

iADA

XVth Congress
Halle/Leipzig 2023



International Association of Book and Paper Conservators

PRELIMINARY PROGRAMME

Preprints

Updated July 18, 2023



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IADA XVTH CONGRESS: GENERAL INFORMATION

WHEN

16-20 October, 2023

WHERE

Georg-Friedrich-Haendel-Halle
Salzgrafenplatz 1, 06108
Halle (Saale), Germany

Presentations (whether 20 min, 10 min, or 5 min) will take place either in Lecture Hall 1 or in Lecture Hall 2. Due to a large number of submissions, **parallel sessions** will take place in the afternoons. The location of each session will be indicated in this program as follows:

- Lecture Hall 1
- Lecture Hall 2

We are offering **live translation** in Lecture Hall 1 from German to English and English to German. The presentations in Lecture Hall 1 will be livestreamed in the presenter's original language. The translated content cannot be livestreamed.

Exhibitors will present their products and services in the foyer and these will be available throughout the day. **Poster exhibitions** are set up throughout the Haendel Halle.

Please note that the **General Assembly** is scheduled for Tuesday evening. In order to attend you will need to have an active IADA membership.

PRECONFERENCE SCHEDULE

Sunday

15 October

14:00-17:30

EXHIBITOR SETUP

15:00-17:30

EARLY REGISTRATION



SCHEDULE & SESSIONS OVERVIEW

Monday
16 October

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Conserving Michelangelo's Epifania Cartoon

Recent Findings and an Update on a Long-Term Project



Monday, October 16

10:00–10:30

Michelangelo was one of the most significant artists of the Renaissance, working in a range of artistic disciplines. However, his quest to guard his working methods, for perfection, and to control the circulation of his artworks means that relatively few drawings have survived. It is Michelangelo's 'Epifania' cartoon (c.1550-1553), formally acquired by The British Museum in 1895, which is the topic of this paper.

Epifania has been a project within The British Museum's Western Art on Paper Conservation Studio since 2018. The scale of the project, in terms of the cultural significance of the object itself, the size of the drawing (measuring (H) 2346 mm x (W) 1737mm) and the duration of the project, mean that the project and decision making have been shaped by many staff and by international collaboration (Fig 1).

This talk will primarily focus upon the renewal of the project in 2022, when the authors of this paper began to add

to and consolidate understanding of *Epifania*'s provenance history. Particular significance is attached to previous owner, Samuel Woodburn, as someone likely to have directly contributed to *Epifania*'s current condition. Recent research has also gathered information on the historic framed display of *Epifania*, especially of display since 1895 (Fig 2). Framed display, historic and future, has been and will be a constant focus throughout 2022-23, as the project moves towards completion. The final topic of this paper will outline the solutions found for mounting and framing *Epifania*, and the trials which led to the chosen methods.

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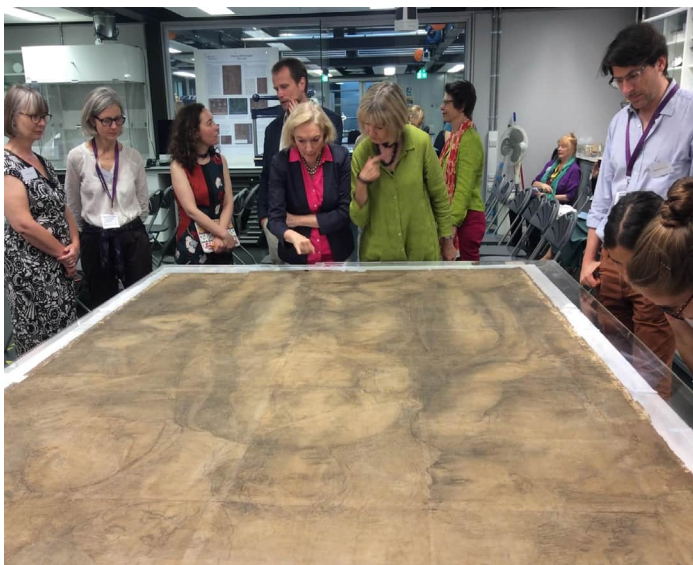


Fig. 1 Members of the international Experts Meeting gathered to discuss and contribute to the Epifania Project, 2019. (© Trustees of The British Museum)

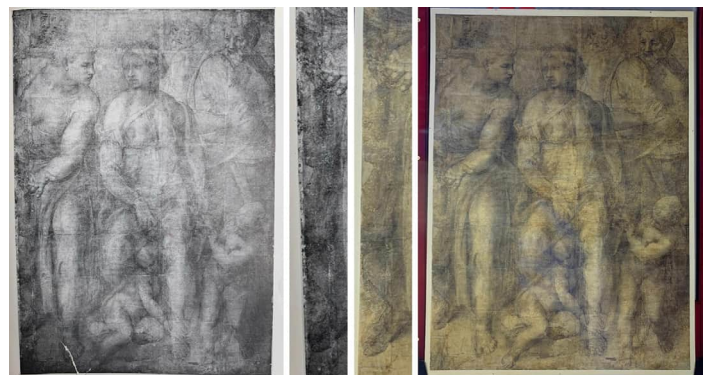


Fig. 2 Close examination of historic images of *Epifania* added to the understanding of the framed history of the object. The centre left and left images are taken from Johannes Wilde's 1953 'Italian Drawings in the Department for Prints and Drawings in the British Museum'. Comparing these images to the centre right and right images, taken in 1987, we see that between 1953 and 1987 the edges of the cartoon have been covered as part of the framing within a gallery wall case. (© Trustees of The British Museum)

Layer Build-Ups, Flaking, and Fragility Levels in Friable Media Drawings

A Case-Study of Léon Spilliaert's Friable Media Drawings

Monday, October 16
10:30–11:00

Due to a lack of tools to quantify the fragility of friable media, there often is a preconceived notion that objects containing powdery media are inherently fragile. This paper presents the results of a master thesis, conducted in connection with the European project FRIABLE, investigating the degradation phenomenon of multi-layered drawings containing dry and oil pastel, and gouache paint.

Visual examination of *Lente* (1911) and *Visioen. Elias op de vuurwagen* (1912) by symbolist painter Léon Spilliaert (Royal Museum of Fine Arts of Belgium) revealed that both artworks contained pastel and a paint-like medium, and presented severe flaking (fig.1). This unstable condition endangered their handling. To pinpoint the cause of this deterioration and provide more insight into the influence of the quantity of binder in the paint and the sequence of the layers, artificially aged mock-ups were constructed with handmade dry pastel and gouache as well as commercially

manufactured oil pastels (fig. 2). Different amounts of binder, thicknesses and layer build-ups were tested. These mock-ups were additionally subjected to repeated handling to provoke flaking.

The results of the aging and handling experiments revealed that flaking in multi-layered and multi-media artworks seems to be primarily caused by interfacial issues, as the sequence of the layers influenced the probability of flaking more than the nature of the media or the quantity of the binder in the paint.

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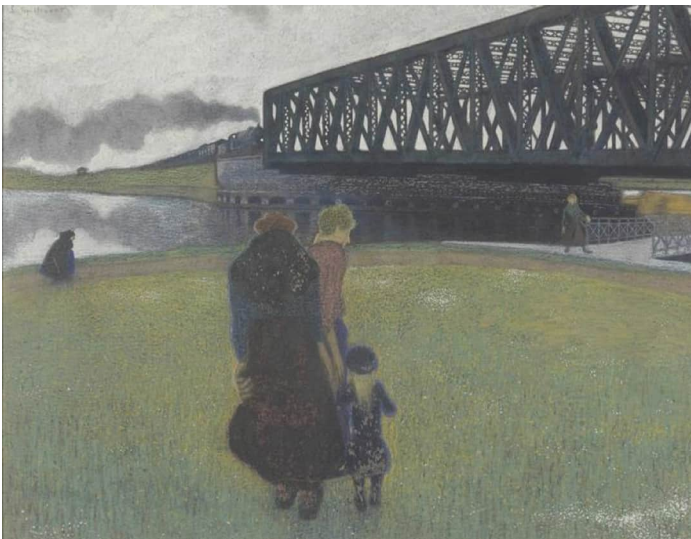


Fig. 1 Léon Spilliaert, *Lente*, 1911, Royal Museums of Fine Arts of Belgium (Brussels), inv. 11224. (© J. Geleyns)

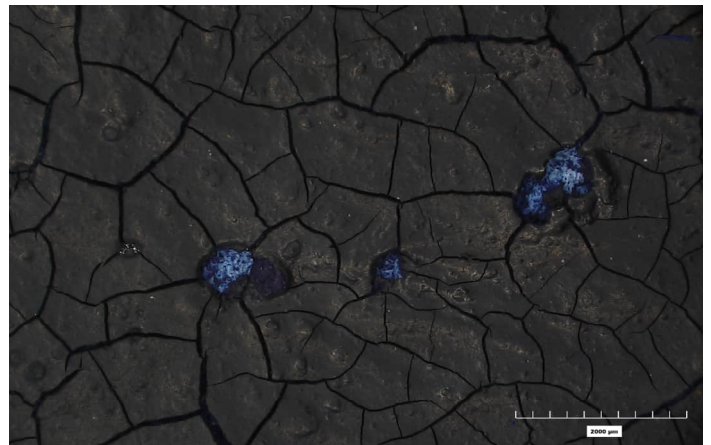


Fig. 2 Mock-up with a thin gouache layer (100µm) with a small amount of binder (water 4:1 gum Arabic, w/w) on a pastel layer on cardboard substrate, magnification x35 (Hirox). (© L. Sauvage)

TK MCCLINTOCK, LORRAINE BIGRIGG, DEBORAH LACAMERA

The Conservation and Reproduction of Historic Wallcoverings at the Frederick Law Olmsted Site

Monday, October 16

11:00–11:30

Fairsted, located in suburban Boston, is the home and working facility of the pioneering landscape architecture firm of Frederick Law Olmsted (1822-1903) and sons. He relocated his practice from New York City to this 1810 Federal Style house in 1883, renovated it as a family residence and to accommodate his busy professional office, and landscaped the grounds. The firm remained active at the site until the early twentieth century. In 1980, the National Park Service assumed stewardship of the house, the office, with its extensive archives, and the grounds. A project to renovate the interiors was initiated in 2010, for which the original wallpapers from the period of interpretation were reproduced in six rooms. These included five different designs generated by suppliers from four different countries using four methods of production (screen print, low relief block printing, a uniformly colored linen burlap, and an integrated color cartridge type paper). This presentation will focus on the

availability of samples for removal and reference, research into reproduction options, selection of suppliers, quality control during reproduction, and installation in collaboration with a reproduction wallcovering specialist. The timeframes and costs involved will be shared for purposes of reference when wallcovering reproduction projects of similar scale are encountered. Strategies for the most authentic and efficient project execution, and the differences between working with entirely original historic wallcoverings and reproductions will also be presented.

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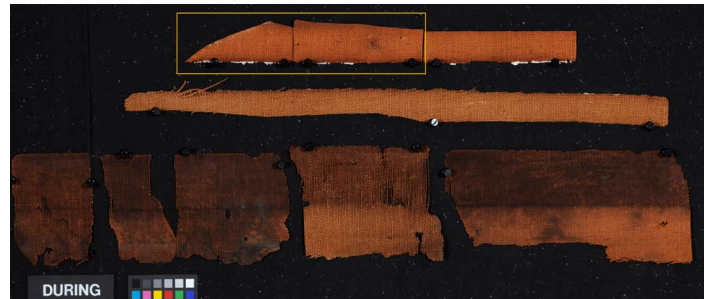
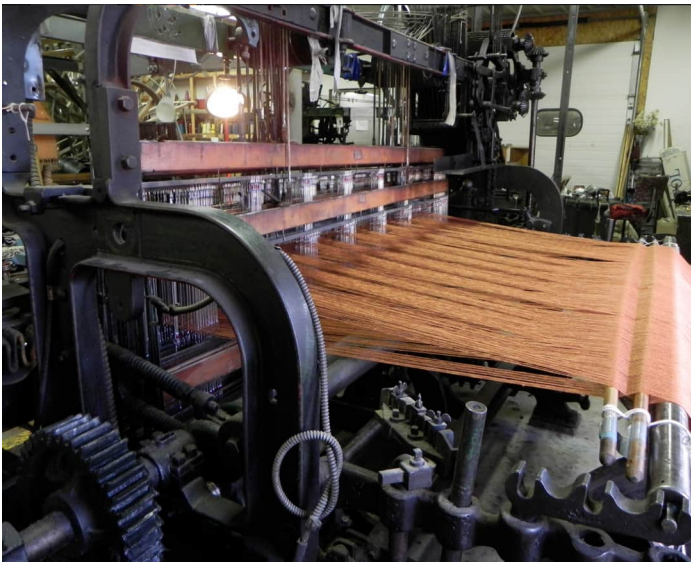
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EMILY O'REILLY ACR¹, NICOLA WALKER ACR²

Hanging in There

The Extraordinary Development of Paper Curtains and the Conservation Treatment of a Rare Survivor



Monday, October 16

11:30–12:00

In 1872, one of the most lauded inventions promoted at the International Exhibition in London was felted paper; the material was marketed as being firm and tough, whilst remaining 'soft enough to fall readily into graceful folds'. While the inventors, Pavy Pretto and Co saw opportunities for its use in a variety of decorative purposes, felted paper was primarily seen as a cheap alternative to cretonnes or chintz fabrics for curtains, roller-blinds and bed-hangings.

150 years later, a rare example of a paper curtain ensemble was examined at Mount Stewart, a National Trust property in Northern Ireland, and prioritised for conservation treatment. Research into these unusual papers has unearthed samples of felted paper in collections in the UK and US and increased our understanding of their manufacture, distribution and use.

As a multi-disciplinary project, National Trust textile conservators were involved in decision making and treatment as well as bringing in their experience of working

with traditional curtains, while the main conservation treatment of the curtains was carried out by freelance paper conservator Emily O'Reilly. This complex treatment is described, including discoveries made about the curtains' construction, how they had been treated since being assembled, and the various layers of paper sewn together to make up the curtains and valances.

Research and treatment options investigated will be discussed and the reasons for the final techniques and materials explored. Innovative textile printing onto new fabric was used to support the fragile paper, replicating the reverse pattern of the original paper curtains.

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Fig. 1 The Naples Bed hangings at Mount Stewart before treatment. (© Emily O'Reilly)



Fig. 2 The two layers of paper making up the curtains, during treatment. (© Emily O'Reilly)

FRANÇOISE RICHARD¹

Rigid Solvent-Gels in Paper Conservation

A New Approach to Sticky Problems



Monday, October 16

12:00–12:30

The past 10 to 15 years have seen the development of rigid hydrogels in paper conservation to function as a local application method for a variety of water-based treatment solutions. However, their combination with organic solvents for the treatment of synthetic adhesive removal is challenging, particularly for solvents with low polarity and miscibility with water.

An existing strategy to overcome this challenge is the use of oil-in-water emulsions: slabs of hydrogels soaked in emulsion absorb droplets of organic solvents suspended in water. However, the risk for the treated paper lies within the treatment solution: emulsions contain large amounts of water susceptible to staining the paper substrate, and residual surfactants could remain in the paper.

A research project was therefore undertaken to develop rigid solvent-gels for paper conservation. The main objective was to maximize the amount of organic solvent while

minimizing the water contained in the gel. In the so-called 3-steps method, the underlying idea is to take advantage of the miscibility of ethanol with both water and most organic solvents. Ethanol progressively introduced in the hydrogels serves as a co-solvent to ease the ingress of other solvents, such as Methyl Ethyl Ketone (MEK) and Ethyl Acetate (EA) in agar-based gels (fig. 1).

The method was optimised to minimize the shrinkage of the gel's structure, and the proportion of water and organic solvents contained in the gels was assessed analytically using FTIR (fig. 2). Practical application to remove aged synthetic adhesive from pressure sensitive tape confirms the viability of the method.

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Fig. 1 Three-step process to prepare agar-based solvent-gels. The addition of ethanol (step 2) as a co-solvent facilitates the ingress of methyl ethyl ketone MEK or ethyl acetate EA (step 3), two useful solvents for the removal of aged adhesive from pressure sensitive tape (PST). (© Françoise Richard)

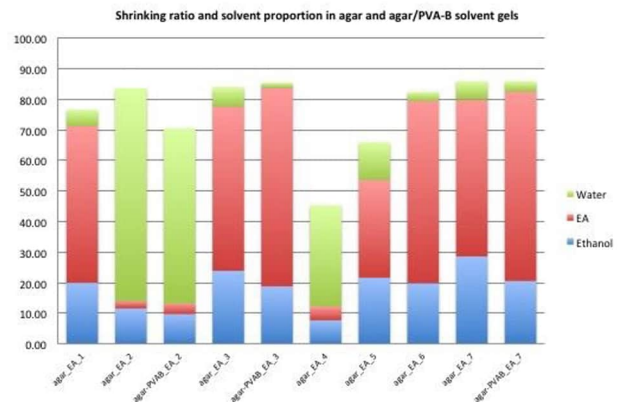


Fig. 2 Measured shrinking ratio and solvent proportion for solvent-gels prepared using agar or agar modified with a small proportion of PVA-Borax. Different preparation methods are compared: the highest columns with largest red area correspond to gels exhibiting the least shrinkage with greatest ethyl acetate content (EA). (© Françoise Richard)

ELIZA JACOBI¹

The Life and Drama of the Papyrus of Qenna

A Research and Conservation Project of a Papyrus



Monday, October 16

14:00–14:30

The Papyrus of Qenna is the longest Book of the Dead in the collection of the National Museum of Antiquities in the Netherlands (RMO). It is 3000 years old, has a length of 17.2 meters, and consists of 38 separated, framed sheets. The papyrus was acquired by the first director of the museum, Caspar Reuvens, at an auction in 1827 in London. In its 200 years in the collection, the papyrus has gone through multiple stages of repair. In 2018, a three-stage conservation project was initiated to completely conserve and reframe the 38 sheets. Ultimately, the goal of this project is to conserve the friable surface of the papyrus and to remove old, now damaging, linings. This will be the first time that the papyrus will be glazed in a uniform way. The conclusion of this large conservation project is an exhibition in the summer of 2022 in the museum, which will tell the story about the Book of the Dead as well as the story of the history and the conservation of this particular papyrus.

The conservation project has been challenging. The use of a gum-like adhesive on both the recto and verso sides posed a lot of problems during the removal of the old lining. The old adhesive was used as a consolidant on the recto side, but now causes delamination of the papyrus. It was thus necessary to remove this as much as possible and apply a new, less intrusive consolidant. While challenging, the project also gave us the opportunity to use different research photography to aid the conservation and gain information into the materiality of this object. We combined this research with archival research. The present paper will allow us to present our reconstruction of the dramatic life of the Papyrus of Qenna.

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Fig. 1 Eliza Jacobi at work on the papyrus.
(© Rijksmuseum van Oudheden)



Fig. 2 Exhibition of the complete papyrus, June 2022.
(© Rijksmuseum van Oudheden)

**FEMKE COEVERT¹, IDELETTE VAN LEEUWEN²,
MAUD VAN SUYLEN², DAFNE DIAMANTE³**

Reichardt's Cyclorama – 1853

An Interdisciplinary Quest Regarding the Attribution, Dating, Conservation and Installation of a 23 Meter Moving Panorama, Painted on Paper

Monday, October 16

14:00–14:30

During the preparations for the Rijksmuseum depot's move to its new location, Collectie Centrum Nederland (CCNL) in 2018, a hand-painted scenic landscape on paper that is 2,309 centimetres long and 180 centimetres high came to light. Together with five broadly similar, but shorter, pieces, it was described as wallpaper. After extensive research, four of these have been identified as surviving parts of Cyclorama Reichardt, named after its German owner, Ferdinand Reichardt (b. 1813). This particular moving panorama, originally measuring an astounding one and a half kilometres, was an extraordinary phenomenon that has travelled through the Netherlands, Belgium and Great Britain between 1853 and 1855. It was shown rolled between two wooden poles, accompanied by music or storytelling, in order to give people an experience of travelling from Tyrol to Italy. The interdisciplinary quest undertaken by curators and conservators led to the compelling new understanding of the purpose of these lengthy paper landscapes, the tale of which has been published in [The Rijksmuseum Bulletin](#).



Fig. 1 Technical analysis of the colours: Raman spectroscopy_BK-18283-A. (© Femke Coevert, Rijksmuseum)

This lecture concentrates on the technical analysis, it will also cover the conservation treatment and the installation in the exhibition XXL-Paper. It will show how research of the various traces of use confirmed its purpose as a moving panorama and how the technical analysis of the paper, colours and binder were of decisive importance for the dating and attribution of the Cyclorama Reichardt. The exhibition XXL-paper in the Rijksmuseum in the Summer of 2022 featured the largest works on paper from the Rijksprentenkabinet; naturally, the longest roll of the cyclorama was included. The extreme dimensions of the artwork forced the team to customize not only the stabilizing conservation treatment and its documentation, but also the challenging display in the exhibition.

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Fig. 2 Conservation treatment of the most damaged part_BK-18283-A. (© Kelly Schenk, Rijksmuseum)

ELISA CARL¹, ROSINA HERRERA GARRIDO², MARTIN JÜRGENS²,

LÉNIA OLIVEIRA FERNANDES², MAGDALENA PILKO²

Investigation and Conservation of Burnt Albumen Prints

The Bauduin Collection at the Rijksmuseum

Monday, October 16

14:30–15:00

Antoon Bauduin (1820–1885) was a doctor of medicine in the Dutch military who taught at a medical school in Nagasaki from 1862 to 1870. During this period, Bauduin was also active as an amateur photographer, producing wet collodion glass plate negatives from which he made albumen prints. Together with his brother Albert (1829–1890), he also collected prints made by other photographers that depict the locations they travelled through in Asia.

In 2016, the descendants of the Bauduin brothers donated 121 albumen prints to the Rijksmuseum in Amsterdam. One fourth of these prints show serious charring and losses as a result of a barn fire that occurred in the 1970s. In 2017, for her bachelor's thesis in conservation, Elisa Carl researched a practical method to consolidate and reinforce the burnt albumen prints in order to render them safe for handling and accessible to the public (Fig. 1). An exhibition at the Rijksmuseum entitled "Early Photographs of Japan" featured

a number of the treated prints in 2022. The entire collection has been mounted and housed in custom-made folders and can now be safely viewed in the museum's Print Room.

This presentation discusses the scientific research and practical experimentation that helped develop the treatment that was finally applied to the burnt photographs. It also demonstrates the potential of Macro-XRF scanning in recovering pictorial information from charred photographs (Fig. 2). It is hoped that heritage professionals confronted with collections presenting similar problems will benefit from this conservation effort.

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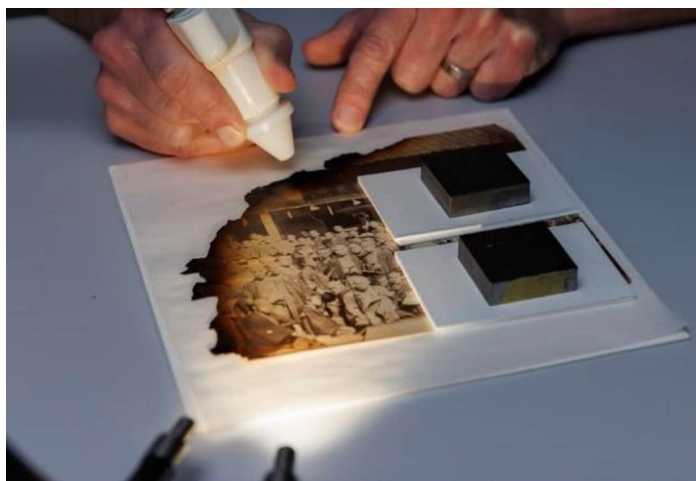


Fig. 1 Consolidating burnt areas with an ultrasonic mister to apply an adhesive aerosol (Aquazol® 200, 0.5% in ethanol). Antoon Bauduin, *Farewell to the hospital in Nagasaki*, albumen print, 1867, 157 × 189 mm, Bauduin collection, Rijksmuseum, RP-F-2016-76-66. (© Kelly Schenk, Rijksmuseum)

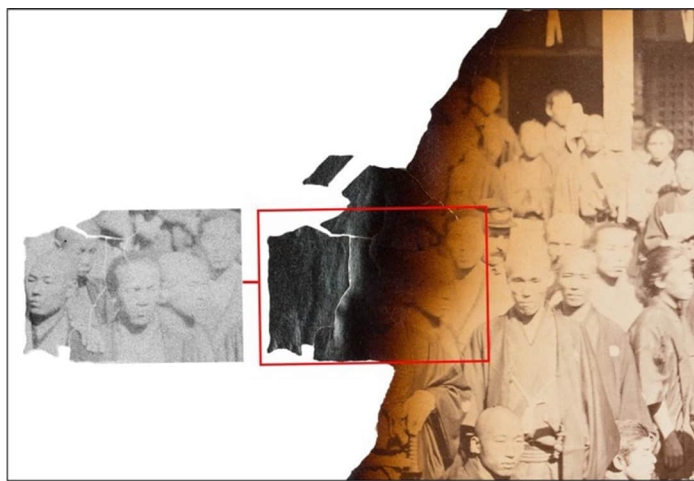


Fig. 2 A Macro-XRF scan reveals the distribution of silver in the charred and fragmented border of the print in Fig. 1 (Ag-L map, inverted image, settings: 25 µm steps, 70 ms dwell time). The mapped area is equivalent to approx. 7 cm². (© Martin Jürgens and Judith van der Brugge-Mulder, Rijksmuseum)

ELISA ALBANO¹, SERAFINA PIGNOTTI², VALERIA PESCE²

A Journey through the Lenses of the 18TH Century *Mondo Nuovo*

Conservation of One Peepshow Box of the Interactive Museum of Cinema in Milan (MIC)

Monday, October 16

14:30–15:00



The peepshow box known as *Mondo nuovo* is among the 18th-century objects that embodied the spirit of Enlightenment. It is an optical instrument, successor of the 17th-century magic lanterns, and traditionally used as a form of popular entertainment by the enigmatic figure of the *imbonitore*: a sort of peddler who used to attract crowds to himself, inviting the curious to look inside a mysterious image projector. The *Mondo nuovo* optical boxes were indeed used for viewing perspective images, printed on paper, and often vividly re-elaborated by the traveling entertainers themselves. Through their display, the spectators could be transported into geographically distant countries, as well as into actual historical events, discovering a *Mondo nuovo* (literally a “new world”) and its new customs.

The conservation project relating to the peepshow box belonging to the Interactive Museum of Cinema in Milan (MIC) aimed to re-pristiniate the function and the original scenic effect of the object, making it accessible to the public

again (Fig 1-2). The intervention on the optical instrument concerned both the wooden body equipped with oculars, and the eight perspective view prints housed inside. In addition, three different decorative woodcut papers were found on the inner walls of the wooden box. All the paper materials have been attributed to the Remondini printing house that was active in Bassano del Grappa (Italy) between the 17th century to the middle of 18th century. The conservation treatment has also involved the papers' digital reintegration, proposing a new mounting and exhibition solution that would promote the object's utility.

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Fig 1 After treatment: *Mondo nuovo* wooden box. (© Valeria Pesce)



Fig 2 After treatment: Viewing of one Remondini perspective print through the central lens of the peepshow box. (© Valeria Pesce)

TERESA MESQUIT¹ , SARA ELLENIUS², KARIN NEANDER²

A Case of 100,000 Visual Memories

A Collection Casualty Is Turned Into a Mass Digital Initiative

Monday, October 16

15:00–15:30

Nordiska museet in Stockholm, Sweden, houses one of northern Europe's largest cultural-historical photograph collections, comprising documentary materials, photographers' archives as well as collections from businesses, organizations, and institutions. These images represent an invaluable resource for the visual understanding of Swedish society.

In January 2021, about 100,000 nitrate negatives were affected by a water leak in the nitrate vault and subsequently packed for frozen storage. The pilot project *100,000 Bildminnen* (100,000 Visual Memories) was developed in its wake to treat, digitize, and make widely accessible this compromised material.

Central to the effort were workflows for efficient thawing, separating, and drying water-damaged film negatives, frozen in a variety of conditions and enclosures. Equally important was to ensure transfer of existing archival information and sync conservation with digitization. In September 2022 a team of 9 project staffers commenced the execution phase,

fine-tuning the methodology in the process. The museum has partnered with *KulturIT* for the transfer of metadata and to disseminate images from the project. A collaboration with *Wikimedia Sverige* will feature crowdsourcing events, including writer's studios, to generate engagement with the collection.

What are realistic outcomes in the mass treatment and digitization of 100,000 negatives, frozen in the aftermath of such a water event? With keen planning and adjustments, the effort — thawing, separating, digitizing and ingesting into the collection database — is projected to be completed during 2023. We hope that *100,000 Bildminnen* will add a considerable body of knowledge regarding planning and workflows for the treatment of water-damaged photographic negatives.

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Foxing Atlas and Draper

Introducing Computer Vision Skills to Support the Visual Assessment of Foxing Stains

Monday, October 16

15:00–15:30

The foxing atlas is one of the outcomes of a master thesis research dedicated to the investigation of causes of foxing on Willem Witsen's prints from the Rijksmuseum. All the prints were made on Van Gelder paper, which is traditionally considered prone to foxing.

The issue with foxing stains is that they are diverse in appearance and can have various inherent causes (e.g., metals, fungi, inorganic additives, irregularities in the paper) and external causes (e.g., moisture). It becomes even more complicated when dealing with a large collection of foxed works on paper. Classification of foxing stains can be seen as a bridge that helps to connect a specific type of foxing to a specific cause. The main issues with the already existing foxing classification models by E. Cain & B. Miller and J. M. Carter (1984) are subjectivity and absence of the reference images.

This paper presents how, inspired by these classifications, the foxing atlas acts as a visual examination aid in visible and ultraviolet light (Fig. 1) to relate foxing stains to plausible causes and conservation strategies.

The limitations from previous classifications were overcome by introducing objective features (images, morphology description) and conducting a validation survey

amongst conservators and students. Finally, the Draper was developed by Robert G. Erdmann as a visualisation tool to facilitate comparison of historical prints under various lighting conditions (Fig. 2).

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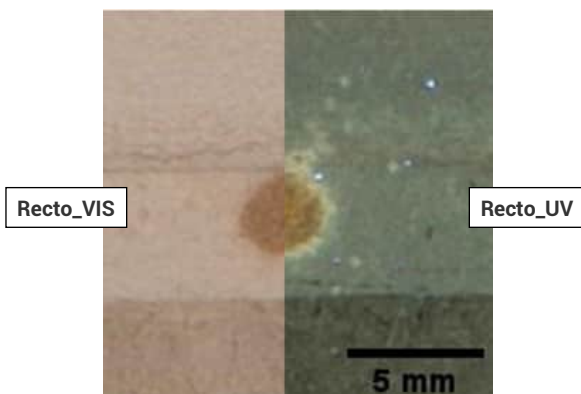


Fig 1 Foxing stain on the print Schaapherder met hond achter zijn kudde, W. Witsen, inv. RP-P-1941-266, Rijksmuseum, Amsterdam. (© A. Baars)



Fig 2 Curtain viewer tool applied to the Gezicht op de Kikkerbilsluit in Amsterdam, W. Witsen, inv. RP-P-OB-25-691, Rijksmuseum, Amsterdam. (© Robert G. Erdmann)

CLARA WALDTHAUSEN¹

Image or Object

Understanding the Values of the Analogue Fine-Art Photograph



Monday, October 16

15:30–16:00

The physical manifestation of photographs in museum collections, such as size, finishing technique, framing, and printing technology, are what a viewer (un)consciously takes into account when looking at a print. These elements were carefully considered by the maker to deepen the expression of his artwork. In printing analogue chromogenic photographs, multiple tools and skills are employed, which similarly contribute to the unique value of the final print. However, these contributions seem not to be equally perceived, and are not sufficiently understood by keepers of collections.

The absence of understanding may be one of the reasons why reprinting chromogenic artworks is becoming a trend in museum practice. Analogue photographs are digitized and reprinted using modern techniques and materials. These prints then replace the analogue photograph, which indicates that image prevails over the object.

This research aims to investigate and understand the intrinsic values of chromogenic analogue photographs in

a digital era. Considering the choices that are made during printing improves the understanding of the object as a whole. Additionally, it improves awareness of the value of the physical artwork within the collection, as well as the role of material and technology in a historical context.

The methods used are literature review, artist and printer interviews, and visual comparison to establish the significance of the choice of technique, materials, and finishing on the value of analogue photographs. Based on my findings, I argue that these elements make each analogue photograph unique and need to be taken into consideration in their preservation.

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Towards a More Sustainable Exhibitions Climate in the National Archives

Monday, October 16

15:30–16:00

In the context of sustainability and energy efficiency, the National Archives of the Netherlands (NA) re-examines its climate requirements for the preservation of its archives and collections.

The 1995 Dutch Public Record Act contains specifications on the storage climate of archival documents based on set points (18°C and 50% RH). For the anticipated new Act, the NA has proposed more flexible climate regulations based on bandwidth rather than set points, allowing more energy-efficient climatization. In anticipation of the new Act, the NA works towards a depot with a monitored climate that gradually changes with the seasons.

In line with this more flexible approach to storage conditions, we had another look at our exhibition policies. How could we adapt our exhibition climate and loan requirements to meet the growing demand for a more sustainable approach to exhibiting? Together with the curatorial team, conservators drew up new, more sustainable exhibition guidelines. In doing

so, we had to answer questions such as: how will a more flexible exhibition climate impact exhibition of individual objects, and what implications will this have for our incoming and outgoing loans? Should we draw up temperature and humidity guidelines for each type of object in our collection (for example, iron gall ink on paper, parchment, albumen prints), or can we suffice with a few general categories? And what can we learn from other Dutch institutions who have asked themselves similar questions? But above all, is the field ready for these changes?

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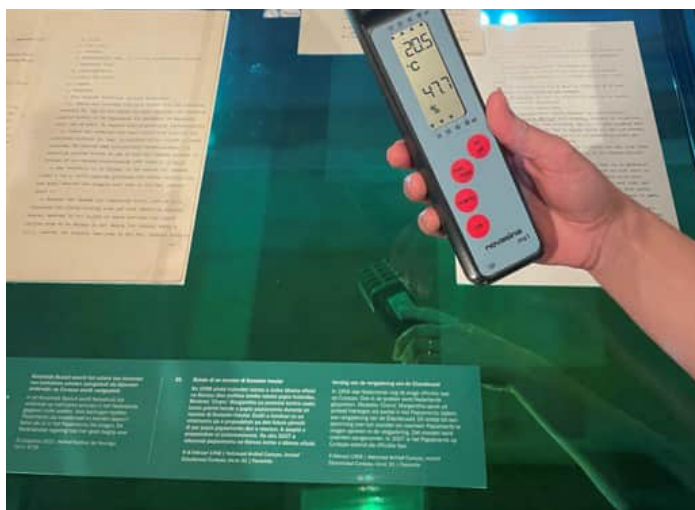


Fig. 1 (© Nationaal Archief)

MARKUS KRÖN¹

Nail It Down

270 Square Meters of Egyptian Wallpaper in the Art History Museum in Vienna



Monday, October 16
16:30–17:00

In 1873, the world exhibition took place in Vienna, a huge event. The Art History Museum was built at practically the same time. The Egyptian pavilion at the World's Fair featured reproductions of the murals from the tomb of Khnumhotep II, colourful decorative paintings on paper. After the end of the world exhibition, these wallpapers were not thrown away, but instead used to decorate the walls in the rooms of the Egyptian collection in the Art History Museum. They hang there to this day, but in 2019, parts of them threatened to fall down.

This article describes the conservation and restoration of these wallpapers in 2021. In terms of area, this is the largest wallpaper project that we have ever tackled. What was particularly remarkable and surprising was the historical mounting of the wallpaper. Since the object was not originally intended as wallpaper, it was executed on stiff, hard-glued paper. The object is more like a backdrop painting for a stage.

With the adhesives that were suitable for paper at the time, it was difficult to attach these papers to the walls. Therefore, around 1890, colleagues resorted to all sorts of unusual methods. The wallpaper was mounted with thousands of nails, screws, strips of metal and fabric. Accordingly, they designed the technical preservation in an unusual and surprising way. Another difficulty was the retouching. The wallpaper has been touched up over and over again throughout history. Retouches in the background painting were heavily darkened. Making dark areas appear lighter again through retouching is always particularly challenging.

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Fig. 1 Scaffolding in the public gallery. (© Markus Krön)



Fig. 2 The backside with hundreds of nails. (© Markus Krön)

VALERIA PESCE¹, MARIA CHIARA PALANDRI², MARCO GARGANO³,
SILVIA BRUNI⁴, MARGHERITA LONGONI⁴, AND AURORA CANEPARI⁵



Conservation Treatment and Non-Destructive Investigation of Six Japanese Woodblock Prints by Utagawa Kunisada

A Multi-Interdisciplinary Project at the Edoardo Chiossone
Museum of Oriental Art

Monday, October 16
16:30–17:00

In 2017, the Edoardo Chiossone Museum of Oriental Art in Genoa welcomed a group of six *ukiyo-e* polychrome prints by Utagawa Kunisada (1786-1865), part of a wider donation by the archeologist Madeleine Cavalier, widow of the professor Luigi Bernabò Brea. The entire collection was donated to be preserved and to be made accessible to the public, promoting the planning of a specific conservation project.

The aim of this paper is to summarize the results of the whole project, highlighting its successful multi-interdisciplinary approach that involved historians, curators, conservators, and conservation scientists. The project was carried out *in situ* at the Chiossone Museum, and it was supported by a completely non-invasive diagnostic campaign thanks to the collaboration between the Museum, the Brera Academy of Fine Arts and the Chemistry and Physics Departments of the University of Milan (Fig 1-2). The analysis included high-resolution multiband imaging and reflectance transformation imaging (RTI). Printing materials were examined with different spectroscopic techniques: reflectance spectroscopy using optical fibers (FORS), Raman spectroscopy (RS), reflectance Fourier transform infrared

spectroscopy (FTIR) and fluorescence spectroscopy.

The collected data allowed the acquisition of new knowledge regarding the printing techniques, the paper supports, as well as the inks used in the production of these *ukiyo-e* prints. The results enabled a more targeted approach to the conservation of the prints over time: the treatments were calibrated through knowledge of their surface morphology, while the identification of pigments and colorants made it possible to assess sensitivity to both wet treatments and exposure to light.

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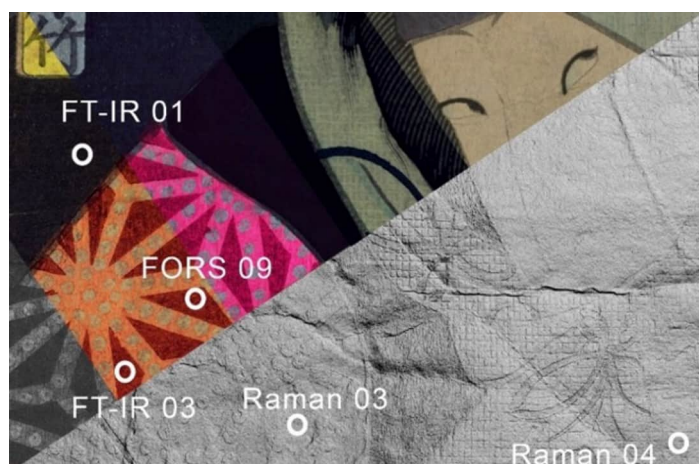


Fig. 1 Schematic representation of all the diagnostic analysis performed on each Japanese woodblock print. (© Marco Gargano)



Fig. 2 Local cleaning with Nanorestore Gels® hydrogels. (© Valeria Pesce)

How to Deal with an Artist's Mounting

Gerhard Richter's Drawings of 2020

Monday, October 16

17:00–17:30

In 2021, the Staatliche Graphische Sammlung München hosted the exhibition Gerhard Richter 54 Zeichnungen, 3 Graue Spiegel, 1 Kugel at Pinakothek der Moderne in Munich. The drawings in pastel, ballpoint and graphite were displayed in frames with glazing and set up with mountings and mattings assembled by the artist himself.

Once the exhibition was over, six drawings became part of the museum's collection, and many doubts about their future conservation immediately arose. In fact, already during their being on display, the papers showed severe mechanical distortions, easily discernible to visitors and presumably attributable to the mountings. After the removal of the frames, what was only assumed was confirmed. The artist had glued every sheet with a synthetic adhesive to a Dibond® aluminium plate embellished along the margin with a two-layered mat window – composed of an upper frame in acid-free cardboard and a lower one made up of strips of acid cardboard.

Despite ethical concerns regarding removing an artist's mounting, detaching the papers from the Dibond® aluminium panels was deemed the most acceptable solution to avoid further damage due to heavy distortion and waviness.

However, the adhesive applied randomly on the drawings' verso had built such a strong bond between paper and support that mechanical dismounting was impossible; furthermore, the information on the used adhesive provided by the artist proved incorrect and not helpful for the task. Only further analysis, such as FTIR, made it possible to identify the adhesive and, consequently, to select the solvent and method of intervention most suitable for the safe removal of the drawings, thus making feasible a surprisingly complex conservation treatment.

This paper will provide a complete overview of the conservation treatment carried out: the working methodologies and the scientific analysis will be described, along with remarks on and reflections about the decision-making process and the ethical issues involved.

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Fig. 1 Gerhard Richter, 21.2.2020 (inv. 2021:106 Z) pastel, ballpoint and graphite on paper. (© Staatliche Graphische Sammlung München)



Fig. 2 Gerhard Richter, 21.2.2020 (3) (inv.2021:99 Z), pastel, ballpoint and graphite on paper, adhered to the Dibond® plate, after removal of the mat. (© Staatliche Graphische Sammlung München)



MSI & MFT

Visual Inspection of Selected Brown Inks on Paper

Monday, October 16

17:00–17:30

We examine the use of MSI for the identification of brown inks common in Old Master drawings that are often difficult to distinguish and pose questions concerning their light sensitivity. The ageing patterns of sepia, bistre, and iron gall inks tend to obscure many discernible differences such as they may have existed in freshly prepared inks. Therefore, drawings are often described as “brown ink on paper”, leaving a strong interest to identify them, improve their art-technological description and predict their ageing behavior. Combining multispectral imaging (MSI) and microfading testing (MFT) as contact-free analyses, we studied sepia, bistre, and iron gall inks in several dilutions applied on two types of paper. Photography under VIS, UVA and IR radiation completed the non-destructive examination of our samples. By parallel use of these analytical methods, we seek their potential correlations in support of ink identification and characterization.

Key results include the following:

- Inks differentiable in fresh condition converge visually during moist-heat ageing (especially iron gall ink and sepia).
- UVA and IR support iron component detection in the inks (UVA absorption was noted for brown inks other than iron gall).
- MSI and false color images can visualize invisible properties of these inks and help distinguish them nondestructively.
- MFT revealed the different light sensitivities of bistre and sepia compared to iron gall ink, but also differences due to the paper substrate.

In conclusion, MSI and MFT used in conjunction with VIS, UVA and IR photography assist the conservator’s visual inspection of brown ink drawings.

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Fig. 1 VIS: Different inks applied on gelatine-sized paper. Top row: various iron gall inks. Bottom row: bistre and sepia inks. (© Carsten Wintermann)



Fig. 2 MSI: NIR-false color image (940nm) of different inks on gelatine-sized paper. Top row: various iron gall inks. Bottom row: bistre and sepia inks. (© Carsten Wintermann)

ADRIENNE BELL¹, RENATE MESMER²

Not Just Another Day in Conservation

The Folger Under Construction



Monday, October 16

17:30–18:00

The Folger Shakespeare Library, designed by architect Paul Cret and opened in 1932, has been undergoing a major renovation to expand public space, improve accessibility, and enhance the experience for all who come to the Folger. The closure began in January 2020 and presented many great learning opportunities for Conservation staff. Creativity, flexibility, and excellent communication quickly became the cornerstones of our work. The Folger collections needed to be packed, moved to several remote storage locations and returned. Collection spaces received major fire detection and suppression upgrades, and compact shelving was expanded. Preservation climates were maintained for the historic rooms despite the shutdown of all air handlers within the building. Even with most of the collections stored off-site, incoming loan requests were processed and prepared

for travel and display. New exhibition galleries, including a permanent visible storage display for the Folger's 82 First Folios, had to be designed, built and filled. With increased storage space due to the expanded compact shelving and the decision to store items by size, new tools and equipment were developed to aid staff in their daily work.

Folger conservators will share their experience, the challenges and all the unexpected fun surprises that come with a three-year building renovation.

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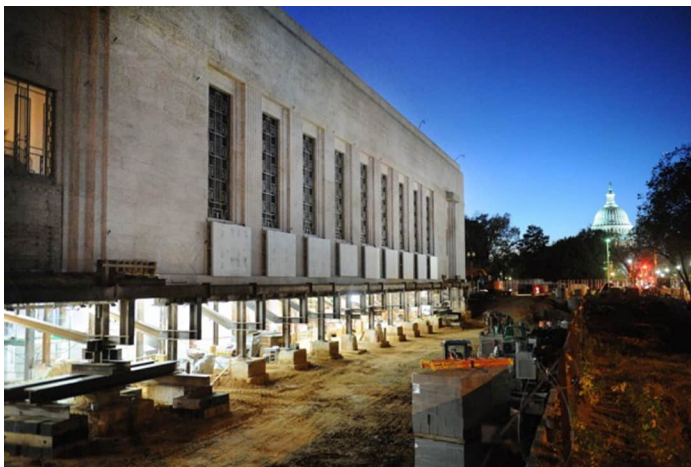


Fig. 1 The front of the Folger Shakespeare Library under renovation, November 2021. (© Lloyd Wolf)



Fig. 2 Conservators and Collections staff wrapping fragile items for transport. (© Rhea DeStefano)

THOMAS KLINKE¹

Black on White

Autopsy of the Prints by Lucas Cranach the Elder for the
"Critical Catalog of Luther Portraits (1519 - 1530)"



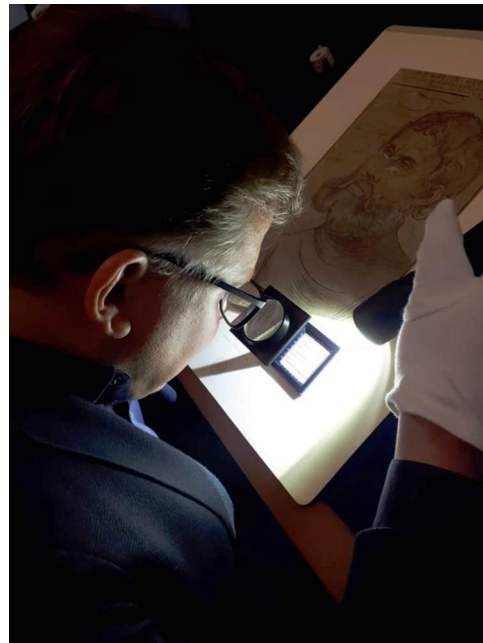
Monday, October 16
17:30–18:00

For the interdisciplinary research project "Critical Catalogue of Luther Portraits (1519–1530)," funded by the Leibniz Association, a total of over six hundred printed portraits of the reformer Martin Luther were examined. Almost sixty are by Lucas Cranach the Elder, who created the painted and printed portrait prototypes that have been widely copied and distributed to this day. They characterise Luther in the formative phases of his life.

Until now, these portraits, that help chart the history of Luther's influence, have not been systematically catalogued. The 'Critical Catalogue of Luther Portraits' provides an instrument to assess these important works within the context of Reformation and art history for the first time. It has been published and is currently available online in the Cranach Digital Archive (<https://lucascranach.org/en/luther>).

Researchers from the fields of art history, conservation science, Reformation history, and digital pattern recognition collaborated in the interdisciplinary project team. The results of technical examinations and scientific analysis were complemented by the most recent developments in pattern recognition to digitise, index and evaluate a total of 727 prints and paintings. Central to the project was the question of the methods of reproduction.

On examining the printed images, the condition of the printing plates revealed by the impressions was qualitatively assessed and used for classification, as were the specifications of the paper. These methods were used to make fundamental statements about the authenticity and chronological classification of the portraits, as well as to reconstruct their sequence within the respective editions.



FENNA YOLA TYKWER¹

Preventing Insect Infestations

Freezing Archival (Paper) Documents



Monday, October 16

18:00–18:30

A common and well-known way to prevent insect infestations, especially from the grey silverfish (fig. 1), in archive buildings is freezing archival paper-based documents before storing.

The Hamburg State Archives use a professional cold storage cell (fig. 2) to freeze new deliveries (300 shelf metres) of archival materials every year. Meanwhile folding boxes with lids are filled with papers, files, books and moisture-absorbent material. The cold store reaches a minimum of -23°C . Then the boxes are placed in the cold store. Inside the plastic boxes the core temperature of the objects normally falls down to the upper limit of -18°C for lethal use after four hours. This should ensure the killing effect for eggs, larvae, pupae and adults. The experimentally determined procedure for freezing archival materials guarantees that the supercooling point of -18°C is maintained for at least 12 hours. After 24 hours the boxes are taken out of the freezing cell, and the passive acclimatisation process will start in a non-air-conditioned room for another 24 hours. Afterwards, the archival documents are stored.

One year after the implementation of the freezing process, no paper pests could be detected on about 6,000 square metres of passive conditioned archival storage space at the State Archive Hamburg.

But the freezing process is associated with high energy consumption, so more energy- and time-saving options must be considered. Therefore, the following question has arisen:

What temperature ranges over what period of time are optimal to kill all paper pests without harming archival documents?

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Fig. 1 Photo of a living grey silverfish. (© Tykwer)



Fig. 2 The entrance to the professional cold storage cell. (© Tykwer)

MARIA CHIARA PALANDRI¹, GIULIA ORETTI²

Mapping Colors

An Interdisciplinary Research Project on Pigments and Dyes in Early Cartography

Monday, October 16

18:00–18:30

The “Mapping Colors” project investigates colors in maps in the National Library of Norway’s collections from both scientific and historical perspectives. The Map Centre contains the world’s most extensive collection of printed maps of the Nordic countries, with approximately 150,000 items covering a 500-year period and an equally long color history. Answering the many pending questions about where the pigments come from, where the colors were produced and what they contain, would allow us to reconstruct not only a history of color and its use, but also reveal new information on travel routes, market and trade, iconography and illustration, as well as paper production and printing techniques. The pilot project, whose preliminary results are presented here, focused on maps and atlases in the period between 1482, date of the first map where Norway is depicted, and 1612, when the last edition of Abraham Ortelius’ atlas *Theatrum Orbis Terrarum*

was published. In addition to the historical research, a combination of non-destructive analytical techniques - such as multi- and hyperspectral imaging, microfading, XRF and FTIR spectroscopy – were used to examine the chemical and physical characteristics of both the paper supports and the media and their correlation, with the aim of shedding light on identification, production, state of conservation and degradation mechanisms. The data obtained served as a guide for the conservation treatment and for establishing better exhibition practices. Furthermore, the first results are laying the foundations for an international, interdisciplinary research project that combines map history, cultural heritage, conservation science and image processing.

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Fig. 1 The Map Centre. (© National Library of Norway)



Fig. 2 XRF analysis on a 1482 map. (© National Library of Norway)

**SARA MAZZARINO¹, PAOLA BERETTA², ALFREDO CIGADA³,
EMANUELE ZAPPA³**

Engineering in Book Conservation

Working Towards a Scientific Understanding of Book Mechanics



Tuesday, October 17

8:30–9:00

The rationale behind the conservator's approach to repairing bookbindings is based mainly on her/his own experience, sensitivity, skill set and ability to identify functioning issues in a 3D dynamic structure.

Making a judgment according to those parameters may determine, under the same circumstances, at least two types of scenario: diverse treatment choices in response to the same problem, or identical solutions for extremely different problems.

How can we make more objective evaluations to efficiently address structural problems in bookbindings? Can we determine scientifically the mechanical forces involved in the functioning of bookbindings?

To try to answer these questions, we teamed up with the Politecnico Department of Mechanical Engineering in Milan and started to look at methods and measuring techniques

to identify and quantify forces involved in the mechanical function of the book.

In this paper, we want to share with the conservation community the very first findings, making considerations in regard to the possibility of introducing a new, more scientific approach to treatment choices in book conservation practice.

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ELIZA JACOBI¹, KARIN SCHEPER²

From Roll to Binding

Research on the Materiality of a Rare 6th Century Complete Coptic Codex with Papyrus Leaves



Tuesday, October 17

9:00–9:30

The National Museum of Antiquities (RMO) in Leiden has a renowned collection of Egyptian artifacts. Only a few of these objects are books. AMS 9 is a Coptic codex with papyrus leaves from 6th century Egypt. The codex is complete, by which we mean that all elements of the physical book are there. This makes AMS 9 one of the very few Coptic manuscripts still housed with its original cover and binding in the world.

At some time in the 19th century the codex was subjected to a repair campaign. In 2020, the book was in need of conservation treatment, as the old repairs were now causing damage.

This paper addresses the 2020 research and conservation project. The research was focused on the materiality of the book; structure, binding, the book block, and the previous

repairs. We combined research photography like UV, IR and X-ray, with archival research and the making of models. The presentation is divided into three parts: we will introduce the codex' history in the museum and its content. We will then look more closely at the physical characteristics: the binding structure, which has a board attachment not previously described in bookbinding literature, and the textblock composition. The material study revealed among other things that the papyrus leaves were cut from a roll of papyrus. An overview of the conservation treatment will conclude this paper.

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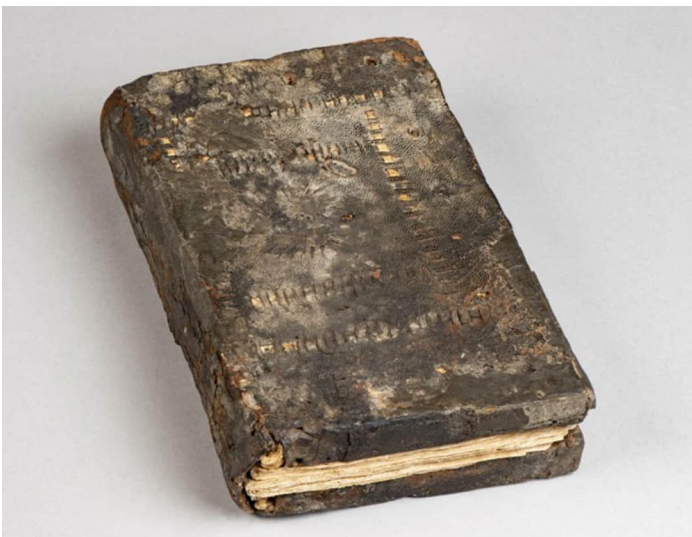


Fig. 1 6th century Coptic Codex AMS 9. (© Rijksmuseum van Oudheden)



Fig. 2 Eliza Jacobi working on the codex. (© Rijksmuseum van Oudheden)

Reaching Out to...Whom?

Conservation and Communication in the Era of Social Media



Tuesday, October 17

9:30–10:00

Recent digital reports indicate that over 4.7 billion people worldwide—59% of the global population—actively use social media. Platforms that allow users to quickly “scroll through” also see a counter-intuitive increase of interest in content regarding craftsmanship and slow manufacture. How do conservation and professional conservators fit in this scenario? Can this digital curiosity be intercepted, and can book and paper conservators make the most of these tools?

Starting from examples of current practice, this paper will illustrate the fundamentals and main purposes of digital communication in our field. We will explore strategies and critical issues that need addressing during decision-making and content creation processes: identifying the target audience, balancing professionalism and lightheartedness,

scalability and management of digital content creation. The discourse will also touch on issues such as what voices make the international narrative around conservation, and the effects of cultural and linguistic barriers on communicating the field of book and paper conservation on social media.

The possibilities as well as the potential risks offered by social media will be investigated as effective tools for public engagement, awareness-raising and advocacy in our sector.

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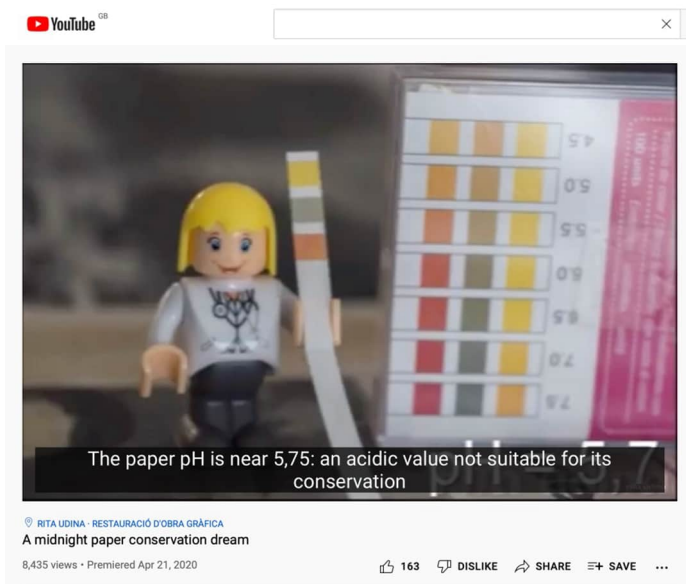


Fig. 1 “A midnight paper conservation dream”, Stop Motion video illustrating a conservation treatment to the general public. (© Rita Udina)

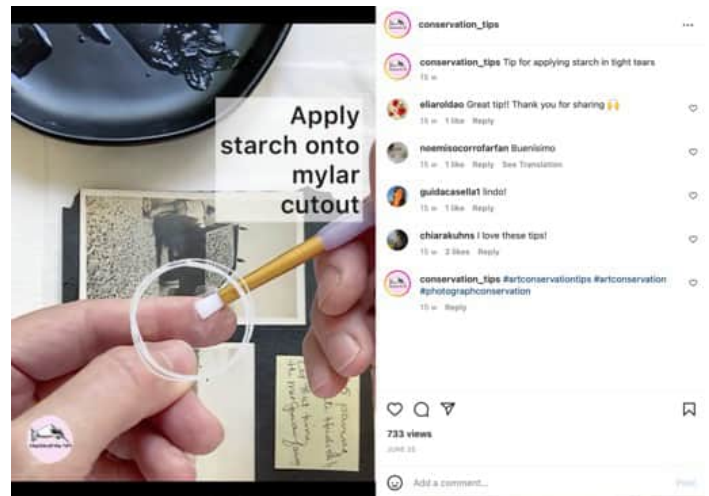


Fig. 2 Instagram post by @conservation_tips created by a conservator for other conservators (© Luisa Casella)

SUSAN CATCHER

The Conservation and Display of a Traditional Hwarot Panel



Tuesday, October 17
10:30–11:00

This paper covers how we promote and contribute to the Victoria and Albert Museum's collections through the understanding of historic materials and techniques that go into the making of such objects. This both improves academic research and ultimately enhances the visitor experience through creating a culturally acceptable display. The conservation of a Korean embroidery panel originally found on an hwarot or bridal gown demonstrates this. The collaboration of both conservation disciplines (textiles, science, paper) and Korean practitioners (social history, pattern making, embroidery techniques, paper making) enabled the work to be meaningful and informative. The decision to remount the hwarot panel as a robe structure, as it had been previously disassembled for the foreign market, was agreed upon, as was the retention of the lilac

repairs. These 'repairs' were as a result of repeated wearing, and as such form documentary evidence. Hwarots worn by commoners were often shared by the woman of the same family or village as they were expensive and time consuming to make.

The Korean Folk Museum provided dimensions and a pattern that would replicate the robe on which to attach the embroidered panel. A typical hwarot would have had a red exterior and a blue interior to symbolize the yin/yang relationship between the husband and wife, including decorative patterns to bring wealth, good fortune and fertility to the new couple. The replica robe takes into account the historical context of the panel and can be re-utilized for the eventual conservation and display of the sleeve and front panels.



Fig. 1 Historic Repairs. (© Victoria and Albert Museum)



Fig. 2 On display. (© Victoria and Albert Museum)

Re-Evaluation of Verdigris Stabilisation

Mild Accelerated Ageing Conditions

Tuesday, October 17

11:00–11:30

Copper-based pigments, such as verdigris, cause severe damage to many important historical documents. Although the subject of its stabilization has often been in focus of research during the past years, it remains an ongoing concern to the paper conservators and researchers.

Until recently, very little was known about the degradation pathways of verdigris under different conditions, and this is necessary for paper stabilization studies. For paper, temperature equal to or higher than 80 °C is usually used for thermal accelerated ageing tests either without any humidification, or humidification up to 65% of a relative humidity (RH). Studies of paper stabilization with verdigris have been usually carried out under the stated conditions. Based on the research by Brostoff et al, published in 2020 (Restaurator), the studies of paper stabilization were performed in accordance to the new artificial ageing protocol (50 °C and 65% RH). Mock-up samples were

prepared using historically important neutral verdigris. Besides Whatman filter paper, Verdigris paint films have also been applied to handmade paper sheets. The use of two of the most promising antioxidants as stabilisation agents, tetrabutylammonium bromide and benzotriazole as antioxidants, has been re-evaluated.

In order to assess the stability of mock-up papers, the determinations of colour, molecular weight and pH value during accelerated ageing were performed.

The results indicate that although both antioxidants retard degradation of cellulose under mild ageing conditions in comparison to untreated samples, the stabilization effect of tetrabutylammonium bromide is superior over benzotriazole.

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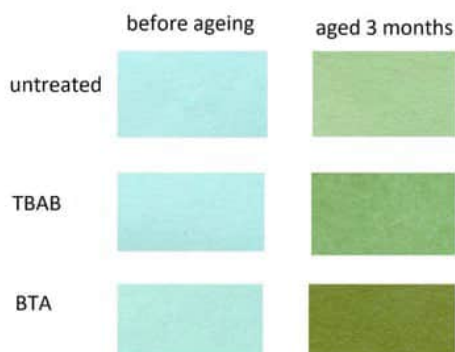


Fig. 1 Scanned Whatman paper samples with Verdigris paint application before and after accelerated degradation for three months. (© Jasna Malešič)

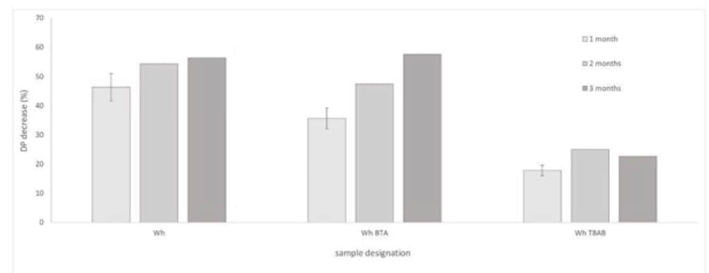


Fig. 2 Decrease of degree of polymerisation (%) of Whatman paper samples during accelerated thermal degradation of either untreated samples or treated with BTA or TBAB in respect to unaged paper sample.



Decision-Making: An Art in Itself

The Applicability of the Revised SBMK Decision-Making Model for
Two Blackbooks made by Artist Boris Tellegen

Tuesday, October 17

11:30–12:00

Book and paper objects are generally treated case-by-case. However, treatment decisions become more challenging with objects that contain unknown or changing meanings, functionalities or assigned values. Other specialisations in the conservation field have developed decision-making models to assist in finding suitable conservation and presentation solutions for these objects. One example is the revised SBMK decision-making model, designed by The Foundation for the Conservation of Contemporary Art (SBMK) and revised by the Cologne Institute of Conservation Sciences (CICS) in 2021.

This decision-making model consists of a flowchart of nine steps, focusing on tangible and intangible aspects of the object (fig. 1). The model has been developed for modern and contemporary artworks, as artists and other stakeholders are commonly involved in the decision-making, and materials constantly change due to their fast deterioration.

As part of the master thesis 'Scraps, Scribbles, Stakeholders' (2022), two 'blackbooks' by artist Boris Tellegen (1968-) from the Rijksmuseum were used as a case-study to test the model's applicability (fig. 2). These scrapbooks were created as portfolio and logbook from 1986 to 1997 to design and document the artist's graffiti works.

In this presentation, the benefits and practicalities of implementing the revised SBMK decision-making model, to support the decision-making for the conservation of complex book and paper objects, will be discussed. Each step of the model is described in relation to the case-study, focussing on the model's strengths and possible recommendations for improvement. Additional insights for organising and conducting meetings and interviews with the artist and stakeholders are shared.

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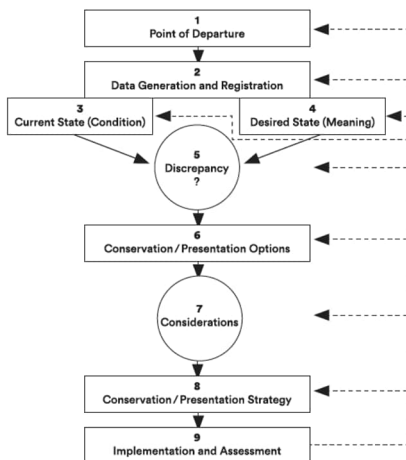


Fig. 1 © Cologne Institute of Conservation Sciences [CICS]

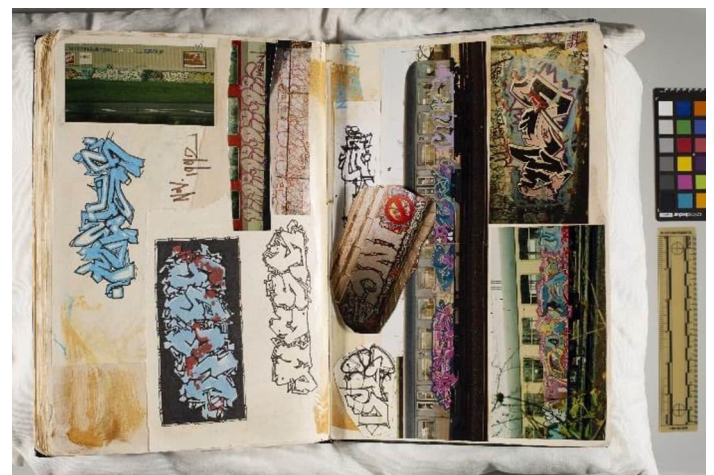


Fig. 2 Book 1, 1986–1992, Boris Tellegen, *Blackbook* © Mariska Castelijijn

**LEILA SAUVAGE¹, EMELINE POUYET², LUCILE BRUNEL-DUVERGER²,
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Who said 18th Century Pastels Were Boring?

Communicating About the Interdisciplinary Study of La Tour Pastels from the Musée Antoine Lécuyer (France)

Tuesday, October 17

12:00–12:30

Since 2020 the Musée Antoine Lécuyer has communicated about the conservation of its Maurice Quentin de La Tour (1704-1788) pastel paintings. What makes this museum unique is the presence of the artist's studio content and its turbulent history (rescue transports during the wars, copies substituted to originals). Due to the fragility of the pastel medium, unframing represents an opportunity to access the artist's materials (fig.1). The museum has therefore set up yearly conservation campaigns and gathered a large public around various events (e.g. guided visits, online videos).

In 2022, an analytical approach combining non-invasive multi-modal techniques, with spectroscopic imaging of micro samples was developed to characterize La Tour's materials (paper, pigment, filler, and binder/fixative).

This paper presents the methodology followed to study the materiality of the pastels (fig.2). Bridging (technical) art history, archival research and material sciences, this

approach provided most notably a deeper understanding and mapping of the degradation states of the blue paper. The comparison of the pastel chemical composition in several portraits also highlighted the complexity and diversity of materials used by the artist, unraveling new insights into the nature of the fixative used by La Tour.

Finally, the paper discusses how the museum used online resources, printed images and visits to invite the public to (re)discover La Tour's pastel collection.

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Fig. 1 Dry cleaning of La Tour's Selfportrait, LT3, Musée A. Lécuyer. (© Luc Couvée, St Quentin)



Fig. 2 Portable X-ray fluorescence spectroscopy (non-contact) on Mme Fel, La Tour, LT4, Musée A. Lécuyer (© CNRS-LAMS)

RENATE MESMER¹

All About that Base...

Tuesday, October 17
15:00–15:05 ⚡



At the Folger Shakespeare Library the display of books started when the library opened in the 1930s. Since that time, the display techniques at the Folger have changed greatly. For years, Folger conservators have been working on reducing the excessive amount of waste that exhibiting books produces when using traditional materials like matboard, plexiglass, or Polyethylene terephthalate glycol (PETG).

This talk gives an overview of how the Folger has displayed books in the past and will share a preliminary design for a modular, reusable, and affordable open book display (or book cradle in other words) to be used in the new Folger galleries

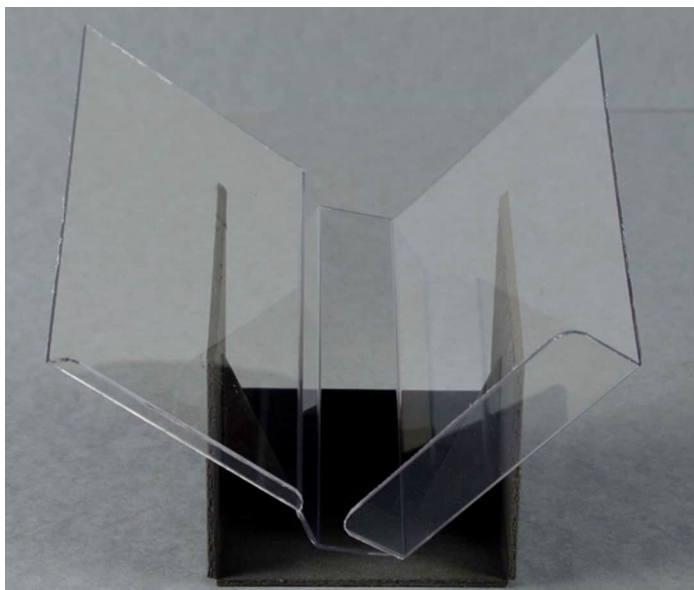


Fig. 1 Open book display: Metal base and PETG top. (© Renate Mesmer)

and future exhibitions. Designing a base in 2013 was the first step. The base has been modified and improved since to better accommodate different book thicknesses. The use of a reusable base resulted in a decrease of material waste by an estimated 30-40%.

The next step, creating the top parts, is in progress. The prototype in development will be presented at this IADA conference. This presentation is intended to encourage conversation and the exchange of experiences and ideas.

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Fig. 2 Prototype of adjustable metal base. (© Renate Mesmer)

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THOMAS PRESTEL⁵**



White Paper is Never Quite White

How Light Affects Paper Color

Tuesday, October 17
15:05–15:10 ⚡

Our response to prints and drawings or pages in books is significantly determined by the tonality of the paper, which usually is classed in light exposure guidelines as quite stable when it is free of lignin, making the media the weak component on which light exposure policies focus in collection institutions. However, when we look at the many shades of whitish, yellowish and brownish paper tonalities, and the many light damage effects that beset non-ligneous papers, we have to acknowledge that a more differentiated approach is needed when we seek to preserve historic and modern papers in a condition that can be considered appropriate for the age and quality of the paper – one appropriate for viewing the media on such paper. In this lighting presentation, we draw attention to a current collaborative project, funded by the German Research Foundation (DFG), in which we study the effect of light on 38 paper samples that feature key components of historic or modern white paper (gelatin, alum, iron, rosin, lignin, calcium carbonate, optical brighteners). In these samples, we

observe color-change phenomena generated through cyclic thermal and light aging, which are intended to replicate color changes that may occur during cyclic rotation of original objects moving between dark storage and exhibition. The project also considers the application of microfading testing (MFT) in the prediction of color change of paper and its limits. The project methods and goals are summarized and we add an outlook into the future.

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Fig. 1 Marie Kern preparing pulp; casting sample papers.
(© Irene Brückle)



Fig. 2 Giulia Vannucci measuring illuminance for a sample set in Berlin.
(© Fabienne Meyer)

How Little is Little Enough?

Discussing Gellan Gel Residues on Paper Substrates



Tuesday, October 17

15:10–15:15 ⚡

Gels are an indispensable and versatile tool for many challenges in paper conservation. However, since they need to be in close contact with the paper surface, they will not only deliver moisture, but might also leave residues. Among the available choices, gellan is an interesting example for discussing residues on paper: it is a polysaccharide and thus degrades under similar conditions as cellulose and hemicellulose, and it forms a stiff, yet shapeable gel that allows local (Fig. 1) and overall applications.

The cautious conservator opts for interleaving paper between the gel pad and the paper object to prevent residues; however, this decreases the efficacy of the gel application, leading to longer treatment times. Omitting the interleaving paper increases the efficacy, but also the risk of leaving residues.

The answer to whether residues of the gel are detectable depends on the choice of analytical methods for their detection: the less sensitive the method, the more likely

residues will go unnoticed (Fig. 2). In gellan gels, one of its constituents, rhamnose, is a sugar of low importance in paper-making fibers, and thus this molecule can be used as a specific marker for residues on paper. With the respective method, methanolysis, rhamnose residues were indeed detected after gellan application on paper.

Therefore, the question that we as conservators must answer is not if there are residues or not, but rather, whether the conservation concept to achieve an envisioned goal can accommodate a certain risk associated with gel residues on the paper surface.

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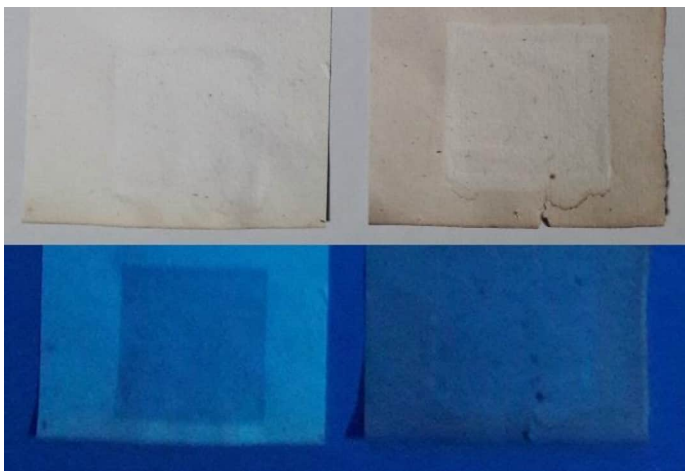


Fig. 1 Historic gelatine-sized rag paper after local gellan gel application before (left) and after (right) accelerated ageing seen in VIS (upper row) and under UVA radiation (lower row). (© Ute Henniges)

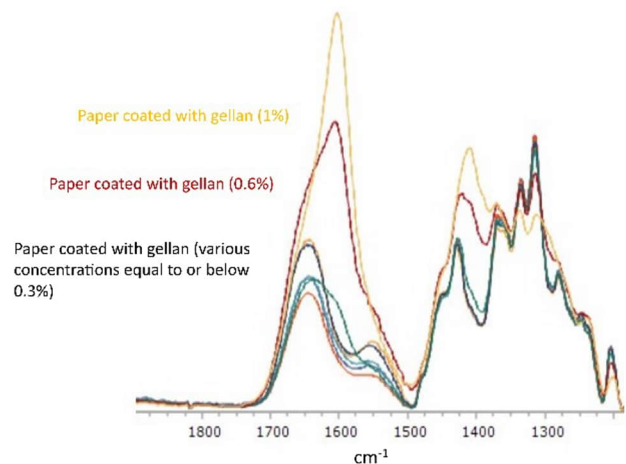


Fig. 2 ATR-FTIR spectra of modern rag paper coated with gellan in various concentrations to determine the limit of detection. (© Ute Henniges)

Damage and Prevention of Fragmentary Manuscripts

Tuesday, October 17

15:15–15:20 ⚡

Our ancestors created thousands of samples of manuscript books that have become precious treasures. The majority of Georgian manuscripts are preserved at Korneli Kekelidze Georgian National Center of Manuscripts. The manuscript heritage has preserved a large number of fragmentary manuscripts.

Fragmentation of the manuscripts occurred for various reasons: enemy invasions, when certain sheets of the manuscript were lost during the evacuation; improper storage conditions, which led to dismantling of the manuscript book case, and the loss of pages. Often, manuscripts of liturgical content, that were damaged or out of practice, were used as secondary material, etc. For these and other reasons, fragmentary manuscripts are scattered in various repositories in Georgia and abroad.

We studied the condition of Georgian fragmentary manuscripts performed on parchment. Most of them are

damaged for different reasons and to different degrees, the text on some pages is difficult or not readable at all. There is also discoloration from moisture and candles.

A small number of fragments can be found as traces of early restoration - thread-stitched and reinforced areas, which at that time was one of the methods of sheet repair-strengthening, as well as later period micelite and paper.

Recommendations to be considered during preventive conservation include strengthening mechanical injuries if necessary, placing them correctly, and creating appropriate conditions.

Our duty is to preserve the cultural heritage that has reached us and hand it over to future generations.

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Thinking Outside the Box

Securing Contaminated Wallpaper Fragments

Tuesday, October 17

15:20–15:25 ⚡

During the reconstruction of the baroque brewery “Brauhaus zum Pelikan” in Halle/Saale, a fragmented wallpaper from the first half of the 19th century had to be dismantled permanently. The society in charge of the brewery wanted to keep parts of this and another underlying wallpaper, both still adhered in strips to wooden slats from the former room partition, for documentation (fig. 1). The project initially focused on a microorganism contamination, especially dry rot (*Serpula lacrymans*, wood-decaying fungus), scarcely studied for its impact on the decontaminated building. Investigating the fungus constituted one part of the project.

However, the project's focus turned out to be a heavy arsenic contamination that was identified via x-ray fluorescence of selected wallpaper fragments. Scanning electron microscopy of cross sections coupled with EDX allowed stratigraphic mapping: It appears that the arsenic was part of a biocide applied to the first wallpaper layer before the second wallpaper was adhered on top of it (fig. 2). Arsenic quantification by inductively coupled plasma

mass spectrometry (ICP-MS) indicated a significant amount of toxic arsenic previously already suspected by semiquantitative colorimetric tests.

The arsenic contamination determined the treatment which centered on the preservation of a small set of adjoining wallpaper strips. This involved cleaning and gluing back detached parts of the blue wallpaper in a glove box followed by mounting in a sealed frame for future display. Indispensable was the intensive and repeated exchange with experts in the field of contaminated cultural heritage that made this project possible and provides guidance for the brewery in dealing with any remaining wallpaper parts.

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Fig. 1 Overview room partition with wallpaper.
(© Christian Hartwig)

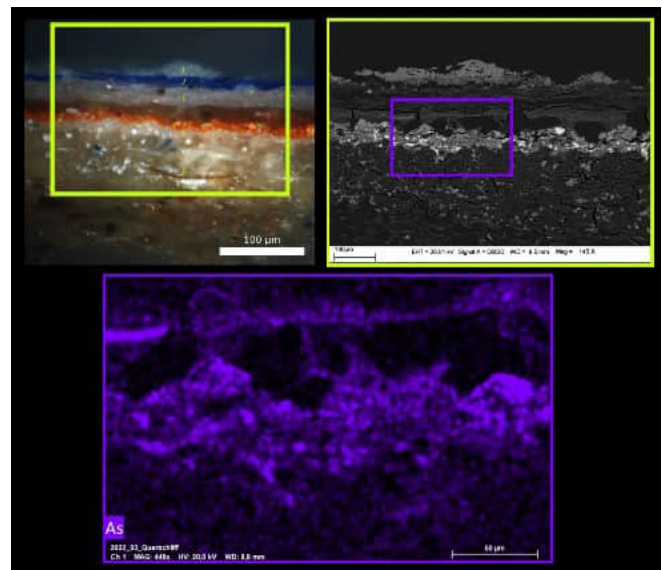


Fig. 2 Cross section of wallpaper layers, top left to bottom: transmitted light microscopy, scanning back scattered electron microscopy (BSE-SEM), element mapping of arsenic via energy dispersive x-ray-microanalysis (SEM/EDX). (© Stephanie Dietz)

LAURA DEBRY¹, BÉNÉDICTE DUVERNAY²

Investigating Works on Paper in a University Museum

Bridging the Divide between Historical Approach and Material Approach at the University Museum of Louvain



Tuesday, October 17

15:30–15:40

In 2022 a new position of responsible for research was created at the Musée L, museum of the Université catholique de Louvain (UCLouvain). This position, quite unusual in Belgian museums, is aimed at imagining possible collaborations between scholars, students and museum professionals. Because of the Musée L's important collection of prints, one of the first research projects that will be launched to make historians and experts of conservation work together is the catalogue raisonné of a Belgian engraver: Walter Vaes. Thanks to a donation, the museum keeps the major part of Vaes' prints, which makes it the ideal promoter to carry out this scientific project. The Musée L is planning a digital catalogue raisonné, and is currently considering the method to achieve it by combining academic research and museum research. How can this scientific tool allow scholars, experts of conservation and students work together? How can such an enterprise rely on digital humanities? One of the goals is to familiarize students with an area of expertise that was once important at the university: material analysis of objects. Conversely,

conservation documentation and technological studies in the museum will benefit from university research, which could help linking these skills to current issues. Laura Debry, conservator and expert of works on paper at the Musée L, and Bénédicte Duvernay, responsible for research recently appointed at the same museum, will discuss together how a long-lasting museum practice such as a catalogue raisonné will be used in a university museum to cross material and historical approaches, and to restore material analysis as a crucial practice for art historians.

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WEIWEI ZENG¹

Chinese Export Wallpaper Fragments in Cross-Cultural Context

An Investigation of Their Historical Background, Materiality, Conservation and Museum Presentation



Tuesday, October 17
15:30–15:40

Chinese handmade wallpaper was a very popular import artwork in Europe between the 18th and 19th centuries, although at the time, it was regarded as peasant art by Chinese art scholars. However, in recent decades, historians and conservators in China have become increasingly interested in this art form.

This paper I wrote in the University of Applied Sciences Erfurt focuses on an 18th-century Chinese export wallpaper from the German Wallpaper Museum Kassel and seeks to contribute more scientific information and practical experience while examining the underlying causes of the growing interest.

Two of the ten fragments of this wallpaper were used in the study as an example of the conservation concept—restoring the wallpaper’s appearance while preserving the signs of previous use and how to display the wallpaper after conservation in a fragmented form. The analysis of the artwork made use of infrared light, optical microscopy,

XRF, and FT-IR spectroscopy with focus on what drawing methods and materials were used and what western painting philosophy were embraced.

The study yielded reliable data and information about the historical painting technique and used materials. An idea for the museum's future storage and exhibition is also proposed.

This paper also raises a few open questions, such as how the international professional community can foster greater collaboration on historical maritime wallpaper trade between China and Europe. How did an ordained item become a one-of-a-kind art collection? How can the public learn more about Chinese export wallpaper?

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Fig. 1 Two pieces of the wallpaper before treatment (© Weiwei Zeng)



Fig. 2 The two pieces after treatment (© Weiwei Zeng)

**MARIE-NOËLLE GRISON¹, JULIETTE FRANÇOIS², ESTELLE VAN GEYTS³,
LEILA SAUVAGE⁴, LISE VANDEWAL⁵, LIEVE WATTEEUW⁶**



FRIABLE

Characterising Powdery Materials in Belgian Drawings from the Royal Museums of Fine Arts of Belgium (1850-1914)

Tuesday, October 17

15:40–15:50

The interdisciplinary FRIABLE project (2022–2026) is based on the in-depth analysis of a corpus of drawings in friable media (pastel, charcoal and chalks) from the collection of the Royal Museums of Fine Arts of Belgium (RMFAB). These drawing materials became especially popular with late 19th- and early 20th- century Belgian artists, among which are the Symbolists. Some of these works have been collected, exhibited and transported extensively before they entered the museum's collection. Due to the weak adherence of powdery media to the supports, these drawings are prone to damage and require special attention as to their handling and display. By investigating these fragile media, FRIABLE aims to develop conservation protocols, and to provide the community with decision-making tools and training material.

The FRIABLE project methodology brings together (technical) art history, preventive conservation, archival research, oral history, materials science, and engineering. The first phase of the study includes reconstructing the past life of each work, characterising the materials used,

developing a technical vocabulary and assessing their condition. This will form the basis for a comprehensive risk and value analysis. Further advanced analytical techniques (multispectral imaging, MA-XRF, FORS, etc.) will pinpoint the characteristics of these friable media.

This talk will present a progress report on the development of a visual examination and material characterisation procedure, and share preliminary results from the risk analysis performed on the corpus.

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Fig. 1 Henri-François Ramah, *Bouquet of flowers*, pastel on paper, n.d., 684 x 498 mm, RMFAB, inv. no. 12272 (© J. Geleys)

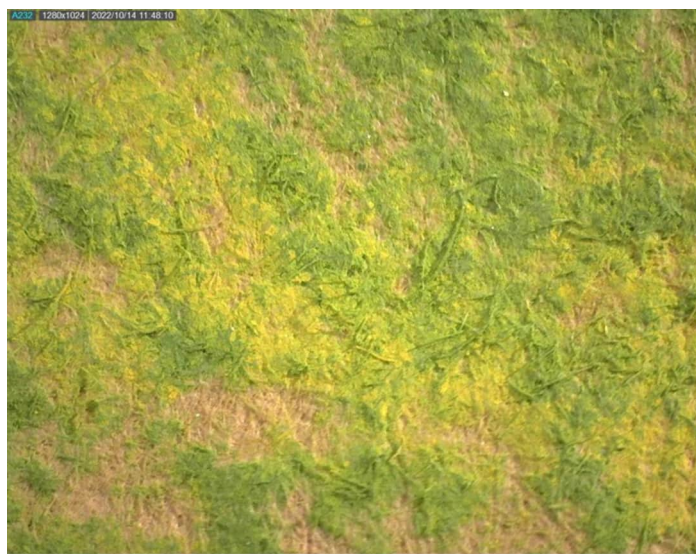


Fig. 2 Detail of fig. 1, magnification 50x (© Lise Vandewal)

CHRISTINE MCNAIR¹, JENNIFER POULIN², TIFFANY ENG MOORE³

Modern Materials in Books

An Exploratory Research Study



Tuesday, October 17

15:40–15:50

This short talk introduces an exploratory research project at the Canadian Conservation Institute (CCI). Contemporary book conservators receive little training in modern materials, focusing almost exclusively on methods and materials used in hand binding from the 19th century and earlier. This is accentuated in Canada by the complete absence of book conservation training in the conservation training programs.

Modern papermaking that includes polymers, the varieties of adhesives used in industrial bookbinding, the use of synthetic leathers -- these are all topics that have been under researched and are poorly understood, both in terms of the identification of materials and the expected material behaviors over time. There is a tendency to dismiss modern books as ephemeral objects, but they will be part of future collections.

As part of the CCI Modern Materials Working group, the project from 2022-2024 will consist of:

- A literature review of the use of modern materials in books, focusing on synthetic leather, plastics in paper, and modern bookbinding adhesives.

- A survey of the modern materials sample collection in the CCI paper lab and the development of a survey form to be used with other collections of sample books.
- Collecting samples of modern materials used in books in the form of historic catalogues, sample books, and didactics.
- Analytical testing of modern materials in books .
- Identifying potential collaborators both within Canada and beyond.
- Developing a more formal research proposal in 2024-25.

We are actively hoping to invite collaboration and partnerships with other conservators interested in this topic.

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Nanodiamond Composites

A Green Approach to Parchment Conservation

Tuesday, October 17
15:50–16:00

Finding new materials for restoration treatments is an interesting challenge in recent times. The reduction in the use of chemicals, the sustainability and the biocompatibility of the treatments are, currently, priorities.

The possibility to use nanomaterials to integrate and boost treatments and products already employed in the restoration field seems to present an interesting opportunity.

In such a context, nanodiamonds (ND) represent a promising material to employ thanks to their physical-chemical characteristics (such as thermal and chemical stability) and mechanical properties, but also for their biocompatibility and low toxicity.

We present the use of ND as a consolidating agent for parchment. Different dispersions based on ND have been tested in commonly used wet cleaning media, such as ethanol, or added to HydroxypropylCellulose (HPC) (Fig.1). The short and long-term effects of the ND-treatment have been analysed before and after an artificial ageing treatment. Thanks to Light Transmission Analysis (LTA), it has been possible to monitor the variations in the denaturation

temperature of the collagen within parchment (Fig.2), and by means of the Attenuated-Total-Reflectance Fourier Transformed Infrared (ATR-FTIR) spectroscopy, to evaluate the hydrolyzation/gelatinization degree of the protein. Both the techniques have highlighted the capability of the ND dispersion in ethanol to work as a protective treatment for the parchment sample, in particular in the concentration of 0.05%.

Although the research is still ongoing, ND-based treatments have showed interesting and promising results making ND a valid “green” candidate to develop new approaches in the restoration of cultural heritage.

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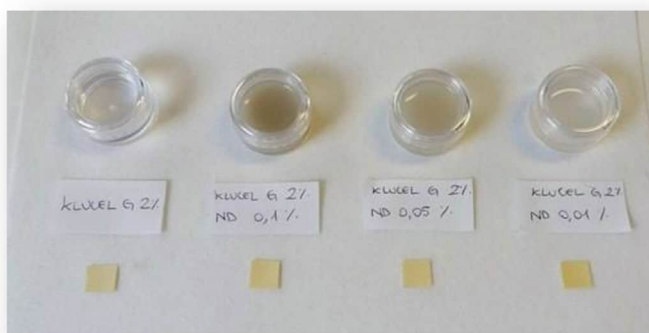


Fig. 1 HPC and ND composites prepared for the parchment treatment

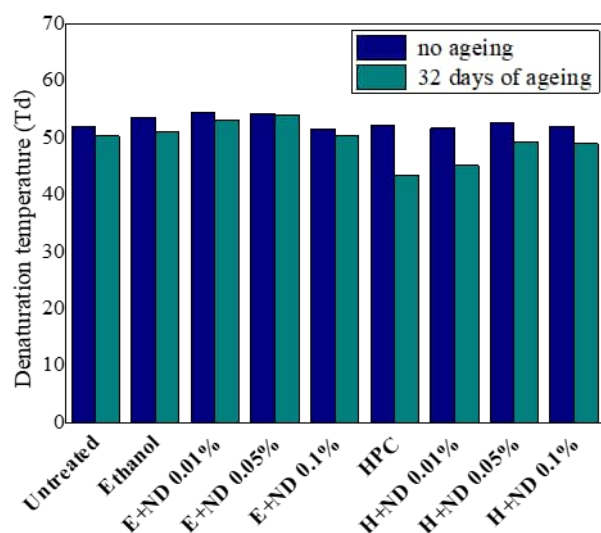


Fig. 2 LTA denaturation temperature of modern parchment samples treated with ethanol dispersions, ethanol-ND composite, HPC, HPC-ND composites.

YUN LIU¹, LIEVE WATTEEUW²

Characterising the Degradation of Copper-Containing Green Pigments In Book and Map Collections by Non-Destructive Methods

Tuesday, October 17

16:00–16:10

The use of copper-containing green pigments in early books and maps in the collections at Maurits Sabbe Library (KU Leuven) represents one of the most astonishing co-creations by humans and nature that have shaped humanity and culture. However, the instability of this pigment has caused issues of discolouration and corrosion to the documentary heritage, leading to losses of historic materials and information. This project was born to gain an in-depth understanding of the degradation of the pigments, its effect on the substrates, and the preservation needs for the collections. Objects are selected in the collection for case studies and mock up samples of various degradation states are created as references. Non-destructive techniques, including X-ray Florescence (XRF) Spectroscopy, Fiber Optics Reflectance Spectroscopy (FORS), and UV-VIS-NIR multispectral imaging, are used for data collection. Statistical

methods are used to extract the chemical information from the data and interpret it to obtain material composition and degradation state of the samples. The results will not only set a foundation for further investigation into the degradation kinetics of copper-containing green pigments, but also reveal the key factors that play roles in the stability of the pigments and their effect on the paper substrate, which can be used to optimise the collection management strategies.

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JOANNA DIDIK¹, SYDNEY SCHAFFER²

Treading in Water-Based Paints

An Analysis of the Deterioration of the Indigenous Collection of Paintings on Paper at the Gilcrease Museum



Tuesday, October 17

16:00–16:10

The Gilcrease Museum in Tulsa, Oklahoma, houses thousands of the region's best examples of indigenous works of art on paper. Through a grant from the Henry Luce Foundation, a large part of the collection was catalogued and assessed for conservation needs. Common conservation issues include photochemical damage of the paper substrate and paint, cracking of the paint, and media loss on a vast majority of the artworks. To understand how and why this damage occurred, mockup samples were created after an instrumental investigation was completed on a sampling from the artwork in the collection. Solubility tests revealed that the binder is not soluble in water unless the paint was exposed to environmental factors, especially light, and Fourier-transform infrared spectroscopy (FTIR-ATR) analysis points to a vinyl polymer. Pentel Roll'n Glue, direct match in Nicodom database, was chosen as a synthetic, water-based binder and gum arabic was also chosen to

compare results against. Dry pigments from two companies, Kremer and Daniel Smith, were chosen to add to the binders. A sheet of Canson 98lbs/160GSM ultramarine paper served as the substrate. Accelerated aging was achieved through exposure to the environmental elements outside (sunlight, fluctuating relative humidity...) and the comparison of the control sample and the aged samples revealed similar damage to the artworks observed in the collection. Microfading testing (MFT) and comparison of CIE L*a*b* readings confirmed a noticeable difference in the control and aged samples. The samples created will influence the future care of the collection, offering opportunity for informed exhibition, storage, and treatment decisions.

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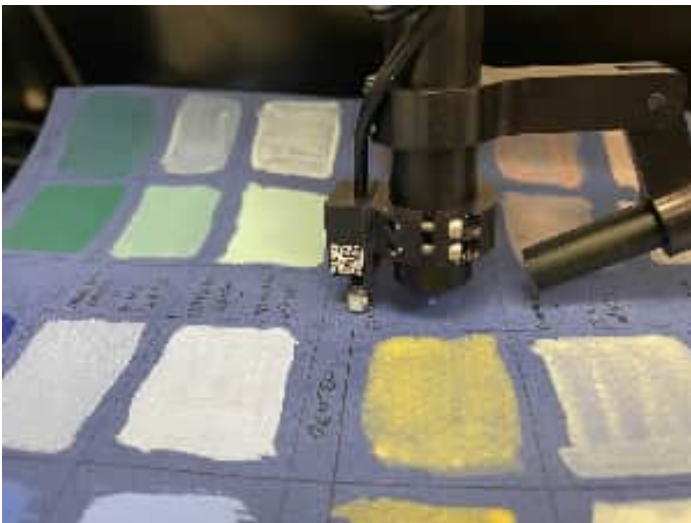


Fig. 1 MFT of ultramarine paper substrate on Control sample
(© S. Schaffer)

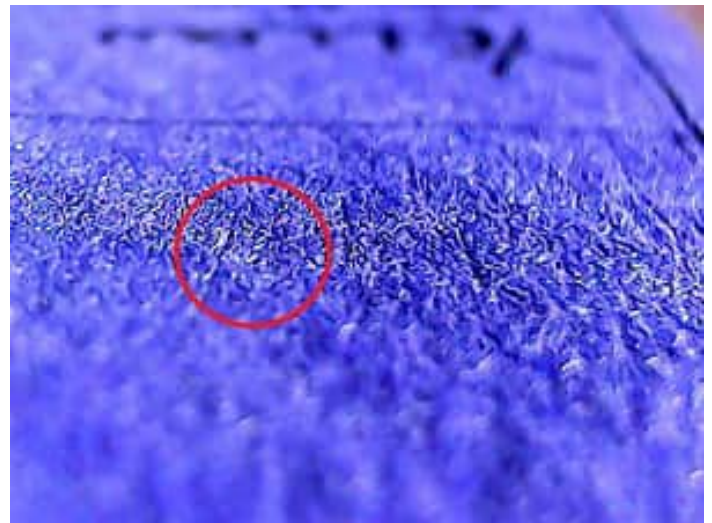


Fig. 2 After MFT area circled in red (© S. Schaffer)

Nano2

Nanomaterials as a New Approach for Efficient Treatment of Historical Documents Damaged by Ink Corrosion

Tuesday, October 17

16:10–16:20

In the research project Nano2, funded by the Swiss Innovation Agency Innosuisse, several institutions in Switzerland have joined forces to develop an efficient restoration method to treat ink corrosion on cultural assets that combines chemical deacidification and mechanical stabilization using nanomaterials.

A total of at least 8,430,000 pages of manuscripts in the combined collections of Staatsarchiv Zürich and Zentralbibliothek Zürich have sustained ink damage. Not all objects can be handled with the current methods, especially books that contain water-soluble inks in addition to iron gall ink (stamps or handwritten additions) (Fig 1), books with valuable book bindings that are not to be rebound, and books in which only individual pages are affected by ink corrosion and no complete restoration is necessary.

To address this problem, the Nano2 process is being developed. The use of nanolime and nanocellulose for the treatment of ink corrosion is promising, since both materials have already been tested separately on paper in various forms of application and have been shown to be useful for deacidification and stabilization of paper, respectively.

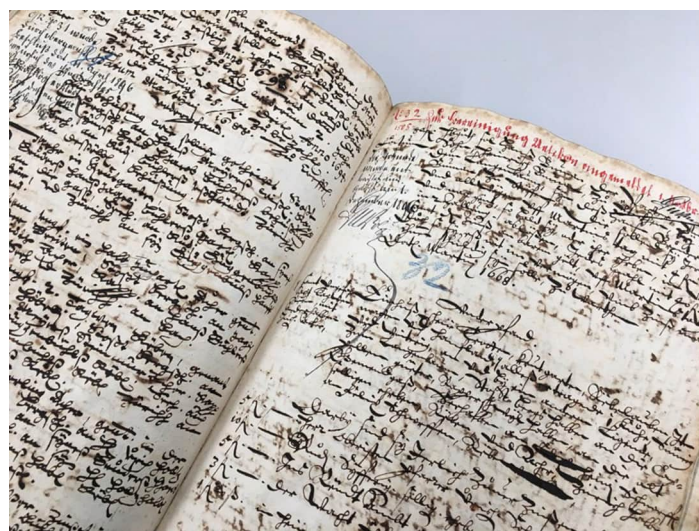


Fig. 1 Iron gall ink combined with water-soluble inks in an historic document from the 17th century in the collection of Staatsarchiv Zürich. (© Staatsarchiv Zürich)

In this project, the two nanomaterials are being applied as anhydrous dispersions to provide a non-aqueous, local treatment of paper damaged by ink corrosion, in which the paper is chemically deacidified and mechanically stabilized. Various analyses will be used to demonstrate the effectiveness of the ink corrosion treatment and to optimize the formulation and application of the Nano2-dispersion to eliminate adverse effects (Fig 2).

The paper will present results of the ongoing project and emphasize cultural, economic, and institutional sustainability.

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Fig. 2 Samples of historic paper with iron gall ink corrosion treated with nanolime dispersion. (© Staatsarchiv Zürich)

ELLIS SEKAR AYU¹

The Approach of Local Wisdom in Preserving the Ancient Manuscripts of Nusantara

Experiences of Conservation Practices



Tuesday, October 17

16:10–16:20

Indonesia is an archipelago country consisting of 16,771 islands, 1,340 tribes and 718 languages. Indonesia keeps the manuscripts of the nation's intellectual works that need to be saved and preserved. The ancient manuscripts are currently stored in museums, the National Library, public libraries, traditional institutions, and private property.

Problems in the preservation of ancient manuscripts in Indonesia are: 1. Human resources: limited conservators both in quantity and quality in the conservation of ancient manuscripts; 2. Facilities and infrastructure: the materials used in conservation activities are not yet available domestically, so most of them still need to be imported. Most libraries, traditional institutions and the community do not have the work facilities and materials for the implementation of manuscripts conservation 3. Method: the diversity of manuscripts and types of damage requires different methods in handling them; 4. Budget: until now, most libraries, institutions, and communities that own

ancient manuscripts do not allocate a special budget for preservation; 5. Manuscripts as sacred heirlooms: most of the community in Indonesia still considers manuscripts as sacred heirlooms, so they do not dare to hold, open and read them.

The Center for Preservation at the National Library of Indonesia holds regional manuscript preservation activities for institutions or the private community who have manuscripts. To conserve ancient manuscripts, a local wisdom approach is used where the materials used can be obtained in the area of origin of the manuscript and also the methods and techniques used can be applied by the owners of the manuscripts.

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Testing TerraSkin: A Modern Stone “Paper”



Tuesday, October 17
16:20–16:30

Modern stone papers are not paper in the traditional sense, trading their cellulose structures for plastic and mineral powder. Stone papers, or rock papers, are praised for being more environmentally friendly to produce than pulp papers. Many claim to be waterproof, tear resistant, grease resistant, mold resistant, infinitely recyclable and/or acid-free. These sheets have gained popularity with contemporary artists and can be found in art galleries, museums, and private collections.

This presentation will take a closer look at TerraSkin, a fiberless stone paper composed of more than 75% calcium carbonate and less than 25% polyethylene. Evidence of additional materials were confirmed with attenuated total reflection Fourier-Transform Infrared spectroscopy (ATR-FTIR). Solubility and mechanical tests are essential for developing protocols for handling, hinging, and rudimentary treatments. Common paper conservation techniques are tested to demonstrate the perils and limitations of treating

a stone paper lacking a cellulose core, especially since the sheet easily creases. Short-term aging studies (<1 year) provide insight into TerraSkin's stability under various environmental conditions. The manufacturer indicates that the sheet can begin to degrade within 6-9 months when exposed to direct sunlight and moisture, with the potential to fully degrade.

While TerraSkin appears to be discontinued, the artworks that have been created on this material remain. There are multiple other stone papers currently being sold, such as YUPO and Denril, with similar chemical constructions as TerraSkin. Treatment of such new and developing materials deserves thorough practical understanding as they seem to be becoming more ubiquitous.

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Fig. 1 Scratch test on TerraSkin stone paper in raking light. (© Restorart)



Fig. 2 Solvent spot tests on TerraSkin stone paper under ultraviolet emission. (© Restorart)

New Lights on Architectural Models

The Use of High Viscosity Polymeric Dispersion as a New Cleaning Agent



Tuesday, October 17

16:20–16:30

Established by the University of Porto, the Marques da Silva Foundation's mission is to classify, preserve, study, enhance and disseminate architectural culture and heritage.

Possessing 39 architectural collections, the Documentation Center of the Marques da Silva Foundation currently has a collection of 381 architectural models.

With a new exhibition on the horizon to open on September 22, 2022, at the Architecture Circle of the Municipality of Oeiras, it was necessary to restore 10 models made by architects Manuel Graça Dias and Egas Vieira. This was also an opportunity to try the use of a high viscosity polymeric dispersion of Borax and PVA as a new cleaning agent.

For the conservator, architectural models pose many complex issues due to their composite material make-up which can degrade at differing rates. The working models are generally made of cheap and ephemeral materials, often fragile, and rarely made to last. The final models, or

competition models, more faithful to the final design and made of more durable materials, were commonly produced as a showpiece and a communication tool between the architect and the client.

The intricate and complex designs of some of the models made their cleaning a very difficult task. This paper will address the use of a Borax and PVA (8%) cleaning gel, which had the ability to mold itself to the different surfaces of the architecture models (fig. 1 and 2).

The success of the cleaning task will be addressed and also the difficulties that have arisen during the process.

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Fig. 1 Borax and PVA (8%) cleaning gel applied on a cardboard surface.
(© Ana Freitas)

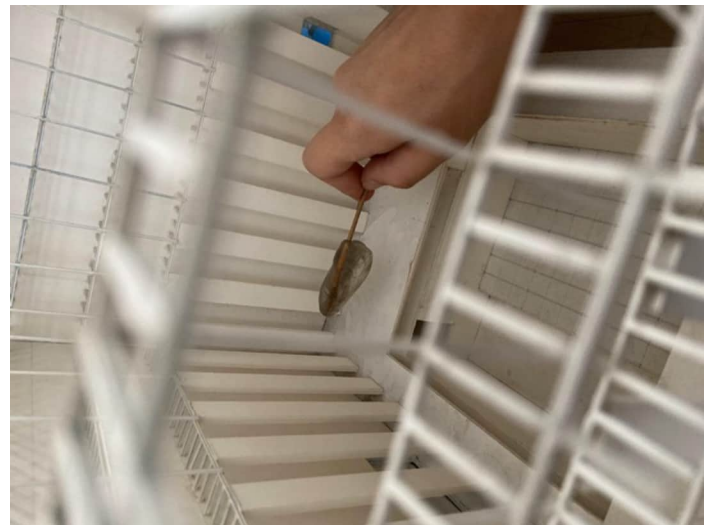


Fig. 2 Borax and PVA (8%) cleaning gel applied on a wooden stick.
(© Ana Freitas)



Looking for Skeletons in the Cupboard

Retracing the Use of Chloramine-T in the Paper Conservation Studio of the Rijksmuseum Amsterdam between 1950-1985

Wednesday, October 18

8:30–9:00

Chloramine-T was introduced to paper conservation in 1937 as an extraordinarily mild bleaching agent. It had been used for decades until, in the late seventies, it was found to damage paper in the long term. Yet, until present, paper conservators at the Rijksmuseum did not find any anomalies in their collection that they could trace back to Chloramine-T. Still, the ominous predictions made by conservation scientists hang over the museum's valuable paper collection like a dark cloud, which causes mild anxiety with the collection manager.

This is why the Rijksmuseum asked the University of Amsterdam for an assessment of the actual damage. Unfortunately, a systematic examination of objects treated with Chloramine-T is problematic: treatment documentation from the time is poor, the expected damage pattern not very distinctive, and there is no suitable detection method for Chloramine-T residues.

Interviews with former conservators and conservation technicians of the museum appeared the best avenue to identify those objects that most likely have been treated with Chloramine-T. These interviews gave valuable insight into a studio practice with its own dynamics. Also, an analysis of the literature regarding Chloramine-T, its precursors and degradation products has led to improved insight into the chemical reaction conditions of the bleaching process. Although the authors would still discourage the use of Chloramine-T, the outcome of this research sheds a less negative light on the use of the discredited bleach.

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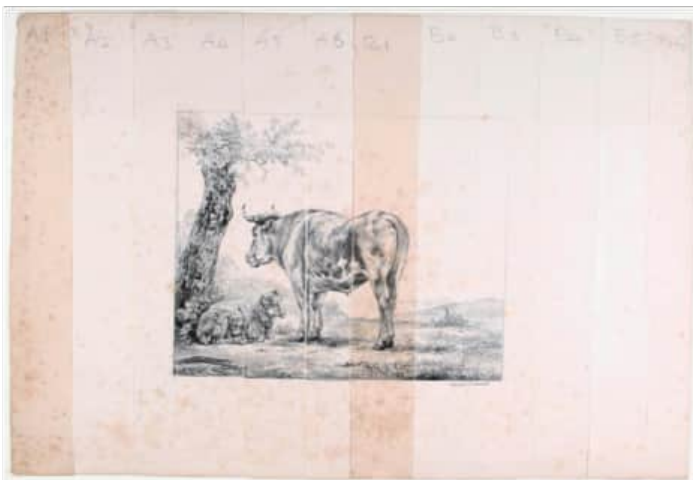


Fig. 1 Bleaching test with Chloramine-T conducted in the paper conservation studio of the Rijksmuseum (© Rijksmuseum)

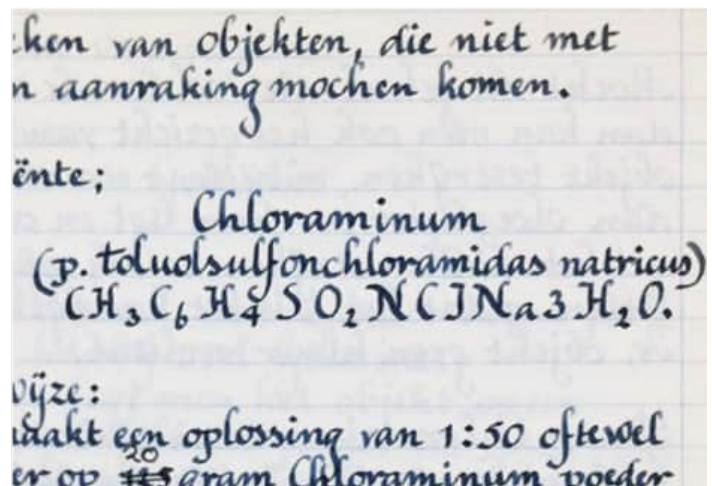


Fig. 2 A recipe for Chloramine-T with treatment notes (© Rijksmuseum)

Ad Multos Annos

Conservation of Manuscripts at the Austrian National Library

Wednesday, October 18

9:00–9:30

The Collection of Manuscripts and Rare Books can be regarded as the historic core of the Austrian National Library. In 1914, the first conservator, Alois Liska, was employed to work for this collection. We will review the historic development of conservation and preservation from the early 20th to the 21st century. While priorities, decision making, concepts and working methods have changed, we can observe certain red threads, for example the use of natural materials.

We will present preservation projects like the rehousing of manuscripts in dust jackets and archival boxes as well as the monitoring of climate, dust and insects. Within an historic building, pragmatic solutions have to be found. Case studies will illustrate ongoing conservation projects like the treatment of original bindings and the consolidation of illuminated manuscripts.

Research projects focus on endangered artefacts, copper green pigments and the study of art technology. The condition of verdigris is assessed in manuscripts from the 15th century. The mode of colour application, paper quality and humidity seem to influence ageing behaviour. Visual observations and condition rating will be correlated with the characterisation of pigments by analytical methods.

Taking care of a rich collection enables us to monitor the long-term effects of treatments and preservation efforts over a period of more than 100 years.

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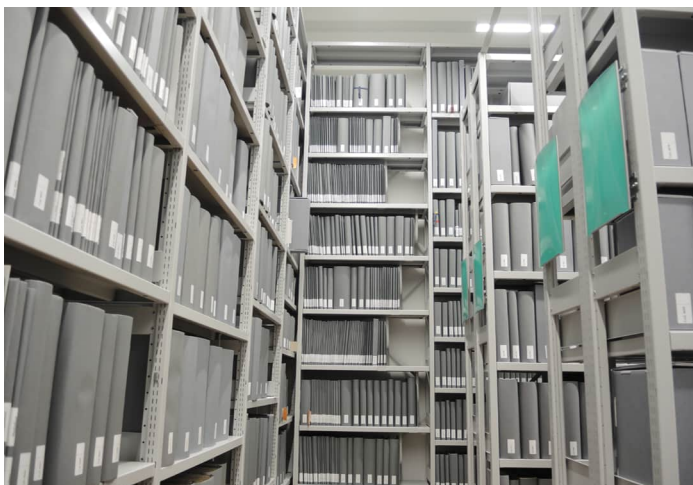


Fig. 1 View in the stacks of the Manuscript Collection after rehousing. (© Conservation Department, Austrian National Library)



Fig. 2 Cod. 13975, fol. 25v – 26r, History of Emperor Sigismund, Austrian National Library. (© Conservation Department, Austrian National Library)

ZOITSA GKINNI¹

“Hidden Stories of Recycling” at the National Library of Greece



Wednesday, October 18

9:30–10:00

In 2022, the Conservation Service of the National Library of Greece participated in ICCROM's "Our Collections Matter" (OCM) initiative. This programme provided an opportunity to connect, discuss and work with an international team of conservators on understanding the Sustainable Development Goals working with OCM's Toolkit and integrating sustainability actions focusing on collections. Participants worked with the ICCROM's representatives, in a constructive environment. As an outcome, each institution should involve and finally organize a particular project that would connect collections and cultural heritage with the society under SDG actions. The conservation team of the National Library of Greece designed an action called "Hidden Stories of Recycling", which was presented to the public within the European Days for Conservation in October 2022. The Library's collections managers and conservators collaborated and produced an educational programme with the aim to show the conservation's critical role in understanding and preserving complex cultural heritage objects. The reuse of available materials has been common practice since ancient times, and the programme centered around the concept that reuse and recycling of materials is not a modern means to sustainability. The conservators

demonstrated to participants ways that books, as historical objects, underwent interventions and modifications from the moment of their creation until they reached our hands in their present form. To do this, conservators highlighted the ways of reusing and recycling materials in manuscript codices, rare books and archival materials from the Library's collections.

This paper will discuss the benefits and lessons learned from (a) participating to ICCROM's programme, (b) designing the action connected to SDGs and (c) interacting with the public. It will also attempt to interpret how hidden stories in the collections' objects and origins could capture the imagination of people, show them potentialities in the present, and, thus, inspire purposeful agency in using sustainable practices so much needed in our daily lives that our ancestors used out of necessity, scarcity, availability, and a way of frugal use of means towards noble ends, a rational behavior for sustainable futures.

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Fig. 1 *Plutus* by Aristophanes, 1549, Paris (EΦ 2923E, Rare Books collection NLG). The covering material is an antiphonal parchment manuscript waste. (© Zoitsa Gkinni)



Fig. 2 Conservators interacting with the public in the "Hidden Stories of Recycling" event organized at the National Library of Greece. (© NLG)



Wednesday, October 18

10:30–11:00

Historical documents are exposed to many dangers. Endogenous damage factors such as acid in paper or exogenous influences such as dirt, mold or pests can severely damage objects.

An emergency in the form of water damage usually catches institutions that store written cultural property unprepared. Major damage can occur in a very short time.

In order to be able to deal with damage and damage situations appropriately, knowledge and the ability to act must be built up.

E-learning-courses are an interesting option for this. They make it possible to learn independently of location and time. And in the time of Covid, it is also a possibility for distance learning. Interactive elements can make abstract content understandable and optimize learning by combining different forms of media.

But after all, it is always important to integrate what is learned into professional practice!

There are various platforms on which E-learning-courses are offered in the field of conservation. Two of these offers

can be found at www.bestandserhaltung.eu. The first course deals with the topic "Bestandserhaltung" (project period 2014-2016), the second with the topic "Notfallvorsorge" (project period 2020-2022).

The target group are archivists, librarians, employees in museums, conservators, persons responsible for preservation, interested laypersons in cultural and memory institutions, trainees and employees in authorities without archival qualifications.

The digital offer is free of charge and the course language is German. Both courses will be presented to the conference participants and are intended to serve as an example of how knowledge transfer with conservation issues can work.

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E-Learning Bestandserhaltung

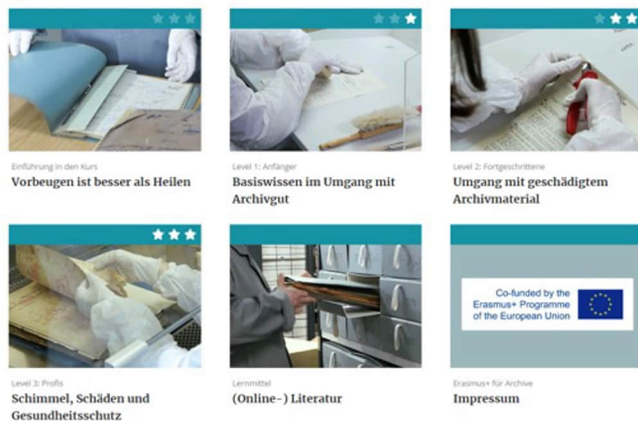


Fig. 1 Homepage Course 1 "Bestandserhaltung" (© Fahrenkamp)

E-Learning Notfallvorsorge

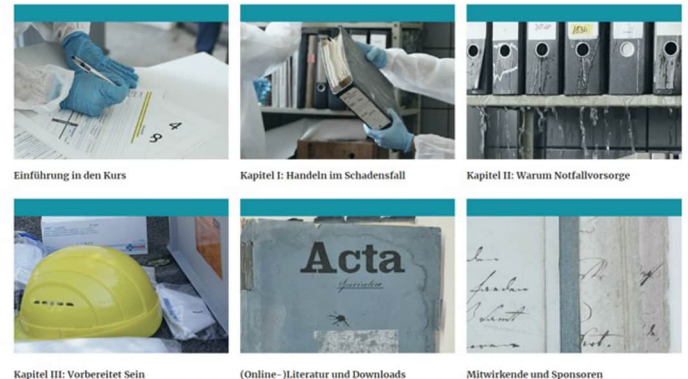


Fig. 2 Homepage Course 2 "Notfallvorsorge" (© Fahrenkamp)

MARC HOLLY¹, DR. WERNER MÖLLER²

Museum and Archival Storages in Times of Climate Change and Energy Crisis

Case Studies from Saxony-Anhalt

Wednesday, October 18

11:00–11:30

Climate Control Systems were introduced to museums in the middle of the 20th Century, causing high demand for energy for the conservation of cultural heritage. Low or no energy storage facilities were developed as an answer but rarely realized worldwide. The federal state of Saxony-Anhalt, in the middle of Germany, is facing financial and demographic challenges that demand cheap solutions for the storage of cultural heritage. Climate change-induced risks need also to be considered (IPCC AR6).

In this talk, museum and archival storage solutions in the Saxony-Anhalt will be presented. The state archive of Saxony-Anhalt moved into a low-energy depot in 2011. The building is a combination of an old military residence and new build storage facilities. (Fig.1) The “Depot Cube” was designed as a prototype using innovative materials and simple technology that is easy to maintain. More than ten years of experience proved that the model can fit archival conservation principles.



Fig. 1 The State Archive of Saxony-Anhalt in Magdeburg, Germany. (© Landesarchiv Sachsen-Anhalt)

The Bauhaus Dessau Foundation had installed a storage and office facility in a former brewery complex in the city of Dessau-Wörlitz. (Fig.2) The redevelopment of the site was part of the International Building Exhibition (IBA) in 2008. New concepts, including e.g., solar thermal and the sponge city principle, were developed to increase the sustainability criteria of the site but never implemented. The concepts received new interest in 2022 when external partners, looking for a joint museum storage solution, started a discussion about expanding the use of the brewery complex. The work in progress will be discussed.

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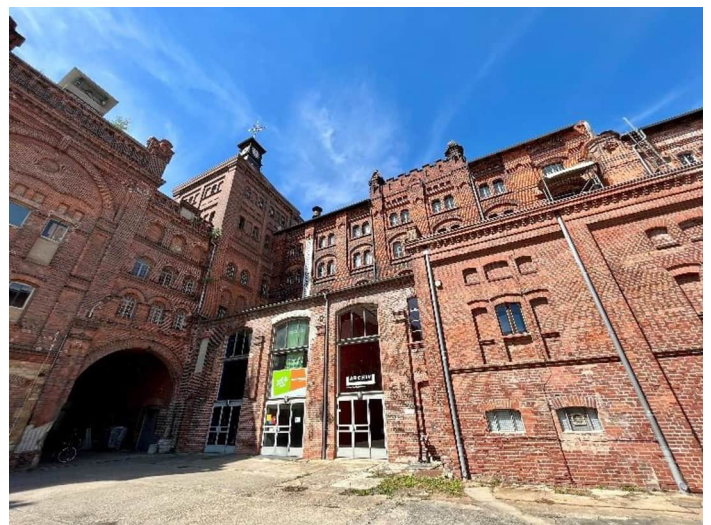


Fig. 2 The Former "Feldschlösschen Brauerei" in Dessau-Wörlitz, Germany. (© Marc Holly, Beratungsstelle Bestandserhaltung Sachsen-Anhalt)

JULIA FELD¹

How to Move an Archive during a Pandemic

The Experience of Relocating the Historical Archive of Cologne



Wednesday, October 18

11:30–12:00

In the autumn of 2021, the collection of the Cologne City Archive, including 1.6 million archival items damaged by the collapse in 2009, was moved into its new home from the prior locations in Cologne and Düsseldorf. Our workshops were also moved without disrupting ongoing conservation work. The move of the collection took eight weeks, during which time employees of the archive alongside the removal company teamed up in a carefully planned operation. The preceding three years were filled with preparations, from ensuring that our collection was packaged safely for transportation, to allotting each piece of conservation equipment a location on the new premises, to finding and working with an experienced removal company, to selecting transport materials and developing a schedule that would enable moving nearly 7000 boxes of archival material each day from two locations simultaneously. Not least, the ups and downs of the pandemic necessitated flexibility and repeated adjustments of plans.

How do you move large quantities of diverse archival material efficiently and safely? What types of transport containers are appropriate for which type of document, taking into consideration required climatic conditions, protection against mechanical damage, efficiency, cost and sustainability? How do you instruct 50 movers on how to handle fragile, pre-damaged documents under time pressure? And carry out quality control when around ten lorries of archival items are moved each day?

In this presentation we will share our experiences and discuss the challenges faced, alongside the solutions found and the lessons learned.

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Fig. 1 The vacuum freeze dryer is moved into its new location (© HASTK)



Fig. 2 Transport containers filled with archival boxes waiting to be unpacked. (© HASTK)

PASCAL QUERNER¹, STEPHAN BIEBL²

Challenges and New Solutions for the Grey Silverfish (*Ctenolepisma longicaudatum* Escherich, 1905) in Museums, Archives and Libraries

Wednesday, October 18

12:00–12:30

Silverfish (*Lepisma saccharinum*) are described as pests to museum and paper objects and mainly occur in damp and humid conditions. They can damage paper, starchy materials, wall paper, but in some cases also insect collections and textiles. Recent reports document a new species, the grey silverfish (*Ctenolepisma longicaudatum*), increased in Europe (Netherlands, Norway, Germany and Austria). This new pest causes new threats especially for archives, libraries, but also modern art collections. Different treatment methods against this pest in infested rooms, buildings and for objects are discussed and compared to prevent new infestations and the spread of this species. The results are discussed with examples of damage to museum objects and different IPM strategies applied: mass trapping, deep cleaning, quarantine

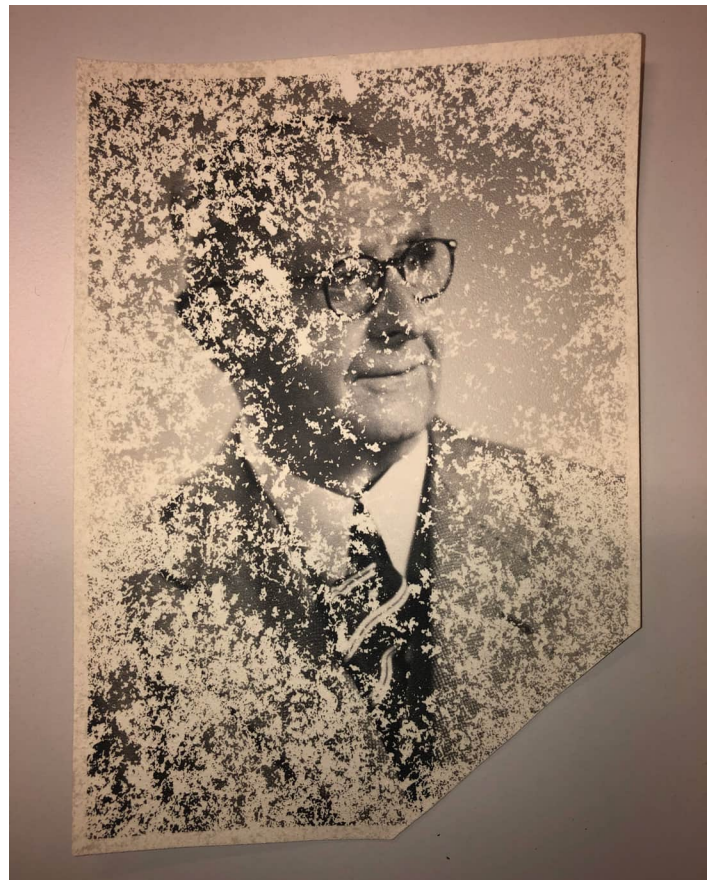
of packaging materials, humidity control, application of diatomaceous earth and experiments with poison bait gels. For object treatment, freezing, humidity-controlled heating, and anoxia are compared and reviewed.

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How to...

Mount Big Pieces of Paper on a Textile and a Stretcher Frame



Wednesday, October 18

14:00–14:10

In recent years we have mounted numerous strips of wallpaper, large maps or drawings on to a textile and later stretched them on to aluminum-wood composite frames. We were able to gain a lot of experience and refine and standardize our method. We installed numerous panoramic wallpapers using this process, namely for the German Wallpaper Museum.

In our short lecture we will give you simple, practical instructions. We will present our step by step proven method. Each operation is described in detail. We refer to

possible dangers and tripping hazards. We present a recipe for assembling large formats for everyone to try.

Finally, we briefly discuss the advantages and disadvantages of this method.

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Fig. 1 Step by step (© Markus Krön)



Fig. 2 Step by step (© Markus Krön)

JOHANNA ZIEGLER¹

Nailed it?

Display and Housing of Large Embossed Prints



Wednesday, October 18

14:00–14:10

In 2020, the Dresden Kupferstich-Kabinett celebrated Günther Uecker's 90th birthday with an exhibition of around fifty of his works on paper from the museum's collection. Mainly known for his nail paintings, sculptures and installations, the artist also created a large number of embossed prints using nails as his primary tool to shape the paper. So far these types of works have always been presented in frames with a distance between the glass and back board. In this case however, the curator asked for invisible, floating mounts without glass, and the artist agreed to this idea.

The conservation department did not only need to consider stability and safety issues. The mounting method was supposed to be suitable for both display and long-term

housing, with the possibility of choosing between the framed and unframed presentation for future exhibitions.

The prints were mounted on slightly smaller boards, which in turn were attached to the wall using hook-and-loop fasteners. After the exhibition, the sheets were left on the boards and transferred into inlay mounts matching the museum's standard mats. They can now be put into distance frames as they are, or taken out of the mats and mounted by reusing the hook-and-loop fasteners.

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Fig. 1 Embossed prints by Günther Uecker during the exhibition at the Dresden Kupferstich-Kabinett (© Andreas Diesend)

Tricky Treatment

Revealing a Double-Sided Drawing



Wednesday, October 18

14:10–14:20

A drawing attributed to the German landscape painter Johann Heinrich Roos (1631–1685) was treated to remove it from an acidic grey cardboard adhered overall with a polyvinyl acetate adhesive (Fig. 1). The drawing in iron gall ink and grey and brown washes over black chalk featured inscriptions that document color values, indicating its workshop use before a paper mount was added, likely by a 19th-century collector. These marks were identified with UV-induced VIS luminescence and infrared reflectography. The project revealed a second, closely related red chalk drawing on the verso which, together with many signs of use (folds, stains), strengthened the identification of the drawings as preparatory studies for two closely related Roos paintings (Minneapolis Institute of Art and Gemäldegalerie Alte Meister in Dresden).

Key to uncovering the verso drawing was an intricate, fine-tuned treatment that minimized water contact and

mechanical impact on the drawings, risky especially for both the iron gall ink and the chalk. The treatment involved, in sum, splitting the cardboard and thinning its remnants in dry condition, reducing the PVA with acetone, followed by highly local humidification steps assisted by heat and timed mechanical action, involving simple tools but sophisticated technique (Fig. 2). Once separated, the mounting paper and the double-sided drawing received remedial treatments. According to the wishes of the owner, they were mounted separately for future study and double-sided display.

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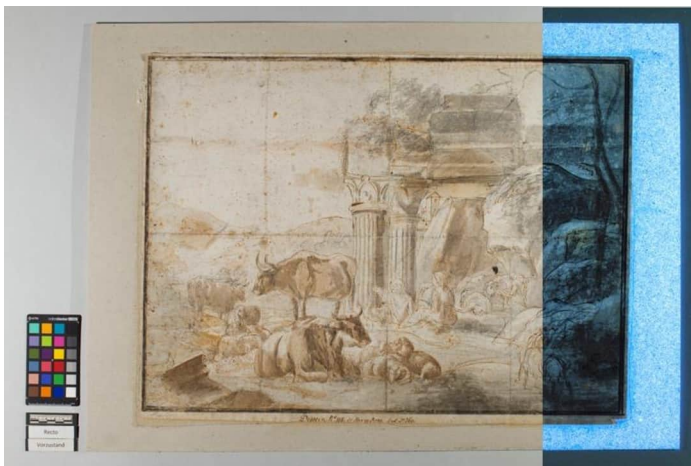


Fig. 1 Johann Heinrich Roos, drawing in iron gall ink and washes over black chalk, 43.5 x 57.8 cm, private collection, before treatment, from left to right: VIS and UVA image. (© Karen Köhler)



Fig. 2 Selected treatment steps (a-c) and verso drawing (d). (© Leonie Rök, Karen Köhler)

FLORENCE WATSON¹

Problem Solving in Conservation for Digitisation

Treating Pages with Severe Iron Gall Ink Damage for a Digitisation Project at The National Archives



Wednesday, October 18

14:10–14:20

During a survey conducted as part of a digitisation project at The National Archives, thin copy papers with severe iron gall ink damage were identified. Damage ranged from creasing and small tears, to large areas of cracking, significant text loss and dissociated fragments [fig. 1]. These issues were widespread throughout the project, and in most cases further handling would accelerate damage and loss.

This talk will outline how the conservation for digitisation team at The National Archives tackled this issue. The aim was to find a solution which safely stabilised the pages for handling during digitisation, whilst being time and cost effective, and repeatable on a large scale.

The team adapted a method for lining pages using 3.6gsm Japanese tissue brushed through with 2% Klucel G in propan-2-ol, which had been used for mould-damaged

and burned pages in previous digitisation projects. For the iron gall ink pages in this project, gelatin was used as the adhesive and in some cases a heavier weight of tissue was used to support areas of loss [fig. 2]. The results were largely positive and succeeded in stabilising the pages for handling during digitisation, although the use of gelatin instead of Klucel G in propan-2-ol increased the risk of tidelines and cockling forming during treatment.

As part of this work, the team was involved in discussions around how to assign time for pieces with similar damage during surveys. New guidance has since been issued that improves the accuracy of surveys for digitisation projects.

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Fig. 1 Damaged iron gall ink page before treatment (© Florence Watson)



Fig. 2 Iron gall ink page after treatment (© Florence Watson)

Made from Scratch

The Scientific Database for the Karlsruhe Piranesi Drawings



Wednesday, October 18

14:20–14:30

The two large-format Piranesi albums at the Staatliche Kunsthalle Karlsruhe house over 300 drawings from the Roman workshop of Giovanni Battista Piranesi (1720–1778). Between 2017 and 2021, they were the focus of a joint research project of art historians and paper conservators, funded by the German Research Foundation and Swiss National Science Foundation. During the course of the project, it became evident that the classical format of a printed inventory catalogue would not fulfil the requirements for presenting the research findings: A wide range of art-technological data – statistics, FORS spectra, high resolution MSI photographs and macro photographs – as well as the many historical interconnections within the group of the drawings at Karlsruhe and with drawings in other collections called for the very different organizational structure of an digital database. As the website of a public art museum and by requirement of public project funding, we had to

communicate the research results in adequate depth, had to make them easily accessible for the broad public, and had to meet long-term maintenance requirements. We designed a website that features essays and catalogue entries that both integrate images and glossary terms and offers numerous cross-references easily accessed in this digital framework. Designing this structure proved to be an ambitious project in itself. We share our experience, discuss pitfalls and lessons we learn on the way and provide an introduction to the database and its key features at the Kunsthalle Karlsruhe: the website “In Piranesi’s Workshop”.

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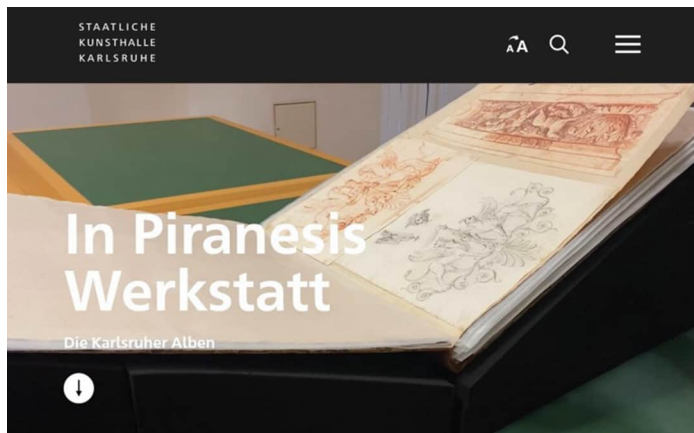


Fig. 1 Main page of the website. (© Staatliche Kunsthalle Karlsruhe)

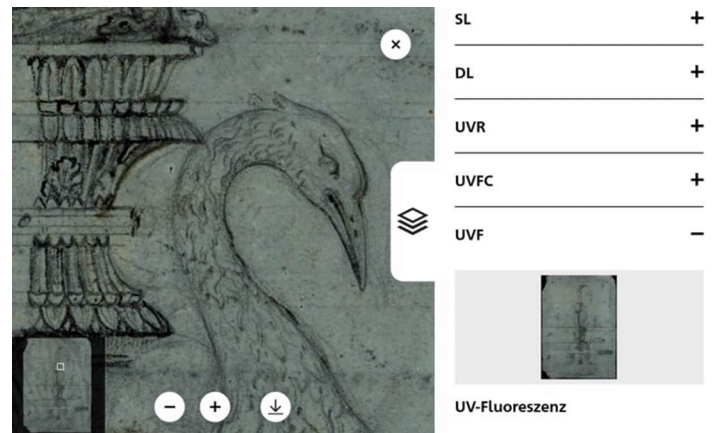


Fig. 2 Tool for zooming high-resolution images taken with different VIS lighting conditions and in multispectral imaging. (© Staatliche Kunsthalle Karlsruhe)

Digitisation of Newspapers

Preservation vs Access at the Swiss National Library

Wednesday, October 18
14:20–14:30

The Swiss National Library (NL) is not exempt from the wave of newspaper digitisation that has been going on for years. Old newspaper volumes are being subjected to the mechanical constraint of digitisation, and probably not just once.

After some unpleasant surprises following digitisation projects, it has become clear that more emphasis needs to be placed on preparing newspaper volumes for digitisation. For each type of binding, a compromise must be found that ensures full readability by the scanner while keeping the binding and book block as intact as possible.

The original binding is the work of craftsmen who did not foresee the challenges of digitisation. The bindery, in collaboration with the conservation department, has looked for new ways. The solution devised is to change the binding technique—sometimes less, sometimes more radically—in such a way that the newspaper volume will survive the forthcoming and subsequent digitisations unscathed. The

changes are difficult to accept from a restoration point of view. They can only be justified because the NL must fulfil its four, sometimes contradictory, legal mandates: collecting, indexing, preserving and communicating.

For reasons of conservation and security, the NL will continue to store newspapers and periodicals in bound form. As a precautionary measure, the binding rules for new newspaper volumes have therefore been adapted so that a possible digitisation measure can be carried out later without damage.

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Fig. 1 Original binding of a newspaper volume. (© Mirjam Gierisch)



Fig. 2 Modified binding of a newspaper volume. (© Mirjam Gierisch)

JUSTINE BOLLE¹, IRENE BRÜCKLE², UTE HENNIGES²

Susu, Yasha, and Oxalic Acid

Observations on Historic Treatment Agents



Wednesday, October 18

14:30–14:40

Susu, *yasha*, and oxalic acid were formerly held in high esteem, respectively, for inpainting paper (*susu*, *yasha*) and stain removal from paper. These agents still find occasional use in paper conservation. However, they are eyed with reservation because none of them have been scrutinized for their immediate and long-term effects on paper. We tested the agents on different paper substrates using preparations following historic and modern recipes. The samples were subsequently exposed to thermal and light aging.

Three types of *susu* were created from boiled-down extracts of historic paper (one recipe with the addition of calcium carbonate), while *yasha* was prepared from boiling alder cones. Climate aging revealed a decided darkening, especially for *yasha*-inpainted samples, light aging showed less pronounced darkening. This undesirable effect bolstered our view that any brown hues required for inpainting are matched with equal success using high quality watercolors, which were tested simultaneously.



Fig. 1 Boiling ligneous paper and board scraps to create *susu*
(© Justine Bolle)

The oxalic acid was used in three concentrations, effecting a brightening on some discolored samples, a trend that was, however, reversed during thermal aging unless an alkaline reserve (calcium hydrogen carbonate) administered by immersion followed treatment to lessen this effect. Light aging faded all samples except the ligneous paper, which yellowed. Coincidentally, the integral strength of the papers, especially the aged rag papers, diminished significantly.

We illustrate these effects and in sum, conclude that the use of *susu* and *yasha* can be considered historic, and that oxalic acid is to be considered with reservation for exceptional treatment situations.

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Fig. 2 Sample of *yasha* inpainting before (left) and after (right) climate aging (top row) and references (bottom row).
(© Justine Bolle)

“Lesen in Staub” by Miriam Cahn

Investigating Storage of Contemporary Drawings with Friable Media



Wednesday, October 18

14:30–14:40

Contemporary artworks on paper are often characterized by conceptual choices of the artist regarding the materials used, the production processes and the form of presentation. In the group of works „Lesen in Staub“ (“Reading in Dust”) dating from the 1980–1990s, Swiss artist Miriam Cahn scraped black chalk powder from large blocks, accumulated it on sheets of paper lying on the floor and made drawings with her hands and body in performative action, sometimes with her eyes closed. Drawn with loose charcoal dust and bigger chunks, the artworks have an extremely friable surface. They vary greatly in size and are often serial in nature as well as numerous per group. Cahn emphasizes their fugitive character intentionally in uncovered and variable presentations. A condition survey of several works of this period at the Kunsthau Zürich stimulated a deeper investigation in suitable ways of housing for contemporary artworks on paper with friable media that are not intended to be framed. Housing should provide physical protection

in storage and transit and also support proper handling in installation situations. Different options of housing that avoid any contact with sensitive drawing surfaces were researched and tested. The ideal storage solution should be scalable to a wide range of object sizes customized to fit available museum storage units as well as general space requirements and must be also cost-efficient.

In addition, methods to temporarily secure the drawings were investigated.

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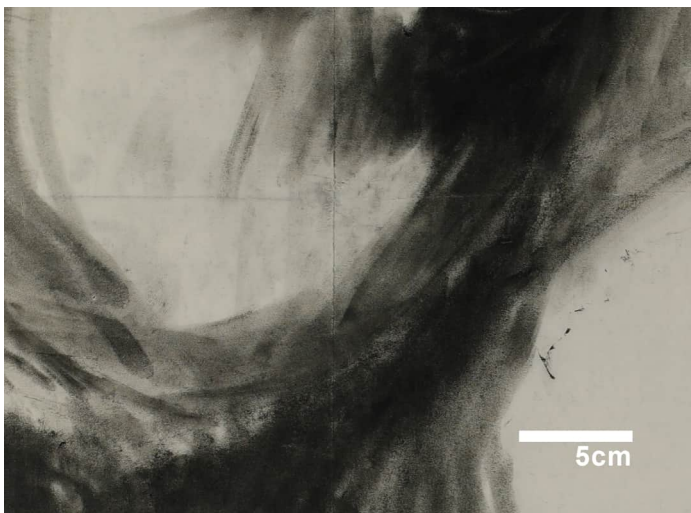


Fig. 1 Typical appearance of intentionally smudged lines.
(© Kunsthau Zürich)

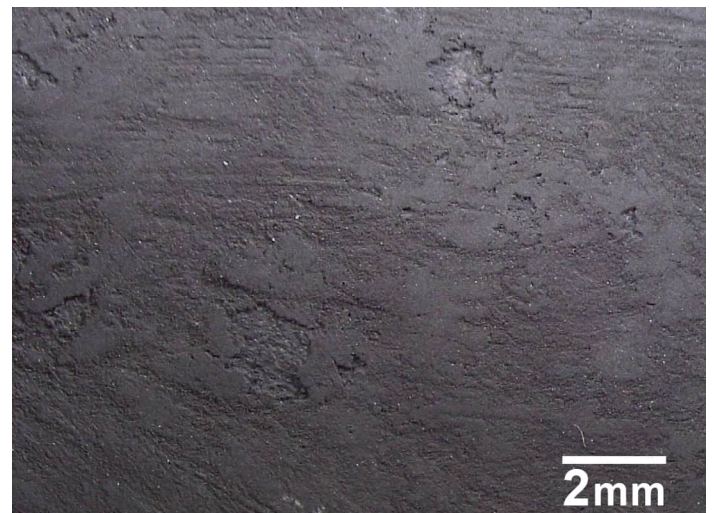


Fig. 2 Typical losses in areas of heavy pigment application.
(© Kunsthau Zürich)

Making Gilbert & George

Investigation Upon Gilbert & George's Working Methods and Materials



Wednesday, October 18
14:40–14:50

Gilbert & George is a British artist duo active since 1969 in London's East End. They started as performance artists but moved to photography with their black-and-white silver gelatine *Pictures* around 1971. In the late seventies to nineties, their *Pictures* developed into large scale, multicoloured compositions of hand-dyed silver gelatine "photo-sculptures".

Nowadays, the works of Gilbert & George appear in Dutch collections and in major institutions worldwide. Very little is known about the hand-colouring techniques and materials that the artist couple used. Due to their importance, these works are often exhibited and loaned, and as a result, some works have displayed fading of the dyes. An example of this can be seen in figure 1. This example illustrates the importance of technical knowledge necessary for preservation decision-making.

This research focuses on the method, materials, and techniques that Gilbert & George employed in hand-colouring their silver gelatine photographs. Literature and

documentary research was conducted. Their use of colour was studied by examining their photo-sculpture series online (fig 2). Additionally, visual examination and analysis was performed in an attempt to establish their working method.

Our investigation clarifies Gilbert & George's colour application as the following: each panel was coloured individually with various liquid dyes. Uncoloured areas were isolated by a liquid masking gum that was applied with a brush. The panels were then left to dry, after which the masking gum was removed. The hand-colouring was built up in layers by repeatedly masking areas and applying subsequent colours until all colours were utilized.

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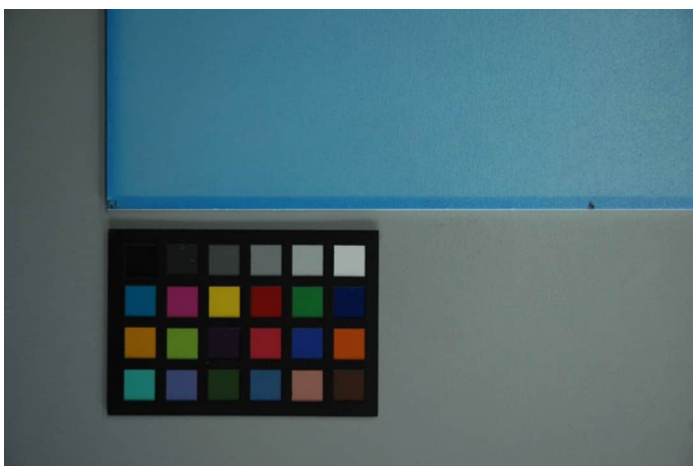


Fig. 1 Discoloration of the blue dye is visible at the bottom right corner of one of Gilbert & George's works, after the frame was removed. (© Clara von Waldthausen)

	A	B	C	D	E	F	G	H	I	J
5	Red	Mental	Mental no. II		1976	124 X 104 CM	Whole panels colored			
6	Red	Red Morning	Hole		1977	242 X 202 CM	Whole panels colored			
7	Red	The 1978 Pictures	The Gardener		1979	202 X 162 CM	Whole panels colored			
8	Green	The 1980 Pictures	The Ailsa Leaves		1980	242 X 202 CM	Whole panels colored			
9	Blue	The 1980 Pictures	The Ailsa Leaves		1980	242 X 202 CM	Whole panels colored			
10	Orange	The 1980 Pictures	The Ailsa Leaves		1980	242 X 202 CM	Whole panels colored			
11	Red	The 1980 Pictures	The Ailsa Leaves		1980	242 X 202 CM	Whole panels colored			
12	Yellow	The 1980 Pictures	The Ailsa Leaves		1980	242 X 202 CM	Whole panels colored			
13	Green	The 1981 Pictures	Coloured Black		1981	121 X 101 CM	Whole panels colored			
14	Blue	The 1981 Pictures	Coloured Black		1981	121 X 101 CM	Whole panels colored			
15	Red	The 1981 Pictures	Coloured Black		1981	121 X 101 CM	Whole panels colored			
16	Yellow	The 1981 Pictures	Coloured Black		1981	121 X 101 CM	Whole panels colored			
17	Purple	The 1981 Pictures	The Plant Box		1981	101 X 81 CM	Whole panels colored			
18	Blue	The 1981 Pictures	Rude		1981	242 X 202 CM	Whole panels colored			
19	Orange	The 1981 Pictures	Rude		1981	242 X 202 CM	Whole panels colored			
20	Pink	The 1982 Pictures	Shit		1982	242 X 202 CM	Whole panels colored			
21	Brown	The 1982 Pictures	Shit		1982	242 X 202 CM	Whole panels colored			
22	Pink	The 1982 Pictures	Shit Path		1982	242 X 181 CM	Whole panels colored			
23	Orange	The 1982 Pictures	Shit Path		1982	242 X 181 CM	Whole panels colored			
24	Orange	The 1982 Pictures	Catkin Silver		1982	242 X 202 CM	Whole panels colored			
25	Orange	The 1982 Pictures	Catkin Silver		1982	242 X 202 CM	Whole panels colored			
26	Green	The 1982 Pictures	Cabbage Writhing		1982	302 X 202 CM	Whole panels colored			
27	Red	The 1982 Pictures	Cabbage Writhing		1982	302 X 202 CM	Whole panels colored			
28	Blue	The 1982 Pictures	Cabbage Writhing		1982	302 X 202 CM	Whole panels colored			
29	Blue	The 1982 Pictures	Coloured Linn		1982	181 X 101 CM	Whole panels colored			
30	Yellow	The 1982 Pictures	Coloured Linn		1982	181 X 101 CM	Whole panels colored			
31	Orange	The 1982 Pictures	Coloured Linn		1982	181 X 101 CM	Whole panels colored			
32	Purple	The 1982 Pictures	Young Girl		1982	242 X 202 CM	Whole panels colored			
33	Pink	The Believing World	Bad God		1983	242 X 181 CM	Whole panels colored			
34	Yellow	The Believing World	Bad God		1983	242 X 181 CM	Whole panels colored			
35	Blue	The Believing World	Bad God		1983	242 X 181 CM	Whole panels colored			
36	Green	The Believing World	Dark With God		1983	482 X 181 CM	Whole panels colored			
37	Blue	The Believing World	Dark With God		1983	482 X 181 CM	Whole panels colored			

Fig. 2 Screenshot of the color inventory made to examine their use of colour. (© Charlotte Brewaeys)

CHIARA ZIRONI¹, CARLOTTA LETIZIA ZANASI²

The Herbarium of Stefano Bartolotti

Restoration and Digitisation of a XVIII Century Bound Herbarium



Wednesday, October 18

14:40–14:50

With the progressive development of initiatives that aim to promote ecology related topics and the preservation of botanical species, the digitisation of herbaria has become a precious resource in the endeavor of enhancing collections, safeguarding originals and creating digital surrogates to facilitate studies from remote locations.

However, because of their polymaterial nature, herbaria made with dried plants are extremely fragile objects which require minute attention during handling and consultation phases. The historical herbarium (1770-1771) by Stefano Bartolotti, comprised of 592 dried plant specimens divided in two volumes, highlighted to an even greater extent both the conservation issues to which bound herbaria are subjected to and the difficulties that may arise during their digitisation.

The herbarium was found to be in quite a precarious state, with a high risk of specimen fragment loss at every mechanical stress it was subjected to. It was also observed

to be particularly susceptible to bacterial, fungal and insect-related biological attacks, which have ended up greatly weakening its paper support.

The much-needed restoration therefore had as main objective the securing of the artifact through the disassembly of its volumes and the restoration of its paper supports, and through the dry cleaning and fixing of the detached or otherwise partially fragmented exsiccata of which the original position was successfully localized. In addition to rendering the artifact useable again, these operations were carried out to perform the herbarium's digitisation in utmost safety through photographic acquisition on a reproduction table, obtaining pleasing and tidy images.

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Fig. 1 The herbarium before the restoration. (© Chiara Zironi)



Fig. 2 The herbarium after the restoration. (© Chiara Zironi)

MIYON SCHULTKA¹, IRENE BRÜCKLE², UTE HENNIGES²

The Artist's View on the Treatment of his Work

Klaus Olbert Speaks about his Large-Format Drawings



Wednesday, October 18

14:50–15:00

When we received a large (2.50 × 1.70 m) contemporary graphite drawing by Klaus Olbert, created on a thick machine-made paper, it was for the overt problem of exhibition damage. The drawing had been torn off the bulldog clips by which they had been suspended on a gallery wall. This resulted in several significant creases distributed across the drawing. In discussing the treatment with the artist, who still owns this work, our exchange soon included general issues of his art production – the choice of paper, the quality of the graphite pencils he likes to use, and the way he prefers his drawings to be displayed and some concerns for storage. His interest in our detailed work on the creases and our interest in his work as an artist led to an exchange that manifested itself in an interview intended to be integrated

in the online "Archive for Techniques and Materials of Contemporary Artists" hosted at Dresden University of Fine Arts (<https://artemak.art>). We discuss the treatment and focus on the steps in the process which generated the interview document, in which Klaus Olbert shares his views on his preferred materials and techniques and their longevity. The guidelines provided by Artemak.art to support an interview are thematized in our talk.

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Fig. 1 Pre treatment planar distortion (© Miyon Schultka)



Fig. 2 Process of overall humidification and flattening (© Miyon Schultka)

Untitled Monochrome of 1961 by Mario Schifano

Technical Study and Conservation of an Enamel and Newsprint Collage on Paper Previously Restored



Wednesday, October 18

14:50–15:00

This document outlines the design and execution of a successful conservation treatment on Mario Schifano's important 1961 *Untitled* monochrome. The artwork belongs to the production to date regarded as the true original phase of the master's research, as well as the one that made him famous by introducing him in the early 1960s to the international art market. In the field of modern and contemporary art, some interventions pose considerable risk to key aspects such as surface integrity and authenticity. Therefore, before defining the treatment objectives, it was essential to achieve an in-depth understanding of the author's intentions, his execution technique, the physical and chemical characteristics of the materials and the type of interaction established between them. Given its unfortunate conservation history, *Untitled* had already undergone a conservation treatment in the past, which, while mitigating the degradation that had occurred as a result of direct and prolonged contact with water, had not proved decisive. The tests carried out combined with the scientific analysis

made it possible to answer many of the questions that the particular types of degradation detected had raised, deepening the research on the industrial materials used by the artist, such as coated paper and Ripolin enamel: a famous brand of varnish already used by the likes of Picasso, Kandinsky, and Picabia. The intervention stood out for the use of innovative techniques based on solutions calibration, so as to minimize the osmotic impact on the monochrome constituent materials, and by the adoption of a specially designed flatness recovery method, maintained through an innovative mounting process on paper-lined panel.

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Fig. 1 *Untitled* in grazing light from above before conservative treatment. (© Leonardo Albasini)

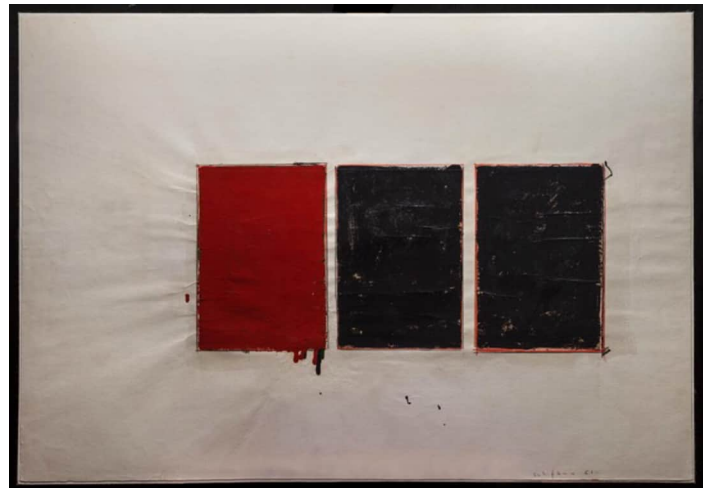


Fig. 2 *Untitled* in grazing light from above after conservative treatment. (© Leonardo Albasini)

MARIELUISE NORDAHL¹

From Paper to Concrete

The Conservation of the Collection of Architectural Models from the Architectural Archives of the Academy of Arts, Berlin



Wednesday, October 18
15:00–15:10

The Baukunstarchiv of the Akademie der Künste, Berlin (Architectural Archives of the Academy of Arts, Berlin) houses an outstanding collection of over 550 architectural models. In an extensive restoration project, all models are currently being cleaned, conservationally secured and repackaged. About half of the models are being restored so that they can be exhibited. The aim is to make the collection accessible to the public both within the depot and digitally.

The collection brings together architectural models from the end of the 18th century to the present day. Represented are projects by the most important architects of modernism, such as Hans Scharoun, Bruno Taut, Hans and Wassili Luckhardt, Konrad Wachsmann, Heinz Graffunder, Josef Paul Kleihues and female architects like Karla Kowalski and Hilde Léon. The variety of forms and materials in the collection is wide-ranging. About a third of the models are made of paper and cardboard, and there are numerous mixtures of materials. Thus, alongside lightweight models

made of paper, plastic or wood, there are concrete castings weighing 100 kg.

After decades of storage in an interim depot, the collection moved to the new depots at Pariser Platz 4, Berlin, in 2018. Surface dirt and mechanical damage in particular impaired the appearance and endangered the substance of about half of the collection (Fig. 1).

The presentation describes the implementation of the restoration project as a team effort of different restoration departments in close cooperation with the collection, while also taking a closer look at the working conditions of the freelancers on site. The restoration measures, the implementation of the storage, as well as visions of a possible exhibition are presented.

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Fig. 1 Modellnummer 016, Rosenthal, Sofa, construction of the protective package. (© Nordahl 2022)



Fig. 2 Modellnummer 242, Stephan Heise, Berlin – Lichtenrade, Heim zur abgeschlossenen Unterbringung von Jugendlichen, Wettbewerb, 198, during conservation (© Nordahl 2022)

SANDRA MÖLLER¹

Armenian Manuscripts in Antelias

A Conservation project at the Cilicia Museum



Wednesday, October 18

15:00–15:10

This conservation project was realized in 2019 with a focus on the improvement of the exhibition and storage conditions of the Armenian manuscript collection at the Cilicia Museum Antelias/Beirut, Lebanon. The 228 manuscripts from 10th–19th centuries, some single book fragments and scrolls represent the diaspora testimony of the Armenian Catholicosate of Sis. The majority of the manuscripts shows severe damages connected with their historic use and their rescue during the Armenian Genocide, shaping their historic value and allowing rare insights into Armenian bookbinding techniques.

However, about 40 of the manuscripts are significantly deformed, resulting from display in a permanent exhibition since 1998, lacking adequate book support and with opening angles up to 180°. Unsuitable exhibition conditions in the museum environment caused concerns about acceleration of the degradation processes.

To mitigate those factors that pose a future preservation risk to the collection, a workshop was set up for six weeks



Fig. 1 Modified book support with openings in the plinths and moveable contact areas to insert silica gel sachets. (© S. Möller)

in the dining hall of the Armenian priest scholars of the Holy See of Cilicia. A German-Armenian team focused on preventive conservation interventions, in particular on-site production of book supports that can accommodate silica gel for RH stabilization within the display cases. The existing plywood showcases, covered with felt fabrics, were modified in an attempt to continue their use. To raise awareness for the requirements of cultural heritage preservation the staff was introduced into appropriate handling, book exhibition requirements and basic understanding of damages.

This paper describes the results and challenges of implementing a conservation concept within limited time, untrained staff and minimal equipment in a troubled Middle East region.

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Fig. 2 Removal of the red felt as a first step to cover the wooden showcases with barrier materials and new archival textile. (© S. Möller)

SIMONE FERRARO¹, MARIA CHIARA PALANDRI¹

Apotheosis of Psyche

The Re-Treatment of a Fragile XVIII Century Large Format Cartoon Restored in the Early 1980s

Wednesday, October 18

16:00–16:30

The conservation of works on paper of large formats often brings up many unexpected challenges. This is especially true when the artwork has been previously treated quite extensively in the recent past, at the beginning of a new era of synthetic adhesives. The present study describes the issues that we had to face during the complex treatment of a late eighteenth century cartoon, previously conserved in 1983. In addition to the object's size, a circle of almost 2.5 m in diameter, the treatment had to be conducted on site, in a hall open to the public and used for lectures, subject to rapid fluctuations in thermo-hygrometric values as well as requiring the use of non-toxic materials.

Thus, we were faced with the removal of several different types of pressure sensitive tapes, various modern synthetic adhesives and the residues of the starch and protein-based adhesives that had been used in previous centuries. A

satisfactory result was achieved using various enzymatic solutions, after multiple trials of both aqueous and solvent based cleaning. Subsequently, a new lining system had to be devised to deal with both the extreme fragility of the object and its size, letting it be displayed once again in the future.

This treatment has allowed us to face on a large scale what will become increasingly common in the future. We will be dealing with more complex cases due to the degradation of the now not-so-new synthetic adhesives, finally being able to observe their natural ageing in comparison with accelerated ageing tests.

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BERT JACEK¹, ANNE SICKEN², ANDREA PATAKI-HUNDT³

The “Washing with Water” of Paper with Butanols

The Cleaning of Paper from Water-Soluble Substances with Water-Saturated Butanols

Wednesday, October 18

16:30–17:00

Many old papers may contain undesirable substances. These can be metabolic products of microorganisms, carried/washed-in contaminants, degradation products of ingredients of the papers or components of unbalanced iron gall inks. These contaminants can be different salts, organic acids, dyes, adhesives, etc. In most cases, these components are water-soluble, so that they can be dissolved by aqueous treatment. However, aqueous cleaning of the papers is not always possible. Therefore, alternatives to the existing aqueous cleaning techniques were sought.

In this project, the extent to which these papers can be cleaned in water-saturated butanols was investigated. The idea behind this is to transport water—as little as possible—into the papers, but still rinse out the water-soluble substances.

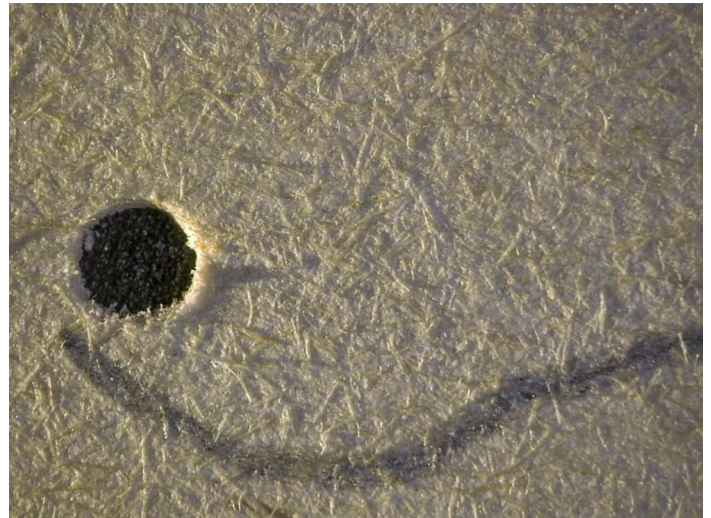
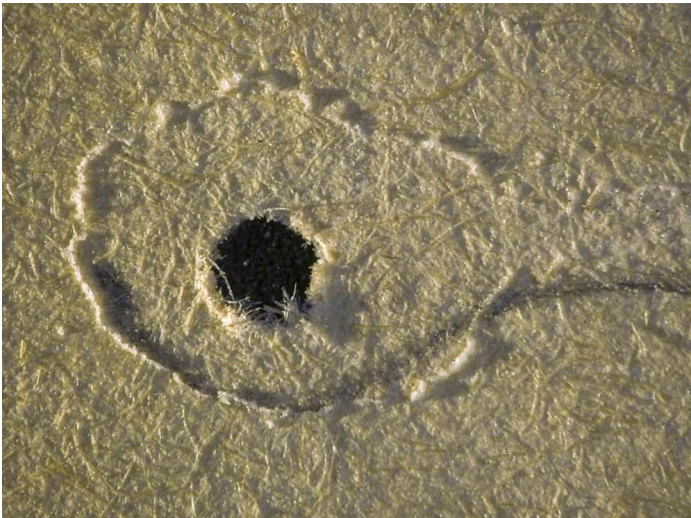
Different papers were soiled with different contaminants and then treated with the water-saturated butanols. Various salts, organic acids, adhesives and dyes were applied as soils. As butanols were tested 1-butanol, 2-butanol and 2-methyl-1-butanol for their suitability. The interesting and preliminary good results were also evaluated on aged iron gall inks and various other paper objects.

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The Color Palette of Roasted Cellulose Powder and Its Many Uses

Wednesday, October 18
17:00–17:30

Colour-adaptable cellulose powder offers various non-aqueous opportunities to fill losses and perform retouches. The colour change caused by roasting the cellulose powders at different temperatures and in varying time intervals is investigated in order to develop a process for the production of this colour-adaptable material and a reproducible colour palette of different shades of brown (Fig 2).

As part of the conservation of a berât of Sultan Mustafa III a manual leafcasting technique with cellulose powder is modified, so it can be used to fill losses in water-sensitive documents. For the application the cellulose powder Arbocel B00 is processed with Tylose MH50 (2%). This fibre suspension is sprayed onto plastic foils with an airbrush. The dried cellulose powder fleeces are glued with Klucel G in ethanol. Before gluing, the losses are stabilised with a remoistenable tissue. In addition, a fibre suspension made of cellulose powder and Klucel G in ethanol is used for direct leafcasting with a brush. In this way, fragile areas can be stabilised and smooth colour transitions can be achieved (Fig 1).

A visual stain reduction is carried out on a modern painting by Mimmo Paladino by applying the colour-adapted cellulose powder suspensions. The cellulose powder Arbocel B00 is processed with Klucel G in n-butanol (1%). This fibre suspension is applied directly to the paper substrate using an airbrush.

In a series of tests n-butanol achieved the best optical result. In order to compensate for the associated low adhesion, the retouching is finally coated with MH300 (1%).

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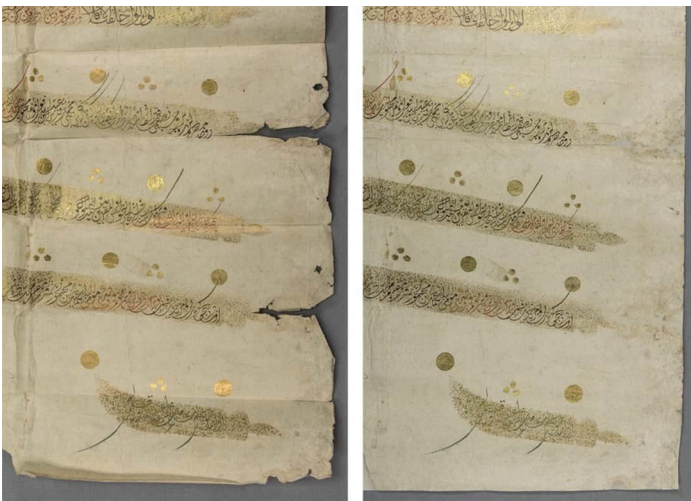


Fig. 1 Detail of the berât before and after the losses were filled with colour-adapted cellulose powder fleeces. (© Samland)

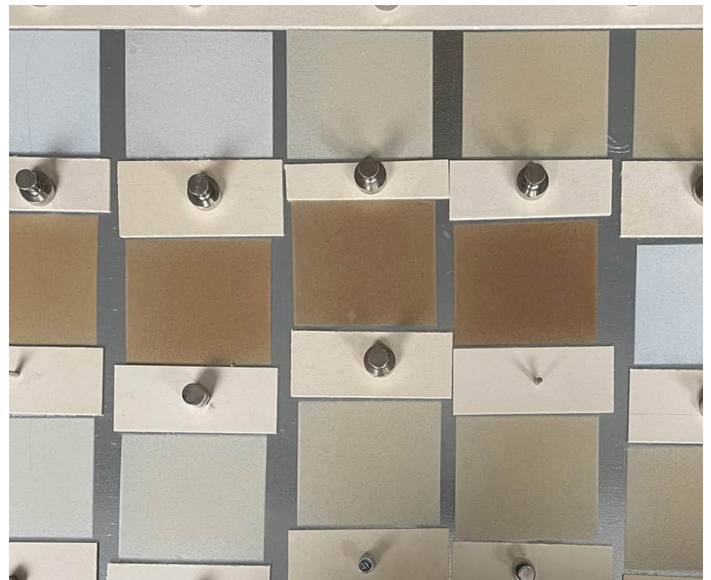


Fig. 2 Colour gradations of the cellulose powder fleeces. (© Samland)

An Investigation into Diatomaceous Earth Stones as a New Tool in Paper Conservation

Wednesday, October 18

17:30–18:00

Diatomaceous earth bath stones are produced commercially for home use. This research was initiated to establish if this commercial product can be used as a sustainable substitute for cotton paper blotters.

Diatomaceous earth is similar to Fullers' earth, which already has its place in the field of conservation. The properties and characteristics of diatomaceous earth stones make them a potential new tool to be used alongside or instead of cotton blotters in paper conservation drying procedures.

The presentation focuses on the origins of diatomaceous earth material, the physical and chemical characteristics of the bath stones and their use in treatment. The National Archives and Records Administration Heritage Science Laboratory in College Park, Maryland, USA conducted the XRF and FTIR analyses of the two different commercially available bath stones and Whatman filter paper samples

dried in direct contact with the stones. A Bruker ARTAX 400 x-ray fluorescent instrument and FTIR using an iS50 instrument with built-in ATR accessory were used.

Whatman filter paper samples dried in direct contact with the diatomaceous stones showed no change from the control when analyzed by FTIR (Fig 1) supporting the idea that the diatomaceous earth bath stones should be a safe alternative for conservation drying procedures.

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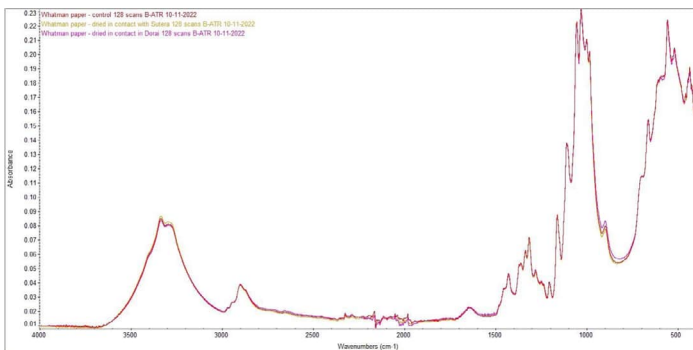


Fig. 1 FTIR spectra of the samples dried between the two stones match that of the control Whatman filter paper. (© Jennifer Herrmann)



Fig. 2 Diatomaceous stone dried etchings (over a sheet of Hollytex). (© E. Paul)

TING-FU FAN (范定甫)¹, YI-CHIUNG LIN(林怡瓊)²

Facing the Challenge

Treatment of the Oversized "Formosa Evergreen Scroll" Painting

Wednesday, October 18

18:00–18:30

The "Formosa Evergreen Scroll" by ten artists led by the well-known artist Chang Dai-Chien (張大千) in 1981, is the largest silk Chinese painting in the collections of the National Museum of History in Taiwan. After more than 40 years of repeated rolling and exhibiting, damaged structural conditions such as creases and cracks have occurred, as well as thousands of instances foxing of various sizes that had grown on the painting.

Treating oversize artwork is always challenging for the conservator. The dimensions of this landscape painting are about 2.4 meters in height, 66 meters in length, with a weight 32 kilograms. It requires 6-10 people for installation and roll-up each time. Its treatment is a situation and experience that we never imagined.

Unlike regular Eastern paintings, this one needs different procedures and strategies.

During 2020-2021, a large working rack was specially designed to assist the conservators with documentation



Fig. 1 Painting documentation and treatment on the working rack.
(© SJAC)

and provide the possibility of safely rolling the painting back and forth while treating the front and back at the same time.

Gellan gum was used to reduce foxing on the painting and backing paper. Afterward, two more Kozo paper backing layers were applied to give better strength for future display and rolling.

Furthermore, an improved and safer rolling method with a newly produced transportation box was included.

We can never predict what new difficulties we will face. Therefore, what we can do is be ready with our minds, skills, and teamwork, then stay open and flexible to confront the next challenge.

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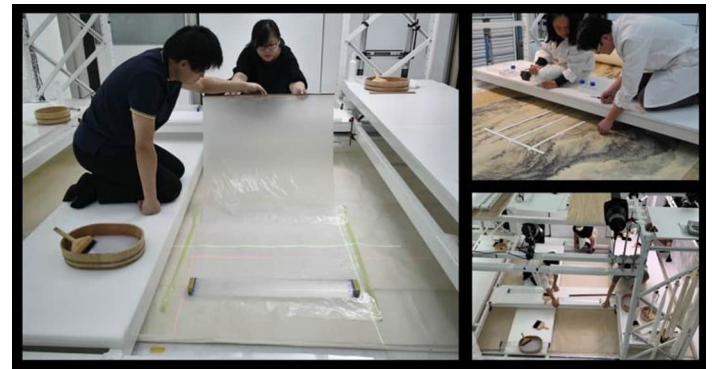


Fig. 2 Reduce foxing with gellan gum and backing process.
(©SJAC)

CHENG CHIN-SSU¹

Three-Dimensional Paper Restoration

The Preservation and Restoration of Bride's Phoenix Coronets



Poster

In this presentation, we share our experience in restoring paper-based, three-dimensional artifacts. The commonly seen gold leaf and chalk lines which were used in carved artifacts were hardly found in paper-based objects; since the artifact is a three-dimensional object, the conditions of having the artifact temporarily fixed on a hat rack to avoid stressing it according to traditional restoring methods need to be considered. Therefore, the control of water, the selection of adhesive, and the tools employed are key factors in this project.

Bride's Phoenix Coronets were accessories worn by brides during marriage in early Taiwanese society. They were an important part of marriage culture. This Bride's Phoenix Coronet collected by the National Museum of Taiwan History was displayed in "Entangled Things, Entangled Connections-A NPM, NTM, and NMTH Joint Exhibition" in 2022. The artifact underwent preservation due to the damage caused by worms and the improper preservation of the artifact.

After a thorough observation and assessment, the artifact was made from paper, outlined with appropriate patterns with chalk, decorated with paintings and gilding, and with persimmon paper on the inside. This might be a functional

consideration of waterproofing during the usage based on our inference. Staining was found throughout the artifact, with numerous instances of peeling and losses to the gold leaf and the paper base; considering the traveling nature of the exhibition, as well as other needs, the cleaning along with the physical protection and strengthening of the artifact were performed. After the spot test, this artifact was cleaned with 50% alcohol. The physical protection and strengthening part of the artifact, on the other hand, were divided into two types: one fixed by gelatin, and the other consisting of the chalk line needing the use of D498 with a heat gun. Clip-on earrings were used as tools for securing the artifact, and the artifact's display rack was made during the process.

This artifact has other issues that are worthy of discussion, such as whether the hanging string of beads needs to be restored or the ornament needs to be filled up. Both are cases in restoration ethics that require discussion.

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Fig. 1 Fixed on hat rack during treatment. (©Cheng Chin-Ssu)



Fig. 2 Bride's Phoenix Coronet after treatment on the exhibition. (©Cheng Chin-Ssu)

Conservation Issues of a Large-Scale Architectural Drawing from the Mid-20th Century



Poster

This paper presents a MA conservation project of a large-scale architectural drawing – a project for the post-war reconstruction of the Branicki Palace in Warsaw, dating from the mid-20th century, from the collection of the Museum of Warsaw. The drawing was allocated not with other technical drawings but in the art department, possibly due to its representative appearance: carefully executed in pencil, ink and watercolour washes. The author of the work, Boris Zinserling, was an architect and painter who graduated from the Academy of Fine Arts in St. Petersburg. After WWII, he worked in Miastoprojekt Stolica state office on the reconstruction of destroyed monuments.

Inadequate storage conditions and specific mounting directly on wooden strainers contributed to the poor condition of the work. Among the main challenges were the development of an accurate method of cleaning the drawing containing sensitive media, manipulating the large-format

paper which suffered from several mechanical damages and treating the heavily cambered pine plywood backing. The treatment decisions were based on extensive queries with the author's family, architects and the Museum of Warsaw and also technical examination including pH measurements, fibre analysis, UV-VIS, XRF, FTIR and Raman spectroscopy analyses. It was decided to dismantle the drawing from the strainers and treat them separately to assess the possibility of reusing the plywood as a strainer with the necessary modifications to provide a safe construction for the drawing. The project demonstrates a proposal for treatment of this type of large, complex object, assuming an ethical approach to respect all of the authentic elements.

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Fig. 1 Borys Zinserling, Project of the reconstruction of Branicki Palace in Warsaw, 1949-1954. Recto – damages of the drawing: large tears, folds, losses, leaks. (© Museum of Warsaw)



Fig. 2 Borys Zinserling, Project of the reconstruction of Branicki Palace in Warsaw, 1949-1954. Verso – wooden strainers with plywood backing. (© Museum of Warsaw)

A Book that Doesn't Look Like a Book

Problems of Conservation-Restoration of Book Art Objects on the Example of Two Objects from the Book Art Museum in Łódź.



Poster

Book art objects are created in many forms and using various types of materials. This paper presents a MA project concerning the conservation of two book-objects from the Book Art Museum in Łódź, Poland: *Two versions of the diary*, in the form of shoes made of papier-mâché, by Magdalena Haras, 2011 and *Notes from a journey*, a triptych installation with elements resembling traditional books by Krzysztof Wosik, 1999. The project combines knowledge from the field of paper and modern art conservation.

These two objects posed a challenge for treatment planning, due to their complex structure containing both natural and synthetic materials: several types of paper, papier-mâché, canvas, plaster, metal, wood, dried plants, cord, print, ink, pigments, and adhesives. The rapid degradation is mainly caused by the use of new, chemically unstable materials and mechanical damage as a result of storage and exhibition conditions in which visitors could

touch the objects. But here comes an exciting and difficult question, how to convey to the viewer the idea carried by an art book if one cannot get fully hard with it?

In addition to technical examinations: UV, IR and microscopic examination, XRF, FTIR, and microchemical analysis, pH measurements, fiber analysis, important decisions were made only with the artists' consent. Interviews with artists as a standard part of conservation documentation of contemporary art enables to preserve the authenticity of their works. The conservator's dialogue with the artists made it possible to gather information and identify their ideas and intentions.

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Fig. 1 Book-object, *Two versions of the diary*, Magdalena Haras, 2011.



Fig. 2 *Notes from a journey*, Krzysztof Wosik, 1999

ELISA DÍAZ-GONZÁLEZ¹

Reinforcement of Paper Supports

Cellulose Fibre Sheets on Leafcasting Machines as a Proposal for Filling Losses in Photographic Paper



Poster

The general objective of this research is the formation of pulp sheets using cellulose powder as a base with fibres of different dimensions that can be used as a support for the filling of losses of photographic papers.

These papers consist of a fibre base and are traditionally coated with a layer of barium sulphate. This white layer receives the emulsion and the image-forming material and sometimes the perception of the image can be modified in relation to its texture.

Japanese paper has been used for the reintegration of the support of these photographs, instead of using the leafcasting machine commonly used in paper conservation laboratories. This device makes it possible to form sheets that will later be used to make pulp infills adapted to the shape of the losses in this type of paper.

The use of these cellulose fibres also makes it possible to control the composition of the pulps to those present in the

photographs, adjusting pH values and adding sizing both in the pulp and on the surface.

We propose, therefore, to evaluate the quality of the cellulose fibres in comparison with the others used in commercial pulps, taking into account structural properties, surface properties and optical properties. But also to evaluate the method of filling of losses in contemporary photography. In this first approximation, tests have been carried out to find the appropriate proportions of fibres of different dimensions in combination with the forming or drying material.

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Fig. 1 Mixture of two fibre sizes, unbeaten, reemay-drying. (© Elisa Díaz)



Fig. 2 Mixture of three fibre sizes, beaten, hollitex-drying. (© Elisa Díaz)

Archival Preservation Toolboxes

Supporting Conservation Routines Among Archival Staff

Poster



The archival preservation toolboxes at the *Bayerisches Hauptstaatsarchiv* are designed to implement a positive preservation routine among archival staff and assist in everyday routines. A box offers the supports, tools and paddings useful for a variety of archival documents. It includes an image-based booklet with short descriptions giving guidance on how to safely handle and work with documents, bound books, charters, large format objects and photographic documents using the contained supports.

Toolbox and booklet do not presuppose in-depth knowledge of preservation or art-handling. Through this low-threshold approach, the toolbox can be used by a variety of people and institutions, ranging from members of staff without knowledge in conservation right up to experienced archivists wishing to refresh their knowledge in certain

areas. The booklet can be downloaded free of charge from the website of Staatliche Archive Bayerns as well as the list of the toolbox's contents and an evaluation of alternatives (German language only).

The project was supported by the Pilot Project Funding of the Coordination Office for the Preservation of Written Cultural Heritage (KEK - *Koordinierungsstelle für die Erhaltung des schriftlichen Kulturguts*) in 2021. With this funding, 50 boxes were put together and distributed among Bavarian state archives.

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Fig. 1 Preservation toolbox. (© BayHStA)

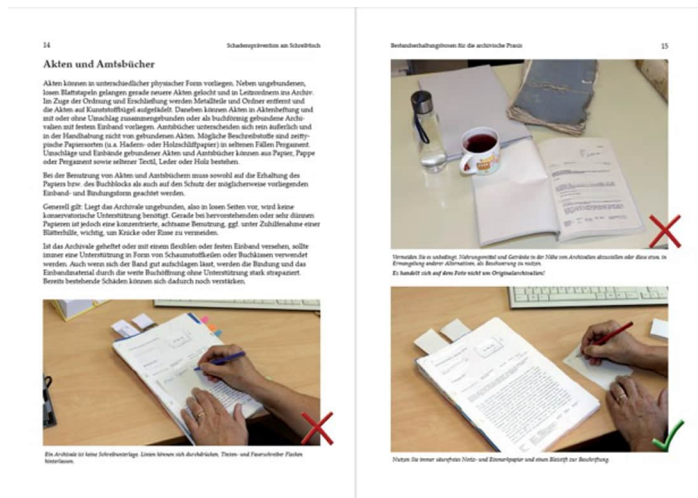


Fig. 2 Screenshot from the booklet. (© BayHStA)

Optical Brighteners

Movement and Degradation in Paper

Poster



This poster investigates the potential discoloration and deterioration of optical brightening agents (OBAs) within paper. Specifically, this poster looks at the introduction of OBAs into non-OBA containing paper and observing how they degrade after being placed within a climate chamber. This experiment was inspired by a previous treatment. While attempting the removal of a gummed tape from an intaglio paper, water was used to remove the water-soluble adhesive tape. It was not realized until after the treatment that the tape's paper carrier contained optical brightening agents and that these brighteners had reacted with the application of water, creating tidelines within the print that were only visible in UV fluorescence.

An experiment was done to investigate the possible consequences of the OBA tideline if it had been left unnoticed. Intaglio paper and OBA-containing office paper samples

were made, treated with water, and then aged within a climate chamber. Results from the experiments show that while there is a possibility of OBAs in paper discoloring over time, these effects are minor compared to the severe darkening of the degradation materials within typical non-OBA-containing tidelines. Additionally, it was found that the plastic clips used in the climate chambers contained OBAs, which transferred to the paper samples. The results serve as a cautionary tale of the ease in which OBAs can transfer from one paper substrate to another, of the discoloration of tidelines, and of the possibility for OBAs to migrate from plastic materials that paper comes in contact with.

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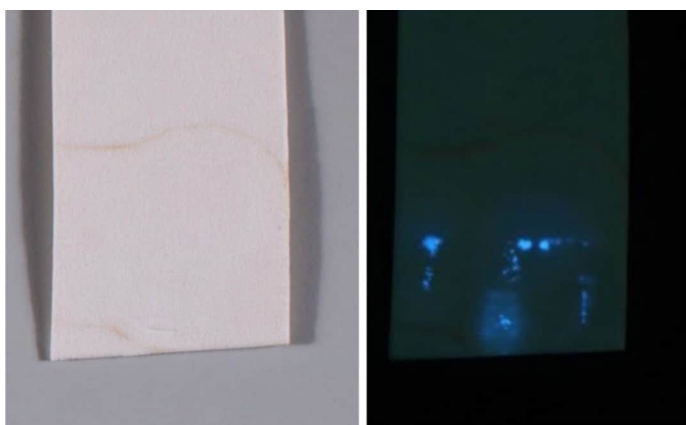


Fig. 1 Blotter sample with OBAs which have transferred during mock treatment, after aging in the climate chamber for 6 days.

Fig. 1a Visible Light, showing darkened tidelines.

Fig. 1b Same sample as 1a, under UV with 2 second exposure. Note the small points of fluorescence seen in the sample, indicating the presence of optical brighteners. Any fluorescence which may have been seen in the unaged sample's tidelines are gone in the aged sample. This implies that very little if any of the OBAs had migrated to the tideline, instead staying concentrated in specific spots on the paper.

(© Fenna Engelke)



Fig. 2 Detail of the same images in Figure 1. The large spot of OBAs is slightly discolored in the visible light image.

Fig. 2a Samples in visible light.

Fig. 2b Samples in visible light with increased contrast, edited to allow the discoloration to be more visible on some computer screens.

Fig. 2c Sample in UV fluorescence.

(© Fenna Engelke)



So You Want To Do Biocodicology?

Poster

The emerging field of biocodicology – the study of the biomolecular information stored within parchment – has significant benefits for the study of manuscripts. By understanding the biological record housed within these documents, we can further our understanding of their production, use, storage conditions and current state of preservation.

This poster aims to give an overview of the biocodicological methods implemented in the ERC funded Beasts to Craft project and a practical outline of how they can be applied. Including estimates of how much these analyses cost and how many samples can be realistically processed in a certain time frame.

A number of case studies will also be highlighted to practically demonstrate how biocodicology can be applied in conservation settings to further the study manuscripts. Examples of what the results looked like and how they could be integrated with the existing manuscript catalogues will be presented.

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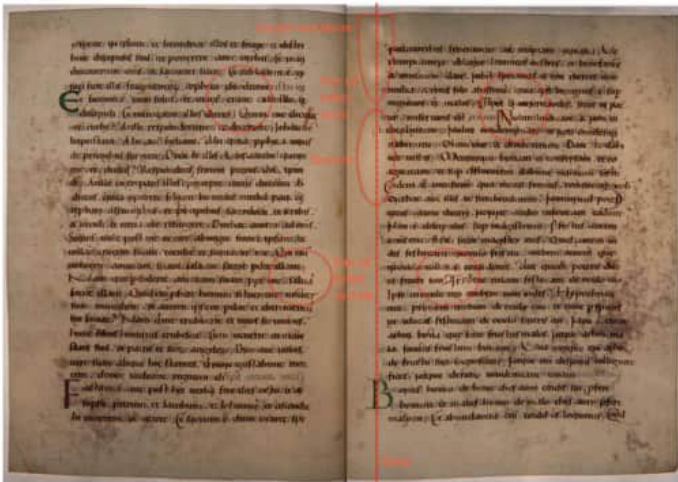


Fig. 1 Anatomy of a parchment leaf.

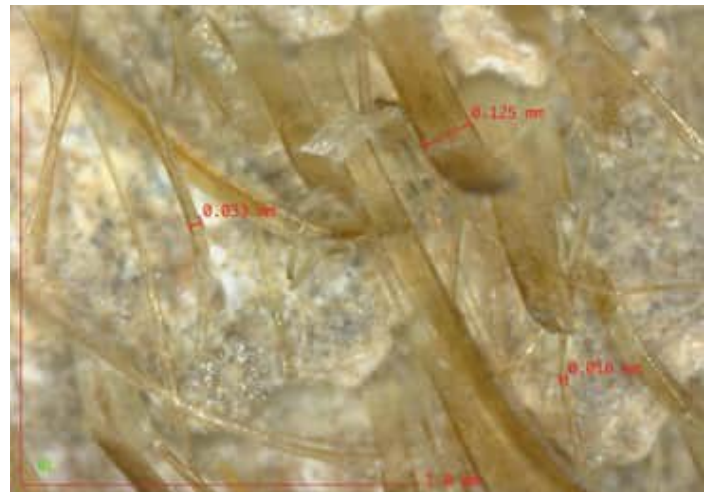


Fig. 2 Detail of a skin for microscopic identification and biocodicological analysis.

Linoleum, Wood, and Ink

Looking into the Graphic Work of Vicki Penfold

Poster

Vicki Penfold (Krakow 1918 - Tenerife 2013) was one of the most relevant artists of the last century in the Canary Islands, standing out for her broad artistic production in which she cultivated painting, sculpture and graphic work. Recently, her personal archive was donated to the *Instituto de Estudios Hispánicos de Canarias* (IEHC) in Puerto de la Cruz. Among the many donated materials, a selection of diverse examples of her graphic work stands out, as well as twenty-two linocut plates that the artist kept.

After an initial classification of all these elements, we verified that prints that correspond to one or several plates are preserved. This allows us to analyze in detail the transfer procedures from plate to print in the graphic work of the artist. The wooden planks on which a thin sheet of

linoleum is placed allow the artist to achieve very fine details, something that Vicki Penfold uses to create texture and rhythm in her prints.

The main objective of this work is to show the working techniques of this artist in relation to the work of the plates and its transfer to paper through the set of reliefs provided for each print. For this we use Reflectance Transformation Imaging.

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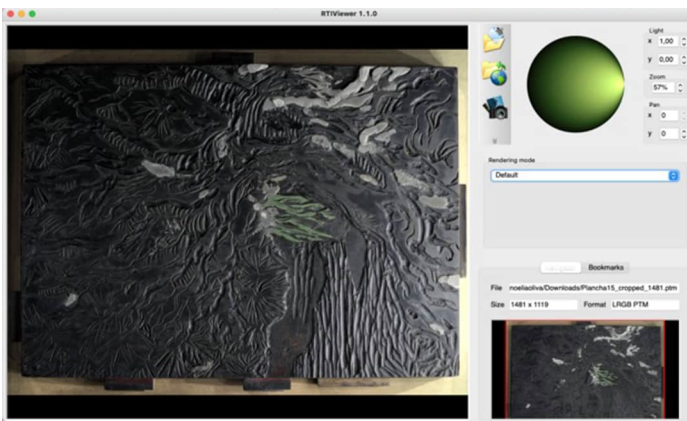


Fig. 1 RTI screenshot of one of the linocut plates. (© Noelia Oliva García)



Fig. 2 Detail of a linocut plate. (© Noelia Oliva García)

On the Consideration of Old Repairs

A Review of Approaches and Ways Forward

Poster

Old repairs have not been a typical focus in book and paper conservation despite their artifactual value, and consideration of keeping or removing them has often been limited to a judgement of aesthetics or stability. This is pertinent, as similar lines of thinking can also be applied to aged conservation treatments, and the narrative value these hold can enrich the interpretation of an object. Reasons for the neglect towards a consideration of old repairs, the various treatment approaches adopted over time, and avenues which will help form arguments for their conservation alongside the object were identified.

Research took place primarily through a critical review of literature, and was part of a master's thesis. Approaches ranged from removing repairs to return to an 'original', values-based checklists, to a materialist biographical approach. These were parallel to shifts in conservation theory.

The neglect towards the topic is both historical and

circumstantial. The bookbinding roots of book conservation, or poor ageing characteristics of repair materials mean justifying the conservation of failing repairs often proves difficult (Fig. 1). The lack of focused discussion has also meant there is no standard terminology being used in publications, making it difficult to trace.

Repairs were found to be as cultural as much as they were material, differing across recent centuries. Old repairs offer glimpses into how objects have been valued contemporarily (i.e. historical interpretations of heritage, and of changing ideas of ethical conservation) (Fig. 2). Any form of re-treatment should thus take these into consideration.

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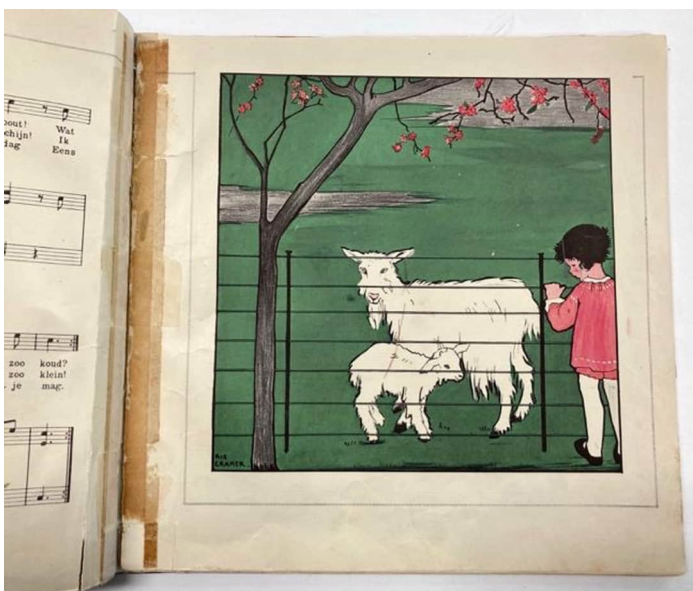


Fig. 1 Children's book with pressure-sensitive tape that has degraded the paper substrate. Tape removal is typically undertaken. (© Kristin Low)



Fig. 2 Neo-Gothic binding with old leather repairs across the head and tail edge, reflecting how it was well-used and cared for. (© Kristin Low)



Heat on Paper

The Effects of Flattening Treatments Using Heat on Transparent Papers

Poster

This research investigates the effects of the use of heated spatulas as a flattening treatment for impregnated transparent papers (Fig. 1). Heated spatulas are used to locally flatten creases in papers, particularly for large-scale conservation projects. This study focused on four early-twentieth-century papers which had been made transparent by impregnation with natural resin, based on FTIR analysis. Heat was applied directly to creases on the sample papers at a range of temperatures and application times to evaluate effectiveness and side effects (Fig. 2). Another set of samples were artificially aged to examine the long-term effects of the treatment. The treated papers were assessed visually with visible light and ultraviolet radiation, and mechanically through the use of a handfold test. The assessment concluded that heat application with a spatula at temperatures of 160°C and below were more effective than mechanical flattening but did cause some shiny streaks

at all application times. High temperatures (200°C) induced distortion and glossy areas upon immediate application on the three weaker papers. Artificial ageing showed no increase in damage on the treated areas compared to the general degradation of the paper. The hand fold test results did not show a statistically significant effect of the treatment on the mechanical properties of the already brittle papers.

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Fig. 1 Test application of a heated spatula at 120°C on a creased part of paper #1. (© M Montcalm)

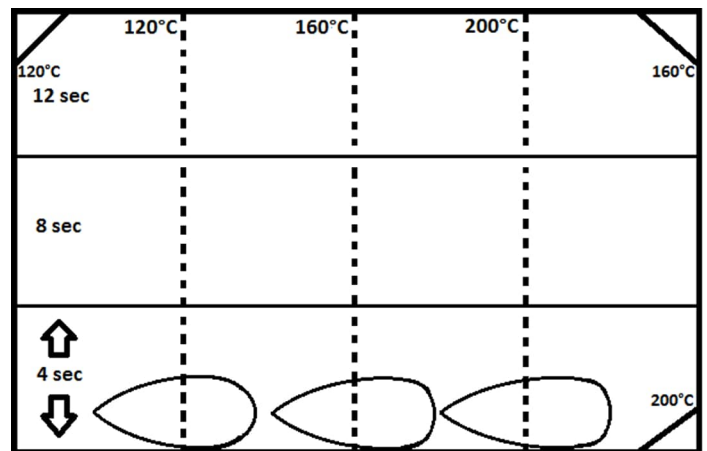


Fig. 2 Treatment design for samples. The three vertical dotted lines represent the creases treated at three different temperatures. The horizontal lines represent the areas which delineate the three different application times (4, 8 and 12 seconds). The ovoid shape at the bottom represents the size and shape of the spatula head which is moved up and down in the timed section during application. The three corners represent the areas where three temperatures are applied statically for 4 seconds and then folded to test mechanical strength. (© M Montcalm)

ELIZA PENROSE¹

Flattening the Friable

Tension Drying Works on Paper with Friable Media Using Magnets

Poster

In preparation for an exhibition of works by New Zealand artist Grant Lingard at Christchurch Art Gallery Te Puna o Waiwhetū in 2022, 3 works on paper were identified as requiring treatment. The self portraits from 1986 and 1987, executed in heavily applied, unfixed charcoal on a thin wove paper had been stored rolled prior to entering the collection. Whilst they had been stored flat (mounted) for many years, the resulting regular undulations throughout the sheet remained very distracting visually.

It was clear that the works would benefit from flattening, and due to the friable nature of the media this became a great opportunity to consider alternative flattening methods.

Whilst the use of magnets for treatment of parchment is well documented, aside from uses as a display solution it is difficult to find instances of their use with works on paper. I decided to explore the options. After some testing and deliberation, neodymium magnetic strips were used

in combination with a re-purposed whiteboard - after humidification of the sheet. Initial testing highlighted some of the issues (ensuring an even tension, short working time), limitations (sheet thickness, sheet size) as well as benefits (protection of the media, good flattening ability). Overall, whilst not eliminated, the method reduced the undulations significantly and I would certainly like to explore the method further.

This experimentation is at the early stages and I hope to explore it more in the coming months and be able to supply further examples.

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Fig. 1 Grant Lingard, Self Portrait 1986 – before treatment in raking light. (© Eliza Penrose)



Fig. 2 Grant Lingard, Self Portrait 1986 – after treatment in raking light. (© Eliza Penrose)

JULIANA POLTE¹, DR. MICHAEL VOGEL²

New Enzymatically-Based Decontamination of Microbially-Damaged Paperwork

Results of a DBU-Project at the SLUB Dresden

Poster

Climate change and its causes are more and more one of the main topics in conservation and restoration. In 2021, a DBU-Project started which focuses on damages caused by mould and the possibility of decontamination with enzymes (Fig. 1). The cleaning treatments in conservation until now have been limited and often bring only a surface effect, because spores and hyphens are still fixed between the fibre mat (Fig. 2). The new enzymatically based treatment evaluates a deep cleaning-system within the fiber structure to prevent cultural heritage against new germination of mould. The tested cleaning methods were a washing treatment and different gel techniques infused with enzymes. The methods were evaluated regarding the cleaning efficiency and object safety. An effective cleaning can therefore preserve our written culture heritage and minimize health risks.

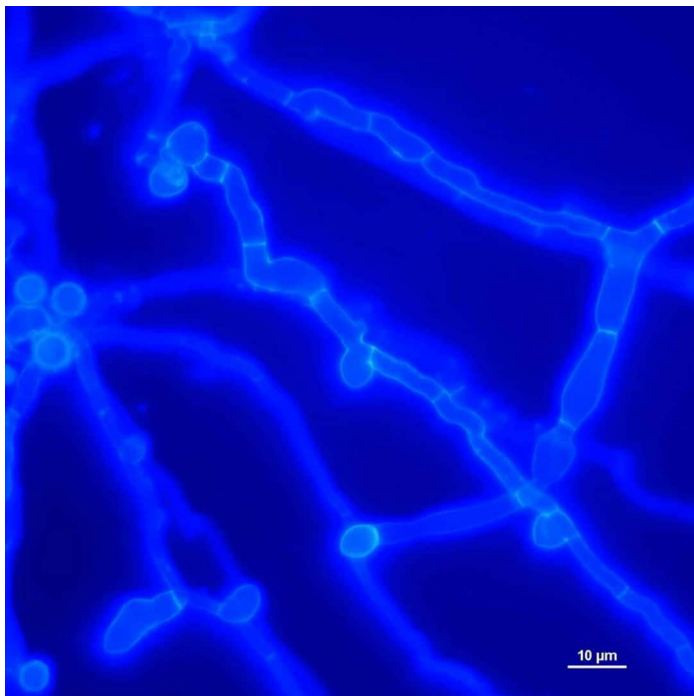


Fig. 1 Scopulariopsis brevicaulis IHD (© K. Plaschkies)

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Fig. 2 Mould between fibres. (© SLUB Dresden)

MACIEJ STASIEWICZ¹

Conservation and Restoration of the Scrapbook Documenting the Artistic Activities of Marek Szwarc



Poster

This paper presents an MA project concerning the conservation of the scrapbook documenting the artistic activities of Marek Szwarc, an artist of Jewish origin, active in Poland and abroad during the WWI and WWII. This album, dating to the mid-20th century, was created by the artist himself and his wife.

It is an interesting example of a complex object, containing various types of materials adhered directly to the pages of the album: newspaper cuttings, letters, documents, invitations to exhibitions, exhibition catalogues in various languages and photographs. Many of these items were severely degraded and required full treatment, i.e. separating them from the album pages. Concomitantly, conservation was aimed at preserving the authenticity of the original matter. After the artist's death, the album was re-bound, which posed a further challenge for planning conservation treatment, as the new binding was aesthetically distant from the original character of the object.



Fig. 1 The album documenting the artistic activities of Marek Szwarc, $\frac{3}{4}$ view, VIS

Treatment planning included queries, consultations with the owner and a historian specialized in Jewish art. Final decisions were based on technical examinations, including microscopic examination, numerous pH measurements, fibre analysis, UV-VIS examination of each page of the album, XRF and FTIR analysis, also microfading tests. It was decided to carry out a full conservation, including the dismantling of structural elements and selected items attached to the album pages. The secondary binding was permanently removed from the object. The result of the project demonstrates an ethical approach to the conservation of this type of object, respecting all the original elements, their complexity and authenticity.

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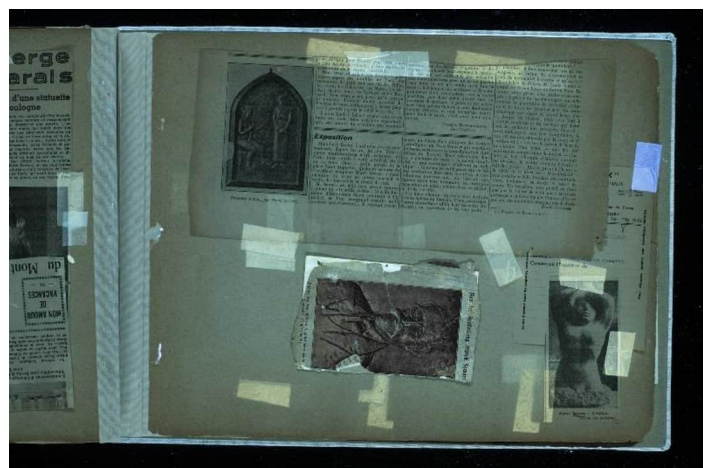


Fig. 2 The album documenting the artistic activities of Marek Szwarc, a sample album page, UV light

Problems Concerning the Conservation and Restoration of a Model of the 1942 Vault Decoration for the Miraculous Chapel of Our Lady of Czestochowa

Conservation and Restoration of a Multi-Layer Object



Poster

The subject of this study is an MA project concerning the conservation of a model of the 1942 vault decoration for the Miraculous Chapel of Our Lady of Czestochowa by Józef Oźmin, a Polish artist who worked with his wife on the restoration of the chapel during World War II. The design refers to the oldest surviving part of Jasna Góra - the presbytery. The model is composed of many elements placed on a large piece of plywood (107.6 x 99.8 cm). Its construction consists of plywood, gypsum ribs, cardboard rosettes and paper strings, which reproduce architectural details and watercolours depicting religious scenes.

Long-term destructive factors and the complex technological structure caused extensive damage, altered the appearance of the object and made it impossible to display the maquette. The fundamental problems for the treatment were the severe deformations of the plywood and the attached elements.

As a result of numerous investigations (pH measurement, fibre analysis, microscopic, UV-VIS and X-ray, FTIR, and Raman examinations), the decision was made to completely dismantle the object, allowing the individual elements to be separated from the wooden substrate. These elements, after conservation and restoration, were placed on a new substrate, and the design of which was the result of the trials and tests carried out. The final stage of the work was the design and construction of a special box for storing and displaying the object.

The project was a challenge in the field of professional ethics. Decisions were made in relation to the responsibility of preserving specific elements of the maquette.

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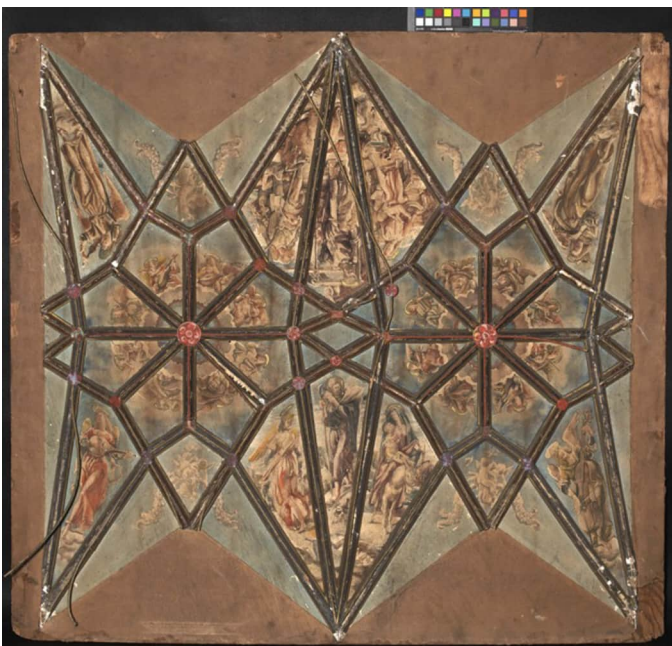


Fig. 1 Model of the vault decoration for the Miraculous Chapel of Our Lady of Czestochowa, 1942r., Józef Oźmin, before treatment, VIS



Fig. 2 Extensive damage in the plywood substrate that supports the vault structure, the papers used, the layers of paint and other materials, such as gypsum, used to make particular elements of the maquette.

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