The ConNext Conference is organised by

University of Antwerp
Faculty of Design Sciences

In collaboration with

HAWK
HAWK Hochschule für Angewandte Wissenschaft und Kunst

Technology Arts Sciences
TH Köln

FH: P
Fachhochschule Potsdam University of Applied Sciences

UNIVERSITY OF LINCOLN

ipt
Instituto Politécnico de Tomar

WEST DEAN COLLEGE
ARTS & CONSERVATION

INP
Institut national du patrimoine

UNIVERSITY OF DELAWARE
WINTERTHUR
Introduction

For the fourth time we are delighted to announce the Conservation for the Next Generation Student Conference, or ConNext 2024. ConNext provides an international platform for students and early career professionals within the broader field of furniture, wooden objects, and polychromy conservation to share their innovative ideas, treatments, and findings in several short evening sessions. Each session is preceded by a renowned keynote speaker from the field.

With ConNext we have three main goals: (1) to share the research and work that's being done by the students from our institutes, (2) to improve contacts between our different institutes and (3), to lower the threshold for our students to present for a large professional audience at international conferences like ICOM-CC and Stichting Ebenist.

As we enter our fourth edition and look back at what we've accomplished, we can pride ourselves in saying we've succeeded in all three, with a growing partner-network of now 12 international institutes. This year, the Winterthur/University of Delaware Art Conservation Program joins us in our efforts, represented by Kathy Z. Gillis and several Winterthur students presenting their findings at ConNext 2024.

Since we started our online student conference, several ConNext alumni have had taken the next step in their career and presented for large international audiences.

We extend our deepest appreciation to all keynote speakers for sharing their first-hand knowledge and experiences with the ConNext community: Miriam Schefzyk, associate curator of decorative arts (J. Paul Getty Museum), Dana Melchar furniture conservator (Victoria and Albert Museum), Bill Wei, senior conservation scientist (Wilbar Holding B. V.), Heather Porter, Upholstery conservation (self-employed), and Anke Scharrahs, Diplom-Restauratorin (self-employed).

But most importantly we thank our ConNext speakers: Diana, Gianina, Isabel, Mario, Juliana, Jens, Nathaly, Karay, Nicolas, Abi, Jakob, Caroline, Kirby, Paula, Sarah, Juliana, Yvan, Tjabbe, Caro, Katherine, and Anna-Lena. A special mention goes out to Yvan Darcis who has assisted us in the preparations of ConNext 2024.

We hope you join us for these passionate and inspirational sessions. See you all at ConNext 2024!

The ConNext Team

<p>| Sophie Glerum (University of Amsterdam) | Friederike Waentig &amp; Andreas Krupa (Cologne Institute of Conservation Sciences) |
| Vincent Cattersel (University of Antwerp) | Ana Bidarra (Polytechnic Institute of Tomar) |
| Angelika Rauch (University of Applied Sciences Potsdam) | Amélie Méthivier and Pauline Chassaing (Institut National du Patrimoine) |
| Henning Schulze (University of Lincoln) | Kathy Z. Gillis (Winterthur/University of Delaware) |
| Julia Schultz (University of Applied Sciences and Arts Hildesheim) | Yvan Darcis (Master student, University of Antwerp) |
| Shayne Rivers (West Dean College) | |</p>
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- ♥ -
Session 1
MIXED MATERIALS

16 APRIL 2024

HOSTED BY
FRIEDERIKE WAENTIG
ANGELIKA RAUCH
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| 1pm - 1:20pm EDT 6pm - 6:30pm GMT 19:00 - 19:20 CEST | **KEYNOTE BY MIRIAM SCHEFZYK**  
ASSOCIATE CURATOR OF DECORATIVE ARTS, GETTY MUSEUM | Diana Marques (IPT) | A pedal car from the 20th made of wood, plywood, and metal: conservation and restoration treatment. |                                    |
| 1:20pm - 1:35pm EDT 6:20pm - 6:35pm GMT 19:20 - 19:35 CEST | Gianina Wolf (FHP)  
Model of a meeting house ("Lum") from Simbang (Papua New Guinea) - Inventory, technological examination and considerations for storage. |                                |                                                                      |                                    |
| 1:35pm - 1:50pm EDT 6:35pm - 6:50pm GMT 19:35 - 19:50 CEST | Q&A                                                                                |                                |                                                                      |                                    |
| 1:50pm - 2pm EDT 6:50pm - 7pm GMT 19:50 - 20:00 CEST | **BREAK**                                                                                    |                                |                                                                      |                                    |
| 2pm - 2:10pm EDT 7pm - 7:10pm GMT 20:00 - 20:10 CEST | Isabel Ostermann von Roth (HAWK) [POSTER]  
Examination, research and cleaning strategies of a half-ship model of a "14-Gun Brig". |                                |                                                                      |                                    |
| 2:10pm - 2:15pm EDT 7:10pm - 7:15pm GMT 20:10 - 20:15 CEST | Mario Sebastian Wolter (TH Köln – CICS)]  
Fine blasting abrasives for cleaning the corroded iron fittings of a silted, flood-damaged trunk. |                                |                                                                      |                                    |
| 2:15pm - 2:30pm EDT 7:15pm - 7:30pm GMT 20:15 - 20:30 CEST | Juliana dos Santos (IPT)  
Conservation and restoration of wooden cabinets and wooden typefaces from the Typographic Workshop of the Polytechnic Institute of Tomar. |                                |                                                                      |                                    |
| 2:30pm - 2:45pm EDT 7:30pm - 7:45pm GMT 20:30 - 20:45 CEST | Q&A AND CLOSING REMARKS                                                                 |                                |                                                                      |                                    |
A pedal car from the 20th century made of wood, plywood and metal: Conservation and restoration treatment.

**KEYWORDS:** pedal car; toy; wooden artisanal production; wood; plywood; metals.

For a long time, pedal cars have been a fascination for children, as they are used in a playful perspective, allowing them to mimic adults by driving them during their playtime. More recently, they have been valued as a product of material culture, meaning heritage or cultural assets with value, thus, to be preserved, conserved or restored.

In the case of the object under intervention, it was produced in the last century, precisely in the year 1938, by the current owner’s father and grandfather. Being a handmade object crafted by these two family members, it presents a wide variety of materials and techniques available at the time, and sometimes a peculiar construction method, although overall, an excellent result was achieved. According to the owner, this will be an object that will be put on display and, for now, they do not intend for the object to be used in the future. However, the ongoing intervention is comprehensive and aims for everything to be functional and operable.

The study and treatment of conservation and restoration of this object have posed a significant challenge, not only due to the diversity of materials requiring very different approaches but also because of its conservation status. After a thorough and detailed analysis, it was proposed to carry out a treatment involving stabilization, formal (material and technical), and compositional (decorative and aesthetic) restitution, in accordance with the objectives presented by the owner.

The intervention proposal was prepared after a detailed study and observation of the object, with the development of examination and analysis methods to support the study such as X-ray fluorescence (FRX), Fourier-transform infrared spectroscopy (FTIR), Micro-photo, and Optical microscopy, and considering the state of conservation, ethical and deontological principles, technological resources and objectives presented by the owner. The agreed proposal involves complete disassembly, treatment of the structure, paying attention to all the materials that are part of the object (wood, wood derivatives, metals, glass, porcelain, paper, fabric and rubber) and finally the treatment of the surface strata.

The object is currently in the intervention phase, with some procedures already completed, such as complete disassembly, full treatment of metals, seat treatment, and filling of gaps.

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Top: A car in the storage location. © Clarisse Cadete
Bottom: Car undergoing disassembly for structural treatment. © Diana Marques
Model of a Meeting House ("Lum") from Simbang (Papua New Guinea):
Inventory, Technological Examination, and Considerations for Storage.

KEYWORDS: meeting house model, ethnological object, Papua New Guinea, 20th century, plant materials, storage concepts

The following study focuses on a model of Lum from Simbang (Papua, New Guinea) in the Ethnologisches Museum Berlin. The work addresses the documentation and technical examination of the severely damaged model from 1901.

A Lum is a meeting house used by the Jabim, a group that lived in a wider area of the same name in Papua New Guinea. Literature on the construction of model houses from Papua New Guinea, or the wider geographical area in general, is limited. There are, however, a number of historical sources that have descriptions of the construction of houses and the materials that were in use in the region. As a result, this work is carried out in a relatively unknown field. To introduce the topic, the object is placed in a geographical, historical, and ethnological context to provide background information. Comparable objects in other institutions and in the Ethnologisches Museum were primarily researched in terms of their materials and construction. As part of the technological study, the materials used on the object were identified or narrowed down. The materials underwent both microscopic and macroscopic examination and were compared with reference materials where possible. In addition to written and visual documentation, a digital 3D model was created using a CAD programme to reconstruct the object's assembly. This allowed the construction of the object to be worked out and visualised. The digital model also helped to determine the original position of individual components of the object.

The object requires conservation and restoration to restore it to a state of stability. In addition, both the materials and the construction are extremely fragile and weak. Therefore, different storage concepts were developed for the various components of the object, taking into account the condition of the model. This plan is necessary to store the object until it undergoes conservation and restoration.
Top: Side view of object, previous state.
Bottom: Back side of object, previous state.
Both pictures © Ethnologisches Museum der Staatlichen Museen zu Berlin – Preußischer Kulturbesitz, Gianina Wolf.
Examination, Research, and Cleaning Strategies of a Half-Ship Model of a "14-Gun Brig".

KEYWORDS: conservation; ship models; polychromy; cross-sections; cleaning treatment

The subject of this paper is a half-ship model of a "14-Gun Brig" from the collection of the Rijksmuseum, Amsterdam. A half-ship model is a scale representation of the port or starboard side of a ship’s hull, mounted on a backboard (Fig.1).

The wooden, polychrome-painted model dates back to the period between 1780 and 1820.

A series of only partially documented previous revisions and restoration measures were identified on the object under visible light and UV-Rays (Fig. 2). In some areas, different paint layers were visible (Fig.3). A label with the name of the ship is suspected to be present beneath the black paint, indicated by structural change in the paint layer in an oval shape (Fig.4). Two questions arose: what is the sequence and origin of the paint layers present? And is there a label with information on the model’s provenance?

X-Radiography IR-light and UV-light showed a distinct oval form where the label may be present, but no text was distinguished. The presence of an original emblem under the black paint could not yet be confirmed. Exposure of the paint layer by mechanical removal of the black paint is an option but could not be performed due to time constraints. A number of cross sections, taken from the paint layers, were studied under the microscope. This revealed an interesting stratigraphy.

Another topic discussed in this paper is the cleaning strategy for the model. The paint on the ship is stable and could be cleaned with damp cotton swaps. On the black paint of the backboard however, the pigment particles dissolved during the tests with various aqueous cleaning methods, indicating a low adhesive strength of the binder. Therefore, it was decided to only dry clean this area.

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**Top:** An overall view of the current condition from the front side of the half-ship model under visible light.

**Middle:** An overall view of the current condition from the front side of the half-ship model under UV rays. Some previous treatments are visible here.

**Bottom left:** A detailed shot of the ship’s rib. Here, a breakout point is visible, revealing multiple layers of paint.

**Bottom right:** A detailed shot of the backboard with the oval structural change in the paint layer.

All images © RIJKSMUSEUM Amsterdam, Isabel Ostermann von Roth.
Fine blasting abrasives for cleaning the corroded iron fittings of a silted, flood-damaged trunk.

**KEYWORDS:** mechanical cleaning; fine blasting abrasives; blasting agents; corrosion removal; dirt removal

Past year on ConNext 2023 a method for the consolidation and mechanical cleaning of heavily sludged paper fragments from a flood-damaged trunk was presented. However, this method was not suitable for removing the remaining contaminants on the object. The following second stage involved cleaning with fine blasting abrasives.

Fine blasting cleaning offers precise removal of dirt and contaminants from surfaces, ensuring thorough removal with less damage than most other mechanical cleaning methods to the underlying material. The process is effective in treating the corroded and soiled metal surfaces, providing a controlled and targeted approach that minimizes abrasion on delicate materials. With this method, not only mechanical stress to the surfaces can be avoided but also the usage of water and other liquid chemical cleaning agents, which are not suitable due to the sensitive materials of the object like corroded metal, shrunk leather, and damaged paper.

The presentation given during ConNext 2024 primarily focused on the cleaning of the corroded fittings of the trunk, with a preview of the start of cleaning the leather surface. There is very little solid literature on the general application of fine abrasive cleaning in restoration, which is probably due on one hand to the fact that this is still a relatively unknown procedure, and on the other hand to its complexity, which complicates a systematic scientific evaluation.

Aiming for preservation of the passivated layer on the iron fittings, an exemplary test series on the cleaning of corroded metal surfaces was carried out. Another requirement was the preservation of the porous paint layer on the fittings, which could not be completely done as the active corrosion was further spread beneath the paint surface than was initially apparent. However, the elimination of the rust hazard had to be given greater priority. The preferred method involved fine glass beads of a size ranging from 10-50 µm, which were blasted onto the surface at a maximal pressure of 2,3 bar at a shallow angle in a distance of less than 1 cm and a nozzle of 0,8 mm.

In some areas, parts of an original tin coating were uncovered. It was intended that this, along with remnants of the paintwork, should remain visible as evidence of the trunk's history. In consideration of that, the final application of a black-tinted, transparent coating of a protective microcrystalline wax provides a more homogeneous overall appearance of the fittings.

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**Top:** Condition of the flood-damaged trunk from the City Museum Bad Neuenahr-Ahrweiler before the fine blasting treatment

**Bottom:** Trunk housed in a specially designed fine blasting cabinet.

All images © TH Köln – CICS, Mario Wolter.
Conservation and Restoration of wooden cabinets and wooden typefaces from the Typographic Workshop of the Polytechnic Institute of Tomar.

KEYWORDS: Polytechnic Institute of Tomar; Wooden typographic cabinets; Wooden typefaces; Typographic instruments and tools; Conservation and Restoration.

The Typographic Workshop of the Polytechnic Institute of Tomar (TW-IPT) is one of the few and the oldest typography workshops in the Portuguese academic context, still active and with pedagogical functions. It also has patrimonial and museological functions, namely, in safeguarding the historical and technological of the graphic arts, involving the typographer’s job and the equipment used in text composition and other graphic materials. The TW-IPT collection has added relevance proceeding from its origin and history in the Imprensa Nacional – Casa da Moeda (INCM), the Portuguese National Press.

The research project, Typography.IPT – Typographic Workshop of The Polytechnic of Tomar: An industrial heritage to be safeguarded and valued, was developed between 2021 and 2023. The Conservation and Restoration Laboratory of IPT participated in the project by developing interventions on the wooden typographic cabinets, wooden typefaces and typographic instruments and tools.

In general, the objects were in good condition. Damage originated from continuous use, misuse, and poor preservation conditions. In the wooden cabinets, there were mainly paint residues, stains from cleaning products, metal corrosion stains, gaps, fissures, incisions, deformations, and fillings from old interventions. The wooden typefaces were affected by dirt and paint residues.

The intervention sought a better reading of the objects without erasing all traces of use over time, through cleaning, stabilization, and protection. A room was adapted for its exhibition and use in academic training and cultural activities, with a suitable environment for its use and preservation.
**Left:** Cabinet 44 before intervention.
**Right:** Cabinet 44 after intervention.

All images © Fernando Antunes, IPT.
Session 2

CLEANING

23 APRIL 2024

HOSTED BY
HENNING SCHULZE
SHAYNE RIVERS
# Programme

## Session 2: Cleaning

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CEST: 19:00 – 19:20 | **KEYNOTE BY DANA MELCHAR**  
**FURNITURE CONSERVATOR, VICTORIA & ALBERT MUSEUM** | -  
| EDT: 1:20 pm – 1:35 pm  
GM: 6:20 pm – 6:35 pm  
CEST: 19:20 – 19:35 | **Jens Steffen Patt (HAWK)**  
Solvent-Loaded HWR Nanorestore Gel®: Possibilities and Limitations for Varnish Removal. | -  
| EDT: 1:35 pm – 1:50 pm  
GM: 6:35 pm – 6:50 pm  
CEST: 19:35 – 19:50 | **Nathaly Witt (HAWK)**  
The treatment of soot-damaged surfaces with gellan gum and aqueous solutions. | -  
| EDT: 1:50 pm – 2:05 pm  
GM: 6:50 pm – 7:05 pm  
CEST: 19:50 – 20:05 | **Q&A** | -  
| EDT: 2:05 pm – 2:15 pm  
GM: 7:05 pm – 7:15 pm  
CEST: 20:05 – 20:15 | **BREAK** | -  
| EDT: 2:15 pm – 2:30 pm  
GM: 7:15 pm – 7:30 pm  
CEST: 20:15 – 20:30 | **Karay Klenner (HAWK)**  
The use of agar gel on unvarnished, porous wood for the removal of surface soiling – possibilities and limits. | -  
| EDT: 2:30 pm – 2:45 pm  
GM: 7:30 pm – 7:45 pm  
CEST: 20:30 – 20:45 | **Nicolas Hannay (HAWK)**  
Plasma-based cleaning of historical metal surfaces. | -  
| EDT: 2:45 pm – 3 pm  
GM: 7:45 pm – 8 pm  
CEST: 20:45 – 21:00 | **Q&A AND CLOSING REMARKS** | -  

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Solvent-Loaded HWR Nanorestore Gel®: Possibilities and Limitations for Varnish Removal.

KEYWORDS: Nanorestore; gel; varnish; nanogel; solvent

The presentation discusses varnish reductions using solvent loaded HWR Nanorestore Gel® compresses. The aim of this study is to investigate the behaviour of the compresses in the solvent-loaded state. The results of the work should help in the selection of a compress system for varnish reduction. In order to achieve this goal, a comprehensive literature review was conducted to survey the current research on the subject and to collect relevant findings. Subsequently, various test series of varnish reductions were carried out on a test specimen manufactured for this purpose. The Nanorestore Gel® compresses were compared with Evolon CR thin. In addition, colour measurement, multispectral images of the test specimens and VIS images of the gel compresses were evaluated. Selected solvent compositions were analysed with FTIR-analysis to determine the concentration of the solvent released by the compresses. The tests carried out, come to unambiguous results. These answer the question posed by the work in the context of the limitation by the unaged plate. The findings of this work have potential practical applications for restorers in the selection of compress systems for solvent-based varnish reduction of sensitive image layers.
Top: Solvent loaded Nanorestore Gel® on a test object.
Bottom: Detail of Nanorestore Gel®.
All images © HAWK Hildesheim, Steffen Patt.
The Treatment of Soot-Damaged Surfaces with Gellan Gum and Aqueous Solutions.

KEYWORDS: Gellan gum; soot-damage; gel; aqueous treatment; soot

The treatment of soot-damaged surfaces is a challenging task in the conservation and restoration of artworks due to the properties of soot.

This thesis investigates the effectiveness of the polysaccharide gel 'gellan gum' and its modifications as a cleaning method for such objects. This is done by first examining the history, causes and chemical characteristics of soot damage and analysing the challenges it poses for conservators. Based on this information, multiple samples are coated with a soot layer to closely emulate naturally occurring soot damage.

To emulate real-world scenarios, multiple samples, including unaged easel paintings with white gesso and varnished surfaces, along with an aged wooden panel coated with oil-based lacquer, are subjected to soot deposition. Additionally, the study extends to a case-study approach, examining the treatment's applicability on actual soot-damaged artifacts, thus enriching the practical implications of the research.

Various gellan gum gels, some of which have been modified with complexing agents and surfactants, are then applied to the different surfaces in varying concentrations and exposure times. Subsequently, analytical methods such as spectrophotometry are used to determine the effectiveness of the procedure.

The results indicate that none of the gels tested are universally effective for various types of soot damage, which warrants further research into specific cleaning methods for soot compositions and aging stages of soot layers.
Top: Application of Gellan gum.
Bottom: Front view of one of the non-aged samples after treatment.
All images © Nathaly Witt, HAWK Hildesheim.

KEYWORDS: Agar; gel cleaning; unvarnished surface; porous timber; surface dirt

Agar gel is already used as a cleaning agent in various fields of conservation, for example on stone objects, paintings, and paper. It could also serve as an alternative to established techniques for cleaning wooden objects and furniture. Tests were conducted to assess agar gel as a cleaning agent on unvarnished, porous wood with surface dirt. Different application methods such as pouring, brushing, and pre-made gel sheets, as well as various concentrations and temperatures, were tested. For comparison different dry-cleaning agents were also tested. In addition to macroscopic and microscopic examinations in visible light and UV radiation, the results have been evaluated using color measurements. In addition, the penetration time of a drop of water was measured to demonstrate a possible compression of the surface and to examine the moisture vapor transmission after cleaning.

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Top: Preliminary condition of the test object.
Bottom: Final state of the test object.
All images © HAWK Hildesheim, Karay Klenner.
Plasma-based Cleaning of Historical Metal Surfaces.

**KEYWORDS:** plasma; brass; corrosion removal; cleaning; Boulle marquetry

In this study, the potential of plasma-based methods for removing corrosion products from brass is investigated. Extended focus is put on their potential application in the restoration of historical brass surfaces, such as those found in Boulle-style furniture.

The mechanism of plasma treatment on corrosion products is described, as well as its use in restoration so far. Several conventional methods of metal restoration are also described, along with their advantages and disadvantages.

The experimental part of this study involves the investigation of two plasma-based treatment methods on artificially corroded brass samples. One method is a traditional plasma treatment, while the other examines the removal of a corrosion layer using plasma-activated water. Surface property and material composition analyses are conducted to evaluate the results.

It was found that both treatment methods were able to completely remove the oxide layer present in parts of the brass surface. However, further research is needed before these methods can be used on historical surfaces. The high temperatures generated during plasma treatment, as well as the irregularity and colour changes of the resulting surface, currently prevent their application on Boulle-style furniture. On the other hand, treatment with plasma-activated water proved to be more efficient and produced a homogeneous appearance on the treated surface, although it still caused some colour changes.
**Top:** Disc-jet plasma treatment.
**Bottom:** Brass plate treated with plasma-activated water.

All images © HAWK, Nicolas Hannay.
Session 3
HOLDING IT TOGETHER
30 APRIL 2024
HOSTED BY
KATHY GILLIS
ANA BIDARRA
# Programme

## Session 3: Holding it Together

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<tr>
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GMT: 6 pm – 6:30 pm  
CEST: 19:00 – 19:20 | **KEYNOTE BY BILL WEI**  
| EDT: 1:20 pm – 1:35 pm  
GMT: 6:20 pm – 6:35 pm  
CEST: 19:20 – 19:35 | **Abi Tudor (West Dean)** | The use of a non-reversible urea formaldehyde glue for plywood re-lamination.                 |
| EDT: 1:35 pm – 1:50 pm  
GMT: 6:35 pm – 6:50 pm  
| EDT: 1:50 pm – 2:05 pm  
GMT: 6:50 pm – 7:05 pm  
CEST: 19:50 – 20:05 | **Q&A** |                                                                                 |
| EDT: 2:05 pm – 2:15 pm  
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CEST: 20:05 – 20:15 | **BREAK** |                                                                                 |
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| EDT: 2:30 pm – 2:45 pm  
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CEST: 20:30 – 20:45 | **Kirby Martino (UvA)** |                                                                                 |
| EDT: 2:45 pm – 3 pm  
GMT: 7:45 pm – 8 pm  
CEST: 0:45 – 21:00 | **Q&A AND CLOSING REMARKS** |                                                                                 |

KEYWORDS: Lascaux 498; Lascaux 303; gap fills; non-structural splits

The presented research is a continuation of work by Shayne Rivers, Ambrose Taylor et al and research carried out by Charlotte Morphet and Junsun Hwang.

There are a wide range of materials used to fill non-structural splits, with many lacking the required flexibility, leading to problems like fill embrittlement and wood damage. Two potential solutions are Lascaux 498HV and 303HV. The proposed presentation will cover the research carried out into Lascaux 498HV and Lascaux 303HV, with the use of visual aids such as images and videos. Physical samples can also be shown to demonstrate the flexibility of the material.

The study in 2023 evaluated the mechanical and working properties of these two adhesives. A review of the literature determined the tensile and compressive properties required of a fill and, by a survey of 36 professional conservators, a list of desirable working properties for fill materials was generated. Testing included tensile and compressive test of bulked Lascaux 498HV and 303HV, with results compared against the requirements of a fill. Mechanical testing also explored the impact of colorants on Lascaux 498HV. Working properties were assessed through application, sanding, carving, re-solubility, and retouching analysis and compared with the performance of know material.

Results showed that a mixture of earth pigment and chalk as a bulking agent for Lascaux 498HV produced a flexible fill meeting the fill requirements. The blend yielded a smooth paste that, once dry, could be sanded, carved, painted, and removed using industrial methylated spirits, acetone, or xylene as needed. It is useful and flexible material for wood conservation that, according to the survey, was used by as little as 8% of the respondents for non-structural gap filling. The purpose of this presentation will be to share the research and its findings with a wider audience while treating them aesthetically.
Top: Mixing Chalk Pigment and Lascaux 498HV to create a pigmented bulked fill.
Bottom: Testing the application of colour on bulked Lascaux 498HV alongside known fill materials gesso, West Systems epoxy and bulked B72.
All images: © West Dean College, Abi Tudor.
The use of a non-reversible urea formaldehyde glue for plywood re-lamination.

KEYWORDS: modern material; industrial; glue; ethics; exchange

The study discusses using a non-reversible industrial glue in the conservation and restoration of the Rex Club Chair by the Slovenian designer Niko Kralj from the late 1950s. The chair is a foldable and stackable armchair with a backrest, seat and frame made of beech plywood. The object is of private property and the owner wishes that the chair allows to fold it and to occasionally sit on it safely. The object concerned showed damage due to severe moisture exposure, which led to the detachment of the veneer layers and the decomposition of the original glue. The glue of the plywood is a urea-formaldehyde resin, which was identified by FTIR analysis. As the glue and the woodwork aged and suffered from weathering the plywood cracked, particularly in the perforated areas of the seat and the backrest. Repeated stress over the years led to the detaching of the single veneer layers. The aim of the conservation and restoration concept is to glue the detached veneer to bring back reliable stability. For gluing the BASF urea formaldehyde glue Kaurit with the hardener powder Bonit was chosen. During treatment a volatile binding agent menthol was applied around the gluing areas to prevent the glue from penetrating through the veneers to the surfaces. The glue was applied using a spatula. Special clamps were used to push the veneer back into the appropriate position. In conclusion, the measure of regluing the plywood with a non-reversible adhesive can be considered positive. The bond of the plywood is stabilized, and the Rex Club Chair can be used again.
Top: Front view of Rex Lounge Chair. Image Jakob Becker, TH- Köln-CICS
Bottom: Cracked veneer layer.
Both images: © TH-Köln-CICS, Jakob Becker.
Technical Examination and Treatment of a Set of Early 19th century Chinese Export Lacquered Nesting Tables.

KEYWORDS: lacquer; furniture; Chinese; export; analysis


Analytical techniques utilized were cross-section microscopy with reflected visible and ultraviolet (UV) light, microchemical staining, scanning electron microscopy with energy dispersive spectroscopy (SEM-EDS), pyrolysis gas chromatography-mass spectrometry with thermally assisted hydrolysis and methylation (THM-Py/GCMS), and x-radiography. Results from the analysis supports the hypothesized 19th-century Chinese export lacquerware attribution.

Condition concerns across the set of tables included flaking, cupping, and loss of the decorative layers as well as an overall hazy and darkened appearance. The completed treatment of one of the tables utilized ongoing developments in aqueous cleaning for water sensitive surfaces along with more established conservation techniques for consolidation and loss compensation. The protocol developed will serve as the basis for the treatment of the remaining tables in the set.

The information from this study adds to the extensive survey of lacquered Asian export objects within Winterthur's collection, builds on ongoing connoisseurship and study, and informs the treatment and preservation of these types of objects.
Bottom: Caroline Shaver (author) treating a lacquered nesting table. Image © University of Delaware, Evan Krape.
Broken hearts:
Suitable support for 19th century wax injected anatomical preparations.

KEYWORDS: natural history; skin; medical history; wax; anatomical preparation; Museum Vrolik

This research explores the materiality of two unique objects: 19th century wax injected hearts - a moose and a camel heart- and the advantages of approaching their degradation and damages as a construction issue from the perspective of wood and furniture conservation.

These hearts from the Museum Vrolik collection suffer damage from age, display conditions, and most obviously from detached arteries; research investigated workable methods to reattach broken arteries and provide suitable structural support. Due to the degradation and fragility of the objects, as well as their organic shape, conventional repair techniques were deemed unsuitable, making it necessary to explore new materials and application methods.

To this end, tests were conducted with adhesives and substrates after an extensive literature review, as well as the historical reconstruction of a wax injected heart. The findings propose the most appropriate adhesives for the wax and skin, instruct on application, and advise on future care for the objects.

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Top: Documentation of the hearts.
Bottom: Detail of damage to an artery.
All images © University of Amsterdam, Kirby Martino.
Session 4

WOOD AND TEXTILES

7 MAY 2024

HOSTED BY
ANDREAS KRUPA
MARJOLEIN HOMAN FREE
## Programme
### Session 4: Wood and Textiles

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<th>Time</th>
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<td>1pm – 1:20pm</td>
<td><strong>KEYNOTE BY HEATHER PORTER</strong>&lt;br&gt;Upholstery Conservator, Self-Employed</td>
<td><strong>Paula Steinborn</strong> <em>(TH Köln, CICS)</em>&lt;br&gt;Sitting Together: the conservation-restoration of upholstery ensembles in Germany using the example of an ensemble from the castle Marienburg (Pattensen, Germany).</td>
</tr>
<tr>
<td>1:20pm – 1:35pm</td>
<td><strong>Sarah Beach</strong> <em>(Winterthur/UoD)</em>&lt;br&gt;Paint, Not Patina: The Analysis of Verte Antique on Two New York Couches.</td>
<td><strong>Juliana Gomes Novaes dos Santos</strong> <em>(IPT)</em>&lt;br&gt;The wooden carved Indo-Portuguese bed from the National Palace of Pena: conservation and restoration intervention.</td>
</tr>
<tr>
<td>1:35pm – 1:50pm</td>
<td><strong>Q&amp;A</strong>&lt;br&gt;<strong>BREAK</strong></td>
<td><strong>Yvan Darcis</strong> <em>(UA)</em>&lt;br&gt;Understanding the degradation phenomena of tannin-metal complexes in black-dyed weighted silk.</td>
</tr>
<tr>
<td>1:50pm – 2:05pm</td>
<td><strong>Juliana Gomes Novaes dos Santos</strong> <em>(IPT)</em>&lt;br&gt;The wooden carved Indo-Portuguese bed from the National Palace of Pena: conservation and restoration intervention.</td>
<td><strong>Q&amp;A AND CLOSING REMARKS</strong></td>
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**Programme**

**Session 4: Wood and Textiles**

- **KEYNOTE BY HEATHER PORTER**
  - **Upholstery Conservator, Self-Employed**
  - **Paula Steinborn** *(TH Köln, CICS)*
  - Sitting Together: the conservation-restoration of upholstery ensembles in Germany using the example of an ensemble from the castle Marienburg (Pattensen, Germany).

- **Sarah Beach** *(Winterthur/UoD)*
  - **Paint, Not Patina: The Analysis of Verte Antique on Two New York Couches.**

- **Q&A**
- **BREAK**
- **Juliana Gomes Novaes dos Santos** *(IPT)*
  - The wooden carved Indo-Portuguese bed from the National Palace of Pena: conservation and restoration intervention.

- **Yvan Darcis** *(UA)*
  - Understanding the degradation phenomena of tannin-metal complexes in black-dyed weighted silk.

- **Q&A AND CLOSING REMARKS**
The Conservation-Restoration of Upholstery Ensembles in Germany using the Example of an Ensemble from the Castle Marienburg (Pattensen, Germany).

KEYWORDS: upholstery; ensembles; systematic; work sheets; condition

In this Bachelor thesis the significance of upholstered furniture and their handling in conservation-restoration is discussed, especially regarding ensembles in Germany. A systematic for recording the structure and the condition of ensembles is developed and tested on two upholstered furniture suits from the castle Marienburg (Pattensen, Germany).

This systematic is composed of different work sheets in multiple choice style, some to gather general information about the ensemble, for example the used materials and technics, and some to record the conditions of the individual pieces in different categories, for example textile, metal, and wood. This individually collected information is interpreted through adding up the chosen options in the different condition-categories and thus generating numbers that can be compared.

The goal was to find a time saving way to create an overview of the condition of ensembles composed of many objects, which can be used to evaluate the necessity of further steps in conserving those objects. Those further steps are aimed at being solutions for the entirety of the ensemble rather than for individual objects. The work sheets were developed through literature research, visual comparisons, and personal experiences.
Top: Front view of one object from the ensemble belonging to the rooms of the princesses.
Bottom: Front view of one object from the ensemble belonging to the rooms of the queen.
All images © Stiftung Schloss Marienburg
The term “verte antique” refers to a type of surface decoration popular in American high-style furniture of the early 19th century that sought to imitate the look of patinated bronze. Historical documentation and materials analysis has revealed that verte antique surfaces are complex layered structures that include multiple applications of pigments, clear varnishes, and/or metal powders that vary greatly by craftsperson. Though this type of decoration is found on the work of prolific cabinetmakers such as Duncan Phyfe (1770-1854) and Charles-Honoré Lannuier (1779-1819), verte antique has not been the subject of extensive publication. This presentation will review the existing English scholarship on verte antique. It will then expand this scholarship within the context of recent material analyses carried out by the presenter on the verte antique legs from two New York couches in the collections of the Colonial Williamsburg Foundation and the Winterthur Museum, Garden, and Library.

The first couch (2023-6) was analysed in the summer of 2023 under the supervision of Kirsten Travers-Moffitt, Conservator and Materials Analyst at the Colonial Williamsburg Foundation (Williamsburg, Virginia, USA). Analysis techniques utilized include optical cross-section microscopy, scanning electron microscopy with energy dispersive x-ray spectroscopy (SEM-EDS), polarized light microscopy (PLM), and Fourier transform infrared spectroscopy (FTIR). The analysis of a second couch (2023.0019A-C) will be performed in the Spring 2024 academic semester. It will be completed as a part of the graduate coursework at Winterthur. The analysis will be carried out in Winterthur’s Scientific Research and Analysis Laboratory (SRAL) under the supervision of Conservation Scientist and Assistant Professor Catherine Matsen. Techniques will include those previously mentioned as well as X-ray fluorescence (XRF) spectroscopy, Raman spectroscopy, and pyrolysis gas chromatography mass spectrometry (py-GCMS). The summary of findings presented in this talk will help situate the two couches within the greater practice of verte antique and raise awareness of the complexity of this type of surface decoration.

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New York Couch, detail of verte antique leg (c. 1815-1820). Unknown maker. Maple, cane (rattan), gilding, brass, and iron. Overall dimensions 76,8cm x 61cm x 200,7cm (30 1/4in x 24in x 79in).

Image © The Colonial Williamsburg Foundation, Sarah Towers.
The wooden carved Indo-Portuguese bed from the National Palace of Pena: Conservation and restoration treatment.

**KEYWORDS:** bed of India; carved wood; furniture collection; museum; conservation and restoration

In recent years at the National Palace of Pena (NPP) in Portugal, efforts involve conserving and reconstituting spaces and period environments. Objects decorating these spaces are studied, analysed, and included in conservation and restoration programs to integrate remodelled or preserved environments. These included a XVI/XVII century’s (?) Bed (PN1464), displayed in the Veador's bedroom. According to the inventory record, this Bed came from the National Palace of Ajuda, Lisbon, in 1939, and it had already been on display at NPP by 2005, the date of the inventory.

Considering its conservation state and treatment needs, as well as the interest in historical-artistic, iconographic, iconological and technological research, the study and conservation and restoration treatment of the Bed was initiated as part of a Master's internship. This was established through a partnership between Parques de Sintra – Monte da Lua, S. A. (PS-ML), the managing company of NPP, and the Conservation and Restoration Laboratory of the Polytechnic Institute of Tomar.

The Bed is carved with decorative motifs, mainly representing Indian flora, in high relief. It was previously intervened, with disinfestation mentioned in 1976, but other procedures are evident, such as filling gaps with wood, paste and natural waxes bitumen and stains, as well as the natural wax finishing. With macroscopic observation, it was possible to identify different wood species in both carved and non-carved pieces and it was possible to observe modern mechanical processing marks on the non-carved pieces. However, macroscopic observation was not sufficient to confirm the wood species, or other materials used in both production and restoration. FITR exams were made with sampling of different parts of the bed's surface stratum, to identify the materials.

The intervention methodology was established with the NPP, in accordance with the philosophy and criteria established by the PS-ML, following a multidisciplinary approach between the historians, art historians, specialists in analytical techniques and conservators-restorers for interventions in the palace’s spaces. Stabilization of the bed is the aim of the treatment. It started with the cleaning and protection of the metallic screws and with the immunization of the wood. This Bed is referenced as produced in Old Portuguese India State and in teak wood, however, questions were raised about the artistic style, for whom it was produced, if it's really made of teak wood, and what type of decorative surface coating it would originally have. With the ongoing study and intervention, we will seek to clarify these issues.

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Top: Bed in the Veador’s bedroom at the Palace of Pena (PNP), © Palace of Pena Collection, Juliana dos Santos.
Bottom: Front view of the bed, © Gonçalo Figueiredo - Lab. Photo IPT.
Understanding the Degradation Phenomena of Tannin-Metal Complexes in Black-Dyed Weighted Silk.

KEYWORDS: black weighted silk; conservation; iron-tannin complex; degradation

By the end of the 19th century, most silk was dyed with synthetic organic dyes. Synthetic blacks (Azo dyes, coal tar) however could not compare to the black colours attained with the natural ingredients used for centuries prior. To dye silk black, tannin-rich materials were mordanted with metal salts. These tannin-salt blacks are described to have a more lustrous shine, deeper colours and better draping properties.

Silk is made mainly out of the proteins Fibroin and Serine. During the production process of silk textiles, the serine is boiled-off to make degummed silk and thus weight is lost. In the textile industry most textiles are sold by surface, silk however is sold by weight. Using salts and tannins in the dyeing process can recover this lost weight. More so, they can surpass the weight of silk to make weighted silks. By multiple repeating parts of the dyeing process, the weight attained can be up to 600% of the weight of the silk before dyeing. Manufacturers made use of this fact to sell silks at a higher price.

The main draw-back of weighting silk is that the higher the weight, the quicker it degrades. This phenomenon was well known, as in 17th century France, weighting silk was forbidden due to its low quality. In the period of 1850 to 1930, this ban was forgotten, and weighted silks were commonly used in clothing, upholstery, and drapery.

In total, 89 different recipes for black-dyed silk were found from which 57 result in weighted silk (not exhaustive). To understand the degradation mechanics of black weighted silk, four recipes will be reproduced. Each recipe will be reproduced five times, each with a different amount of repeat baths to result in different weighting percentages. The reproductions will be artificially aged and analysed with XRF, spot-testing, SEM, Chromatography and CIE-LAB before and after aging. By comparing the chemical differences between the mock-ups, the degradation phenomena from black weighted silks could be better understood. The results from this study will be used in the overarching project SAFESILK for a more systematic conservation plan for weighted silks.

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# Programme

## Session 5: Decorative Surfaces

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<td><strong>KEYNOTE BY ANKE SCHARRAHS</strong>&lt;br&gt;DIPLOM-RESTAURATORIN, SELF-EMPLOYED</td>
<td><strong>EDT:</strong> 1pm – 1:20 pm&lt;br&gt;<strong>GMT:</strong> 6 pm – 6:30 pm&lt;br&gt;<strong>CEST:</strong> 19:00 – 19:20</td>
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<tr>
<td><strong>Tjabbe Nijs (UA)</strong>&lt;br&gt;Finishing techniques employed on ebony and tortoiseshell imitations in the Netherlands during the 17th and 18th centuries.</td>
<td><strong>EDT:</strong> 1:20 pm – 1:35 pm&lt;br&gt;<strong>GMT:</strong> 6:20 pm – 6:35 pm&lt;br&gt;<strong>CEST:</strong> 19:20 – 19:35</td>
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<td><strong>Caro van Mierlo (UA)</strong>&lt;br&gt;Reviving History: Restorative Journey of an 18th-Century Altar piece from Antwerp's Carolus Borromeus Church.</td>
<td><strong>EDT:</strong> 1:35 pm – 1:50 pm&lt;br&gt;<strong>GMT:</strong> 6:35 pm – 6:50 pm&lt;br&gt;<strong>CEST:</strong> 19:35 – 19:50</td>
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<td><strong>Q&amp;A</strong></td>
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<td><strong>Katherine Peters (Winterthur/UoD)</strong>&lt;br&gt;Searching for Saints: Technical Study of a German Polychrome Altar.</td>
<td><strong>EDT:</strong> 2:15 pm – 2:30 pm&lt;br&gt;<strong>GMT:</strong> 7:15 pm – 7:30 pm&lt;br&gt;<strong>CEST:</strong> 20:15 – 20:30</td>
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<tr>
<td><strong>Anna-Lena Korsten (TH Köln, CICS)</strong>&lt;br&gt;Ethical Discussion on the conservation approach to the Coat of Arms Panel of the Guilds.</td>
<td><strong>EDT:</strong> 2:30 pm – 2:45 pm&lt;br&gt;<strong>GMT:</strong> 7:30 pm – 7:45 pm&lt;br&gt;<strong>CEST:</strong> 20:30 – 20:45</td>
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<td><strong>Q&amp;A AND CLOSING REMARKS</strong></td>
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Finishing Techniques employed on Ebony and Tortoiseshell Imitations in the Netherlands during the 17th and 18th Centuries.

KEYWORDS: ebony imitations; polishing techniques; gloss analysis; historical recipes; Belspo FED-tWIN HOME-AGE

This research project investigates the finishing techniques applied to ebony imitations in the Netherlands during the 17th and 18th centuries, specifically focusing on polishing techniques. This study is part of the Belspo FED-tWIN HOME-AGE project. The research begins by analysing historical recipes from the Netherlands, France, Germany, and England to identify common techniques used. Subsequently, a selection of suitable techniques is tested on mock-ups. These selected recipes include combinations of pumice, Tripoli, oils, or water, applied with a cloth or piece of leather to achieve a desired surface finish. The results of these techniques are then evaluated by conducting gloss analyses on the mock-ups and comparing them to a 19th-century Augsburg cabinet from the Royal Museums of Art and History collection KMKG-MRAH, Brussels. The primary objective of the research is to ascertain whether it is possible to identify the employed polishing technique.

tjabbenijs34[at]gmail.com
Reviving History: Restorative Journey of an 18th-Century Altar piece from Antwerp's Carolus Borromeus Church.

KEYWORDS: treatment; tortoiseshell; inlay; veneer; ebony

The motivation behind this research is the inquiry into the restoration of an 18th-century crucifix on two pedestals from the Carolus Borromeus Church in Antwerp. The objective of this research is to gain a better understanding of the art-historical background and an overview of the values connected to the object. Additionally, a visual and theoretical material-technological examination is being conducted on the materials comprising the object, supplemented by analytical techniques such as XRF- and FTIR-scans. These two components allow for the formulation of a treatment proposal outlining three different treatments, subsequently presented to the owner. Through consultation, a decision is reached regarding the adopted approach, based on the earlier stated values. This leads to the selection of restoration treatments that will ultimately be carried out. The entire process is extensively documented and photographed to ensure transparency. To conclude, a chapter is dedicated to the preventive conservation and handling of the object, which are necessary post-treatment.
**Top:** Overview of the object after treatment.
**Bottom:** Close-up of the silver figurines.
All images © Carolus Borromeus Church, Antwerp, Caro van Mierlo.
Searching for Saints: Technical Study of a German Polychrome Altar.

KEYWORDS: German polychromy; cross section microscopy; technical study; x-ray fluorescence spectroscopy (XRF); scanning electron microscopy – energy-dispersive x-ray spectroscopy (SEM-EDS)

A technical study of a German Polychrome Altar of a Saint (c. 1515) took place in the summer of 2023 as part of a graduate summer internship in objects conservation at the Isabella Stewart Gardner Museum (Boston, MA, USA). The study was completed under the supervision of Jessica Chloros, Objects Conservator. This presentation will include discussion of the scientific research and analysis, while also providing the object’s context and history of the institution and its conservation lab, which was founded in 1930’s and is one of the oldest conservation labs in America.

In 1892, Isabella purchased this altarpiece from an exporter in Paris. At the time, it was described as depicting Joan of Arc. Since then, the attribution of the saint’s identity changed multiple times, first to Saint George, then to Saint Gereon and eventually to Saint Maurice. The object has not been examined by a conservator since 1950, when it underwent an extensively interventive conservation treatment. The goal of the 2023 study was to gain a better understanding of the object, its history, and, if possible, definitively identify the saint. The project was carried out in support of and in collaboration with an art historical examination of the altar by the museum’s Curatorial Assistant, Adrienne Chaparro.

The first step in this investigation was to assess the object’s condition and identify fabrication methods and evidence of previous restoration. Multi-band imaging, borescope photography, X-ray fluorescence spectroscopy, cross-section microscopy, scanning electron microscopy – energy-dispersive X-ray spectroscopy, wood identification, and X-radiography were performed to help determine and describe the materials present.

A summary of gathered observations, methodologies, and analytical findings will be presented. Though the identity of the saint was inconclusive at the end of the study, material information about its cultural context was gained and adds to our understanding of the artwork’s history.

katherine.gayle.peters[at]gmail.com
German, Upper Rhine or Swiss, Altar of Saint Maurice and the Theban Legion, about 1515. Polychromed poplar, 131 x 152.5 cm (51 9/16 x 60 1/16 in.). Image © Gardner Museum, Isabella Stewart.
Ethical Discussion on the Conservation Approach to the Coat of Arms Panel of the Guilds.

**KEYWORDS:** ethics; original; discussion; layer of paint; 18th century

The coat of arms panel of the guilds owned by the Museum Humpis-Quartier Ravensburg is a round painted wooden panel from around the 18th century, featuring concentric arranged coats of arms picturing different crafts. It has a complex history and a multi-layered structure, with various layers of paint added over time. Little information exists about its use and origin.

During the examination of the panel, the question arose which phases of modification are acceptable and what can be considered "original" as there are two main layers of paint and three main working phases. This discussion is of great importance as it not only influences conservation decisions but also the interpretation and presentation of the object.

One possible approach to this ethical issue is to consider the different layers of paint as part of the object's history due to the fact that the first, now not visible with the naked eye, layers of paint contain a whole different design with a lot of detailed and different crafts shown. Each layer could be seen as evidence of a specific time-period that should be preserved. In this sense, it would be important to document and preserve the different phases of modification by looking at the underlying layers with different imaging techniques in order to highlight the complexity and development of the object. The newest layers at the top like the varnish or a new layer of paint on the outer edge have to be taken into consideration in this approach as well. Do these layers resemble a specific time-period that should be preserved as well?

Another aspect that should be considered in this discussion is the authenticity of the object. What makes the coat of arms panel an authentic testament to past times? Is it the original material substance or the traces of past use, such as exposing underlying layers? These questions will help develop criteria for accepting modification phases and create an ethically sound decision-making process for a conservation concept. The focus in the presentation will be on discussing the concept-finding process with all the challenges that arose during it.

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Top: Front view of the object under normal light.
Bottom: Infrared image of the object.
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