Canadian Association for Conservation of Cultural Property

Association canadienne pour la conservation et la restauration des biens culturels

44th Annual Conference & Workshops

PROGRAM | ABSTRACTS

Kingston, Ontario
May 8-12, 2018

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THE CANADIAN ASSOCIATION FOR CONSERVATION OF CULTURAL PROPERTY
1554 CARLING AVENUE, UNIT 268, OTTAWA ON K1Z 7M4
TELEPHONE: 613.231.3977
E-MAIL: ADMINISTRATOR@CAC-ACCR.COM
WEB SITE: WWW.CAC-ACCR.CA

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Coffee break supporters:

- Golden Artist Colors
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- Conservation Solutions Inc.

Our colleagues who have been instrumental in delivering the CAC 2018 program and events:

- Stefanie Killen
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SPECIAL EVENTS

WORKSHOP RECEPTION / EMERGING CONSERVATORS COMMITTEE RECEPTION

Wednesday, May 9th, 6:00 pm – 9:00 pm

University Club, 168 Stuart St, Kingston

Workshop participants, emerging conservators and incoming conference delegates are welcome to meet and mingle at the University Club to enjoy light refreshments and a complementary beverage, followed by a cash bar, in the cozy surroundings of this house overlooking Lake Ontario.

CONFERENCE RECEPTION

Thursday, May 8th, 6:00pm – 9:00 pm

Agnes Etherington Art Centre, 36 University Ave, Kingston

The beauty of the Agnes Etherington Art Gallery's collections will draw you to the reception and conversation with your friends and colleagues will be a bonus. Also on offer, light refreshments and a complementary beverage followed by a cash bar in this jewel of a gallery on the Queen's campus.

CAC BANQUET & SILENT AUCTION

Friday, May 11th, 2017 6:30 pm – 10:00 pm

River Mill Restaurant, 2 Cataraqui St, Kingston

The Conference Banquet and Silent Auction will take place at River Mill Restaurant (www.rivermill.ca) on the on the evening of Friday May 11th. This lovely restaurant is located in the historic Woolen Mill building on the banks of the Cataraqui River. It is accessible on foot from downtown Kingston, however we will also be providing transportation between campus/downtown and the restaurant. Tickets for the banquet are $85 and include transportation.

TOURS

THE DAVID MCTAVISH ART STUDY ROOM, AGNES ETHERINGTON ART CENTRE

36 University Avenue
2 to 3 p.m. – Wednesday May 9th, 2018

The Collection of Canadian Dress has over 2500 objects including dresses, shoes, fans, parasols, jackets, hats and much more housed in the east vault of the Art Centre. The technical care and documentation of this fine collection will be discussed by the Art Centre's Textile Conservation Technician, Caitlyn Picard, whose internship is generously funded by Dr. Isabel Bader. Examples from the collection will be on display. Participation is limited to 15 people. There is no charge for this tour.

KINGSTON CITY HALL

216 Ontario Street
2 to 3 p.m. - Wednesday May 9th and
4 to 5 p.m. - Thursday May 10th, 2018

Built in 1844 when Kingston was the capital of the United Province of Canada, Kingston City Hall is a nationally designated heritage site and a prominent landmark on the city's waterfront. In addition to its significant architecture, it features portraits, stained glass, and some intriguing history. There is no charge for this tour.

QUEEN'S UNIVERSITY ART CONSERVATION LABS OPEN HOUSE

Art Centre Extension, 15, Bader Lane
3:30 to 6:00 p.m. Thursday May 10th, 2018

Come visit the labs of Queen's University's Art Conservation program! Meet students and faculty and see what they've been working on.

"COUNTY SIPS" A WINE TOUR IN PRINCE EDWARD COUNTY

Full day - Sunday May 13th, 2018

Join your conference organizers on a sommelier-lead wine tour featuring tastings at 4 or 5 wineries and lunch at the Waupoos Market Pub. Includes return transportation from Kingston.

$125.00 per person. www.countysips.com

PRE-CONFERENCE WORKSHOPS

DRUM MAKING

Tuesday, May 8 and Wednesday May 9 2018. 9:00 am to 5:00 pm (both days)
Artifacts lab, Art Centre Extension, 15, Bader Lane

Helena Neveu, elder, drummer and educator, will lead participants through the creation of their own hand drums using hides prepared by Queen's University Artifacts Conservation students. Participants will learn about the traditions associated with drums in specific indigenous cultures and will have the opportunity to birth their own drums following traditional practice. This is an important opportunity for conservators to get hands-on experience with hides and drums, and to learn about the cultural meanings inherent in these objects.

Snacks and coffee provided. Lunch is on your own.

MICROSCOPY REFRESHER

Wednesday, May 9, 2018. 9:00 am to 5:00pm
Microscopy lab, Art Centre Extension, 15, Bader Lane

This hands-on workshop will include an introduction to basic polarized light microscopy (PLM), lenses, microscope parts and functions, and the preparation of temporary and permanent slides. Methods of sampling, sample handling and storage, and sample preparation for microscopy will also be covered. The instructor for the workshop is Scott Williams. Scott retired from the Canadian Conservation Institute in 2013 as a Senior Conservation Scientist. At CCI he performed thousands of analyses of materials from all types of museum and cultural objects. Since his retirement from CCI, Scott has been an Adjunct Professor teaching microscopy and assisting in the spectroscopic analysis of materials in the Master of Art Conservation Program at Queen's University.

Snacks and coffee provided. Lunch is on your own.

SILKSCREEN PRINTING

Wednesday May 9th, 2018, 9 a.m. to 12:30 p.m.
Location: Tett Centre for Creativity and Learning, 370 King Street West

In an informative, creative, hands-on session, participants will learn the history of screenprinting (it started in 1500 BC!), witness the photo-emulsion process and assemble silkscreens using materials found at hardware and thrift stores (no specialized supplies needed), and have a chance to see their ideas come to life with three different methods of screenprinting (stencil, resist, and photo emulsion). Participants will be provided with a tote bag to print on and can also bring a cotton t-shirt from home if they wish. The workshop will be run by Barb Danielewski, artist and educator. www.barbdanielewski.com

Lunch is not provided with this workshop.

PRE-CONFERENCE WORKSHOPS & TOURS SCHEDULE

Tuesday, May 8

9:00 - 12:30	**Workshop 1:** Drum Making (day 1) Artifacts Lab, Art Centre Extension, 15 Bader Lane
12:30 - 13:30	LUNCH
13:30 - 17:00	**Workshop 1:** Drum Making (day 1) Artifacts Lab, Art Centre Extension, 15 Bader Lane

Wednesday, May 9

9:00 - 12:30	**Workshop 1:** Drum Making (day 2) Artifacts Lab, Art Centre Extension, 15 Bader Lane	**Workshop 2:** Microscopy Refresher Microscopy Lab, Art Centre Extension, 15 Bader Lane	**Workshop 3:** Silk Screening Tett Centre for Creativity and Learning, 370 King Street West
12:30 - 13:30	LUNCH		
13:30 - 17:00	**Workshop 1:** Drum Making (day 2) Artifacts Lab, Art Centre Extension, 15 Bader Lane	**Workshop 2:** Microscopy Refresher Microscopy Lab, Art Centre Extension, 15 Bader Lane	

14:00 – 15:00	**TOUR –** Agnes Etherington Art Centre Queen's University, 36 University Avenue	**TOUR –** Kingston City Hall 216 Ontario Street

18:00 - 21:00	**Workshop Reception & Emerging Conservators Committee Reception** The University Club, Queen's University, 168 Stuart Street

2018 CAC CONFERENCE PROGRAM

Four Points by Sheraton Kingston, 285 King Street East, Kingston, ON

Thursday May 10 – Day 1

8:00 - 8:40	REGISTRATION
8:40 - 9:00	WELCOME AND INTRODUCTION
9:00 – 9:45	**Per Guldbeck Memorial Lecture** *James Bourdeau*
9:45 - 10:15	BREAK/TRADESHOW/POSTER SESSION

SESSION 1 – DIRECTIONS IN PRACTICE Session chair: Wanda McWilliams

10:20 - 10:45	**Scientific Concepts Critical for Practising Conservators: Identifying Threshold Concepts** *Alison Murray, Art Conservation Program, Queen's University*
10:45 -11:10	**Picturing Us: A Critical Visual Analysis of Photographs Used for Conservation Outreach** *Anne MacKay, McCord Museum*
11:10 -11:35	**Managerial-Style Exhibition Making Practice and the Changing Role of the Conservator** *Sara Serban, McCord Museum*
11:35 -12:00	**Conservation Trends and Directions – Messages from the Heritage Community** *Charlie Costain*, Jonathan Fafard, Canadian Conservation Institute*
12:00 -13:30	LUNCH CAPC AGM (Four Points Ballroom)

SESSION 2 – CONSERVATORS AS COLLABORATORS Session Chair: Diana Komejan

13:30 -13:55	**Big Jobs, Big Picture: Lessons Learned from Large-Scale Treatments** *Rachel Sabino, Art Institute of Chicago*
13:55 - 14:20	**Hold-off or Hands-on? Collaborative Engagement as an Integral Part of the Treatment Process** *Megan Doxsey-Whitfield*, Kelly McHugh, Smithsonian Institution, National Museum of the American Indian*
14:20 - 14:45.	**Conservation and Management of Cultural Heritage Monuments and Sites in the Canadian Arctic Archipelago: Challenges and Impacts of an increasing Marine Tourism Activity** *Pierre-Louis Têtu, University of Ottawa*
14:45 - 14:50	ANNOUNCEMENTS (5 mins)
14:50 - 15:20	BREAK/TRADESHOW/POSTER SESSION

15:30 -18:00	TOUR 1 – Open House at Queen's University Art Conservation Labs *Art Centre Extension, 15 Bader Lane*
16:00 - 17:00	TOUR 2 – Kingston City Hall *216 Ontario Street*
18:00 - 21:00	CONFERENCE RECEPTION - Agnes Etherington Art Centre *Queen's University, 36 University Avenue*

Friday May 11 – Day 2

8:00 - 9:00	REGISTRATION
8:55 - 9:00	ANNOUNCEMENTS

SESSION 3 – COLLECTIONS MANAGEMENT Session Chair: Gayle McIntyre

9:00 - 9:25	**Case Studies in the Implementation of Digital Preservation Plans and Policies in Small and Medium-Sized Cultural Heritage Institutions** *Ern Bieman, Canadian Heritage Information Network*
9:25 - 9:50	**Moving Heaven and Earth: Re-housing the ROM's Canadian and European Furniture Collections** *Greg Kelley*, Greg Kelley Conservation Services; Melissa Maltby, Royal Ontario Museum*
9:50 - 10:15	**Expanded Cataloguing of Cape Dorset Inuit Prints: Summary of a Project Undertaken to Better Document the Japanese Papers Used by the Inuit Artist Printmakers of Cape Dorset** *Amanda Gould*, Canadian Museum of History; Nancy Jacobi, The Japanese Paper Place, Toronto; Laura Hashimoto, Library and Archives Canada*
14:50 - 15:20	BREAK/TRADESHOW/POSTER SESSION

SESSION 4 – ART IN PUBLIC SPACES Session Chair: Patricia Smithen

10:45 - 11:10	**Preliminary Results of a Comparative Study of Anti-Graffiti Coatings for Painted Outdoor Murals** *Michael O'Malley*, Centre de conservation du Québec;* *Nancy Binnie, Canadian Conservation Institute*
11:10 - 11:35	**The Conservation of Richard Serra's *Tilted Spheres:* When Public Art Becomes Too Public** *Sue Maltby, Maltby & Associates Inc.*
11:35 - 12:00	**Nothing About Us, Without Us: Preserving the Belle Park Pole** *Julia Campbell-Such*, Laurel Claus-Johnson, Alison Murray, Amandina Anastassiades, Art Conservation Program, Queen's University*
12:00 - 13:30	LUNCH CAC REGIONAL REPS MEETING (Four Points Ballroom)

SESSION 5 – TEXTILES Session Chair: Lisa Ellis

13:30 - 13:55	**Conservation of Plastics and Synthetic Materials for a Costume Exhibition** *Sonia Kata, McCord Museum*
13:55 - 14:20	**Light-Induced Change in the Structural Colour of Jewel Beetle Elytra on Textiles** *Lauren Osmond, Art Conservation Program, Queen's University*
14:20 - 14:40	**Hands On / Hands Off Textiles: Considering the Ethics of Washing through Research into Historical Cleaning and Finishing Practices** *Sophia Zweifel*, Conservation Solutions Inc., Ottawa;* Gennifer Majors, Agnes Etherington Art Centre
14:40 - 14:50	**Conform to Perform: Preparing Gellan Gum for Use on Textile Substrates** *Michelle Hunter, Canadian Conservation Institute*
14:50 - 15:15	BREAK/TRADESHOW/POSTER SESSION
15:15 - 17:00	CAC ANNUAL GENERAL MEETING
18:30 - 22:00	BANQUET DINNER AND SILENT AUCTION *River Mill Restaurant, 2 Cataraqui Street*

Saturday May 12 – Day 3

8:30 - 9:00	REGISTRATION

SESSION 6 – PAPER / PHOTOGRAPHS Session Chair: Rosaleen Hill

9:00 - 9:25	**Recovered Reflections: An Electrochemical Study of 19th Century Daguerreotypes** *Madalena Kozachuk*, The University of Western Ontario; J. McElhone; T.K Sham; J.J. Noël; R.R. Martin; A.J. Nelson*
9:25 - 9:50	**Treatment impossibilities? Case studies for four badly damaged varnished paper artifacts with conflicting media and varnish solubility parameters** *Crystal Maitland, Greg Hill, Canadian Conservation Institute*
9:50 - 10:15	**Kelpra Studio Job 6961: A Case Study of "*The Software Chart*", a 1968 Screenprint on Plastic by Joe Tilson** *Joan Weir*, Art Gallery of Ontario; Eric Henderson, Canadian Conservation Institute; Vincent Dion*
10:15 – 10:45	BREAK/TRADESHOW/POSTER SESSION

SESSION 7 – PAINTINGS Session Chair: Victoria Kablys

10:45 - 11:10	**Fra Angelico's Dormition and Assumption of the Virgin: Transformations Old and New** *Gianfranco Pocobene*, Isabella Stewart Gardner Museum; Alexa Beller*
11:10 - 11:35	**The Materials and Techniques of Louis Dulongpré: Oil Portraits from 1800-1825** *Kate Helwig*, Debra Daly Hartin, Canadian Conservation Institute*
11:35 - 12:00	**Confessions of an Emerging Conservator: What I Didn't Know I Didn't Know** *Bethany Jo Mikelait, Restorart Inc.*
12:00 - 13:30	LUNCH JCAC BROWN BAG LUNCH (Four Points, British American Room)

SESSION 8 – OBJECTS Session Chair: Erika Range

13:30 - 13:55. FR	**A Study of Light Discoloration of Birch Bark** *Carole Dignard*, Season Tse, Eric Henderson, Canadian Conservation Institute; Sonia Kata, McCord Museum*
13:55 - 14:20	**Hands-On, Hands-Off: What Every Conservator Needs to Know About the Complexity of Asian Lacquer** *Marianne Webb, Webb Conservation Services, Halfmoon Bay, B.C.*
14:20 - 14:45	**The Mask (and Glove of Hell): Treatment of Two Degraded Rubber Horror Film Props** *Evelyn Ayre*, Carole Dignard, Jill Plitnikas, Canadian Conservation Institute*
14:45 - 15:10	**Waxing and Waning: The Curious Case of an Early Eaton's Wax Display Mannequin** *Laura Cunningham, Collections and Conservation, Museums and Heritage Services, City of Toronto*
15:10 - 15:20	CLOSING REMARKS

Sunday May 13

9:30 - 17:30	"County Sips" Wine Tour of Prince Edward County

FR = Indicates that paper will be presented in French

SCIENTIFIC CONCEPTS CRITICAL FOR PRACTISING CONSERVATORS: IDENTIFYING THRESHOLD CONCEPTS

Alison Murray, Art Conservation Program, Queen's University

"What scientific principles used regularly during your hands-on practice have you found difficult to learn?", "What concepts led you to an eureka moment that was important in your development as a conservator?" The answers to these questions would be useful for conservation science professors as they determine what they teach and how, as they prepare interns and new graduates. Many disciplines use threshold concepts as a way of focusing on ideas that are difficult to learn yet are critical to understanding and are required elements of the curriculum development. Threshold concepts are defined as: troublesome, transformative, irreversible, integrative, and possibly bounded (delineating conceptual areas). Once these concepts are identified, there can be a focus on developing appropriate strategies for teaching them. This paper serves as a springboard for practising conservators to identify potential threshold concepts. Conservation scientists who teach in North American conservation programs have already answered a survey on this topic and follow-up, in-depth interviews are in progress. Students and conservation treatment professors are also being solicited for their input. In 2016, conservation professionals at the Joint Interim ICOM-CC Meeting on Conservation Science and Education at Harvard University had the opportunity to discuss these issues and it is hoped that discussions will continue at the CAC meeting. This paper also extends the work presented at the 2017 ICOM-CC meeting in Copenhagen. The research has already been used to address specific topics and to change teaching methods at Queen's. It is hoped that feedback from a survey of conservators after this CAC meeting will serve as an important resource for curriculum renewal.

PICTURING US: A CRITICAL VISUAL ANALYSIS OF PHOTOGRAPHS USED FOR CONSERVATION OUTREACH

Anne MacKay, McCord Museum

This paper looks at images found in publicity or in public outreach material in the conservation field and analyzes them using the tools of critical visual analysis. The use of photographic imagery in communications is a key strategy in the establishment of public awareness of an organization. Photographs appeal directly to the viewer's sensibilities and are usually the first element of a solicitation or a document to be analyzed, consciously or not, by the intended recipient. Images can convey complex and subtle ideas forcefully, instantaneously and indelibly, and as much as texts may clarify images, images may colour our understanding of the written material that accompanies them. Modern critical visual analysis uses a variety of techniques – from the semiotic investigations pioneered by Roland Barthes in the mid-twentieth century to the contemporary study of framing and the gaze – to decode imagery in order to better understand the messages conveyed.

The analysis of photographs and other visual material pertaining to conservation gives us insight about the identities of our profession and our institutions and allows us to think critically about the face we present to the world. This contribution examines photographs from major Canadian conservation bodies contained in documents, publicity materials and on web pages that seek to engage the public and investigates what they tell us about how we view our profession and ourselves as practitioners. Most of these images emphasize very close contact with objects and imply a treatment action or a technical examination. This paper questions whether the messages conveyed by such images are in line with both an optimal promotion of conservation and the best understanding of its value to ourselves, to other professionals and to our public.

MANAGERIAL-STYLE EXHIBITION MAKING PRACTICE AND THE CHANGING ROLE OF THE CONSERVATOR

Sara Serban, McCord Museum

As retail stores across Canada prepare their annual Christmas window displays, so does the McCord museum launch its yearly Toys exhibition. What sets this exhibition apart from the museum's other programming is that it is neither curator nor collections driven but rather directed by a project manager and the curator, who together devise the concept and scenario of the exhibition. The public is invited into an immersive experience that includes playful activities for families where objects are used to illustrate the scenario instead of being highlighted for their historical significance and meaning.

The need for museums and galleries to appeal to popular culture is perhaps most clearly seen in the temporary exhibition. As discussed by Mathieu Viau-Courville and Dimitrios Doumas, these have become multifaceted museological and communication projects, with the aim to entertain and educate as broad a segment of the public as possible. In doing so, a museum strives for financial gain and prestige while shaping a distinctive institutional identity. With the adoption of this managerial style exhibition, the scholar-curator is no longer front and centre, which in turn brings about changes to the role of the conservator in these institutions.

The traditional approach to an exhibition is a creative act designed to deliver ideas and messages based on the objects in a museum's collections, with scholarly research and curatorial interests serving as the guiding force. This model has changed of late, placing a professional project manager and administrators in charge, resulting in the emergence of a non-curatorial, managerial decision-making process where scenarios are devised before objects are chosen. Decisions are made around a narrative arc, rather than an object's historical or cultural relevance. Objects are selected and, in many cases, presented out of context - a flying car, a monkey in a spaceship, a Marie Antoinette doll standing in as Goldilocks. Conservators are called upon to advise on the selection of these objects. This calls into question the role of the conservator, where their involvement in the design of an exhibition and choice of objects to be displayed now plays a part in this curatorial endeavour. In this context, the importance of the actual objects now comes second to that of the environment created for the exhibition. Questions arise concerning the display of museum objects in unorthodox ways - designers and project managers may propose the installation of artworks outside of established and controlled spaces. Their motivation being that it is an effective way to engage the public – especially younger audiences - before entering the exhibition space proper. Normal conventions dictating the security of objects can be seemingly ignored in the quest for an exciting, interactive museum experience. 'Experience' becomes the important concept. Throughout these changes in direction, the conservator's responsibilities change and adapt, positioning us as not only in charge of the preservation and conservation of the objects in our collections, but increasingly as one of a team whose responsibilities now encompass the creation of thematic and visual representations of exhibition scenarios.

CONSERVATION TRENDS AND DIRECTIONS – MESSAGES FROM THE HERITAGE COMMUNITY

Charlie Costain and Jonathan Fafard, The Canadian Conservation Institute

The conservation field in Canada is small and diverse, so it is challenging to gather information about the needs of the profession and the conservation issues faced by our heritage institutions. To assess these needs and challenges, the Canadian Conservation Institute (CCI) has carried out a number of consultations over the years, both from conservators and from museums, galleries and archives across Canada.
This presentation will review the results of brainstorming sessions held at previous CAC conferences, of consultations that CCI carried out across Canada in 2013, and of recent focused consultations that CCI has been holding in 2017 on conservation challenges related to modern materials and contemporary art.
CCI has held 6 brainstorming sessions at CAC conferences over the past 18 years, which have resulted in hundreds of suggestions. The presentation will highlight some of the major themes that have emerged in the areas of research and training, ranging from mould remediation to contemporary art.

Five major categories of conservation challenges emerged from consultations with the heritage community in 2013. These categories include: issues with managing facilities (storage, environment), managing safe access to collections, managing digital collections, dealing with an increasing diversity of materials (traditional to contemporary), and access to conservation expertise. The results of these consultations formed the basis for CCI's current strategic plan. This plan builds on many of CCI's past activities but puts a particular emphasis on developing expertise in the area of contemporary art and modern materials, maintaining a focus on preventive conservation and the museum environment, and modernizing and diversifying professional development opportunities for heritage professionals.

Most recently, in order to assess the needs of CCI's clients in dealing with non-traditional materials, CCI has conducted a number of consultations to ascertain the prevalence of modern and contemporary objects in Canadian institutions and the challenges faced by heritage professionals working with them. Clients reported that 30-44% of objects in their collections were modern/contemporary. The most common materials of concern reported were plastics and rubber, electronics, and analog audio-visual material. Many clients noted a lack of internal expertise in dealing with modern artwork containing technological components (e.g. time-based media) and uneven access to external expert services across the country.

The presentation will end with an invitation to conference delegates to participate in this year's brainstorming session to solicit suggestions for research and training that will take place during the conference.

BIG JOBS, BIG PICTURE: LESSONS LEARNED FROM LARGE-SCALE TREATMENTS

Rachel Sabino, Art Institute of Chicago

Whether in the private sector or within institutions, conservators seem to be under increasingly urgent and constant pressure. Exhibition schedules and treatment deadlines are drawing ever tighter with ever-fewer resources—both material and personnel—allocated to satisfy these demands. At times, certainly, realizing even a minimum level of treatment feels like an impossibility.

Over the past several years, various initiatives at the Art Institute of Chicago have necessitated major re-treatments of several oversize works of art: a pair of 17th-century Islamic tile spandrels; a Renaissance terracotta altarpiece; and a Classical Greek marble funerary monument. The treatments themselves were of considerable interest, requiring investigation into new materials and techniques; exploiting trusted materials from the conservator's arsenal but utilizing them in novel ways; and demanding ample bench skills. These aspects of each treatment will be discussed. However, the more salient theme that the three campaigns will highlight is the degree to which the treatment design for each object went beyond the strictures mandated by the profession (i.e., reversibility, minimal intervention, etc.). The broader project exigencies necessitated the input of numerous staff members outside of conservation. For instance, a specific goal of each treatment was to ensure that installation be as straightforward and expedient as possible. A further goal was to reduce the object's footprint within available storage space in the event of its being removed from exhibit. Not least, the treatment design incorporated sound shortcuts to accommodate the project deadlines as closely as possible.

These and other goals will be enumerated in greater length to reinforce the notion that it behooves conservators to think beyond the bench and tailor treatment designs to dovetail neatly with the needs of clients or the institution as a whole. In the face of dwindling budgets and burgeoning administrative hurdles, it makes increasing sense to function as collaborative partners with a full understanding of how conservation fits into the bigger picture. At the same time, the three objects serve as good case studies for discussion as to the extent of treatment and when it is critical to insist on wholesale re-treatment. The reservoir of goodwill that builds from a track record of problem solving, not just for the benefit of the objects in our care, but on behalf of the many other members of staff whose work may appear tangential but is nonetheless allied with our own, makes it easier to hold the line and push for those treatments which might not otherwise have full support or the luxury of undivided attention.

HOLD-OFF OR HANDS-ON? COLLABORATIVE ENGAGEMENT AS AN INTEGRAL PART OF THE TREATMENT PROCESS

Megan Doxsey-Whitfield, Kelly McHugh, Smithsonian Institution, National Museum of the American Indian

Eagle feather headdresses are items of great importance for Native Nations in the North American Plains. The cultural significance of a headdress is specific to each community and carries with it particular cultural protocols for both creation and care. The depiction of the Plains warriors adorned with an eagle feather headdress has become a deeply embedded image in American culture as a generalized iconic symbol of American identity. Because of their iconic status, feather headdresses were frequently collected by museums and are regularly put on display.

Americans, an upcoming exhibition at the Smithsonian National Museum of the American Indian (NMAI) examines the ubiquitous presence of Indigenous imagery and invites viewers, in part, to learn about the meaning and importance of eagle feather headdresses to Indigenous Peoples. For this long-term exhibition, two Lakota and two Northern Cheyenne headdresses were selected for rotation prompting their examination and treatment. The awareness that Indigenous communities have different protocols related to care and handling prompted the desire to better understand how to appropriately care for these items while under the museum's stewardship. Collaborative engagements between the conservation department; members of the curatorial, education, and exhibition departments; and Duane Hollow Horn Bear (Lakota) or Conrad Fisher (Northern Cheyenne) informed protocols for care and treatment.

The material components of the four selected headdresses are similar; from a physical standpoint, these headdresses merited a uniform conservation treatment plan. However, respect for the cultural and intangible differences between them guided the decision-making process leading to very different outcomes: hands-on treatment for the Lakota pieces; and recommended handling guidelines, improved storage methods and a mandate for further discussion for the Northern Cheyenne pieces. This project reinforced our understanding that cultural authority resides with the stakeholder. As conservators at NMAI, it is our responsibility to work in partnership with our Indigenous constituency and utilize our best skills to implement the most comprehensive and appropriate treatment for the items in our care.

A POSTMODERNIST APPROACH TO THE PRESERVATION OF THE HISTORIC & CULTURAL HERITAGE SOUGHT OUT BY THE TOURISM INDUSTRY IN CANADIAN ARCTIC WATERS SINCE 1990

Pierre-Louis Têtu, postdoctoral researcher, Canada Research Chair in Environment, Society and Policy (ESPG), Department of Geography, Environment and Geomatics, University of Ottawa

Since 1995, the melting ice pack has led to a rapid increase in tourism in Canadian arctic waters. For example, since 2007, cruise ships and recreational vessels have doubled and quadrupled respectively (Dawson et al., 2014; Johnston et al., 2017). In this perspective, for several years now the scientific community that specializes in tourist polar navigation has been calling for the implementation of guidelines to address the various sites that are popular with the industry, as well as an assessment of the risks posed by environmental degradation, and damage to the sites and buildings of cultural and historical importance.

As part of a postdoctoral research project funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), spatial analyses of data obtained by the Canadian Coast Guard have identified areas (hot spots) of the Canadian Arctic Archipelago with the highest concentrations of cruise ships and recreational vessels, as well as the natural and cultural sites and communities most visited since 1990 (Têtu, 2017ab). Another objective, which will be addressed in this presentation, is to identify and quantify the degree of the degradation to historical and cultural structures in the Canadian Arctic, and to identify appropriate monitoring and conservation measures.

While good practice guidelines exist for cruise ships and boaters elsewhere in the Arctic - Svalbard, Franz Josef Land - and Antarctica, for example, this idea is still in its infancy for the Canadian Arctic. In this context, the overall objective of this paper is to provide a portrait of the costs and benefits of the different methodological approaches to the preservation of the cultural and historical heritage found in the Canadian Arctic, in comparison with what has been done elsewhere in Svalbard, on Franz Josef Land and on Antarctica. We will then focus on the Tallurutiup Imanga / Lancaster Sound area, a marine conservation area proposed to UNESCO by the Government of Canada in December 2017. In closing, this presentation will discuss the different approaches to the conservation of cultural and historical heritage in the Arctic and present the next steps of the project: field work in Resolute Bay this coming summer, and a cruise scheduled in 2019 on the MV Bremen.

CASE STUDIES IN THE IMPLEMENTATION OF DIGITAL PRESERVATION PLANS AND POLICIES IN SMALL AND MEDIUM-SIZED CULTURAL HERITAGE INSTITUTIONS

Ern Bieman, Heritage Information Analyst, Canadian Heritage Information Network

Digital Preservation Standards are well-established in the Archival Community. However, many of these standards are beyond the reach of smaller cultural heritage institutions. The Canadian Heritage Information Network (CHIN) has been working with digitization and digital preservation specialists to develop and promote standards and best practices for institutions of all sizes but has focused on smaller institutions as an area of particular need.

This is a presentation of two case studies which were carried out by CHIN from 2015 through 2016, and which are now published on Canada.ca. The paper focuses on the implementation of digital preservation policies, plans, and procedures in the 8th Hussars Museum and Archives of Sussex, New Brunswick, and the Medalta Museum of Medicine Hat, Alberta.

The presentation will discuss how in each of these case studies, a number of resources found in CHIN's Digital Preservation Toolkit were used, including: 1) A digital asset inventory template that was used to survey all digital holdings and the potential risk and impact of loss associated with them; 2) A digital preservation policy plan template to develop a policy suited to the needs of the organization; and 3) A digital preservation plan template to identify, compare, select, and implement a technical solution.

This presentation will also discuss the lessons learned in both case studies, including the degree to which tools in the toolkit were applicable to smaller organizations, how the selected plans differ from prevailing digital archiving standards and what might be improved in future implementations for institutions of this size.

MOVING HEAVEN AND EARTH: RE-HOUSING THE ROM'S CANADIAN AND EUROPEAN FURNITURE COLLECTIONS

Greg Kelley, Melissa Maltby, Royal Ontario Museum

The sale of the Royal Ontario Museum's iconic McLaughlin Planetarium to the University of Toronto in 2009 precipitated a large-scale two-year move of over 26,000 artifacts. These objects, which were the core of the ROM's Canadian and European collections, had been stored in the adapted planetarium theatre from 2000 to 2017. Moving such vast and varied collections from a building designed in 1968 as a working planetarium—complete with laser light shows in "The Theatre of the Stars" and exhibit spaces in the "Astrocentre"—to an off-site purpose-renovated facility presented many unique logistical and organizational challenges.

This paper focuses on the creative systems and processes developed to ensure safe transport and sound long-term storage of the furniture and wooden object components of the collections. Specifically, we will share our designs, materials, and rationales for large-scale furniture pallets, storage mounts for tall case clocks, re-useable and versatile moving crates, and tailor-made Tyvek dust covers. We will further highlight select hands-on conservation treatments such as the use of Funori to stabilize flaking paint on furniture.

Additionally, we will discuss the opportunity we were given to take an innovative approach to designing our storage facility from the ground up by using 3D modelling software to pre-visualize the floor plans and furniture shelving layouts. The program SketchUp Pro helped us to reorganize and reimagine the collections to improve accessibility and care-taking in the future. As an added bonus, we also used this program to plot out the diverse pallet sizes of the furniture and boxed collections to plan our weekly truck loads. We will talk about how we saved time and energy on already hectic move days by doing this kind of intensive tracking in advance.

EXPANDED CATALOGUING OF CAPE DORSET INUIT PRINTS: SUMMARY OF A PROJECT UNDERTAKEN TO BETTER DOCUMENT THE JAPANESE PAPERS USED BY THE INUIT ARTIST PRINTMAKERS OF CAPE DORSET

Amanda Gould, Paper Conservator, Canadian Museum of History
Nancy Jacobi, President, The Japanese Paper Place
Laura Hashimoto, Paper Conservator

At the beginning of printmaking in Cape Dorset, Nunavut, almost sixty years ago, the community's graphic artists were influenced by James Houston, a Canadian artist attributed with introducing Japanese printmaking traditions to the North. Due to this influence, approximately half of the prints produced and issued in annual collections by Cape Dorset printmakers were printed on Japanese (Eastern or Asian) paper, called washi in Japanese. Today this practice continues, and a great many of the prints produced by the West Baffin Eskimo Co-operative Ltd., (the Co-op), especially stonecut and stencil prints, are printed on papers containing Eastern plant fibres.

The Canadian Museum of History (CMH) holds the most complete public collection of prints produced by the graphic artists of Cape Dorset. In order to gain a more comprehensive understanding and record of this collection, a project was launched by the CMH in 2014 to research and document findings linked to the materiality of the prints, including the paper supports on which the artworks are printed.

The characteristics of a paper, including its fibre components, area of fibre cultivation, manufacture (meaning how the papermaking fibres were washed, cooked and formed), and method of drying the finished sheet, all contribute to how a paper will age, and perform during a conservation treatment. Accessing this information can therefore be useful to a conservator prior to undertaking the treatment of a work produced on such a support. This would include not only many Inuit prints but also any artwork executed on or treated using washi in North America from the late 1950s onward. Additionally,
awareness of the characteristics of a paper that is currently in good, versus poor, condition after years in the North American context can allow for the recommendation or selection of certain papers over others by conservators who employ these materials in their treatments, and artists and collectors concerned with the longevity of their artworks.

Accomplishing the CMH research project required harnessing the knowledge, experience, and personal and corporate records of key resources, both individuals and businesses, some involved in the supply of washi to the Co-op between about 1956 and 2010. In so doing, the project sought to identify and record the Japanese, or other, most accurate name and distinguishing characteristics, including the papermaking fibre(s), of each of the Eastern papers used as a support for an Inuit print in the collection of the CMH. Part of this research required obtaining samples for the purpose of fibre analysis. The pursuit of samples of a paper named "Mochizuki," used by the Co-op in the 1980s, exemplified the variation in quality of papers of the same name. The hands-on comparison of prints and paper samples that the project necessitated led to greater understanding of the Inuit printmaking and Japanese papermaking traditions and greater insight into the surprising extent and range of quality of the export of washi to North America in the 20th century.

PRELIMINARY RESULTS OF A COMPARATIVE STUDY OF ANTI-GRAFFITI COATINGS FOR PAINTED OUTDOOR MURALS

Michael O'Malley, Centre de conservation du Québec*
Nancy E. Binnie, Canadian Conservation Institute

Despite the fact that outdoor murals are considered by some to be ephemeral works of public art, the question of finding practical and effective graffiti protection continues to be a major concern not only for muralists and conservators, but for all stakeholders involved in their preservation and care. As of 2017, there are no anti-graffiti coatings available that are specifically designed for use on painted outdoor acrylic murals. The soft, porous nature of acrylic paint makes it difficult to clean, and acrylic paints are generally sensitive to the organic solvents required for graffiti removal.

Background

This ongoing project aims to compare the performance, appearance and handling characteristics of ten graffiti barrier products and four acrylic varnishes that could potentially serve as anti-graffiti coatings.
Inspired by initial tests undertaken in Los Angeles at the Getty (2008-2011), conservators at the Centre de conservation du Québec (CCQ) began a similar test program in 2012 to evaluate different coatings through four-season cycling in a northern climate. The Canadian Conservation Institute has contributed to this project through the loan of analytical equipment (chroma meter and gloss meter) and analysis of gloss and colour measurement data.

Test design

There were several differences between the test parameters chosen by the CCQ project and the Getty project. Perhaps the most significant difference is that the Getty coatings were applied over varnished paint surfaces, while the CCQ tests sought to evaluate the potential of varnishes themselves as graffiti barriers, as well as other graffiti barrier products applied directly over paint.

A selection of both permanent and sacrificial coatings was made by looking for products available and in current use in Canada. The coatings were spray-coated in two and three layers over unvarnished blue and white painted panels, generally following manufacturers' recommendations.

After 2 years of natural outdoor ageing on the roof of the CCQ, four types of graffiti markings were systematically applied to all panels. The marked panels were left for 3-4 weeks before graffiti removal tests began.

Graffiti removal or partial removal was attempted using organic solvents, hot water vapour and mechanical methods. Observations made during coating application and after initial graffiti removal tests were documented by photographs and notes on standardized forms. Gloss and colour measurements were made yearly to chart the rate and type of visual changes noted, as compared to an indoor control panel.

Preliminary results

The coatings were assessed on the following criteria: overall general appearance (gloss, saturation, dirt pick-up, colour change), ease of application, effectiveness as a graffiti barrier, ease of removal, and ease of local reapplication after graffiti removal.

No ideal products were found, but several coatings possessed good optical qualities, aged well within a five-year time period, and could be cleaned and re-applied locally. The coatings that best showed good potential to act as graffiti barriers include the acrylic varnishes, a polyurethane coating, and two water-based proprietary products that contain wax. The study of the long-term ageing properties of these coatings is ongoing.

THE CONSERVATION OF RICHARD SERRA'S TILTED SPHERES - WHEN PUBLIC ART BECOMES TOO PUBLIC

Susan L.Maltby, Conservator, Maltby & Associates Inc.

Toronto Pearson International Airport, like many airports worldwide, has a significant permanent collection. The collection is on perpetual display in public spaces throughout the airport. Terminal 1 is no exception. The airport commissioned Richard Serra to create and fabricate *Tilted Spheres*, a monumental 120 ton Corten steel sculpture, to act as a focal point in the International Departure lounge in the new terminal 1.

Tilted Spheres was fabricated in a steel mill in Germany and then shipped to Canada in 2005 well in advance of the second phase of the terminal's completion. The size and scale of the sculpture necessitated that it be installed prior to completion of the building.

Corten steel is a common material for the artist. Serra normally leaves the steel in its native state, allowing it to corrode with time and exposure to the elements to create a stable corrosion layer. It was decided that the rust colour of Corten would not be aesthetically compatible with the white and gray colour palette of the terminal. The artist felt that black was a more suitable colour. As such, the sculpture was allowed to corrode lightly and then coated with Fertan, a rust converter, prior to shipment.

However, conditions *en route* had been such that the converted surface of the steel had failed in localized areas causing the steel to corrode. This was considered unacceptable. The sculpture was meant to be black. On the advice of a conservator and a corrosion specialist, Fertan was reapplied to the entire sculpture and followed by four coats of the rust inhibitor Dinitol.

Not long after the terminal opened in early 2007, it became apparent that the anti-corrosion coating was failing. When scratched, the surface lifted leaving the area lighter in colour, in contrast to the dark steel. Failure of the coating made for a highly satisfying mark-making experience for the visitor and a nightmare for the curator. The sculpture essentially looked like a big chalkboard covered in white "graffiti." The amount of graffiti grew exponentially with each passing day; it proved irresistible to most. The public honestly saw this as an interactive art experience. This view was not shared by the artist.

Maltby & Associates Inc. was retained to develop a treatment plan for *Tilted Spheres*. The sculpture offered many challenges including the fact that it was immovable, in the middle of one of the busiest airport terminals in Canada and in a highly secure area. Moreover, the airport wanted the piece to remain accessible to the public throughout its treatment. The treatment had to remove the failing anti-corrosion coat while retaining the black converted surface below. The curator also asked that an anti-graffiti coating be applied once the anti-corrosion coating was removed. After considerable research and testing the treatment was developed. The anti-corrosion coating was removed using dry ice blasting after which a wax-based anti-graffiti coating was applied. This paper discusses the challenges of conserving a monumental piece of public art in a very public space is ongoing.

NOTHING ABOUT US, WITHOUT US: PRESERVING THE BELLE PARK POLE

Julia Campbell-Such, Laurel Claus-Johnson, Amandina Anastassiades, Alison Murray, Queen's University

The conservation of totem poles has challenged our idea of what constitutes a conservation treatment. Poles are often repainted, but rarely by a conservator. "Replicas" are frequently made to take the place of a deteriorating pole, preserving cultural and historical information without intervening in the original physical object. Again, a conservator may recommend this work but is not usually the one who performs it. The conservation of totem poles therefore tends to be a collaborative endeavour carried out by many hands.

This paper explores the question of what constitutes a "hands-on" conservation treatment by looking at research currently being conducted on a totem pole at Belle Park in Kingston, Ontario. This monumental outdoor wooden sculpture was carved and painted in 1973 by members of the Native Brotherhood at Joyceville Correctional Institution and given to the city of Kingston on the 300th anniversary of colonial settlement in the area. Native Brotherhoods are inmate-run, grass-roots organizations formed to address the social, political, economic and cultural problems that have led to the incarceration of disproportionate numbers of indigenous people in the Canadian prison system. One early focus of their activism was the revival of indigenous cultural and artistic traditions. The Belle Park pole is therefore an important historical monument to the early days of this movement, as well as an important record of the history of indigenous-settler relationships in the region.

The objective of the research on the Belle Park pole is to provide the City of Kingston with data to inform any future conservation work on the monument and to help the city with their decision-making surrounding the future life of the sculpture. Research conducted on the pole consisted of a technical analysis of the materials and their degradation. The structural stability of the pole was analyzed using a Resistograph. For the decorative surface layer, wood samples were examined using microscopy and paint samples were investigated with x-ray fluorescence (XRF), polarized light microscopy (PLM) and Fourier transform infrared spectroscopy (FTIR). However, this scientific, materials-based analysis was considered through the lens of culture. All work was done in consultation with Corrections Canada staff, the City of Kingston and, where possible, the artists or their representatives. Recommendations for the future of the pole therefore consider not only the stability of the material object but also the stability of the more intangible aspects of the pole: the story it tells, the history of its creation, and the intentions of the people who created it.

CONSERVATION OF PLASTICS AND SYNTHETIC MATERIALS FOR A COSTUME EXHIBITION

Sonia Kata, McCord Museum

A recent exhibition at the McCord Museum, *Fashioning Expo 67*, featured over 60 costumes from the 1960s plus accessories and archival material. Many costumes and objects contained synthetic fibres, non-traditional materials, and plastics – including malignant plastics in varying condition. These materials presented condition issues and conservation challenges different from typical historic textiles, and required research into their methods of manufacture, material properties, and best methods for treatment and long-term preservation. Five examples will be discussed here: paper fabric, metallized plastic film, polyvinyl chloride, polyurethane foam, and rubber.

- A paper dress made of Dura-weve fabric (nylon mesh filled in with cellulose pulp) had tears and losses that were treated by applying facings of toned Japanese tissue paper with adhesive.

- A dress made of a metallic plastic film fabric had tears and losses that were treated by applying adhesive Mylar patches. Stubborn creases in the plastic fabric were difficult to fully remove – a problem encountered in several costumes with synthetic materials.

- A polyvinyl chloride raincoat had tears in the vinyl material and its surface was dirty and sticky. The vinyl was solvent-cleaned and tears were repaired using adhesive-backed fabrics.

- A costume made with a polyurethane foam-backed fabric had lost its shape because the foam had degraded and disintegrated. The dress was mounted on a custom-made mannequin fitted with a petticoat to support the fabric from the inside, thereby restoring its original appearance for exhibition.

- A pair of rubber boots were degraded past the point of repair but were still displayed. After exhibition, changes were made to storage conditions. All rubber boots and some costumes were moved to cool storage to slow the rate of deterioration, then fitted with internal mounts to prevent deformations.

LIGHT-INDUCED CHANGE IN THE STRUCTURAL COLOUR OF JEWEL BEETLE ELYTRA ON TEXTILES

Lauren Osmond

In India, in the mid-nineteenth century, iridescent jewel beetle elytra were used to adorn zardozi textiles being produced specifically for British export. The Victoria and Albert Museum (V&A) owns many of these luxurious textiles in their South and Southeast Asia collections, and continues to acquire such objects. At the V&A, during the conservation treatment of a Victorian textile embroidered with silver-gilt braids and jewel beetle elytra, it was observed that the colour of the elytra had shifted from a vibrant green to blue-violet where the elytra had been exposed to light, likely while being on display. Many loose elytra from the textile had distinct stripes across the surface where embroidery threads had blocked the light. The iridescent colour in this type of beetle wing is produced by structural means rather than by pigment and so this change in colour was unexpected and unexplained, prompting the questions: "How is the exposure to ultraviolet light affecting the microstructure of the beetle elytra?" and "In what condition does this leave the elytra?"

This paper will present research undertaken in an effort to identify the mechanisms causing this structural change in colour and will also outline how confocal microscopy may be a viable and non-destructive tool for the examination of iridescent microstructures. Through determining if the layers within an elytron are delaminating or collapsing, this stream of research offers insight into the condition of these exquisitely embroidered composite objects with the intention to inform preventative measures during display and conservation treatments.

HANDS ON/HANDS OFF TEXTILES: CONSIDERING THE ETHICS OF WASHING THROUGH RESEARCH INTO HISTORICAL CLEANING AND FINISHING PRACTICES

Sophia Zweifel, Conservation Solutions Inc., Ottawa; Gennifer Majors, Agnes Etherington Art Centre*

The decision of whether or not to wash historical textiles is not only a subject continuously up for debate, but one that varies greatly across regions and over periods of time in our field. Aqueous cleaning of textiles, when it can be safely performed, can have the benefits of removing different types of soiling, reducing acidic degradation products, and increasing the pH of textile fibres so as to slow the processes of degradation. However, washing can also present many risks of physical stress and damage for weak textile fibres, can cause dyes to bleed, and can alter the 'hand" of the fabric as well as remove significant historical information by disturbing original textile finishes. Further debate around the washing of textiles is concerned with conceptual issues of cleaning. Textile conservation has moved away from practices that seek to remove soiling and stains from fabrics so as to maintain them as 'pristine' examples of the historical record for research and display purposes. Rather, conservators recognize the value in retaining some of the materials that were once removed in routine textile conservation practices. Alterations, repairs, soiling and stains, as long as they pose no further risk to the textile, are often preserved by conservators as valuable traces of the textile's use. However, while we have come to see the historical and conceptual value of soiling and wear, and embraced the context of the textile's use value as spanning beyond a single historical moment, this does not mean we are free from imposing our own subjectivity and value structures upon these objects as we take actions to treat them. If the conservator chooses to leave soiling intact on a textile they are nevertheless making a decision about the context in which the textile will be interpreted and understood. In some cases, our current efforts to preserve signs of wear contest with historical efforts to remove them. After all, textiles not only have a history of becoming dirty and worn, but also of being washed, mended and cared for.

In the winter of 2017 as part of the Isabel Bader Fellowship in Textile Conservation at the Agnes Etherington Art Centre, the author, with the help of the Isabel Bader Intern in Textile Conservation, Gennifer Majors, undertook a research project that sought to explore the ethical conundrum of textile washing. Rooted in the rich Kingston history contained in the Queen's University Collection of Canadian Dress, the project tackled textile conservation decision-making and treatment while studying the physical and tangible history of cleaning preserved upon items in the collection. This paper will outline the research of historical cleaning practices, the analysis of traces of cleaning ad finishing materials found on historical textiles from the collection, and a selection of textile conservation treatments that were informed by this research and wider ethical discussions within the field.

CONFORM TO PERFORM: PREPARING GELLAN GUM FOR USE ON TEXTILE SUBSTRATES

Michelle Hunter, Canadian Conservation Institute

The use of rigid gels as a material for conducting localized cleaning has become a popular method of treatment in a number of conservation specialties. One such rigid gel is gellan gum, a polysaccharide produced from bio fermentation that is widely used in the food industry. Gellan gum is available in two powdered forms, its natural high acyl form, which yields a soft opaque 'jelly'-like gel, and its deacetylated, low acyl form which yields a clear, firmer gel. Low acyl gellan gum and its properties have been explored and successfully used in paper conservation treatments since its first published use in 2010 by the ICPAL Laboratory for the Conservation of Library Materials in Rome and has since been widely used in the paper lab at the Canadian Conservation Institute.

Textile substrates are often composed of a somewhat textured woven structure that contain many alternating high points, or 'crowns', as well as the spaces between the yarns, the low points, or interstices. For a rigid gel to be most effective it must conform to the physical structure or particular texture of the textile substrate. Both low and high acyl gellan gums have the potential to be an effective tool for textile conservators faced with reducing localized staining on textile substrates. This paper will examine the suitability of gels prepared from low acyl, high acyl, and mixtures of both low and high acyl gellan gums to conform to various textile substrates. Tips for how best to prepare the gels will also be explored.

RECOVERED REFLECTIONS: AN ELECTROCHEMICAL STUDY OF 19TH CENTURY DAGUERREOTYPES

M.S Kozachuk; J. McElhone; T.K Sham; J.J. Noël; R.R. Martin; A.J. Nelson

The development of the first commercially viable photographic image, the daguerreotype, captured portraits and landscapes for a span of approximately 25 years between 1839 and 1860. Known for their stunning resolution and wide range of grey tones, the daguerreotype production process involved exposing a silver-coated copper plate to iodine vapours to produce a light-sensitive surface. The subsequent latent image, which was formed upon exposure to light, was fixed with heated mercury vapour. Residual silver halides were removed with a thiosulfate wash. Improvements continued to supplement this process until it was superseded by other photographic methods. While produced by an outmoded technology, daguerreotypes provide a significant historical record of 19th century individuals and events though image deterioration now disfigures many of these valuable images. One current restoration method used on these images is an electrocleaning process, which has proven to be one of the safest conservation techniques to date. However, the effects of this preservation treatment, and the extent of the physical and chemical implications to the daguerreian image, have not yet been analyzed in depth.

This research describes a preliminary study conducted as part of a collaboration between The University of Western Ontario and The National Gallery of Canada (NGC), Canadian Photography Institute (CPI). Daguerreotypes with varying degrees of deterioration were supplied by Conservation Department's study collection at the National Gallery of Canada. Synchrotron- and laboratory-based techniques were used to examine the plates before electrocleaning. Synchrotron-based X-ray absorption near edge structure (XANES) spectroscopy and X-ray fluorescence (XRF) microscopy, conducted at the Canadian Light Source (CLS), allowed for chemical characterization of the surface alongside the chemical distribution imaged in the XRF elemental maps. The results showed the presence of sulfur and chlorine as the primary components of the tarnish. Rapid-scanning XRF recorded at the Cornell High Energy Synchrotron Source (CHESS) showed that the fluorescence signal from mercury could be used to retrieve images obscured by chemical and physical deterioration.

Sulfides, oxides, and halides were detected as the primary corrosion products removed during preliminary cathodic electrocleaning experiments. Visible improvements were observed. Full plate cleaning was conducted at the NGC using two different electrochemical methods. The subsequent synchrotron- and laboratory-based analysis of the electrocleaned plates will be discussed.

Research supported by NSERC, CRC (TKS), and the Faculty of Science, The University of Western Ontario for interdisciplinary research (MSK).

TREATMENT IMPOSSIBILITIES? CASE STUDIES FOR FOUR BADLY DAMAGED VARNISHED PAPER ARTIFACTS WITH CONFLICTING MEDIA AND VARNISH SOLUBILITY PARAMETERS.

Crystal Maitland, Greg Hill, Canadian Conservation Institute

The paper lab at the Canadian Conservation Institute has recently had four different paper-based artifacts coated in yellowed, aged varnish layers. In two cases, varnish removal was possible as part of the treatment, while in two cases it was not. For two heavily degraded hand-coloured lithographic prints, it was possible to remove their oxidized natural resin varnishes, but with very different solvents and application methods – each finding a balance between the solubility of the varnish and the solubility of the media, while accommodating for the heavily degraded nature of their primary supports. For the third artifact, World War I letters adhered with polyvinyl acetate to a plywood box and varnished with an unpigmented alkyd resin, solubilisation of the varnish was not possible. A treatment plan was necessary that accommodated the aged resin that would remain as a part of the artifact moving forward. Finally, in the case of an oversized manuscript map, while the natural resin varnish was easily solubilized, the ethics of varnish removal were called into question due to the complicated layers of multiple overdrawing and the questionable condition of the original media below. The question of which state the map should be preserved in ultimately precluded the removal of its varnish. These four cases studies weave together to provide interesting details of treatment execution, but also the decision making around treatment plans for challenging varnished paper objects.

KELPRA STUDIO JOB 6961: A CASE STUDY OF "THE SOFTWARE CHART", A 1968 SCREENPRINT ON PLASTIC BY JOE TILSON

Joan Weir, Art Gallery of Ontario, Eric Henderson, Canadian Conservation Institute, Vincent Dion

By the beginning of the sixties, contemporary printmaking in the Americas and in Europe was already in the midst of a renaissance. Artists and printers actively began to collaborate to produce artworks which challenged traditional concepts of printmaking. The boundaries of size, materials, content and production were virtually obliterated and resulted in some of the most unique and affordable art produced at the time.

"The Software Chart", 1968 by British artist Joe Tilson is a screenprint on plastic produced by the Kelpra Studio, leaders of the era in the production of fine art screen printing in London, England. The five-colour screen printed image appropriated from print media and referencing a major international event, is printed on plastic (noted as Astrafoil) and backed with a reflective surfaced plastic (noted as Lumaline). Print and backing were adhered to each other with double sided masking tape, mounted to card and framed in a shallow metal frame.

Printed and produced in an edition of 150, most known versions of this print assembly exhibit severe pressure related distortions and off gassing (vinegar odour). The print was not considered to be in exhibitable condition and came to the conservation department for review.

This presentation will describe in detail the print history and concept, components, condition issues, material analysis, treatment stages, degree of treatment success, and the many issues relating to possible reconstruction, final presentation and long-term prognosis.

FRA ANGELICO'S DORMITION AND ASSUMPTION OF THE VIRGIN: TRANSFORMATIONS OLD AND NEW

Gianfranco Pocobene, Isabella Stewart Gardner Museum; Alexa Beller

Fra Angelico's Dormition and Assumption of the Virgin is one of the more intriguing paintings in the collection of the Isabella Stewart Gardner Museum. Acquired by Isabella Gardner in 1899 from Colnaghi and Co., London, the panel painting hangs discreetly in its 19th century frame next to a window in the Gardner Museum's Early Italian Room. Its understated presentation in the gallery belies its original form and peculiar history. Painted almost six centuries ago, the sublime image is in an astonishing state of preservation with hardly any paint loss or abrasion and only minimal retouching. Much of the gold leaf surface remains intact and the pigments, most notably the ultramarine blue, retain their intense hue. The egg tempera paint and gold ground surfaces have escaped damage from over cleaning and there is no evidence to suggest that a natural resin varnish was ever applied to its surface. In spite of the pristine condition of the image, the panel's format, like so many early Italian panel paintings, is drastically altered making it difficult to envision its original form. At some point in the late 18th or early 19th century, its shape was modified, transforming it from a gabled panel into a rectangular one. Just prior to its acquisition by Gardner, the panel was set into its present neo-gothic style frame.

The panel painting, currently on view in the exhibition Fra Angelico: Heaven on Earth at the Isabella Stewart Gardner Museum (22 February - 28 May 2018), reunites it with three companion reliquaries painted by Fra Angelico in the early 1430s for Santa Maria Novella in Florence. The exhibition provided the impetus to reconsider questions of Fra Angelico's technique and the original form of the work. The purpose of this paper is two-fold. Firstly, it will present the results of the technical study which reveal fascinating aspects of Fra Angelico's technique. Secondly, it will address new evidence regarding the panel's original form. As a result of the research and treatment, we now also have a clearer understanding of the sequence of the physical alterations that were made to the reliquary throughout its history. Significant structural work and the removal of later alterations was performed with the goal of presenting Dormition and Assumption of the Virgin in a format that more closely resembles the original. Furthermore, the removal of 19th century over-paint on the verso revealed previous generations of decoration which clarified questions about the tabernacle's shape and scale. The conservation treatment also raised a number of new questions. What did the original tabernacle frame look like (was it engaged or not?) and were there relics within it? When was the original frame removed and why are there several campaigns of decorative painting on the verso? These questions remain matters of debate, perhaps to be answered by further archival and technical research.

THE MATERIALS AND TECHNIQUES OF LOUIS DULONGPRÉ: OIL PORTRAITS FROM 1800-1825

Kate Helwig, Canadian Conservation Institute, Debra Daly Hartin, (retired), Canadian Conservation Institute

Nineteenth-century Québec artist Louis Dulongpré (1759-1843) was a prolific painter thought to have created more than 4000 works in oil and pastel. However, today, less than 200 of his works are known and only a fraction of these have been definitively attributed to him. Attributions to Dulongpré are often problematic; he rarely signed or dated his paintings and, adding to the complexity, he made multiple versions of some of his portraits.

Louis Dulongpré was born near Paris and first arrived in North America as a French soldier during the American War of Independence. He subsequently moved to Montreal in 1784 and quickly became active in the cultural community. After training in drawing and painting in the United States in 1793 and 1794, he returned to Montreal to work as an artist, initially producing pastel portraits and, from about 1800 onwards, oil paintings. During the period from 1800 to 1825 he undertook many commissioned oil on canvas portraits, as well as large paintings for church decoration. Financial hardship and illness marked the end of his life. He died in 1843 at the Dessaulles manor house in St-Hyacinthe.

This presentation will describe results of a research project that was undertaken at the Canadian Conservation Institute (CCI) to document the materials, techniques and condition of a selected group of Dulongpré's oil paintings dating between 1800 and 1825. Research at CCI on Dulongpré began a number of years ago in support of the conservation treatment of an oil on canvas portrait of Jean Dessaulles that showed severe cracking, related to a problematic starch-based ground layer. At that time, very little was known about the artist's materials and techniques. The information gained from our research has allowed a better understanding Dulongpré's working methods and, in the future, the project results may be helpful in resolving problems of attribution and may also be useful in evaluating the conservation requirements of his works.

The project involved the examination of sixteen oil paintings (twelve portraits and four religious paintings) from a number of institutions. The choice of paintings was undertaken after consultation with curators; works were chosen that were both accessible for examination and had a firm attribution to Dulonpgré. The study involved visual examination as well as technical photography and x-radiography when possible. This was followed by sampling and scientific analysis of the paint and ground layers. Certain paintings were sent to CCI for examination and others were examined on-site in the various participating institutions.

The presentation will focus primarily on Dulonpgré's oil on canvas portraits. The earliest work in the study is a signed and dated portrait of Isaac Todd from 1800, while the latest paintings studied are versions of Joseph Papineau's portrait, dating from about 1825. Overall trends will be discussed as well as some notable changes in materials over the course of Dulongpré's career. A comparison of the three known versions of Joseph Papineau's portrait and two versions of a portrait of Jean Dessaulles will also be presented.

CONFESSIONS OF AN EMERGING CONSERVATOR: WHAT I DIDN'T KNOW I DIDN'T KNOW

Bethany Jo Mikelait, Restorart Inc.

This talk explores a few uncomfortable realities and challenges facing the emerging conservator; some of which are often overlooked, or purposefully avoided, from the perspective of someone in that very position. Some reflections will be presented about finding a place in the professional landscape of conservation in Canada based on the current system of entry into the field, first academically, then by committing to the years of developing the skills needed to offer a discerning art world. Making mistakes is a part of that process. While navigating the waters of an uncharted and unfolding career, excellence is being demanded not only by the objects and people we serve but also of ourselves, while in the company of our fellow colleagues in conservation who inevitably scrutinize our treatment decisions and results. Making mistakes often feels like shooting yourself in the foot.

The art conservation profession is narrow, and access is regulated by a limited number of graduates completing their master's requirements each year. But there is still a gap in our current system existing between graduating with a MAC degree and becoming a recognized professional in the field. Theoretical knowledge alone does not enable treatment skills to develop successfully at the bench. This talk probes a bit into the courage, humility, and humour experienced within the continuum of this learning process beyond the academic setting – and why it matters.

A STUDY OF LIGHT DISCOLORATION OF BIRCH BARK

Season Tse, Carole Dignard, Canadian Conservation Institute; Sonia Kata, McCord Museum; Eric J. Henderson*

This research aimed at quantifying the effects of light to the cambium side of birch bark, and more specifically, to compare the extent and rate of colour change to different bark colours as well as from exposure to different light sources. Six birch bark samples of different colours were tested: red-brown (A), brown (B), orange-brown (C), orange (D), beige (E) and yellow (F). The total colour change and shift in chroma were monitored during exposure (dose-response) to three different light sources: daylight through north-facing window glass with partial UV-filtration; a panel of 11 LED lights, UV-free, with continuous exposure and with light-dark cycles; and the Newport Oriel microfade tester (MFT), UV-free.

Results show that the rate and extent of colour change varied depending on the light source, especially the presence of UV (even if in low amounts), and the initial bark colour. At low light dose (approximately 1 Mlx-h), a rapid initial colour change occurred for all six bark samples, with sensitivity equivalent to ISO Bluewool (BW) 1-3. The window and LED exposed samples darkened initially, then lightened with continuous exposure, whereas the MFT exposed samples just lightened. All six barks exposed to daylight through window with partial UV-filtration showed twice the total colour change compared to the UV-free LED samples at the same light dose. The MFT exposed samples showed the least total colour change; the difference between LED and MFT results, however, was within 1 Bluewool step.
Medium-toned (orange and orange-brown) barks showed the fastest and most extensive colour change compared to lighter (yellow and beige) barks as well as the darker (red and brown) barks.

The difference among the aging methods are most obvious with medium to light coloured barks (C-D-E-F). For the orange bark (C), the ratings from the three exposure methods ranged from between BW 1-2 to close to BW 4, more than two bluewool steps.

Exposure to light-dark cycles under LED lamps resulted in approximately the same total colour change as continuous exposure at the same light dose but exhibited a small colour change reversion during each night cycle, especially noticeable in the a*-value (red hue) of Bark A, the red-brown bark. Results from the masked controls show that the barks' cambium side changes colour to a small extent without exposure to light.

This research shows that colour change of birch bark due to light exposure depends on its composition at the surface (its colour) as well as its exposure history (the change is not linear in time). Knowing the possible behaviour will help better understand the changes that may occur. Since it is often not possible to know a bark's exposure history at the moment of assessment, making it difficult to predict the result of future light exposure, MFT remains a valuable tool and was shown to be able to give a good estimate of light sensitivity within one BW step.

HANDS-ON, HANDS-OFF: WHAT EVERY CONSERVATOR NEEDS TO KNOW ABOUT THE COMPLEXITY OF ASIAN LACQUER

Marianne Webb, private practice

Asian lacquer is one of those materials that most furniture and object conservators encounter occasionally during their career. Flaking surfaces and engrained dirt are the most common problems and resemble those that are found on many wooden objects. Cleaning and consolidation is usually required. For assistance, conservators have been able to turn to a large number of publications on Asian lacquer to understand the surface and develop treatments. Articles fall into two categories, scientific analysis and case histories. For hands on treatments, many articles narrate successful conservation projects, however, caution must be used in assuming that a given treatment is applicable for different objects. In addition, there are articles that describe treatment methods that have subsequently been shown to be detrimental over the long term. Conservators who proceed with treatments based on the current level of knowledge may be unintentionally putting the objects at risk. Treatments can dramatically go wrong when a sensitive lacquer surface is exposed to water especially when there is heat also. A lustrous black surface can instantaneously turn to a milky brown colour. For example, this can occur during consolidation if using warm hide glue. It can also occur during careless attempts to clean the surface. Fortunately, our understanding of Asian lacquer surface has dramatically improved over the last few years. The Getty Conservation Institute is leading the research that demonstrates Asian lacquer is a complex mixture of one or more anacard lacquers with additives such as oil, pigments and resins. Now that we are learning more about the complex nature of the surface, we are studying how the ingredients affect the behaviour. Some progress has been made and the research is ongoing. For example, we know that the pH of a lacquer surface is not related to the amount of light a surface received but is in fact related to its initial formula. We also know that if oil is one of the initial constituents it affects the mechanism for polymerization and therefore the aging characteristics of the lacquer. It is quite likely that other ingredients also affect the physical behaviour. Naturally as knowledge about the composition and behaviour increases, it will radically affect the treatment of Asian lacquer. To date we have taken a rather naïve approach with limited options for different circumstances. In future, we must follow the paintings field to develop a systematic approach for both understanding each surface and developing unique treatment methods. Projects at the Getty Conservation Institute in Los Angeles and Royal Institute for Cultural Heritage (KIK-IRPA) in Brussels are researching new approaches to cleaning Asian lacquer. Stay tuned for further developments.

THE MASK (AND GLOVE OF HELL): TREATMENT OF TWO DEGRADED RUBBER HORROR FILM PROPS

Evelyn Ayre, Jill Plitnikas, and Carole Dignard, Canadian Conservation Institute

In 2016-17, the Objects Laboratory at the Canadian Conservation Institute treated two highly degraded natural rubber film props from Julian Roffman's 1961 movie "The Mask (Eyes of Hell)", the first Canadian feature-length horror film and first Canadian film with 3D sequences. Currently held in the collection of the Toronto International Film Festival, the two props, a rubber mask and glove made under the art direction of David R. Ballou and Hugo Wuethrich, displayed degradation typical of rubber stored at room temperature for over fifty-five years: discolouration, deformation, rigidity, embrittlement, cracking, and loss. Fourier transform infrared spectroscopy confirmed the rubber was highly aged and using a tool presently in development, an assessment of the glove's remaining lifetime revealed that it had reached its end as an object that was 'fit for purpose'.

Rubber is often found in modern collections as a component of objects and as such, can sometimes be replaced with a reproduction or replacement component; but what can be done when the entire object is made of rubber, and that object is a unique handmade creation? With the knowledge that the mask and glove would not sustain any normal handling or storage, special storage environments designed to slow oxidation were of limited use at this point. Little information existed on the treatment of rubber, and there was risk of irreparable damage during treatment. No clear way forward presented itself. Using a decision diagram, as proposed by Michalski and Doria-Ross 2011, treatment options were considered, including the option of 'no treatment'. After consulting with conservation colleagues, assessing treatment choices, and testing materials and techniques, an interventive treatment was devised. The goal was to buy some time for these props in an understandable form by stabilising the cracked and embrittled areas of both objects and re-shaping the deformed glove.

The fragility of the objects necessitated careful and controlled handling, treatment, and packing methods, which included the use of a variety of supports, hand tools, and securing techniques. Cracked areas of both the mask and glove were stabilised with backings of Japanese paper toned with gouache paint. The backings were attached with Jade R, a vinyl acetate/ethylene co-polymer (VAE) dispersion, which was also used to mend detached pieces of the mask. The glove's hand, which had hardened into a closed position, was partially opened up using warm air from a Leister Labor S hot air hand tool. After stabilisation and re-shaping, a pigmented mixture of Jade R and glass micro bubbles was used to fill cracks in the glove, followed by retouching with gouache paint. A simple support system of Tyvek® cushions was made for the transport and long-term storage of the glove. Barrier layers of polyester film were also included for the mask and glove to prevent any possible sticking to adjacent materials due to further deterioration. The final step was the packing for transport of these objects, as well as three other associated masks and a plaster head, and the provision of unpacking and handling guidance for the owner.

WAXING AND WANING: THE CURIOUS CASE OF AN EARLY EATON'S WAX DISPLAY MANNEQUIN

Laura Cunningham, Collections and Conservation Centre for Museums and Heritage Services, City of Toronto

The City of Toronto's Collections and Conservation Centre houses an extensive array of artifacts originating from the Timothy Eaton Company Archives. One of these items is a curious wax mannequin that was accessioned into the city's collection in 1988 – its head detached with a break at the neck. This mannequin (c. 1900) has a papier-mâché torso, wax head and neck, with glass eyes and hair individually inserted by hand.

Wax mannequins were first introduced by German manufacturers at the 1894 Paris Exposition and became popular in North American department store display windows, including Eaton's, by the turn of the century. Stories exist of mannequins slumped and melting – heads bowed – while on display after a hot summer weekend.

This paper will examine the manufacturing and hand finishing techniques used to create this mannequin. It will also detail earlier repairs and include an exploration of the wax composition. Current and past trends in the conservation of wax objects will be reviewed with a focus on the development of a treatment plan for this unique collection item. Finally, connections will be made between this mannequin and other figures created in wax, from anatomical models to Madame Tussaud's waxworks

POSTERS

MANY HANDS MAKE LIGHT WORK: VOLUNTEER INVOLVEMENT WITH THE COLLECTION AT THE TEXTILE MUSEUM OF CANADA

Hillary Anderson, Textile Museum of Canada

Volunteers have been an important workforce at the Textile Museum of Canada from its founding in 1975. As the Museum has grown, the scope of unpaid work has changed but passionate, dedicated volunteers remain essential to day-to-day museum operations. The Textile Museum's Volunteer Association functions to support the museum in a variety of ways including fundraising and recruitment. Volunteers and unpaid interns can be found working under the direction of staff in roles ranging from the docents leading tours, to the person ringing through purchases at the gift shop. They are also involved in more behind-the-scenes roles, including volunteering in the Conservation Department. This poster uses the Textile Museum as a case study examining the capacity in which volunteers work within the collection and what the institution has gained as a result.

Like many organizations in the heritage sector, the Textile Museum of Canada faces challenges in growing both its audience and the breadth of experiences available to the visitor without over-extending staff. Many staff are the only person functioning in a specific role at the institution and in some cases, are doing so in a part-time capacity. One of the solutions has been to tap into the expertise and skills that our volunteers already possess and pair them with an appropriate project to support staff. Often, not only does the Museum benefit, but the individual gains skills that can be used in other parts of their life and develops friendships with likeminded individuals that would otherwise have not been possible.

The integration of volunteers in the conservation department has altered over time, due to changes in the overall museum structure and the working styles of individual conservators. This poster will focus specifically on how unpaid interns, non-specialist volunteers, and specialist volunteers (often new conservation professionals) performing unpaid work have recently contributed to conservation projects at the Museum. By utilizing the skill sets of these different groups appropriately, the Museum has found ways to complete projects that would be impossible for a single conservator to complete on her own. Methods to allow volunteers access to the collection without compromising object safety are key to the success of such projects. The importance of advanced planning to create meaningful work for all parties cannot be stressed enough. Staff must be mindful to balance the needs of volunteers with the never-ending rush of deadlines to create a successful working relationship that is sustainable for the long term and beneficial to all involved. While working with volunteers in this capacity may not be appropriate for all collections and every museum, this poster aims to give conservators and other museum professionals a better understanding of how to work with volunteers to create a positive result.

IONIC LIQUIDS: IMPROVING THE CLEANING EFFICIENCY OF ISOPROPANOL WITH 1-ETHYL-3-METHYLIMIDAZOLIUM ETHYL SULFATE

Brandon Finney, Queen's University

Room temperature ionic liquids are a novel class of fluids set apart from aqueous solutions and organic solvents by their unique range of properties. The substitution of ionic liquids for toxic, volatile organic solvents may hold several advantages for practicing conservators, as ionic liquids like 1-ethyl-3-methylimidazolium ethyl sulfate are practically non-volatile, completely non-toxic, and non-irritating. In 2013, Pacheco et al. published results on the first use of ionic liquids as alternatives for organic solvents in the removal of varnish from painted surfaces. The results showed promise, but the study fell short of expressing practical uses for ionic liquids; several time-consuming applications of prohibitively expensive ionic liquids were necessary to remove test coatings. Recent research on the properties of ionic liquids as solvents suggests that binary mixtures of ionic liquids and organic solvents may prove more effective at solvating these coatings than ionic liquids alone, while using only a fractional amount of ionic liquid. By combining the well-known properties of isopropanol with the ionic liquid 1-ethyl-3-methylimidazolium ethyl sulfate, new low-toxicity solvent mixtures may be formed that mimic the qualities of so-called 'stronger,' and often noxious, organic solvents. Mixtures of isopropanol and 1-ethyl-3-methylimidazolium ethyl sulfate are first characterized by spectroscopic determination of Kamlet-Taft (KAT) parameters. Solvent mixtures are then tested on naturally aged varnish sample boards made at the Canadian Conservation Institute in 1994. Spectrophotometer and glossmeter data are reported.

Hand Skills and Conservation Practice

Caterina Florio, Canadian Museum of History

One of a number of recurring discussions in the conservation field is that of methodology. Specifically when developing a treatment plan, how does a conservator decide on a particular conservation strategy and technical approach? In our field, finely honed hand skills have traditionally been the foundation of our training, work and practice. With the shift in focus toward prevention rather than intervention, the topic of hand skills, which arguably informs the concept and delivery of interventive treatments, becomes a critical theoretical issue. Though some may argue that hand skills are not a limiting factor in delivering the vision of the intended treatment outcome, a discussion of this topic is worth having. Related questions that come to mind include: Is a treatment directly proportional to our hand skill proficiency? Can a conservator with limited hand skills envision something that he/she can't perform? As hand skills atrophy becomes an issue with the shift to prevention and with the sheer number of non-treatment tasks many conservators now provide, is the conservator's confidence compromised? And if it is, what does that mean for the decisions behind the conservation of artifacts? Ambitious conservation treatments require confident, skilled conservators not only to address the obvious technical challenges, but also to stimulate the creative and innovative evolution of the field (discipline).

This poster doesn't attempt to reach a definitive conclusion, but simply to stimulate a discourse about the way we approach our thinking process and the implementation of our vision through our handiwork.

INVESTIGATING THE CAUSE OF MEDIA-RELATED CONDITION ISSUES OBSERVED WITHIN A SELECTION OF INUIT PRINTS FROM THE CANADIAN MUSEUM OF HISTORY

Marie Ève Gaudreau Lamarre, Alison Murray, Queen's University; Amanda Gould, Canadian Museum of History

The Inuit printmaking tradition began in 1957 in Cape Dorset, Baffin Island. The printmaking techniques used by the West Baffin Eskimo Co-operative (the Co-op) were adapted from the traditional Japanese ukiyo-e style and are still used to this day. Approximately 30 to 40 drawings are chosen yearly for the production of limited edition stonecuts, lithographs, etched, engraved and stenciled prints in Cape Dorset. The Canadian Museum of History (CMH) has been acquiring near-complete annual collections of Inuit prints since the 1950s and continues to build its collection today with contemporary pieces. The Museum holds the most comprehensive collection of prints produced by Cape Dorset since 1957, totaling almost 3000 prints. The purpose of this study was to determine what is causing media-related condition issues observed with some of the Co-op's prints at the CMH. Five issues were studied: localized discolouration, offsetting, haloing, strikethrough and feathering. The media, support, printing technique and surrounding environmental conditions were studied as potential causes. A survey of about 400 prints at the CMH, supported by a comparison with prints exhibited or stored in other institutions such as the Winnipeg Art Gallery, looked at storage conditions and display history to determine if any issues are caused by environmental conditions. In addition, instrumental analysis completed by the Canadian Conservation Institute offered more insight on materials used and degradation products. It was determined that feathering is not a significant issue, that strikethrough is a normal characteristic of stonecuts printed on Eastern papers, and that haloing is mostly only affecting the early editions of engravings. Offsetting of the oil binder, by far the most common issue, is presumably caused by inherent vice in the ink; however, the location of the offsetting appears to be influenced by the paper substrate and the storage material in direct contact with the prints. Finally, localized discolouration found on some stonecuts from the late 1970s is suspected to be the result of combined offsetting from several prints and catalyzed by past storage conditions. This research project has been conducted as part of an ongoing project at the CMH that aims to characterize materials used to create Inuit prints. The project aimed not only to broaden curators' and conservators' knowledge of this traditional and contemporary artistic process but also aimed to benefit Inuit artists and printmakers.

AN INTEGRATED STUDY FOR THE IDENTIFICATION OF THE MATERIALS USED IN A 19TH CENTURY GILDED PICTURE FRAME FROM WOODSIDE NHS, ONTARIO, CANADA

Despoina Kavousanaki, Parks Canada

Gilded frames comprise a highly diverse category of works of art made from a wide variety of materials with a huge selection of techniques. Natural inorganic and organic compounds are involved initially in the construction of the frame. Upon ageing these compounds progressively oxidize resulting in the formation of degradation(?) products, which may change both the structure and the appearance of the frame. Conservation treatments complicate the decorated structure further, adding new parameters to the ageing behaviour of the existing materials. Usually of synthetic origin, these conservation treatments may alter either intentionally or as a result of degradation processes, a frame's appearance, thereby changing its historical and monetary value.

Currently a 19th century gilded frame from Woodside NHS is under conservation treatment in the painting laboratory of Parks Canada. Due to the difficulty in identifying the materials and understanding their ageing, a thorough investigation is undertaken. The scientific analysis includes the use of Optical and Fluorescence Microscope, the SEM/EDX, FTIR and py-GC/MS techniques in order to identify the materials, understand the deterioration processes and eventually assess the frame's condition. The wide variety of data on the artifact's material, microstructure and deterioration processes can be used as an analytical reference for cultural heritage professionals as well as an aid to decision making in order to properly conserve, protect and restore it.

THE CASED OBJECTS REHOUSING HOW-TO

Elsbeth Jordan, Tania Passafiume, Library and Archives Canada

Cased photographs can be found in a wide variety of institutions. Their age and fragility often require specific housing systems. A need was identified at Library and Archives Canada for a new, supportive form of housing, which would move beyond phase boxes, board sink mounts, or custom fit clamshell boxes usingas little adhesive as possible. A survey of current methods led to a prototype from the National Gallery of Canada that was further refined following inhouse workshops in 2012 and 2014. The new housing method offers customizable support, easy removal and tarnish inhibiting materials. The Cased Objects Rehousing How-To incorporates images, diagrams and simple instructions which enable the user to construct a supportive enclosure. This poster aims to provide a didactic tool for institutions who wish to update their cased object housing and serves as an introduction to the expanded, bilingual version of the method, which will be available in the updated version of LAC's ebook "*LINGUA FRANCA – A Common Language for Conservators of Photographic Materials*".

BUILDING AN EMERGENCY RESPONSE NETWORK FOR BC COLLECTIONS

Kasey Lee, Royal British Columbia Museum; Heidi Swierenga, Museum of Anthropology at UBC; Elisabeth Czerwinski, Burnaby Village Museum

Conservators from the Royal British Columbia Museum, the Museum of Anthropology at UBC, and the Museum at Campbell River have responded to several emergencies involving cultural collections in the past few years. Through these experiences the need for an organized approach to heritage disaster response in BC became apparent. To explore this idea, a Museums Assistance Program grant was secured to explore the idea and to develop a framework for a BC Heritage Emergency Response Network (BC HERN). This poster illustrates the efforts of conservators from three major British Columbia museums to lay the groundwork for the development of the BC HERN.

INTEGRATING 2-D AND 3-D MODELS FOR DOCUMENTING A THIRD INTERMEDIATE PERIOD EGYPTIAN (WHITE TYPE) COFFIN

Marissa Monette, Amandina Anastassiades, Dr. Alison Murray, Dr. George Bevan, Queen's University

Conservators and related professionals in the field of cultural heritage are collaborating with specialists in computer science and geography to advance the application of imaging techniques in cultural heritage that enable a greater understanding of materials, original use, and construction of artifacts. This research project focuses on applying techniques from these interdisciplinary collaborations in the context of object conservation by using 2-dimensional and 3-dimensional imaging techniques to analyze a Third Intermediate White Type Egyptian coffin lid dating from the 25th Dynasty (8th-7th century BCE). The primary goal is to integrate the enhanced internal structural information from computer tomographic (CT) scanning and surface topographical information gained from photogrammetry using the open source software CHER-Ob (Cultural Heritage Object), developed by Yale University's Computer Graphics Group. The intention behind the standardization of a digital work flow for the integration and preservation of the digital models for the head, chest, and pedestal fragments is to produce a usable workflow from this project for the remaining seventeen fragments of this Egyptian White Type coffin lid. The integrated models, combined with the results from previous analytical studies of the coffin lid fragments, offers a template for a new form of fully integrated condition mapping for conservation and treatment reports. The previous analysis includes scanning electron microscopy (SEM), x-ray fluorescent spectrometry (XRF), and Fourier transform infrared spectroscopy (FTIR). For the Third Intermediate Egyptian (White Type) Coffin Lid Project at Queen's University, the information gleaned from the integration of two types of digital models aims to be at a high degree of accuracy to inform the future preservation and conservation treatments of the object. This case study is used for the standardization of integrating 2-D and 3-D models using open source programs and application of digital data preservation techniques, such as the Digital Preservation Toolkit by the Canadian Heritage Information Network (CHIN).

COVETING COUGHTRY: A TECHNICAL ANALYSIS OF CONSTITUENT BINDERS IN THREE GRAHAM COUGHTRY PAINTINGS.

Valerie Moscato, Patricia Smithen, Alison Murra, Queen's University

The arrival of three paintings by Canadian artist Graham Coughtry (1931-1999) at the Queen's University Master of Art Conservation program prompted this investigation into the artist's practice. The paintings, which date from the 1950s and early 60s, were created in a period of Canadian art marked by a rebellion against figurative modes of representation and the integration of new, commercially developed painting materials. Coughtry, who is known for his reconciliation of the human figure with the period's demand for abstraction, participated in the exploration of new paint media by combining traditional oil paints and Lucite 44, a poly(n-butyl methacrylate) resin. By characterizing the artist's use of these binding media within the three paintings, this project seeks to better understand the artist's working methods and contribute to the larger narrative of experimental paint use in Canada during the 1950s and 60s. Each painting will undergo a full visual examination, documented through photography in visible light, raking light, and ultraviolet radiation. X-radiography and infrared reflectography will also be performed. Samples from each of the three paintings will be analyzed using Fourier-transform infrared spectroscopy (FTIR) to characterize the binding media. A relative concentration of the constituent binders will be experimentally determined by comparing paint sample spectra to spectra of prepared test films combining drying oil and Lucite 44 in known concentrations. Pyrolysis-gas chromatography-mass spectrometry (Py-GC-MS) will be used in exceptional cases where the materials characterization provided by FTIR is unclear. These analytical techniques will be accompanied by archival research of materials from the artist's estate, interviews with the artist's network, and materials characterization information from institutions that own Coughtry's work from the same period. This research will also help to inform the paintings' conservation treatments by characterizing the materials present, which could be beneficial for the understanding and care of Canadian artworks from this period more generally.

MAKING ETHAFOAM MANNEQUINS FOR THE NATIONAL MUSIC CENTRE, CALGARY, AB USING A CNC ROUTER

Gail Niimimaa, Nils Sundstrom, Niinimaa Enterprises Inc.

The poster will showcase the work that was done using Computer Numerical Control (CNC) router to cut 23 mannequins for the National Music Centre's opening exhibition on Canadian Pop Icons. The CNC router was used to create 5 body sizes – 2 female and 3 male that were used to fit the performance clothing of pop icons selected for the opening exhibition. Gail Niinimaa, Niinimaa Enterprises Inc. worked to create the sizing needed for the mannequins working from the actual costumes chosen for the exhibition. Nils Sundstrom, Solid Woodwork Ltd. took Gail's measurements and created the files that the CNC router used to cut the forms. The reduction of labour to create the custom mannequins was significant and the collaboration between the textile specialist and the computer technologist to use this new technology was both innovative and ground breaking. Although each mannequin was custom fit by hand and padded out with appropriate materials the starting point of the project was at a much higher level than with the traditional ethafoam stacked disk method of mannequin making. The new technology allowed for an innovative partnership with industry to create a better fitting mannequin for museum exhibition.

EXAMINING THE EFFECT OF CALCIUM PHYTATE ON PIGMENTS DURING THE TREATMENT OF WORKS INCORPORATING IRON GALL INK AND WATERCOLOURS''

Julie Niven, Canadian Conservation Institute

Calcium phytate is an effective means of chelating the free iron ions from iron gall ink, that are a significant factor in ink corrosion on paper. While a number of historic works incorporate both iron gall ink and watercolour paints, little research has been done to date on the possible side effects of phytate on these other colourants.

In this research project, watercolour on paper swatches (pigments bound with gum arabic) are bathed in a water bath and a phytate bath to compare any changes in colour and to determine whether these changes are attributable to the use of calcium phytate. Colour change is assessed using a spectrophotometer.

This poster will briefly introduce the topic of works containing iron gall and watercolour, the mechanism of phytate binding to iron ions, and the rationale behind pigment selection for the project. Swatches will be illustrated with Before and After photos. Observations derived from data analysis will be presented and the potential effects of using phytate with historic pigments will be discussed.

APPLICATION OF GELLAN GUM FOR REMOVAL OF IRON STAINS ON CERAMICS

Gyllian Porteus, Canadian Conservation Institute

The removal of iron stains from ceramics presents many challenges, from the formation of tidelines and the introduction of chemical residues, to risks of damaging chemically sensitive components like enameling, gilding or metal ornamentation. Some of these challenges may be alleviated by using poultices to apply chemical treatments thus controlling wetting and placement. With the growing popularity of gellan gums as a poultice material in paper and paintings conservation, this poster presents research into the application of gellan gum gels to ceramics for the removal of iron stains by reduction and chelation. The effectiveness of gellan gum was compared to immersion treatment for the application of sodium dithionite in combination with three different chelators: Diethylenetriaminepentaacetic acid (DTPA), ethylenediaminetetraacetic acid (EDTA) and sodium citrate monobasic. The sample ceramic sherds underwent accelerated ageing post-treatment to assess the potential risks of the chemical treatments overtime.

MATERIAL CHARACTERIZATION AND PROVENANCE STUDY OF A LITHIC COLLECTION POSSIBLY DONATED BY ARCHIBALD E. MALLOCH AT THE AGNES ETHERINGTON ART CENTRE.

Paige Van Tassel, Queen's University

A Neolithic stone tool collection of about 50 objects resides in the vaults of the Agnes Etherington Art Centre has no associated information other than the name "Archibald E. Malloch." The absence of information has led to a further dissociation from their original context and the source communities in which these objects were manufactured. This missing information is in part due to the collecting of "curios" objects possessing an indigenous origin which was a hobby of many amateur archaeologists and collectors immigrating from Europe to North America in the 18th and 19th centuries. Archibald E. Malloch (1884-1919) was one of these collectors and a graduate of Queen's University.

The aim of this project is to characterize these objects with various analytical techniques such as scanning electron microscopy (SEM) and x-ray fluorescence (XRF) to aid other scholars in their art historical, archaeological, and anthropological research in the provenance and techniques used in the production of Neolithic materials. This project will include a survey of the stone tools using photo documentation, geological description, and typological description which will be shared with the Agnes Etherington Art Center to disseminate on their website as a part of their online collection database, thereby opening the collection to interested parties who specialize in Neolithic pre-contact material culture. This project aims to help solidify the history of source communities in which these objects have originated and allow further collaboration and discussion between indigenous communities and academic institutions about repatriation and reconciliation.

CONTRIBUTORS

Anderson, Hillary
Textile Museum of Canada
55 Centre Avenue
Toronto, ON, M5G 2H5, Canada
handerson@textilemuseum.ca

Ayre, Evelyn
Canadian Conservation Institute
1030 Innes Road
Ottawa, Ontario, K1B 4S7, Canada
evelyn.ayre@canada.ca

Bieman, Ern
Canadian Heritage Information Network
1030 Innes Rd
Ottawa, Ontario, K1B 4S7, Canada
Ern.Bieman@Canada.ca

Campbell-Such, Julia
Queen's University Art Conservation program
15 Bader Lane
Kingston, Ontario, K7L 2S8, Canada
julia.campbellsuch@queensu.ca

Costain, Charlie
Canadian Conservation Institute
1030 Innes Road,
Ottawa, Ontario, K1B 4S7, Canada
charlie.costain@canada.ca

Cunningham, Laura
Collections & Conservation, Museums &
Heritage Services, City of Toronto
98 Atlantic Avenue
Toronto, ON, M6K 1X9, Canada
laura.cunningham@toronto.ca

Dignard, Carole
Canadian Conservation Institute
1030 Innes Road
Ottawa, ON, K1B 4S7, Canada
carole.dignard@canada.ca

Finney, Brandon
Queen's University Art Conservation program
15 Bader Lane
Kingston, Ontario, K7L 2S8, Canada
brandon.finney@queensu.ca

Florio, Caterina
Canadian Musuem of History
100 rue Laurier
Gatineau, QC, K1A0M8, Canada
caterina.florio@historymuseum.ca

Gaudreau Lamarre, Marie Ève
Queen's University
134 chemin des Sables
Val-des-Monts, QC, J8N4C9, Canada
megaudreaulamarre@hotmail.com

Gould, Amanda
Canadian Museum of History
100 Laurier Street
Gatineau, Quebec, K1A 0M8, Canada
amanda.gould@historymuseum.ca

Helwig, Kate
Canadian Conservation Institute
1030 Innes Road
Ottawa, Ontario, K1B 4S7, Canada
kate.helwig@canada.ca

Hill, Greg
Canadian Conservation Institute
1030 Innes Road,
Ottawa, Ontario, K1B 4S7, Canada
greg.hill@canada.ca

Hunter, Michelle
Canadian Conservation Institute
1030 Innes Road
Ottawa, Ontario, K1B 4S7, Canada
hunt0222@gmail.com

Jordan, Elspeth
Ottawa, ON, Canada
elspeth.jordan@canada.ca

Kata, Sonia
McCord Museum
397 Boul. St-Joseph Ouest, 17A
Montreal, Quebec, H2V2P1, Canada
kata.sonia@gmail.com

Kavousanaki, Despoina
Parks Canada
despoina.kavousanaki@pc.gc.ca

Kelley, Greg
Greg Kelley Conservation Services
230 Hatt Street
Dundas, Ontario, L9H 2G8, Canada
gkelley@gregkelley.com

Kozachuk, Madalena
The University of Western Ontario
1151 Richmond St
London, ON, N6A 3K7, Canada
mkozachu@uwo.ca

Lee, Kasey
Royal British Columbia Museum
675 Belleville Street
Victoria, BC, V8W 9W2 Canada
klee@royalbcmuseum.bc.ca

MacKay, Anne
McCord Museum
690 Sherbrooke Street West
Montreal, QC, H3A 1E9, Canada
anne.mackay@mccord-stewart.ca

Maltby, Susan
Maltby & Associates Inc.
Toronto, Ontario, M5T 2C2, Canada
susan.maltby@utoronto.ca

Mikelait, Bethany Jo
Restroart Inc.
23 Morrow Avenue
Toronto, ON, M6R 2H9 Canada
bjmikelait@gmail.com

Monette, Marissa
Queen's University, Master of Art Conservation Program
15 Bader Lane
Kingston, Ontario, K7L 3N6, Canada
1mtm4@queensu.ca

Moscato, Valerie
Queen's University, Master of Art Conservation Program
15 Bader Lane
Kingston, Ontario, K7L 3N6, Canada
valerie.moscato@queensu.ca

Murray, Alison
Queen's University
Art Conservation Program, 15 Bader Lane
Kingston, Ontario, K7L 3N6, Canada
alison.murray@queensu.ca

Niinimaa, Gail
Niinimaa Enterprises Inc.
25 Cathedral Rd. N.W. Calgary, AB, T2M 4K4, Canada
niinimaa@nucleus.com

Niven, Julie
Canadian Conservation Institute
1030 Innes Road
Ottawa, Ontario, K1B 4S7, Canada
nivenjp@gmail.com

O'Malley, Michael
CCQ
1825 rue Semple
Québec, QC, G1N4B7, Canada
michael.omalley@mcc.gouv.qc.ca

Osmond, Lauren
Queen's University
3950 Sir Wilfrid Laurier, #492
Saint Hubert, QC, J3Y 5Y9, Canada
lnosmond@gmail.com

Pocobene, Gianfranco
Isabella Stewart Gardner Museum
25 Evans Way
Boston, Massachusetts, 2115, USA
gpocobene@isgm.org

Porteous, Gyllian
Canadian Conservation Institute
1030 Innes Road
Ottawa, Ontario, K1B 4S7, Canada
gyllian.porteous@canada.ca

Sabino, Rachel
Art Institute of Chicago
111 S. Michigan Ave.
Chicago, Illinois, 60603, USA
rsabino@artic.edu

Serban, Sara
Musée McCord
690, rue Sherbrooke Ouest
Montréal, QC, H3A 1E9, Canada
sara.serban@mccord-stewart.ca

Têtu, Pierre-Louis
Université d'Ottawa
60 Université
Ottawa, Ontario, K1N6N5, Canada
ptetu@uottawa.ca

Van Tassel, Paige
Queen's University, Master of Art Conservation Program
15 Bader Lane
Kingston, Ontario, K7L 3N6, Canada
12tpv@queensu.ca

Webb, Marianne
Webb Conservation Services
7941 Redrooffs Road
Halfmoon Bay, BC, V0N1Y1, Canada
marianne@mariannewebb.com

Weir, Joan
Art Gallery of Ontario
317 Dundas St W
Toronto, Ontario, M5T1G4, Canada
joan_weir@ago.net

Zweifel, Sophia
Conservation Solutions Inc.
3 - 166 Donald Street
Ottawa, Ontario, K1K 1M9, Canada
sophiazweifel@gmail.com

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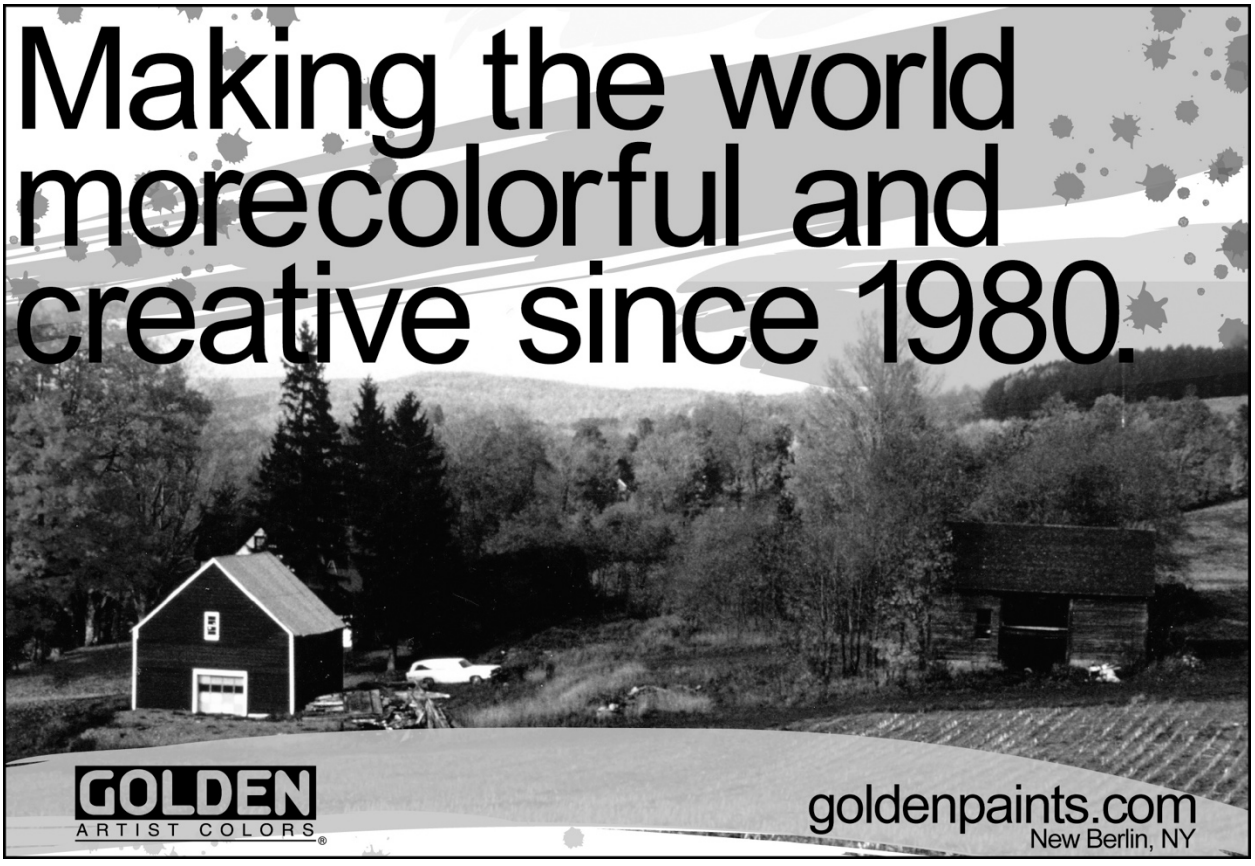

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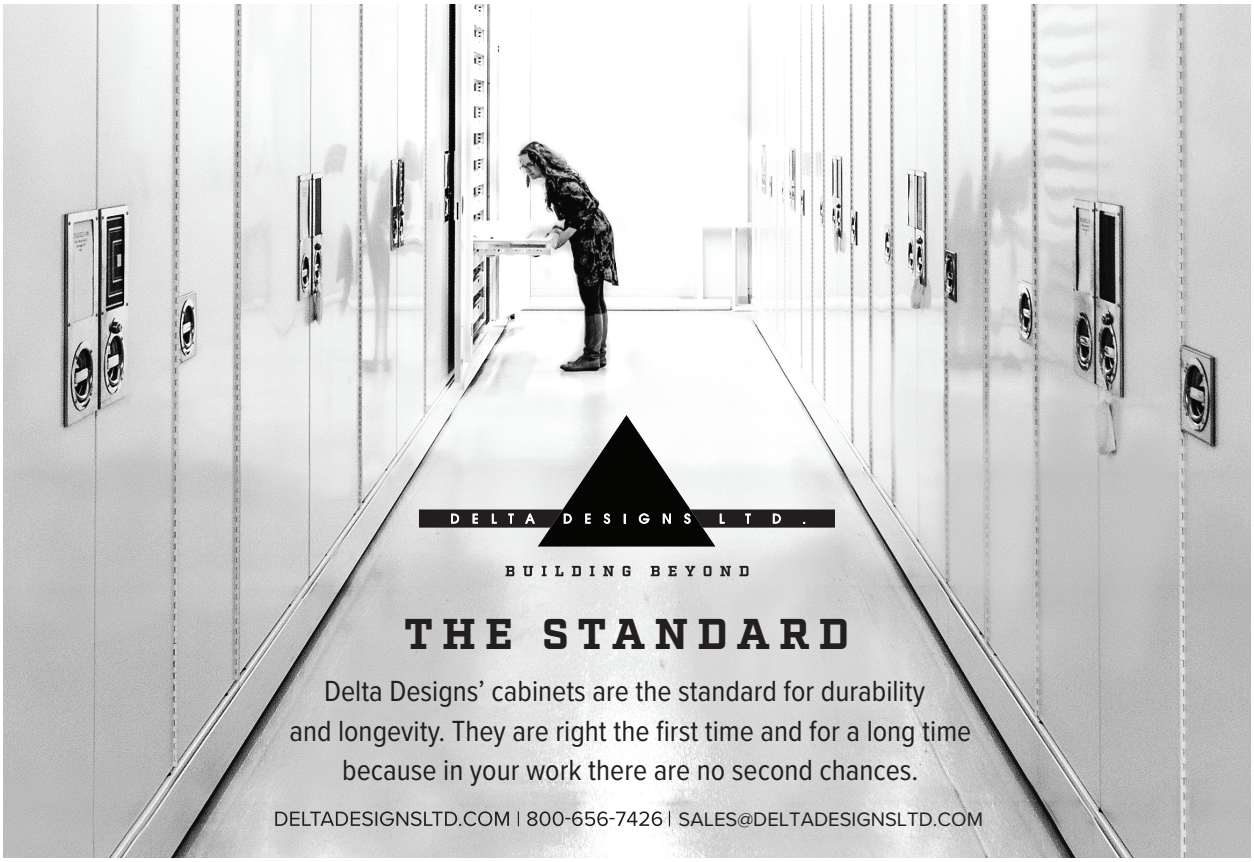

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