of object cataloguing information? Is conservation documentation more like the non-public financial information – such as price paid and current insurance value – also tracked in collection information systems?

- The NGS includes condition information as part of its catalogue entries; it is seen as a means of clarifying the authenticity of the work. It sits therefore alongside bibliography and provenance as a significant part of the object's 'passport'.
- Little conservation information is included in the data collected on the NGS collections management system. Responsibility for the accuracy of information such as dimensions and media does not as yet sit with any one specific group. Such protocols are currently under discussion. Very few areas of the collection have been surveyed and, as a result, little of this type of information is embedded within the collections management system
- Condition/structure/loan condition reports are held on a standalone conservation drive that is separate from the collections management database.
- Conservation documentation, technical study and condition information are seen to be more akin to curatorial cataloguing information than non-public financial information. Records of

treatment (the solvents used etc.) are probably viewed in the same way as non-public financial information, not secret as such but of interest to relatively few.

Should all previous records ideally be digitized? If so, should the original documents (which obviously have intrinsic value) also be preserved? What are the financial implications of these decisions and would retrospective digitization be practical even if desirable?

- Previous records: Despite the size of the collection, the number of conservation records that exist in paper copy is relatively few – probably ca. 3,000. As such it would not be such a daunting task to make digital copies of these pages. The need to preserve the paper sheets would therefore be less of a priority. However, as public records, it is likely that we would be required to archive the original records.
- It was generally felt that it would be more useful to consider particular elements to digitize retrospectively (e.g., technical studies, and technical images such as x-ray and IR). Resources might be better spent on developing digital templates and formats for future records, together with selective digitization of technical reports and key images, as well as new ways of facilitating understanding of conservation.

Are there aspects of traditional documentation or of the process of creating it that deserve attention so that valuable information does not get lost in the creation of documentation as digital files? Current practice of adding comments from visiting professionals to the file as a note, for example might be more difficult in digital documentation. On the other hand, if conservation documentation is publicly available to some extent, should submitting comments and questions be more easily facilitated?

- Such comment can often shed light on the history of thinking about a work, each comment building on the last. The juxtapositions, page layout, and even handwriting can play a role in the history of documentation practices, which transcripts cannot capture. The difficulty of archiving and keeping ‘notes’ in the digital era is a challenge in many respects. Mechanisms that are already being used in other fields should be examined.

Addendum to April 2006 Summary

The National Gallery's policies towards documentation of the collection remain as described below in the paper for the Mellon meeting in New York (April 2006). This applies as much to conservation-related information and technical files on paintings as to all other collection and gallery information. At the same time, there is a continuing commitment to providing access to information of all types and at all levels to the public and to professional enquirers. Documentation of the collection, however, remains unintegrated and the sources of information continue to reside in a tripartite system of curatorial, conservation and scientific files. The majority of public enquiries arrive via the Information Department and are dealt with on the spot, or passed on as appropriate. Professional enquiries generally come straight to the relevant department, although these frequently pass internally between National Gallery staff.

Since April 2006 there have been several developments and plans made within this overall documentation and access system:

1. A project to redesign and refresh the information on the National Gallery website has been underway since September 2006. This is a two-year project, the first phase of which will be concerned with improving elements of design and ease of use of the website; the second phase will improve and expand the content. Part of the second phase will be to incorporate an area on technical study of the collection, conservation and the application to scholarship of material data on paintings. It is also intended to make available to the general public the 'Mellon Raphael Database' described in more detail below under 'pilot project'.
2. One of the Gallery's internal information delivery systems – eMuseum – now contains both a 'zooming' image facility for the entire collection and provides users with the facility to create and download 'custom crops' of pictures for PowerPoint and other purposes such as publications. This could be made more widely available when copyright agreements have been resolved. In common with the British Museum, Victoria & Albert Museum and Courtauld Institute of Art, the National Gallery has agreed to waive copyright fees for low-volume scholarly publications and to provide high-quality digital images of the collection directly to scholars online at no cost.
3. Through the Gallery's Information Strategy Group (ISG) which has senior representatives from the Curatorial, Conservation, Science (Chair), Information Systems, Finance and Communications Departments, a framework plan for improved integrated storage of, and access to, all Gallery images, whatever their source, is being developed. This will therefore encompass technical documentation of the collection (where images are involved), including x-rays, infrared reflectograms, cross-sections and other 'care of collection' images. The integrated system is likely to be managed through TMS.
4. An ISG-managed project on the desiderata list is the compilation within TMS of a back-catalogue of all infrared images on paintings held, presently, by the Conservation Department. Routine digitisation of x-ray images continues on an *ad hoc* basis and will be catalogued in the same way as the infrared material.

5. A new prototype database for recording scientific information and the results of analysis of paintings has been developed during the year. It is being tested initially using technical survey data gathered on the Bolognese painter, Guido Reni (1575 – 1642).
6. The entire run of the *National Gallery Technical Bulletin* from 1977 will shortly be made available online as a subscription service through three sources: JSTOR, IngentaConnect and Project Muse. The work has been undertaken by the National Gallery Company.
7. A limited-scale programme to physically preserve some of the Conservation Department's most delicate dossiers is underway. A specialist in paper and archival conservation has been engaged and is working periodically on the project.

Mellon Pilot Project on Technical Documentation: Paintings by Raphael

This project will begin formally on recruitment of a Mellon Fellow in digital documentation (an appointment will have been made by the time of the meeting in London). As proposed in New York, the Gallery will develop a pilot project that will compile technical material on paintings electronically, build and assess an initial database framework for presentation, and then develop the levels of interpretation required for two different audiences. In order to test such a system, a subject initially limited in scope but rich in existing data has been chosen, and the pilot project will be centred around the Gallery's remarkable and diverse group of ten paintings by Raphael. As a result both of long-term research and of recent reassessment arising from the exhibition held in London in 2004, there is extensive primary material on Raphael, much of it already interpreted in various publications. The finished database will be made accessible to scholars on the Internet via a dedicated website, and in a more simplified and interpreted form to the general visitor on the Gallery's website and other information systems.

The main features of the project are as in the application for funding to the Mellon Foundation, of which the following is an edited extract:

1. The first step will be initial gathering and digitisation of data on Raphael from a wide range of Gallery sources, including colour and black- and-white images of the paintings at various levels of detail and magnification; x-radiographs and their digitally-processed versions; infrared reflectograms and mosaics, paint cross-sections and other micrographic images, SEM micrographs and the results of analytical study of the paintings, including work on paint media (recorded at a level of interpretation that will enable enquirers to make direct use of the information in their research). The database will also contain text from National Gallery publications, including scholarly catalogues, relevant bibliographic material, and internal conservation, curatorial and scientific dossiers. The system (database) needs to be developed in such a way as to both archive the material and allow for easy retrieval at each of the proposed levels of interpretation and access. Any user of the system would be allowed full access to all stored data and search capabilities, irrespective of the level of their experience and knowledge, although it would seem advisable to alert potential users that they will move through structured levels of depth of access to data. A Web-based system is the likely technical solution for access to the database.

2. Once an experimental system has been applied provisionally to two or three selected works by Raphael, it will be demonstrated in a consultation phase with other institutions holding Raphael material and with potential users, both professional and general public. At that stage, the Gallery intends to work with one or more sister institutions to host material on Raphael held by those institutions in order to establish methods for integrating information from a variety of sources.
3. The third stage will include:
 - Response to the feedback from other institutions
 - Compilations of the remaining National Gallery data, taking into account the views and recommendations of other interested parties
 - Integration of data on Raphael paintings held by other institutions

It will be a fundamental requirement that the database be designed in a way that will facilitate additions of future research and shared information; as a result it will become a living resource for Raphael studies as scholarship develops and deepens.

While Raphael has been chosen as the subject to explore the architecture, flexibility, operation and accessibility of the database, the intention is to develop a system and template suitable for handling data on any painter. Expansion of the content to a wider range of artists is seen as an essential future direction to take.

April 2006 Summary

The present approach to conservation documentation at the National Gallery encompasses two contiguous policies: (1) to maintain (and conserve) the existing traditional paper-based records (conservation dossiers) and (2) to explore the potential for future digital documentation of the record, and the resources and methods required to duplicate, in electronic form, the 'back-catalogue'. The latter remains at an exploratory stage; no individual technology has been chosen, although some experimentation has been undertaken with TMS and also with small-scale, custom-designed databases.

The conservation records are not viewed, or used, in isolation from other Gallery information sources. They are considered to be, particularly by the conservators who are their custodians, working (open) documents recording both past and continuing care of the Gallery's collection.¹ There is one dossier for each painting in the collection (many are multi-volume records) and each consists of archival-quality albums containing comments on the painting's condition, history of treatment, treatment reports and (usually) many black-and-white prints of details, including the backs of paintings, before-and-after treatment prints, 1:1 x-ray prints, as well as a certain amount of infrared, UV and colour (transparency) photography. Some older dossiers contain scientific and colour measurement information in addition.

Although there are many types of record within the Gallery that deal with paintings in the collection, the bulk of key information is contained within three series of files: (1) the conservation record noted above (2) the curatorial/history files, located in the Gallery's main library, but

administered under the supervision of the curatorial department (also one record per painting in the collection), and (3) the scientific files, organised by artist, at present covering around 60% the collection (that is, for pictures which have had some form of technical examination or analysis).²

With the National Gallery's library and archive, these three sequences of records form the principal research resources for the collection. None of these files is static or closed. In addition, there are a variety of paintings-based image databases growing at the gallery, the most significant of which is a high-resolution, accurate colour image database of (virtually) the entire collection, recorded directly from the paintings using a high-resolution digital scanner (VASARI scanner) and high-resolution digital cameras (MARC camera). At the same time, growing numbers of x-ray images are being digitised and assembled electronically into complete mosaics; the same is true of a collection of infrared images. Infrared reflectogram mosaics are now being recorded with a new solid-state, high-resolution digital infrared camera developed in the Scientific Department. At present these records reside in stand-alone databases.

At the Gallery, the policies for developing and exploiting information-based resources are formulated within a senior management forum known as the 'Information Strategy Group' (ISG), its overall remit being guided by an internally published 'information strategy'. The ISG has the power to make recommendations on policy and projects to the Gallery's management group, the priorities in allocation of resources for which are tested competitively each year within a corporate planning process. Among other principles, the ISG-sponsored strategy states, in relation to Gallery-held information, that the institution should:

- Create value by exploiting information effectively
- Share and communicate information internally as widely as possible
- Make information available, with limited exceptions, *externally*
- Keep information safe, archived and preserved.

Clearly these principles must be judged to apply to conservation-related information resources, and allied material held elsewhere within the Gallery, which is often read in conjunction with the conservation record. It is recognised, of course, that for outside enquirers, the specialist nature of the conservation records is such that it is helpful where practicable to provide assistance in interpretation of the material.

In Britain, the third bullet point above has been given special emphasis in the institution of a Freedom of Information Act (2000),³ which, in its essential intent, gives the public general right of access to documents and information held by public institutions, museums included. There are a number of exemptions to this overarching right (material bearing on national security, commercially sensitive material, possible infringements of intellectual property rights and so on), but the kind of information that museums hold on their collections, including their conservation records, are covered by this Act and the public have the right to be given the information in the form that the public institution holds it. If an enquirer is dissatisfied with an institution's response to an enquiry, the person has recourse to an independent commissioner for information, who is empowered to adjudicate.

The National Gallery, as a public institution is bound by the Act, but it is worth pointing out that in practice it simply formalises a policy towards public enquiries that the Gallery has operated for some years: that is, to *facilitate* the supply of information on the collection in as open a way as possible. Over the year of its full operation, the Gallery has tried to interpret the Act in a helpful and unrestrictive way, on the basis that the collection is owned by the public and that the institution is in the business of engaging the public with its collection to the maximum degree. This means, of course, providing information of all kinds when it is requested, rather than seeking to find exceptions within the law to deny it to enquirers.

A rough analysis of the types of enquiry about the collection that have come in from the public (although 'Freedom of Information' is quite rarely cited) shows that genuine conservation information is quite rarely sought (although a few journalists have been consulting the dossiers).⁴ There are rather more enquiries concerning the results of technical examination of individual paintings in the collection or the work of particular artists, whether this information is held in the conservation dossiers in the form of x-rays and other technical photographs, or in the Scientific Department's picture files. This is also broadly true for most professional research enquiries, and it is usually only our conservator colleagues who have an interest in handling the conservation dossiers themselves. The National Gallery always shares this information on a collegial basis, and it must be said, our staff very frequently receive the benefit of similar courtesies from colleagues in museums around the world. These contacts are vital to our own care of the collection and to its study and they are relationships we seek to foster.

It is important to draw a clear distinction between technical records on paintings and conservation records – the museum needs to keep up-to-date records of both – but it is the former which have the greater usefulness to researchers of all kinds, and if made more widely available, it is these records which would have the largest constituency. Initially, electronic versions of these technical documents, particularly if they are held in well-designed relational databases, would be of considerable value to the museum's own staff when made accessible on the Gallery's network. There is probably no fundamental reason why this documentation should not be made available externally in the future, excepting the need to solve certain problems which might involve intellectual property rights in the material, and perhaps also some copyright matters. Whether there is genuinely sufficient demand for the conservation records to be open to outside enquirers in electronic form is a less resolved question, and the loss of our ability to provide guidance on interpretation to enquirers would be a disadvantage.

It is inevitable that museums will make increasing use of electronic documentation methods, if only because the importance of conventional photography is diminishing so rapidly. In addition to institutional operational imperatives to adopt electronic documentation methods, these tend now also to align with some of the outward, public-facing methods of providing information to the museum's general visitors, whether via the Web or through provision of systems such as the National Gallery's 'Art Start' project. To that extent, the design of public programmes might have the effect of pulling along more specialist documentation projects.

The obvious challenge to institutions is whether the new documentation methods will grow up in museums in a coordinated, planned manner or instead in haphazard, incompatible forms and formats. The advantages of the former must be obvious, and there may even be arguments for museums around the world to think of designing common protocols for conservation and other

museum documentation, at least for similar types of collections, in order to facilitate future exchange of information.

It seems quite likely that museums will be forced to continue to maintain both conventional paper-based systems at the same time that they are developing new methods based on electronic technologies, if only because of the practical advantages – that all conservators know - of paper records in actual use in the studio. These collections of files are also of historical importance in their own right, and they form part of the history of conservation. A simple-minded calculation of the human resources required to enter the ‘back-catalogue’ of conservation and scientific records even for such a relatively small number of paintings as the National Gallery’s collection produces daunting results and extended time-scales. However, that does not mean that a serious start should not be made – nor does it mean that we should not try to overcome some of the objections that have been raised in sharing this information with colleagues around the world in ways that can be delivered across the Web.

¹ The conservation records include files on a number of outside paintings, including paintings on long-term loan to the collection, but not possessing NG inventory numbers.

² The Scientific Department files also include a large number of records of technical examination of paintings and other painted objects outside the collection.

³ The terms of the Freedom of Information Act came fully into force in January 2005.

⁴ The great majority of enquiries about the collection are made through the Gallery’s information staff, who deal with public enquiries of all types. Many concern simple information about the Gallery’s holdings, location of paintings, requests for further information about particular artists and so on. Information Staff log FOI enquiries with the archivist, who ensures that enquiries are answered within the time limits laid down. They also pass on conservation and scientific enquiries to the relevant department, sometimes to both. Certain of these technical enquiries suggest they should be logged as ‘Freedom of Information’, even though they may not say so explicitly; they are also noted in a log in the relevant department.

Archiving Technical Documentation at the RKD

The Rijksbureau voor Kunsthistorische Documentatie or RKD (Netherlands Institute for Art History) in The Hague administers one of the most important information resources in the world pertaining to Western art from the late Middle Ages to the present. Its general mission is to collect, manage, and provide access to art-historical documentation such as photographs, reproductions, books, and magazines, as well as archives of artists, art historians, art critics, dealers, collectors etc. In this way the RKD plays an important supporting role for museums, universities, auction houses, galleries, and other institutions, as well as for independent researchers, collectors, and private individuals with art-historical interests.

In the mid-1990s the RKD began acquiring archives of technical documentation with the intention of making these accessible to anyone with a professional interest in the material aspects of paintings and the history of art production. The term ‘technical documentation’ as we use it refers to both treatment-related conservation documentation and technical studies of artists' materials and working procedures not directly related to conservation practices. Currently, by far the largest portion of the technical documentation at the RKD concerns paintings in museum collections.

Several museums, research institutes, academic researchers, and private restorers have already transferred their material to the RKD where it can be consulted by others. First and foremost are the archives of Prof. J.R.J. van Asperen de Boer (University of Groningen) and Prof. Molly Faries (Universities of Indiana and Groningen), both pioneers in infrared reflectography (IRR). Together with their students, they performed IRR research on more than 2,000 paintings in museums and private collections all over the world. Their research material consists of ca. 3,500 rolls of film with IRR images, hundreds of manual IRR assemblies, color slides with details of examined paintings, research reports, handwritten notes, and correspondence. In addition the archives of Prof. van Asperen de Boer include files on paint sample analysis and the archives of Molly Faries contain a small number of x-rays.

The RKD also functions as a repository for technical documentation emanating from special research projects. For instance, the Harvard University Art Museums (HUAM) have chosen the RKD as the only non-American location where one can consult a digital version of all visual material gathered for the exhibition *Mondrian. The Transatlantic Paintings* (2001), such as IRR images, UV photographs, x-rays, and slides of paint samples. Furthermore, the RKD is the formal owner of the archives of the Rembrandt Research Project (RRP), which include a large number of x-radiographs. For the time being the RRP's documentation will remain in its present location at the University of Amsterdam, but after the project is completed it will be transferred to The Hague.

Especially noteworthy is the acquisition of important archives of conservation documentation from private restorers. The substantial archives of P.F.J.M. Hermesdorf, who treated many paintings in Dutch public collections, include personal notes and correspondence, treatment reports, before, during and after-treatment photographs, and slides. The files of the SKRA in Amsterdam, a collective of restorers which has recently ceased its activities, contain treatment and

condition reports with photographic material, and a small number of x-rays, of more than 2,000 works of art in public and private collections. These archives are in the process of being opened for study.

The RKD has long-standing contacts with several museums, institutes, and private restorers to try to persuade them to transfer some of their material to us and we have high hopes that we can seriously expand our technical documentation in the near future. In addition to managing and making available material which has been provided by others, the RKD plays an active role in the area of infrared reflectography. Thanks to financial support from the Netherlands Organisation for Scientific Research (NWO), since 1995 we have our own IRR equipment to examine paintings upon request or for special projects in collaboration with museums (Rijksmuseum, Museum Boijmans Van Beuningen and many others). The results of this research are of course added to our archives of technical documentation.

Accessibility

The RKD is funded by the Dutch government and our primary task is to make our documentation accessible to the public. In principle, the technical documentation can be consulted by any interested individual; however, we focus on the following target groups: conservation professionals, technical researchers, museum curators, academic scholars and other art historians, and students. Because the RKD is not (yet) the most obvious place to look for the results of technical examination, we devote a lot of attention to promotional activities for the above-mentioned target groups, such as workshops, lectures, and articles in specialist journals. Interest from the general public (which at this moment is virtually non-existent) is not encouraged. However, we do encourage academic students to consult our documentation and we make an effort to provide them with additional explanation if necessary.

The services we offer include consultation of the material at the RKD by appointment, in a special room equipped with a computer (to study digital files), light boxes (for slides and x-rays) and camera surveillance. Each visitor is assisted individually by a specialized staff member. In addition, there is the possibility of ordering digital material on CD for study at home and/or for use in publications. We will also (for a fee) make computer assemblies from individual IRR images. In special cases we allow experienced researchers to make their own computer assemblies from IRR images we provide, on the condition that we receive duplicates of the assemblies for our archives.

Before any material is made available it is checked for sensitive information, which may include confidential comments, addresses of private owners, invoices for restoration etc. We also check whether there are any restrictions protecting the interests of the persons who have initiated and/or performed the research (the original examiners). For example, certain material is not accessible until the original examiner has had the opportunity to analyze and publish it first. These restrictions are devised in agreement with the individuals or institutes that have transferred their documentation to the RKD. However, we feel it is important to achieve a balance between the rights of the original examiner on the one hand and the interests of other scholars on the other. Intellectual property rights ought not to hinder the progress of knowledge and should not be extended to the grave. At present we do not make a clear distinction between treatment-related conservation documentation and other technical studies. However, we do consider making special restrictions with regard to the consultation of conservation documentation in agreement with the owners of the works of art in question.

In consultation with an international advisory committee of museum experts in the field of technical research, we have developed a set of conditions for the publication of IRR material from our archives.¹ When we examine paintings with our own IRR equipment, a contract is signed in which the owner formally agrees that the IRR images remain the property of the RKD and will in due course be incorporated into our archives, where they may be studied by others. Even when the RKD has the copyright, we consider it important that the owner is kept informed. Therefore, prior to publication the applicant must obtain permission from the owner, and afterwards, both the RKD and the owner receive a copy of the publication. Another condition is that a detailed description of the equipment used for the IRR research is included in a footnote, which is essential for proper interpretation of the material. We envisage similar sets of conditions for other categories of technical documentation as well.

At present we receive ca. 20 visitors a year for consultation of the technical documentation. However, as the RKD has recently moved to new premises offering better facilities for the study of this material, we have increased our promotional activities and we expect the number of visitors to increase. We answer ca. 100 inquiries a year by e-mail, post or telephone, which vary from general questions on technical research to requests for specific information. Two RKD curators, occasionally assisted by temporary employees, devote part of their time to collecting and archiving the technical documentation and making it accessible to visitors. A third person is responsible for conducting IRR research with the RKD's own equipment and for processing the results.

Database *RKDtechnical*

An important tool for making the technical documentation more accessible is the database *RKDtechnical*, which has been developed especially for this purpose. This database, which is searchable in various ways, contains the essential object data (maker's name, title, dimensions, whereabouts, etc.) and research data (name of researchers, research date, equipment used, type of documentation, location etc.). It is an application of *ADLIB* and uses the same principles and validation lists as our other databases: *RKDartists* (with artist information) and *RKDimages* (with descriptions and illustrations of works of art).² In the future the object data in *RKDtechnical* will be linked to *RKDimages*, which contains further art historical information including bibliography and provenance.

From the start it was decided that *RKDtechnical* (despite its English name) should be in Dutch, like the other RKD databases. However, all descriptive titles of the entries will be translated into English so that it can be used by an international audience. At first the database content was limited to IRR research, but later on we created new datasets for documentation of other research techniques, such as x-radiography, dendrochronology, and paint sample analysis, as well as information on restoration treatments. The database contains basic descriptions enabling the user to quickly find out which works of art have been examined, what kind of research techniques were applied and where the documentation can be found.

It should be stressed that *RKDtechnical* is a reference database that does not provide the material itself, or an in-depth analysis of it. In this it functions in a similar way to the database used by the International Network for the Conservation of Contemporary Art (INCCA). However, in the future it could be linked to databases containing technical documentation in digital form. At present *RKDtechnical* can only be used within our institute, but information from it is already shared with professionals from outside by sending paper printouts or by downloading sets of electronic records. In due course the database will be made accessible via the RKD's website. However, it is our current

policy not to give direct Internet access to the actual material itself because of copyrights and restrictions concerning intellectual property.

It is our intention not to limit the scope of our database to material at the RKD, but to include references to material which is kept at other institutes and museums. By doing this we can make researchers aware of the existence of available documentation in their specific field of interest and thus stimulate the sharing of information. Recently, the RKD completed a project with the Mauritshuis in The Hague for which the essential data of all technical documentation for their Rembrandt and Vermeer paintings was added to *RKDtechnical*. We hope to start similar projects with other museums, but for this we are dependent on external funding.

Digitization

An increasing portion of our technical documentation is preserved as digital files. As is customary today, all IRR research done by the RKD is captured digitally on location and assembled on the computer. All rolls of film with IRR images from the archives of van Asperen de Boer and Faries have been digitized so that they can also be studied and assembled on the computer. The digitization of the rolls of film was largely done by a specialized company. This turned out to be very time-consuming because the quality of the scans had to be checked constantly by us.³ From this we gained the experience that quality is far more important than quantity when digitizing technical documentation, because otherwise the usefulness of the scans is limited.

Ideally we would like to digitize all our film-based material, such as x-rays and slides, but we do not currently have the funds or staff to execute such an operation within in a short timeframe. Therefore, we have to give priority to technical documentation which cannot be replicated, for instance because the examined works of art are no longer or are hardly accessible. We have no plans to digitize written or typed documentation such as notes and reports. It is of the utmost importance to preserve the original documents not only because of their historical importance, but also in order to be able to check the quality of the digitized images. One of the advantages of digitization is that the files can be easily duplicated, which facilitates the sharing of documentation. The possibility of duplication also makes it more appealing to museums and institutes to deposit some of their technical documentation at the RKD, because contrary to paper-based records they can keep the material at their own disposal while a back-up is created at a different location.

A further advantage of digital images is that they occupy less storage space, but they pose new problems regarding durability. Everyone knows the risks of storing digital images on a carrier/medium which becomes obsolete or deteriorates so rapidly that it can no longer be read. Therefore, storage and conservation of digital material is an ongoing process which demands openness to new insights and technical developments. At the RKD we started storing digital images on CD-ROMs, believing this was a stable medium. However, soon we heard alarming stories about disc quality and longevity. Recently the RKD purchased an Optical Library/Jukebox system (using *blu-ray* discs) which offers the possibility of long-term storage while the files remain available for consultation. This system is now used to store and back up all our digital visual material.

A serious risk of digitizing technical documentation is that essential object and research information is lost, such as comments/observations written on the reverse of a photograph, or technical notes which are kept in the same paper file. At the RKD we use the above-described

database *RKDtechnical* to preserve this kind of information together with a reference to the location of the digital image.

Concluding Remarks

In our opinion, technical documentation is different from other types of documentation because it demands some basic knowledge of technical research and a context in which it should be interpreted. Therefore it is not really suitable for sharing with a broad, unrestricted audience (except, for example when it is presented with additional information in a publication). Nevertheless, its use ought not to be restricted to conservators and technical researchers, but it should also be made available to museum curators and other art historians who are not specialized in technical research.

At the RKD we are well aware of the fact that our situation is markedly different from that of a museum that has its own conservation studio. We do not have the original works of art nearby, nor can we ask someone from the conservation department to give explanations to visiting scholars. But what we can offer is the unique possibility to compare technical documents of related works of art in different collections. We can also provide photographic material (photographs, slides or digital images) which can help in comparing technical documents such as IRR images and X rays with the painted surface, although of course this can never replace the work of art itself. For students and professionals who are not that familiar with technical research we are most willing to give additional explanation to some extent. However, in the end, the scholars themselves are responsible for any conclusions they draw from studying the results of technical examinations.

¹ Members of this advisory committee include at present: Maryan W. Ainsworth (Metropolitan Museum of Art, New York), J.R.J. van Asperen de Boer, Arnout Balis (Rubenianum, Antwerp), Rachel Billinge (National Gallery, London), Molly Faries, Alison Gilchrest (Andrew W. Mellon Foundation, New York), Henry Lie (Straus Center for Conservation, Harvard University Art Museums, Cambridge, MA), Jochen Sander (Städelsches Kunstinstitut, Frankfurt am Main), Ron Spronk (presently Straus Center; from July 1, 2007, Head of the Department of Art, Queen's University, Kingston, Ontario), Hélène Verougstraete and Roger Van Schoute (Laboratoire d'études des oeuvres d'art par les méthodes scientifiques, Louvain-la-Neuve), Elizabeth Walmsley (National Gallery of Art, Washington).

² See <http://www.rkd.nl> for more information. The RKD databases were designed before *Dublin Core* was introduced as an international standard for describing information resources on the Internet. Currently we are investigating if and how the Dublin Core Metadata Element Set could be applied to our databases.

³ The people who do the digitization are mostly trained as photographers and they are used to scanning with a rich contrast between the lighter and darker areas. However, IRR images have to be scanned as 'grey' as possible in order to use them for making computer assemblies.

Access to Conservation Information

Research on this subject was recently completed (*Inventarisatiesystemen restauratie, 13 November 2006*) wherein the main goal was to explore the current state of all conservation documentation systems used at the Rijksmuseum. The study revealed that many improvements are needed. At the current time, it is not really possible to access all the different documentation systems that are used in the Rijksmuseum with a single click of the computer.

Emphasis has been placed on the need for improved and uniform access because of the wide variety of documentation systems in use and the recent reorganisation, in which the conservation departments were combined in a single department. Our main difficulty with regard to information access has to do with standardisation. It is practically impossible to obtain a complete overview of all information relating to an object in the Rijksmuseum collection using the current documentation system (Adlib), let alone to provide this information in a coordinated way to potential users within and outside the museum.

It is indeed desirable that conservation documentation be contained in a central documentation system, together with all other object information (e.g., loans etc.). Therefore conservation documentation and technical research will not be separate; at the most, two different modules will be set up within the same central documentation system.

As a governmental institution, all our information is public; therefore, the topic of conservation documentation is high on the agenda. One might call conservation documentation the moral obligation to the object. Since February 2007, *Spectrum* (the accepted handbook in the Netherlands and Flanders on standards of quality for museum management) has been in use in the Rijksmuseum.

Is any or all documentation in its current form shared with other professionals in your own museum? Is it important that this be facilitated?

Conservation treatment reports in hard copy are available for all those who are professionally involved in the field, and the information is freely shared.

Is any or all documentation in its current form shared with conservation professionals in other museums? Is it important that this be facilitated?

Indeed, we think that all information should be shared with colleagues; however, in many cases, the use of different languages can pose a problem at the international level.

Is any or all documentation in its current form available to any interested individual such as a freelance conservator, scholar, reporter? or to the general public?

Yes, as a governmental institution we are obliged and willing to disseminate this information.

Are there new or changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

As noted above, the Rijksmuseum has been following the standards specified in the handbook, *Spectrum*, since February 2007.

Should a distinction be made between treatment-related conservation documentation and technical studies of artists' materials?

Generally speaking, we do not consider that there is or should be a distinction.

Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience? Are there specific exceptions in an affirmative or negative response to this question?

Some information is available on the website; however, not all information related to conservation documentation is made available unless it is requested.

Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

No, there are no such obligations.

Are there publications issues that result in individual or departmental protection of information (i.e.. refusal to share or release information for fear of someone else publishing it)?

No, nothing out of the ordinary. New material may be restricted until it has been published.

Digitization of Conservation Information

Currently, conservation documentation is not directly linked with the rest of the documentation for an object. The information fields in Adlib are not up to the standards we seek. We are in the process of determining how to produce clear, digitized documentation for each field (furniture, paintings, textile, marine models, metals, glass and ceramics, books and paper).

Ideally all information should be digitized; however, practically speaking, this is an enormous job considering the nature of the documentation: documents, photos, slides, notes, remnants of materials etc. It is desirable to keep originals, although they will also need conservation. Therefore it remains to be determined whether the benefits of retrospective digitization on such a scale outweigh the costs.

Staatliche Museen zu Berlin

The seventeen museums, three research institutes and the Replica Workshop of the Staatliche Museen zu Berlin (National Museums in Berlin) together make up Germany's largest institution presenting world art and culture from its beginnings to the present day. This universal museum of art is funded jointly by the national government and the federal states. Museum Island Berlin (*Museumsinsel*) – the jewel of Berlin's museum landscape – was added to the UNESCO World Cultural Heritage List in 1999.

Today the National Museums in Berlin form part of the Prussian Cultural Heritage Foundation, but their origins stretch back to the Royal Museums, founded by King William Frederick III of Prussia. The National Museums combine the following museums and institutions under the roof of a single General Directorate:

- Egyptian Museum and Papyrus Collection (in the Altes Museum)*
- Collection of Classical Antiquities (in the Pergamon Museum {*Pergamonmuseum*} and the Altes Museum)
- Ethnological Museum*
- Gemäldegalerie (Old Master Paintings)*
- Art Library
- Museum of Decorative Arts
- Köpenick Palace
- Kupferstichkabinett – Museum of Prints and Drawings*
- Numismatic Collection (in the Bode Museum)**
- Museum of European Cultures
- Museum of Asian Art
- Museum for Photography / Helmut Newton Foundation
- Museum of Islamic Art (in the Pergamon Museum)
- Museum for Pre- and Early History
- National Gallery
 - Old National Gallery*
 - New National Gallery
 - Hamburger Bahnhof - Museum für Gegenwart – Berlin
- Museum Berggruen
- Friedrichswerder Church
- Museum Scharf-Gerstenberg (opening spring 2008)
- Sculpture Collection and Museum of Byzantine Art (in the Bode-Museum)*
- Museum of the Ancient Near East (in the Pergamon Museum)
- Central Archive**
- Institute of Museum Research
- Rathgen Research Laboratory*
- Replica Workshop**

The institutions and collections marked with one asterisk have responded to the questionnaire. Those marked with two asterisks have indicated that the questions are not applicable to them. The questionnaire has also been distributed among the other institutions within the Prussian Cultural Heritage Foundation. One of the world's major cultural organizations, the Foundation comprises:

- The National Museums in Berlin
- The State Library*
- The Secret State Archives Prussian Cultural Heritage Foundation
- The Ibero-American Institute
- The State Institute for Music Research

The State Library is a research and reference library open to the public, with comprehensive present-day and historic collections, offering a wide range of services on two sites. The founding of the Churfürstliche Bibliothek zu Cölln an der Spree (Electoral Library) nearly 350 years ago established the basis for what is today the most important academic research library in Germany.

Access to Conservation Information

Is any or all documentation in its current form shared with other professionals in your own museum? Is it important that this be facilitated?

When applying these questions to the National Museums in Berlin, we must first address the meaning of “your own museum”. Does this refer to single museum collections, or can the National Museums be considered as one universal museum complex? In addition, a distinction is made between the conservation department and the curatorial function within the museum.

The picture is somewhat mixed. In general, documentation in each collection is accessible to all in-house staff. This includes curators, who may want to access documentation records for specific questions related to materials and techniques (“*Kunsttechnologie*”). Condition reports are also shared with couriers on a regular basis. Documentation on treatments, however, is not usually made available outside the conservation departments until treatment is completed, and there is also understandable reluctance to share “unfinished” or internal reports.

Even within a single collection, there are sometimes concerns about intellectual property rights, which illustrates the need for greater acceptance of conservation as a profession with its own distinctive research characteristics. This may be the reason why access to documentation is in many cases closely monitored by conservators, while in other cases, only unchangeable files (e.g., PDF format) are made available.

Sharing documentation in-house raises IT issues, since in most cases the respective servers can only be accessed from within that collection. An alternative is to share documents via e-mail, with all the limitations this mode of communication entails. The existing software and hardware needs to be significantly improved in order to further facilitate this kind of in-house exchange.

There is an increasing tendency to outsource larger conservation projects to the private sector. This is especially (although not exclusively) the case for the Museum Island, given the preparations underway for the restoration of the Pergamon Museum (scheduled for completion in

2026), the reconstruction of the Neues Museum (scheduled to re-open in 2009) and the restoration of the Bode Museum (which re-opened in October 2006). Documentation related to these projects is contracted out as well, making it difficult if not impossible to monitor and maintain in-house control. In many cases, documentation related to these outsourced projects is accessible only in hard copy, even in cases where digital records were submitted, because the museums lack the software necessary to work with or even view the corresponding files.

Some respondents expressed concern that even if the actual work is contracted out, responsibility for the preservation of the collection remains with the National Museum. The museums, their conservation departments and the allied programs concerned with conservation issues must be supported in fulfilling this essential mandate.

Most conservation departments consider free access by conservation staff to all research records to be a precondition for scientific exchange, discussion, and in brief, progress.

MuseumPlus

This collection management system was introduced in 2004 on a pilot basis in four of the museums. It is anticipated that the system will be incorporated into all of the Berlin museums following the pilot phase. Some collections, among them those that already have digitized documentation in the MuseumPlus system, have fewer problems providing access for all in-house staff. In some cases, documentation is integrated into the library and hence is accessible to a wider circle of interested parties.

The limitations of the current IT situation are experienced throughout the collections. This is viewed negatively, especially in museums that have made it an institutional priority to improve documentation in the conservation department by increasing its precision (and thereby its long-term sustainability).

Is any or all documentation in its current form shared with conservation professionals in other museums? Is it important that this be facilitated?

The restrictions referred to above apply to an even greater extent to conservation professionals in other museums. As a consequence, there is an ambivalent attitude with regard to the sharing of information. Most outside requests relate to questions about materials and techniques rather than conservation treatments. In general, documentation is considered confidential, but it may be shared upon special request, in which cases it is usually monitored closely by in-house staff. This control by museum staff seems appropriate not only for reasons of safeguarding the confidentiality of information, but also in order to avoid misinterpretations and misunderstandings. Several museums stress that they would appreciate facilitated information exchange with colleagues from other institutions.

Condition reports accompanying a loan are shared with the conservators and registrars in other museums who are responsible for the exhibition. The absence of both an international glossary (of damage) and a standardized methodology for condition surveys is a drawback, and institutional collaboration in this field would be welcomed by many museums. How to capture condition factors in measurable and replicable ways for comparative purposes and future monitoring is an area which deserves further development.

Is any or all documentation in its current form available to any interested individual such as freelance conservator, scholar, reporter? or to the general public?

Answers to this question range from a general “no” to a straight “yes”, taking into account the issues mentioned above. While some institutions advocate the open sharing of documentation, others emphasize its confidential nature and grant access only for serious research requests. Reluctance often stems from the fear of being deprived of intellectual property, through unauthorized and unacknowledged publication.

In most cases, if the request is considered reasonable and constructive, access may be granted under certain conditions. The importance of close monitoring and control, which seem to be facilitated through digital systems such as MuseumPlus, was emphasized by most museums.

In the future, Web-based access to conservation documentation appears to be a priority for at least some conservation departments. For institutions with large databases, accessibility by interested parties via the Web is also a key priority.

Are there new or changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

In most museums, staff are not aware of any new or changed legal or ethical considerations. Only two institutions answered in the affirmative. For a public authority such as the National Museums, there are implications regarding the accuracy of the information and hence about access for the interested public.

Should a distinction be made between treatment-related conservation documentation and technical studies of artists' materials?

It often seems difficult to separate one from the other. Similar restrictions are applied to both types of documentation, with greater reluctance expressed in the case of conservation documentation. There are two probable reasons: first, the conservation profession is not legally protected in most parts of Germany; second, it is not easy to apply conservation treatment decisions from one case to another and the sharing of “raw” treatment documentation could easily be misinterpreted and misused.

Technical studies usually generate broader interest from outside researchers; research related to materials and techniques tends to be published in peer-reviewed journals or museum catalogs, where it can be easily accessed.

In MuseumPlus, both types of information are entered in the conservation module and can be searched separately. Several respondents raised the issue of confidentiality regarding both types of documentation. However, it seems likely that in the future, both will merge to an even greater degree, as conservators become more involved in technical studies. Eventually, conservation strategies are likely to benefit from increased exposure to peers and/or public audiences.

Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience? Are there specific exceptions in an affirmative or negative response to this question?

Most museums see the advantage of sharing conservation documentation with a broader audience. It seems necessary to strike a balance between the risks and potential gains.

Among the risks mentioned were: theft of intellectual property, copyright fraud, competitive interaction between professionals, damage to works of art through ill-informed or uncritical copying of treatment methodologies, misinterpretations and misunderstandings by non-professionals, and the facilitation of forgeries. Especially sensitive areas identified included the topics of *Beutekunst* and provenance research.¹

Among the advantages mentioned were: peer review and exposure resulting in the development of conservation as a scientific profession; raising public awareness of the needs and complex characteristics of conservation; and creating a platform for conservators to publish their work.

Only a minority of the institutions that responded endorsed unlimited access. In most cases, the opportunities for broader access are well recognized, but often the reluctance to take the risks described still prevails. It may be a matter of time and public awareness before significant changes in attitude become common.

Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

At the moment there are no affirmative obligations to share conservation documentation. Most collections reject this idea, citing confidentiality. Some propose that the existence of conservation documentation (which could then be made available on request) should be shared together with other information.

As a digital system, MuseumPlus provides a link between the two modules of ‘Conservation’ and ‘Collection’, allowing the two information types to be either combined or separate.

Are there publications issues which result in individual or departmental protection of information (i.e., refusal to share or release information for fear of someone else publishing it)?

The existence of certain publication issues became obvious in the respondents’ answers. Conservation documentation should be subject to copyright rules and protected as the intellectual property of conservation professionals. As a general rule, ongoing research should be published by staff members. Conservators and conservation scientists who have entered the publication arena (which until quite recently was the exclusive domain of art historians and archaeologists) demonstrate an increased awareness of this issue. Ironically, sometimes their concerns regarding the protection of intellectual property are directed not only at colleagues from other disciplines, but also at their conservation peers.

¹ *Beutekunst* is a term used for ‘displaced’ or looted art, such as for example, works of art taken from German collections to Russia after WW II. The pedigree for works of art as promoted by the Berlin declaration of 2003 for archaeological objects seems to be at odds with this overemphasized sensitivity in some areas.

Not all conservation departments see this as an issue; however, with conservation gaining a growing research capacity and profile, it seems necessary to take these fears into account and to apply the same ethical standards to conservation research as to any other type of research.

Digitization of Conservation Information

Is conservation documentation woven into the broader context of collections information? Purely technical issues aside, should conservation information be treated differently than other types of object cataloguing information? Is conservation documentation more like the non-public financial information – such as price paid and current insurance value – also tracked in collection information systems?

There is a desire to include conservation documentation in the collection management system. However, as noted earlier, MuseumPlus is still in a pilot testing phase and is not yet in place in all the art museums. Even those museums that advocate access are in favor of effective control; the confidentiality of certain information should and must be maintained.

Conservation treatment documentation is relevant primarily for museum staff members; it is included in catalogue information in specific cases, but not as a general rule. On the other hand, some responses indicate that both types of information constitute part of the object and its history, and hence it should be possible to link them.

Should all previous records ideally be digitized? If so, should the original documents (which obviously have intrinsic value) also be preserved? What are the financial implications of these decisions, and would retrospective digitization be practical even if it is desirable?

The answer throughout the collections is a clear ‘yes’. There are many advantages to digitizing previous records. There is also agreement about the importance of preserving the original documents under archival conditions, both for their intrinsic value and for practical reasons. Many manuscripts or other documents cannot be digitized without a considerable loss of information. However, all museums are fully aware of the financial implications. The overall extent of records and material at the National Museums and the Prussian Cultural Heritage Foundation exceeds any budgetary possibility for major conversion in the near- or mid-term.

It might be advisable to delay major digitization campaigns until the new electronic systems are installed, and then decide on the extent and mode of conversion. Emphasis could be given first to specific types of documentation such as early photographs, or older documentation.

Are there aspects of traditional documentation or of the process of creating it that deserve attention so that valuable information does not get lost in the creation of documentation as digital files? The current practice of adding comments from visiting professionals to the file as a note, for example, might be more difficult in digital documentation. On the other hand, if conservation documentation is publicly available to some extent, should submitting comments and questions be more easily facilitated?

Some respondents indicate that digitized material will never completely replace historical sources. Others do not see significant advantages to traditional documentation as compared with digitized documentation. Primary documents, such as removed fills, original mountings, or cross-sections of original samples, obviously have to be treated (and preserved) differently.

It should be feasible to add comments in digital form if the databases are maintained on a regular basis. As long as professionals take care of this documentation, the risks of data loss through digitization are considered to be low.

Other respondents felt that digital and analog image files should be considered as parallel modes of documentation. Ideally, conservation documentation still requires a hardcopy printout on archival-quality paper with permanent ink. Digital files are important because they can be viewed on a computer screen for details that a regular printout will not provide. The same is true for text information. Both digital and analog modes complement each other at present, suggesting that a final resolution to this question is not possible at this time.

An important, unresolved issue is the desirability of being able to add notes or remarks within MuseumPlus. This option requires further discussion and software development.

Conclusions

The wide diversity of responses mirrors the variety of programs within the National Museums. The collections are largely independent of one other and each has developed in its own way over the last 177 years. In many cases, answers to the questionnaire covered the gamut from open to restricted or controlled access, and from withholding to sharing of information. It seems that the art museums are more concerned with confidentiality than the other museums and institutions.

Legitimate issues of confidentiality and protection of intellectual property are creating barriers within conservation departments, between these departments and the curatorial staff, between institutions within the National Museums, within the Prussian Cultural Heritage Foundation, and last but not least, also at the interface with the public. These barriers are sometimes weak, but they can also be quite impermeable.

At the same time, discussion has been stimulated at various levels. The advantages of sharing information with peers may not yet be fully appreciated, but they are becoming more widely recognized. The role of digitization in speeding up and facilitating this process is obvious to all. Recognition of the responsibility to share acquired information with the public, at least in non-sensitive areas, has also grown significantly over the past years.

One undeniable challenge is the traditionally decentralized structure of the National Museums. On one hand, this structure does not lend itself to synergy and streamlining. On the other, only independent units such as these could collectively have built a large cultural institution of such kaleidoscopic richness as this is today.

Legitimate doubts can be raised as to how well this structure is suited to facing the challenges of conservation documentation today. Conservation has certainly gained a research profile which needs to be acknowledged and respected within the museum community. And exchanges among the various conservation departments must be fundamentally deepened and broadened.

Responses to the questionnaire show that conservators are fully aware of their important responsibility and are striving to achieve a balance between confidentiality and access. The degree of

awareness of the issues associated with conservation documentation is very high. With the decision to create a *Kompetenzzentrum Konservierung* (central conservation and conservation science facility) adjacent to the Museum Island, it seems the National Museums and the Prussian Cultural Heritage Foundation are currently preparing the ground for appropriate and sustainable conservation strategies in the digital age.

The initiative of the Andrew W. Mellon Foundation to involve the National Museums in Berlin in this exciting and enriching dialogue is greatly appreciated. Following this energizing impetus, it is expected that more museums and institutions within the National Museums and the Prussian Cultural Heritage Foundation might also engage in these discussions in due course, which will most certainly be for the common good of the institution as a whole.

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Background Information

The mission of Statens Museum for Kunst is to enrich and move people through its artworks. Thus it is important to the museum that every department plan and implement its efforts in accordance with the mission statement, which underscores that the artworks should be accessible and that knowledge about the artworks should be readily available.

Since 1999 the museum's Collections Management System (CMS) has been the central instrument for managing data. The CMS was developed by Statens Museum for Kunst and can be compared with TMS or the Merlin System. All kinds of documents can be managed by the CMS, which is connected to a photographic database capable of storing a multitude of digital images. The CMS is also available online to the general public. Statens Museum for Kunst was the first museum in Scandinavia to present a large part of its collection online. Since then the demand for more information has been growing steadily.

It is our vision to continue digitizing the collection in order to make it available both to the general public and to researchers worldwide, thereby strengthening our national and international infrastructures.

However, one type of information has not been included in CMS until now: conservation documentation. The museum's conservation documentation dates back to the creation of the museum in the late 19th century. Until very recently, it was made up of analogue cards and paper reports, glass plate negatives, black/white gelatin negatives and their prints, colour slides of different formats, and x-ray negatives.

As the conservation department consists of three sections – paintings, objects, and drawings and prints – there is a vast and varied amount of documentation.

- During the past 100 years more than 3,500 treatment records have been generated. Some are short, while others comprise several volumes of documentation.
- Approximately 8,000 black & white glass plate negatives 13 x 18 cm and 18 x 24 cm.
- Approximately 13,000 black & white film negatives 9 x 12 in.
- Approximately 3,000 colour slides 6 x 6 cm and 2,300 size 24 x 36 mm.
- Several thousand black & white 6 x 6 cm negatives.
- More than 1,000 x-radiographs in various formats.

Over the past five years, electronic records have replaced analogue records, and during the past three years, digital images have taken the place of analogue negatives and slides. In addition, digital infrared images are now routinely included in the files, thus x-ray negatives are the only remaining analogue photographic format left. Recently many of these negatives have been digitized on a flatbed scanner in order to enhance their accessibility and research use within the conservation department.

Access to Conservation Documentation

Is any or all documentation in its current form shared with other professionals in your own museum? Is it important that this be facilitated?

The records of the conservation department have always been accessible for study by all museum staff members. We would like to encourage and strengthen interdisciplinary study of the collection among curators, conservators and other professional staff members. We feel that the conservation documentation ought to be fully searchable in digitized form in order to enhance the accessibility of this information.

Is any or all documentation in its current form shared with other professionals in other museums? Is it important that this be facilitated?

On request, all information in the files is shared with museum conservation professionals and conservation students without reservation.

Members of the INCCA project (International Network for the Conservation of Contemporary Art) provide access to conservation documentation that is of interest for the network – but not in its raw form. The information is summarized, keynoted and tagged with metadata for searching of the database by INCCA members. It is a mandatory that INCCA members contribute 20 documents a year. It is important to facilitate information exchange between museums and related institutions – especially information pertaining to contemporary art and artists, who often work with complex ‘installations’ and materials. Otherwise, there is little information sharing between museums except in the case of direct requests.

Is any or all documentation in its current form available to any interested individual such as a freelance conservator, scholar, reporter? or to the general public?

The conservation files are accessible to external scholars and the press on request. In-house staff often have to mediate contents for external visitors, as we are aware that certain types of information can be difficult to interpret in the same spirit as they were recorded.

The museum has had great success with exhibitions dealing with conservation projects. They have been presented as open workshops, where the general public could follow the conservation process both in the museum and online. Conservation has also been described in exhibitions. The latest example was our Rembrandt exhibition (*Rembrandt and his Workshop 2006*), where international experts in conservation, in collaboration with Danish experts and curators, produced conservation information that was made available to the general public.

Are there new or changed legal or ethical considerations that you feel require you to provide access to conservation documentation?

When sharing conservation documentation, no restrictions whatsoever are placed on the treatment files, although in certain instances, assistance is needed to interpret the content. Technical studies that have not been fully published may be restricted. This nature of this restriction is determined according to whether publication or presentation of the material is anticipated within a

reasonable timeframe or whether the material is still under investigation within an active research infrastructure.

For all disciplines, the evolution of the profession means that some treatments and conclusions from previous technical studies will no longer comply with current practice, ethical observations or ways of thinking. However, this should not restrict access to these records as they must be viewed as historical evidence of past practices that were carried out for the same purpose as today, i.e., the highest degree of care for the collection and its understanding.

It is therefore considered important to comply with the “Danish Act on Public Access” in our historical documents as well. This practice can be viewed by interested external parties as transparency with regard to the evolution and progress of conservation practice and it will help to suppress any accusations about secrecy or concealment of sensitive information.

Should a distinction be made between treatment-related conservation documents and technical studies of artists’ materials?

We would find it advantageous to de-emphasize the distinction between treatment-related conservation and technical studies of artists’ materials, because they are so intertwined. This would also help to bridge the gap between conservation scientists and conservators – although we do believe that treatment-related documentation is more sensitive in nature than technical documentation.

Are there advantages to sharing conservation documentation with a broader audience? with an unrestricted audience? Are there any specific exceptions in an affirmative or negative response to the question? Are there affirmative obligations to share conservation documentation along with other information, such as bibliography or provenance information?

Making conservation documentation available to the public along with art historical and historical information such as provenance will also, in our view, enhance public interest in technical art history, artists’ materials etc. We are convinced that this type of information sharing may even cause public interest to increase and make our collection more attractive to audiences that do not normally visit art museums. By sharing this information about our cultural and material past, we may add a stimulating dimension of excellence to our institute, as well as enhancing our interdisciplinary and research potential.

One could argue that by making this information available, an interest and perhaps a need for information is created which did not exist before, but unless there is a use for this type of knowledge, it will be dismissed as non-valuable information by the audience.

Are there publications issues that result in individual or departmental protection of information?

We would advise conservators and/or curators who wish to protect certain information until research may be published to address this issue on an individual basis.

Digitization of Conservation Information

Is conservation documentation woven into the broader context of collections information? The purely technical issues aside, should conservation information be treated differently than other type of object cataloguing information? Is conservation documentation more like the non-public financial information – such as the price paid and current insurance value – also tracked in collection information’s systems?

As mentioned above, the conservation documentation is currently not available in digitized form. In our CMS, certain information relating to the insurance value of individual artworks, storage security codes etc. are not available to the public. However, we do not believe that information in the conservation files will require any such restriction.

A growing number of conservation staff members have expressed their desire that all information be digitized in order to have online and instant access to the huge amount of information in the files. The department of paintings has an archive of more than 1,000 cross-sections and paint samples, which currently cannot be retrieved for comparative analysis with other material in-house. In other words, the conservation files continue to grow and possess a potential goldmine of information, but there is no ready access to this information except through hours of searching a variety of analogue file cabinets and their dossiers.

Should all previous records ideally be digitized? If so, should the original documents (which obviously have intrinsic value) also be preserved? What are the financial implications of these decisions, and would retrospective digitization be practical even if it is desirable?

Ideally, all documents should be digitized. Naturally, the original documents have intrinsic value and should be preserved, as they also reflect the development of the discipline over time. The cost of full digitization of the conservation documentation was calculated earlier this year, although the cost of updating the CMS structure, which would enable it to host this information, has not been accounted for.

<i>Task</i>	<i>Amount</i>	<i>Price in DKK</i>
<i>Digitization of the conservation records</i>	<i>35,000</i>	<i>1,750,000</i>
<i>Digitization of the glass plate negatives</i>	<i>8,000</i>	<i>600,000</i>
<i>Digitization of the black & white negatives</i>	<i>13,000</i>	<i>975,000</i>
<i>Digitization of the colour slides (24x36 and 6x6)</i>	<i>5,300</i>	<i>397,500</i>
<i>Digitization of the black & white 6x6 negatives</i>	<i>ca. 2,000</i>	<i>150,000</i>
<i>Digitization of the x-radiographs</i>	<i>ca. 1,000</i>	<i>75,000</i>
<i>Total</i>		<i>3,947,500</i>

Note: Using a conversion rate of 1 US\$ = .18 DKK, the above total is US\$ 721,686.

In order to be able to adequately store the information and metadata in an accessible format within CMS, we will need to add several extra pages and fields, with ample links within the information structure already available in CMS. The creation of this new infrastructure, including the directly accessible public platform, will require an estimated 1,500,000 DKK (US\$ 274,232).

Are there aspects of traditional documentation or of the process of creating it that deserve attention so that valuable information does not get lost in the creation of documentation as digital files? The current practice of adding comments from visiting professionals to the file as a note, for example, might be made more difficult in digital documentation. On the other hand, if conservation documentation is publicly available to some extent, should submitting comments and questions be more easily facilitated?

Clearly it can be more difficult to create digital information than analogue information. Digital information requires standards and more accurate information, so that the identity of the writer can be stored. And digital information requires digital equipment that can be used both during fieldwork and in the office. On the other hand, digitized information can be easily accessed. In the long run, the benefits of having conservation documentation in digital form will surely outweigh the cost of production.

We feel strongly about the desirability of sharing metadata and in particular conservation research files – especially considering our need to share information and to participate in interdisciplinary research infrastructures, with regard to both research in progress and material that is already published.