CCI Newsletter

Canadian Conservation Institute
Institut canadien de conservation

Lights, Camera, Action, RETOUCHE!!! Supervision of a Film Crew in the Haskell Opera House

by James Bourdeau, Conservator, Fine Arts and Architectural Services

One might think that work at the Canadian Conservation Institute can be routine. On the contrary, CCI staff are occasionally asked to fulfill somewhat unusual (even glamorous!) requests. One such opportunity came from the Haskell Free Library and Opera House in Stanstead, Quebec, early in 1999. The Arts and Entertainment Network was producing a new TV miniseries ("The Fabulous Showman P.T. Barnum: Inventing the American Age") and wanted to film a scene in the Opera House. The director of the Opera House, knowing that I had examined its historic interior in 1998, requested that I supervise the film crew to ensure that any negative impact on the fragile interior elements would be minimized.

I arrived several days in advance of the shoot and spent the time padding an elaborate wooden entrance staircase and laying corrugated cardboard sheets on the floors in preparation for the arrival of the film crew. [*In retrospect, it would have been preferable to use rigid, wood fibre sheets on the floors; the cardboard sheets provided adequate protection against the heavy equipment, heavy tripods, and dollies used for tracking shots, but the "low-tack" adhesive tape required to fasten the cardboard sheets to the floor became "high tack" after four days, and a clothes iron was required to remove it.*] I also supervised the installations of the production company's art department to ensure that no damage was done to the building fabric: when modern elements such as light fixtures were replaced with mock gas fixtures that mimicked the style of the 1850s, I asked that foam padding

Opening night at the Opera House in 1904.

J.J. Parker Collection - Stanstead Historical Society

No. 23
June 1999

ISSN 1180-3223

be used where the mock fixtures were attached to the stamped tin ceilings; offending exit signs and fire alarms were covered with paper masks and period curtains were installed with friction-fit rods; and I specified that wherever possible pins should be used instead of nails, and that nails and pins had to be inserted into wood joints rather than flat surfaces.

The film crew arrived early on Monday morning and I found that the size of the crew, to say nothing of the size of some of the grips*, was quite daunting. The literature even warns of this.[1] For the rest of the day I had to be in many places at the same time, answering questions, looking over people's shoulders, acting as traffic cop, and negotiating to minimize the impact on the building while not impeding the artistic flow of the work. To their credit, the crew from Les Productions la Fête/Barnum Productions was very professional and very receptive to my suggestions and prohibitions. I was also aided by the exceptional location manager, Catherine Dawe of Barnum Productions, and Phil Desormeaux of the Haskell Opera House, who were in constant contact by cell phone. Inevitably some restrictions had to be imposed, e.g. no food or drinks would be allowed on the stage; IR-emitting lamps had to be moved away from decorative plaster and shielded; stage sets could not be touched; and the stage curtain could not be raised and lowered as a film prop because it was too fragile. But never doubt the power of being a star! Leading man Beau Bridges, ill with a cold, required (and was allowed) cups of chamomile tea while on stage to keep his voice intact, although his assistant was warned to be VERY careful when pouring that tea.

Exterior view of the Haskell Opera House (the left side is in Canada and the right side is in the United States).

As filming progressed, the call, "rolling...action," was often followed by "cut," then "*RETOUCHE*," and a makeup assistant would hurry over to the actors to repair sagging eye lifts or a flattened coiffure. Unfortunately, sometimes they were just a little too enthusiastic, and several times I had to lunge quickly to prevent a wayward make-up backpack from inadvertently brushing against the stage sets.

Film director Simon Wincer made use of several of the original historic backdrops, including the stage curtain and the forest and street scenes, but I did not allow him to use the drawing room scene as it was too fragile. And I conducted my own *retouche* on the street scene by repairing two tears at the edges of the fabric, top and bottom, that were in danger of propagating across the width of the drop.

Filming wrapped up on Tuesday, and on Wednesday I worked with the crew from the art department and the Haskell Opera House to remove the modifications. I was also able to do a post-mortem on the event with the Board of Trustees of the Haskell Opera House that afternoon. The impact on the interior was minor and I noted all damages in a report in which I also recommended repair options and some preventive care measures to

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The ***CCI Newsletter*** is published two times per year by the Canadian Conservation Institute. It is available free upon request. To change your subscription address, please send your former and current addresses to:
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Ottawa ON K1A 0M5 Canada
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Printed in Canada

be taken before the Opera House was closed for the rest of the winter.

The use of historic sites for filming is a novel way to fund preservation, not only directly by payment from production companies, but indirectly through the increased publicity it generates. Given adequate preparation and supervision, it can be rewarding for everyone.

*Grip: A very large member of the film crew who carries heavy and expensive camera equipment, and who NEVER EVER drops anything.

References

1. Mignier, A.M. *Coming Soon to a Museum Near You: Collections Care During Film Production*. Graduate thesis report. Orinda, CA: John F. Kennedy University, 1996.

About the Opera House...

The Haskell Free Library and Opera House was opened in June 1904 by Martha Stewart Haskell and her son Horace, as a gift to enrich the communities of Stanstead, Quebec, and Derby Line, Vermont. The site is unique in that the international boundary actually passes through the Opera House, with the stage in Canada and the seats in the United States. The interior design, by James Ball of Stanstead and Gilbert Smith of Boston, is purported to be a scale version of the old Boston Opera House which was destroyed by fire at the beginning of the century.[1] In addition to its unusual location, the Haskell Opera House is noteworthy because its interior elements (including the original stage sets and machinery) are intact. Many historic theatres from the 19th century have been restored in recent years but stage sets from this period are notoriously ephemeral and few have survived. The stage sets of the Haskell Opera House include painted wings or legs, backdrops, teasers, and other traditional theatrical stage elements that are direct descendants of the perspective stage settings of Bolognese architect Sebastiano Serlio (1475–1554).[2] All these sets are painted in a traditional water-soluble distemper on cotton or linen canvas, and they are the only known surviving work of Erwin LaMoss,[3] an important scene painter active in Boston in the late-19th century. The sets include a forest scene, a street scene, a drawing room, and an ambitious stage curtain depicting the Grande Canal in Venice; they are of very high quality and are an irreplaceable heritage treasure.

Other elements worth noting in the Opera House are the moulded plaster decorative elements in the balcony front and the proscenium arch, the mural paintings flanking the stage, and the original wooden folding chairs for the audience. There are two classes of chairs in the orchestra section and the hat racks under them reflect this: top hats (typically worn by affluent men) would fit snugly in the U-shaped wire racks under the expensive seats in the front and soft caps (typically worn by men of more modest means) would fit in the simple racks of the cheap seats at the back; ladies, of course, would never remove their hats in public.

To enhance filming, boom lights outside the Opera House create artificial daylight within.

References

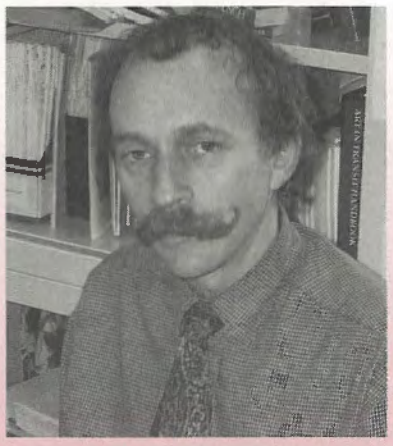
1. *Étude du décor de scène de l'opéra Haskell de Rock Island*, rapport présenté au Ministère des affaires culturelles du Québec, Des Rosiers et Associés Inc., Montréal, avril, 1992, pp. 4–6.

2. Serlio, Sebastiano. *Regole generali di architettura* (1545).

3. *Haskell Opera House Renovation Project: Project Summary*. Haskell Free Library and Opera House, November, 1996.

New Director, Conservation and Scientific Services

I am pleased to announce the appointment of Charlie Costain as Director, Conservation and Scientific Services, on December 21, 1998. His new duties include responsibility for directing all of CCI's scientific and conservation staff, and the services they provide for clients. Charlie brings a wealth of experience in the heritage conservation field to this position; one of CCI's veterans, his strong sense of leadership and his knowledge of conservation are major assets in this key role.



I also want to pay tribute to Cliff McCawley, who acted in this position since its creation in 1997. Cliff made an important contribution to the Institute, and to heritage conservation, throughout his distinguished career at CCI which began in 1976. He has taken up a new assignment in the Department of Canadian Heritage; his many friends and colleagues in conservation look forward to continued work with him in the future.

Bill Peters

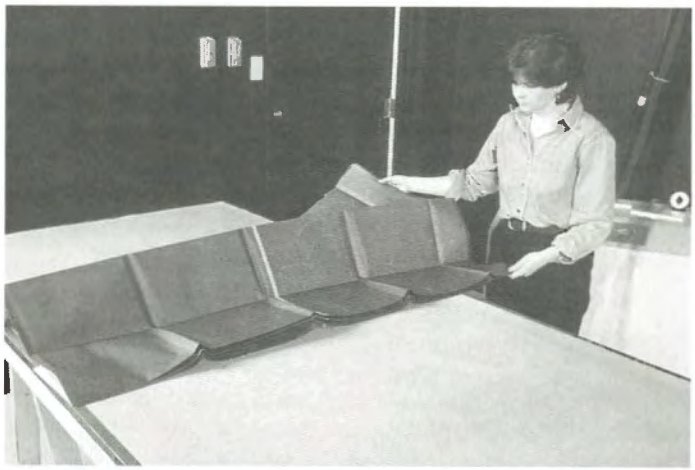
Unfolding the Past — Preserving a Blueprint for the Future

by Jonathan Browns, Paper Conservator, McWilliams Conservation Inc.

The Centre Block of the Parliament Buildings in Ottawa is possibly the most recognized building in Canada. Designed by architects John A. Pearson and Jean Omer Marchand, it was built between 1916 and 1922 as a replacement for the original structure which was destroyed by fire on February 3, 1916. More than 2600 original architectural drawings were produced for the Gothic Revival design which includes the original Parliamentary Library and a 90-m-high Peace Tower with observation deck.

These original drawings were destroyed during the 1940s by a fire in the architectural firm of Darling Pearson. Fortunately, Public Works and Government Services Canada (PWGSC) possessed blueprint copies of almost all of them. Most of the photographic reproductions were standard blueprints; however, a small number (46) were diazo prints. The drawings consisted of structural, mechanical, electrical, and architectural elements. The blueprints included various colours (blue, blueline, sepia, black, and purple) on a variety of papers (including tracing paper), and on occasion were adhered to a fabric backing. Soluble stamped ink, ballpoint pen, graphite, and chalk pastel had also been applied to the reproductions.

In 1997, the Heritage Conservation Program of PWGSC initiated a project to sort, catalogue, and record the information on these blueprints and some more current ones (up to 1960). The impetus of the project was the need to utilize the blueprints as reference material for the conservation and rehabilitation of the Centre Block. The project was designed to eliminate unnecessary handling of the blueprints, some of which were in poor condition, by recording and making the information available electronically.



Wanda McWilliams of McWilliams Conservation Inc. unfolding blueprints on the suction table.

The Heritage Conservation Program approached CCI for assistance in December 1997. A humidification and flattening procedure that would allow the information in the blueprints to be captured without causing physical damage to them was subsequently recommended. For this procedure, CCI custom built a 1.2 x 2.4 m (4 x 8 ft.) suction table that would allow several blueprints to be treated at the same time. McWilliams Conservation Inc. carried out the project in which approximately 4200 blueprints were humidified and flattened in 19 weeks.

The blueprints, ranging in size from 30 x 15 cm (12 x 6 in.) to 1.8 x 2.4 m (6 x 8 ft.), had been folded and stored in metal filing cabinets. They were first sorted, catalogued, and prioritized by staff from the Heritage Conservation Program. Conservators then carefully unfolded them face down onto the suction table and misted them with a water/ethanol mixture. Soft Japanese brushes were used to distribute the water/ethanol mixture evenly over the verso of the blueprints. Once relaxed, they were again misted to encourage the creases and folds to lay in a flat plane. Blueprints larger than the suction table were treated in sections, untreated areas being rolled onto a cardboard tube to support them while awaiting treatment. Approximately 7–15 min of suction was required to dry and reduce planar deformations. Following the humidification and flattening procedure, pertinent information as well as a brief condition report and treatment record were entered into a database. The plans have now been stored in oversized folders placed in flat shallow storage boxes; the diazo prints are grouped together according to type and isolated from one another with Mylar.

On May 21, 1859, the *Ottawa Tribune* posted a notice to architects announcing a public competition for the construction of Canada's new Parliament Buildings. The Centre Block was to house the Parliament and the East and West Blocks were to accommodate Canada's entire civil service–forever! The article also explained that "with speed unknown to modern bureaucracy," the competition was to be conducted within one year.

The treatment of these blueprints was a successful joint venture: the Heritage Conservation Program initiated the project; CCI supplied the project management, treatment strategy, and facilities; and McWilliams Conservation Inc. carried out the humidification and flattening procedure as well as the daily, on-site supervision of the project. The following individuals participated: Claude Charbonneau, Rebecca Casagrande, Michel Filion, and John Gregg from the Heritage Conservation Program; CCI conservators Michael Harrington, Sherry Guild, David Hanington, and Paul Heinrichs; and private conservators Wanda McWilliams, Jonathan Browns, Juliet Graham, and Terry Keith. This project is just one example of the growing trend in conservation for collaboration between government agencies and the private sector.

Further Reading

Kissel, E., and E. Vigneau. *Architectural Photos Reproductions: A Manual for Identification and Care*. New Castle, DE: Oak Knoll Press and The New York Botanical Gardens, 1999.

Reed, J., E. Kissel, and E. Vigneau. "Photo-Reproductive Processes Used for the Duplication of Architectural and Engineering Drawings: Creating Guidelines for Identification." *The Book and Paper Group Annual* 14 (1995), pp. 44–49.

Message from the Director General

In recent years CCI has been moving in new directions, and one of the most positive outcomes of this is the opportunity to blend the experience and skills of conservators and scientists as we undertake multidisciplinary projects. Both specialties bring their particular focus to a task, and the combination of viewpoints ensures that the needs and concerns of everyone involved can be fully addressed. Recent examples of this successful collaboration include the treatment of the royal charter of the Hudson's Bay Company and the ongoing work for the restoration of Canada's Parliament Buildings, one project of which is detailed on p. 4 of this issue.

But even in this climate of change, the creation of knowledge remains the foundation of our mandate.

It is often assumed that research is the principal source of new knowledge, but there are many ways to learn. While it is certainly true that research at CCI does generate new knowledge, it is equally true that knowledge can be a result and a byproduct of the treatment of objects. Our selection criteria for treatment projects are intended to ensure, as much as possible, that the work we undertake will in fact lead to new information, e.g. new techniques and processes for conservation, or an increased understanding of materials and their interaction within the environment.

Knowledge generation is most useful when the information addresses real-world concerns in a practical manner and is accessible. We are, therefore, increasing the emphasis placed on the delivery of our knowledge, examining not only the enhanced use of traditional methods of publishing but also new techniques afforded by electronic publishing. To this end, the CCI Web site is being completely redesigned to be a more effective communications tool (see p. 6 for more details). Our training and education program is also being upgraded to include more educational activities for interns and more cooperation with the academic world.

At CCI we are strongly committed to working with you, the conservation and heritage community, to ensure that our work addresses your needs. A consultative process is in place to provide direction for our research program, and this year we will be publishing a research summary and inviting comments from the interested community. Feedback is essential. I invite your thoughts as to how we can best orient our quest for knowledge and make it available. Your suggestions with respect to this fundamental aspect of CCI's function will be given full consideration.

Bill Peters
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More information on CCI and its activities can be found on CCI's World Wide Web pages:

http://www.cci-icc.gc.ca

Three, Two, One... Release! CCI Launches a New Web Site

by Raymond Lafontaine, Director, Information Services and Marketing

CCI spun its first threads on the World Wide Web in July 1996. This original site received 18 000 hits and more than 500 visitors in its first month, and we were very pleased with our first modest venture into cyberspace. Although the site continued to grow in popularity (it now receives more than 75 000 hits and 6000 visitors monthly), technology advanced rapidly and the time soon came to revamp our electronic home. Seeking a fresh look and feel that would parallel our new corporate look, as well as improved usefulness and functionality, we set about overhauling the site in the fall of 1998 with the assistance of consulting firm Market Access Communications Inc. of Ottawa.

The redesigned CCI Web site offers a number of new features:

- The Bookstore presents an electronic catalogue of our publications and special products. Users can search the catalogue for specific topics and generate an online electronic order form simply by clicking on a selection, thereby keeping a running tally of their orders and how much they will cost.

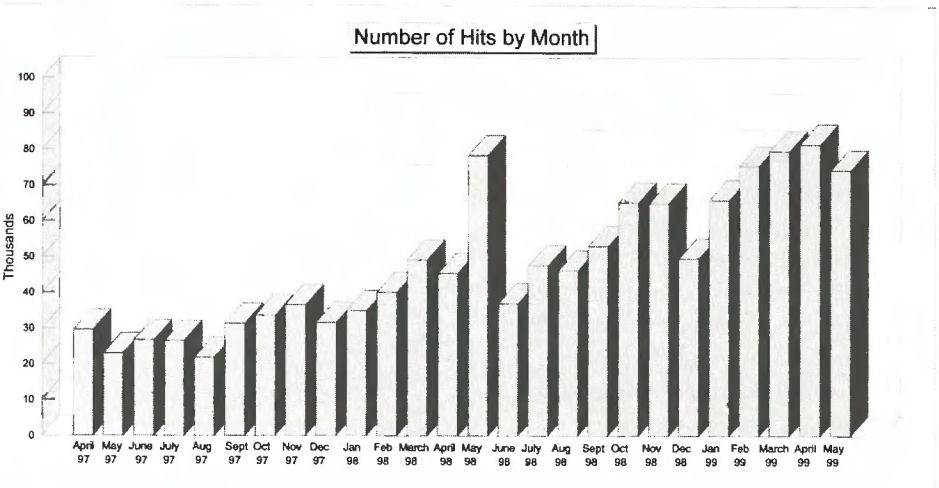
- The Conservation Information section provides access to information generated by our staff and research collaborators. Users can carry out author and key word searches of this entire database, as well as a free-text search within the body of an individual document. New information will be added regularly to increase the range of included conservation topics, issues, and questions.

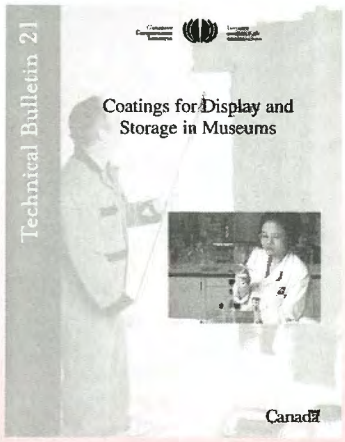
- The Services section describes in detail what we have to offer to the conservation and heritage communities, and includes an expanded list of learning opportunities that range from internships to on-site seminars and workshops. An electronic form makes it easy to contact us, and a search engine allows the user to examine not only our complete site, but also the entire site of the Department of Canadian Heritage.

Future plans include enhancing access to our library collections of books, periodicals, articles, videos, etc. by providing direct access from the site to our collection database. We are also looking into distance learning on the Web to supplement our existing training programs, and perhaps even a virtual tour of our laboratories.

The redesigned site will be up and running in the spring of 1999. If you haven't done so already, we invite you to check it out at our new address (www.cci-icc.gc.ca)*. We hope your visit will be useful, and look forward to receiving your feedback on how we can make it even better.

*The old address (www.pch.gc.ca/cci-icc) is still functional.





Coatings such as paints and varnishes are often used in museums. This Technical Bulletin will alert architects, designers, contractors, fabricators, project managers, and museum staff to the damage that coatings might cause to objects, and provide guidelines for the selection of coatings that will help minimize this risk. A list of coatings is provided for many different situations, and when possible, alternative materials and procedures are given. Recommendations are based on the various classes of coatings and resins; trades names are not specified because there is a large variety of coatings on the market and their formulations may change in the future. Tests that will verify coating specifications or monitor the emission of volatile compounds are described, and information on substrate preparation is also provided.
Paperback, 46 pp.
In Canada: CAN$20
Other countries: US$20 (plus S&H)

Contingency Planning for Year 2000 — Don't let the Millennium Bug get your Collections!

by Charlie Costain, Director, Conservation and Scientific Services, and David Tremain, Conservator, Preventive Conservation Services

It's New Year's Eve, 1999. As the clock ticks down, the world is holding its collective breath to see if the lights go out, the phones go silent, or the traffic lights go haywire. You are also wondering what will happen to the collections in your care. All of the museum's computer-operated systems have been verified, but what if you missed something? What if the electric company missed something? What if...?

Most Canadians are aware of 'Y2K' and have either taken steps to prepare or, convinced that the problem is beyond their control, have decided to just hope for the best. For those who are preparing, the process can be divided into two distinct parts: risk management (assessing the risks and taking appropriate action before the critical date), and contingency planning (drawing up emergency plans for after the critical date).

Risk Management

In carrying out risk management for Y2K, Canadian museums face many of the same issues as most businesses. Numerous useful sources of information are available, including Industry Canada (http://strategis.ic.gc.ca/sos2000 or 1-800-270-8220) and the Year 2000 Information Centre for the Cultural Community (http://www.ramanet.net).

By now, many of you will already have contacted the vendors of all of your computer-based systems to inquire about compliance and to have your systems tested. In addition to obvious computer hardware and software, systems that typically need to be verified include security and controlled-access systems, fire protection systems, automated heating, ventilation, and air conditioning (HVAC) systems, financial systems, in-house registration, database, and record-management systems, etc. This type of planning will help to mitigate Y2K problems.

It should be noted that although midnight of December 31, 1999, is the most widely publicized date in the Y2K scenario, there are a number of additional dates that could cause problems in computer systems (e.g. http://www.tbs-sct.gc.ca/info2000/introduction/DangerDates_E.htm). These dates will typically be verified in standard Y2K testing procedures.

Contingency Planning

But what if...? Even with the most thorough risk management actions, it is prudent to have a contingency plan in place to deal with any 'surprises' on January 1, 2000. This disaster plan should focus on problems that could occur as a result of some malfunction, either within your institution or outside it. Apart from the problems shared with other types of businesses, museums also have some specialized concerns. Some of the particular risks that impact a museum and its collections are outlined below.

Power Failure—One of the most extreme failures that can be envisaged, a power failure would affect a range of systems relating to security, fire protection, and temperature and relative humidity, in addition to the daily operation of your museum. Even with an emergency power backup for your museum, what level of operation could you maintain? Who would be responsible for operating and maintaining the emergency backup system? How much fuel would be available and how long would it allow you to provide power?

Security and Controlled Access Systems—A power failure or computer malfunction could disable your security and controlled access systems. How vulnerable would your institution be if the automated security system failed? Would a failure allow unauthorized access to the building or to collections? Would your closed-circuit television cameras and video recorders continue to function? Would the failure of your controlled access system deactivate your key cards, impeding you and your staff from entering the building? Are your building security staff designated as 'essential personnel' who would remain on-site throughout an emergency situation? If they were on-site for a prolonged period of time, could you ensure they were warm, fed (without increasing the fire risk), and had functioning toilet facilities? If extra security personnel would be required to assist during this time period, are they identified and reserved now?

Fire Protection—A standard wet-pipe sprinkler system will remain functional during a power failure, but only if the water pressure is maintained and the temperature remains above freezing. A pre-action system, which depends on a signal from a detector to charge the system with water, may not operate at all in the case of a power or computer failure. Therefore, special attention will have to be paid to fire risks, especially if heaters, fuel for portable generators, etc. are introduced into your museum facility during a power failure.

Temperature and Relative Humidity—A power failure or failure of the HVAC system could leave you without temperature and humidity control. Generally, slow cooling (such as that which occurs in a building without heat) should not cause major damage to works of art or artifacts. Some

objects may become more fragile when cold, but this should not cause a problem unless they are moved.

The primary risk during a period of no temperature or humidity control is damp and mould, and this is more common in regions where the exterior conditions are wet. Unfortunately, without power not much can be done to overcome damp or mould, although increased ventilation and a slight increase in temperature through the use of equipment powered by portable generators might be considered. The fact that Y2K incidents will take place during the cold season is an advantage for Canadian museums, as lower temperatures diminish the rate of mould growth.

When systems are reactivated, a rapid return to normal temperature and relative humidity levels could cause problems; a two-stage temperature increase is safer. First set the thermostat to about 10°C, wait for the building to equilibrate, and then reset the thermostat to normal comfort conditions. Good ventilation and monitoring of the relative humidity are also important. Slower ramping of temperature (smaller increments over a more prolonged period) may be carried out, but the benefits are small and this may impede other business resumption activities.

Water Damage—If the indoor temperature of your museum falls below 0°C, plumbing and wet-pipe sprinkler systems should be drained. Artifacts should be removed from the vicinity or they should be covered with sheets of polyethylene and raised off the floor if there is any risk of water damage. It is worth noting that if the interior temperature does go below freezing and the water has been turned off, problems might not be apparent until the building is warming up and the systems being restored.

Now is the time to review your own contingency plan. Does it cover all the above items? Does it establish not only the actions that would be undertaken in various circumstances, but also how you would know if a problem occurs, who would have the authority to activate the plan or parts of the plan, and who would be responsible for then carrying out various actions? How would you activate your plan if telephone service were disrupted? If you have a well-thought-out Emergency Response Plan (ERP), you will likely have little additional work to do to establish a Y2K contingency plan; and if you do not have an ERP, the impending Y2K threat may provide a good incentive to put one in place. At the very least, you should discuss some of the scenarios listed above, or others that might occur in your institution, and plan some appropriate response. Finally, if you are considering utilizing any emergency backup equipment (such as portable generators or heaters), ensure that your staff are familiar with their operation in advance, and that they are being used safely and in accordance with manufacturers' recommendations.

Conclusion

How likely is it that we will encounter any of these problems? Testing by major utilities such as Ontario Hydro has been ongoing for some time, and they generally report a high state of readiness. Peter de Jager, one of the earliest experts to warn of Y2K problems, now feels that in North America "we have avoided the doomsday scenarios" (*Toronto Globe & Mail*, April 28, 1999, p. A10). de Jager states further that, while he feels that 2- to 3-week disruptions of services are unlikely, preparing for a disruption of this length "is sufficient to handle what Y2K might throw at you" (http://www.year2000.com/archive/y2khowbad.html). This is an educated guess from a man who has studied the problem extensively, but unfortunately no one can be sure of the risk or the magnitude of the problem.

At CCI, our staff will be happy to answer your questions about emergency planning; contact us by e-mail (cci-icc_services@pch.gc.ca) or telephone (613-998-3721). We will even be available (by phone) over the New Year's weekend, 24 hours per day! If there are significant disruptions, we will be prepared to act in an advisory capacity and if necessary assist institutions in recovery and salvage operations.

Here's hoping we can all toast the new millennium without incident!

Archaeological Conservation: Specialized Techniques and Research for Wet Objects

a personal review by Kate Singley, Atlanta, GA

On November 2–5, 1998, a professional development workshop, designed to tweak the capabilities and confidence levels of those conservators struggling with vats of smelly artifacts, was held at CCI in Ottawa. Twenty-two conservators, students, and technicians attended. We were on a mission, drawn to Ottawa from such far-flung locations as Boston, Cairo, Mexico City, Eugene, Vancouver, Reykjavik, and Hull...

We were not disappointed.

The schedule was packed, a veritable waterlogged Genesis. Day 1: wood chemistry and identification, plus a review of current international treatments for wood. Day 2: an explanation, step-by-step, equation-by-equation, of PEGCON, which has now

been demystified for at least 21 of us. Day 3: iron and composite materials. Day 4: a smorgasbord of textiles, basketry, baleen, rubber, and leather.

Each day had a related laboratory practicum. These were particularly valuable. There was something for everyone, no matter how experienced. Little tips to aid in identifying wood under a microscope, or determining moisture content, or photographing wet surfaces. Other sessions covered methods of determining PEG concentration during a stepped soaking, and selections of pH papers and meters. Despite being in well-equipped, glamorous surroundings, the course emphasized the simple, safe, and low-tech approaches. Laboratory time also included a tour of the new Parks Canada wet labs nearby.

All the teaching staff from CCI (including Cliff Cook, Malcolm Bilz, David Grattan, Nancy Binnie, Greg Young, and Tara Grant) were very approachable and accommodating. For many of us, it was an opportunity to finally connect a publication with a face. Additionally, course participants were called on to contribute informally during working lunches. For our group, topics included problems drying mushy ceramics, a reevaluation of wet leather treated with castor oil, and a case study of documenting and treating a composite shot locker.

Judy Logan should be commended for the time and effort that went into designing this course. The handouts alone were dynamite: a 3" binder chock full of lecture notes, charts, manufacturers' technical sheets, and related IIC-CG reprints. Courses such as this help us to standardize our techniques and encourage an exchange of information. The seminar was particularly useful for those of us who are geographically isolated, professionally misunderstood by colleagues, too impoverished or distracted to go to every WOAM meeting, and/or shaky in our techniques.

Kate Singley, flanked by CCI conservation scientists David Grattan (left) and Malcolm Bilz (right), assessing the condition of waterlogged wood samples.

It was a lot to cover in four days. Perhaps not enough time was allowed for down-time, and the use of the CCI library and online search capability. The course focused on wood, and less time was spent on the more exotic and problematic organics.

Enough interest has been generated that CCI is planning to repeat the course in April, 1999, and foreseeably again as needed. The registration fee may seem stiff but it is worth it. Lunches, morning coffee, and rolls (aka breakfast) were included. The CCI staff covered transportation to and from lodging, and could suggest alternative accommodation for those on a tight budget.

My advice—plan to come to this "waterlogged Genesis". Start the memory-enhancing herbs now. Bring warm clothes. But on the 5th day rest, in the CCI library.

And from another participant:

Dear Sonya [Training and Development Officer, CCI],

Please extend my thanks to Malcolm Bilz, Nancy Binnie, Clifford Cook, Tara Grant, David Grattan, Judy Logan, Lyndsie Selwyn, Season Tse, and Gregory Young for the professionally prepared and extremely well-executed Conservation of Wet Archaeological Artifacts Workshop, as well as to Carl Bigras for his excellent photographic contribution. I especially appreciated the generosity shown by all the instructors of their time and the care they took to ensure the understanding and knowledge acquisition of each participant. I came away enriched in information and re-inspired in my work.

Very best wishes to all of you in your future teaching and research endeavors. Your collective work forms an exemplary contribution to the international conservation community.

Sincerely,

Patricia Leavengood,
Objects Conservator
Art Conservation Sciences
1920 Eastlake Ave. E.
Seattle, WA 98102 USA

WANTED

Old and/or damaged silk, leather, and skin are extremely useful for the workshops at CCI. Any old petticoats and bonnets, book bindings, kid gloves, discarded upholstery leather, skin boots, kayak coverings—indeed, anything that is expendable and taking up valuable space—would be appreciated. If you have any materials you would be willing to donate, please call Client Services at (613) 998-3721.

Editor's Note

These three regular features appear in each issue of the *Newsletter*. "The History of Conservation" looks at conservation treatments of the past, "The Science of Conservation" examines recent scientific analyses that have been conducted at CCI, and "On Display" highlights recent conservation treatments. Watch for them in future issues!

The History of Conservation

The Treatment is Clear

by Lyndsie Selwyn, Senior Conservation Scientist, Conservation Processes and Materials Research

It must surely be a common problem. Old friends are coming for dinner and the silver candlesticks they gave us for a wedding present are about to be used for the first time in years. The relief of finally locating them quickly turns to dismay as we unwrap them and see... tarnish! Exposure to sulphur-containing gases has caused a thin film of solid silver sulphide to form on the surface and the result is a dull lackluster finish. To restore the original brilliance of the silver, the sulphide film must be removed.

At the turn of the century (1907) an industrious homemaker could find the following recipe for silver polish[1]:

> *The best polish for silverware —that is, the polish that, while it cleans, does not too rapidly abrade the surface—is levigated chalk... The usual metal polishes, such as... finely ground pumice stone... cut away the surface so rapidly that a few cleanings wear through ordinary plating.*

The author's 'wedding present' candlesticks (silver-plated zinc with gold trim), before and after polishing.

More recently (1992), a conservator might find this advice[2]:

> *Make a slurry... of precipitated chalk in distilled or deionized water and apply in small quantities to tarnished silver with cotton and cotton swabs.*

As we can see, the 1907 opinion is still valid 85 years later. The only modification is the stipulation that the chalk be precipitated from solution rather than levigated (ground into a fine powder). This stems from the fact that precipitation gives better control of the particle size than grinding, and avoids the large particles that can leave behind visible scratches during polishing (small particles also leave scratches, but if the particles are small enough the scratches are invisible to the unaided eye). One reason for the enduring use of chalk is that it is a soft material (hardness about 3). Harder abrasives such as pumice (hardness about 6) remove more material with each stroke, but also cause more damage: if polishes containing the harder abrasives (such as "all-purpose" metal polishes) are used on silver plate, they rapidly remove the entire silver layer, revealing the underlying base metal; if they are used on sterling silver, they can rub away delicate engravings.

This is one case where time has simply polished the advice!

References

1. *Henley's Twentieth Century Formulas, Recipies and Processes*. 1907.

2. National Committee to Save America's Cultural Collections. *Caring for Your Collections*. New York: Harry N. Abrams, Inc., 1992, p. 116.

The Science of Conservation

The Log... ical Solution!

by David Grattan, Manager, Conservation Processes and Materials Research, and Malcolm Bilz, Senior Assistant Conservation Scientist, Conservation Processes and Materials Research

A partially exposed fossilized log was found in the Hagerman Fossil Beds in Idaho in 1993. The United States National Park Service (USNPS) removed a section of it (about 2.5 m long by almost 0.5 m in diameter) and stored it until 1998, when it was delivered by truck to CCI. But a 3-million-year-old fossilized log does not look quite like the logs you burn in your fireplace! So it seemed logical to do a little scientific investigative work before attempting conservation treatment.

Analysis of the ash content of the log (using ASTM Standard Test Method D 1102-84) disclosed that it is about 95% mineral, indicating that it is highly petrified. Visual examination revealed what appeared to be three main components associated with the log: a yellow material with a slight pattern similar to the grain of wood; a brown sand

matrix with a uniform featureless texture; and a similarly featureless yellowish sand. Samples of all three components were subjected to X-ray diffraction, scanning electron microscope elemental analysis, and Fourier transform infrared spectroscopy. Results of these tests showed that all three materials contain a lot of silicon. The yellow material has the highest iron content and appears to be a clay; the yellowish and brown sand both appear to be quartz. The elemental composition of the yellowish sand is intermediate between the yellow material and the brown sand, suggesting that this is not a third distinct material but rather a mixture of small pieces of petrified log and the brown sand matrix.

Armed with the results of these scientific analyses, we can now proceed with conservation treatment. In the coming months we will attempt to remove the sand matrix and isolate the petrified wood fragments. If necessary, some log fragments can then be consolidated. Preliminary tests have indicated that Rhoplex AC-33, an acrylic emulsion, may be suitable for this purpose.

Thanks to the combination of science and conservation, when the log is returned to the USNPS some segments should be suitable for display.

CCI conservator Tara Grant using a vacuum to remove the sand matrix and isolate the petrified wood fragments.

On Display

Weaving the Story of Tobias

by Wojciech Jakobiec

Past treatments of the Textile Laboratory at CCI include two tapestries (*Tobias and Sarah Bidding Farewell to Her Parents* and *Tobit Giving the Note of Hand of Gabael to Tobias and Raphael*) from a set of five that depict the Old Testament (Apocrypha) story of Tobit and Tobias.

Dating from the first half of the 16th century, the tapestries were part of Henry VIII's collection and probably hung in Bisham Abbey, Buckinghamshire. They have no markings to identify where they were produced, but the quality of the craftsmanship and stylistic components suggest they were made in one of the major workshops in Brussels, widely recognized as the best in Europe at that time. Their design is attributed to Bernard Van Orly, a Flemish artist who was influenced by Raphael. They were donated to the Winnipeg Art Gallery in 1973 by Lord Gort, a renowned art connoisseur.

The tapestries have been woven in accordance with traditional technique. The weft threads completely cover the warp threads, creating a weft-faced textile in which the design is an integral part of the structure. The warp and most of the weft threads are wool, with silk weft threads used for highlights.

Tobit Giving the Note of Hand of Gabael to Tobias and Raphael, *after treatment. Note the missing border.*

The central images should be bordered on all four sides with a floral and fruit motif, but both tapestries have been cut at some time in the past. The left-hand portion of *Tobias and Sarah Bidding Farewell to Her Parents* was cut so that the tapestry would fit a small bedchamber, and a large area of the image is now missing; the border of *Tobit Giving the Note of Hand of Gabael to Tobias and Raphael* is partially gone on three sides. Like most tapestries from their era, they have been previously repaired.

On examination, the tapestries were found to have damage typical for their age: several of the original, naturally dyed colours had faded; many areas of weakened or missing wefts had previously been repaired by embroidering through the lining, which put considerable stress on the tapestries; the silk weft used as highlights had disintegrated; and the iron mordant used to dye the dark brown wool that outlines the images had caused the fibres to weaken, leaving the warp bare.

The tapestries were first mechanically surface-cleaned and, after testing their colourfastness, wet-cleaned. Areas of loss were then rewoven with compatible wool, silk, or cotton yarns; linen was used for re-warping where necessary. In areas where there was insufficient evidence to recreate the original design, reweaving was done in a manner that respected the integrity of the original. This traditional approach, more time-consuming than other repair techniques, is harmonious with the original technique both physically and aesthetically. Finally, the tapestries were fully lined and returned to the Winnipeg Art Gallery.

All five tapestries were recently on exhibit. After endless hours of conservation, they made a stunning display.

Wojciech Jakobiec was a conservator at CCI from 1983 to 1997, during which time he worked in the Textile and the Fine Arts laboratories.

Symposium 2000 - The Conservation of Heritage Interiors

The Canadian Conservation Institute – Ottawa, Canada

May 17–20, 2000

The Canadian Conservation Institute (Department of Canadian Heritage) will host Symposium 2000 - The Conservation of Heritage Interiors, on May 17–20, 2000, in Ottawa, Canada. A three-day international symposium organized in collaboration with the Association for Preservation Technology (APT) and Public Works and Government Services Canada's Heritage Conservation Program, Symposium 2000 will emphasize the professional collaboration necessary to plan and execute successful conservation projects in historic interior spaces. The presentations will cover architectural interiors and the materials that compose them, both moveable and fixed. The many submissions received so far promise a varied and interesting program. Anyone responsible for the preservation and rehabilitation of heritage interiors, including professional conservators, preservation architects, conservation scientists, craft and trades people, engineers, technicians, and designers, is encouraged to attend.

Symposium papers will be presented in the auditorium of the National Gallery of Canada, with simultaneous translation to English or French as required. Each registrant will receive a book of preprints that includes the text of all papers, in the language of presentation. Abstracts of all papers, posters, demonstrations, and videos presented at the symposium will be included in both English and French.

Program: The tentative program, which follows the course of an architectural conservation project, will include the following session titles:

1. The Preparations—Conservation Assessment
2. Project Planning—Teams and Partners
3. Implementation—Treatment Approaches and Case Studies
   - Furniture and Textiles
   - Wallpaper
   - Plaster
   - Paintings and General Finishes
4. The Interior Environment—Conservation for the Long Term
5. The Post Mortem—Panel Discussion, The Conservation of Heritage Interiors: Consensus and the New Orleans Charter

Registration will begin Wednesday evening (May 17), with papers being presented from Thursday through Saturday (May 18–20).

Tours will be offered on Sunday (May 21), and should include various local heritage buildings and sites whose interiors have undergone conservation work or are currently under restoration (e.g. the neo-Gothic buildings of the Canadian Parliamentary Precinct and Ottawa's Notre Dame Cathedral), the treatment and research facilities at the Canadian Conservation Institute, and other venues.

An accommodations and registration package will be available in September. To receive this package, please contact:

Christine Bradley, Registration Coordinator,
Symposium 2000
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5
Canada

tel.: (613) 998-3721 ext. 250
e-mail: christine_bradley@pch.gc.ca

More information about this symposium is available on the CCI Web site (http://www.cci-icc.gc.ca).

Canadian Association for Conservation of Cultural Property

Annual Conference and Workshop

The next annual meeting of the Canadian Association for Conservation (CAC) will coincide with Symposium 2000, and participation in both events is encouraged. The CAC Conference and Workshop will take place in Ottawa, Canada, from Sunday May 14 to Tuesday May 16, with tours on May 17. For more information, visit the CAC Web site (www.cac-accr.ca) or contact Maureen MacDonald at (613) 998-3721 ext. 126.

Internships

CCI is pleased to host the following internships.

Curriculum Internships

Laurence Becker from Germany. A student at Fachhochschule für Technik und Wirtschaft (FHTW), Cologne. May–September 1999 in the Treatment and Development Division (Textiles) with Janet Wagner, Renée Dancause, and Jan Vuori.

Holly Fiedler from Canada. A student in the Master in Art Conservation program at Queen's University. May–August 1999 in the Treatment and Development Division (Fine Arts) with James Bourdeau.

Verena Hiller from Germany. A student at FHTW, Cologne. May–September 1999 in the Treatment and Development Division (Objects) with Bob Barclay.

Alexandra Jeberien from Germany. A student at FHTW, Berlin. April–July 1999 in the Conservation Processes and Materials Research Division (Archaeology) with Cliff Cook and Tara Grant.

Irene Karsten from Canada. A B.Sc. graduate and current doctoral student in Human Ecology, University of Alberta. May–August 1999 in the Conservation Processes and Materials Research Division with Jane Down.

Professional Development Internships

Nada Novosel-Habekovic from Croatia and new resident to Canada. A graduate of the School of Applied Arts, Zagreb. February–August 1999 in the Treatment and Development Division (Furniture) with Michael Harrington.

Ulla Zenz from Austria. A graduate of the Academy of Fine Arts, Vienna. October 1998 – October 1999 in the Treatment and Development Division (Objects) with Janet Mason.

Career Edge Internships

A national youth internship program sponsored by the Federal Government of Canada has been established to facilitate the transition of Canadian youth from educational institutions to the workplace. CCI is proud to be hosting nine paid internships under this program in 1999–2000.

Internships have been created in the following areas: Archaeology, Fine Arts, Objects, Conservation Processes and Materials Research, Training and Development, Information Technology, and Finance. The following individuals have already started their internships.

Jennifer Benson, a B.Sc. graduate from the University of Ottawa. April 1999 – March 2000 in the Conservation Processes and Materials Research Division with Jane Down.

Jennifer-Lynn Draper, a Sir Sandford Fleming College graduate of the Collections, Conservation and Management program. May 1999 – April 2000 in Training and Development with Sonya Milly.

Upcoming Seminars and Workshops

CCI's educational initiatives are an essential means of communication, allowing us to share the results of our current research and conservation practices with you, the heritage community, while simultaneously learning about your emerging needs and concerns.

We are pleased to provide the following seminars and workshops in collaboration with various Canadian heritage associations and organizations across Canada during 1999/2000.

June 1999

Conservation Considerations for Sculptors and Carvers

Host(s): Yukon Tourism/Heritage Branch; McBride Museum; Society for Yukon Artists of Native Ancestry; and Yukon Arts Branch
Location: Whitehorse, Yukon Territory
Date: June 25, 1999
Contact: Diana Komejan, Conservator
tel.: (867) 667-3431
e-mail: diana.komejan@gov.yk.ca

October 1999

Archaeological Conservation: Specialized Techniques and Research for Wet Objects
Host(s): Canadian Conservation Institute
Location: Ottawa, Ontario
Date: October 18–21, 1999
Contact: Christine Bradley
tel.: (613) 998-3721 ext. 250
e-mail: christine_bradley@pch.gc.ca

November 1999

Storage Planning for Books and Archival Materials
Host(s): Archives Association of British Columbia
Location: Vancouver, British Columbia
Date: November 1–2, 1999
Contact: Francis Mansbridge
tel.: (604) 987-5618
e-mail: nvmchin@island.net

Storage Planning for Cultural Facilities
Host(s): Prince of Wales Northern Heritage Centre (PWNHC)
Location: PWNHC, Yellowknife, Northwest Territories
Date: November 6–7, 1999
Contact: Rosalie Scott, Conservator
tel.: (867) 873-7664
e-mail: Rosalie_Scott@ece.learnnet.nt.ca

Consolidation of Porous Materials: Physics and Optics
Host(s): Museums Association of Saskatchewan
Location: Regina, Saskatchewan
Date: November 18–19, 1999
Contact: Patricia Fiori, Education Manager
tel.: (306) 780-9269
e-mail: mask@sk.sympatico.ca

Emergency and Disaster Preparedness for Cultural Institutions
Host(s): Ontario Museum Association; and Ontario Association of Art Galleries
Location: Brampton, Ontario
Date: November 22–23, 1999
Contact: Cathy Blackbourn, Professional Development Project Manager
tel.: (519) 571-1576
e-mail: cate@golden.net

Integrated Pest Management
Host(s): University of Alberta
Location: Edmonton, Alberta
Date: November 25–26, 1999
Contact: Lisa Barty, Education Coordinator
tel.: (780) 492-6271
e-mail: lisa.barty@ualberta.ca

February 2000

Integrated Pest Management
Host(s): Museum Association of Newfoundland and Labrador; and Association of Newfoundland and Labrador Archives
Location: Avalon Peninsula, Newfoundland
Date: February 12–13, 2000
Contact: Ute Okshevsky, Executive Director and Professional Development Coordinator
tel.: (709) 722-9034
e-mail: manl@tourism.gov.nf.ca

March 2000

Preservation of Optical Disks and Magnetic Media Records
Host(s): Council of Nova Scotia Archives (CNSA)
Location: Halifax, Nova Scotia
Date: March 2–3, 2000
Contact: Rosemary Barbour, Chair, CNSA
tel.: (902) 424-6070
e-mail: cnsa@fox.nstn.ca

Host(s): Public Archives of Nova Scotia
Location: Halifax, Nova Scotia
Date: March 6–7, 2000
Contact: Rosemary Barbour
tel.: (902) 424-6070
e-mail: cnsa@fox.nstn.ca

Emergency and Disaster Preparedness for Cultural Institutions
Host(s): Eastern Ontario Regional Museum Group
Location: Brockville, Ontario
Date: March 30–31, 2000
Contact: Bonnie Burke, Secretary-Treasurer
tel.: (613) 342-4397
e-mail: bmchin@cybertap.com

Unconfirmed Dates

Care of Textiles
Host(s): Association Museums New Brunswick
Location: Fredericton, New Brunswick
Date: TBA
Contact: Jeanne Mance Cormier
tel.: (506) 452-2908
e-mail: muse@nbnet.nb.ca

Industrial Collections
Host(s): Manitoba Museum of Man and Nature
Location: Winnipeg, Manitoba
Date: TBA
Contact: Barry Hillman, Coordinator, Museum Advisory and Training Service
tel.: (204) 956-2830
e-mail: bhillman@ManitobaMuseum.mb.ca

Each year, CCI invites provincial museum, archival, and art gallery associations and major museums to submit an application to host a CCI workshop in their own province or territory. The wide range of available conservation topics is detailed in CCI's Training Catalogue. For more information, or to obtain a free copy of the catalogue, contact:

Sonya Milly, Training and Development Officer
Canadian Conservation Institute
1030 Innes Road, Ottawa ON K1A 0M5
tel.: (613) 998-3721 ext. 110
e-mail: sonya_milly@pch.gc.ca

CCI Services: Seminars, Lectures, Workshops, and Visits

In co-operation with provincial museum and art gallery associations, CCI responds to specific needs within the museum community by offering workshops, seminars, and lectures related to the conservation and care of museum and art gallery collections. CCI staff also participate in and present lectures to meetings of professional groups and associations.

November 1998

Bob Arnold made consultation visits to the following institutions in Halifax: **Mount Saint Vincent University Archives, Mount Saint Vincent University Art Gallery, Federation of Nova Scotia Museums, Dalhousie Art Gallery, University of King's College Library, Killam Library (Dalhousie University), Anna Leonowens Art Gallery (Nova Scotia College of Art and Design)**, and the **Canadian Parks Service Conservation Labs - Atlantic Region**.

Michael Harrington, James Bourdeau, and Paul Heinrichs attended the annual conference of the **Association for Preservation Technology** in Williamsburg, VA.

At the **Art Gallery of Nova Scotia**, Bob Arnold presented two slide-illustrated lectures on CCI's conservation treatment of several 16th-century, Flemish, wooden, polychrome sculptures that are part of the gallery's permanent collection and are currently featured in their exhibition "An Expression of Faith—Sacred Art of Centuries Past."

Ian Wainwright presented at seminar "Analysis, Recording, and Conservation of Rock Paintings and Petroglyphs" at the **Comisión Nacional de Arqueología**, Montevideo, Uruguay; he also visited a number of rock painting and petroglyph sites in the Departments of Salto and Flores with landowners, archaeologists, and government authorities to discuss conservation and preservation strategies with them.

December

In Toronto, James Bourdeau and Michael Harrington discussed options for the restoration of the interior of the **Chamber of the Legislative Assembly of Ontario** (Queen's Park, Toronto) with Martin Davidson and Donald Schmitt of A.J. Diamond, Donald Schmitt and Company, Architects, and Paul Tranquada, Director of Building Management and Conservation at the Ontario Legislature.

At the invitation of the **Construction Technology Resource Centre**, Michael Harrington made a presentation in Toronto at "Construct Canada," a forum directed to the building industry aimed at developing and marketing innovative construction services and products through linkages and collaborations; his talk detailed current CCI involvement in the preservation of architectural elements and finishes, and presented the conservation community as a valuable resource available to assist in heritage preservation projects.

January 1999

Helen McKay and James Bourdeau met with Gilbert Gignac to discuss the conservation of portrait miniatures in the collection of the **National Archives of Canada** and the development of training opportunities for conservators who will be responsible for this treatment.

Brian Laurie-Beaumont visited the **Kelowna Art Gallery** to review issues of security and collection preservation as well as storage and display areas as the background for future building redevelopment; he toured the facility and interviewed all staff as well as select members of the board.

Bob Arnold examining a large painted ceramic mural "Veneration of the White Collar Worker, No. 1 and No. 2" at the Lester B. Pearson Building in Ottawa.

CCI Seminars

"Storage Planning for Cultural Facilities" Siegfried Rempel and Deborah Stewart at the **Association of Manitoba Museums** in Brandon, MB, January 15–16.

February

At the historic **Haskell Opera House**, Stanstead, QC, James Bourdeau provided supervision and guidance for a film crew shooting several scenes for a forthcoming television miniseries "The Fabulous Showman P.T. Barnum: Inventing the American Age."

At the request of the **Mohawk Native Council**, Jane Sirois and Tom Stone visited Akwesasne to analyse a number of masks and figurines that had recently been repatriated from a museum in the United States for the presence of arsenic and mercury.

At the **Lester B. Pearson Building in Ottawa**, Bob Arnold, Kate Helwig, and Jeremy Powell carried out a comprehensive examination and study of the condition and conservation needs of a large painted ceramic mural "Veneration of the White Collar Worker, No. 1 and No. 2" created by artist Gathie Falk in 1973.

Renée Dancause gave a presentation to the **Ottawa Doll Guild** on three dolls conserved at CCI.

Siegfried Rempel and Janet Wagner visited the **Museum for Textiles**, Toronto, to conduct a site visit of the museum's storage facilities.

Michael Harrington presented the conservation component of **Federal Heritage Buildings Review Office (FHBRO)** Maintenance and Repairs Workshop, in Ottawa, to property managers from across Canada; he also presented a 2-day workshop "Furniture and Decorative Arts" to students in the **Art Conservation Techniques program** at **Sir Sandford Fleming College**, Peterborough, ON.

Scott Williams presented a 3-day workshop "Plastics in Museums" to students in the **Master of Art Conservation program** at **Queen's University**, Kingston, ON.

March

At the **Musée de la civilisation** in Quebec, QC, Scott Williams performed on-site infrared spectroscopic analysis of various objects in the museum collection, and discussed the implication of the chemical composition of these objects on their conservation and curation.

Jan Vuori attended a meeting of the **Steering Committee of the North American Textile Conservation Conference** in Washington, DC, to select the program for Textile Symposium 2000 (scheduled for March 29–31, 2000, in Asheville, NC); she also visited the **National Gallery of Art** to examine a large silkscreen by Matisse that had been treated with a suction disk, a treatment similar to one being carried out in the Textile Lab at CCI.

James Bourdeau presented a lecture "The Use of Additives for the Stabilization of Surface Coatings" to students in the **Master of Art Conservation program** at **Queen's University**, Kingston, ON.

Jean Tétreault gave a series of seminars on the selection of display, storage, and transportation materials in three European countries: in France to students of the **DESS program in preventive conservation of the Université de Paris I** and to professional conservators of the **ARAAFU** (members of the **Réunion des musées de France** could attend either presentation); in La Chaux-de-Fonds, Switzerland, to members of the **Association Suisse de conservation et restauration**; and in Sweden to students of the **Conservation Institute of Göteborg University**. He also presented a paper on storage and display materials during the seminar "La conservazione Preventiva delle Raccolte Museali" sponsored by **Instituto per i Beni Artistici Culturali e Naturali della Regione Emilia Romagna** in Ferrare, Italy; and a workshop "Commercial Coatings for Storage and Display Purposes" to students in the **Master of Art Conservation program** at **Queen's University**, Kingston, ON.

Bob Barclay was on a panel discussion regarding conservation and restoration of historic musical instruments at a conference of the **Historic Brass Society** at the Cité de la musique in Paris.

As part of Restauro 99, Jean Tétreault presented a paper on storage and display materials in Ferrare, Italy: (left to right) Iolanda Silvestri (cooordinator), Gaël de Guichen, Christina Menegazzi (coordinator), Françoise Perfettini, Benoît de Tapol, Giovanni Pinna, May Cassar, Jean Tétreault, and Jean-Jacques Ezrati.

CCI Seminars

"Emergency and Disaster Preparedness for Cultural Institutions" Deborah Stewart and David Tremain to the **Archives Association of British Columbia** in Vancouver, BC, March 18–19.

"The Preservation of Optical Disks and Magnetic Media Records" Stefan Michalski and Joe Iraci to the **Association of Newfoundland and Labrador Archives** in St. John's, NF, March 29–30.

April

Debra Daly Hartin presented a half-day workshop "Making It Last: Taking Care of Your Art" at the **Art Gallery of Hamilton**, Hamilton, ON, April 25, 1999. The workshop, aimed at the general public, provided the opportunity for members of the general public to learn more about the basic care of paintings on fabric and wood supports.

Tom Stone presented a lecture on materials and deterioration processes to students of the **Aboriginal Cultural Interpretation program of Sir Sandford Fleming College**, Peterborough, ON; the lecture was presented via two-way video conference from the college to the students at the Rainy Lake Ojibway Education Authority in northwestern Ontario.

CCI Seminars

"Archaeological Conservation: Specialized Techniques and Research for Wet Objects" Carl Bigras, Malcolm Bilz, Nancy Binnie, Cliff Cook, Tara Grant, David Grattan, Judy Logan, Lyndsie Selwyn, and Gregory Young to a group of **22 people from Norway, France, the United Kingdom, the United States, and various parts of Canada**, at CCI, April 12–15.

At MuseumExpo, the trade show of the **American Association of Museums** annual conference (April 26–28 in Cleveland, OH), Mary-Lou Simac, George Prytulak, and Paul Marcon manned the CCI booth. Conference delegates who stopped by to visit were treated to a display of CCI publications and special products, a demonstration of the new PadCAD software that addresses three-dimensional packing problems, and the opportunity to enter a free draw. Congratulations to grand prize winner Josephine Shea, Assistant Curator/Registrar of the Edsel & Eleanor Ford House in Grosse Pointe Shores, MI, who will receive the book *Mount-making for Museum Objects* along with a CCI mug and a scarf commemorating the 1997 North American Textile Symposium.

Technical Bulletin 20

"Construction of a Constant-current Power Supply for Spot Electrolysis"

Electrolytic reduction has been used to treat corroded metal objects for some time, and a number of articles have been published on the theory and techniques of electrolysis.

Manufactured units that perform electrolytic reduction on localized corrosion on metal objects are expensive, and frequently do not provide low current regulation. When performing spot electrolysis on a metal artifact, a number of variables come into play that affect current flow, such as concentration of the electrolyte, surface area of the anode compared with the cathode, and the degree of corrosion (resistance). A current-limiting control can prevent very high current density on the artifact, thus avoiding undue heat, vigorous hydrogen evolution, and embrittlement. Depending on the voltage rating, a direct-current source, such as an unregulated battery, may cause sporadic current surges on areas of the artifact, subjecting it to unwarranted stress. A current-limiting power source provides a way to control the rate of the electrochemical reaction.

This Technical Bulletin provides a schematic diagram and detailed instructions to build a small, inexpensive spot electrolysis device that controls the current. The device described is a direct-current power supply with current-limiting control, and has a maximum supply of approximately 120 mA. This device can be used to treat small areas of corrosion on furniture hardware and plated metals, and will be useful in treating composite artifacts and metal archaeological finds.

Paperback, 10 pp. – In Canada: CAN$10 – Other countries: US$10 (plus S&H)