Icon NEWS

THE MAGAZINE OF THE INSTITUTE OF CONSERVATION • JUNE 2017 • ISSUE 70

Representing Icon in China

Also in this issue

Decoding a colour chart • A new conservation studio • Digitising PhD theses

ARMOUR SYSTEMS™ + MUSEUM WORKSHOP

Mounting interest at the National Army Museum in Chelsea

Specialist mount makers Museum Workshop, a brand of Conservation by Design, have just completed a major installation of mounted objects for the National Army Museum in West London, that has allowed two-thirds of the collection to be displayed for the first time, across five new permanent galleries.

Our challenge was to carry out the design, manufacture and installation of 1700 artefact displays in the midst of an on-going internal refurbishment and fit-out, in order to achieve a mid-march opening by H.M. Queen Elizabeth.

Our success was achieved by the commitment of an experienced, multi-disciplined project team, working closely with the museum's curatorial staff, to create compelling stories and engaging experiences across the five gallery themes of Soldier, Army, Battle, Insight and Society.

Mount makers *Toby McNicol (head of mount-making), Adam Smith, Zoe Harper, John Dowling, Nathan Jones*
Technical support *Marcus Gittins, Ed Morriss, Matt Edwards, Ben Coles, Vincent Gascoigne*
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inside ICON NEWS

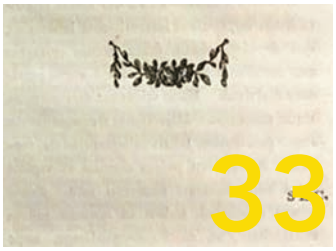
JUNE 2017 Issue 70

From the Editor

In this issue, we greet with pleasure news of a new studio opening thanks to the National Trust and the news of a dozen more conservators who have achieved ACR status. We also welcome the new Dynamic Objects Network and a new voice to conservation in the shape of *The C Word: the Conservators' Podcast*; each podcast lasts about an hour to provide a stimulating and interesting listen with authoritative voices in the mix to clarify and inform on the subject in hand. And, of course, as ever we welcome our new members.

Heritage science provides another thread running through this issue. Students apply science to a real-life case study (dogs and all!); investigative techniques offer an insight into the mysterious colour chart of an 18thC botanical artist; our CEO notes heavy investment in science on her trip to China and our Membership Manager noticed that heritage science research was informing practice across the many Group events he attended this Spring. We also have some interesting thoughts from a heritage scientist still pondering the issues from deep into retirement. And we welcome the first open access research to be funded by the National Heritage Science Forum, of which Icon is a founder member.

Lynette Gill



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Cover photo
Part of The Palace Museum in the Forbidden City in Beijing. Photo taken by Alison Richmond on her tour of China representing Icon

Deadlines for adverts and editorial
For the August 2017 issue
Friday 2 June

For the October 2017 issue
Friday 4 August

professional update

In place of her normal column here, our Chief Executive Alison Richmond has written our main feature article about her recent visit to China.

NEWS FROM THE BOARD

Strategy update

Icon's draft strategy 2017–2021 was sent out for consultation in February, inviting feedback from members and key stakeholders. This is the first time Icon has undertaken such a consultation and so it was important that the draft strategy document looked attractive and inspiring, particularly as we were aiming for engagement from external partners and stakeholders. We hoped the document would stimulate a good range of feedback.

All members were sent a link to complete a survey and were asked to rate each of the three main aims and all of the sub-themes, with plenty of room to make comments in free text. Meanwhile, stakeholders were emailed a copy of the strategy, and asked to answer three questions:

- Are these strategic areas appropriate for Icon?
- Would you be willing to engage with us on these?
- How could we make it easiest for you to work with us?

We were very happy with the response: 203 members completed the survey and many provided free text comments so there is plenty of feedback for the Trustees to consider. The majority of feedback from members is very positive, with around 50% 'wholeheartedly' agreeing with the aims of the strategy. This is especially the case with the Advocacy and Excellence aims and these results are consistent with the responses to the 2015 Membership Survey.

Free text comments highlight some of the issues that may need strengthening:

- Ensure that the strategy takes account of Icon members as stakeholders that are key to its delivery.
- For some members, external advocacy is a priority, while others are more concerned with supporting standards for existing members.
- Diversity of the workforce is an issue and many commented on the lack of diversity in the imagery.
- The strategy is London-centric and Icon needs to demonstrate that it is relevant and active across the UK.
- Active and visible support for research needs to be enhanced.
- The strategy needs to underscore its relevance to the private sector.
- The strategy needs to demonstrate Icon's international perspective.

External stakeholders' feedback was also very positive. All respondents thought that the aims were appropriate for Icon and most expressed the wish to work with Icon on these, while the question of how Icon supports what is already going on in the sector was also raised. Some even identified specific areas for collaboration. Among the areas set for further consideration by the Board are complex questions around Icon's identity and the space that it occupies in the heritage, museums, libraries and archives sectors and importantly how we communicate that to external audiences.

The key messages from the feedback will be considered by the Board before a final version of the strategy is published and sent to members and stakeholders.

Fundraising training for Trustees

Thanks to a match-funded grant from the 'Giving to Heritage' programme, Icon has been supported to build its capacity in fundraising. Jo O'Sullivan, who has an impressive background in fundraising across the charitable and private sectors, took a small group of Trustees and staff on a journey to identify Icon's unique case for support and to answer the question: what would persuade an individual, a funder or a sponsor to support Icon rather than any other similar organisation?

The learning was enhanced by the presence of Trustees who had expertise and experience in communication, public engagement and fund-giving, and their contributions to the session added new dimensions to the foundations that were laid.

The next steps will be for the Board of Trustees to further refine the key messages and for staff to compile the components of a case for support for each project bid. At the end of April, Jo will meet again with the 'fundraising trustees' and staff, this time to draft a fundraising strategy.

The 'Giving to Heritage' programme is supported by the Institute of Fundraising, the Heritage Lottery Fund and The Heritage Alliance. We are very grateful for their support.

Alison Richmond

INCREASING SUPPORTER MEMBERSHIP

Members may recall that a key aim to emerge from strategic workshops held by the Board of Trustees was to increase Icon's supporter base; that is, members who are interested in the world of conservation but not conservators themselves. It was thought that Icon could cater more effectively for some of the large numbers consuming our content on platforms such as Facebook and Twitter, and it was considered appropriate that this area be subject to some dedicated exploration and critical assessment.

There are a broad variety of options – and complexities – in this area, and so the Board of Trustees has set up a Task and Finish Group to examine our options with a view to growing Icon's supporter base. The Group consists of three Trustees, the Membership Manager and two co-opted members; it is chaired by Trustee Caroline Peach.

Over the coming weeks, the Group will seek to define the products for Icon's new supporter categories; to test them; to determine the required infrastructure for delivering them; to develop a proposal for launching the products and of course to define the budget that would be required to do so.

Please stay tuned for more on the Group as this exploratory work progresses.

'ANYTHING THAT MOVES'

Icon's new Dynamic Objects Network launched in grand style last month with a sold-out event at the Clockworks, a private horology museum and studio.

Nearly forty people were in attendance, bringing the event slightly over capacity, with a range of representatives from museums, private sector organisations, academia and indeed Icon.

There were opening comments from Jonathan Betts, a member of Icon's Board of Trustees, who explained that the Network was designed to engage conservators working on 'anything that moves' - an extensive field implicating a wide-range of materials and object types.

Françoise Collanges also spoke, outlining the key points of the Dynamic Objects Network, including its goals, focuses and future projects. She reminded everyone that The Network is a collection of people who primarily live by their diverse heritage conservation responsibilities, interests and skills. Françoise discussed the need to prepare a set of conservation guidelines for the assessment and care of Dynamic Objects as a future Network project.

Matthew Read ACR at the Dynamic Objects Network launch

Image: Paula Moore/West Dean

Image: Paula Moore/West Dean

Launching the Dynamic Objects Network: (from the left) Kenneth Cobb, James Nye (the Clockworks founder), Françoise Collanges and Icon Trustee Jonathan Betts

Matthew Read ACR, senior tutor at West Dean College, presented examples of the diverse nature of dynamic artefacts that have needed attention. These include dolls, whose media include brass and steel, papier-mâché, ceramics and hair, and The Bowes Museum Swan on which Matthew is a lead conservator. He asked 'When does any dynamic object cross over from being something that can be restored to working order, or, to being respected as an archaeological object loaded with its own history which could be stripped away when made to work?'

The Dynamic Objects Network aims to support established professionals working with these objects and to foster new interest in issues around their conservation. It will work towards the following five objectives:

- To define a general approach to the conservation of dynamic objects on a professional level, irrespective of whether they are still running or are now static. This includes the process of being changed from one state to the other.
- To promote the conservation of dynamic objects to the general public. This includes promoting an understanding of what cultural dynamic objects are; how conserving them respects their cultural, historical and social values as much as their materials and why this demands specific sets of knowledge and skills.
- To prepare guidelines to support the conservation of dynamic objects.
- To support the professional development of conservators within this discipline.
- To provide a channel to report professional findings, including support to produce peer-reviewed publications and to give professional advice upon request.

Icon's new Network model provides the means for members to come together across the specialisms, to progress short-term or long-term projects focusing on areas of relevance in conservation outside Icon's current core activities.

The Dynamic Objects Network will stage themed meetings, organised in partnership with Icon's established specialist Groups, and will welcome collaborative projects with any organisation sharing the same objectives.

If you are interested in getting involved with the Network, simply visit the website or get in touch with the membership team.

ICON MEMBERSHIP & CSCS CARDS

As many of you know, a CSCS card is a very useful and necessary card to obtain in order to work on any sort of construction site.

The Construction Skills Certification Scheme (CSCS) has withdrawn the Construction Related Occupation (CRO) card. CRO cards ceased to be issued on 31 March 2017, and some of you may be affected by this change.

This is a quick reminder to confirm that Icon's own CSCS card scheme is unaffected and qualified Icon members can still obtain CSCS cards in the usual way.

Since Icon's previous scheme ended in 2014, members had been in touch with the office to relay the challenges they experienced integrating themselves into the framework operated by our friends at the CITB in the absence of clear guidance from the Institute.

Some of you may recall the consultation that was launched in January 2015, asking members to contact the office to provide details of their experiences so that Icon could calibrate guidance and liaise with the CITB in a bid to address common problems faced by conservators seeking to obtain a CSCS card.

Overwhelmingly, members asked for Icon to raise awareness of the Accredited standard, and the quality assurances provided alongside this by Icon's Code of Conduct, Professional Standards, and support provided to conservators on the PACR Pathway.

The feedback that was amassed during this consultation was extremely helpful and ensured that Icon's Professional Development team was well aware of the needs of members when working with the CITB later that year.

The resulting scheme, in place since the autumn of 2015, has smoothed the route for conservators towards the essential CSCS card, and feedback has been almost entirely positive.

Those of you who are Accredited members or Associate members on the PACR Pathway can qualify for a CSCS Card by presenting your current Icon membership card, and completing the relevant test. The type of CSCS card which is appropriate will vary depending on the experience of the individual:

Trainee Card:

Suitable for a recent graduate from an accredited academic or vocational programme or someone who is learning on the job through work experience. Must be registered on the PACR Pathway.

The card is valid for five years and cannot be renewed.

You must have:

- Pass certificate for appropriate CITB Health & Safety test. CITB can confirm the appropriate test.
- Associate Icon membership card which states PACR Pathway.

Experienced Technical, Supervisor or Manager:

Suitable for someone who has at least two years of previous experience in the sector, but who dos not hold an NVQ Qualification or who has not been accredited. It is appropriate for Icon members registered on the PACR Pathway.

The card is valid for three years and cannot be renewed.

You must have:

- Pass certificate for appropriate CITB Health & Safety test. CITB can confirm the appropriate test.
- Associate Icon membership card which states PACR Pathway.

Professionally Qualified Person:

Suitable for someone with Accredited Conservator Restorer (ACR) status.

The card is valid for five years and can be renewed.

You must have:

- Pass certificate for appropriate CITB Health & Safety test. CITB can confirm the appropriate test.
- Accredited Icon membership card.

CSCS is fully managed by Construction Industry Training Board, and issues should first be directed towards them.

To apply

1 Visit https://www.cscs.uk.com/ or call 0344 994 4777 to identify the appropriate card and test type.
2 Book your Health & Safety Test
3 Email copy of test certificate and Icon membership card to cscs@citb.co.uk
4 Call 0344 944 4777 within 5 days of emailing across your documentation to make your payment.

As ever, if you have any questions or comments about Icon membership and CSCS cards, please get in touch with our Professional Development Manager, Patrick Whife, at pwhife@icon.org.uk, so we can bear this in mind when we are next liaising with CITB.

PACR PATHWAY ENTERS ITS FIFTH YEAR!

The PACR Pathway was launched in April 2013 to provide support to Associate Members of Icon in their pursuit of Accreditation through linking them with one of seventy three trained mentors, all of whom are ACRs.

In addition to working with a mentor, Pathway members are able to attend events throughout the year. These include PACR Clinics which are designed to support members close to accreditation and allow them the opportunity to ask any questions they may have about their applications and the process of applying. At least six events are run each year (but often more). In the last year alone we have run events in Bristol, Glasgow, London (three times), Oxford and York.

There is also the opportunity to attend the annual PACR Pathway event, which focusses on a different topic each year. Recent events have included Continuing Professional Development and also Conservation and the Law. These events allow members to network with other professionals, as well as giving participants the opportunity to hear about a topic which can support their ongoing professional development.

It is fair to say that the Professional Development Team did not know what to expect by way of take up, however it was soon evident that the interest in the Pathway was far greater than anticipated; so much so that by the end of its first year there were 110 members with another 140 joining the next year. Since then, it has continued to grow, with 584 people now having signed up. Based on the current membership and those live on the Pathway, this equates to 42% of the current Associate Members being registered, a fantastic achievement.

To date, 77 members of the PACR Pathway have gone on to accreditation, 174 have worked with an Icon Mentor and more than 215 people have attended PACR Clinics. Looking at those accredited in the last year, all bar one worked with a mentor (compared to 54% in 2012), and benefited from their essential support in going through the PACR Process.

For those of you already on the Pathway, please stay in touch and let us know any questions – even if you have yet to start working with your mentor.

The Pathway has a huge amount of potential and we can see that there is appetite for the further development of this initiative, one of which could be linking it to a cross specialist network of emerging professionals and we are keen to support this developing from within the membership. Under the auspices of the newly developed network model, this would offer the opportunity to develop further events and to arrange specific network events for those members approaching accreditation.

If you are interested in taking the lead or supporting this, please do get in touch with our Head of Professional Development, Susan Bradshaw on sbradshaw@icon.org.uk.

GOLD DUST: NHSF NEWS

The first Gold Open Access publication to be fully funded by the National Heritage Science Forum's Gold Open Access grant is now available online free of charge.

The research paper, by Dr Helen Wilson and Sarah VanSnick, is titled 'The effectiveness of dust mitigation and cleaning strategies at The National Archives, UK' and is published in

Photo: NHSF

NHSF Golden Girls: Sarah VanSnick and Helen Wilson

the *Journal of Cultural Heritage* 24, 100–107. It is available at: www.sciencedirect.com/science/article/pii/S1296207163020 72 or http://dx.doi.org/10.1016/j.culher.2016.09.004

The article discusses current preventive conservation and cleaning practices at the National Archives. Sarah VanSnick, Senior Conservation Manager at TNA said: 'This research had some very practical outcomes and direct application to conservation practice. We hope it will support those in the archive and library sector advocating for preventive measures or wanting to improve them.'

The NHSF Gold Open Access Grant is available to NHSF member organisations and their employees. It supports delivery of the National Heritage Science Strategy by giving full access to current research free of charge and immediately on publication, thus maximising the impact and benefit of heritage science and increasing the visibility of current research within and outside of the heritage sector.

TRAVELS WITH THE MEMBERSHIP MANAGER: Spring 2017

Research across specialist borders

This Spring has featured an especially busy season of lectures, conferences and other events organised by Icon's specialist Groups. Locations have taken in some beautiful historic cities, including Ely, Cambridge, Bath and of course London. These events have engaged with a wide range of specialist topics and debates across the sector but they all had one thing in common. They all underscored the vital connection between research and practice and emphasised that the need for heritage science research is greater than ever.

As we all know, the activity of the conservation sector is

Michael Nelles
Membership Manager

strongly underpinned by current heritage science research. At any given moment, a substantial contingent of researchers are making new discoveries that can have a direct impact on conservation practice.

The extent of research underway in our sector has been prominently showcased at recent Group events. This January, I popped over to Freemasons Hall in London, where the Stone and Wall Paintings Group had found themselves with an offer of a speaker they couldn't refuse, nearly selling out the lecture room at Freemasons Hall at comparatively short notice. The draw was Chiara Pasian, who is in the final stages of her PhD research into the behaviour of water in grouting. Chiara's research seeks to determine the best way to reduce the water content of conventional grouts in order to mitigate risks for water-sensitive original materials that may be present, for example by substituting ethanol or whisked albumin. Naturally, her conclusions are relevant to the work of practitioners, and the discussion following her talk underscored linkages between conservation practice and the value of new research.

The Book and Paper Group AGM late this March also showcased some key advances in heritage science research, this time with strong interdisciplinary links. Dr Paola Ricciardi, a research scientist at the Fitzwilliam Museum in Cambridge, gave a talk describing her work as the lead scientist on the MINIARE Project, which employs a combination of advanced scientific methods for the study of illuminated manuscripts. For me, this underscored the variety of connections between technical art history, material culture and the historical record – particularly as Paola's chemical analysis was able to shed new light on old-world trade routes, providing insights into the transfer of knowledge and skills between different craftsmen working across a variety of media.

These two lectures held clear relevance for a broad contingent of Icon members, so how can Icon ensure that all members are able to access and discuss some of these insights? There are several new technological approaches to outreach and dissemination that are gaining ground. Most prominent among these is podcasting, which has been trialled successfully to extend the reach of a highly-rated talk staged in London this February. Dr Clare Finn ACR of Icon's Paintings Group organised a particularly well-received session on 'Copyright for Conservators' and the talk, by copyright specialist Dennis Lee of Bircham Dyson Bell LLP, drew a packed house from right across the specialisms. Of course, even this was a small fragment of Icon members who would have been interested to attend. To break down some of these

The geographic distribution of the Icon membership

geographic barriers, a podcast of Dennis's talk was published (with his permission) in the members' area of the Icon website, and the click-through figures are strong. So podcasting technology could help to ensure that more members are able to catch up with the latest talks no matter where they are in the country: watch this space!

In March, I headed to Bath to join the Textile Group for their annual Forum and AGM. Across an action-packed programme featuring thirteen papers, speakers described some of their creative solutions to storage problems – navigating restrictive influences of time and cost to maintain quality. Linkages between research, science and conservation practice were again strongly evident, as delegates related their experiences of designing effective – and readily accessible – storage systems.

All of these events involved a substantial investment of time and energy by Icon members serving on conference organising committees, not to mention the efforts expended by delegates presenting papers. To ensure maximum impact for these events, research can again provide the tools to ensure events are able to maximise attendance and deliver key benefits directly to Icon members.

While podcasting will help mitigate geographic barriers to attendance, new methods of targeting the geographic specificity of the membership mix have recently started to offer new insights. Alex Owen, Chair of the Furniture and Wooden Objects Group, made postcode analysis much simpler when he discovered an easy-to-use website that would generate visual depictions of the geographic spread resulting from a list of Group members' postcodes. It illustrates in striking detail the exact concentrations of

members at various locations across the country. These insights will help to inform future events programming.

Beyond geography however, there is still plenty of work to be done. Other barriers to attendance exist and members throughout the country can expect to incur transport and accommodation costs as they travel to attend relevant training and conference events. Bursaries can help offset the costs, so that people are more easily able to attend lectures and conferences to keep abreast of our sector's fast-moving trajectory, and here Icon has a clear role to play.

Since 2015, Icon has received generous grant funding from TruVue to offer CPD grants for mid-career conservators and this programme has enabled more than forty conservators to attend conferences, workshops, training courses and even to undertake mid-career internships. As ever, Icon is working to maintain this welcome funding stream for members – so watch this space!

Icon's Groups have also developed innovative approaches to bursaries and a number have launched new schemes to enhance access to training events. At their AGM this March, the Book and Paper Group announced a series of Professional Development Bursaries for book and paper conservators. The Group aims to award five bursaries of £100 each to support conservators undertaking training and research. Similarly, the Heritage Science Group offered grants of £150 to support students attending the International Conference on Science and Engineering in Arts, Heritage, and Archaeology (SEAHA) at the University of Brighton this June. A number of other Groups are also working out bursary schemes for the benefit of Icon members – good cause to stay tuned to the Iconnect system!

All of this takes place against a backdrop of heritage science research delivering ever-more practical insights to influence conservation practice. In April, I headed to Cambridge to join the Historic Interiors Group for their annual conference. Research insights ran the gamut, and in many areas indicated the further work to be done. The House of Commons is set to commission three MA projects to explore issues such as the manner in which dust is able to attach itself to the vertical surface of historic frescos, part of a project led by Caroline Babington ACR.

Alongside this, practical research was showcased by the investment of time and ingenuity required to recreate historic wallpapers at the Palace of Westminster, reviving vanished craft skills to produce strikingly beautiful neo-Gothic designs with glistening gold and delicate flock textures, a project led by former Icon Trustee Allyson McDermott. Amidst all the advances, this was a reminder that it sometimes falls to conservators to use research to uncover ways to match the forgotten methods of master craftsmen and decorators of bygone eras.

The importance of heritage science research to conservation practice is set to continue. Looking towards our forthcoming round of events, Icon will continue to seek ways to mitigate barriers and extend participation across as wide a base as possible to ensure that members can stay up-to-date with new developments across our sector. Please stay tuned – or indeed, let me know your views and suggestions!!

Michael Nelles

NEWS FROM THE GROUPS

Book and Paper Group

The Book & Paper Group AGM took place on Thursday 30 March 2017. Below are edited versions of the Chairs' annual reports, along with a report on the meeting itself by a student from Camberwell College of Arts.

The guest lecture, by Dr Paola Ricciardi: 'Colour, colourants and context – a heritage scientist's perspective' will be made available on the Icon website.

Chair's Report (Michelle Stoddart)

BIRMINGHAM CONFERENCE

This year we had the joint session with the Photographic Materials Group at the Birmingham 'Turn and Face the Change: Conservation in the 21st Century' Conference. Thank you very much to those of you who submitted presentations, those that presented, and those that helped organise the event and helped out on the day.

ACCESS

The Committee has sought to address the London-centric nature of events by having events in various locations, including Cambridge and Oxford (see below). Another way we will seek to address this is through online content. We

have recently purchased a camera and will record events and training with the permission of the presenter. We will then upload these videos to behind the password protection of the Icon website. The Special Project Officers (SPOs) are looking into hosting webinars, which could mean that people could attend events in real time and participate online.

GRANTS/BURSARIES

In remembrance of Fred Bearman the Book and Paper Group would like to announce the Fred Bearman Research Grant. More information about this Grant will be available on the Icon website.

This year we started our two-year scheme of Professional Development Bursaries for book and paper conservators. These bursaries are financed with the surplus from our 2015 'Adapt and Evolve Conference'.

DOCUMENTATION NETWORK

The Documentation Network is currently working with the Book & Paper Group and the Stained Glass Group to research the benefits and issues of using the CIDOC CRM standard.

COMMUNICATION

We are putting a larger focus on communication, within the Committee itself, with other Groups, and with Icon central. The Committee has started to use online systems, such as Trello and Google Docs suite, to coordinate workflow.

In terms of working with other Groups and Icon central there has been discussion of using similar online systems to better communicate and this is on the agenda for the next Group Chairs Forum. We are also looking to share the camera with other Groups, so that we all benefit from the videos on the Icon website.

THE FUTURE

The Group is currently working on a variety of projects. We are looking to help implement Icon's draft strategy 2017–2021, with a focus on advocacy, excellence and engagement. We are reviewing and updating our policies where necessary. We are looking to create re-occurring bursaries and financial opportunities. We are planning a Book & Paper Group conference for next year as well as more lectures and workshops. We are also looking to have a bigger digital presence, through the Icon website and social media.

Events and Training Sub-committee Chair's Report (Fiona Mclees)

EVENTS & TRAINING

In total, seventy-two workshop places were offered this year. All workshops were fully booked with the exception of the Northampton iteration of the Photoshop Skills course, which was cancelled due to low uptake. However, this course has proved successful in other locations and there are plans to re-run in further locations. This course has also resulted in closer collaboration with the Furniture and Wooden Objects Group, as their Chair Alex Owen is the course tutor, and has led to discussions of other ways in which the Groups could share training resources.

Four evening lectures were organized over the last twelve months, including the AGM lecture. The first three lectures offered a hundred and forty places in total, with each lecture subsidized to ensure that members could attend for free (with a small fee in place for non-members). In spite of free booking only eighty-one tickets were taken up for these events: discouraging factors may have been the Oxford location of one lecture, and the Alexander Technique lecture appealing significantly less than the Alexander Technique practical workshop, suggesting that for this kind of training a hands-on approach is more desirable. The lecture on paper history given by Andrew Honey was booked out entirely. However, one risk of making lectures free is that there were several last-minute cancellations or no-shows for this event, unfortunately too late to re-allocate the tickets to people on the waiting list.

GRANTS AND HOST INSTITUTIONS

We are very grateful to the following sponsors who provided funds or materials to support Events & Training activities:

Clare Hampson Fund

Conservation by Design

Icon Book & Paper Group

We also greatly appreciate the assistance of the institutions who are willing to host our events, and the employers who support the attendance at meetings of Events & Training Sub-committee members, all of whom are volunteers.

FUTURE PLANNING

Several events ran waiting lists, and we hope to repeat some of these courses in order to accommodate those on the waiting lists. Where possible, we would like to run repeat events in different geographical locations. As usual, we would be interested to hear from any studios outside of London who would be able to host workshops. Unfortunately despite repeated calls for volunteers to join the Sub-committee from other parts of the country, our members are all still in the Southern part of the UK (Oxford, Cambridge and London), and as a result regional events are infrequent. However, we will continue to address this imbalance whenever possible, and one way in which we hope to do this is by filming lectures and making the videos available through the Icon website, for the benefit of members everywhere.

We have several events already in place for 2017, including a repeat of the Salt-Printing workshop run in collaboration with Lux Darkroom last year, and a special one-off Gold Finishing course.

Following on from the success of 2015's Book & Paper Group Conference 'Adapt & Evolve', we have begun planning for another stand-alone Book & Paper Group Conference in 2018. We are currently in the early stages of this and will update you further in due course.

Care of Collections Group

The Care of Collections Group and the Metals Group are excited to announce our joint event hosted by the Royal Armouries in Leeds on Wednesday 26 July: *Bite the bullet: Managing firearms and other tricky collections.* The day will include papers, discussions and practical collections care applications for the management of firearms, weapons and hazardous collections. It is aimed at anyone with any involvement with, or responsibility for, care and management of such collections.

The provisional timetable for the day is as follows:

10:00 – Tea and Coffee on arrival
10:15 – Welcome and Introduction
10:30 – Collection hazards: An Introduction
11:00 – Firearms and weapons: Key considerations
12:00 – Lunch, delegates to provide their own lunch
13:00 – Handling of firearms/weapons/other hazards
14:00 – Packing and Transport of firearms/weapons/other hazards
14:30 – Tea and Coffee
15:00 – Scenario/group work/panel discussion
16:00 – End

There will be up to 100 tickets available, costing £10 plus booking fee for Icon members and £15 plus booking fee for non-Icon members. Further information on when ticket sales are live will be sent out via an Iconnect.

We are pleased to say that the Storage Day in Oxford which took place earlier this month sold out in record time. For any of you who were unable to book a place we will be providing a full write up in due course for Icon News.

Furniture and Wooden Objects Group

Report from the AGM

The Group's AGM, held at the end of February, proved once again to be a very enjoyable evening. Held at the William Morris Society in Hammersmith, this well-attended event offered an informative lecture and a chance for a catch up over a drink, as well as conducting the Group's business. This year we were pleased to host a talk by Jonathan Ashley-Smith focusing on his recently published work investigating the decline in practical skills among conservators. The talk was well received by those present who were broadly in agreement with his thesis. The main official Group business of note was to clarify the Group's name. It was voted almost unanimously that henceforth we should be known officially as 'The Furniture and Wooden Objects Group'. The minutes from the meeting are available on request from Alex Owen (aowen.cons@gmail.com).

New Committee members

The Group would like to formally welcome two new committee members:

Edward Hutt has recently graduated from Bucks New University with a degree in Furniture Conservation. Since then he has mainly been working in a self-employed capacity.

Oliver White has worked at Plowden & Smith since 2008 as a Furniture Conservator. Prior to that he completed a furniture restoration HND and a BSC in the Conservation of Decorative surfaces at London Met.

Symposium 2017

By the time this issue of Icon News goes to press the Group will have just held its second bi-annual symposium on 12 May at the Linnean Society in Piccadilly, London. Given the quality of the speakers and their abstracts, the event will struggle not to have been a great success! Irrespective, the Group would like to thank its committee members for all their hard work on the day, as well as thanking the Linnean Society, and particularly Tatiana Franco and Glenn Benson, for all their kind assistance in helping set the event up. Finally the Group would like to offer its greatest thanks to those who gave up so much of their time and energy to speak at the event – thank you!

Upholstery Conservation Event at Knole House

The Furniture and Wooden Objects Group has organised a joint event with the Textile Group called 'Approaching it Differently - Upholstery Conservation'. Held at Knole House in Kent, this two-day workshop is open to both Textile and Furniture conservators with the aim of fostering an informative exchange of skills and experience at this area of interface between the two specialisms.

The course will enable students to gain greater knowledge of the history of upholstered furniture with relation to the frame and textiles, and discuss the upholstery materials, tools and techniques used to create them. The methods available to

examine existing upholstery and to understand the physical evidence of original and later phases of work using tack holes and fragments on the frame will be discussed. Practical sessions will introduce participants to the simple upholstery skills necessary to attach and remove textiles from the frame using standard fixed attachments. Pros and cons of these traditional fixings will be discussed and provide a framework for discussion about how they can be replaced with less damaging alternative conservation techniques. Textile conservation and treatment of other original upholstery materials will be shown alongside modern approaches used for the recreation and application of missing historically accurate upholstery.

The course, lead by Heather Porter, will be held on Monday and Tuesday, September 4 & 5, 2017. There will also be an opportunity to explore Knole House. Morning and afternoon tea, plus a buffet lunch, will be provided. Ticket prices are offered at a subsidised rate.

For more details, and to book via Eventbrite, please see the event page on either the Textile or Furniture and Wooden Object sections of the Icon website, or look out for the relevant Iconnect.

Collaboration with the Wooburn Craft School

In order to improve our members' ability to access more affordable, quality CPD, the Group has started working with the Wooburn Craft School to offer a discounted rate to Icon members on many of its courses – often between 10% and 20%. The Wooburn Craft School, located just off the M40 near Beaconsfield, offers courses in a range of traditional craft skills, many of which are directly related to the Furniture and Wooden Objects Group's interests. Courses usually run for five days and offer a chance for conservators to instigate, refresh, or hone their practical craft skills.

Look out for Iconnects over the coming weeks and months with details of courses including French upholstery (beginners and intermediate), woodcarving, marquetry, and mosaic. More details are available from the Group's event page on the Icon website or via the School's website (www.wooburncraftschool.com). Tickets are available on Eventbrite or by contacting the school. Discounted rates are NOT available on their website so please contact them directly - just make sure to mention you are an Icon member when you book!

And finally...

The Group is always looking for help and assistance – either in the form of one-off ideas or suggestions, or as longer term support by becoming a committee member. If you have any ideas for events, talks, lectures, or any other forms of CPD or networking, particularly if they might be successfully held outside of London, then please do be in touch!

Metals Group

For the event coming up in July to be held jointly with the Care of Collections Group please see all the details above under the Care of Collections Group entry.

Icon Scotland Group

The Icon Scotland Group has been focusing on communicating via social media and the Scotland Group Iconnect, but it seems a good idea to resume our update in Icon News, so here we are! Icon Scotland is Icon's only national group, representing conservators, conservation scientists and preservation specialists working in Scotland. The committee members are listed on our page on the Icon website and have been featuring in a series of interviews on the Group's blog (https://iconscotland.wordpress.com). The committee typically meets three or four times per year, usually in Edinburgh and Glasgow, and for the last few years we have also held an annual away day, to provide time for detailed planning and reflection. This year's away day was held on 8 February at the recently opened Kelvinhall in Glasgow, with visits to the National Library of Scotland's Moving Image Archive and the Hunterian Collections Study Centre.

The Icon Scotland Group works with other heritage organisations in Scotland to lobby the Scottish government on issues of common interest and concern, and has recently contributed through Built Environment Forum Scotland (BEFS) to a report entitled *Brexit: What Scotland thinks: summary of evidence and emerging issues* and has drafted evidence for BEFS to take forward to a meeting with Fiona Hyslop (Cabinet Secretary for Culture, Tourism and External Affairs) and Mike Russell (Scottish Brexit Minister).

Recent events

These have included a visit to explore conservation issues at Stirling Castle for students and emerging professionals. As with the previous event held at Edinburgh Castle in 2016, the Stirling Castle visit was fully booked and provided a brilliant opportunity for lively discussions about conservation ethics and practice. It is written up in this issue of Icon News. We also supported the 'Paper Conservators' Meet-up' on 19 April, which has become an annual event where paper conservators working in Scotland exchange news and ideas in informal five-minute presentations. And although we had no direct involvement in the Open Day at Glasgow University's Centre for Textile Conservation and Technical Art History, many of our members attended and this event deserves a mention because of its significance for the conservation community in Scotland. A write-up will appear on our blog soon.

Future events

The Icon Scotland Group is currently working on its programme of events for the year, which will include a repeat of the 'Building a repertoire of basic book conservation techniques' course in Edinburgh on 20 and 21 September, and other workshops such as the popular FOSSHAPE workshop.

PACR grant

We're keen to make members of the Group aware of our grant of £350 towards the PACR fee. Details of how to apply are on our Group page and also on Icon's main CPD Grants page.

Contact and keep in touch

We obviously welcome primary and secondary members, but remember that all you need to do in order to receive the emailed Scotland Group Iconnects is tick the Group on your Icon membership form. You can also see our latest updates on social media: our blog is at https://iconscotland.wordpress.com, our Facebook page is https://en-gb.facebook.com/iconscotlandgroup and our Twitter feed is @icon_scotland.

Textile Group

Due to publication deadlines, it is not always possible to mention all events so please check the Icon website and Iconnect for details. If you have anything that you would like mentioned in our communications please contact nadine.wilson@nationaltrust.org.uk.

Forum & AGM

The Group's Forum was held at the impressive Bath Assembly Rooms on 27 March. *From boxes to buildings: creative solutions for the storage of textiles and dress* included presentations and posters on storage and more general textile conservation issues. Thirteen papers and ten posters were presented and the event was attended by just over one hundred people. A drinks reception and exclusive access to the Fashion Museum were enjoyed by those who did not have to rush away after the Forum. A review of the day by Freya Gabbutt is included elsewhere in this issue.

The Group held its AGM, where committee members reported back from the previous year. We were joined by Michael Nelles, Icon's Membership Manager, who gave a breakdown of membership categories available within Icon and explained the introduction of a new 'Retired Member' category, which is in development with a view to implementation next year.

Three new committee members were appointed at the AGM. *Freya Gabbutt* is the Social Media representative, a recent graduate from the Centre for Textile Conservation in Glasgow. In her committee role she wishes to take a proactive approach to circulating relevant content through the Icon Textile Group social media outlets. *Melina Plottu* has become an Event Co-ordinator. Since 2013, she has been Textile Conservator at the Museum of London. She will join existing committee member Branwen Roberts in creating and managing new events for the Textile Group. *Sarah Glenn* is the new Committee Secretary (formerly Facebook Editor from 2015–17). She has worked at the Victoria & Albert Museum as a Textile Conservator since 2008. Full biographies and contact details of committee members are on the webpage.

Upcoming events

Studio Open Day: May Berkouwer Textile Conservation & Tours, will be held in Sudbury, Suffolk on Friday 30 June. To celebrate the 10th anniversary of the founding of May Berkouwer Textile Conservation, the studio is opening its doors to visitors. Following a chance to see current projects in the studio, attendees will be given a guided tour of nearby Richard Humphries Weaving Studio and a guided tour of Gainsborough House. Further details can be found on the Group's webpage.

people

Appointments

Hannah Clare has been appointed to the newly created post of Head of Preventive Conservation at the British Museum.

Over the past seven years Hannah has held several management roles in preventive conservation and conservation research at The National Archives and although it was a hard decision to leave, the opportunities and challenges offered by this new post with the British Museum are hugely exciting. She will play a key leadership role in the governance and delivery of the Museum's new Collection Care Strategy working alongside the Head of Conservation, Deputy Director (Collections), and other senior stakeholders.

In parallel, Hannah is a member of the 2016/17 cohort of Clore Leadership Fellows, the first from a conservation background to take up a Fellowship.

Philippa Räder ACR was appointed Head of The Royal Bindery, Windsor Castle in February 2017.

She has been a book conservator-restorer in various capacities for the Royal Collection since 2003. A Cambridge graduate in English, Philippa trained in book and paper conservation at the Getty Research Institute, California and previously held positions at The Huntington Library, California and The National Archives.

NEW ACRs

The Accreditation Committee approved the accreditation of the following conservator-restorers at its meeting in February 2017

Congratulations to all these new ACRs!

Michele Bartlett – Preventive

Jim Budd – Stained Glass

Gloria Conti – Book and Archive

Jessica Crann – Paper

Sarah Jarron – Stained Glass

Konstantina Konstantinidou – Paper

Fiona McLees – Paper

Jacqueline Moon – Paper and Photographic Materials

Kaori Motaung – Textiles

Maria-Jose Prieto-Pedregal – Paintings

Branwen Roberts – Textiles

Léonie van der Graaf – Paintings

Jenny van Enckevort – Textiles

Welcome to these new members

We'd like to extend a very warm welcome to all those who joined us in February and March 2017. We hope to see you at an Icon event soon!

Magali Aellen Loup
Associate

Sarah Askey
West Dean College
Student

Stephen Attfield
Associate

Sarah Baily
Associate

Wallis Bean
Student

Anna Bishop
Student

George Bogojevic
G B Decorating
Associate

Carrek Limited
Organisation

Jacqueline Chapman-Gray
Associate

Gill Cochrane
Student

Hazel Curtis
Associate

Alex Cuschieri
Student

Sarah-Jane Fox
Associate

Rehaf Gassas
Associate

Cristina Gomes
Associate

Carly Gratwick
Associate

Karen Guy
University of Lincoln
Student

Alexandra Hancock
National Trust
Associate

John Hoath
Artemis Conservation Ltd
Associate

Edward Hutt
Associate

Seth Irwin
Irwin Paper Conservation
Associate

William Jones
Heritage Project Contracts Ltd

Associate

Rose King
Student

Marjolein Koek
Rijksmuseum
Associate

Connie Lovatt
Associate

Luciana Marques
St Pauls Cathedral
Associate

Pedro Maximo Rocha
Student

Emma McCullough
Supporter

Caroline Miller
University College London
Student

Paola Montefusco Barouk
Associate

National Archives and Records Administration
Organisation

Viola Nicastro
Associate

Rosie Nuttal
University of Glasgow
Student

Maria Oliveira
Associate

Lucia Pereira-Pardo
Student

Andrew Peters
Associate

Jessica Phipps Wardle
Student

Rachael Potts
Supporter

Barbara Sanchez Gutierez
Associate

Linda Shetabi
Student

Carlos Silverio
Associate

Sara Spillett
Eton College
Associate

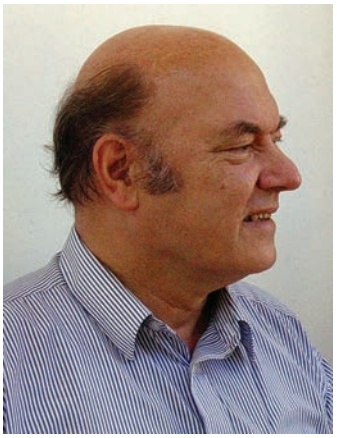
The Walters Art Museum
Organisation

Emily Thomas
Student

Lianne Uesato
Corning Museum of Glass
Associate

Anais Vlahakis
Student

In memory



Christopher Clarkson, who died at the age of 78 just before midnight on 30 March, was so deeply involved in the creation of book conservation as a distinct professional discipline that it is difficult to see how it would have developed without him.

He was born on 22 November 1938, in Bexley and, as a weak child, only went to school when he was 7. At 13, he was sent to the Camberwell College of Art and Crafts, gaining a National Diploma in Design. Recommended by Berthold Wolpe, who had seen some of his lettering, to apply to the Royal College of Art, he was introduced there to 'Fine Binding' by Peter Waters and graduated in 1963. He then taught at the Plymouth College of Art and Design, before working on the restoration of early printed books and manuscripts at Douglas Cockerell & Son and later with Roger Powell.

In 1967, he went with the British Government team to Florence after the devastating floods of November 1966 and became a leading figure in the salvage of the millions of damaged books. It was there that he developed his awareness of historical binding structures, questioning why some of the bindings had survived intact when other binding types had not. This gave him his abiding interest in the history of the structures and functional properties of bookbindings, and led to a detailed study of limp vellum bindings. He also began to formulate, along with others, the principles of 'book conservation' (a phrase he coined), as opposed to the simple repair of books without reference to their historical and archaeological significance, that are now embedded in modern conservation practice.

In 1971, Chris married Oonagh O'Donoghue, before moving to America the following year to work at the Library of Congress in Washington DC, with Peter Waters and Don Etherington, where he was made Head of Rare Book Preservation. While there, he developed the now ubiquitous 'phase box' temporary wrapper for damaged books (with the string and button fastening that he had seen on 15th-century German limp bindings) and the use of Plexiglas to create the first plastic book cradles for the display of books. In 1977, he joined the Walters Art Gallery in Baltimore, before returning, in 1979, to England to work at the Bodleian Library in Oxford. While there, he designed the foam-rubber wedge-shaped reading cradles that are now to be found in rare-book reading rooms throughout the world.

It was his concern about poor training in book conservation that led him, in 1987, to establish an internship programme for selected conservators from around the world at West Dean College, near Chichester, with the aim of helping them to develop a deeper understanding of the conservation of library and archive material.

In 1998, he returned to work privately in Oxford, working on the conservation of many important manuscripts and early printed books (including, most recently, the first two volumes of the 12th-century Winchester Bible). He worked as a consultant to the Bodleian Library, The Wordsworth Trust, the Hereford Cathedral Mappa Mundi Trust, the National Museum of Ireland, Trinity College Dublin, St Catherine's monastery on Mount Sinai and the Pierpont Morgan Library, and advised Danish and Icelandic libraries on their early manuscripts.

He sat on various British Standards Institution (BSI) Committees, and in 2004 he was awarded the Plowden Gold Medal of the Royal Warrant Holders Association in recognition of his significant contribution to the advancement of the conservation profession and was awarded an Honorary Doctorate by the University of the Arts London in 2012. He taught regular courses in the United States, Italy, France and Slovenia and gave lectures and workshops in many countries, including Japan.

It is difficult to think of anyone working in book conservation today who has not been influenced, directly or indirectly, by Chris's approach to his work and his remarkable technical skills. He was able to draw on a wide experience of work, a broad interest in craftsmanship, design and materials and an indefatigable determination to learn and explore what was needed to further his work. He was also always generous in his teaching and advice, from which many working in the field today have benefited. He is survived by his wife Oonagh and their two children, Eoghan and Siobhan, granddaughter Seren, and sister Josie Smart.

Nicholas Pickwoad

12 April 2017

Icon in China

Alison Richmond, Icon's Chief Executive, eports on her recent trip to China representing Icon as part of a British Council delegation

On 25 February our small party of UK heritage professionals stepped on board a direct flight from Heathrow to Beijing. I was travelling in the delightful company of Alexandra Warr (Senior Advisor, Historic England), Debbie Dance (Director, Oxford Preservation Trust), Tony Crouch (City of Bath World Heritage Site Manager) and Humphrey Welfare (Chairman, Hadrian's Wall World Heritage Site Partnership Board and Trustee of the Churches Conservation Trust). The British Council organised the tour, with Katherine Peringer, Karen Cheng and Shengnan Liu accompanying us throughout and translating for us. The Tour was funded by the UK Government's Prosperity Fund.

Less than twenty-four hours later we were standing in the grandest of the ceremonial courtyards of the Forbidden City. Nothing – none of the books I had read or films I had seen – prepared me for this incredible experience. As anyone who has been there will know: the scale of this complex is mind-blowing. But that wasn't all, we had the site more or less to ourselves. We had arrived just before closing time and visitors were a few courtyards ahead of us, being herded towards the exit.

This was my first impression on what was to be an amazing whirl-wind 'High Level Cultural Exchange Tour' organised by The British Council that would also take us from Beijing to Xi'an in Shaanxi Province, the home of the Terracotta Warriors. As well as visits to museums and World Heritage Sites, we were invited to two conferences, one at Peking University and one in Xi'an, where we joined our Chinese counterparts in presenting papers and took part in Question and Answer sessions.

The tour provided a very useful introduction to the Chinese heritage landscape, encouraged mutual understanding and was invaluable to establish contact with key personnel in Peking University and heritage organisations in Xi'an. Set out below are my initial impressions gleaned from visits, listening to presentations and Q&A at the two forums, and from informal conversations with our hosts, with some thoughts on next steps.

UK Delegates visiting The Great Wall at Badaling: l to r: Humphrey Welfare, Alison Richmond, Katherine Peringer (The British Council), Tony Crouch, Alexandra Warr, Debbie Dance

A rare view of the Palace Museum in the Forbidden City – spot the tourist!

IMPORTANCE OF CULTURAL HERITAGE

There is a deep sense of national pride in China's cultural heritage and a recognition that pro-active steps need to be taken to preserve it. There is also is a belief that cultural heritage and its conservation instils a greater appreciation and pride in China's culture. This may be related to a growing recognition that so much has been lost, both during the Civil War, the Cultural Revolution and, more recently, as a result of intense urbanisation. There is a palpable sense of urgency underscoring the importance of saving what is left. This appears to be driven by the government but is also linked to increasing spending power and an enormous internal tourism market. Cultural heritage provides places to go. Mao Zedong's saying, 'He who has never been to the Great Wall is not a true man', has ensured the place of China's most famous monument in the hearts of every citizen.

The definition of cultural heritage in China, as in the UK, changes over time and continues to expand: from the traditional artefacts and sites associated with the imperial court, the remains associated with the revolution, the industrial heritage, through to the intangible heritage associated with traditional ways of life in rural villages.

Recognition of the social value of heritage reflects the new needs of China. Cultural heritage is considered to be a pillar of sustainable development and is a priority in the government's five-year plan, with a budget of 1bn RMB (£116m) per annum. We were told that there is also some private investment. The Chinese public are encouraged to participate in heritage. For example, the Shaanxi Historical Museum in Xi'an is proud of its six thousand volunteers. At the Great Wall, crowd-funding is used to raise money for conservation. At Daming Palace in Xi'an, seven million people donated and 25% of those donated more than 430RMB (£50). In the effort to preserve villages in the face of urbanisation, one organisation has repurposed a line from Abraham Lincoln's Gettysburg Address: 'Cultural heritage conservation by the people, for the people'.

It is also now considered important for the public to know what they are looking at and how it has been 'interpreted' through restoration. This was recognized by one Chinese delegate who said, referring to the recent controversial use of concrete to repair the Great Wall in 2016, 'the public have a right to know what is happening'.

INTERNATIONAL COLLABORATIONS

While cultural heritage in China appears to be taking on new significance, there is also acknowledgement that there are not enough skilled people to take care of it. Skills gaps were particularly prominent in industrial and intangible heritage. Chinese institutions have forged many links with institutions in Europe and the United States, accessing expertise and training, and facilitating fruitful research collaborations. For example, the Shaanxi Historical Museum has established a high-level partnership with the Italian government, which resulted in a state-of-the-art permanent exhibition space for its major collection of Tang wall paintings, as well as access to expertise to train Chinese conservators in the extremely challenging conservation of the wall paintings. In 2004, a German team helped the Terracotta Warrior Museum to solve the chronic problem of paint loss that occurs immediately following the excavation of the sculptures.

British institutions, such as UCL, Cambridge and Oxford, have also partnered with the Terracotta Warrior Museum. At the Daming Palace in Xi'an we visited the Archaeology Exploration Centre that was the outcome of a productive partnership with the University of Oxford. In 2014, IIC signed a Memorandum of Understanding with the Palace Museum with the intention of facilitating collaboration between the two institutions. The aim of the collaboration is to promote research and exchange of expertise and training in conservation internationally.

During our visit, it became apparent that our hosts were under the general impression that the UK, compared to other

Parts of the Palace Museum were repainted before the Olympic Games in Beijing

European countries, did not have as much funding available for these kinds of partnerships. They also revealed that the complexity of the heritage sector in the UK was off-putting. Who should we talk to?, they asked. Our delegation offered to map the heritage protection provision in the UK and our Chinese counterparts offered to do the same for theirs. The British Council will work these up for distribution in Mandarin and English. There is no doubt that these will be helpful documents for both sides.

PRINCIPLES OF CONSERVATION

We learned that the Chinese conservation community has adopted principles of conservation that are similar to those in the UK. The western principles of reversibility, authenticity and minimal intervention are held in high esteem with regard to artefact conservation. For the built environment, traditional approaches to restoration along with other forces are at work. For example, at the Palace Museum in the Forbidden City, full re-painting of some of the historic buildings had taken place in preparation for the Beijing Olympics in 2008.

THE PROFESSION

China formally identifies the role of conservator as a profession. It appears in the national list of professions, which is not yet the case in the UK. Heritage organisations mostly appeared to be public sector, with little evidence of private sector involvement. At one institution, there was a clear distinction made between 'professional' and 'traditional' conservator-restorers. It was remarked upon by our hosts that the old institutional arrangements do not always meet the needs of rapidly evolving situations.

Wherever we visited a scientific approach was evident and there was heavy investment in high-end technology for monitoring.

TRAINING

We learned that there are forty-three universities in China that offer courses in 'cultural protection' and that these cover tangible heritage in most areas but not intangible heritage. I suspect that 'cultural protection' referred to built heritage and sites. In some cases, conservators are trained at university followed by an internship at a museum where they complete their training. Some graduates then stay on as employees. However, it was emphasised by our hosts that there was a dearth of young talent. How can we attract young people into the field? Barriers may be similar to those that exist in the UK. Young people may not be aware that heritage can be a viable career option; the higher education route can be a barrier to some; while remuneration may be low compared to other jobs at a similar level outside of the heritage sector. It would be interesting to share strategies for tackling these problems in our countries.

CHALLENGES

Museum building programme

There is a huge museum building programme underway: three hundred new museums will go up each year for the next seven years. In Xi'an, at the Terracotta Warrior Museum alone, four new museums are planned for construction in the next few years to accommodate the exploding numbers of visitors. These museums will need to be staffed appropriately.

Numbers and scale

The sheer numbers and scale of heritage assets are enormous: the Palace Museum in the Forbidden City has sixteen million objects and buildings from the Ching and Ming dynasties spread over 180 hectares (1.7 square km). Six thousand terracotta warriors are being excavated, restored and replaced in their original location. The Great Wall is 21,000km long and stretches across thirty provinces. Much of the wall is in too poor a condition to accommodate visitors and it has taken thirty years to conserve 3.7km at Badaling. There are fifty World Heritage Sites in China.

Tourism

There is an enormous appetite for cultural heritage tourism. Heritage sites are attracting Chinese visitors on a massive scale. Since it opened to the public in 2009, the Terracotta Warrior Museum has received seventy-nine million Chinese visitors of the ninety-five million in total. What this means is that at the most visited sites there is plenty of money available to spend on building more museums. Could some of this income be distributed to the less visited sites or to where it is most needed? The UK also faces this question with its most visited sites.

There are huge challenges in mitigating the impact of these numbers. In some places, high ticket fees are used to restrict numbers. For example, the Shaanxi Historical Museum charges 300RMB or £35 to enter the permanent display of Tang wall paintings (with replicas on show in the main galleries).

An unrestored part of The Great Wall, revealing the foundations from the Ming Dynasty

While it seems to be effective in reducing numbers – the gallery was virtually empty – it seems somewhat at odds with China's political philosophy. Managing these risks are subjects of great mutual interest and could be the subject of collaborative research.

Rescue archaeology

In Shaanxi, most of the conservation is undertaken in the context of rescue archaeology and therefore not under ideal conditions. There are some very major challenges, for example, in trying to preserve the paint layers of Tang era wall paintings, which start to disintegrate immediately upon excavation. Interestingly, while the location of the Emperor's tomb at Xi'an is known, there are no current plans to excavate it. It is recognised that the skills and knowledge are not yet available to conserve this most valuable national heritage without significant risk. 'Keeping it in the ground' was a conservation approach that we heard about elsewhere.

NEXT STEPS

The Icon model for the regulation of the conservation profession through principles may become relevant to China in the near future. At some point, possibly when conservation expands into a commercial market, accreditation of professionals will be needed to assure quality and maintain standards. In the meantime, there is scope for dialogue on our professional standards and code of conduct and code of ethics. When the time comes, Icon could support the building of an accreditation framework in China.

Exchange of experts

With the huge expansion of museums and interest in cultural heritage, there will be scope for Icon members to offer their specialist expertise in areas of practice that are lacking in China. It may be that the newer areas of cultural heritage, such as intangible heritage, industrial heritage and modern materials, will be the most needed and could be the subject of exchanges of specialists from the UK. It also should not be forgotten (although not the subject of this tour) that the art market in China is booming and the conservation expertise needed to maintain contemporary art is one of the UK's many strengths.

On the other hand, it would benefit the UK to have more dialogue with experts from China to work with us to interpret and conserve China's heritage held in UK museums and more opportunities for UK conservators to train in China. For example, Icon member Susan Catcher ACR, a Senior Conservator from the Victoria and Albert Museum, recently spent three months in Nanjing Museum to learn Chinese scroll-mounting techniques.

Attendance at conferences

It would be very helpful to build a closer dialogue between the UK and China through conferences on topics of mutual interest. Icon's recent conference 'Adapt and Evolve – East Asian materials and techniques in western conservation' (2015) attracted speakers and delegates from many countries in East Asia. It would be beneficial to build on this.

Wall paintings by workers of the Great Leap Forward period (1958) are preserved at a former state-run textile factory in Xi'an, Shaanxi Province. The title is 'Crack down on counter-revolutionaries!' Wallpaintings situated on external walls are protected from the elements by glass

Access to conservation literature

There could be a funded programme to translate key conservation and heritage science texts from English into Mandarin and from Mandarin into English. Currently, Icon provides translations of Journal abstracts into Mandarin, but we know from the number of downloads that there is a growing demand for conservation literature in China. This would need to be externally funded.

Advocacy and public education

There is a huge opportunity for collaboration to provide digital and video content that would bring conservation to life for the public. The Terracotta Warriors Museum has used computers to virtually restore the colour on the warriors. In the Conservation Department of the Shaanxi Historical Museum there were state-of-the-art 3D computer visualisations of excavated tombs. These assets could be made available to the public.

New funding models

As the UK moves away from government sources for funding for cultural heritage conservation and turns toward philanthropy and sponsorship there are obvious parallels with China, where building philanthropy would be a key element of sustainable funding for cultural heritage conservation going forward. I imagine the UK and China would have a great deal of relevant expertise to share.

Soft Power

As we progress towards Brexit, now is the time to shamelessly promote what conservation of cultural heritage and heritage science can contribute to the UK's 'soft power'. The Government's recent consultation on its Industrial Strategy includes science, research and innovation, developing skills and cultivating world-leading sectors among its Ten Strategic Pillars and these are all strengths of our sector. Moreover, the Government has recently agreed that there should be a heritage strand to the Strategy. We will be working with our members and partners to make the case for conservation.

No caption needed. Perhaps an idea we should borrow?

Arthur J. Gallagher

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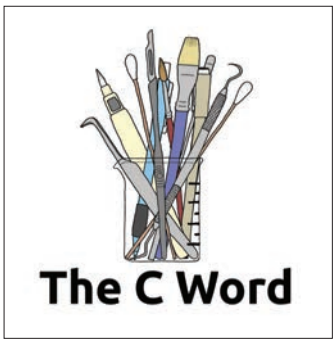

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We're Jenny, Kloe and Christina, three UK-based objects conservators. We're the team behind *The C Word: The Conservators' Podcast*. We talk about all sorts of things from the perspective of conservation professionals, from museum trends and new technology to the big issues like pay and staying safe at work. We have a growing list of collaborators for interviews and as guest hosts, and we are also working with publishers and developers of academic resources to bring regular reviews of the most recent books, apps and systems.

In each episode we try to interview someone interesting (not always a conservator!) and review something nice. So far we've had episodes about demographics, human remains, visible storage and gloves – and we've got lots of exciting topics planned for future episodes, including social media, emerging professionals and extreme conservation. We're always looking for new ideas for episodes, so if you'd like to share a cool topic or a great project you've done, just drop us a line!

The icon used for a recent podcast on human remains

The C Word's YouTube ad website banner: note the hybrid conservation/broadcasting environment

You can contact us at thecwordpodcast@gmail.com or via our website www.thecword.show.

Have a listen! And if you like it (we're sure you will) you can subscribe via iTunes to make sure you never miss an episode. You can also follow us on Twitter (@thecwordpodcast) and Facebook (@thecwordpodcast) to join in the discussion!

A huge thank you to our listeners and collaborators, both current and future.

Jenny Mathiasson, *Kloe Rumsey* and *Christina Rozeik*

In situ pigment analysis in Madrid

Conservation Scientists from the Bodleian Library, Northumbria University and Museo del Prado came together at the Real Jardín Botánico in Madrid in February to carry out pigment analysis on an rare eighteenth century colour chart thought to have been used by the eighteenth century botanical painter, Ferdinand Bauer (1760–1826).

On 6 March 1786, Bauer and John Sibthorp (1758–1796), Sherardian Professor of Botany at Oxford, began a pioneering

Portable Raman Spectroscopy of Haenke/Bauer colour chart in Madrid

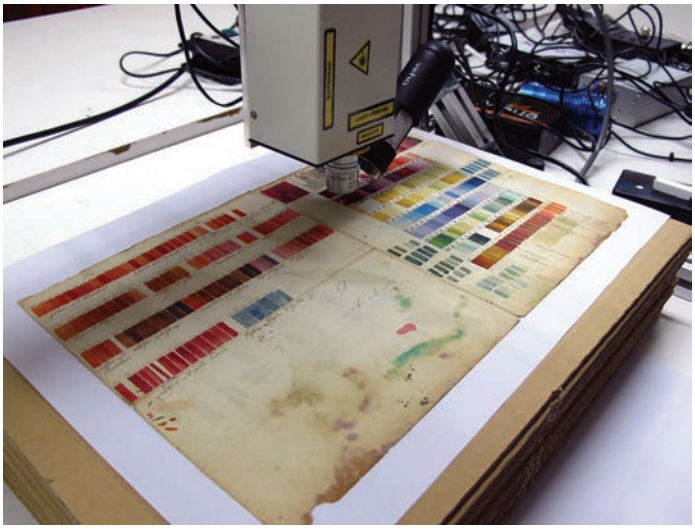


Photo: R. Mulholland

Photo: R. Mulholland

Maite Jover, Conservation Scientist, Museo del Prado carrying out XRF analysis of the chart

scientific journey through Turkey and Greece to record the diversity of plants in the eastern Mediterranean. This was eventually published as the Flora Graeca, one of the most lavish, expensive and rare illustrated natural history books ever produced.

During the expedition, the travellers collected thousands of specimens, many of which are still preserved in the University's Herbaria. Bauer made hundreds of pencil sketches of plants, but unusually, he recorded their colour solely by means of a complex numerical code. Relying only on this code and his astonishing memory for colour, a year later in Oxford Bauer produced some of the finest natural history watercolours ever made. Remarkably, in many cases he had observed the living specimens he painted only once, and up to six years before coming to paint them, yet he managed to paint 966 plant and 248 animal watercolours with almost perfect colour fidelity in the space of only six years.

The vast majority of material from the expedition survived and is now held at the Sherardian Library of Plant Taxonomy at the Bodleian. But the key that links the numbers on Bauer's sketches to the colours in his paintings has been lost (or perhaps never even existed).

However in 1999, a small chart of numbered colours was discovered in Madrid that seemed to correspond to several early works by the Bauer brothers (Franz and Ferdinand), and led to speculation that this may hold the key to unravelling Bauer's unusual system of 'painting by numbers'. As this is the only extant colour chart that can be reasonably attributed to Bauer, it has been studied extensively since its discovery. The pigments used to create it, however, have never been identified, and their relationship to the palette Bauer used in his later work never explored.

The Bodleian Library, funded by the Leverhulme Trust and in collaboration with Durham and Northumbria Universities, has been engaged on a three-year research project to decode Bauer's Flora Graeca colour code by analyzing Bauer's pigments and correlating the results with the numbers on his sketches with the goal of recreating the colour system Bauer used to create these remarkable works.

The Madrid chart is an important key in linking Bauer's early work to the Flora Graeca, (if indeed the chart was actually created by Bauer). In an unusual twist to the story, the chart came into the possession of the German naturalist Thaddeus

Ferdinand Bauer, Morino Persica, watercolour on laid paper. (MS. Sherard 243/19)

Haenke in Vienna, who took it on one of the most important Spanish natural history expeditions to the New World in 1789, and added to it extensively with his own colour system of many thousands of colour swatches. It returned to the collection of the Spanish Crown, and ultimately ended up in the archive of the Real Jardín Botánico in Madrid. Known as the Haneke chart to Spanish scholars, the small 140 swatch 'Bauer portion', hidden amongst Haenke's own colours, was only identified in 1999 by eminent Bauer scholar Professor Hans Walter Lack.

Given its importance and relatively poor condition, the archive does not permit lending of the chart. In this case however, we were able to bring a number of bespoke portable analytical instruments, designed and built at Durham University and optimised specifically for use with works on paper, from the Bodleian to analyse the pigments in the chart in situ. David Howell (Head of Heritage Science at the Bodleian), Richard Mulholland (Leverhulme Research Fellow at the Bodleian) and Kate Nicholson (Senior Lecturer in Chemistry at Northumbria University) travelled to Madrid with the equipment and performed Raman spectroscopy, Fibre optic reflectance spectroscopy (FORS), Infrared reflectance spectroscopy, and multispectral imaging on the chart. Colleagues at the Laboratorio de Análisis at the Museo del Prado also kindly

provided the opportunity to borrow the Prado's portable X-ray fluorescence (XRF) spectrometer to carry out additional elemental analysis.

The pigments identified on the Madrid chart (ca.1775–86) can now be compared with those found in the Flora Graeca paintings (1787–94) and with the numbered drawings in the Bodleian's collection. This will help greatly in understanding Bauer's code. The results form part of a small exhibition on the technical study of Ferdinand Bauer's work and the unravelling of the code by analysis, which is being held at the Weston Library, Bodleian Library from 29 April to 9 July 2017.

Richard Mulholland, Leverhulme Research Fellow
Bodleian Library

A new studio at Knole

News of a new conservation studio is always welcome, so three cheers for the National Trust's new venture at Knole outside Sevenoaks in Kent, where a state of the art conservation studio opened in March. Not only that but the studio is open to the public to visit.

Knole is one of Britain's most important and complete historic houses with a colourful past as an Archbishop's palace, the home of the Sackville family for four hundred years and the inspiration for Virginia Woolf's iconic novel 'Orlando'. However, ever since the Trust acquired the property in 1946, it has faced a running and expensive battle with leaking roofs and windows, damp, moths and woodworm, which have all put Knole's collection of furniture, paintings and textiles at risk.

©National Trust Images/James Dobson

The new entrance to the Knole Conservation Studio, housed in a converted medieval barn

The new studio forms part of a multi-million pound building, conservation and restoration project – the largest in the Trust's history – to rescue Knole from centuries of decay, to re-present its grandest rooms and open domestic spaces that have never been seen before. Knole's collections are as grand as the property and include many pieces of rare Stuart furniture, some acquired from Royal palaces by Charles Sackville, 6th Earl of Dorset, when he was Lord Chamberlain in the seventeenth century.

To provide a permanent space for the conservation of both these objects and, in the future, those from other Trust collections, the new conservation studio has been created on

Launch day for the new studio

Heather Porter, Senior Upholstery Conservator, inspecting the iconic Knole Sofa prior to treatment

©National Trust Images/James Dobson

A peek through the glass door of the Conservation Store on the barn's first floor

site within a former medieval barn. Creating a modern fit-for-purpose studio within such a structure has presented challenges but the end result is a beautiful two-storey space with a conservation store on the first floor and the studio above.

A permanent team of conservators work on paintings, their frames, furniture and decorative objects in front of visitors. On hand on the day of the studio's launch were conservators Gerry Alabone, Judy WeatherallACR, Carmen Vida, Heather Porter, Mark Searle and Jan Cutajar. Siobhan Barratt ACR was also present to see the culmination of her role as Knole Conservation Studio Manager, a post she shared with Dana Goodburn-Brown ACR. Siobhan is now the Trust's Conservator for the London and South East Region, which means she will still be keeping an eye on things!

This is the first studio based at a National Trust property to be open year round to the public and provides a golden opportunity to promote conservation. Certainly, on the day of the launch, public interest was high. The only other in-house Trust studio, at Blickling in Norfolk, specialises in textile conservation but public admittance is limited to a few bookable tours a year. As well as the chance to engage with the public, the Knole studio also has a carefully thought-out interactive area for visitors to explore the materials, tools and techniques used by conservators and to have a taste of conservation decision-making.

As the Trust welcomed visitors into the new studio, four of Knole's important historic rooms also re-opened following completion of the first phase of building and restoration work to transform the interiors and bring collections to life. This has included the installation of controlled conservation heating systems to protect the collections, along with bespoke new lighting to transform the once gloomy rooms and make it much easier for visitors to see and enjoy the interiors.

Two 17th century Venetian Torcheres from the Cartoon Gallery at Knole

Gerry Alabone with one Knole's many picture frames needing attention

The 'Virgin and Child' attributed to Pietro di Niccolo da Orvieto (c.1430–84) after conservation

A miraculous discovery

If you did not read it at the time, do check back with Icon's website (look under the News tab for 11 April) for a terrific story about a double-sided painting, discovered during its conservation at the Hamilton Kerr Institute in Cambridge.

The 15thC picture of a Virgin and Child was taken in for conservation work ahead of an exhibition at the Fitzwilliam Museum and shortly after removing it from display conservators realised that there was an extraordinary picture on the back.

Our website tells the story in detail thanks to an engrossing interview with HKI's Rupert Featherstone ACR about the discovery and the conservation work undertaken. You can also read about its conservation on the Fitzwilliam Museum Conservation blog. The exhibition *Madonnas & Miracles* is running until 4 June and the transformed devotional object has been displayed so that both sides can be appreciated.

Towards the healing of cracks

Some reflections

Cracks are seldom welcome, especially because of their effect on the mechanical properties but also on the stability and value of objects, both aesthetically and commercially. Whilst they might be repaired by introducing liquid adhesives, these will always be difficult to manipulate because of their viscosity and surface energy (tension). The author has long considered that gases, vapours and plasmas might be easier to control and penetrate more effectively.

In the simplest situation, a crack formed in air, almost inevitably moist, will adsorb water which will readily condense even to the root of the crack because of its high polarity and surface energy causing attraction to polar surfaces. Desiccation by desorption or exposure to a vacuum is unlikely to be convenient or complete and is in any case hindered by the effect of a very small radius of curvature of the root of the crack on the vapour pressure (Thomson 1872[1]).

It is possible to envisage that amine (-NH_2) groups might displace adsorbed water if they could reach the root of a crack after which some polymer structures might be built. Such displacements might explain the improved adhesion of bitumen-containing long chain aliphatic hydrocarbons with a terminal amine group onto wet mineral aggregates, and in other instances where epoxypolyamide resin compositions give enhanced corrosion protection for submarine structures. Likewise, liquid ammonia has a dramatic plasticising effect on wood as it aggressively loosens the cellulosic hydrogen bonds.

Thus a two stage application of vapours designed to form a polymer within the crack could be envisaged. Alternatively, the adsorbed water might be used as a reagent which stimulates polymerisation with a sufficiently volatile monomer which if small enough might be expected to permeate into the crack and react accordingly. Polymers formed by water activation are known, moisture curing instant adhesives such as cyanoethyl-acrylates could be possibilities. There are also moisture curing urethane compositions in common use too. There is considerable scope for exploration.

Cracks in ceramics might be most likely to be treated as initially they would be polar and hydrophilic. Acrylate polymers might be generated in situ by first allowing their monomers to condense inside the crack and then proceed to polymerise by exposure to free radicals generated from volatile initiators (peroxides etc.) or by exposure to activating light. Acrylate polymers are well known in conservation treatments. Those in organic materials, i.e. paints, varnishes and lacquers, would be more difficult. Cracks which perforce had been treated previously might need cleansing, if so their organic content can be carefully removed by oxidation with oxygen/argon plasma at room temperatures as described by the author (Daniels et al 1974[2]).

Michael W Pascoe

Dr Pascoe was a lecturer in Polymer Science at Brunel University after careers in the fields of synthetic fibres and paints and before becoming Keeper of Conservation and Technical Services at the British Museum. Subsequently he taught and undertook research in conservation science at Camberwell College. He has published and lectured widely.

[1] THOMSON, W. (1872) '4. On the Equilibrium of Vapour at a Curved Surface of Liquid', Proceedings of the Royal Society of Edinburgh, 7, 63–68.

[2] DANIELS, V. D., HOLLAND, L. & PASCOE, M. 1979. 'Gas Plasma Reactions for the Conservation of Antiquities'. Studies in Conservation, 24, 85–92.

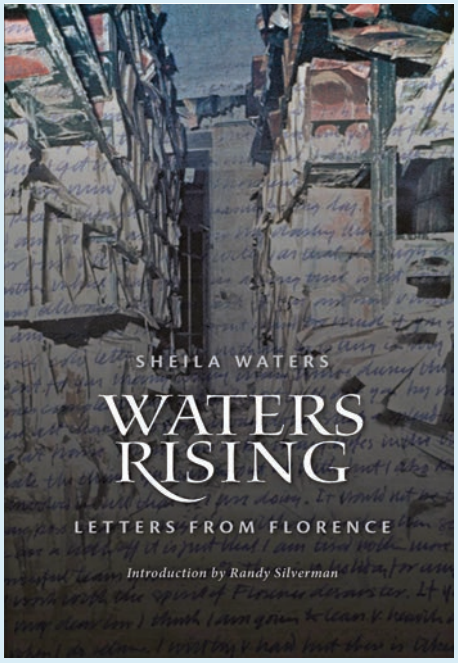
reviews

BOOKS

WATERS RISING: Letters from Florence. Peter Waters and book conservation at the Biblioteca Nazionale Centrale de Firenze after the 1966 flood

Sheila Waters

The Legacy Press. Ann Arbor, Michigan, 2016
ISBN 978-1-940965000



As the generation of book conservators which cut its teeth in the aftermath of the 1966 Florence flood passes and, with it, the first-hand experience of the collaborative effort of the international salvage operation to rescue cultural treasures, Sheila Waters' publication of the correspondence with her late husband in the wake of the disaster marks the importance of understanding the history of book conservation over the last half century.

Collections of letters tend to some degree of repetition for later readers; but the very slight irritation of this is more than balanced by the raw immediacy of the events, thoughts and feelings recorded, often late at night in snatched moments between evening meetings and much-needed sleep, in correspondence which the (auto-) biographical eye necessarily edits and reduces in retelling.

Sheila Waters' 'Narrative Diary and Timeline' which prefaces the letters themselves provides the reader with a clear chronology which makes for more informed understanding of the correspondence and gives clear head space to read the intricacies of the personal relationships and exchanges of ideas – some of them volatile – which form this remarkable story. As Peter Waters wrote, 'in our own way we are creating a history'.

Waters was insistent on the need to record the process of salvage, cleaning and restoration of books damaged by the flood, and a comprehensive selection of his photographs is reproduced at the end of the volume. The images are peopled with young bookbinders and conservators who went on to lead the profession and take forward the ideas developed in Florence throughout the remainder of the twentieth century. Many of the images are familiar from other reports of the flood, but the importance of this publication lies in the first-hand report of the *reasoning* behind the familiar scenes and widely known treatments that Waters and his team adopted.

Throughout the letters a pragmatic, analytical, creative mind is revealed, striving always to balance the pressures of high quality interventive work for individual volumes with the far wider contexts of Italian bureaucracy, the international conservation science scene, home life, and personal and business relationships. 'When people do not take a wide enough view of all the aspects of the operation, then things slide' wrote Waters in an early letter home. As international helpers arrived in Florence and grew into a team where a 'new understanding [is] being forged between binders [which] must continue', Waters' own partnership with one of the leading figures of the older generation, Roger Powell, was crumbling. The enormous strains and stresses of this situation underlie much of the book and the reader is left with an intimate portrait of a consummate craftsman and conservator battling with perfectionism: it is at once the element that threatens to defeat him and the source of determination behind 'the dynamic person who has been set free by this colossal challenge you have had to face', in Sheila's words.

It is only in Sheila Waters' Afterword that the slightly odd relationship between Randy Silverman's eulogistic Introduction and the main body of the text is explained. One has the feeling that this was an introduction to a book which was not eventually written, and despite the justified praise Silverman gives Waters as he places his post-Florence career in perspective, the title of 'Father of Preventive Conservation' seems slightly reductive. Yes, Waters' approach throughout the rest of his career in America was deeply informed by the Florence experience and the idea of phased conservation (which has become so familiar to us now that we scarcely stop to wonder what the 'phase' in 'phase-box' means). But the importance of Waters' approach is surely that it did not stop at pure preservation in the sense of seeing the boxing of books as a complete solution to the problems of damaged volumes – Waters was the person who understood that the cleaned but disbound books left after the flood needed to be bound and put back into use – but that he was also an extremely skilled practical conservator who could undertake complex interventive work (the next 'phase' after keeping damage to the book becoming any worse) when that was required.

Silverman notes that Waters' decision to change the working methods he found at the Library of Congress to focus more on preservation was driven at least in part by the need to halt interventive treatments until there was enough time to train the staff to the point where they had the necessary high-level craft skills to carry out practical work at the required standard. As we see a renewed focus of interest in the conservation/restoration/repair of mechanical objects which still have to function in our collections – the recent launch of the Dynamic Objects Network is a case in point – Waters' big-picture thinking combined with expert practical skills is a model from which we can still learn.

Edward Cheese ACR
Conservator of Manuscripts and Printed Books
The Fitzwilliam Museum

FABRIANO: City of Medieval and Renaissance Papermaking

Sylvia Rogers Albro

Oak Knoll Press, Delaware, 2016
ISBN: 978-1-58456-351-8

Sylvia Roger Albro, a senior paper conservator for thirty years at the Library of Congress, has written an exceptional book covering the history and special qualities of early Italian papers. Albro's interest in these papers began when she examined a 16th century legal manuscript belonging to the Spanish Conquistador, Hernando Cortés in 1986. The paper, she observed 'had survived five hundred years in pristine condition, remaining creamy white and flexible despite repeated use'. Further studies led her to Fabriano, a city renowned for making fine paper over a period spanning centuries.

The book is divided into nine chapters with three appendices, a well-considered glossary of Italian paper terms and bibliography. In the first chapter – *An Ancient Past: Fabriano and Marche* – the history, topology, industrial, technological, political and cultural changes which were instrumental in the emergence of Fabriano's papermaking industry are considered. Most importantly the 'Marchigian peoples' ingenuity when it came to adapting and applying 'various hydraulic engineering designs for industrial purposes'. Fabriano was well-placed as a city for making paper with a moderate climate, access to the Adriatic Sea and an abundance of fast flowing rivers to power waterwheels, necessary for operating equipment used to macerate rags – the main constituent of paper until the mid-nineteenth century. The area was also renowned for its natural spring water containing little, or no, undesirable particulates. As a city Fabriano also benefited from a resurgence of Benedictine monasteries in the 11th century as well as the establishment of guilds and rise in commercial trade.

Although it remains difficult to determine precisely when papermaking first came to be practised in Italy, in chapter II Albro revisits,

and reinterprets, existing documentation leading to a number of plausible routes whereby paper entered the country first as a trading commodity, and then manufactured domestically.

The third chapter – *Improvement and Innovation* – places Fabriano at the epicentre of a change in direction from paper made using Islamic traditions to the establishment of a unique European approach which was adopted throughout the Western world. These practices remained essentially unaltered until the introduction of the paper machine in the nineteenth century. Innovations include: improving and adapting stampers (a series of trip hammers) to macerate rags, the introduction and use of a rigid, rather than flexible, mould made from wood and metal wire and the use of animal gelatine, rather than vegetable starch, in order to provide a surface better suited for work using a European quill pen.

Albro's access to papers collected by Aurelio Zonghi and his brother Augusto in the nineteenth century provides a wealth of material which she thoroughly documents. The range of watermarked sample sheets made in Italy between 1280 to 1600 reveal other innovations which refined and improved the paper to the extent that it so resembled parchment it eventually became an acceptable medium for use by mercantile, government, Papal and other officiating bodies.

The book also includes a comprehensive study of the cultural and iconographic origins of watermarks – the earliest of which first appeared in Italian paper produced during the 13th century. Not only does she date and describe early watermarks and paper formats found in the Fabriano collections, Albro also, in Appendix C, provides a complete catalogue of selected Fabriano paper found in the special collections of the Library of Congress. This invaluable work provides clear images of a wide variety of symbols many of which she links with the insignia of early Benedictine monasteries or insignia used by wool guild members. The dimensions, their relation to the sheet, laid and chain lines are all meticulously recorded.

Further chapters cover medieval papermaking workshops and the progression of steps required to make finished sheets as well as its use by merchants, scribes and notaries as paper began to supersede parchment as a more cost-effective material for general record keeping and copying manuscripts, amongst other uses. With the introduction of printing multiples of texts, the demand for paper increased, impacting adversely on the small craft workshops in the area as Fabriano began to experience competition from other parts of Europe, including Holland, Germany, France and England. By the eighteenth-century political upheaval in combination with a series of devastating earthquakes reduced the number of mills in operation significantly. However, in the final chapter, *Rejuvenation: The Pietro Miliani Era* covers the means by which new investment, development and expansion restores the industry and the town's reputation for making paper of the finest quality.

This wonderful book is of immense value to conservators and paper historians. Albro's diligent research covers the history of a major area renowned for the fine paper manufactured there through centuries as well as the processes involved to achieve this end result. Best of all, she lets the paper tell its own story through the materials used to fabricate the paper to the intriguing and mysterious symbols contained within each sheet.

Maureen Green

Author of Papermaking at Hayle Mill *(The Janus Press) and contributing author of* Papermaking and the Art of Watercolor in Eighteenth-Century Britain: Paul Sandby and the Whatman Paper Mill *(Yale University Press) and* The History of the Oxford University Press, Volume II: 1780–1896. *Her doctoral thesis,* The Green Family of Papermakers and Hayle Mill, *will be published by the Legacy Press later this year.*

TALKS

BOOK & PAPER GROUP AGM & LECTURE

Icon Book and Paper Group
London 30 March 2017

This year's Annual General Meeting of the Book & Paper Group was hosted once again at the fabulous Art Workers Guild. As usual, the minutes of the previous year were read, the accounts introduced, and all matters of general interest discussed. It was heartening to hear that the Book & Paper Group Committee remains dedicated to expanding the accessibility of lectures, particularly as this may lead to a database of archived audio and video recordings at the disposal of all members – a plan which should provide much relief to those whose schedules may otherwise have meant missing a lecture.

The guest lecture – *Colour, colourants and context – a heritage scientist's perspective* – was expertly delivered by **Dr Paola Ricciardi**, Research Scientist for the Fitzwilliam Museum, and a key figure in the MINIARE inter-disciplinary research project, which uses non-invasive imaging techniques to enhance the study of illuminated manuscripts. With a PhD in Cultural Heritage Science and an MSc in Physics, Dr Ricciardi shed insight into some of the techniques used to analyse manuscripts as part of the project.

Dr Ricciardi raised tantalising questions about why we find that some chemically vulnerable pigments do not always deteriorate in a consistent or predictable manner, and why differential lead white darkening may be found at the interface between media and substrate, but not on the surface as might be expected. Though reasons for these anomalies are speculative at present, there is much to be gained from further analysis. Numerous case studies were presented which emphasised exactly how much insight may be gained through use of these analytical methods. From determining areas of retouching to identification of multiple artists, the applications are versatile and wide-ranging.

The importance of inter-disciplinary collaboration and communication was particularly emphasised in the surprising context of the presence of smalt within a manuscript from Florence, which suggested a potential trade overlap between illumination and glass making. Likewise the possibility of identifying the specific geographic region of origin of pigments can allow researchers to link specific usage of popular pigments to illuminators and painters from a specific region to give insight into the nationality of the illuminator working on a given manuscript.

The lecture was thoroughly enjoyable and delivered with good humour, and the drinks reception post-meeting was splendid as ever! Many thanks to Dr Ricciardi and the Committee members for their hard work and organising another excellent AGM.

Aimee Alexandra Crickmore, Second year student MA in Conservation of Books and Archival Materials Camberwell College of Arts

'TORN, WRINKLED, STAINED, AND OTHERWISE NAUGHTY SHEETS'

Icon Book & Paper Group
London 9 March 2017

From the very start of this fascinating lecture by **Andrew Honey**, *'Torn, wrinkled, stained, and otherwise naughty sheets' – how should we interpret paper faults in seventeenth-century paper?*, our observations and expectations were challenged. As paper conservators we are routinely presented with damaged papers, damages that on passing observation seem unremarkable. However, throughout the lecture, Andrew demonstrated that many damages originate

in the manufacturing stage of paper production, rather than arising subsequently through use. Using a case study of one of the Bodleian Library's two copies of the *First Folio*, comparing it with others most notably at the Folger Shakespeare Library, an appreciation and research into these inherent faults was founded.

The recent conservation carried out on the Bodleian's copy of the *First Folio* provided the source material for this research. The audience was presented with many examples of faults that could only have been formed through manufacture: for example, printing ink shown deposited on exposed paper fibres, indicating that the paper was torn before printing, and water drops from the coucher resulting in a higher degree of transparency in the finished sheet.

The lead image, that of a 'musette' caused by the coucher trapping air between the newly formed paper sheet and the felt, was presented as a thing of beauty (there is truth in the phrase 'beauty is in the eye of the beholder') but also served to underline the extent to which 17th century paper production was a highly specialized trade with distinctive terminology. Jérôme Lalande's treatise on papermaking, published in 1761, was frequently cited, providing description of the manual process of paper making and the industrial scale of mill activities, as well as a glossary of terms. What became overwhelmingly apparent is the extent to which the Vatman, Coucher and Layer, beyond having the refined skills required, must work in unison and at the same pace to produce high quality paper. It is when these aspects start to fall out of synch that manufacturing faults begin to manifest.

What do manufacturing faults tell us of the publishing and printing industries? Encyclopædias of the time state that paper with faults should not leave the mill, but as we saw throughout this lecture the reality was that it did. Why is this? Before leaving the mill the papers were sorted into different qualities, with the ideal being that only the higher quality papers found subsequent use. However the economics of papermaking did not make that possible, with the paper often accounting for roughly half of the published production cost. Publishers bought stacks of paper from the mill which suggests that often economy and necessity, rather than luxury, were factors to be considered in production.

Andrew Honey noted the hypothesis that perhaps the numerous flaws seen within the Bodleian copy of the *First Folio* related to the agreement whereby every book published in England and registered at Stationers' Hall would be deposited at the library, therefore use of lower quality materials was perhaps a consideration, given that there would not be monetary recompense. This suggestion has subsequently been discounted, as comparison with the Folger copies shows similar types and numbers of flaws, so the Bodleian's copy cannot be unique in this regard.

What has made research more challenging is that many of these inherent flaws have been conserved as damages. This is the final, fundamental point of the lecture: we must learn to look closely, understand what we are seeing and distinguish between inherent faults and later damage. Only in doing so can we execute ethical treatments that uphold objects as the result of interwoven history and industry, and enable future research.

Emma Turner, Assistant Conservator (Framed Prints and Drawings)

Photo: Richard Hawkes

Lucy Skaer, *The Great Wave*

A VIEW FROM THE NORTH

Independent Paper Conservators' Group
London 20 March 2017

Richard Hawkes established Artworks Conservation in Harrogate thirteen years ago. He stated early on that this was not to be a polemic on inequalities and chose to focus on the opportunities that being one of the limited number of conservators in the North provided. While much of his bread and butter work is straightforward and would be familiar to most of the audience, he chose to highlight the breadth and idiosyncrasy of the work he undertakes.

Employed by eminent and world-class institutions in the North including MIMA (Middlesbrough Institute of Modern Art), The Hepworth, Leeds City Museum, Nottingham Contemporary and many more, Richard covers a wide area. Due to funding cuts, most of the places that employ him have neither in-house conservators nor studios. Often he is called in at the last minute to hang something as per the artist's specifications. Balancing their demands and those of a responsible conservator seems to be an ongoing conundrum.

The objects he works on are made from a range of materials including acrylic, gold dust and x-rays, as well as more familiar territory, blotter, maps, monoprints, lithographs and photographs but in his world, the medium of the prints is wet clay (Julian Stair, MIMA 2012), and the paper rolls luxuriantly onto the floor in three great swathes (Lucy Skaer, *The Great Wave*). He is obliged to take an original and multi-disciplinary approach to his work.

An installation currently on display at Nottingham Contemporary, *The House That Jack Built* by Donald Rodney owned by Museums Sheffield, posed several challenges. The x-rays which made up the background were originally attached to a board with double-sided tape and pva both of which were failing. The tree also constructed from x-rays needed support. After removing them all and repainting the white chipboard, they were reattached using magnetic dots, easily removed, which enabled the works to be stored in boxes.

The tree was made from rolled-up x-rays glued with silicon sealant and joined with black tape. Some tape required replacing with an acrylic adhesive backed version and the trunk was reinforced using a Plastazote tube reinforced with a brass rod. This was attached to the chair using Velcro straps. It can be dismantled into sections. Luckily all of the x-rays were stable however he had to treat a work by the same artist where vinegar syndrome had rendered one sheet unusable. Rodney was no longer alive but Richard sought advice from other members of the BLK Art Group to find out what materials he may have used thereby producing a sympathetic facsimile.

One pitfall of the itinerant conservator is that they have no control or oversight of storage conditions other than when they are parachuted in for a specific project. Underfunding means that, although he advises on disaster planning, the continuity of knowledge and information is not assured because of the turnover of staff and volunteers. Many museums in the North are in a precarious position, five in Lancashire face closure. Yet, work is here, the art is

Photo: Richard Hawkes

Donald Rodney, *The House that Jack Built*, Museums Sheffield

vibrant and the air is bracingly clean.

Eugenie Karen, Assistant Conservation Officer
Special Collections, University of Leeds.

The Independent Paper Conservators' Group, IPCG, was set up fifteen years ago to create better contact between conservators who work independently or alone. IPCG is independent of Icon or any other professional organisation and there are no charges for being a member.

Meetings and workshops are mostly midweek evenings in London but we have also had day trips to institutions, studios and manufacturers.

Please note that our evening lectures will now be on Mondays.

Contact Laila Hackforth-Jones if you wish to have more information about the group at laila.hj@blueyonder.co.uk

CONFERENCES

CONSERVATION MATTERS: Doing Things Differently

Cardiff 12 December 2016

'Doing things differently', the title perfectly summarised the theme of 'changing practices' at the incredibly interesting Conservations Matters conference held at the National Museum of Wales in Cardiff. Change is nothing new for conservators, materials and techniques are often adapted and updated. Kimberly Roche of Cardiff University used a great example, from her own experience, to show changes in conservation materials over the years during her presentation about artefacts from the HMS Savage. Many of the artefacts were coated with shellac which had become glossy. The old coating had to be removed using solvent gels and mechanical action and afterwards the objects were re-coated in microcrystalline wax with tannic acid.

Speakers Pamela Murray and Kimberly Roche outside the National Museum of Wales Cardiff

Three areas to consider change stood out during the conference. The first was the public face of conservation, a topic introduced by **Christian Baars** of The National Museum of Wales as he opened with the first talk of the day: 'Joining the Dots (in public)'. Christian used survey results to show how little the public knew about the work of conservators, the 'Cinderellas of museum work' as he put it, despite being an integral part of a museum. He actively encouraged bringing conservation to the public face of a museum by breaking down some of the barriers that restrict engagement.

Results of a survey he conducted during a conservation open day were highly positive with many museum visitors wishing to see more conservation on display. Christian's hope is that public understanding can change attitudes, raising the profile of conservation and collections care, benefits Kimberly Roche saw during her work on the HMS Savage collection where knowledge and research were shared with the public and conservation displays were used to actively encourage funding and raise awareness. The examples shared at the conference provide clear support for bringing conservation into the public eye.

Creating a standard of conservation was the second area of change to be discussed. **Julian Carter** of the National Museum of

Relaxing in the break at the Conservation Matters conference in Cardiff

Wales gave a fascinating talk on fluid preserved collections, or as he put it 'dead animals in jars'. Julian explained his work alongside Chris Collins and the Clothworkers' Foundation to create a framework and clarify the standards of practice for fluid preservation care. His hope is that by creating a clear standard, further improvements can be made in the field of fluid preservation. **Sarah Paul** and **Rowena Mair Doughty** also spoke about their work to create a national standard of conservation for Wales. In development since 2004 they highlighted the many advantages of creating a national conservation standard, including increased profile, easier ring fencing of funds for conservation needs and providing sustainability. Through both talks I was persuaded that creating or improving standards of practice can be highly beneficial to conservation and the objects we work with.

The final area where conservators may wish to consider 'doing things differently' was considering local culture. **Ayesha Fuentes** from London University's School of Oriental and African Studies spoke of the challenge of adapting to conservation in East Asian environments after coming out of formal education. Ayesha spoke passionately about her placement in Bhutan which had made her reconsider her formal training. Whilst working on a monastery she found that her ideas formed through education clashed with those of local practice, especially when it came to the life and natural decay of prayer scrolls. In many ways, Ayesha challenged her own ideals however through adapting to local culture whilst maintaining sustainability.

Pamela Murray of Cardiff University experienced a similar notion in the conservation of Chinese Shadow Puppetry in Hunan province China. The largest challenge facing her was conserving the art of shadow puppetry itself. As a family tradition with origins in the Chinese countryside the question became about how to bring shadow puppetry to a modern Chinese city and to conserve the art form itself. She admits it would have been easy to conserve the objects and musical scores within a collection, however this would have made them unusable. This 'intangible heritage' determined the conservation methods used. Pamela and Ayesha provide a great example of how a conservator needs to consider local culture when producing a treatment plan.

As a conservation student attending my first conservation conference, I found the event very useful. Having learnt about others' experiences, I will be more prepared to adapt and face challenges as I work to become a professional conservator. All the talks were well delivered and the diverse audience provided stimulating conversation and valuable networking opportunities during the breaks.

I would like to thank all the speakers for their varied and interesting talks, **Megan de Silva** and the staff at the National Museum of Wales for organising and hosting the event, **Michael Nelles** for his update about the Icon Network Model and Jane Henderson for encouraging the students to attend the conference.

Dean Smith
Student MSc Conservation Practice

Sarah Paul (left) and Rowena Mair Doughty discuss a conservation standard for Wales

TEXTILE GROUP FORUM

Icon Textile Group
Bath, 27 March 2017

The 2017 Textile Group Forum was held in the elegant Assembly Rooms in Bath. It was a busy day with an AGM, lots of quickfire talks and a large selection of posters to view… as well as a welcome chance to catch up with colleagues.

The first two sessions, chaired by **Ann French** and **Bevan O'Daly**, were focused on creative storage solutions. This broad theme allowed for contributions from non-textile specialists and encouraged local conservation professionals to contribute to the topic.

The day was opened by **David Singleton** who used Bristols Museums' old tobacco warehouses as case studies to demonstrate that low energy storage options can be safe for objects. Another local speaker, **Eilidh Auckland**, House Manager of National Trust Property Dyrham Park, described the benefits of specialist expertise and training which enabled their team of staff and volunteers to create open storage in the property. This talk was mirrored by **Alison Draper's** thoughtful and honest reflections on the issues and solutions for creating accessible objects at Manchester Metropolitan University Special Collections newly donated Malcolm Garrett collection of textile-heavy 'punk' paraphernalia which created new challenges including interesting smells. These talks all highlighted the common challenges of museum storage of limited space and resources but also the innovative ways these can be addressed.

The second session saw the discussion move towards storage solutions by textile conservation professionals. **Melina Plottu** discussed the practical challenges of assessing and storing over four hundred printed handkerchiefs, reflecting on the

Photo: Stella Gardner

At the Textile Group Forum in Bath's elegant Assembly Rooms

need for preparation and teamwork for a successful project. **Hannah Sutherland** discussed her treatment of a 17th century beaded box whilst studying at the Textile Conservation Centre in Glasgow. The treatment had a very specific brief and small budget which she reflected in the effectiveness of her solution. The themed part of the day ended with **Sarah Glenn** reading a talk by **Rachael Perkins Arenstein** from the AIC Storage Techniques for Science and History Collections (STASHc.com) online resource. The talk explained how AIC identified a real need for better storage in Museums and Heritage which the resource is trying to fulfill, how the website works and, importantly, how to contribute to it. These three talks highlighted the sometimes overlooked importance of storage within conservation treatments and need for it in the long term preservation of objects.

In the second half of the day, two sessions chaired by **Elizabeth-Anne Haldane** and **Alison Lister**, had an open theme allowing for a variety of textile conservation topics. The third session concentrated on innovations in the field. **Heather Porter** and **Frances Hartog** discussed trials using micro-fibre cloths as an alternative to full immersion cleaning for carpets and cut wool velvet chair covers from Knole house. The talk detailed their methodology including how they found the best type of micro-fibre cloths available, use with and without detergent, testing carpet cleaners and demonstrating the dramatic cleaning effect through a video of the process in action.

This was followed by **Rachael Lee's** talk on the innovative ways FosshapeTM is being used abroad and creatively applied at the V&A in costume mounting. This included how to create a shapely bottom for a fiberglass mannequin for underwear in 'Undressed: a Brief History of Underwear' using FosshapeTM and Foam Coat to create a fiberglass texture. The session ended with **Gwen Spicer**, from the USA, discussing magnetic mountings. Gwen explained the science behind different magnet systems for mounting textiles and the potential issues from using them.

In the final session the talks focused on case studies by conservators in the field. **May Berkouwer's** talk focused on fragmented ecclesiastical embroideries from Hardwick Hall. Through detective work she undertook whilst conserving the textiles she revealed the answer to the mystery of the fragmentation and pattern of damage from a vital clue. Both **Lynn McClean** and **Ann French** reflected upon their roles as conservators in major museum redevelopment projects. McClean discussed three ways she project managed conservation for the opening of new galleries at National Museums Scotland. Whilst French used her experience with The Whitworth redevelopment to suggest ways in which conservation can improve major capital museum development projects.

The last talk by **Jessica Burgess** and **Janie Lightfoot** explained the challenge of creating supportive mounts for Manolo Blahnik's collection of shoes with one rule – no Perspex®. It was difficult as the conservators needed to become attuned to the designer's vision in the non-conservation world of fashion. The talk explained their innovative solution for mounting and transporting the shoes (with a small amount of discreet Perspex®). These afternoon sessions demonstrated the exciting projects and innovations going on in the field. The day ended with an evening reception and access to The Fashion Museum in the basement.

Although the Forum was a day of two halves, issues and themes overlapped, demonstrating the wide range of challenges and problem-solving in the field. This format allowed for contributions from textile conservators and museum professionals from Bath to the USA creating a wide-reaching, engaging and enjoyable day. Thank you to the Textile Group Committee for organising a great Forum!

Freya Gabbutt
Freelance Conservator

VISIT

CONSERVATION AT STIRLING CASTLE

Icon Scotland Group
Stirling 1 March 2017

The Icon Scotland Group visit to Stirling Castle was an opportunity to see how Historic Environment Scotland manages the challenges of conservation at a significant heritage site and a prominent visitor attraction. The visit was aimed at students and emerging professionals in the fields of conservation, architecture and surveying.

The day began with a tour, exploring both the exterior and interior of the castle buildings from the re-constructed kitchens, which provide visitors with a taste of castle life, to the vast Great Hall with its hammer beam roof, a modern reconstruction of a spectacular medieval architectural feature. Discussions during the tour focused on the work done to the castle in the 1990s, when Historic Environment Scotland took over guardianship of the site after its many years as a military barracks.

There are mixed views about the extensive work that was done to return Stirling to its former glory, some opinions being that it was too far in the direction of restoration rather than conservation. However it was interesting to hear about the research that went into identifying and understanding the original materials and techniques used in the castle's construction. The decision to reconstruct parts of the interior and exterior has provided opportunities for modern-day craftspeople and promotes the survival of traditional skills.

Environmental monitoring within the rooms of the Royal Palace was another discussion topic as we were guided on our tour. We learnt about the difficulties of maintaining a stable environment in a castle like Stirling, as well as the type and placement of monitoring equipment. We were also shown the types of pest traps used in the rooms and were told about the pests to watch out for.

A highlight of the tour was viewing the seven hand-woven tapestries decorating the walls in the Queen's Inner Hall. These tapestries are a contemporary reconstruction of 'The Hunt of the Unicorn' series, which was woven in the 1500s and is currently in the collections of the Metropolitan Museum of New York. Our tour group, which included a large number of textile conservation students, was given an overview of the project. The instalment of the new tapestries has provided opportunities to research how these materials change over time, from the moment they are hung.

At the end of the tour we were given a chance to get to know our fellow visitors over tea and coffee. Attendees had a range of professional backgrounds, including architecture, preventive conservation and

The visit to Stirling Castle

bookbinding. A large number of the attendees came from the Textile Conservation and Technical Art History courses at Glasgow University. After exchanging opinions on the conservation profession the group was free to explore more of the castle and see the stunning views of Stirling before closing time.

Icon Scotland Group would like to thank Historic Environment Scotland for hosting the visit.

Stephanie Jamieson Icon Intern
National Library of Scotland.

WORKSHOP

BOX-MAKING

Icon Book and Paper Group
Royal Botanic Gardens, Surrey, February 2017

This two-day workshop generously hosted by Kew and led by **Sayaka Fukuda** focused on the creation of an adapted East Asian style four-flap wraparound box for the purposes of preservation. Throughout the workshop Sayaka shared her extensive knowledge and experience about the structure of boxes and the impact each characteristic of the structure, from joints to board weights, can have on the effectiveness of a box as a storage solution.

The first day started off with a discussion about measuring, cutting, grain direction in relation to joints and choosing materials as well as using good quality well-serviced equipment such as board choppers.

Measuring is a topic we visited regularly over the two days, which highlighted its importance and how tricky it can be to get it right. Methods explored included measuring your boards with the object to hand and working directly with your object. An alternative to using a ruler and mixing up measurements is to mark out on strips of paper as this gives a much more accurate measurement and avoids confusion. Sayaka also suggested using a scalpel to mark off measurements rather than a pencil line as this creates an exact point to draw your scalpel over, leading to increased accuracy when cutting boards. A theme that all delegates were interested in was the concept of including 'air' in our measurements. Including 'air' helps provide a snug rather than a tight fit for the object. It was suggested that this can be taken as 1/2mm for a beginner and as one gains more experience it can be adjusted according to your understanding of objects, materials and adhesives.

After the morning discussion there was a demonstration of how to make the first component of the box - the inner tray. Again useful techniques were shared during the demonstration on how to ensure that boards lined up correctly when adhering onto the bookcloth and how to use gauges for each process. We were then set the task of making our own gauges. With the materials being used to make the boxes to hand we created two gauges. A joint gauge made up of a board thickness plus four thicknesses of material, which equates to what would fit in the joints once the box is made.

The second gauge – a corner cutting device – helped to ensure that just enough material was kept at the corners for covering the corners of the boards and avoid the mistake of cutting away too much material. Learning how to make the gauges will prove to be invaluable when making boxes as it speeds up the assembly and covering processes and minimises the potential for mistakes. This also gave everyone the opportunity to get to grips with using a small paint roller to speed up the process of evenly applying adhesive

Once the gauges had been made work could start assembling the inner tray. The inner tray is similar to a four-flap construction in a phase box where there is a layer that extends and folds over the head and tail of the book. During this process the technical aspects of joints were explored and we were shown how to discern whether the joints work correctly at this stage. The joints are one of the most important aspects in creating a suitable box and need to work perfectly if the box is to do its job effectively. If structured correctly they can withstand impacts and protect the book effectively.

Before starting work on the outer tray the neodymium magnets needed to be inserted in the outermost closing strips. Neodymium magnets are becoming increasingly popular in conservation and have been used for

Assembling the outer tray using a right angled straight edge to line up all of the components

Demonstrating how to use the corner gauge

flattening parchment and mounting flat items for display. These magnets also have a strong attraction that works through the layers of covering material to securely close the box. Attendees were encouraged to explore use of other types of magnets in box making and feedback on the success of these experimentations following the course.

The second day started with an analysis of particular techniques and how to make adjustments to improve them. The outer tray was then assembled using the same techniques as those used to make the inner tray. The outer tray extends from the right (a magnetic flap) goes under the inner tray and over the top to close on the right with another magnetic flap. The inner and outer trays were then adhered together. This led to a discussion about the different covering materials and methods we use to ensure good adhesion particularly when working with buckram.

We finished up the course with a round table discussion on structural solutions to projects each attendee was currently working on. There were a lot of innovative ideas for dual functionalities such as combining storage and display as well as storing oversize and rolled material. Sayaka also brought along samples of other solutions that have incorporated the four-flap style to address storage issues such as warping parchment bindings and mounting.

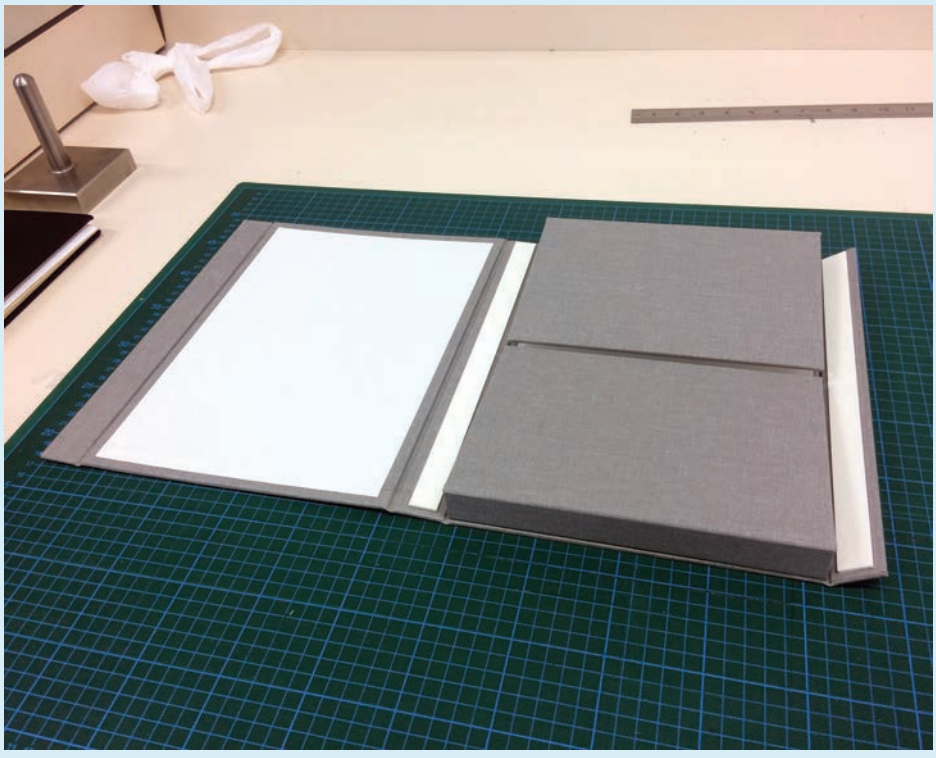
The structure of the East Asian style four-flap wraparound box combines the ease of making a four-flap structure with the benefits normally associated with a clam-shell style box. It provides a less expensive and equally beneficial alternative to the clamshell. Moreover the course presented a great opportunity to look closely at specific parts of a box structure and how these aspects help to create a long lasting storage solution that functions well. A highly beneficial part of the course involved exploration of materials, measurement styles and modes of deterioration, which encouraged practising a careful and considered thought process when creating boxes.

Sayaka has presented these thought processes in a poster which is available to download at www.bookobscure.co.uk/publications/poster

The workshop provided a great opportunity for active discussion on materials, adapting box structures and innovative solutions. The making of the four-flap style box underpinned a wider theme in the workshop surrounding understanding structures, materials and how these interplay with one another in the process of creating a box.

Sarah Bashir Preservation Manager Lambeth Palace Library and Church of England Record Centre.

The completed box



in practice

PhD DIGITISATION AT THE UNIVERSITY OF EDINBURGH

Nicole Devereux, Projects Conservator at the Centre for Research Collections, University of Edinburgh, describes some of the issues to arise in a major digitisation project

The University of Edinburgh is embarking on a huge and exciting project to digitise their PhD collection. The project will be the largest digitisation programme undertaken by the University and will provide access to original Edinburgh research. An eight-month project to conserve these collections based in the Centre for Research at the University's Main Library began in November 2016. This will ensure that the volumes are stabilised for digitisation and the physical integrity of the material is not comprised during the process.

The collection dates from the early 1600s to the present day with theses varying in size and binding style. The collection is formed of a combination of unique theses and duplicates. The duplicates are being destructively scanned, which will free up 500 linear metres of much needed shelf space. Out of the 17000 rare and unique volumes 2000 need conservation treatment before or after digitisation.

The majority of the theses that require conservation work are medical theses. Some contain beautifully hand-drawn and painted images of the anatomy of the human body alongside elegant handwriting, a contrast from the computer-based theses that are produced today. The project has posed several different conservation challenges, such as finding biological specimens within the volumes, split spines, and several theses of different sizes in one binding.

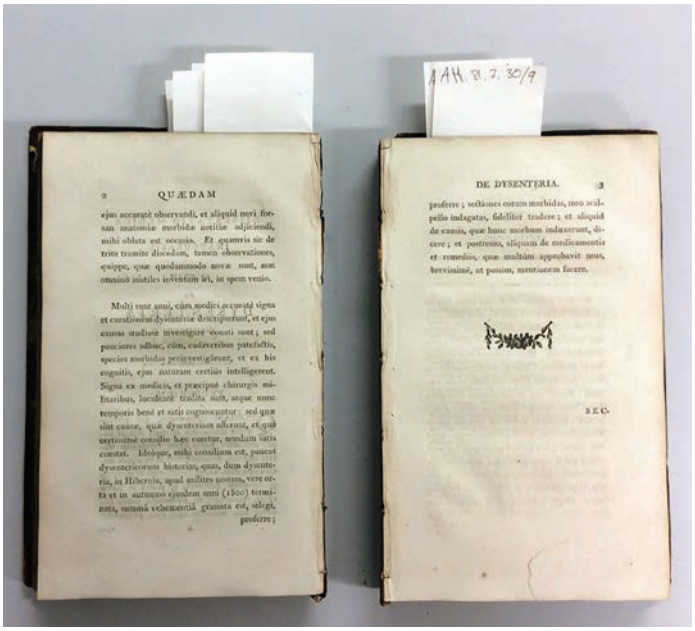
Diseased laminated lung

BIOLOGICAL SAMPLES

Something we did not expect to come across was a volume with sections of real laminated lungs. What do you do with a volume with laminated diseased lungs? First of all, the volume was separated from the collection and staff were advised not to handle it. When handling was required, nitrile gloves and a mask were worn. The Anatomy Department at the University were contacted and, because the lungs were diseased, my enquiry was passed on to the Pathology Department. Professor Colin Smith agreed to view the specimens in the

Glass microscope slides

Latin theses before conservation treatment



conservation studio. He advised that the lungs posed no biological hazard and were from a post-mortem. They had been pumped with formalin through the tissue and then placed in a container filled with formalin. Formalin is a fluid which preserves the tissue as well as killing any microorganisms.

This was not the only surprise that was found in the collection. There is also a volume with broken microscope glass slides and a cardboard box with test tubes of skin fungi. Professor Smith suggested that we dispose of the glass slides and test tubes because they do not have any medical value and pose a hazardous risk to health. The laminated lungs will be digitised and the original kept in the collection.

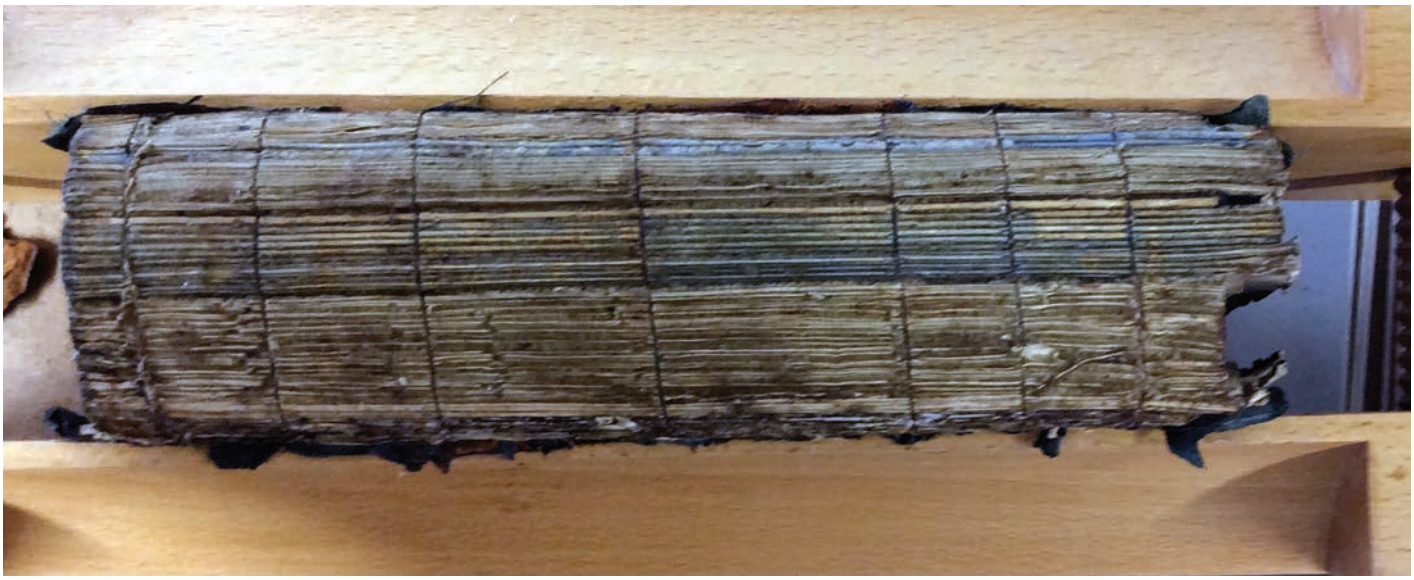
SPLIT SPINES

The earlier part of the collection consists of a number of Latin theses that have been bound together in one volume. These were originally bound by the University, however, the majority of them have been rebound as leather tight backs, some with raised cords or fake raised cords. The type of binding and inappropriate handling in the past have resulted in the sewing supports and sewing breaking, which in turn had split the leather down the spine. This caused the text block to be in two pieces.

To re-sew so many volumes would have been too time consuming for this project so after talking to an experienced book conservator and carrying out some experiments, it was decided that the leather would be removed from the spine dry and with a poultice of wheat starch paste. The spine would then be consolidated with layers of Japanese paper and acid free paper. This enabled the theses to be digitised safely using the angle support which attaches to the Copibook Cobalt scanner. A book enclosure was then made to protect the spines.

Inner joint repair on Latin theses

Latin theses after conservation with Japanese and acid free paper spine



The spine lining removed showing the different sized theses bound in one volume

SEVERAL THESES IN ONE BINDING

Theses ranging from 1838 to 1850 of all different sizes had been bound in large book cloth bindings. Some bindings contained up to nine individual theses which had made the spine more than 10cm in width. With such large bindings and different sized pages, surface dirt had accumulated in-between the individual theses, and the bottom of the spines had distorted and narrowed. Where the volumes had been opened, the sewing had broken and the spine had split and become detached.

These large volumes not only make them difficult to be accessed but they are also too big to fit into the scanning equipment. To enable these items to be digitised, the books were dis-bound and methylcellulose was used as a poultice to remove the animal glue from the spine. The volume was then split into its individual theses, and each thesis was placed in its own acid free folder within an acid free box. This takes up more shelf space but enables digitisation to take place without causing any damage.

Following conservation work, these volumes can now be handled and digitised safely. By the end of the project the aim is that all University of Edinburgh PhD theses will exist both in a digital and physical format and will be discoverable through a comprehensive online catalogue. Furthermore, all physical items will be stabilised and managed in a secure and stable environment. The digital copies created so far are now freely available online through the Edinburgh Research Portal (www.era.lib.ed.ac.uk).

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http://libraryblogs.is.ed.ac.uk/conservation/

The condition of several theses in one binding before conservation treatment

HERITAGE SCIENCE AT HELLENS MANOR

Earlier this year Hannah Duggan, SEAHA MRes student, took part in a field trip for heritage science students

Life is peaceful in the grounds of Hellens Manor, an 11th century house in Herefordshire. No one could suspect that this picturesque building on the daffodil-covered hills of the Wye valley becomes, for a week every year, the subject of intense scientific research. Visitors to the House at the beginning of March found it bustling with scientific activity.

Every year, students at the Science and Engineering of Arts, Heritage, and Archaeology (SEAHA) Masters of Research stay in Hellens Manor working on a variety of research projects. The SEAHA MRes is the first year of the PhD programme in the EPSRC Centre for Doctoral Training based at University College London, the University of Oxford and Brighton University.

The goal of the trip is to use scientific tools and methods away from the controlled conditions of the laboratory, in a real heritage environment. The students embark on diverse research projects, defined in collaboration with the staff of Hellens Manor, illustrating the importance of multidisciplinary research in the heritage sector.

Students worked in three teams, each focusing on a different research question. One team studied the presence of moisture in building materials. The group was made up of doctoral researchers with a variety of backgrounds who contributed different skills: two archaeologists, two architects, and two building scientists. Another team, composed of a surveyor, an engineer and a programmer, used imaging techniques to document and investigate a painted ceiling and two paintings from the collection. The third group, with a conservator, an engineer, a geographer and a physicist, worked to establish an Integrated Pest Management (IPM) plan for the house.

Hellens is a living building. Whilst it is open to the public, it is also actively used as a family home. As they undertake their research, students need to remember this fact, which, naturally, has conservation implications. The dogs that live in the house, which looked at the scientific equipment with curiosity, were a constant reminder that Hellens Manor is not a museum. Any conservation recommendations informed by science need to be balanced against the very real demands of living heritage.

On Saturday March 11, coinciding with British Science Week, a public engagement event was held at the manor. The event focused on demonstrating how heritage science can help inform the preservation of historic buildings. The visitors were guided through the house, where the three teams of students demonstrated a scientific technique each. In the Imaging session, visitors discovered how different wavelengths of light can reveal information that the human eye can't perceive. A practical demonstration was done with a mock painting where visitors were able to see underdrawings and different pigments using reflected IR imaging and UV fluorescence.

As every year, the field trip finished with a presentation and discussion with the house staff, where students make recommendations based on their research. The groups

SEAHA MRes students learn about the history of Hellens Manor, one of the oldest dwellings in Britain.

Hend Mahgoub, Hannah Duggan and Rosie Brigham perform multispectral imaging of one of the paintings in the Hellens collection.

Students in front of the Mobile Heritage Lab, which was open to the public during the weekend.

focused on making suggestions that are achievable and reasonable based on the modus operandi of the house. The group focusing on control of pests presented a highly implementable strategy for the monitoring and control of pests. The team which worked with moisture presented a complete interpretation of sources of sinks of water, as well as low-impact mitigation strategies. The team which did imaging revealed information about the paintings that extends the existing knowledge and could be used in guided tours of the house

This year's trip has ended, but the work is far for complete. Hellens Manor has been called a monument to England's history, its diverse collection spans centuries and contains all imaginable materials. Science still has a lot to say, but the House and its collection are much more than objects of study. By applying their scientific skills to the analysis of this house, SEAHA students have a unique opportunity to learn about the limitations of technology, to test the resilience of the scientific method, and to reflect on what it means to be a heritage scientist. This old house, calm and patient, has a lot to teach.

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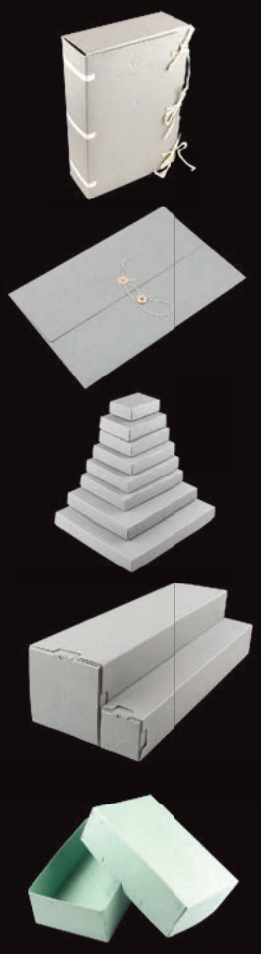

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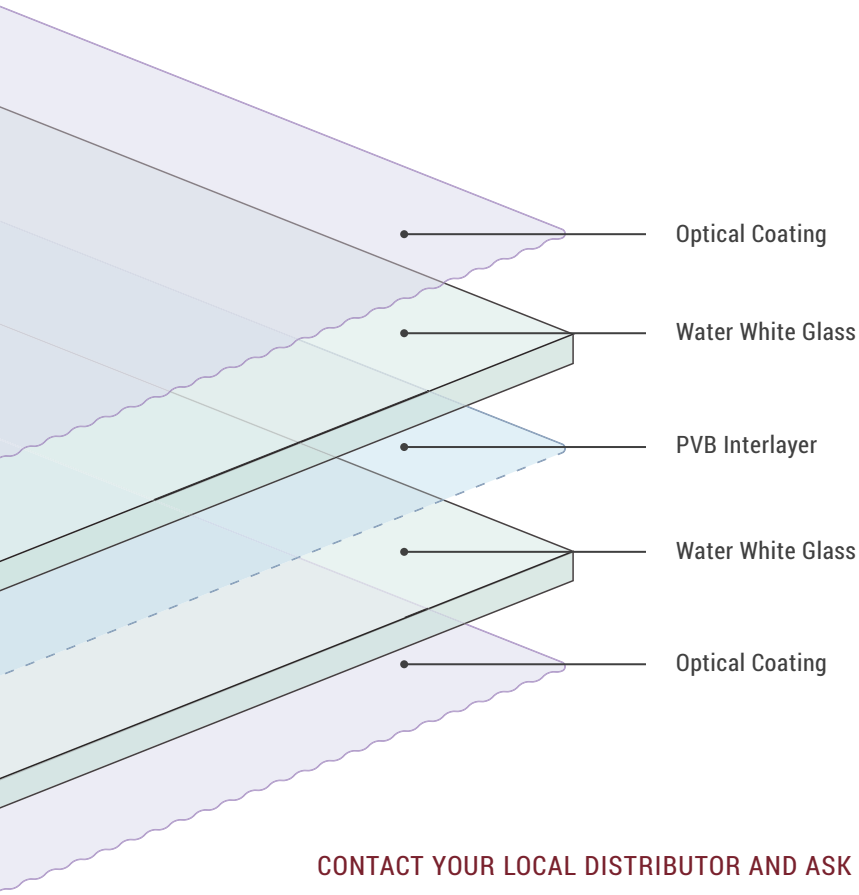

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