

ABSTRACTS

34th CONFERENCE AND WORKSHOP

MONTRÉAL 2008



CANADIAN ASSOCIATION FOR
CONSERVATION CONFERENCE
30 MAI AU 5 JUIN 2008
ASSOCIATION CANADIENNE
POUR LA CONSERVATION
ET LA RESTAURATION

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SPECIALS EVENTS & GENERAL INFORMATION

Thursday, May, 29th

- ✚ Opening Reception, Château Ramezay
280, Notre-Dame Est Street
Montréal, Québec H2Y 1C5
Tel: 514 861-3708

Friday, May 30th

- ✚ Meeting of the Regional Representatives of CAC
Room R 515
Bibliothèque et Archives nationales du Québec (BAnQ) – Grande Bibliothèque
475, boul. De Maisonneuve Est
Montréal, Québec H2L 5C4
Tel: 514 873-1100

- ✚ *Per Guldbeck* Memorial Lecture

Saturday, May 31st

- ✚ CAPC Meeting
- ✚ CAC Annual General Meeting
- ✚ Banquet, Lion d'Or
1676, rue Ontario Est
Montréal, Québec H2L 1S7
Tel: 514 598-0709

Sunday, June 1st

- ✚ Workshop Opening Reception, McCord Museum of Canadian History
690, Sherbrooke Street West
Montreal, Québec H3A 1E9
Tel: 514 398-7100



CONFERENCE PROGRAMME

Thursday, May 29th		Pre-registration
		Opening Reception, 6 pm, Château Ramezay
DAY 1		
Friday, May 30th		Registration Desk open from 8 am to 4 pm Grande Bibliothèque, Bibliothèque et Archives nationales du Québec (BAnQ)
8:30 – 9:00		Announcements and Opening Address
Paper Session chair: Joan Fussell	9:00	Mould Remediation of Architectural Photo-Reproductions and Drawings <i>David Daley</i>
	9:25	Preservation and Conservation of Laminated Documents. What is your Sandwich Made of? <i>Françoise Richard</i>
	9:50	The Ten Crucial Days of the American Revolution: Conserving an Eyewitness Account of the Battle of Princeton, January 3, 1777 <i>Ted Stanley</i>
10:20 – 10:50		Coffee Break
Textiles / Conservation Science Session chair: Elizabeth Richards	10:50	A Modified Mount for Asian Robes <i>Bernd Hildebrandt, Carolyn Morgan, Kirsten Hone and Irene Karsten</i>
	11:15	Prediction of Damages Caused by Pollutants Using Risk Management Approaches <i>Jean Tétreault</i>
	11:40	Off-Gassing...Off-Putting! Linoleum Printing Blocks: Their Storage and Display <i>Laura Cunningham</i>
12:05 – 1:40		LUNCH Meeting of the Regional Representatives of CAC, Room R-515, Grande Bibliothèque
1:40 – 1:50		Announcements CAPC Message
1:50 – 2:30 <i>Per Guldbeck</i> Memorial Lecture		Reassessing conservation. Paradigme Shift and Shared Responsibilities: the Contributions of First Nations <i>Élise Dubuc</i>

Education	2:30	Cinderella Infiltrates the Ball: Heritage Conservator Dance with Community Organizations <i>Sharon Evelyn Little</i>
Session chair: Julia Landry	2:55	Cultural History Baby. Natural History Bathwater - Addressing the Need for Specialist Conservators of Plant and Animal Materials <i>Eve Graves</i>
3:20 – 3:30		Announcements
3:30 – 5:30		Tours: <i>Grand Séminaire de Montréal</i> Golden Square Mile <i>Écomusée du Fier Monde</i>
DAY 2		
Saturday, May 31st	Ouverture du bureau des inscriptions de 8 h 00 à 16 h 00	
8:30 – 8:45		Announcements
Preventive Conservation / Public Art	8:45	The Collections of the Archives nationales de France. Evaluation of the Physical State of the Collections before Moving <i>Anne Lama</i>
Session chair: Kathy Nanowin	9:10	The Monastic Library (manuscripts, imprints and archives) of the Holy Monastery of Prophet Helias in Santorini (Thera) Greece <i>Nikolaos Mantzouris</i>
	9:35	The Centre de conservation du Québec: an Approach to Public Art <i>Michèle Lepage</i>
10:00 – 10:30		Coffee Break
Public Art	10:30	The Conservation Treatment of the <i>Endocrinology</i> Mural Painted by Marian Scott <i>Anne Lapointe</i>
Session chair: Michael O'Malley	10:55	Airport as City Square: Toronto, Edmonton and Winnipeg Airports, 1964 <i>Bernard Flaman</i>
	11:20	A Restored Vision: The Conservation of Jack Shadbolt's Airport Mural <i>Bush Pilot in the Northern Sky</i> <i>Cyndie Lack</i>
11:45 – 1:15		LUNCH CAPC Meeting
1:15 – 1:20		Announcements



Mixed Session	1:20	Authenticity as a Fluctuating Factor for Technological Equipment and Display Devices of Time-Based Media Art Installations <i>Richard Gagnier</i>
Session chair: James Bourdeau	1:45	Roadside Crosses: An Appealing, but Fragile Heritage <i>Diane Joly</i>
	2:10 – 2:45	Coffee Break
	2:45– 4:45	CAC Annual General Meeting Auditorium, Grande Bibliothèque
	7:00	BANQUET
DAY 3		
Sunday, June 1st		Registration desk open from 8 am to 12 pm
	8:30 – 8:45	Announcements
Painting	8:45	Preserving a Found Painting: The Contribution of a Conservator in Private Practice to a Collector's Art Historical Research <i>Hillary Ellis</i>
Session chair: Cyndie Lack	9:10 9:35	Clyfford Still: Revealing the Secrets of a Life's Work <i>Barbara Ramsay</i> Cold Lining and the Structural Repair of Canvas Paintings: Then and Now <i>Diane Falvey</i>
	10:00 – 10:30	Coffee Break
Painting	10:30	A Portrait Miniature Treatment Project at the Library and Archives Canada <i>Maria Trojan-Bedynski and Carol Aiken</i>
Session chair: Barbara Ramsay	10:55 11:20	Study, De-restoration and Restoration of a Large Matte Biwat painting <i>Régis Prévot and Claudia Sindaco</i> The <i>Triumph of the Virgin</i> by William Bercy: a Renaissance <i>Élisabeth Forest, Sophie Roberge et Éloïse Paquette</i>
	11:45 – 1:15	LUNCH
	1:15 – 1:25	Announcements
Mixed Session	1:25	Conservation of the Identities and Heritage of African Cities: A Case Study of Akure, Nigeria <i>T. Oluseyi Odeyale</i>
Session chair: Alastair Fox	1:50	Coronelli's Globes : An Evaluation of Conservation Needs before Display at Bibliothèque François Mitterrand <i>Jean-François Hulot et Hélène Richard</i>
	2:15 – 2:30	CLOSING REMARKS



Mould Remediation of Architectural Photo-Reproductions and Drawings

David Daley

In June of 2002, seven collections of blueprints, architectural drawings and file information were isolated at the University of Calgary due to fears of mould contamination. The rolled documents were listed and sealed in polypropylene bags which were stored in vertical “wardrobe” boxes. Preservation professionals were consulted and a conservator was contracted to provide recommendations for decontamination procedures. Microbial testing showed effected materials to be mildly tainted with mould fungi. It was determined that treatment would be required before staff members and researchers could safely handle the collections. Contamination levels were measured by viability testing, and mould types were identified using microscopic examination of tape mount samples. Cleaning, storage and handling protocols were established to protect workers and ensure the isolation of contaminated materials during the cleaning process.

In 2004, a Conservation Advisor was hired to conduct the treatment. Cleaning procedures were agreed to by all concerned parties and were more thorough than required, to ensure the safety of handlers and minimize the possibility of cross-contamination to other collections. A custom-built, oversized reverse-flow biosafety cabinet was designed for the cleaning process and assembled in a workspace allocated for the procedure. This specialized “clean air unit” permitted mechanical surface cleaning using HEPA filtered vacuum cleaners affixed with soft bristled brush nozzles. The biosafety cabinet permits cleaning without requiring the conservation technicians to use personal respiratory protection. All items were divided into five separate treatment lots, within which each box was individually tested to determine its contamination level and cleaned accordingly. Cleaning procedures varied from either a quick roll exterior cleaning to the complete surface cleaning of each unrolled sheet. Once each test lot was cleaned, a statistically relevant number of boxes representing each risk level were re-tested to determine the effectiveness of the cleaning procedures. Such post-cleaning tests provided assurance that our testing and cleaning were effective in reducing contamination levels enough to store the collections with uncontaminated items.

Over the following three years, the rolled blueprints and drawings were cleaned by student grant recipients, interns and the conservation advisor. This process was carried out until all quarantined materials were remediated. The treatment is an example of the common but serious challenges presented by a mould outbreak, and the measures that can be taken to ensure the thorough remediation of the collections while safeguarding the health and safety of everyone involved.

Preservation and Conservation of Laminated Documents.

What is your Sandwich Made of?

Françoise Richard

Lamination consists of lining both sides of a document with a transparent adhesive and a support material that retain legibility of the text. This former restoration technique was a cheap way to reinforce mechanically damaged paper supports and therefore it was widely used. Many products were available including traditional adhesives, like flour or starch paste, or the more modern cellulose acetate, polyamide, polyethylene. Reinforcement material included a wide variety of transparent papers and silk or synthetic products such as polyethylene web and polyester film.

The problem during ageing, chemical degradation leading to mechanical and aesthetic problems can occur in these « sandwiches », and these are potentially harmful for the document. In order to plan long term preservation of laminated items and collections, the first step is to find out which products were used and their related risks.

This presentation will start with an historical overview of lamination based on bibliographical study. From the first processes at the beginning of the 20th century, to the extensive use of cellulose acetate processes in many institutions worldwide, lamination became popular and a large variety of alternative techniques and products were developed. Then its use phased out. Today lamination using synthetic flexible films has been eliminated from conservation practice.

A project of identification of lamination materials applied to printed books from the National Archives of Canada was conducted in the Gatineau Preservation Centre in 2005. Direct observation, magnification and solubility tests with organic solvents were performed on twenty laminated books. Analytical results were obtained with IR spectroscopy, leading to identification of both adhesive and reinforcement layers. Paper, silk, polyester and polyamide (Nylon) were found as support materials. Cellulose acetate, starch paste alone or mixed with gelatine and polyvinyl acetate PVAc, polyamide and methacrylate resins were identified in the adhesive layer.

The presentation will end with the conservation treatment of a page of the presidential archives laminated with cellulose acetate¹. Plasticizers present in the acetate were identified prior to treatment with a non invasive sampling technique and chemical identification². The treatment itself consisted of a succession of acetone baths to release the original paper from the adhesive and lining, followed by chemical and mechanical stabilization.

¹ Treatment conducted at the Library of Congress Paper Conservation Laboratory, Washington DC

² Sampling technique Solid Phase Micro Extraction, separation with Gaz Chromatography coupled with Mass Spectrometry to identify the components

The Ten Crucial Days of the American Revolution: Conserving an Eyewitness Account of the Battle of Princeton, January 3, 1777

Ted Stanley

The American Revolution formally began July 4, 1776 with the announcement of the Declaration of Independence as the (British) colonies on the shores of North America declared their sovereignty from British rule. The new country was split, however, with some in the population still fervently loyal to the British crown. The military battles that ensued between the American rebels and the British forces were tough and difficult. The Americans were not fairing well in those instances, and morale was generally low among the troops who were by-and-large state militia.

The crucial Battle of Princeton was fought in an air of uncertainty and apprehension among the rank and file of the American army on January 3, 1777. The battle pitted the American commander, General George Washington, and his militia from various colonial states, against the British commander, Major General Lord Cornwallis, whose troops were comprised of professional British and Hessian (German) soldiers. The American victory at Princeton involved approximately 7,000 American troops and 1,200 British and Hessian troops directly engaged in a battle that commenced in Trenton, New Jersey and swung north through Princeton. It petered out just north in Kingston as the Americans withdrew to Morristown for winter quarters.

Robert Lawrence, a citizen of the battle area, put to pen his account of the battle that he saw clearly from where he resided. The narrative document is composed of 24 pages on paper and is scripted in iron gall ink. It describes the participants of the battle and instances occurring in its immediate aftermath, particularly the conduct of some Hessian soldiers.

The document, now in the manuscript collection of Princeton University Library, was in very poor condition when it was brought to the attention of the Library's Preservation Office. Though the inks are in very good condition, the paper supports are severely water stained, weak, and damaged by severe tears and losses. Former treatment resulted in all of the paper supports being silked, or sandwiched between layers of silk gauze. The manuscript's fragile condition severely limited access to it.

Conservation of the manuscript proceeded with thorough examination and testing of the paper support, ink, silking material and adhesive. Subsequent treatment included an enzyme treatment to remove the silk, washing in calcium enriched water baths, leafcasting of the supports to fill losses and stabilize tears, and providing a protecting storage format for the manuscript's future use.

A Modified Mount for Asian Robes

Bernd Hildebrandt, Carolyn Morgan, Kirsten Hone and Irene Karsten

Design for the installation of the 2007 inaugural exhibition of the Mactaggart Art Collection at the University of Alberta called for a modified approach to mounting Chinese robes. In addition to a fine collection of Chinese painting, the Mactaggart Art Collection comprises over 600 textiles, costumes and related artefacts dating from the Song (960-1279), Ming (1314-1644) and Qing (1644-1912) dynasties. Particular strengths of the textile collection include beautiful and rare examples of 17th and 18th century Chinese court costumes, as well as a world-class collection of Tibetan robes. The collection is housed in a state-of-the-art research/storage facility on the University of Alberta main campus.

Dressed to Rule: 18th Century Court Attire in the Mactaggart Art Collection featured a selection of Qing court robes along with painted folios illustrating imperial dress regulations codified under the Qianlong emperor. Robes were presented to match the flat T-shape format of the folio images. Instead of using a suspended pipe or a simple T-mount which supports the sleeves of the robe in this format, as is common in displays of Asian garments, the exhibit designer wanted a mount that would provide more shape to the sleeves and body to soften the presentation and allude slightly to the presence of the human form while fully supporting the surface of the robes

The final mount design consisted of a corrugated polypropylene (Coroplast®) form screwed to a painted plywood upright core and covered front to back with 6mm Ethafoam sheeting, which provided for curved shoulders and shaping of the skirt towards the front. Using a set of key measurements taken from each artifact, these components were custom fit to the robes. The back Ethafoam skirt was stapled to the Coroplast through thin polyester film to ensure the staple would not tear through the foam. The front skirt was shaped and attached to the back skirt with plastic snaps. Sleeve inserts of folded and stitched Ethafoam sheeting were supported by two ABS pipes, which were each secured over the wood core by means of a groove cut through each pipe at the centre edge.

Robes were mounted by laying them out on a table with the centre front folded back, inserting the ethafoam sleeve forms, laying the mount body in place, inserting and securing the ABS pipe through the sleeves and then closing the robe. Mounts were finished with display fabric covers at the sleeve ends, over the neck opening and along side slits where necessary. One mount for a gauze robe was entirely covered with fabric stitched through the Ethafoam. Held upright by means of the plywood cores set into grooves in display plinths, the mounts provided effective and elegant support while revealing the robes' exquisite form and workmanship.

Prediction of Damages Caused by Pollutants Using Risk Assessment Approaches

Jean Tétreault

To quantify the impact of pollutants on collections inside institutions, a great deal of cumulated data has been converted in the form of doses (pollutant concentration x exposure time) at which the first adverse effect was observed on a given material. This dose was defined as the “Lowest Observable Adverse Effect Dose” (LOAED). The LOAED is based on the principle of reciprocity: Similarly to light fading, if it takes 1 year to see a slight amount of fading by ozone at 10 ug m⁻³, it will take 10 years to observe the same amount of damage at 1 ug m⁻³. Sets of LOAEDs can be found in previous work [1]. Because of the complexity in attempting to assess the extent of damage over time, results were reported as the numbers of years before the first adverse effect was seen on a material exposed to a specific pollutant.

CCI, ICCROM* and ICN** have formed a partnership to further quantify the impact of pollutants on collections by developing a model to assess the stage of preservation of collections over time. This model will predict the state of a collection exposed to pollutants for different time frames. For this reason, a new approach is needed to predict the actual damage to a material rather than simply the time at which the first sign of damage is observed. For this purpose, notions of risk assessment previously used can be adapted to a new equation:

$$\text{Equation 1: } D = M (1 - e^{(-(t * LOAE * C)/(M \text{ LOAED}))})$$

where

D = actual Damage, a fraction of the maximum property change (with or without unit), t = time (year), LOAE= Lowest Observable Adverse Effect; critical fraction of maximum property change (no unit), C = Concentration of the airborne pollutants (ugm⁻³), and LOAED = Lowest Observable Adverse Effect Dose (ugm⁻³ yr).

The damage must be expressed in terms of a specific property change that is meaningful for the client, such as fading, yellowing, loss of fold endurance, etc. Scales of the property change need to be defined. For example, from no damage to complete damage could be defined as “intact to fully faded” or “intact to completely fallen apart”. Equation 1 can be adapted for different scenarios such as the effect of a pollutant on an already damaged material or the combined effect of multiple pollutants causing the same property change. The change in the property of the material could be eventually transposed into the lost or remaining value of the material. Many criteria for loss of value (significance) may be used for this purpose.

Experimental data have been applied to equation 1, and results for the tarnishing of silver exposed to hydrogen sulfide, soot deposition to vertical and horizontal surfaces, and weakening of papers will be presented. These examples show that by knowing some key pollutant levels, we will not only be able to estimate when the first signs of damage can be observed, but also be able to estimate the magnitude of the damage over a specific time period.

Reference

[1] Tétreault, J., (2003). Airborne Pollutants in Museums, Galleries and Archives: Risk Assessment, Control Strategies and Preservation Management, Canadian Conservation Institute, Ottawa.

* ICCROM: International Centre for the Study of the Preservation and Restoration of Cultural Property

** ICN: Instituut Collectie Nederland

Off-Gassing...Off-Putting! Linoleum Printing Blocks: Their Storage and Display

Laura Cunningham

A series of colour linocut print proofs and their corresponding linoleum blocks by the artist Mary Evelyn Wrinch (1887–1969) were identified as requiring appropriate display and storage conditions. These works from the 1930s, entitled *Green and Gold*, will be an important component of the installation *In Her Studio* as part of the Art Gallery of Ontario's grand re-opening in the fall of 2008. The Wrinch linoleum blocks are off-gassing with an oily smell that is typical of linoleum and have also caused yellow staining of acid-free tissue used in their storage. The ongoing degradation from the linoleum blocks has raised questions around how best to display and store the works in order to protect both the blocks and other surrounding artifacts.

While linoleum printing blocks are not considered the “finished” work of art, they are found in institutional collections. Only a handful of articles have been written on the conservation of works of art made of linoleum and there are questions about the chemical process that is occurring. No conservation literature could be found concerning their appropriate preventive display or storage conditions. The literature primarily focuses on the conservation of historic linoleum flooring which raises different issues regarding preventive conservation and treatment approaches. A question posted to the Conservation DistList resulted in only more queries from other conservation labs in Canada, the United States and Europe.

Linoleum was invented as a floor covering in 1863 by Frederick Walton and is, by its very nature, acidic. Its primary and most distinguishing components are oxidized linseed oil, resins, ground cork and ground wood. From the oil, to the wood, to the jute backing, its acidity is one of its inherent vices. It is also susceptible to water damage and to alkalis. After conducting a careful literature review and talking to conservation scientists, it was decided that it would be prudent to send samples for analysis to the Canadian Conservation Institute. Several linoleum blocks, old and new, were sent for testing and comparison. Testing was performed to identify the elements of composition and degradation products. The content of this paper follows the process of investigation around Mary Wrinch's works requested for special exhibition and it is hoped that the resulting information and research into linoleum printing blocks will benefit institutions dealing with similar material in their collections.



Cinderella Infiltrates the Ball: Heritage Conservator Dance with Community Organizations.

Sharon Evelyn Little

In 1999 the ICOM-CC Triennial meeting held in Lyons encouraged the membership to become progressively more visible and involved with the general public. Many possibilities exist, but which ones offer the best fit for the professional conservator, whose tasks at hand are already quite often monumental? Slipping comfortably into existing community organizations could be one of the many solutions. Fortunately three non-profit volunteer community organizations in Québec City (Québec) Canada, responded with enthusiasm to the infiltration of the conservator.

My community volunteer work began in 2000 with the Quebec Anglophone Heritage Network (QAHN) www.qahn.org and led to the development of their Cultural Heritage Program for Schools in 2004. Due to an increasing public interest in conservation-restoration of cultural heritage, a short lecture on the topic was included in the program during its second year of operation. In 2005, the conservation lecture was also included in the program *Innovateurs à l'école et à la bibliothèque* www.spst.org, an organization that invites scientific professionals to talk about their careers with students from all levels.

Six years of most enjoyable volunteer community work and networking eventually brought me into contact with the *Community Foundation of Greater Quebec* (Fondation communautaire du Grand Québec www.fcommunautaire.com). This organization, established in 1992, is based on the *Community Foundation Model*, originally developed in Cleveland, U.S.A., in 1914. There are now reputed to be 1 175 community foundations distributed among 46 countries throughout the world. The community foundation functions very much like a mutual fund in terms of investments and charges for administration costs, hence removing all the expensive legal costs, time and continued investment research required to set up and run an independent charity. It was within this framework that my family *Foundation Little/Ragusich* for the conservation-restoration of cultural heritage was created in 2006.

Volunteer community activities of the conservator can do much to increase the visibility of the profession and actively engage the general public, especially the youth. Working parallel to established museums and government departments, community involvement becomes an essential element in developing a healthy long term vision for the conservation of our cultural world heritage. You are encouraged find your personal fit and let the dance begin.

Cultural History Baby, Natural History Bathwater – Addressing the Need for Specialist Conservators of Plant and Animal Materials.

Eve Graves

Existing natural history collections tell us as much about our cultural pasts as they do about the natural world. Traditionally such collections have been largely cared for by curators and specialists in other fields, as there are very few targeted conservation programmes. As well as the big nationals there are many local museums that have natural history galleries alongside those exhibiting cultural artefacts that incorporate animal and plant materials. Most small institutions do not have conservators or curators on staff with special knowledge in these areas, or even an adequate budget to deal with issues that arise with vulnerable organic materials.

To address this situation, new conservation courses are being developed at Camberwell College of Arts, London. Two elective units have been designed as pilots at the undergraduate level to heighten awareness of natural history conservation as a possible career specialisation with a variety of pathways. These units are called *Natural History as Cultural History* and *Plants and Material Culture*. Whichever programme students choose, they quickly discover that for many sessions the groups are combined. This paper argues for the importance of these courses by briefly describing the content, the thinking behind them and the approaches used to encourage learning and engender a desire to enter such fields of conservation.

Beginning with the close links between early collections of natural specimens and cultural items from across the world, students explore ideas about travel, exploration, trade, collection, settlement, conflict, attitudes to and techniques of production and preservation, and the graphic representation of new knowledge. Participants examine the reactions of the peoples of one country to the natural and cultural materials of another. Students visit a variety of different types of collection including research collections.

In science sessions students learn about the chemistry of organic materials as well as analytical techniques that can be used to examine natural specimens or those from cultural artefacts. In the studios, they participate in workshops to learn skills using a variety of plant and animal materials so that they will have an insight into preservation issues in whatever context these materials are encountered.

At the end of the units, two curated exhibitions are presented to the conservation community at Camberwell. Students from the two programmes identify issues that they believe have particular contemporary cultural significance. One suggestion so far, 'Past fumigation Practices and Contemporary Implications' suggests just how closely the natural and cultural will continue to be entwined.

The Collections of the Archives nationales de France Evaluation of the Physical State of the Collections before Moving

Anne Lama

The Archives nationales de France are preparing to move part of the archival collections stored at their Paris location. The collections involved contain documents related to the period 1800 to 1958, from the Fifth Republic presidential archives as well as from private archives.

This presentation will cover the preparation and general organization of the condition reporting of the Paris location collections. The collections represent roughly 50 linear kilometres of shelving that need to be moved.

The condition evaluation of the documents was done by statistical analysis via a sampling method where the basic unit of measure is one physical handling unit (one box, one register or one bundle). The sample included 28,000 physical handling units (PHU), or about 5% of the collections' content.

A database was created internally to insure operational needs were met. It included the three following areas of action:

1. The taking of samples via a computerized algorithm. This was done using an up-to-date and computerized location index.
2. The condition report on the PHU to be evaluated. The information collected using a computerized questionnaire can also be used for programming treatments before the move (disinfection, conservation, binding and conditioning projects). The condition report portion of the data base has three tabs: the description of conditioning methods and degree of intervention involved in conditioning; the typology of the documents in the PHU; and the deterioration observed in the bulk of the documents in the PHU.
3. The results became available as data was being entered. They were presented by extrapolation according to the three tabs of the condition report.

The evaluation and analysis of the results were sub-contracted following a call for bids. The collection period was estimated at four months based on the average time required for the evaluation of a PHU, which was three minutes, including moving.

The rigorous application of the three following points guaranteed that the operation would run smoothly:

1. The tailoring of the database to the institution and the project objectives.
2. The logistical organization of the six people responsible for daily data collection.
3. The establishment of a systematic protocol for saving and synchronizing data on the server.

The Monastic Library (manuscripts, prints and archives) of the Holy Monastery of Prophet Helias in Santorini (Thera) - Greece

Nikolaos Mantzouris

Environmental management, climate control, relative humidity, temperature, heating, ventilation, air conditioning, light, pollution, and vibration: these are terms commonly used and referred to by scientists, researchers, curators, conservators and many others involved in the protection of cultural heritage.

The most important factor in the preservation of collections is the maintenance of proper environmental conditions. In this regard, the author has conducted an independent three year research project at the Holy Monastery of the Prophet Helias on the Greek island of Santorini (Thera). The objective of the project is the application of preventive conservation techniques in the monastery's library (2000 prints, 74 manuscripts and archives), i.e. the reduction and stabilization of the extreme levels of temperature and relative humidity inside the room which temporarily houses the collection, until the completion of a new, specially designed library.

The Santorini research project has a dual goal: firstly, the conservation of the manuscripts and, by extension, of the whole unknown library of the Holy Monastery of the Prophet Helias; and secondly, the development of basic guidelines that will allow for the establishment of a good and healthy environment for these types of collections. The research is not based on recipes and ready-made solutions. Instead, it follows the theory that objects can be stable when they have reached equilibrium with conditions that are not necessarily ideal.

This research comprises a starting point to fill the existing gap in the literature regarding the preventive conservation and management of monastic libraries in Greece. It clearly demonstrates that a thorough understanding of the basic principles that regulate the relationship between relative humidity and temperature, in combination with some very simple improvements to the buildings where monastic collections are kept, may be sufficient for an effective temporary preventive conservation program. This work could serve as an example to be followed by many monasteries all over Greece, allowing them to temporarily and inexpensively protect their collections until they are able to carry out a complete program of environmental control and conservation.

It is hoped that this research will contribute to the debate among conservators about environmental control, especially concerning safe set-points for temperature and relative humidity.

The Centre de conservation du Québec: an Approach to Public Art

Michèle Lepage

Unlike works exhibited in a museum environment, public works of art are often subjected to difficult conditions. When located outdoors, they are exposed to both weather and vandalism. In addition to experiencing the normal degradation process, they may also be moved when the building or site where they are located undergoes changes. Other works, such as those in the Montreal metro system, suffer the effects of an indoor environment that comes with its own set of deterioration factors, such as dust, pollution, graffiti and wear on the stations' structures.

The conservation of public works of art is a subject of increasing concern. In recent years, the Centre de conservation du Québec (CCQ) has begun to work with local authorities to help them manage the conservation and preservation of their collections. Among its clientele, the Centre now counts several municipalities, as well as non-profit organizations such as the Société de transport de Montréal (STM), to which it provides various services. For example, conservators from the CCQ are able to offer advice on choices of media for new commissions. They can advise on how to properly install or relocate a work of art. They may also evaluate the condition of public art collections and provide estimates for preservation plans. In addition to advising administrators on the proper ways to document collections and run maintenance and conservation programs, they may also be called upon to train staff responsible for that maintenance.

As an example, the STM asked the CCQ to evaluate the condition of works installed throughout its 68 metro stations, and to set up a maintenance program for each of them. A conservation plan was developed with a view to the restoration and long-term maintenance of the entire collection. This project is part of the STM's five-year plan, and will continue through to 2010.

As part of their new services, the Centre is currently preparing a guide for the preservation of public art works that will soon be available on its website. The guide is published in collaboration with the Service d'intégration des arts à l'architecture (Department of Integration of Art and Architecture) of the Ministère de la Culture, des Communications et de la Condition féminine du Québec (MCCCF). It will be updated and augmented regularly.

Tools and programmes for preserving public art will be presented in this paper. They have been derived from the CCQ's expertise and its ability to form multidisciplinary teams capable of adapting to the many needs of its diverse clientele.

The Conservation Treatment of the *Endocrinology* Mural Painted by Marian Scott

Anne Lapointe

Marian Dale Scott (1903-1996) first exhibited in 1919 at the Art Association of Montreal. She was later among the first exhibiting members of the Contemporary Art Society of Montreal, founded in 1939, with the purpose to promote modern art.

Upon an invitation by Hans Selye, professor of Biochemistry at McGill University at the time, she conceived and painted the mural *Endocrinology* between 1940 and 1943. Painted in oil on a plaster wall, it is the largest mural created by Marian Scott.

The room in which the mural was painted underwent several changes of function and renovations since the 1960's, which included lowering of the ceiling and piercing of a door in the lower left section of the mural. These architectural changes were paired with some restorations of the mural, including repairs and retouching along a structural horizontal joint, and extensive retouching and repainting around the new door. The retouching resulted in some minor but significant modifications to the original design.

In the early 2000's, repeated water-leaks occurred, resulting from failures in the pumping unit of a recently installed ventilation system on the upper floor. Water migrations from inside the wall to the surface of the mural caused extensive cracking and flaking of the original paint and loss of adhesion between layers, with significant paint losses in the lower right section of the mural.

In the Spring of 2006, after resolution of the water leakage problem and complete evaporation of moisture, we began our treatment of the mural. Treatment included consolidation of the flaking paint and manipulation back into plane of the lifted flakes, surface cleaning, removal of the yellowed varnish and discolored overpaints, filling and inpainting of losses and reconstruction of a missing original motif. This treatment involved interesting technical and ethical issues, which were discussed in consultation with client and professionals (conservator, scientist, art historian).

Airport as City Square: Toronto, Edmonton and Winnipeg Airports, 1964

Bernard Flaman

From 1952 until 1968 the Canadian Department of Transport built a nation wide infrastructure of airport terminal buildings. The highpoint of the program was reached in early 1964 with the opening of new terminals in Toronto, Winnipeg and Edmonton. Although each was designed by a local architectural firm and was conceptually different, the group shared several important elements; each was resolutely modern, each incorporated the latest Canadian and International furniture and each terminal evoked the interior of an art gallery by displaying the largest public art project ever realized in Canada. Twenty pieces of painting and sculpture were commissioned by the Department of Transport, with the guidance of the National Gallery, and installed in the terminal buildings. These interiors represented a new type of public space that was no longer just related to a particular city but possessed a national stature where government sponsorship created a “cultured” atmosphere combining fine art, modernist architecture and elegant furnishings. The choice of artists and the location of each work depended on a larger vision of social engineering that was meant to create a national identity and expose artwork from one part of the country to an audience in another. Inspired by nature and the landscape of Canada, the abstract art created a tension with the nationalistic aspirations and inadvertently introduced a regional element to the interiors of the airport.

Thirty-five years later, the same buildings have been handed over to private airport authorities and are being renovated, expanded or demolished to make way for a radically increased passenger volume never anticipated by the original designers. The original interiors have been replaced with revenue generating retail space and advertising that is themed to evoke a regional flavour and composed, with palpable irony, of national brand shops.

The title of this paper is borrowed from Deyan Sudjec’s 1992 book “The 100 Mile City”. The chapter, “Airport as City Square” traces the evolution of the modern airport and presents a thesis where the airport is described as a traditional city in programmatic terms that includes public spaces, workplaces and transportation. However, these traditional civic elements are rendered in an urban form that has never existed before. The paper documents a series of very powerful civic spaces created in 1964 within the Toronto, Winnipeg and Edmonton airports and explores the political and formal underpinnings of these projects. The images provide an overview of one of the largest public art projects in Canadian history and introduce a series of unique conservation challenges.

A Restored Vision: The Conservation of Jack Shadbolt's Airport Mural *Bush Pilot in the Northern Sky*

Cyndie Lack

Installed in 1963, *Bush Pilot in the Northern Sky*, is the only one of four original art commissions to remain on public display in the Edmonton International Airport. Commissioned by the federal Department of Transport, Shadbolt envisioned a monumental design emblematic of the bush pilot's legendary exploration of the Canadian North. The artist's extensive preparations, which included bush-piloted flights over northern Alberta and numerous exploratory studies, culminated in a final image executed in oil on six vertical sections of canvas. Painted in Vancouver, the canvases were rolled for transportation, to the Edmonton Airport and installed with contact cement on a plaster wall behind the central administration tower.

The province's ongoing economic boom has accelerated airport expansion and renovation projects to meet the corresponding unprecedented growth of passenger traffic. The Edmonton Regional Airports Authority planned the mural conservation as part of a final renovation phase of the second level departures lounge in which the mural is situated. Discussions began 10 years prior to conservation treatment, and my early involvement afforded the opportunity to consult the artist before his death in 1998. Shadbolt originally recommended that an archival photographic montage be displayed beside the mural to provide a historical context and free him from a literal interpretation. His request remained unfulfilled until 2007 when recessed display cases were installed below the mural to house aerial photographs of northern landscape and reproductions of Shadbolt's mural studies. The new display, along with conservation treatment, has renewed the mural's commanding presence and completed the artist's original concept. The fond memories of the mural that many Edmontonians and airport visitors hold are enhanced by its status as the lone vestige of the Airport's 1960's appearance.

The intensive two-month conservation treatment was undertaken on a stationary, three-level scaffold covering the full height and width of the mural. Canvas delamination was limited to the edges of each section but still presented a challenging problem given a total length of nearly 200 feet. Treatment included consolidation of all flaking paint and delaminated canvas, surface cleaning, removal of accretions including excess, unsightly contact cement, thinning of localized, discoloured varnish, and filling and inpainting of losses. Surface cleaning revealed the original colours and the good condition and gloss of the original varnish. Consolidation of the lifted canvas edges and inpainting of gaps along the seams dramatically unified the design, especially in the central white area where the gaps were most visually disruptive. This was a critical achievement serving Shadbolt's original intent: "I spread out the great white image so that, seen from the grand staircase, it upends like a winged platform." (Jack Shadbolt, Letter to the Editor, Edmonton Journal, December 19, 1963, p. 23).



Authenticity as a Fluctuating Factor for Technological Equipment and Display Devices of Time-Based Media Art Installations

Richard Gagnier

The original materials composing a work of art have been the guiding factor in the traditional ethical approach to conservation. They have been used for defining authenticity as well as for establishing preservation strategies. A certain number of art practises that have flourished since the Second World War have been about questioning that materiality towards the object's production. Installation art has been one of these practises and the fact that it integrated media technology where sound and image become prominent, certainly feeds the debate about the status of the work of art. For many of these works, the technological media equipment is put on view, becoming an integral part of the overall display or construction device composing the work within the space. Both the construction device and the media equipment within an installation have been challenging the manner within which we traditionally define the artist's role and signature. Depending on the artist's practise, such elements could be specified, for example, as a generic list of media equipment to provide, of schematic construction sketches and of technical drawings that the artist would establish as a guide for fulfilling the work's intent. In this manner, these works would often only materialize within the context of an exhibition where a museum or art organisation would undertake the role of providing means for it, in collaboration with the artist. If acquired, it is this specific manifestation that would become the reference example, thus acquiring a status as original. Two 16mm film-based works, Rodney Graham's *Corruscating Cinnamon Granules* and Wyn Geleynse's *What a Strange Thing to Happen to a Little Boy* from the contemporary art collection of the National Gallery of Canada, are examined within this context, keeping in mind the historical nature of the media equipment and the obsolete potential of the media carrier.

Roadside Crosses : An Appealing, but Fragile Heritage

Diane Joly

The first crosses were raised in Canada by Jacques Cartier in 1534 and 1535. Later, missionaries and explorers did the same to mark their passage in the new country, along with the habitants on their new farms. This heritage in the form of a cross, born from the popular culture, thereby rose up along many roadsides across the province of Québec.

In 1916, the Société Saint-Jean-Baptiste of Montréal undertook a writing contest about the roadside crosses, thereby launching their 'heritization'. It permits us today to comprehend the characteristics of these objects and to understand how they survived over many years.

The preservation of this heritage is complicated for numerous reasons: first, they are *in situ* and at the mercy of the elements and climate extremes typical of Eastern Canada. Their historical preservation is, at this time, quite challenging as the vast majority of roadside crosses belong to private individuals and not the state. Thus, individual legal requests for protection from removal or from destruction are required. Finally, an increasing number of crosses are largely abandoned due to indifference or to changes of land ownership.

There are about 2,500 to 3,000 roadside crosses in the province of Québec, spread throughout every administrative region. The heritage law protects about 53 crosses, but only 27 are currently classified as historical monuments. A few historical societies or groups, interested in appreciating their heritage, have studied the history of the crosses in their territory and have available information or promotional programs to help educate the public at large.

In Laval, on the North shore of Montréal, la Société d'histoire et de généalogie de l'Île Jésus has instituted a program for the maintenance and restoration of roadside crosses on the island. There are about 30 crosses in this region, with 17 of them being held by private owners. Each year, a visual evaluation of each roadside cross is undertaken along with follow-up recommendations by the Société to identify those needing repairs or upkeep. Many owners maintain their cross, under specific criteria, and they are reimbursed for their expenses. In the fall, a report is prepared and presented to the City representatives. Educational literature is available in the form of information panels located beside the roadside crosses or leaflets, along with specific information on web sites.

The program created by the Société d'histoire is effective and ensures the preservation of the roadside crosses on the Île Jésus. However, a closer look shows ambiguities in the criteria for decision making and in the protocol with the owners. It leaves them with little or no freedom in any decision pertaining to the maintenance or restoration of their roadside cross.

Nevertheless, most of roadside crosses on the island are in good shape. None are abandoned, thereby proving the efficiency of the program overall. With few changes, other administrative regions of the Province could adapt a similar approach. Given the unique and complicated challenges of this appealing heritage effort, such programs could very well be the best solution to ensure their long term successful preservation.

Preserving a Found Painting: The Contribution of a Conservator in Private Practice to a Collector's Art Historical Research

Hillary Ellis

When a restored, deteriorating painting appeared unframed in the trash near her home in Toronto, a concerned collector rescued the painting and began research on what she believed was a landscape by J.M.W. Turner. The collector's interest in her genealogy and her enthusiasm for British art and history fuelled her investigation of the painting's history. A single label was the only documentation discovered with the piece.

In February 2007, the painting came to JANA Fine Art Conservation, Preservation and Research to be treated. Treatment of the painting was limited to stabilization and minor aesthetic repairs to prepare the painting for display; of greater interest was the collaboration between conservator and client as part of the art historical research. JANA's analytical services and photographic documentation augmented the client's art historical research. While the conservators avoided appraisal or authentication of the painting, they provided valuable information that encouraged their client to continue independent historical study of the landscape subject.

To the collector, discovering the painting was a serendipitous event that brought the work back into appreciative hands. To the conservators, it was an interesting example of how basic physical analysis can assist in the evaluation of a painting with little or no documented history. Private clients may evaluate the need for conservation treatment of a work of art based on their personal appraisal of monetary, historical, legal, sentimental, artistic or intrinsic value of the piece. In some instances, they consult a professional appraiser. In this case, the treatment of the painting coincided with the collector having the painting appraised by a professional appraiser and with her own research. It gave the conservators the opportunity to see what happens when a first appraisal is not satisfactory and the owner seeks a second opinion or further inquiry.

The painting shows Vauxhall Bridge, a recognizable landmark on the Thames River. It includes what was later determined to be the Royal Barge, by the owner, as well as barely legible signage in the foreground. With these few pieces of information, a variety of historical sources were consulted to determine the likely date of the painting. The collector has created a map of London in the area surrounding the Vauxhall Bridge that highlights her father's and her own life stories in that region. Though the artist of the landscape remains unidentified, the collector's appreciation of the painting is enhanced by its connection to her family history.

Clyfford Still: Revealing the Secrets of a Life's Work

Barbara Ramsay

A recent and ongoing conservation project has involved the examination and treatment of numerous oil paintings from the estate of the artist, Clyfford E. Still (1904-1980), one of the fathers of Abstract Expressionism. Although born in the United States and considered an American artist, Still's parents were Canadian and Clyfford grew up in southern Alberta, to which he returned periodically throughout his life.

This presentation will provide an introduction to Still's extraordinary and mysterious collection of more than 800 oil paintings, most of which have never been viewed by the public and all of which have been locked away since long before the artist's death in 1980. Still's powerful works in palette knife-applied oil colour are often monumental in scale. They formed an essential part of the development of Abstract Expressionist painting in the post WWII era. However, Still shunned the New York art scene in the 1950s, withdrawing into his own world to explore his personal vision of artistic and emotional expression. Still parted with less than 10 percent of his paintings in his lifetime, selling some and making major gifts to the Albright-Knox Art Gallery in Buffalo, NY in 1964 and the San Francisco Museum of Art in 1975. He gave his paintings titles that reflected the year in which they were painted and methodically documented, stored, and preserved his life's work.

This presentation will touch briefly upon some of the observations made to date with respect to the artist's materials and techniques. In addition, recurring issues of conservation concern will be enlarged upon in the paintings created between Still's early twenties and his death at the age of 75.

The majority of this collection was stored on rolls, often with multiple paintings per roll. Fortunately, most of the paintings that have been unrolled to date are in remarkably good condition. Those with damage exhibit some degree of planar deformation of the cotton duck canvases, lifting and flaking of embrittled oil paint, flattened impasto, paint efflorescence, discoloured and reticulated artist-applied varnishes, or wrapping materials that are adhered to the still tacky paint layers. Individually-tailored treatment protocols are being developed for the paintings requiring treatment. Minimal intervention is the guiding principle in preparing these paintings for safe travel, museum display, and future study.

In the will of the artist, it was decreed that his collection of paintings, works of art on paper, and sculpture could not be "sold, given, or exchanged." Still stipulated that his entire collection must go to an American city that would "agree to build or assign and maintain permanent quarters exclusively for these works of art and assure their physical survival." This remarkable collection will be transferred to the custody of the City of Denver for the new Clyfford Still Museum that is currently in the design stages and projected to open in Denver, Colorado in 2010.



Cold Lining and the Structural Repair of Canvas Paintings: Then and Now

Diane Falvey

Cold lining is an alternative support treatment of paintings introduced by Vishwa Raj Mehra in Holland, and the author was one of his four original students. She brought the technique to Canada upon her return in the 1970's. In the following years, a number of paintings that had exhibited insecurities in the canvas, paint and ground layers, were treated by the author using varied techniques and materials, some conventional and some experimental, including cold lining.

After three decades of natural aging and varied real life display conditions a selection of canvas paintings, previously treated by the author, have recently been condition surveyed by her, noting treatment successes and problems. The results from this survey are useful for the conservator's decision-making process and may help to determine the appropriateness of current Mehra-based treatments. The paper will include a discussion of the structural and aesthetic criteria, which led to past treatments, and a summary of both successful and unsuccessful treatments. The lessons learned from this re-evaluation of past treatment decisions may prove useful in treatment choices today. Recent minimal treatment case studies will outline practical treatments using the low pressure table and selected treatment processes which evolved from the original cold lining techniques. The presentation will show how the results from past work have influenced the author's decision-making philosophy today.



A Portrait Miniature Treatment Project at the Library and Archives Canada

Maria Trojan-Bedynski and Carol Aiken

In 2005, Library and Archives Canada (LAC), with the support of a grant from the Getty Foundation, initiated a project to help develop conservation expertise in portrait miniatures in North America. The intention was to enable LAC and other institutions to provide greater access to these unique objects. Specifically, part of the grant enabled a senior conservator, who specializes in the treatment of portrait miniatures, to collaborate with a LAC staff member to initiate treatments of the LAC collection. Several highlights from the treatment project will be described to demonstrate how different types of problems, routinely associated with miniature portraits, were addressed. These include cracked ivory supports, planar deformations, flaking paint, and accretions of dust and grime with mould and unidentified crystals.

A very brief introduction to the portrait miniature, and its significance in Canada, will be offered before the problems and treatments are discussed. LAC now holds a collection of 130 objects of national and international significance. The treated miniatures were selected on the basis of condition surveys completed in 1985, 2003, and 2007. While the majority of miniatures in the collection are painted in watercolours on ivory, a few are on paper or card, or enamelled on porcelain and copper. Many of the smaller pieces are mounted in jewellery, while the larger ones are housed in leather folding cases or rectangular wooden frames suitable for wall hanging. Most of the pieces were painted in the 19th century, by American and Canadian artists, and by artists of the French and English schools of miniature painting. The diversity of materials, styles, and origins that are found among the examples in the LAC collection make the care and treatment of the collection a complex and interesting conservation specialty, and one that benefits from a collaborative approach to the treatments that will be described.

Study, De-restoration and Restoration of a Large Matte Biwat Painting

Régis Prévot and Claudia Sindaco

This large-scale work (8.36 x 2.03 m), created for a trading ceremony in the early 1930s, is an exceptional example of the art produced by the Biwat community of New Guinea. The central motif of the composition stands against a black background and represents a crocodile spirit surrounded by interlacing. On top are two characters painted on a white background. The support is made up of 25 pieces of palm-based infrastructure held together with rattan splints. The paint - matte and fine, and applied over a layer of sap - is composed essentially of pigments (white, black and earth tones) and in certain places a violet dye is used in the upper elements.

Collected in 1932 by Margaret Mead and dismantled for transportation, the piece was purchased in several separate sets in 1935 and 1961 by the Musée de l'Homme (Paris). In 1999, it was finally put back together in its original format, thanks to the rediscovery of a photo taken *in situ* in 1932. This chaotic physical history helps explain the diversity of the restoration treatments carried out on the work and its current heterogeneous state. On some pieces, the paint, consolidated largely using polyvinyl acetate (PVA), showed unsightly sheen. Paper and canvas intended to consolidate the support had led to deformations and new splits. The encrusted dirt was irregular from piece to piece and there was considerable lifting of the paint layer in many areas.

Conservation treatment was undertaken at the Centre de recherche et de restauration des musées de France (C2RMF) to consolidate the work, homogenize its presentation, and improve its legibility for the opening of the Musée du quai Branly in 2006. The treatment presented a number of challenges related to the exceptional size of the object, the matte aspect of the paint, the fragility of the materials, and the presence of noticeable repairs. Depending on the area and the sensitivity of the materials, the treatments needed to be adapted to produce a uniform result. One of the most important phases of our work was the de-restoration, most particularly the extraction of the PVA - a delicate process when dealing with a porous painting such as this. Solvent compresses, in the form of ethyl cellulose-based gel, helped us regain an optical impression close to the original. Considering the mechanical fragility of the paint layer, the cleaning process was carried out with compresses made of cellulose cotton soaked in water. This humidification also regenerated the original binder, thus re-attaching the flaked paint. The elements that featured very water-sensitive violet dye were cleaned with non-aqueous solvents.

A mix of sturgeon glue and jun-funori (standardized algae glue) made it possible to consolidate the support while respecting its flexibility. Along the splits and in fragile areas, Japanese paper was glued with the same mix. The paint, buckling on the elements with water-sensitive violet colouring, was re-attached with ethyl cellulose.

This restoration allowed us to bring the work back to a state much closer to its original one, and for the first time since 1932, to vertically exhibit the entire work.

The *Triumph of the Virgin* by William Berczy: a Renaissance

Élisabeth Forest, Sophie Roberge and Éloïse Paquette

Triumph of the Virgin, a circular mural painted by William Berczy (1744-1813) in 1810 to adorn the vault of the original Church of Notre-Dame in Montreal, has found new life. The painting was in lamentable condition: it had twice been removed from the area to which it had been marouflaged and relocated, was almost entirely overpainted and had also been heavily damaged by water during a fire. Its conservation posed a number of major challenges; but in the end, the painting was brought back to its former glory through a process that revealed its original appearance and gave this remarkable Canadian work the attention it deserves.

Painted on canvas in studio and then marouflaged to the church ceiling, the circular work (four metres in diameter) served to simulate the presence of a cupola. To carry out this ambitious commission, exceptional in Canada at the time, Berczy took his inspiration from a print copied from a painting by Charles Le Brun (1619-1690).

In 1830, the Church of Notre-Dame was demolished to make room for the current Notre-Dame Basilica. *Triumph of the Virgin* was transferred to the ceiling of the “Petites Filles de St-Joseph” reading room in the Église de Longueuil. In 1928, it was given back to the Basilica for the building’s 100th anniversary, and marouflaged to the ceiling of the small sacristy. In 1978, following a fire in the Sacré-Cœur chapel adjacent to the sacristy, the work came unglued and fell from the ceiling due to water infiltration. Badly damaged, the painting was then rolled up and stored in the Archevêché de Montréal until it was brought to the Centre de conservation du Québec (CCQ) for examination in 2005.

The conservation treatment consisted of stabilizing the flaking and unstable paint layer, removing the overpainting, consolidating and correcting the deformations in the canvas, and filling and inpainting the countless areas of loss. The process posed a number of technical and logistical challenges, particularly due to the large size of the work and to its circular shape. For example, to facilitate operations and provide access to all areas of the painting, a combination easel/table equipped with two rollers was employed. The work was installed on the easel so that it could be rolled in one direction or another as the treatment progressed. Hanging and framing were particularly complex processes; the circular shape needed to be respected, and the work needed to be easy to set up and take down from the walls of its future location, where accessibility and space would be limited. With these considerations in mind, the work was hung and positioned using a Velcro-and-pulley system, and then stapled to plywood posts that had been first screwed into the wall. A neo-classical-style frame was constructed in eight sections, laid around the edges of the work and attached to the plywood with concealed hardware.

The conservation also provided an opportunity to carry out analyses of the ground and paint at the Canadian Conservation Institute. In the fall of 2007, *Triumph of the Virgin* was displayed at the Montreal Museum of Fine Arts for an exhibition celebrating the 350th anniversary of the Sulpicians. It is now installed at the Notre-Dame Basilica in Montreal above the staircase leading to the Sacré-Cœur chapel.



Conservation of the Identities and Heritage of African Cities: A Case Study of Akure, Nigeria

T. Oluseyi Odyale,

Many African cities developed from the conglomeration of small villages; Akure is one of them. Its history can be traced back to the fifteenth and sixteenth centuries and is closely tied to the history of its Yoruba kith and kin. The Yoruba enjoy high rating in terms of anthropological interest from as early as the eleventh century. Testimonies to this are artistic works and artifacts of astounding finesse and excellence found in archaeological context in Ile-Ife and in other parts of Yoruba land.

Urban heritage is concerned with objects, customs or qualities of material and non-material culture, that are passed down over many years within a family, social group or nation and is thought of, as belonging to all its members. The material culture has some aspects reflected in the historical buildings, monuments, sculptural objects, artifacts or antiquities that form essential parts of the physical urban heritage. The non-material culture points to the more obvious cultural differences that exist among people, such as language, dress and traditions. There are also significant variations in the way societies organize themselves, in their shared moral values, and in the ways they interact with their environment.

Identities also involve landmarks (both ancient and contemporary) that are physical structures. Along with other material and cultural heritage, landmarks give direction, scale and prominence, that is, physical structures that sharply contrast with the background giving direction to the city image. Heritage can be viewed as that which has been inherited or any property and especially land that evolves by right of inheritance.

This paper examines the various factors and dynamics that have an impact on the heritage of a growing city. An attempt has been made to document some of the notable landmarks and heritage in Akure that form part of its rich culture. Focus is on the core area of the city. It comprises the ancient portion of the city and thus has greater historical antecedent.

The paper examines the historical antecedent of Akure as an example of an ancient Yoruba city, with its' culture, taboos, identities and historical heritage. Further consideration was given to the dynamics that brought about changes in the development of the city in the past fifty years. The issues of conservation and preservation of relics, buildings, landmarks and monuments of the past are also brought into focus. Various actions presently being taken are examined, and suggestions are offered for possible implementation by the government and the community to preserve this heritage.

Keywords: city identities, culture, monument, heritage conservation, urbanization, Akure



Coronelli's Globes: An Evaluation of Conservation Needs before Display at Bibliothèque François Mitterrand

Jean-François Hulot and Hélène Richard

Coronelli's globes are imposing pieces measuring nearly four metres in diameter. Created for the French king Louis XIV, they illustrate the human understanding of Heaven and Earth in the 17th century. Since their creation in 1681 and until their exhibition at the Bibliothèque François Mitterrand (a branch of the Bibliothèque nationale de France) in 2006, the globes enjoyed an eventful life.

A team of specialists was called upon to evaluate the conservation needs of the globes so that the treatments required for their preservation and exhibition could be properly planned. A technological study based on visual examination of the stratigraphy was conducted while the axes were positioned at the horizontal. The study produced observations concerning the typology and condition of the components (metal embellishments, paint layers, the primary support on canvas and the wooden structure) as well as the methods of assembly.

This presentation will deal with the methodology used to document and map the examinations and the options for editing and presenting the data. Following the study, a condition report and an evaluation of the conservation work were drawn up.

As the study revealed, the construction of the globes, quite complex due to the diverse nature and combination of the materials used, was masterfully executed. The wooden structure is in good condition and requires no treatment. However, we observed inconsistencies in the layers of priming and in the canvas linings that make up the primary support. The disturbances that have developed are relatively stable; the layers have not aged homogeneously, but the aging process is slow. With the exception of one area of accidental damage, as well as failing adherence and lifting on the poles caused by tension around the rotation axis, the globes do not urgently require any treatment. Nonetheless, previous conservation work that has caused surface flaws will eventually need to be redone.

Conservation work was carried out on the area of accidental damage and on the four poles, before returning the globes to their original angle in July of 2006. These operations required precise work that could only be carried out while the axes were horizontal, thus allowing access. The radius of each globe is nearly two metres and the angle of their axes is only 23.7° off the vertical. At this angle, a conservator would not have had sufficient access to nor be able to properly see work in progress if standing on a scaffold, since scaffolding could only have been installed 1.5 metres away from the globe's axis.

POSTERS

A Study on the Use of the Enzyme Lipase for the Removal of Oil Stains in Textile Conservation

Harby Ezzeldeen Hassan Ahmed and Fragiskos Kolisis

New Tools for Archaeologists

Marina Biron

Charles de la Fosse: A Fresco Painter?

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Canadian Association of Emerging Conservators: Filling the Gap

Amanda Gould, Marie-Catherine Cyr, Myriam Lavoie, Carmen Li, Amanda Salmon and Natalie Boruvka

Digitization of Archaeological X-Rays for Archiving and Image Enhancement

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FILMS

The Judgement of Paris Mosaic: the Conservation of a Masterpiece from the Louvre

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Capillary Washing for Paper and Photographs

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Study on the Use of the Enzyme Lipase for the Removal of Oil Stains in Textile Conservation

Harby Ezzeldeen Hassan Ahmed and Fragiskos Kolisis

The removal of oil stains, such as olive oil, from historical textiles is a challenge for the conservator. Olive oil from olive (*Olea europea*) is one type of non-drying oil. In this study the enzyme lipase was used for the removal of olive oil stains from two modern fabrics. The first was undyed linen, and the second was silk, consisting of three samples of silk dyed with safflower, madder, or with a mixture of safflower and madder as natural dyes, mordanted with alum. Each of the above four fabric samples was immersed in olive oil, and a thermal ageing procedure was applied to each of the four samples for different periods of time: 1, 3, 6, 9, and 12 days, at 120 °C. Lipases are hydrolytic enzymes that act on the glycerol-ester bonds of fats and oils and are often used in conservation because of their ability to degrade aged oil films, as a nontoxic and often less aggressive alternative to highly polar organic solvents and/or strong alkaline mixtures. In this experimental work the lipase used was from *Candida Cylindracea* Code 62316 (fluka), a commercially available preparation.

The enzyme preparation was diluted in buffer; 200 mM Tris/HCl at pH = 7.7 and the treatment was performed at 55° C. The role of the enzyme on the removal of olive oil from the textile was followed at different enzyme concentrations as well as various time intervals. To determine the optimal concentration of enzyme to remove the oil from the samples, the enzyme activity was measured according to enzymatic assay of lipase (Sigma) for each treatment, as well as using SEM to study surface morphology of fibers before and after each treatment. The optimal conditions for the enzyme to remove oil films from fabric aged 1, 3, and 6 days, ranged from 35-40 enzyme units and needed 2-2.5 hours as an optimal time, while the enzyme activity applied to the samples aged 9, and 12 days ranged from 50-55 units for 2-3 hours. In this study the effect of Lipase enzyme on fibers and colors was measured using spectrophotometric measurement of ΔE , ΔL , ΔA , ΔB , ΔC , and ΔH . We noted that the greatest effect was on silk dyed with safflower, while the least effect was on silk dyed with madder and on uncolored linen. The results are supported by detailed photographic documentation.

New Tools for Archaeologists

Marina Biron

Preventive archaeology is a recent scientific discipline that researches all traces of human presence, from the Paleolithic era to today. With nearly 1,800 collaborators, the Institut National de Recherche en Archéologie Préventive (INRAP) is the largest structure for archaeological research in France and one of the first in Europe.

INRAP works on nearly 2,500 sites annually in metropolitan France and in the country's overseas departments, carrying out the majority of its archaeological diagnostics and urgent rescue digs in partnership with private and public urban planners.

Placed under the joint supervision of the Research and Culture ministries, the establishment's mission is to study, conserve and protect heritage threatened by regional development. In addition, it disseminates and promotes the results of its work to the scientific community and to the general public.

The activities of the INRAP teams form an unbroken chain of operations starting with the recording of data on site and continuing through their scientific work in archaeological centres and laboratories. Often, preliminary to a scientific publication, an operations report marks the conclusion of the work and is sent to both the State's archaeological services and the planner in question. Thanks to the efforts of archaeological conservators, awareness of preventive conservation is becoming increasingly evident and is being integrated throughout the chain of operations.

INRAP organizes internships that couple theory with practice. These bring in no more than ten people at a time throughout the entire national region. As a result of this low number, conservators employed by INRAP have designed tools aimed at the simultaneous wide-scale dissemination of advice and recommendations to on-site workers. Requests for advice and protocols are numerous, whether they come from experienced archaeologists who may have been led off track by the often contradictory advice they hear by word of mouth, or from young, freshly-recruited diggers.

Conservation specialists have recently designed a field guide to address archaeologists' needs. Titled *"Bon sens bons gestes" (Commonsense Approaches)* and presented in the form of a triptych made of weather-proof, rotproof material (coated paper), it can be kept in a jacket pocket, ready to be pulled out at any time. The texts and diagrams describe the contents of a fieldwork kit that should be assembled before tackling a new operation. They also provide advice for the collection and treatment of archaeological artefacts extracted from the ground. This helps to best protect the vestiges artefacts from the point of their exhumation all the way to the laboratory. A more elaborate poster version of the guide was created for workspaces in archaeological centres and provides, for example, instructions for cleaning and reassembling ceramics, to assist the staff in charge of the management and processing of archaeological artefacts.

Charles de la Fosse: A Fresco Painter?

Claire Brochu

A preliminary study of the paint layer of le Dôme des Invalides, created by Charles de la Fosse, was done as part of its conservation in 1990. The report from the Laboratoire de Recherche des Monuments Historiques notes: “The original painting was created in fresco with an imperfect technique, hence its fragility.”

In 1676, after a five-year stay in Italy, Charles de la Fosse painted his first Parisian fresco, *The Assumption*, on the dome of the church on Rue Saint-Honoré. Then in 1702, he was commissioned to decorate the dome of Église Saint-Louis-des-Invalides, including the crown, where the *Glory of Saint Louis* is represented, and four pendentives, representing the Evangelists.

The chalky surface and muted tones that the painting exhibits today seem to point more to a lime technique than to true fresco. However, upon taking a closer look, one can readily observe the engraving marks of the drawing in the fresh *intonaco* and the *giornate* (joints between two days work) — clear proof of the desire to paint in fresco.

In August 2007, four samples were taken from *The Assumption* in order to better understand its technique. We noted a superimposition of colour layers, a “pressed layer” (allowing water to be drawn to the surface to continue painting in fresco) applied after the colours were laid down, a carbonation layer altered by a solvent, and above all, a layer of dust between the carbonation layer and certain dry-applied colours.

X-ray analyses were carried out on the pigments and the ground layer, and the historical documentation on the work was studied. A report on the condition of the painting after the first restoration, written by the second conservator in 1933, also provided us with considerable information.

The conclusion was surprising: Charles de la Fosse did indeed paint in fresco. He faithfully and masterfully put into practice the lessons he learned in Rome and Venice over five years, but his work was disfigured by successive restorations throughout the 19th century. Of particular note were the acid cleanings that were recommended in the manuals for destroying the *saltpetre* (non original salt layer) covering the painted surfaces of walls damaged by humidity infiltrations.

This type of cleaning, very difficult to control when applied with a brush, caused alterations to the *intonaco* layer in the form of cupping, giving the painting a disrupted, chaotic and darkened surface. However, though some pigments, such as the earth tones, have darkened or others, such as lapis-lazuli, have faded due to the acid reaction, they remain legible and thus possible to restore by retouching. One of the pendentives of the dome at Saint Louis-des-Invalides, representing Saint Marc, was treated using the results of this diagnosis; the 19th-century overpaint was removed and the altered areas were retouched with watercolour glazes. This approach helped to restore the outlines and style so particular to Charles de la Fosse, to the full satisfaction of the client.



Canadian Association of Emerging Conservators: Filling the Gap

Amanda Gould, Marie-Catherine Cyr, Myriam Lavoie, Carmen Li, Amanda Salmon and Natalie Boruvka

As the field of art conservation in Canada continues to rebuild from the economic cutbacks of the 1990s, those professionals who contributed to the growth of conservation in the preceding decades are entering into retirement. It has quickly become apparent that current opportunities for knowledge continuity and transfer to the new generation of conservators are inadequate. This situation, if not swiftly remedied, will result in a loss of valuable knowledge and skills. The lack of funding for entry-level and mid-level employment opportunities in the field has made it necessary for dedicated newer professionals to take a proactive approach to their learning and work to prevent this imminent loss of knowledge.

The Canadian Association of Emerging Conservators (CAEC-ACRE) has been formed by the six post-graduate interns in the first cycle of the re-instated Canadian Conservation Institute (CCI) advanced internship program. Observing the retirement of many veteran CCI staff members even at the onset of their year long tenure, the interns lamented the loss of contact and exchange with these experienced colleagues. Finding themselves in an ideal situation to form a group, the interns determined to form an association whose main purpose is to address the issue of the 'knowledge gap' in the field, to aid in efficient succession planning and to work to promote the interests of new conservation professionals.

The future of the CAEC will be to bridge the gap between emerging and veteran conservators in order to ensure a comprehensive and seamless transfer of knowledge and expertise. One of the ways in which the CAEC wishes to accomplish this goal is through a lecture series to be given by seasoned conservators, which would be made available to the broader community over the Web. This aim would also be achieved by urging national conservation institutions to create more permanent junior positions so that successors can receive more experience than what can be provided during brief contract and term placements. Seeking to provide wide accessibility to resources, the CAEC would also like to form a database of internship opportunities with peer-reviews for prospective students and emerging conservators, and a list of work opportunities tailored to the group. In addition, the CAEC would create and provide a professional skills development forum where information could be shared about portfolio presentation, publishing and competition and interview skills. Another objective is to present resources to those wishing to pursue professional accreditation. We are hoping to create links with other Canadian professional organizations, namely the CAC and the CAPC, and to develop strong relationships with the national training programs.

It is the goal of the CAEC to help ensure a vibrant future for art conservation in Canada, with competent, knowledgeable conservation professionals working together to preserve the nation's cultural heritage and advance this field of study. The Association hopes to make its debut at the 2008 CAC Conference in Montreal with a presentation about its aims and objectives in order to introduce itself to colleagues in an atmosphere of learning and collaboration.

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Digitisation of Archaeological X-rays for Archiving and Image Enhancement

Carmen Li

X-radiography is frequently used to analyze archaeological metals. Large collections of X-radiographs can become difficult to manage as these records are unwieldy and easily damaged. Similar challenges may arise with the Mylar sheets conventionally used to trace the outlines of archaeological artifacts. In addition, this cataloguing method is time consuming and information may eventually be lost due to fading of inks, separation of the Mylar sheets from the X-rays, etc.

Many institutions, particularly in the medical field and in industry, have moved towards digital X-radiography. A brief overview is given comparing digital X-radiography with conventional techniques, particularly as applied to the study of a Spanish Colonial coin from the Southampton Beach Shipwreck Project.

Digitising existing X-radiographs yields a number of immediate advantages: digital image files can be disseminated, the artifacts can be catalogued using simple image manipulation, and digital archives are searchable. Various methods of digitization using widely available equipment - flatbed scanner, digital still camera, and digital video camera – are looked at in detail, comparing image quality. Methods of improving the quality of the digitised image at the capture level will be outlined.

Digitisation is also of benefit as an analytical aid, since Digital Image Processing (DIP) can be used to enhance information on the X-rays that may not be immediately noticeable to the naked eye. Digital image processing in the context of radiographic images is discussed, including evaluating histograms, adjusting shadow/highlight, contrast and brightness, and using the widely available Adobe Photoshop software.

The Profile of an Educational Panel for an Exhibition: Preserving the Peter Winkworth Collection

Maria Trojan-Bedynski, Betty Jaquish and Wanda McWilliams

The field of conservation is small and specialized and as such, it is often not fully understood or appreciated by those outside the world of collections. At an exhibition, for example, the treatment of an original object is often either not recognized at all or is perceived to have been a simple process. If viewers are unaware of the work that has gone into preparing an object for exhibition, they are also unaware of the scope of conservation. Few know about the range of possibilities and the limitations set by institutional criteria and our own code of ethics, or the knowledge and expertise of the conservator.

A little over three years ago, conservators in the Prints and Drawings Conservation Lab at Library and Archives Canada began treatments on numerous prints, drawings and watercolours for the first of the travelling Winkworth exhibitions. Many treatments were necessarily extensive. One small watercolour in particular, damaged by surface dirt, staining, extreme discolouration, fading of the media and darkening of the paper, was dramatically improved by treatment. Brown in tone before, cleaning revealed colours that had not been apparent - and yet it still looked discoloured. The thought occurred to us that it would be an interesting addition to an exhibited item's caption to have, if not a before treatment photograph, at least a brief description of its previous condition.

At a wrap-up meeting after concluding the preparation of the first travelling exhibition, we suggested this to the project manager and the curator, and they liked our suggestion. They took it one large step further! They suggested that we design a panel, to be a part of the second and subsequent exhibitions, (highlighting an appropriate treatment from each one).

We jumped at the opportunity. Of course, this additional work came with rather urgent deadlines because the designer, editors and translators needed images and text, but the result was a professionally designed and produced panel, one for each of the three regional travelling Winkworth exhibitions that followed.

The panels were well received by viewers and we enjoyed the opportunity to engage directly with the public. One reason that our exhibitions are important to us is because they put a face on our institution. It's not likely that a viewer thinks of the preparation, nor should they. Some of these aspects are evident; a mat, frame and captions are there to be seen. Other aspects, like conservation treatment, are not. Working on these panels enabled us to demonstrate the importance of conservation treatment, as well as, we hope, the satisfaction we feel in successfully bringing an object back to life.

The *Judgement of Paris* Mosaic: the Conservation of a Masterpiece from the Louvre

Marie-Laure Courboulès et al.

As part of a cooperative effort with the Louvre in 2006, the Atelier de conservation et de restauration of the Musée départemental de l'Arles antique (MDAA) carried out the conservation of one of the Roman world's most famous mosaics, the *Judgement of Paris*, from Antioch, now known as Antakya, Turkey. The tableau was one of a set of geometric panels, featuring scenes of people, which paved the floor of a vast triclinium banquet hall.

The *Judgement of Paris* scene is 1.86 metres high; it is composed of tesserae made of marble, limestone, glass and obsidian (5 mm high for the backgrounds and 1 to 3 mm high for the scenes containing figures). Five figures are arranged in two groups. In the centre of the image, the young shepherd Paris is surrounded by his flock; he is looking at Hermes, the emissary of the gods. To the right, a group of three women stands on a rocky outcrop; they are the goddesses Athena, Hera and Aphrodite. All three are waiting for the verdict that Paris must hand down following an order from the gods brought to him by Hermes; he needs to choose which of the goddesses is the most beautiful. The panel is bordered by scrollwork depicting interlaced vines and ivy adorned with birds, lizards, butterflies and grasshoppers.

When it was discovered in 1932, the mosaic was transferred to a cement mortar support backed by a metal structure. Seventy years later, the mosaic and its support were showing numerous cracks due, among other things, to the work being moved, but also to the mechanical constraints caused by the metal structure. The mosaic panel was very heavy and thus more fragile, making any move difficult and dangerous.

For all these reasons, it had become urgent to transfer the *tessellatum* to a new support, to clean and lift certain tesserae that were caught in the cement, and to re-treat some problem areas. This work was also necessary in order to make the piece more accessible to the public, since the proposed new support would make it possible for the mosaic to be lent out once again.

The film that will be presented follows the various steps of the conservation and restoration treatment in Arles. A number of archival images, dating back to the 1930s, also serve to illustrate the context of the mosaic's discovery. The sequences show the issues that came up during the restoration process, the technical solutions that were chosen to ensure the long-term conservation of the mosaic, and the aesthetic choices that were made in collaboration with conservators from the Louvre. Thanks to the participation of specialists, the film also touches on the study of the iconography of this exceptional work, and its artistic and symbolic meanings for the Romans of the second century.



Capillary Washing for Paper and Photographs

Janice Passafiume and Renate Mesmer

In June of 2007, Renate Mesmer from the Folger's Library in Washington presented the workshop *Tips and Tricks* at JANA Fine Art CPR Limited in Toronto. Participants included representatives from most of the conservation labs in the Greater Toronto Area and the surrounding area, including the Art Gallery of Ontario, the Royal Ontario Museum, the Government of Ontario Archives, the Metro Toronto Reference Library and the City of Hamilton Civic Museums and Public Art Collections Culture Division.

Capillary washing was one of several topics of instruction videotaped and presented simultaneously to the participants. This method provides a simple, yet gentle effective means of washing artwork and archival documents containing fugitive media and fragile supports. The process, as taught by Renate Mesmer, utilizes reverse capillary forces in a humidity chamber. The document or artwork is placed on a smooth solid support covered with wet Hiromi nylon fabric. The support rests, angled on two trays, in a vertical diagonal direction. The top tray is raised so that the Hiromi fabric acts as a wick and contains the liquid while the lower tray receives the liquid. The document is dry cleaned and humidified by an ultrasonic mister first, and monitored closely during the 4 to 12 hour duration. Occasionally the movement of the paper will require gentle manipulation of the support.

The theory will be explained using diagrams and stop-action film. The following treatments will be demonstrated: 1907 and 1917 crumbling newspapers with black ink, a watercolour on paper executed in charcoal and ink that had been previously attached to a linen support and that contained excessive adhesive residues, and a severely water-damaged gelatin emulsion photograph. The capillary washing method has also been used on fragile labels removed from painting stretchers, backings and frames. There may also be some benefit for textile conservation applications. Treatment will be explained in some degree of detail so that methods can be followed, noting precautions and the limitations of the treatment.

WORKSHOP

**A collaboration between
the CAC and the CCI**

JUNE 2 – 5, 2008

Held at the McCord Museum and McGill University

New Methods of Cleaning Painted & Decorative Surfaces: Including: The Modular Cleaning Program: A Systemic Approach to Cleaning Artworks

Richard Wolbers, Associate Professor, Art Conservation Department, University of Delaware, will present an overview of the theoretical principles needed to evaluate and formulate tailored aqueous and solvent-based cleaning systems for a variety of painted and decorative surface problems. Topics will include: the characterization of painted surfaces; aqueous and solvent cleaning techniques; chelating/complexing materials, thickeners, gels, pastes and poultices; and resin soaps, enzymes and emulsions. Problems presented will consist of soil, coating and overpaint removal.

Chris Stavroudis, Paintings Conservator, private practice, Los Angeles, California, will introduce participants to the Modular Cleaning Program (MCP), which is based on Richard Wolber's approach to cleaning artworks. This program consists of concentrated stock solutions and a computer database that will assist conservators in cleaning with solvents, solvent gels, and water-borne systems. The database assists the conservator in combining the stock solutions, provides information about the solutions and their components, and assists in specifying and mixing new solutions.

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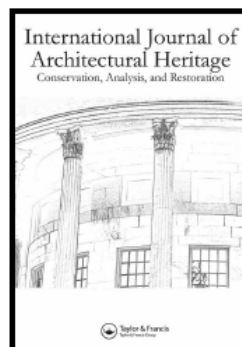
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Edmund Alleyn, *Au-dessus du Lac #1*, 1965. Huile sur toile, 119 x 209 cm, consolidée par Anita Henry (2002) et restaurée par le Centre de conservation du Québec (2008).
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