



IADA Symposium

'Out of Sight—Out of Mind?'
'Sejde z očí, sejde z mysli?'

CZ-Prague

National Museum, 27-28 May 2010

Programme and Abstracts*



NÁRODNÍ MUZEUM



Národní archiv

*** No language editing**

PROGRAMME

IADA 'Out of Sight—Out of Mind?' 'Sejde z očí, sejde z mysli?'

CZ-Prague, National Museum, 27-28 May 2010

Programme

Language

English with simultaneous translation into Czech.

Thursday, 27 May 2010

09.00-10.00: Registration

10.00-10.30: *Welcome*
(Representatives CZ, IADA)

10.30-11.00: Jana Drevikovska and Martina Ohlidalova (CZ)
Tracing the Origins of Illuminating Workshop of Master of the Selmberk Bible

11.00-11.30: Coffee break*

11.30-12.00: Michal Durovic et al (CZ)
Gaseous Pollutant: Monitoring in the Repositories of the State Archives of Czech Republic
12 Jana Náprstková, Jana Tomsu (CZ)
Future of Manuscripts and Old Prints Collection of the National Museum Library and its Preservation, Prague

12.30-14.00: Lunch

14.00-14.30: Flash Presentations Session
(5 lectures, 5 minutes each)

Dionysia Christoforou (NL)
Rijksmuseum Amsterdam: The Conservation and Storage of a Collection of 6,500 Modern Works of Art
Graeme Storey and Caroline Schofield (UK)
Wyatt and Associated Architectural Drawings at Tatton Park: Conservation, Digitisation, and Access Project
Istvan Kecskeméti (FI)
Condition Survey at National Archives of Finland: Methodology and Results

Dirk Lichtblau (DE)
Collection Assessment: Determination of the Paper Condition With SurveNIR

Arcangelo Di Paolo (IT)
Methodologies of Preservation of the Islamic Manuscript: Analysis of the Issues Found in the Private Collections of Mauretania

14.30-15.00: Nicolas Pickwood (UK)
Book Boxes: A New Design in Stainless Steel
15.00-15.30: Frederike Leffelaar (NL)
Composite and Complicated: Dowel-mounted Roller Maps

15.30-16.00: Coffee break*

16.00-16.30: Lucile Dessennes (FR)
The Conditioning of Three-dimensional Theatre Set Models at the Bibliotheque Nationale de France (BNF): Protection and Accessibility of the Original

16.30-17.00: Nina Quabeck (DE)
Uncovered and Unconventional: Preservation of Works on Paper on Open Display

17.00-17.30: Istvan Kecskeméti (FI)
Digitisation of Archival Collections: A Project of 1.55 Million Euro

20.00: Evening reception

Friday, 28 May 2010

09.00-09.30: Robert Fuchs (DE)—*Guest Lecture: The Collapse of the Cologne Historical Archive: The Role of Restorers and Emergency Plan*

09.30-10.00: Henk Porck, Claire Phan Tan Luu (NL)
Conservation Treatment and the Consequent Change in Collection Value

10.00-10.30: Jedert Vodopivec (SL)
Analysis and Risk Assessment in Slovenian Archive Repositories

10.30-11.00: Coffee break*

11.00-11.30: Florence Darbre (CH)
Preservation on View: A Re-usable Book Support

11.30-12.00: Anne-Laurence Dupont et al (FR)
Volatile Organic Compounds and their Impact on Paper Degradation

12.00-12.30: John Havermans (NL)
COST D42 Network: Impact and Challenges

12.30-14.00: Lunch

14.00-14.30: Flash Presentations Session
(5 lectures, 5 minutes each)

Evangelia Stamouli et al (GR)
Planning for a Challenging Conservation Laboratory of Archival Material: Issues of Spatial Collaboration Within a Newly Designed Laboratory for the New Archives Building of Piraeus Bank

Elmer Eusman and Renate Mesmer (US)
Visible Storage—Encasing the Waldseemüller Map at the Library of Congress

David T McNab (CA)
In Site/Sight and in Mind: Preserving the 'Indian Missionary' Stories in the Journals of Ezhaaswe (William A Elias, c 1851-1929): Part I

Mirella Cirfi Walton (CA)
In Site/Sight and in Mind: Preserving the 'Indian Missionary' Stories in the Journals of Ezhaaswe (William A Elias, c 1851-1929): Part II

Andert, Antonin Maria (DE)
These Books Were Made for Reading

14.30-15.00: Eliza Jacobi et al (NL)
Local Repairs on Iron Gall Ink: In Search for an Adhesive and a Method

15.00-15.30: Hilde Schalkx (NL)
Washing Water Sensitive Paper Objects: Capillary Unit or Blotter Wash?

15.30-16.00: Coffee break*

16.00-16.30: Stefan Blankenburg (NL)
Deacidification and Strengthening of Acidified Books and Documents: A New, Fast and Safe Method (Papercare Process) for Conservation of our Paper Based Cultural Heritage

16.30-17.00: Véronique Rouchon et al (FR)
Room Temperature Ageing of Iron Gall Ink Impregnated Papers: The Impact of Oxygen and Humidity

17.00-17.30: Closing remarks

Registration

All participants including invited speakers must register:

- (1) Download the Registration Form <www.iada-online.org/prague_regist.pdf>
- (2) Complete the registration form in full.
- (3) Mail or fax it to: Alexander Aichinger, National Archive Austria, Conservation Department, Nottendorfer Gasse 2, 1030 Wien, Austria, Tel +43-1-79540-603, Fax +43-1-79540-109, alexander.aichinger@oesta.gv.at.
- (4) Check your e-mail for a confirmation receipt for your registration.*

* You can withdraw your application within 14 days after the registration. Thereafter, the registration is valid. Your registration is not complete until we have received payment in full.

Registration Fees

New IADA Members (join us before May 2010):
IADA Members** EUR 80.00
Students** FREE

Registration:
Non-members EUR 150.00
IADA Members EUR 100.00
Students EUR 80.00
IADA Students EUR 60.00
Speakers EUR 60.00

** Exclusive 2010 IADA Membership fee.

Payment

Early payment is recommended. Please pay by bank transfer to the account:

Account Holder: IADA; Bank: Volksbank Göttingen; Bank Sort Code: 260 900 50; Account No: 202 330 000; BIC/S.W.I.F.T.-Code: GENO DE F1 GOE; IBAN: DE14 260 900 500 202 330 000.

Purpose of Payment (required): Your name, Prague 2010. Please make sure that all bank charges are paid by the sender, so that the full amount of the conference fee is received on the IADA account.

Special Programme | Out of Sight Tour

For attendees of the 2010 IADA Prague symposium there will be the opportunity to explore sites in Prague-City which are of special interest to paper conservators and 'out of sight' for most tourists. Participants can individually plan their visits before, during or after the symposium. Participants interested in classical music should be aware of the 65th Prague Spring International Music Festival, presenting outstanding performing artists, symphony orchestras and chamber music ensembles of the world. The programme will commence on Wednesday 26 May 2010, one day before the symposium begins. Please check IADA's website <www.iada-online.org/prague.html> for updates.

Accommodation

List of recommended hotels see under <www.iada-online.org/Prague_Hotels.pdf>.

* The Coffee Breaks are sponsored by DYTEC-GmbH Bonn.

Jana Drevíkovská, Martina Ohlidalová, Kamil Boldan

Tracing the Origins of the Illuminating Workshop of the Master of the Selmberk Bible

Based on the historical research at the Department of Manuscripts and Early Printed Books at the National Library of the Czech Republic, there are eight manuscripts attributed to the Master of the Selmberk Bible, which we have selected. The aforementioned workshop had been active around the year 1440. The workshop is referred to as 'Master of Selmberk Bible', because of its most demanding and most complex illuminations. The most beautiful work from this workshop, the so-called 'Selmberk Bible' can be found in the collection of the Library of the Strahov Monastery in Prague. Four other manuscripts are stored in the collection of the National Library in Prague, two are deposited in the collection of the National Museum in Prague and one of them is in the National Library in Vienna, Austria. At the beginning, the article introduces the technological process of the creation of illuminations on selected manuscripts. The research is based on comparison of the color range of illuminations of individual manuscripts, painting technique of the illuminator and artistic signs of the paintings. Only non-invasive methods, such as optic microscopy, IR reflectography, XRF analysis and UV-VIS spectrometry, were used for the research. It is quite interesting how many steps within the traditional, old-fashioned original process were hidden from our attention as contemporary researchers. Even more interestingly, these were steps, which were casual practice for painters in the middle ages during their work, together with changes of condition of manuscripts from the time of their creation. Finally, it is also important to think about the preservation of these beautiful masterpieces for the future.

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Michal Durovic, Hana Paulusová, Roman Straka

Gaseous Pollutants

Monitoring in the Repositories of the State Archives of Czech Republic

Documents in archives are threatened by a silent decay. One of the most important reasons of this decay are air-pollutants (nitrogen oxides, sulphur oxides, ozone, etc.). This project was focused on the search of air-pollutants concentration in the repositories of the state archives of Czech republic by Purafil equipment OnGuard 3000 and copper and silver reactivity coupons. The Project was also focused on the improvement the airquality in repositories of the National Archives in Prague by the implementation of the Purafil air-purification system with chemisorbant. In the next part of the project the volatile organic compounds (VOC's) were measured in the repository of rare manuscripts Land Registers.

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Graeme Storey,
Caroline Schofield

Flash presentation

Wyatt and Associated Architectural Drawings at Tatton Park

Conservation, Digitisation and Access Project

The Mansion at Tatton Park has been subject to extensive alteration since it was first built circa 1716. There is an extensive collection of architectural drawings, substantially by Samuel (1737-1807) and Lewis William Wyatt (1777-1853), relating to its development, however the drawings are rarely accessed because of their fragility and importance. In 2008 a conservation, digitisation and access project was devised for the collection of 230 drawings, in order to ensure that the drawings survive, and that the information they contain can be accessed and shared with interest parties. The project has been divided into three phases, with funding for phase 1 secured from the National Manuscripts Conservation Trust in conjunction with Cheshire East Council and other funding bodies. A steering group comprising of National Trust adviser, conservator and curator, Tatton Park manager and paper conservator has been responsible for devising and scheduling the project. Accredited paper conservator, Graeme Storey ACR B.A Dip. Con, was appointed to conserve and prepare phase 1 drawings for scanning. A trial scan will take place during August 2009. Pending the results the remaining drawings will be scanned, with the aim that this part of the project will be completed by the end of September 2009, when further funding will be sought for phase 2. This project gives great scope for interpretation and access, providing a model for the conservation of collections on paper and the use of new technologies in the promotion of access.

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Istvan Kecskeméti

Flash presentation

Condition Survey at National Archives of Finland

Methodology and Results

Large condition survey and risk management project was performed between May 2008 and August 2009 at the National Archives of Finland. Around 0,85 % of all paper collections was surveyed by 14 conservators during one year. From around 2.1 million archival units around 18.000 archival units, meaning bindings or boxes, has been surveyed. Methodology of this survey is one of the widest among surveys of paper collections. The survey also utilises the archival databases of National Archives in a sophisticated way. Visual condition survey (in six different damage categories and three damage rates) informs the overall condition of items. Simple chemical tests indicate the condition of paper and also characterises the papers according to their types (hand made rag paper, paper from chemical pulp etc.). One to two samples of each archival unit surveyed were chemically tested. Thorough risk analyses of the storage facilities, climate, storage materials and use of collections will be included in the condition survey. The results of the survey are collected to a specific database, where both statistics and results from thorough searches can be done. For example, the condition survey results can be reflected against the manufacturing period and raw materials of paper. As well it is possible to search changes in one or more specific damage category and rate in different time periods or storage rooms. The results of risk analyses will indicate the life expectancy of collections. One of the first results which were noticed while the survey was going on, was the fact that the brown lignin containing storage boxes widely used in Finland are acidifying rapidly. Lowest pH readings were 3,8 – 4,2 in boxes which were 30-40 years old. Rapid contacts to the Finnish paper industry and box making companies resulted a Finnish made archival quality cardboard for boxes in summer 2009. Also the quality standards for use of cardboards with collections to be stored permanently will be updated in autumn 2009. The final results of the survey are available in autumn 2009. They give deeper information of conditions and risks in storage rooms, the material content of collections, the use of collections and most of all of the damages found to help the planning of conservation and digitisation strategies at the National Archives of Finland.

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Collection Assessment

Determination of the Paper Condition with SurveNIR

SurveNIR is able to determine and to rate the condition of paper in a scientific manner [1-3]. The system is based on statistical evaluation of near infrared spectra. SurveNIR is a mobile system which can operate in the repository without moving the object to another location or environment. SurveNIR was also developed within an EU 6th Framework project and will be market by company Lichtblau [4]. SurveNIR is very fast and also non-invasive; measurements can be repeated on the same spot. No colour marks, water stain or damages like with usual techniques will remain. The system is specially designed to guarantee maximum object safeness. Main components of SurveNIR are the NIR-spectrometer, a computer and the user friendly software with a lot of functions to execute an efficient survey. Accessories like foot step trigger and live video of the measurement spot complete the system. Short-term preservation needs as well as long-term strategies can be defined on the base of the SurveNIR paper identification tool and due to 9 chemical-physical parameters like acidity (pH), degree of polymerisation, tensile strength, lignin content and presence of optical brighteners. Besides determinations of parameters are data base, rating and reporting elements included. SurveNIR is using the individuality of each paper, which is represented within the NIR-spectra. Based on the correlation of reference data from 1400 paper all around Europe with their NIR-spectra, SurveNIR is able to extract data from a wide range of typically historical and modern papers in libraries and archives over a range of more than 200 years.

- [1] Trafela, T, et al: Nondestructive analysis and dating of historical paper based on IR spectroscopy and chemometric data evaluation. In: Anal. Chem., Vol 79 (2007), pp 6319-6323.
- [2] Lichtblau, D, et al: Determination of mechanical properties of historical paper based on NIR spectroscopy and chemometrics – a new instrument. In: Appl Phys. A, Vol 92 (2008), pp 191-195.
- [3] Strlic, M., et al: NIR/chemometrics approach to characterisation of historical paper and surveying of paper-based collections”, In: the 15th Triennial Conference New Delhi, 22-26 September 2008. Preprints: ICOM committee for conservation. Vol 1, New Delhi: Allied Publishers (2008), pp 293-300.
- [4] Further information's are available on <www.lichtblau-germany.com> or <www.science4heritage.org/survenir>.

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Methodologies of Preservation of the Islamic Manuscript

Analysis of the Issues Found in the Private Collections of Mauritania

The four major caravan villages in Mauritania, namely Ouadane, Chinguetti, Tichitt and Oualata, reached their commercial and cultural apex in the eighteenth century. These villages, already known in the Islamic world as centers of concentration and production of books, confirmed the conservative tradition of the books of private collections. The ecological and economic changes that occurred in the second part of the twentieth century led to the demographic decline of these communities, giving them back the role of preservation and diffusion of the Islamic traditional knowledge. Today the bibliographic heritage of Mauritania consists of about 30,000 pieces and is the main source of relevant Arab culture. The logistic approach of analyzing a private book fund from Mauritania has relational problems with the traditional custodian, the physical environment and the surrounding community, putting the preservation expert in a difficult climatic and social setting, especially in relation to the reproduction of suitable spaces for the conservation and the restoration. This article describes the interventions from 1974 (foundation year of the IMRS) until now in the book collection management field, comparing the results, setting a standard methodology and finally an interpretative model of the actions geared to a positive feedback. This model can represent a comparative tool used by the parties involved in the ongoing projects and it can provide examples of solutions for the projects still being planned.

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Nicholas Pickwood

Book Boxes

A New Design in Stainless Steel

The library of the monastery of Saint Catherine on Mount Sinai has preserved the world's largest collection of bindings in the traditional Byzantine/Greek style. Many are in fragile condition, with covering materials embrittled by the very dry, desert conditions of the Sinai desert, and many have metal furniture in the form of bosses, edge-pins and decorative plaques. The Ligatus Research Unit of the University of the Arts was therefore faced with a pressing need to protect these books, but conventional buckram-covered drop-spine boxes showed themselves to be short-lived and liable to warping in RH levels which average around 20%. Wooden boxes were considered, but offered insuperable problems. A new box was therefore designed by Ligatus, in collaboration with Conservation by Design, which has a stainless-steel carcass with a hinged lid, lined with black Plastazote foam in which the book is kept in a fitted four-flap acid-free card folder, cradled at the corners by Plastazote blocks. The boxes are to be made in standard widths (height of book) and depths (width of book) for horizontal storage in metal racks, the sizes determined by software designed by Ligatus which calculates the optimum sizes so as to fit the largest number of boxes into the library cupboards, and will keep the heaviest books at waist height for safety of removal. The use of computer-operated cutting and folding equipment keeps the cost of the box to not much more than the cost of a well-made drop-spine box, and offers a virtually indestructible alternative.

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Frederike Leffelaar

Composite and Complicated

Dowel-mounted Roller Maps

A specific, yet often undervalued group of cultural heritage found in collections of archives, museums and libraries worldwide are 'dowel-mounted roller maps'. Such maps are made of paper prints or drawings adhered to a fabric backing and mounted between two wooden dowels. This mounting method has been used since the 17th century. This type of map is still in common use as educational aid. Due to their size, composite nature and often poor material condition these objects confront paper conservators with specific problems. Published treatment strategies discuss solutions for individual items. Commonly, textile backings and/or wooden dowels are removed with the argument that this is necessary for treatment or storage. As a result very few 19th century dowel-mounted roller maps survive in their original format. In order to gain a more accurate impression of the current state of collections in the Netherlands a questionnaire was sent to a number of museums and archival collections and interviews were carried out with conservators and curators. From these interviews it was concluded that the value of dowel-mounted roller maps differs within different collections. An inventory in the Amsterdam City Archives was carried out as well as stress and strain tests on mock dowel-mounted roller maps. Five main causes of damage were identified which can be linked to the different stages in the maps' use and storage: fabrication damage, damage caused by inept usage, damage caused by rolling, damage caused by hanging and damage caused by natural aging of the materials. Better understanding of the causes of damage to these objects as well as a more systematic examination of the cultural values associated with these objects should form the basis for future conservation treatment.

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Lucile Dessennes

The Conditioning of Three-dimensional Theatre Set Models at the Bibliotheque Nationale de France (BnF)

Protection and Accessibility of the Original Document

Most three dimensional theatre set models are composed of a succession of parallel panes made of paper painted with gouache. Many are conserved fully built for historical or practical reasons. This poses specific conservation problems. The vertical paper sheets are very sensitive to hygrometry variations. The mounting and the protections are not homogeneous and often non-neutral. Some models are totally open and not protected at all while others pose accessibility problems. We attempted to address some of these issues by designing a packaging system that could be adapted to the uniqueness of each object and still standardize the conditioning of large model collections. Models made of a succession of paper panes fixed to a thin paper ground are mounted on a harder support made of neutral cardboard. Then, a custom-made 'presentation box', made of cardboard painted with black acrylic protects the whole model allowing it to be seen through a large plexiglass window. The box is a little higher than the model itself and may host a lighting system during exhibitions. Finally, an outer box made of honeycomb cardboard allows one to store the model safely and to check it through another plexiglass window. The many successive layers protect the model from hygrometry variations and shocks. The homogeneous gray color permits to distinguish the original elements from the conditioning system. Both boxes can be easily unfolded to access to the model internal parts. We will present various recent implementations of this system for models from the BnF collections.

Nina Quabeck

Uncovered and Unconventional

Preservation of Works on Paper on Open Display

Prior to mid-twentieth century, works on paper were traditionally presented in the relative protection of a frame or showcase. The past fifty years, however, brought about a great change in the way art on paper was conceived, created, and presented. Many artists purposefully chose to expand the boundaries of materials and formats. Thus, with modern and contemporary works on paper, enclosed display is frequently not an option, be it because the work is three-dimensional, of particularly large format or, last but definitely not least, because it would be contrary to the artist's intent. Yet, placing works on paper on open display poses a greater challenge to everyone involved in their preservation and presentation. Due to this inherent vice, unconventional works on paper are perhaps also in danger of spending more time in storage than on display. The preservation issues of such works on paper were the focus of the study 'Uncovered and Unconventional' funded by the Samuel H. Kress Foundation which was carried out at the Fine Arts Museums of San Francisco in 2007 to 2008. As part of the study, a general survey involving specialists caring for modern and contemporary collections in the US and Europe was conducted. At the same time, the collection of the host institution was scrutinized, examined, re-housed or treated in the museum's paper lab. When dealing with modern and contemporary art on paper, the combination of the object's requirements with artist's and curator's wishes can challenge traditional paper conservation practices, and works requiring open display pose many tricky questions to all involved in the preservation process. Questions addressed in the survey included: How can such works be presented safely, how can their installation be documented so no mistakes occur upon re-installing, what cleaning methods are available, how can they be packed, how can they travel? The aim of the project was to research the state-of-the-art presentation, storage and preservation options for these seemingly unprotectable objects and to find solutions that can be adapted for use even in the rapid cycles of engagement in today's museum environment. It was felt that amidst the break-neck pace of temporary exhibitions, this could be an important step towards preserving, but at the same time enabling the public to enjoy these splendid yet fragile works of art.

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Istvan Kecskeméti

Digitisation of Archival Collections

A Project of 1.55 Million Euro

Large digitisation project started in May 2009 at the National Archives of Finland which was funded by Ministry of Education. Total sum of 1.550.000 Euro was granted on the project. The schedule of the project was very tight – the whole sum was to be used by the end of same year 2009 meaning that the digitisation project was to be carried out in eight months. István Kecskeméti, head of Archiving techniques unit, was chosen to be the head of the project. Digitisation is good way of protecting originals from use and to allow researchers to study the content of collections outside the reading rooms of the Archives. Therefore it would be best to digitise as much originals as possible. But very rapidly it was realised with the experts at the National Archives that to be able finalise the project in this tight schedule collections earlier microfilmed needed to be prioritised. This is due to the fact that digitising from microfilms is faster and cheaper than digitisation from original bindings. Also the information content of microfilmed collections from 1950's onwards are much used. The microfilms do not need any pre-treatments as originals do. Besides microfiches (process 1A) and microfilms in roll form (process 1B) maps and drawings (process 2) were chosen as well as few loose documents and card file collections (process 3). Maps and drawings need several pre-treatments. Arrangement, writing the contextual metadata into a database as well as conservation treatments were needed. Enriching the metadata during scanning and image manipulation was re-instructed and software for metadata for scanning event was enhanced. The contextual metadata of collections to be digitised is in the VAKKA archival database to archival unit level. As one unit can be up to hundreds or even thousands of pages, more detailed indexing was needed to allow more sophisticated searching of information. The digitisation takes place in 300 ppi resolution in unpacked TIFF format. These so called large master files (each from 25 up to 500 Mb) are stored as two copies in the Digital Archives LTO-4 tape storage system of National Archives. As the digitised master files are added to the database, they will receive also contextual metadata from the VAKKA database. During the feeding of master files the storage system automatically generates small jpg files for the use in the internet. These are stored in servers. When the project started, there was 1,5 million images in the Digital Archives. During the project 2,5-3 million pages is planned to be digitised including 20.000 historical maps and drawings.

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Henk Porck, Birgit Reissland, Claire Phan Tan Luu, Gabriëlle Beentjes

Impact of Conservation Treatment on Collection Value

Disclosure of Hidden Risks

Metamorfoze, the national program for the preservation of the Dutch paper heritage, funds digitisation and conservation of library and archive collections that suffer from decay processes like acid-hydrolysis or ink corrosion. While digitising may damage the authentic construction of books, invasive interventions modify the original composition of documents. Although there is an awareness that these changes may influence historic evidence by impeding the interpretation of the artefacts material context, these—unintended—effects of conservation treatment are still for a large part obscure. In order to enlighten the nature and magnitude of this hidden risk, Metamorfoze is funding a research project aiming at the revelation of treatment-induced modifications, and at the disclosure and quantitative estimation of their impact on the collection value. Four representative case study collections have been selected within the Metamorfoze program, including the letter collection of the famous artist Vincent van Gogh and an archival collection containing manuscripts of importance for the founding history of the USA. Blotting sand, ink composition and the folding scheme of letters are examples of the material-based characteristics which will be monitored during the treatment process. Both positive influences, the intended effect, and negative influences, the 'side effects', on various aspects of the collection value will be evaluated and discussed with the concerned curators and conservators. In making all risks involved explicit, this research project will provide a methodology for an integrated approach in treatment decision making. The first results of the study will be presented.

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Jedert Vodopivec

Analysis and Risk Assessment in Slovenian Archive Repositories

From 2007 to 2009 the all-Slovenian project on the state of archive repositories examined 46 storage units in the national, all 6 regional, 3 public and 3 church archives in Slovenia. To analyze the state of archive repositories, we chose a method created by Stefan Michalski and Robert Waller referring to the risk assessment principles for movable cultural heritage, especially for archives, libraries and museums. The method was presented and tested at ICCROM international seminars on state assessment and priorities determination for heritage protection. The assessments were carried out according to a unified methodology based on ten risk factors. The research revealed that all archive repositories were filled to capacity, even though there are still large quantities of records to be stored in the archives. With the exception of three, all storage units are placed in buildings and premises which were built for entirely different purposes. Many of the older buildings or parts of them transformed to repositories still need the examination of statics. It may be concluded that all archive repositories lack suitable climate conditions, although in some cases these are regulated by climate appliances. Besides, no expense calculations were performed regarding climate systems. It is worrying that even in the latest adaptations, differences between basic demands for archive depots and the final realization remained unreasonably large. On the other hand, it turned out that there are many archivists conscious of the problem and point to it; the ones making decisions, however, seldom hear their voices. The relationship among archivists-projectors-investors therefore needs more attention. The project results confirm the 'hypothesis' about archive repositories forming the essence of each archive. Accordingly, much more should be done in the field of preservation—by Slovene archives as well as the competent authorities.

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Florence Darbre

Preservation on View

A Re-usable Book Support

One aspect of the management of a collection is how to protect objects, in this case, books, while they are on exhibition, allowing at the same time the scenograph maximum liberty to present them to their best advantage. It is the vision of the Swiss architect, Mario Botta, that books should be presented floating in space, and it is this vision which remained in focus during the development of our support where in fact the book was the client. Given that a book is a three-dimensional object with size, weight and binding all varying enormously, the challenge for the conservator was to develop a 'customizable support system' that can be reused time and time again and yet properly exhibit the book with regard to its conservation needs no matter where it is to be open, all in a manner that is pleasing to the eye. The presentation will describe and demonstrate the support, developed to satisfy these constraints, which is now in use for the collection of the Foundation Bodmer in Geneva. The presentation will discuss the weak spots of the structure of books which is essential to the understanding of our approach to the development of our support.

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Paul Bégin

Volatile Organic Compounds and Their Impact on Paper Degradation

During ageing, paper produces a wide array of volatile organic compounds (VOCs) from the degradation of cellulose, hemicelluloses, lignin and other components. However, much is unknown on how these VOCs can affect paper stability. When generated by a stack of paper in an archival container, these VOCs stay trapped and can build up in significant concentration in the container's air. The VOCs with carbonyl and carboxyl functionalities can be targeted as potentially harmful to paper by accelerating its degradation rate. For instance, it has been previously established by the authors that acetic acid can be detrimental to paper when present in vapour phase in its immediate environment. We have studied the impact of some of these VOCs on pure cellulose paper in real time. Acetaldehyde, acetic acid, formaldehyde, formic acid, furfural and hexanal were chosen, as they have been identified among the most abundant VOCs that paper produces during ageing. The paper samples were exposed for various periods of time to each compound separately, in closed vessels and at ambient conditions. In order to generate a given VOC concentration in the vessel's air, a VOC/water/salt solution was used. Later, and in order to project their long term behaviour, the paper samples were subjected to accelerated ageing under heat/humid conditions and subsequently were analysed. Molar mass determinations as well as colour, pH, folding endurance and zero-span tensile strength measurements were performed in order to assess the impact of each VOC on paper degradation. The first results of this cooperative project will be presented.

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John Havermans

Cost D42 Network

Impact and Challenges

The conservation of our paper based cultural heritage is a duty for all nations, due to ethical reasons. Only very slowly decision makers start to understand that caring about cultural heritage and especially about museum, library and archival collections is also a valuable long-term investment for their economy and in the interest of their citizens. The quality of the indoor environment is decisive for the preservation of a collection. Sensitive materials as paper, displayed in an aggressive environment may suffer from chemical attack of pollutants, leading to irreversible damage within only a few weeks of inappropriate exposure. Members of COST Action D42, Enviart, explore chemical interactions between cultural artefacts and typical indoor environmental conditions through field studies and laboratory experiments and transfer the results into preventive conservation practice. The Action focuses on the chemical impact of pollutants on materials, thus also considering physical and environmental aspects, materials technology, chemical analytics, emission and harmonisation. Within this action there are 3 working groups active: (1) on Preservation (2) on Analysis and (3) on Guidelines. The last one is cooperates with the European standardisation body CEN (TC346). The backgrounds and the impact of ENVIART network will be shown by means of discussing case studies.

Acknowledgement: The European Commission, the European science foundation and COST office are acknowledged for making this network possible. All D42 members are acknowledged for their contribution.

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Haralampos Chaitas,
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Flash presentation

Planning for a Challenging Conservation Laboratory of Archival Material

Issues of Spatial Collaboration within a Newly Designed Laboratory for the New Archives Building of Piraeus Bank, Greece

This paper will explore the spatial correlation between the various areas in a conservation laboratory. The aim of this endeavor is to record and analyse the 'zones' existing in a conservation laboratory. In a set of specially designated areas, the term 'zone' is used to identify an area, according to its uses and/or the activities performed within it. This paper is meant to offer essential help and perspective to every professional who deals with the care of archival material, such as conservators, archivists and/or archival facility designers who seek either to create a conservation laboratory from scratch or to rearrange an already existing one. The paper will be divided into three parts, aiming to explore the spatial frameworks within a conservation laboratory from different aspects. It will thus present in detail: the spatial requirements from the user's point of view, i.e. the user-friendliness of a modern conservation laboratory; the essential rooms and spaces in such a setting, viewed in conjunction with the particular tasks performed there (such as photographic documentation, material detection and analysis with destructive and non-destructive techniques, wet, dry and chemical treatments, various repairs, bookbinding, making archival enclosures and boxes etc.); the ergonomic requirements of the specially designed facilities involved in the care and treatment of archival material. The bibliographical research will be conducted following a holistic approach, by combining resources from both the field of architecture and that of conservation, thus reflecting the interdisciplinarity encompassing the whole project.

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Elmer Eusman

Flash presentation

Visible Storage

Encasing the Waldseemüller Map at the Library of Congress

In 2003, the Library of Congress purchased the only surviving copy of the Waldseemüller 1507 World Map from Prince Waldsburg-Wolfegg. It is the first printed map to assign the name America, indicating the landmass we now recognize under that name. Because of its importance, the stakes were high in the classic dilemma between ensuring preservation and providing access to the map. To address both needs, it was decided to explore the construction of an oxygen-free encasement that would allow the long-term exhibit of the map without decreasing its expected lifespan. In 2005, an interagency agreement was created between the Library and the National Institute for Standards and Technology (NIST) for the design and production of the world's largest argon-filled map encasement (almost 6' by 10', weighing over 2,000 pounds). The design of the encasement includes the use of a double O-ring Viton® seal and the unique use of a flexible aluminum back. This complex project required the involvement of many different stakeholders including engineers, chemists, manufacturers, curators, donors, architects, riggers, media representatives, and, of course, conservators. The complexity of the project required a rigorous project management approach, which included scope, cost, time, and risk management as advocated by Project Management Institute (PMI). Using these tools, the design, fabrication, and installation were successfully completed and the map's environment is now continually monitored for fluctuations in temperature, humidity, oxygen levels, and differential pressure. The encasement has maintained a constant environment for more than a year while remaining on exhibit.

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Jan de Vries, Birgit Reissland

Washing Water-sensitive Paper Objects

Capillary Unit or Blotter Wash?

Washing vulnerable objects containing water-sensitive media is a challenge for paper conservators. Removing aesthetically disturbing features like stains or tidelines by applying water as solvent can cause water-sensitive media to change their appearance or even to dissolve. Several techniques are designed to minimize this risk. While 'blotter washing' is widely applied, recent literature recommends using the 'capillary unit'. The question remained how effective the methods actually are. Based on literature, both techniques and a combination were tested and the treatment design optimized. For visualizing the often barely perceptible movement of water-soluble discolouration products through the paper, samples of modern water-colour papers (Arches, Schoellershammer and Schut, 160-185 g/m²) were coloured by immersion in a solution of Ponceau 4R (E124), a water-sensitive red dye. Blotter wash was carried out on blotter paper using a screen-printing screen. Treatment on the capillary unit was done on Paraprint OL60 (non-woven viscose fabric). The combined method applied blotter wash on Paraprint OL60. To prevent evaporation treatments were carried out under an acrylic-glass cover. After treatment the samples were compared visually. Finally, case-study originals were treated. Contrary to the literature, the slope of the capillary unit did not influence the effectiveness. Instead, the crucial parameters are the height-difference between the water level and the end of the Paraprint OL 60, and the entire length of Paraprint OL60. The combination of blotter wash and capillary unit allowed for the most effective and homogeneous removal of soluble compounds on the test papers. The case studies showed that the capillary unit is suitable for paper objects taking up water easily, being a time and labour saving alternative to the other methods.

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Stefan Blankenburg

Deacidification and Strengthening of Acidified Books and Documents

A New, Fast and Safe Method (Papercare Process) for Conservation of Our Paper Based Cultural Heritage

Cellulosic materials like paper and textile are prone to disintegration due to acid induced hydrolysis, bacterial processes, light and/or oxidation. These processes are a threat, especially to our paper based cultural heritage. The most severe problem for old paper and textile (e.g. linen) is the continuous process of cellulose breakdown, leading to discoloration and mechanical weakening. At this moment many books and documents, especially from the 19TH and 20TH century, are in poor condition due to the ongoing acidification process. If no action is taken to strengthen the structure of the paper and to stop acidification, many of these books and documents will be lost. At the moment there are no processes available that both stop the deterioration process and simultaneously strengthen the fibre structure. Omniaccess BV in the Netherlands developed the Papercare process for mass deacidification of books with simultaneous reinforcement of the fibre structure. This novel process is based on the deposition of additives using supercritical carbon dioxide. The additives deacidify the paper, form an alkali reserve to prevent further acidification, and connect to the (broken) fibres in the paper to repair the network. Furthermore fungi and bacteria are killed during the process. The process is unique in combining all treatments steps in one process. Books can be taken from the shelf and put directly in the machine. After the process they can be put back in place. We would like to present the process and the operation of the deacidification machine at the conference.

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Véronique Rouchon, Cédric Burgaud, Maroussia Durant, Eleonora Pellizzi, Koen Janssens, Yannick Vercammen, André Dorsch, Gert Nuyst

Room Temperature Ageing of Iron Gall Ink Impregnated Papers

The Impact of Oxygen and Humidity

The degradation of paper induced by iron gall ink has been largely studied using artificial ageing procedures applying high humidity and elevated temperature conditions. Degradation is usually attributed to cellulose depolymerisation, resulting from acid hydrolysis or oxidation mechanisms. Acid hydrolysis, favoured by the presence of humidity, should theoretically be limited in dry environments. Cellulose oxidation, favoured by the presence of oxygen and free iron II ions should theoretically be limited in an oxygen free environment. Little information is however available regarding the dominant mechanism involved in real conditions, namely at room temperature, and regarding to humidity or oxygen thresholds capable to promote these mechanisms. This study aims to highlight these aspects in order to point out the most damaging environmental parameters. The degradation of laboratory samples made of Whatman paper impregnated with different combinations of iron sulphate, gallic acid, and gum Arabic was studied at room temperature. These samples were stored for several months in various environments including humid, dry and/or oxygen free ambiance. The cellulose degradation was followed by chromatography and viscosimetry, and compared to the oxidation state of iron, determined by X-ray Absorption Near Edge Spectrometry. This work shows that the cellulose depolymerisation is closely related to oxidation mechanisms occurring even at very low oxygen concentrations (less than 0.1%). Oxygen free techniques are also efficient in limiting the cellulose degradation. However, these should be controlled with a high precision. This last aspect seriously limits realistic implementations on large collections.

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Robert Fuchs

Guest Lecture

The Collapse of the Cologne Historical Archive

The Role of Restorers and Emergency Plan

On the 3rd of March 2009 the ground opened up and swallowed the Cologne Historical Archive. The historical memories of Cologne sunk within 5 minutes into the construction-site of the metro nearby. Possibly the criminal act of some people from the construction company caused the collapse of the archive building. Some employees used less steel girders than needed causing weakening the walls of the metro station construction. They made money by selling the steel to a scrap dealer. At a level of minus 38m ground water penetrated the concrete and carried away the soil under the archive tower. A hollow like cone of 12m in diameter and 25m depth was built and caused the slow motion collapse of the building which broke first in the middle of the baseplate, then the building fell down to the side onto the metro station. The metro station has 3 levels: on the bottom the double tunnel for the train, which was on level minus 44m. The level 2 for the transfer of passengers is on a level minus 34m and the first level is minus 22m. This ceiling was stable enough to hold the heavy mass of the broken archive. Due to the ground water level the floors beneath were flooded by water and immersed. A blessing in disguise most of the material did not fall into the water but on the floor bed of the first level metro.

A thud announced the collapse so that some twenty people both staff and visitors which sat in the reading room and offices could save themselves by escaping through the rear exit of the archive. The only restorer of the archive was working in the front tower building when she heard the people crying, she ran and flew over the 5 level staircase to be rescued in the last seconds before the collapse.

The Cologne Archive is the most important city archive in Northern Europe with a very rich collection. The city documents go back to the early Middle Age and the cadastral register begun in the 11th century and was completely conserved until today.

Two years before the disaster the new director of the archive begun with computer aided catalogisation of the items. Material of more than 27 kilometers of book shelves were stored in the front building (the tower) before they fell down more than 20m together with the heavy broken wall construction, the smashed steel shelves with the pulverized bricks on top. That amount of archive material would represent the distance from Kladno to Prag center. Fortunately most of the thousand precious parchment documents, a small part of the library and few precious books which were in restoration were stored in the flat rear building and could be rescued with only small damages.

The rescue action for the archive started on the second day. First one had to stabilize the other buildings in the street and to search for missing persons from the other buildings. The dead bodies of two young men were found after a week under the rubble of the neighboring house at a depth of 12 meters.

Directly after the collapse the fire brigade began their work. Nobody was allowed to enter the site. Therefore, the recently

made emergency plan, which was stored in the office of the director, could not be examined. The room was situated near the border of the cone in which the building sunk and the floor was unstable. It was demolished later with all documents and books on the tables when a roof was erected over the whole site. This was necessary because on the next day it started raining. The big top of a circus covered now the hill of garbage to protect the documents for the next days until the roof was finished.

The second day after the disaster I was able to help with some members of our institute with the rescue process. Until it was clear that all missing persons were found the work went on 24 hours a day. Tons of broken concrete, bricks and rests of archival documents were carried to a big hall to collect even the smallest pieces of papers. Only firefighters or members of other emergency services were involved to rescue the material on-site. They packed what they could into transport boxes. The best boxes they could use were new rubbish bins. They have a lid against the rain and two pins on the sides where they could be hung over the rubbish hill in place and finally they have good transport wheels. Very quickly an emergency place for helpers and restorers was built, where the archival documents could be packed and sorted. The wet pieces were enveloped in a plastic foil and packed into skeleton containers and sent to a freezing center preparing for the freeze drying procedure. The first emergency site was very dusty and loud because on the same site the rubbish was stored and sorted by excavator machines. A new site was needed where the packing and cleaning could be made under better conditions. The authorities specified that changing rooms with lockers and separate toilets for women and men should be available. We found this in a large furniture store close to Cologne. Two and a half floors with 6000m² were prepared for that. The delivery entrance and elevators had to be prepared so that the building was secure for the very precious materials. A special 24 hours guard service was installed. The rescue activity was made from 7 am to 2 pm and from 2 pm to 7 pm in two working shifts. Helpers, archivists and restorers from many cities, many countries, many trainings came to Cologne. The onsite rescue crew tried to organize the work of up to 30 helpers with the help of 3 to 8 restorers and archivists.

After two weeks it was noted that too many archivals were packed into skeleton containers because most helpers and also restorers could not distinguish between humid and wet objects. The very wet objects have to be freeze dried, the other materials could be dried on-site. Therefore four cabins were built with foils in which air dryers and ventilators produced a dry climate of 30 to 40 % r.H. and 25 °C. The books and archivals were first laid open on shelves on trolleys and these were carted into these cabins and dried over 12 to 24 hours. This technique turned out to be successful for the humid materials.

The biggest problem was that half of the material was destroyed and lacerated into thousands of large and small pieces. The helpers tried to sort them but it was often not possible to register and collate the pieces. Because often many boxes per hour were excavated by the firefighters the packing and register action had to be very quick. Sometimes about hundred boxes had to be

executed on one day and a tailback occurred.

A good cleaning or a restoration could not be made at this speed, but the material was packed in good conservation papers, envelopes and boxes. These boxes had to be brought to twenty external archives because of the insurance and their storage facilities. But because of the disruption of the collections the unification of the pieces will make a continuous problem for the future. During the rescue all wet medieval parchment books with illuminations came into our Institute. We dried them very quickly with freeze drying, ventilators or hair dryers. In every case the process had to be as quick as possible. Often the water penetrated only in the moment when the firefighter took the books from the rubbish and rain or collected water from a hole in the rubbish mass run into the fore-edge. The water run had to be stopped quickly before the water could damage the paintings. For example one of the most precious books was the gospel book from St. Gereon (10th cent.) and a book of hours (15th cent.) could be saved in this way.

After half a year the firefighters came to the ground water level. Then an emergency center had to be installed near the site where they were excavated. The totally wet and dirty archival documents had to be cleaned under water before packing for freeze drying. This was done for four weeks then the site was not stable enough to work in.

A construction has now to be built around the archival documents which lay in the cone hole in the water. This building will be finished in August and then the rest can be excavated safely without putting the houses around the site in danger.

For the restoration of the big mass of archival documents each of the 100 000 boxes have to be opened again and restorers have to classify the objects to different restoration processes. These have to be made in many other restoration labs in Germany and other countries. Calculates at this time is that the restoration process will cost some 150 million and take possibly 50 years. For the classification and distribution a very large area is necessary. This site (3x6000m²) is being constructed at this time and hopefully be finished in October this year. In the meantime a large group of archivists are opening the boxes stored in the different archives to register the collections with a new software. This should allow to better unify the disrupted collections.

For the future we have to think how to deal with preservation of our cultural heritage. Are our measures like emergency plan exhausting the possibilities of precaution for the preservation of cultural heritage? Do we need more conscience or more precepts of laws to make sure that cultural heritage cannot be lost? For the Cologne archive a concise catalogue and a signature on every page would improve the efficiency of unification of the disrupted collections. Can we conservators agree to the last proposal?

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