

**Cleaning Wall Paintings:
Methodological Approach with
Low Chemical Risk
Theory and Practice**

24-28 September 2018

Department for Conservation and Restoration of
Works of Art, Academy of Fine Arts, Zagreb

Workshop by:
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and
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Workshop timetable & activities

Day 1 Monday, 24 September / OKIRU

ALL PARTICIPANTS

8:30 Coffee

8:45 Welcome speech

9:00 Introduction on the chemical risk in the conservation studio/worksite

13:00 Lunch

14:00 Presentation of solvents and solubility triangle - TriSOLV

17:00 Conclusion

Introduction on the chemical risk in the conservation studio/worksite

The lecture will cover the main topics related to the safety in the working environment starting with the introduction of the European REACH regulation from 2009, which applies to all chemical substances and whose purpose is to improve the protection from the risk posed by chemicals used in industry and day-to-day lives. The focus of the lecture will move towards the behavioral technical components for a safer working environment, solvents used in conservation and their parameters (toxicity, evaporation, flash point, etc.), DPI, labeling of hazardous substances and their disposal.

Presentation of solvents and solubility triangle – TriSOLV

TriSOLV is a web-based Flash application developed by Prof. Coladonato and Prof. Scarpitti from ISCR, an useful tool during every stage of conservation process; cleaning of surfaces, removing of damaged/altered materials, application of coatings/varnishes, etc. This organized system facilitates understanding of complex solubility behaviours allowing conservators to shift from toxic-carcinogenic solvents to less hazardous ones. Aim of the lecture is to provide the theoretical foundation in the Hildebrand solubility parameters and the following practical training using TEAS Graph and the App itself.

Day 2 Tuesday, 25 September / OKIRU

ALL PARTICIPANTS

8:30 Coffee

9:00 Water and aqueous solutions, EDTA, TAC

MEMBERS OF PRACTICAL WORKSHOPS

13:00 Lunch

14:00 Practical Workshops

17:00 Conclusion

Water and aqueous solutions, EDTA, TAC

Conservation measures for wall paintings and stone artefacts often include chemical cleaning with water-based solutions made by several reagents and inert materials for the mixtures and poultices to be applied. The additives may include ammonium carbonate, ammonium bicarbonate, EDTA and TAC. All these materials will be covered individually in order to fully understand their chemistry and characteristics. A section of the lecture will examine in depth the conductivity and solubility of the ionic compounds while another will cover the use of water solution of CO₂ for the removal of calcareous concretions. In the conclusion, the desalination treatment will be discussed, a quite common practice in the fight against one of the most serious reasons for the damage of many (porous) artworks; salt crystallization.

Practical workshops

The measurements of pH and ionic strength of the water-based solutions used in conservation help define their intrinsic properties and to predict their cleaning effectiveness. Ideally, the surface readings of the artworks should also be taken before any conservation treatment. The practical workshop will lead the participants in developing more acute awareness of these concepts and in practicing measurements and adjustments. The participants will also be involved in performing micro-chemical tests on water-soluble salts to identify sulphates, nitrates, etc., and on the pigments from mockups and wall paintings.

Day 3 Wednesday, 26 September / OKIRU

ALL PARTICIPANTS

8:30 Coffee

9:00 Hydrogen peroxide, surfactants, ion exchange resins, gels

MEMBERS OF PRACTICAL WORKSHOPS

13:00 Lunch

14:00 Practical Workshops

17:00 Conclusion

Hydrogen Peroxide, surfactants, ionic exchange resins, gels

Besides „solvents“ there are many other chemicals which conservators can rely on. A broader and deeper knowledge of these modern tools helps us to determine the most appropriate conservation measures. The lecture on using hydrogen peroxide as a cleaning agent, composition and structure of surfactants, chemistry of ionic exchange resins and gels as well as the colorimetry applied to cultural heritage, will complete the theoretical framework provided by this workshop.

Practical workshops

In the practical workshops participants will continue to follow up the preparation of gels and their application. The participants will prepare and use the polyacrylic acids, cellulose ethers, polysaccharide gums and silicon gels, among others.

Day 4 Thursday, 27 September / Brezovica

MEMBERS OF PRACTICAL WORKSHOPS

- 9:30** Executing practical tests *in situ*
- 12:30** Lunch
- 14:00** Executing practical tests *in situ*
- 17:00** Close

Day 5 Friday, 28 September / Brezovica

MEMBERS OF PRACTICAL WORKSHOPS

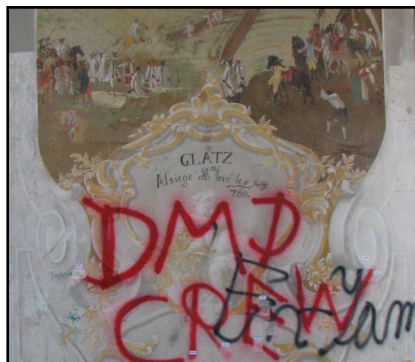
- 9:30** Executing practical tests *in situ*
- 12:30** Lunch
- 14:00** Field trip

Executing practical tests *in situ*

During the last two days of the workshop the participants will have the opportunity to discuss some of the challenging cleaning problems of the 18th century wall paintings in the Brezovica castle, like the presence of cement overplasterings, graffiti, dust and soot accumulation, etc. They will perform the conductivity / pH measurements and cleaning trials as well as the identification of pigments and soluble salts.

IN SITU WORKSHOP

Brezovica castle, Brezovica



As the property of noble families, Brezovica is mentioned in the Middle Ages, but the castle has the greatest importance in cultural history as the property of the Drašković family, one of the most important feudal families in Croatia. As a whole, with the surrounding park and valuable equipment, in which the wall paintings of the central hall are especially emphasized, the Brezovica Castle is a representative example of the profane architecture of the baroque period in continental Croatia.

The paintings represent the scenes from the Seventh-Year War and the events in which Josip Drašković, the owner of the castle, participated. The paintings depict the cities, at the present time in the areas of Germany, the Czech Republic and Poland, mostly from the area of Silesia, and a detailed depiction of the military troops during the sieges and battles. The inscriptions in the medallions below the scenes indicate the dates, locations, and description of the scenes. The paintings were executed a fresco with a secco additions. Old photographs as well as various research results indicate the existence of certain overpaintings created over time.

In 2009, after one of the many devastations of the abandoned castle took place that resulted in damaging the wall paintings with graffiti, the Department for Conservation and Restoration of Works of Art was engaged in the conservation researches and partial removal of the graffiti. OKIRU students were soon accompanied by the colleagues from the Department of Art History from the Faculty of Humanities and Social Sciences, who devoted themselves to exploring historical documents and archival materials related to the castle.

FIELD TRIP **Wooden chapels of Turopolje**

St. Barbara's chapel, Velika Mlaka



St. Barbara's chapel in Velika Mlaka is considered a Baroque wooden buildings jewel in Turopolje region. The written traces about the chapel date from 1642 and the history of the building can be followed all the way to 1912 when a porch was added. The oldest part of the chapel is the 17th century shrine with an apse in which a winged altar stands out with its display of the life and martyrdom of St. Barbara on one side, and Christ's Passion on the other. The main altar painting displays a standing figure of St. Barbara.

There are around 150 preserved paintings on the chapel's wooden ceilings and panels that display saints and floral designs and were probably painted sometime between 1749 and 1759. One unique quality of this chapel is a rare iconographic depiction of the St. Kummernisse, a crucified female saint whose face is covered in a beard. Another one is the display of Virgin Mary the Protector, a rare example of this theme in continental Croatia. In the middle of the display is the character of the Madonna with a spread cloak under which the faithful have hidden.

St. Martin's chapel, Stari Brod



The wooden chapel of St. Martin in Stari Brod is a rare example of a traditional folk Baroque architecture with a completely preserved painted interior. The chapel is first mentioned in the archival documents in 1699. It was constructed by using oak planks on brick foundation. It is a single-area building with a polygonal shrine and a small tower with a bell gable above the facade. In front of the entrance, there was a small porch that was removed in 1736, when a small vestibule was added, giving the chapel a rectangular shape.

All the walls, the nave, the vestibule and the shrine ceilings are covered with 88 shallow wooden panels framed by decorative laths and vividly painted. In spite of extremely ruinous state and the evacuation of the inventory, the chapel remained opened to the public until 2007, when the conservation works started. The chapel was reopened and re-consecrated in 2015.

St. John's chapel, Stara Drenčina



The wooden Chapel of St. John the Baptist in Stara Drenčina is mentioned in the reports of canonical visitations since 1696. The renovation and upgrading of the chapel, which started in 1731, was completed by the laying of a new altar in 1740, painted and gilded in 1748. The statues depicting bishops and angel figures have been lost in the meantime, and the original appearance of the whole has been disturbed, but the altar with altar paintings is a precious example of the sacred heritage of the Baroque period in central Croatia. The main altar, together with the painted wooden panels which cover the walls and the ceilings, transforms the chapel into the interior of the exquisite imagination and vivid ambience.



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