



The Newport Medieval Ship Project

Also in this issue

The Icon Conference • Greener solvents • Volunteers dress for success

Icon membership benefits

- Access to professional development and networking opportunities through Icon's **16 specialist Groups and 8 Networks**
- **Discounted admission to all Icon events** including those delivered by Groups and Networks
- Access to **Accreditation**, supported by mentoring opportunities
- Members' magazine (**Icon News**) containing conservation case studies, interviews, reviews and analysis
- Fully peer-reviewed **Journal of the Institute of Conservation** featuring innovative research on all aspects of the preservation of cultural heritage
- Weekly **Jobs e-bulletin** with UK-based and international opportunities
- Monthly **Iconnect e-bulletin** with a roundup of recent stories, news articles and events
- **Online CPD log** to track your professional development activity
- Discounts on conservation titles published by **Routledge**
- Discounts on **British Standards** relevant to conservation practice

And in addition:

- Students are welcome to showcase their work in our **online project gallery**
- Members can gain additional career-boosting skills and experience by volunteering in a range of roles on Icon's many committees and working groups
- Members can raise their professional profile through contributing articles for the Icon website, which reach an even broader audience through our thriving social media channels

AUGUST 2022 Issue 101



From the Editor

If you missed the Icon Conference 2022 you missed a treat. I was especially pleased to learn about APOYOnline, an impressive organisation that brings together professionals in the field of heritage preservation in the Americas and in Portuguese and Spanish speaking countries. But then again, the virtual tour of the newly refurbished Burrell Collection was also fascinating, as was the concept of socially prescribing conservation to help people with mental health problems. I could go on.... there were just so many terrific talks from amongst our members and from around the globe. The Conference Committee share some initial feedback on the event on pages 10 & 11.

I can't believe that we have never told the story of the Newport Medieval Ship; the project is so obviously a remarkable contribution to maritime archaeology and this is the twentieth anniversary of its excavation and conservation. The pictures of the campaign to save the ship demonstrate once more how much people value their past and its preservation.

Organising volunteers, testing for green solvents, rescuing industrial heritage, learning about our Chief Executive's busman's holiday and involvement with Europa Nostra – there is plenty of reading to get your teeth into over the summer holidays in this issue!

Lynette Gill



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Cover image
Disassembled Newport Medieval Ship framing timbers exposed during a water change. This photograph was taken after the timbers had been mechanically cleaned but before any chemical pre-treatments had commenced
© Newport Museums and Heritage Service/Toby Jones

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Deadlines for adverts and editorial

For the October 2022 issue
Friday 12 August

For the December 2022 issue
Monday 3 October

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professional update

From the Chief Executive



Sara Crofts on sharing experience and learning from example

Now that we are in the height of the summer season, I share my hope that many of you will have been able to take a holiday this year. Everyone I speak to seems to have a busy, and frequently quite pressured, working life and so the value of taking time out to rest and recuperate feels more important than ever. But, while we all talk a lot about work-life balance, trying to achieve an equilibrium is far from easy. Although I am

often guilty of working into the evenings and sometimes carrying my work phone with me when I'm on short breaks, I am firm with myself about the sanctity of my summer holiday. Come the end of August I will switch on my out-of-office message and the phone will be left behind as I depart for a fortnight in the mountains of Piedmont, safe in the knowledge that I have an excellent team of staff, including our highly experienced new Office Manager Naomi Hollis, who will get along with running the organisation just fine without me.

So, I wonder if you too will be venturing out of the UK in search of new cultural experiences after a couple of years when many of us have explored the varied delights of the United Kingdom on a staycation instead. Having recently taken my first trip on Eurostar since the COVID-induced hiatus, I can heartily recommend the delights of Flanders; Mechelen and Leuven on this occasion.

Although I hadn't pre-planned a conservation-themed itinerary my partner and I were sufficiently intrigued by the tantalising sight of an open door belonging to a fine church on the Veemarkt that we subsequently found ourselves completing the self-guided walking tour of Mechelen's eight major historic churches (*Torens aan de Dijle*¹). This was thoroughly rewarding for two key reasons. The first is that we were fascinated by the epically-scaled timber pulpits featuring near-life-size carvings of people, plants and animals, and the

Sara spots conservators at work on her holiday!



Image Sara Crofts

Provision made for visitors to watch conservators at work on the Rubens altarpiece of Onze-Lieve-Vrouw-Over-De-Dijlekerk, Mechelen

second was that in many churches there were active conservation projects. The most notable of these was the conservation of the Rubens altarpiece of Onze-Lieve-Vrouw-Over-De-Dijlekerk, where the team can be observed at work through a window in the security hoarding.

It was also heartening to see that this is one of many projects in Mechelen that is supported by *agentschap Onroerend Erfgoed* (the Flemish Agency for Immovable Heritage). Having visited Flanders several times now it strikes me that the sophisticated co-ordination and high-level support for cultural heritage achieved by the government agencies in this region are extremely impressive, and that there are many lessons that we could take from their approach.

Some of you will already be aware that I am a strong believer in the 'power of example' and I spend a fair amount of my time advocating for greater and better dissemination of project-based learning through outreach work, and by sharing informative case studies through digital channels. However, while there is some positive exchange of ideas between organisations within the UK, I don't think that we look to our international colleagues for inspiration as much as we could.

Close to home, there is a wealth of exciting and innovative cultural heritage projects taking place in Europe. Many of these initiatives are interdisciplinary, cross geographical boundaries, seek to encourage shared understanding, and aim to build social cohesion, as well as providing a means to exchange professional knowledge and expertise.

For the last twenty years the best of these projects have been recognised by the European Heritage Awards / Europa Nostra Awards and showcased in the annual *Laureates* publication and awards website². Having previously been an award winner (in 2010) I was honoured to be asked to chair the selection panel for the Education, Training and Skills category in this important anniversary year. This also meant that I was one of fifteen international jury members tasked with selecting the thirty winning projects across all five award categories. As always, the quality of the submissions was very high and so this was a tough process, especially given the differences between the scale, ambitions and resources available to the entrants.

I should also confess that my connection with Europa Nostra runs deeper than just the awards. I have been an individual member of Europa Nostra for many years and I currently volunteer my time as a Council member and also as the Chair of Europa Nostra UK. Finding out about interesting new ideas,

learning about successful projects and making connections with colleagues across Europe is one of the key motivations driving my engagement with Europa Nostra, and reading through the sixty project dossiers submitted for this year's awards was truly inspirational. Together they showcased a range of brilliant new work in many fields, including slow tourism, co-creation of resources to protect intangible heritage, creative adaptation of historic housing types, and cutting edge research.

I now look forward to joining the celebration event where the winners will present their projects to an international audience at a gathering in Prague in September. For me this is the most important element in the European Heritage Awards / Europa Nostra Awards as this provides the opportunity to help to disseminate good practice and to seed ideas in other places and organisations.

This kind of knowledge sharing was also a key ingredient in this year's Icon Conference, which took place over two days in May and was delivered by our newly formed Conferences

Committee, supported by Icon staff. The theme was *Reaching out for Recognition*, with many of the excellent presentations offering practical suggestions about how conservators and heritage scientists can reach out and collaborate with communities, artists and individuals beyond our sector in order to demonstrate the value of conservation to society.

Having already suggested that we should all look outwards to see what our international colleagues are doing it was heartening to note that the conference programme featured a number of speakers from other countries and to see that we were able to welcome many delegates based outside of the UK. Hearty congratulations to our Conferences Committee for putting together this top-notch event and sincere thanks for the time and effort that you contributed to make this such a success.

1. <https://torensaandedijle.mechelen.be/kerken> Accessed 13 June 2022

2. <https://www.europeanheritageawards.eu/publication/> Accessed 13 June 2022

POLICY CORNER

European policy developments

In April our attention was drawn to the draft recommendation for lead to be included in the draft recommendation of substances for inclusion in Annex XIV (REACH) by our colleagues at ICOMOS. We shared the concern that this would make it much more challenging for conservators to access and use lead in conservation treatments (especially stained-glass projects) and wrote to Europe Chemicals Agency to draw their attention to the potential adverse impact of this proposal on the conservation of cultural heritage. We echoed the call by ICOMOS for the use of lead in conservation practice to be exempted from onerous and unnecessary control processes. A copy of our response is available in the policy section of the Icon website:

<https://www.icon.org.uk/impact/policy-responses.html>

However, there are some positive policy developments in the EU, which may be of interest to those working in the cultural heritage sector.

Initiated at the end of 2019, the European Green Deal¹ is a set of proposals that aims to make the EU's climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels, and climate neutral by 2050. One of the many actions that have been set up to support this aim is the concept of the New European Bauhaus². Launched by European Commission President Ursula von der Leyen in October 2020 the New European Bauhaus (NEB) movement is intended to be a bridge between the world of science and technology and the world of art and culture; it aims to approach the significant challenges of the 21st century in an inclusive, sustainable, and beautiful way. The first NEB Festival took place in Brussels in June.

'Culture is a transversal and cross-cutting concern and constitutes a fundamental pillar for sustainable development. Culture is also essential to explore and interrogate current and complex challenges, to inquire into our interdependence with the environment, and to nourish humans' collective life.'
Culture Action Europe³

Taking the EU Green Deal model as a cue, the European Cultural Foundation, Culture Action Europe and Europa Nostra (representing the European Cultural Alliance) have also made a joint call for a Cultural Deal for Europe with the rallying cry that 'there is no recovery or future for Europe without culture'⁴. By embedding culture into policymaking at all levels they argue that we can make sure that Europe recovers economically, socially and emotionally from the pandemic into a more inclusive and cohesive union. The campaign builds on an earlier piece of research: *The Value and Values of Culture*⁵ which collected relevant evidence substantiating the impact of culture across a range of EU policy fields and made the case for proper support for the cultural ecosystem.

1 European Green Deal:

https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en#timeline Accessed 17 June 2022

2 *ibid.* Accessed 17 June 2022

3 Culture Action Europe:

<https://cultureactioneurope.org/news/new-european-bauhaus-a-promising-intention-and-a-much-needed-open-debate/> Accessed 13 June 2022

4 <https://culturalfoundation.eu/stories/cultural-deal-for-europe> Accessed 17 June 2022

5 <https://cultureactioneurope.org/knowledge/the-value-and-values-of-culture/> Accessed 17 June 2022

ACCREDITATION NEWS

A review is underway of the Application and Assessment process that underpins Icon Accreditation. Icon is committed to ensuring that Icon Accreditation continues to be open and adaptable to the needs of all professional conservators, and that the application and assessment process itself is not a barrier for individuals wishing to become Accredited members of Icon.

To ensure that this is the case, Icon's Professional Standards & Development Committee (PSD) has approved a full review of the approach and operation of the application and assessment process that underpin the system. Chaired by Dr Mike Flannery ACR, the Review Panel was brought together from across the



THE INSTITUTE OF CONSERVATION

Call for Trustee nominations

It's time to nominate next year's additions to Icon's Board of Trustees – and you can help!

Nominations for Icon's next Board elections open **15 August**, when notifications will be dispatched to member inboxes.

Could you – or someone you know – be an effective Board Trustee?

Trustees need to make time available for four board meetings, one planning day and some committee meetings each year. To be an effective Trustee, candidates must be enthusiastic, committed, keen to collaborate and express their views on the strategic direction of the organisation.

As former Icon Trustee Jenny Williamson wrote in a recent issue of Icon News 'It is good for my CPD. Some of my Trustee experience has been particularly helpful in two recent job applications'.

Six seats are up for election in this year's Board elections cycle - so if you or someone you know has a strong vision for the future of Icon, please encourage them to submit a nomination before the **closing date of 11 September!**

For more, visit <https://www.icon.org.uk/about-us/who-we-are/icon-board-of-trustees.html>.

Dr Michael Nelles
Head of Membership
Icon, the Institute of Conservation

Icon membership and includes Lara Artemis ACR (Icon Accreditation Committee, Assessor), Beth Baker ACR (Mentor), Alice Hynes (External representative), Sarah Peek ACR (Chair, Icon Accreditation Committee), Charlotte Tomlin (Pathway member), and Robert Turner ACR (Assessor).

Over the course of 2022, the Panel will be taking a critical look of all aspects of the delivery of Icon Accreditation, including the adaptability of the system to requests for reasonable adjustments, the effectiveness of the application form in getting people ready for assessment, the opportunity to deliver assessments over a longer period of time, and the support available to members of Icon in helping them get ready for Icon Accreditation.

It is important to note that assessment to the 'proficient' level across the thirty seven criteria that make up Icon's Professional Standards and Judgement & Ethics are not up for review. It is also very much the case that the system will continue as a peer assessment process, and that Icon Accreditation will continue to be recognised and respected for its rigor, fairness, and transparency.

Icon Accreditation was developed by professional conservators, for professional conservators. As such, it is essential that all members, along with sector stakeholders are able to share their views. We will be sharing updates and organising consultation events throughout the year. However, if you do wish to share your views directly, please get in touch with Patrick White, Head of Skills, at pwhite@icon.org.uk.

CONTRIBUTING TO CONSERVATION STANDARDS

In issue 99 of Icon News, Isobel Griffin ACR wrote about the European standard-setting process in action. Here she discusses contributing to the development of European and British Standards for Conservation

There are several stages in the development or review of a standard where the UK conservation community can make a useful contribution. Contributions need to be channelled through B/560, which is the committee within the British Standards Institute (BSI) with responsibility for the Conservation of Cultural Heritage standards. And, in turn, B/560 feeds into the relevant European standards committee, CEN/TC 346. Icon's Professional Standards Development committee recently suggested that B/560 could supply some guidance for Icon members on how to contribute, and this is set out below.

Proposal for a new standard or revision of an existing document

Members of the B/560 committee vote on whether to begin work on a new standard, and on whether an existing standard that has been in use for five years should be confirmed (i.e. retained as it is for a further five-year period), revised or withdrawn. Members of the UK conservation community can suggest ideas for new standards and advise B/560 members on current proposals.

Drafting of a new/revised standard

Once it has been agreed that a standard will be created or revised, a working group is formed, with membership from at least five European countries, which will usually include the UK. The UK's representative will consult with experts from the UK conservation community and may even form a sub-committee or 'mirror group' to pull together the UK's ideas; members of the mirror group do not need to be members of B/560.

When the working group is satisfied that a draft is ready for wider review, the draft is circulated to all the countries within the CEN/TC 346 committee for comment, so this would be the UK's chance to input if it had not participated in the working group.

During the drafting process, the standard is not available to the public through the BSI website, so conservation professionals who want to input need to do this by contacting the B/560 committee.

Public consultation/comment on the new/revised standard

Following approval at the committee stage, the draft is made available for public consultation/comment, through the BSI website. The UK conservation community can input directly into this process.

Comment resolution, approval and publishing

Following the public consultation, the comments received are collated within each country and sent to the working group, which modifies the draft accordingly. The updated draft is then circulated to member countries to vote on, before proceeding to approval and publishing. The UK conservation community will not usually be involved in these stages unless significant technical changes are made to the draft and a second consultation period is needed.

How to make a contribution

B/560 has representation from a wide range of cultural heritage organisations within the UK, and its members will



A recent meeting between members of Icon's Professional Standards Development committee and Isobel Griffin representing the British Standards Institute committee B/560 Top row: (l) Mel Houston ACR; (centre) Duygu Camurcuoglu ACR; (r) Sophie Rowe ACR Bottom row: (l) Flora Davidson ACR; (centre) Laura Lewis-Davies; (r) Isobel Griffin ACR Absent: Lorraine Finch ACR & Karen Thompson ACR

often reach out to known experts on a particular topic to get their opinions and feedback. However, it's important that anyone who wants to contribute, and this can be done through the BSI website.

Use the BSI website to find out what's going on and submit feedback

- Go directly to the B/560 page British Standards Institution - Committee (bsigroup.com) (Or the long way round is to go to the BSI standards development website Home Page (bsigroup.com), then type B/560 into the search box, then scroll down to the committee results and click on B/560).
- Look at the list of work in progress. The status column shows which stage the standard is at: either: proposal, drafting, public comment, comment resolution, approval, or published standard.
- For more information, click on a reference number, which will contain the name of the standard. The timeline this brings up is helpful because often one stage will have finished but the next one won't have started yet. For example, when an item is shown as a 'proposal', the process of voting on whether review is needed may be 'live', or the proposal may be waiting for the CEN/TC 346 committee to review the voting results and agree how to proceed.
- If the timeline shows you that a standard is at a point where input can be given (i.e. it is live in the proposal, drafting or public consultation stage) you can do so by clicking on the message committee button. You will be prompted to login or register on the website, and then you can send a message to B/560. Additionally, if a standard is at the public consultation stage, anyone can read it by clicking on the read draft and comment button, and comments can be submitted directly into the draft using the add/view comments function.

Example of recent, current and forthcoming work

- BS EN XXX Conservation of cultural heritage - Desalination of porous inorganic materials by poultices – the proposal stage is complete and the drafting stage begins on 22/7/2022.

For a comprehensive list of all work in progress, check the B/560 page on the BSI website.

NEWS FROM THE GROUP AND NETWORKS

Archaeology Group

The Archaeology Group was delighted to present papers on the conservation of glass as part of the United Nations International Year of Glass at our 2022 AGM. The event was very well received, and we would like to say a huge thank you to all our wonderful speakers and everyone who attended. A full review of the event will be available in the next issue of *Icon News*. Our lunchtime lectures will continue in the autumn – we are always welcome to ideas or suggestions. Work on *First Aid for Finds* continues with the co-authors having regular Zoom meetings. Based on reviewers' comments, a new structure has been agreed. Publication is now planned for 2023.

Please watch Iconnects, Twitter (@ICONArchaeology) and the website for further Group announcements. We always love to hear about your archaeological conservation projects big and small. Please tag us and #FindsFriday in your posts and follow us on Twitter to see what everyone else is up to!

Charlotte Wilkinson ACR

Icon AG Communications Rep

Ceramics & Glass Group

Nigel Williams Prize – Call for Submissions

Have you or your team completed an exciting project in conservation of ceramic, glass, or a related material in the past three years? Did it present some interesting challenges, technically and/or ethically, perhaps requiring some lateral thinking which might be of interest to others in the profession? If so, consider applying for the 2023 Nigel Williams Prize. We will soon begin accepting submissions. For more information on the prize and submission, please visit the Nigel Williams Prize page on the Icon website.

...and other NWP news

Victoria Oakley ACR is stepping down from her role of judge for the Nigel Williams Prize. The Ceramics and Glass Group would like to thank her for the invaluable work that she has been doing for the Prize over the years.

Committee Vacancy - are YOU our next Treasurer?

The Ceramics & Glass Group is looking to fill the role of **Treasurer**. The Treasurer maintains an overview of the Group's finances and is part of the executive committee along with the chair and the secretary. Full training will be provided. For a full description of the role, please visit our webpage. If you are interested, or would like further information, please contact us at iconcgg@gmail.com.

Finally, don't forget about our **Autumn Meeting on 30 September 2022** at Knole House, a National Trust property in Sevenoaks, Kent, which is a short train journey from London. The meeting will be held in the new Royal Oak Foundation Conservation Suite and will start at 10:30am with a series of lectures on the theme of Conservation for Redisplay. The AGM will be held before lunch, and we hope to engage a wider membership at the AGM with the use of online voting.

After this, delegates will be offered the chance of a personal tour of the newly refurbished Conservation Workshop. Entry to Knole House itself is free to our delegates and they can refresh themselves in the restaurant or stretch their legs with a walk in the extensive park. The workshop tours are limited to small groups so delegates will be split up in the afternoon to ensure these activities run smoothly. The day will end at approximately 4:30pm. A small charge will be made for the day to cover the hire of the meeting room. More information will be available on the website in due course, watch this space!

Stay in touch with us at:

Twitter: [@ICONCGG](https://twitter.com/ICONCGG)

Facebook: [ICON Ceramics and Glass Group](https://www.facebook.com/ICONCeramicsandGlassGroup)

Instagram: [@iconcgg](https://www.instagram.com/iconcgg)

Marisa Kalvins

Ceramics & Glass Group

Historic Interiors Group

The AGM followed the talk by our guest speakers (reviewed on page 26) and our chair, Tina Sitwell ACR, gave an overview of the Group for any new attendees to a HIG event. She explained that the restrictions we all experienced during the first two years of the covid pandemic naturally resulted in a reduction in events, but we had given talks on Wentworth Woodhouse, Prison Art in the United States and encaustic tiles at the Palace of Westminster. We are still planning our delayed conference on Libraries and by the time this goes to print we hope to be writing a review of our first in-person visit we are planning for July where we look forward to seeing new and familiar faces once again. If anyone would be interested in joining the Group and the committee, we would love to hear from you.

Modern Materials Network Tour of Significant Early Plastics Sites

Want to visit some key areas in the birth and development of early plastics? Join us for an afternoon tour of historic sites linked to early plastics around London's East End.

Icon members/students £10/ non-members £15

Friday 16 September 2022

1pm-4:30pm

Meet at 1pm outside Sainsburys Local at 55 Berkshire Rd, London E9 5NN. (Near to Hackney Wick Overground station)

This afternoon tour will take you around important historical locations in the manufacturing and mass producing of early plastics in London.



Credit: © Museum of London

Modern Materials Network tour: the area of Hackney in East London where early plastics were developed, as depicted in Museum of London's image of the Booth Poverty Map Section 10

East London was a crucial place in the development of plastics. It was in Hackney Wick in 1865, that Alexander Parkes manufactured the first semi-synthetic plastic which he called 'Parkesine', a form of cellulose nitrate. This new material could make anything from combs to billiard balls and imitate natural materials like ivory and tortoiseshell. After Parkesine Company Ltd, other plastic companies opened in the area making it pivotal for the development of early plastics.

The tour will visit some key locations including the site of the former Parkesine works, the first British Xylonite site & the site of the later Halex factory from British Xylonite. The tour finishes at Vestry House Museum where you will be able to see some examples of historic plastics.

Please note this tour will require both walking short distances and taking public transport (which must be covered by the attendees). Contact point if needed: iconmmn@gmail.com

Icon Scotland Group Training and events

Icon Scotland's first in person event of 2022 was a study visit to Rosslyn Chapel near Edinburgh, on 10 June. The visit involved a general introduction to the chapel from Ian Gardner, Director of the Rosslyn Chapel Trust, and talks about stone conservation and relative humidity control in the Chapel by Alex Kelly, Eden Conservation and Rob Thomson ACR, Preventive Conservator, respectively. Following the visit there was a much appreciated opportunity to catch up over a cup of tea!

Other happenings

The Icon Scotland committee met for a development day on 22 June. This involved a meeting hosted by National Museums Scotland, where the topics under discussion included how the Group can do more to engage with the public in Scotland and opportunities for collaboration with other heritage organisations. The meeting was followed by a visit to Surgeons'



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Hall Museums in Edinburgh, which we are grateful to Cat Irving for organising.

Our strategy and work plan for 2022-2023 has been published on our Group page on the Icon website. We wrote this prior to the publication of Icon's new strategy, and we expect next year's work plan to link more closely to the new strategy.

We'd like to remind conservators who are resident and working (or actively seeking work) in Scotland that we offer four grants per year of up to £350 towards the costs of accreditation. The second deadline in 2022 for accreditation applications is 3 October, and we will give preference to grant applications received before 3 September. Information about how to apply is on our Group page on the Icon website.

Committee vacancies

We are currently on the lookout for a new Secretary and one or more Events Assistants. If you are interested and would like more information, please email Gwen Thomas at admin@iconscotland.org.

Additionally, although it is not a committee vacancy, the reserved seat for Scotland on Icon's Board of Trustees will become vacant again in the autumn, once Mel Houston ACR has completed her second term in office. We really value this reserved seat and the direct communication it allows Scottish-based conservators with the rest of Icon, so please start thinking now about potential candidates to replace Mel.

Contact and keep in touch

We are always delighted to have new members in the Group, 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. Our general email address is admin@iconscotland.org and comments and suggestions for events can be emailed to events@iconscotland.org

Textile Group Latest News

The Textile Group held their AGM online in late June so that as many members could attend as possible. A roundup of the past year's events and general activities was presented to all who tuned in to watch, new committee members were voted in and to end the meeting, we heard from two textile conservators from the People's History Museum, Manchester who discussed 'Working with Large Painted Textiles'. Many thanks to Jenny van Enkevort ACR & Kloe Rumsey for their time. If you missed the event, a recording is available on the Textile Group's YouTube page.

Forthcoming Textile Group Events

Please check our Textile Group section of the Icon website for event updates, alternatively see our Twitter or Facebook page (details below).

Other Textile Related Events

DATS (Dress & Textile Specialists) - 2022 Conference: 20-21 October 2022. The 2022 DATS conference will be held at Bristol M Shed & live via Zoom®. The subject for this year's conference is: 'Skeletons in the Closet: The Legacies of Dress & Textiles Collection Practices'.

Costume Society - 2022 Conference 'Clothes Maketh the Man': 22 October, 26 October, 29 October and 2 November 2022. The provisional schedule for Saturday sessions is 13.00 - 15.00 UK time and for Wednesday sessions is 19.00 - 20.30 UK time.

ICOM-CC Interim Meeting – Feb 21st-23rd, 2023: ICOM-CC's

Textile Working Group is joining forces with the Modern Materials and Contemporary Art Working Group for their next joint interim meeting, entitled: 'Semi-Synthetic Textile Materials in Fashion, Design & Art'.

In This Issue

Annabelle Camp, a third-year graduate fellow from the Winterthur/University of Delaware Program in Art Conservation, currently completing the second half of her internship at the V&A, reviews her time at this year's AIC conference.

Writing for Icon News

If you would like to submit an article or review an event, details of how to write for *Icon News* can be found here: <https://icon.org.uk/what-is-conservation/writing-icon> or by contacting Terri Dewhurst on the address below.

Keeping in touch with the Textile Group

Due to publication deadlines, it is not always possible to mention all events so please check the *Icon* website, Facebook page, Twitter feed and *Iconnect* for details. If you have anything that you would like mentioned in our communications please contact the Textile Group's News Editor Terri.Dewhurst@nationaltrust.org.uk

Textiles Group Email: icontextilegroup@gmail.com

Twitter: @ICON_Textiles

Facebook: [Icon Textile Group](#)

HELP TO SAVE THE PLANET!

Congratulations to Lorraine Finch ACR on the publication of her book *Low Cost/No Cost Tips for Sustainability in Cultural Heritage*.

Packed full of achievable and clever ways to reduce our impact on the planet, her publication is simple, clear and easy to follow. It is stuffed with actions that can be taken straight away, for little or no cost, and that will have an immediate effect, regardless of whether you work in heritage or not.

'This is a brilliant resource for EVERYONE, not just people working in cultural heritage.' Eleanor Schofield, Deputy CEO, Mary Rose Trust

The book is inspiring, practical and brimming with great ideas, tips and tricks for living and working sustainably.

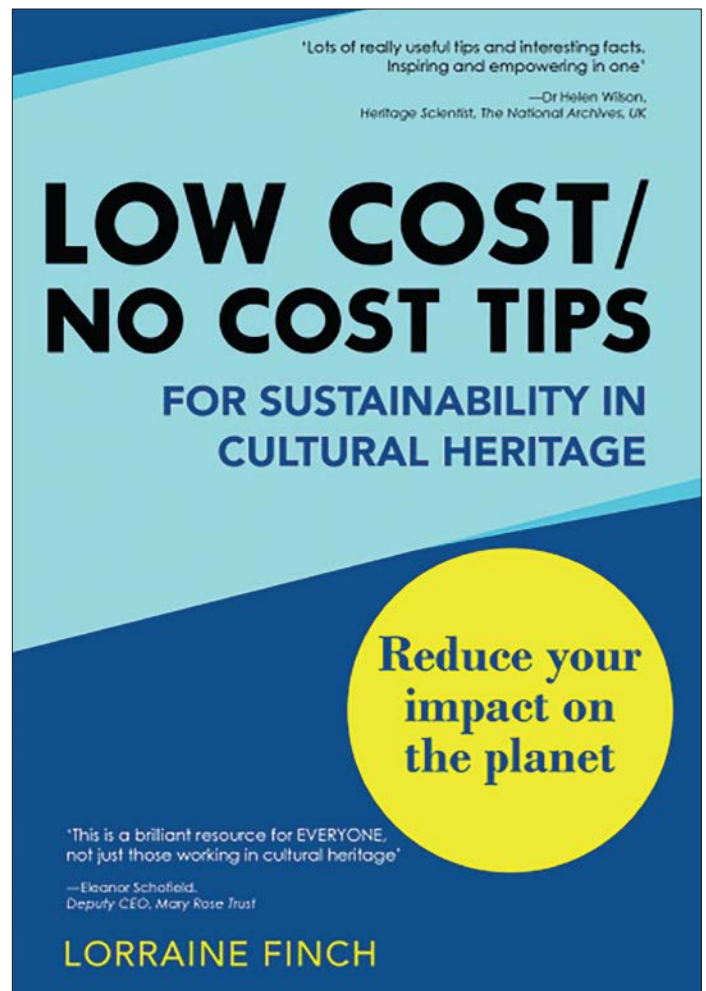
'Anyone who's passionate about sustainable living (not just in the workplace) will find this book to be such a useful resource.' Meeta Thareja. Co-founder and Director, MetaValue.

Lorraine was moved to make these tips available to help us all to reduce our impact on the climate and the environment, and to give people the tools to make a difference. Lorraine said 'Together we can make the changes needed. Every person can make a difference.'

'Inspiring and empowering in one.' Dr Helen Wilson. Heritage Scientist, The National Archives

At COP26 Sir David Attenborough said we must turn 'tragedy into triumph'. Inspired by this, Lorraine wrote to Sir David Attenborough to let him know that she was fighting to change 'tragedy to triumph' through 'Low Cost/No Cost Tips for Sustainability in Cultural Heritage'. She was over the moon to receive a reply.

'Thank you for all that you are doing to help in the fight against

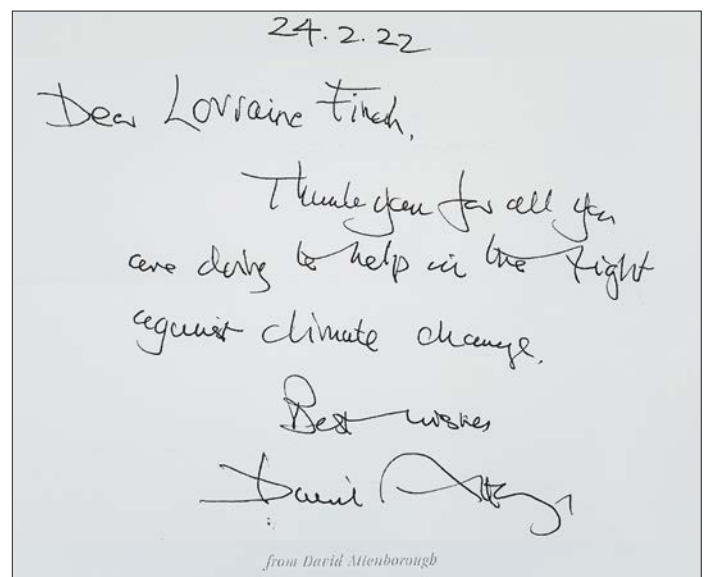


climate change.' Sir David Attenborough.

As well as helping to save the planet, the tips in 'Low cost/No Cost Tips for Sustainability in Cultural Heritage' help to combat the rising cost of living by saving you money. Here's an example: since putting the tips into action in her own life and work, Lorraine reduced her energy bill by £22.50 a month.

Low Cost/No Cost Tips for Sustainability in Cultural Heritage is published in the most sustainable manner possible. As well as being available as an eBook, the print version is print on demand.

With traditional publication methods, books are normally printed in the Far East and shipped to the point of sale AND





The author proudly displays her book!

more books are printed than are needed, leading to approximately 40% being pulped. By contrast, with print on demand only what is needed is printed, where it is needed and delivered directly to who needs it. So print on demand significantly cuts waste, distribution and energy costs associated with the moving and storage of books. Printing happens at the closest point to where the book is ordered, thereby cutting the final mile delivery mileage to a minimum.

The print edition is available as print on demand from all online bookstores including:

World of Books (a BCorp) <https://bit.ly/3yIz9Mc>

Waterstones <https://bit.ly/3G7KlbK>

Amazon <https://amzn.to/3FgTVIE>

Barnes and Noble <https://bit.ly/3LF7Da2>

Apple Books

LETTER TO THE EDITOR

Emerging conservators take aim at zero hours contracts

As you are certainly aware, the Victoria & Albert Museum recently announced a call for 'early-career conservators' to apply to their 'zero hour worker pool'. As you are also aware, this follows recent mass redundancies at the museum to reduce costs in light of a 22% loss in funding since 2010/2011. This was met with great criticism, foretelling the institutional 'loss of over 1,000 years specialist experience' and knowledge.

Amid the cost-of-living crisis, this casualisation of conservation work and form of false self-employment is gravely concerning. In particular to those early-career conservators whose position as recent graduates makes them all the more vulnerable to accepting the unfair terms of this form of precarious employment – a fact that the V&A is evidently aware of.

Icon has made clear their mission to support recent graduates/emerging conservators, evidenced by this key point in the new Strategy outlined in their most recent publication: 'D. Develop conservation as an inclusive and rewarding career'.

Webinars on CV writing and interview skills aren't enough. We

cannot accept the current paradigm of temporary short-term contracts and zero hour contracts if we want to make the profession more inclusive and overcome barriers to a rewarding career. The ills of zero hour contracts are well known; as a Public and Commercial Services Union representative said in 2013 regarding their use within the museum sector:

'These contracts are accepted by most workers because they have no choice. The work/life balance shifts dramatically in favour of the employer and, in the wrong hands, can lead to exploitation and unacceptable breaches of employment.'

Icon has established a protocol for critically highlighting jobs in the sector that fail to meet their recommended pay scale. In this spirit of safeguarding workers, zero hour contracts should also be critically appraised. As members of Icon, we wish to communicate our concern and anger over this process which is becoming endemic in the sector. Whilst Icon has advertised this 'zero hour contract pool', Icon must also advocate open discussion and criticism to effect tangible change to the way our work is organised.

A group of emerging conservators

Icon responds:

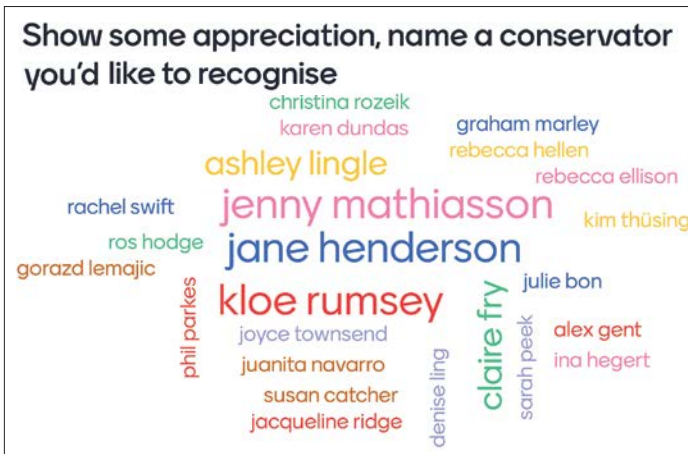
Icon's recent Labour Market Intelligence Research has shown that approximately 2% of employees within the conservation workforce are appointed under zero-hour employment contracts. Icon recognises that the use of Zero Hours Contracts is a complicated issue; whilst for some they can be problematic, for others their flexibility can indeed be a benefit. Icon is actively seeking to provide support and advice where we can.

The emerging professionals are actively seeking the views and input of conservators and heritage scientists on this issue.

Please share your feedback directly with the group at emergingconservators0@gmail.com

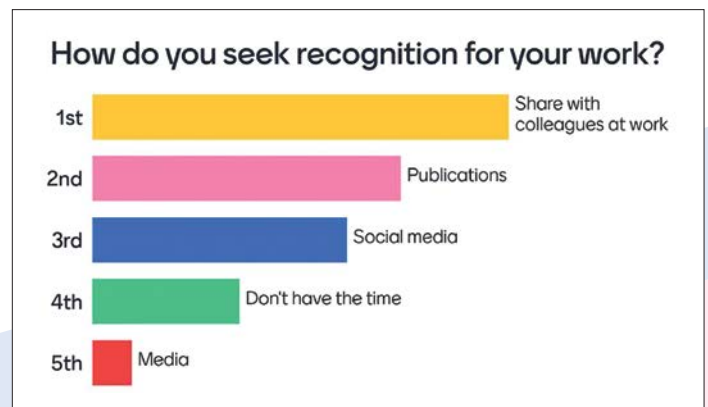
ICON CONFERENCE 2022

The Conferences Committee looks back on Icon's 2022 Conference, which took place online over two days in May, and gives a taste of the feedback provided by the delegates during the event from the Mentimeter survey



Feedback

The online evaluation platform Mentimeter was used to ask delegates specific questions about conference topics, to capture breakout room discussions and to provide a space for general feedback.



We were delighted to see friends and colleagues from the UK and other parts of the world recognised across the feedback. We were happy to hear that the last two years had given some delegates the space and inspiration to try new ideas in the workplace and look for outreach opportunities with new audiences.



We could not miss the opportunity to talk about and share the initiatives of Icon members to help save Ukrainian heritage and support Ukrainian colleagues. In times of crisis the support from a strong network is essential to us not just as professionals but as human beings.

Delegates were asked 'How do you seek recognition for your work?' It was very interesting to see that the number one answer was 'through our colleagues and fellow professionals'. This shows how important recognition from within our conservation community is and how important it is to give recognition to each other.

A big thank you

- to all who took part in organising, presenting, attending and supporting the Icon Conference 2022: *Reaching out for Recognition*. Both the main event and Twitter programmes were designed to celebrate recognition and collaboration across our profession, to encourage public debate, uplift diverse perspectives and support the work of early career and emerging professionals. We hoped that people would leave feeling inspired and reconnected. Did we achieve our goals? Read on to find out....

Was the event successful?

The event was a collaboration between The Conferences Committee and the Icon office team. It is fair to say that during planning we had relatively conservative estimates and expectations for the event; lead-in time was very short and we were all too aware of general virtual event fatigue amongst friends and colleagues. It is therefore with great delight that we can share with you some very positive feedback and results:

- Income generated: £4,248.10 (ticket sales and sponsorship)
- Delegates registered: 186 of whom
 - 163 Icon members
 - 9 Icon Student members
 - 14 Non-members

- Reach on Twitter - hashtag #IconReachOut22 receiving:
 - 405 mentions
 - 1.7 thousand interactions
 - 1.8 million reach
 - 311 shares
 - 1.4k likes

We were so amazed by these results! The #IconReachOut results show that the Icon Conference reached a broad public outside the conservation field. Recognition for this success has to go to students at Cardiff University and their tutor Ashley Lingle ACR.

During the Covid pandemic digital platforms were the only way to meet. There is no doubt that celebrating in person is the best way, but we have to admit that digital platforms are here to stay and can support us in connecting with each other. We were happy to hear that during this conference, participants had enjoyed each others' company, albeit virtually. The feedback showed that the delegates felt that the conference was a great opportunity to meet people and make new connections.



We look forward to continuing our work as a Committee, together with Icon staff ,and we look forward to welcoming you at our next event: watch this space...



For anyone who was not able to join us at the event and wishes they had, talks will be freely available on the Icon YouTube account in November. The final Mentimeter report will be published on the Icon website.

What you enjoy most about IconReachOut22?

I loved the discussion we had in breakout room about international collaboration. Q&A session were great as well. It is great to know about how different conservators do reach out.

I have enjoyed finding out about many other conservators and organisations that I did not know existed.

Strong positive focus on outreach to different audiences

Inspiring projects which are achievable

Really enjoyed hearing from colleagues in South America and India

Being inspired by other people's projects and thinking about how I might do similar work in my institution

Being reminded that I belong to a wider group of fellow professionals

The initiative to help with Ukrainian heritage

The variety of topics, projects and ways of reaching out

The virtual tour of the Burrell Collection

The company!

Having discussions with colleagues and hearing from interesting speakers.

The great range of speakers

Hearing about inspiring projects Great discussion about outreach- wish there had been more time! The virtual tour A range of different presentation styles and input made it varied and interesting.



SAYING GOODBYE TO SIMON

From our Chief Executive Sara Crofts

On 12 July 2022 the Icon team said goodbye to our Business Director, Simon Green, who has retired after a ten year stint supporting the financial, governance and administrative aspects of our business. When he arrived in 2012 Simon brought a wealth of experience of organisational management, knowledge of the charity sector and business acumen. He has diligently and enthusiastically employed these talents to help Icon pursue its objective to achieve long term financial resilience.

Simon has supported two Chief Executives, and a few of his notable achievements include the launch of the previous Icon website in 2015 and his work on the Governance Evolution project, which included the creation of our Governance Handbook. Simon has also ensured the smooth operation of our annual trustee elections and overseen three office moves in his time – no mean feat!

The Icon staff team wishes him well as he embarks on new adventures and, as he remains one of our few Honorary Members, we know that we can still count on his attendance at our AGMs in the future!

Former Chief Executive Alison Richmond ACR develops the story:

Thankfully, Simon arrived at Icon just in the nick of time. I had been in post as Chief Executive for one year and it had become clear that without the support of a business or finance director I would struggle to do the advocacy work that Icon had been set up to do.

Simon joined our small team with experience from a varied and successful career; he understood how both businesses and charities operate. (Simon always insists, rightly, that charities need to run like businesses.)

He was formerly the owner of Hayle Mill, where the famous Barcham Green archival-grade papers prized by the conservation profession were produced. Throughout his earlier career he travelled widely abroad advising in an expert capacity on handmade papermaking. He had another important string to his bow; through selling archival paper to conservators and, in due course, becoming Chair of the Institute of Paper Conservation (IPC), he was familiar with our sector, knew many conservators both professionally and socially, and counted among them many good friends. As a result, he had a great deal of respect for conservators and the work we do.

Nancy Bell ACR gives us a glimpse of the IPC years

Simon also brought his business acumen to the role of Chair of IPC, guiding us through some turbulent times with a firm hand, herding cats when required, but always with a twinkle in the eye and good humour. Thanks to Simon's in-depth understanding of the paper industry and his ambassadorial role advocating for the preservation of heritage and landscape, IPC grew from strength to strength, supporting a large international community of paper and book conservators.

And back to Alison

Much of the work that Simon did at Icon was by its nature behind the scenes. Some members may not have come across Simon in their encounters with the staff team. Nevertheless, his contribution to the development of the organisation was significant in many areas.

He was passionate about how Icon presented itself to the public, often passing me newspaper articles that needed a response. As Sara has noted, when it became clear that our original website had passed its sell-by date, and in full knowledge of the huge disruption this would cause, he took the bull by the horns and managed the project to a successful conclusion.

The financial arrangements of charities are complicated and managing them well is enormously important, as public accountability is a defining responsibility of a charity. Simon worked hard to ensure that everyone was on the same page, spending many long hours each month going through our many pages of accounts with our accountants JS2 Limited. Simon was also a stickler for setting our budgets in good time and would firmly nudge each of us to produce our figures. At Icon, we had a truly multigenerational office. Simon relishes working with younger people and was able to relate to them without any self-consciousness. This could sometimes be very entertaining. I have particularly fond memories of the banter, along with some truly terrible puns and jokes, which Simon would pitch across his desk to Michael [Nelles] who always rose to the occasion tossing something equally outrageous back to Simon. We would all groan amicably. Another day in the office had begun.

Finally, Carole Milner CBE, Icon's founding chair

I first met Simon in the early 90s when I still lived in France and we were establishing ECCO (the European Confederation of Conservator-Restorers' Organisations). He was a fervent champion of IPC and a formidable challenger even then!

We've continued to spar amicably on and off over all the years since. But, above all, we've worked well together, whether through the years of convergence [which led to the formation of Icon] or later on Icon's root and branch governance review.

I've grown to respect Simon immensely for his diligence and hard work, his pragmatic business head and above all his stalwart nature and absolute reliability. Running a membership organisation is not always a walk in the park and Icon went through some early teething problems. But I firmly believe that, perhaps more than we realise, Simon's steady hand on the backroom tiller helped keep us afloat.

Then of course, as others have noted, there's that twinkle in his eye – and we all know, of course, that he's really a big teddy bear.



THE INSTITUTE OF CONSERVATION

Notice of 18th Annual General Meeting

Notice is hereby given that the 18th Annual General Meeting of the Institute of Conservation will be held online at 5.00pm (UTC+01:00) on Thursday 1 December 2022 to consider the following business:

Ordinary Resolution 1: To receive the Trustees' Annual Report and Accounts for the year ending 31 March 2022.

Ordinary Resolution 2: To authorise the Trustees to appoint the auditors to serve until the end of the next Annual General Meeting and to authorise the Trustees to decide the remuneration to be paid to the auditors.

A member of the Institute of Conservation who is entitled to attend and vote at the meeting (being a paid-up Accredited, Associate, Pathway, Student or Emeritus Member) is entitled to appoint a proxy, who need not be a member of the Institute of Conservation, to attend and vote instead of them. Proxies may be appointed via the web portal or to the registered office so long as they are received before 5.00pm (UTC+01:00) on Tuesday 29 November 2022. Those received later will not be counted.

If you are eligible to vote you will be sent an email by our election support provider Mi-Voice inviting you to access the Proxy Notice enabling you to register your instructions online. If you do not have an email address, please phone the Mi-Voice office at 0845 241 4148.

Dr Michael Nelles
Head of Membership

10th June 2022

people

Icon staff news



A warm welcome to **Naomi Hollis** who joins Icon as Office Manager, carrying out a range of administrative duties to support the team and help the organisation run smoothly and efficiently.

Naomi is no stranger to the world of cultural heritage as she studied archaeology at The Institute of Archaeology at both undergraduate and Masters level and worked on various projects in the UK and the Middle East.

Her career then moved into charity administration and over a period of more than fifteen years she has worked in organisations as diverse as the World Monuments Fund, Age UK and RADA. With Icon, she is pleased to be bringing her administrative skills back to the cultural heritage field.

Naomi's usual working days in the office will be Wednesday and Thursday and she can be contacted on naomi.hollis@icon.org.uk

Awards



In the latest round of Queen Elizabeth Scholarship Trust (QEST) awards, congratulations are due to Icon member **Nicola Shreeve**, the 2022 QEST Benefact Trust Scholar for Wood, Stone and Decorative Surfaces Conservation.

Nicola originally trained at the London College of Furniture and has over twenty years' experience as a self-employed furniture and frames restorer. A longstanding ambition to work as a specialist conservator in the museum and heritage sector led her to study for a BA in the Conservation of Wood, Stone, and Decorative Surfaces at City and Guilds of London Art School.

Following her graduation, Nicola is now undertaking a Masters degree to further her specialist skills in the conservation of polychrome sculpture. Her QEST funding will support the second part of the course when she will further her training with a focus on the technical investigation and conservation of the monument to Sir Richard Pecksall (d.1571) in the Chapel of St Edmund, Westminster Abbey.

New ACRs

The Accreditation Committee approved the accreditation of the following conservator-restorers at its meeting in June 2022. **Congratulations to all these new ACRs!**

Vanessa Applebaum

Objects and Conservation Management

Morgan Browning

Paper and Archival Materials

Jack Clare

Stained Glass

Heidrun Gassner

Objects (Ethnographic)

Tracy Manning

Conservation Management

Nora Meller

Textiles

Michael Rieveley

Ceramic Tiling

Nicoletta Tomassi

Easel Paintings

Nikki Tomkins

Book and Archival Materials

Sadie Wilson

Conservation Management

Welcome to these new members

We would like to extend a very warm welcome to all those who joined us in December 2021 and January 2022. We hope to see you at an Icon event soon!

Melissa Barton

Student

Amelia Bedson

Pathway

Keara Burr

Associate

Heather Caven

Supporter

Athina Chatziantoniou

Student

Jae Youn Chung

Pathway

Sally Doran

Pathway

Laura Goodman

Student

Susan Hughes

Supporter

Victor Jefferys

Associate

Kelly Keegan

Associate

Katharine Kibort

Student

Kylie Lloyd

Student

Malin Lundin

Supporter

Alexandra McGuire

Pathway

Elsa Ray-Iliffe

Student

Storm Scott

Student

Wesley Tanner

Supporter

Anne Traill

Associate

Shannon Wilson

Supporter

Sophie Woehrling

Pathway

Angharad Yeo

Student

Jingyi Zhang

Student

In memory



Alan Buchanan (1931-2022), who has died from oesophageal cancer aged 90, will be greatly missed by his many friends and colleagues. The youngest of nine children, Alan was educated at Gordonstoun and Downing College, Cambridge where he studied Mechanical Engineering.

After his degree Alan did his National Service in the Royal Marines. This was during the Cold War and he was part of the 'Stay-behind' forces, clandestine units tasked with burying equipment in secret caches in Austria for use in the event of a Warsaw Pact invasion. Afterwards, he worked as a civil engineer both in this country and overseas, including Africa and the Far East, before retiring aged 58 and starting a second career as a paper conservator

Alan studied paper conservation at Camberwell College of Art, graduating in 1991 and opening his own conservation studio in 1993. His engineering training proved to be invaluable to the world of conservation and before long he was designing and manufacturing equipment that became a mainstay of professional conservation practice. His designs included a cedar wood humidity box, a book cradle to hold delicate books safely during digitisation (in

collaboration with the Bodleian Library, Oxford), a small area, high pressure suction point ideal for removal of small stains, and, perhaps the most notable of his developments, the vacuum or suction table with a built-in light box.

With his ever-enquiring mind and quest to enhance conservation treatments, one of his projects addressed the need for paper-making pulp to match the specific colour of a work of art under treatment in the studio. To this end, he created colour charts of the different shades, provided stock and published a paper on the subject for the BAPH Quarterly (No. 65, January 2008).

Alan contributed to the conservation profession at a crucial stage, becoming Treasurer of the Institute of Paper Conservation in 1995 and then Chair of the Institute in 1997, helping to oversee the introduction of a formal accreditation process for paper conservators. Alan had enormous energy and from 2005 willingly combined his busy conservation work with teaching a new generation of post-graduate conservation students at Camberwell, something he found richly rewarding.

Alan is survived by Elissa, his wife of 51 years, his children Ben, Polly, Nelson and Alice, by his first wife Gretchen, his half-brother Iain and his three grandsons.

Anne Greig

Paper Conservator

'My dear, think nothing of it', said he with a flourish of his hand, as I broke his bone folder. Suave, courteous, the consummate gentleman, always helpful, with an excellent dry humour: these were the hallmarks of Alan

In memory

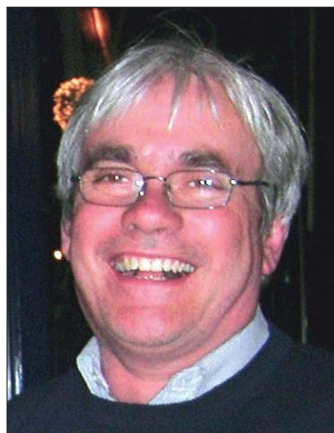
Buchanan. He was my student at Camberwell and later a much-respected colleague and friend.

We worked together for four summers at Worcester College, Oxford on a long-running conservation project and later, on many other tasks. He was a great teammate; at Worcester he made our lives easier by charming the difficult secretaries and having an easy way with the scouts who turned up their noses at the presence of so many women. He was terrific with the numerous interns on the team. And after the long and hot days in the library-cum-studio, there would be a cooling little trip on his boat, *Clairinch*, named after the battle cry of the Buchanan clan, moored conveniently just around the corner at Weirs Mill Stream, just beyond the west bank of the Thames where he always whipped up a fantastic barbeque, followed by endless easy conversation - all of us remember the fun, and him, with warmth and gratitude.

As Chairman his previous managerial skills helped the Institute of Paper Conservation (IPC) into a tighter, more professional organisation and his later contribution to the process of accreditation cannot be overestimated. It was Alan, once again, bringing his previous professional experience to bear, who made us understand that the purpose of accreditation was the reassurance of the public using our services and not for the greater glory of the conservator.

His was a rich and interesting life, a life well lived. We will all greatly miss him.

Kate Colleran ACR FIIC



On 20 April 2022, **Tim Green** died at the age of 68. He will be greatly missed by his wife, Hazel, and his son and daughter, Joe and Nicky, as well as his wider family, all of whom were dear to him. He will also be remembered fondly by friends and colleagues throughout the conservation world.

As a student, Tim benefitted from a four-year training programme established between the Courtauld Institute and the Tate, and he spent his conservation career at the Tate from his student days until his retirement in 2018. In 1981 he was appointed to the post of permanent exhibition conservator, where he faced busy schedules and was expected to work to tight deadlines.

But there was concern that works of art, both loaned to and from the Tate, were being exposed to too much risk. With characteristic enthusiasm, Tim was determined to find out about the physical risks. Over a ten-year period, he measured the shocks and vibrations experienced by works of art and explored packing case designs. In the process, he became quite a showman, arranging several open demonstrations where he took particular pleasure in the controlled destruction of

simulations of paintings.

His research was directly concerned with actual gallery practice, for instance, framing and glazing paintings had become a mainstay of conservation practice and, following the opening of Tate Liverpool in 1988, it was important to transport them simply and economically from London. Initially, to protect the glass from breakage in transit, it was taped, however on removal this frequently left release patterns on the coated glass. Tests done by Tim demonstrated that as long as the glass was fitted properly in the frame rebate, the danger in transit was small and the tape was unnecessary. These findings challenged existing cautious practice and informed glazing methods, as well as proving the value of such research.

Tim then contacted other institutions with expertise and commitment to loan exhibitions, and in conjunction with the National Gallery of Art and the Smithsonian Institution in the USA and the Canadian Conservation Institute, devised the *Art in Transit* (AIT) programme to disseminate and interpret research results.

The AIT conference in London in 1991, the workshop manual and the conference proceedings remain the basis of practice in art transport. Over several years and many gruelling hours, Tim's drive kept this international group focused on working towards a successful outcome. The results underpinned future exhibition successes and pre-empted Tate's further expansion. Unfortunately, I think the stress of this project on top of his everyday duties also had a detrimental effect on Tim's health.

Many conservators will have met Tim in his role as exhibition conservator, but he also carried out practical treatments on paintings in the collection. The common theme was simple analysis of outstanding problems combined with sensitive visual awareness.

Tim's enthusiasm was also translated to the Royal Academy of Arts, where, as Professor of Chemistry, he gave lectures and advised the students for over a decade. He was very proud of this, since the institution usually renewed professors every few years.

Tim advised painting students on the use of materials that would last. Consequently, there now exists a group of canvases that his students deacidified with chalk prior to painting. One day, when other canvases have deteriorated, some of these may become his unspoken epitaph.

Stephen Hackney ACR

This is a shortened version of the appreciation of Tim Green first published on the IIC website in June 2022

THE NEWPORT MEDIEVAL SHIP PROJECT

Dr Toby Jones, Curator of the Newport Medieval Ship Project, tells the story of twenty years' work on an important archaeological find

THE DISCOVERY

Exactly twenty years ago, in the summer of 2002, a remarkable archaeological find was unearthed during redevelopment work in Newport, South Wales in the United Kingdom. The remains of the wooden hull of a late medieval merchant vessel were found preserved deep in the alluvial clay along the River Usk in the city centre.

The find sparked intense local interest and was deemed of international significance and it was quickly proposed that the vessel be fully excavated and conserved so that it could be later reassembled and displayed.

What followed was an intensive five-month excavation, in-situ documentation programme, and recovery effort that required the complete disassembly of the waterlogged ship into thousands of individual components. As well as the timbers, around a thousand artefacts and environmental samples were also recovered.

Initial observations suggested that the ship dated to the mid-15th century, with strong evidence of Iberian connections in the form of Portuguese coins and ceramics. Later dendrochronological analysis firmly dates some of the hull planking to after 1449, with an origin in the Basque Country in Northern Spain.

The ship appears to have been intentionally positioned on a pre-erected cradle in a side channel and was undergoing refit or repair, sometime after the Spring of 1468 but before the Winter of 1469. It appears that the ship heeled over and flooded, with contemporary efforts to raise or re-float it ultimately unsuccessful. Substantial portions of the upperworks of the ship were removed at some point, along with the salvaging of all the readily reusable items, including the anchors, masts, guns and larger rigging elements.

Public engagement with the ship-find began immediately after the discovery in the summer of 2002. Around 22,000 people visited the site over three open days and the Save Our Ship campaign formed and took to the streets to rally for the recovery and conservation of the hull and artefacts





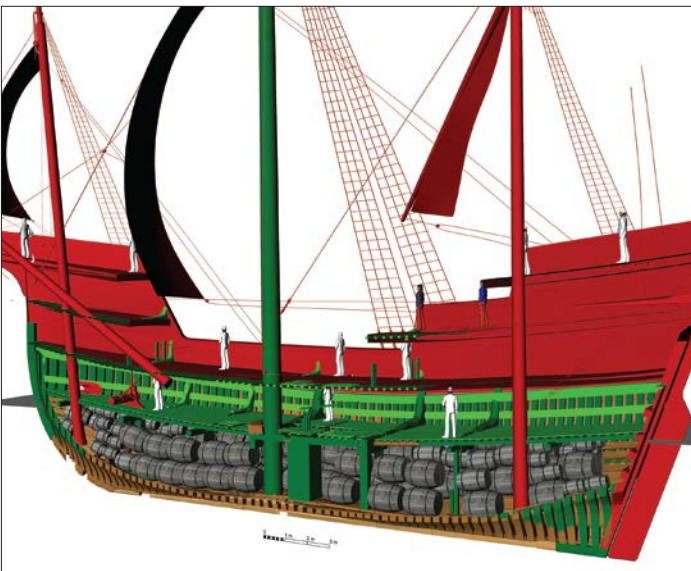
This artist's impression of the Newport Ship shows her taking on a pilot in the Bristol Channel prior to navigating the River Usk into Newport. The vessel would have had a crew of around forty, along with numerous extra passengers. Painting by David Jordan.

EXCAVATION AND RECOVERY

Several factors complicated the excavation, recovery and disassembly, including the sheet pile cofferdam surrounding the vessel, the numerous concrete piles inadvertently driven through the hull during the redevelopment works, and the interlocking/overlapping construction and fastening of the vessel. The depth of the excavation also necessitated the use of cranes to lift the timbers out of the pit and onto flatbed lorries.

All of the recovered archaeological material was kept wet in a series of temporary tanks before eventually ending up in some seventeen 25,000 litre PVC tanks (with external scaffold pipe framework) inside an industrial unit in the city. The water was changed on a regular basis but little or no salinity was detected. The individual hull timbers, varying in size from finger-sized fragments to the 20m long keel, were all labelled with animal ear IDs (cow tags). Longer timbers were cut into more manageable lengths, both for ease of initial handling/documentation and for later fitting into a freeze-drier.

This cut-away view of the ship shows the internal structure, decks, and cargo hold filled with casks of wine. The ship could have held 175-250 tons of cargo, with iron, wine, and grain being the most common.



CLEANING AND DOCUMENTATION

THE HULL TIMBERS

In 2004, archaeologists and conservators began a multi-year effort to clean, record, analyse and conserve the timbers and artefacts. The hull timbers, predominantly oak, were well-preserved, both by the extensive use of wood tar during and after initial construction, and by the ideal depositional environment for organics – wet, cold, dark and anoxic river clay. The hull timbers were largely covered in concretions caused by the corrosion of the numerous wrought iron clenched nails used to hold the hull planking together. These concretions (along with tar, animal fibre caulking and barnacles) were removed using dental tools, small chisels, toothbrushes and lots of water.

The preservation of details on the surface of the timbers was remarkable, with thousands of examples of inscribed lines (design marks), toolmarks and fastener head impressions. During the cleaning process, tar, iron and animal fibre samples were taken for future analysis. The 3D digital documentation methods detailed below were complemented by selective digital photography and hand-written timber record sheets.

An early photograph from the excavation showing the newly discovered port side of the hull, with numerous loose timbers filling the hold. These timbers were disarticulated but once formed part of the upper structure of the vessel, which was partially dismantled and salvaged soon after deposition.





Archaeologists lifting a section of the keel. Between 5 and 7m of alluvial overburden had to be removed to fully uncover the ship before it was dismantled and raised

Once all the overburden and loose timbers had been removed, the site was recorded using traditional methods and photogrammetry. Note the numerous modern concrete piles that were driven through the site (and hull) during the initial groundwork. View looking towards stern of vessel



The timber storage tanks and work areas in the ship centre. Archaeologists, conservators, volunteers, and students spent thousands of hours cleaning, documenting, and conserving the timbers and artefacts



A large vacuum freeze-drier was initially set up at the ship centre in Newport and operated under the supervision of York Archaeological Trust. The freeze-drying of the entire assemblage is expected to be complete by January 2023

Like many rescue archaeology projects, archaeologists working on the Newport Ship excavation were under pressure to complete their investigations quickly. While they were able to document the position and context of artefacts and ship timbers with traditional hand drawings, photogrammetry, photography and videography, they were unable to record each timber in the detail necessary to create a reconstruction model of the ship (The reconstruction of the original shape of the hull form of an archaeological ship find is seen as a key research goal within nautical archaeology).

After cleaning, the hull timbers were recorded using 3D digital documentation technology and digital photography. A laser scanner was used to record important tool marks and artefacts. Different layers/colours in the Rhinoceros3D CAD modelling software were used to organise the data and build up a detailed record of the geometry and fastener type and position for each timber.

The 3D wireframe drawings produced by the contact digitisers were used as a basis for creating digital solid models, which were in turn 3D-printed using selective laser sintering technology. These individual 1:10 scale model ship timbers were assembled into a 3D model of the surviving original hull. This physical scale model then served as a



Each timber was recorded using contact digitisers and this highly accurate geometric data was converted into digital solid models which were 3D printed and assembled to form a 1:10 scale model of the recovered hull.

foundation on which to ghost-in the missing areas of the hull. This complete model was digitised and used to create accurate reconstructions of the original hull form, complete with sails, rigging and cargo.

ARTEFACTS

Hundreds of artefacts were found during the ship excavation. They ranged from items used in daily life, like earthenware pottery and wooden combs, to defensive items like stone shot and a leather archer's bracer, complete with a stamped Latin inscription. Some finds, like the rigging elements and wooden bowls, were well preserved in the waterlogged environment. Others, like Portuguese coins, cork oak and various foodstuffs, could provide clues about the crew or cargo. Dozens of cask staves and heads were found during the excavation, which indicate that the ship carried wet and dry goods in casks, along with a range of bulk cargoes. Of significant technical importance are the numerous composite artefacts (wood, leather, metal) related to the various pumps found on board the ship.

One particularly interesting item was a silver French coin found purposely inserted into the fabric of the ship. The coin, a *petit blanc*, was placed in a rebate cut on the inboard face of the keel. The coin features a cross on one side and a crest of the Dauphin of France on the other, and was minted in Cremieu, France between May and July 1447.

The objects were all documented via digital photography, laser scanner or archaeological illustration and offer potential



A variety of artefacts were recovered including (clockwise from top left): woollen textiles, boxwood combs, a carved wooden gaming piece, and stone shot for use in breech-loading wrought iron guns.



The *pouline* shoe was an item of high fashion and is in an amazing state of preservation. A significant amount of leather was recovered during the excavation, with other items including an archer's decorated wrist guard and parts of the ship's pumps

insight into life on board the ship during mid-15th century. All of the small finds have been conserved, with some already on display at the Newport Museum and Art Gallery, and in the ship conservation centre.

The silver French coin, called a *petit blanc*, was found purposely hidden in the fabric of the ship as a good luck charm with the cross on the obverse facing up. The coin was only minted between May and July in 1447





A substantial assemblage of wooden rigging elements was recovered, ranging from blocks with pulleys to deadeyes. Poorly preserved fragments of grass and hemp cordage were also recovered.

CONSERVATION WORK

Following documentation and dendrological analysis, the hull timbers began the active conservation process. A concerted effort was made to mechanically remove all visible iron and iron-corrosion products prior to documentation; however, iron staining was still visible. In order to remove further soluble iron salts, a decision was made to use a chelating agent. The first step in the planned polyethylene glycol (PEG) and vacuum freeze-drying process was pre-treatment with 2% w/v Di-ammonium Citrate to remove the bulk of the soluble iron salts still present in the timbers.

A tank full of timber would typically be treated for four to eight weeks and then rinsed several times with fresh water before new Di-ammonium Citrate was added. In one tank, the first treatment caused 181mg/litre of iron to come into solution, while the fourth and final treatment of that particular tank yielded only 5mg/litre of iron in solution.

Following rinsing, a two-stage PEG pre-treatment was commenced, with concentrations of 15% v/v PEG 200 and 5% w/v PEG 3350 used for the planks, and 15% v/v PEG 200 and 20% w/v PEG 3350 used for the frames and other thicker material. PEG was added incrementally until the desired percentages were reached. The tanks were not heated or insulated, but the PEG solution was circulated with pumps.

Vacuum freeze-drying followed, with batches of timbers taking four to six months per run. Initial estimates of shorter run lengths proved optimistic, as the largely intact (i.e. minimal degradation but waterlogged) timber structure impeded the PEG absorption and subsequent migration of water vapour to the surface. Freeze-drying took place both onsite at the ship centre in Newport and later at York Archaeological Trust and the Mary Rose Museum in Portsmouth. The final batch of timbers is expected to be freeze-dried around about now, marking the end of active conservation treatment, twenty years after initial discovery.

LONG-TERM STORAGE

The dried timbers and artefacts are currently being stored in two bespoke insulated chambers built inside the ship centre industrial unit. These 'rooms within rooms' are made from pallet racking, scaffolding tubes and fittings and 100mm thick polyisocyanurate boards (PIR - Kingspan/Celotex). Joint seams are filled with silicone and covered with aluminium foil tape. Large double-glazed units set into a removeable door allow public viewing and forklift truck access.

Lighting is provided by four 50-watt LED floodlights. Temperature and relative humidity conditions are maintained using a domestic dehumidifier; conditions are kept stable with little energy input. The central area of each store is filled with rolling racks (again made from scaffold tubing, fittings and OSB board covered with LDPE foam), which allow material to be easily moved around in order to access the pallet racking.

REASSEMBLY AND DISPLAY

The ultimate goal of the entire project is the reassembly and display of the medieval ship in a suitable environment. Reassembly trials have shown that the material will generally fit back together well, with the empirical results being bolstered by a re-recording programme which is providing comparative data for the statistical analysis of shrinkage and distortion.

Quantifying the new shape and size of the individual timbers in their dried state is providing critical information for the design of a suitable support system. Several interrelated research projects are underway with Swansea University Department of Engineering in order to design and test various cradles and materials while also examining the widespread problems of deformation and creep currently affecting archaeological ships around the world.

In the case of the Newport Ship, it is envisioned that the extant articulated hull (measuring approximately 25m long x 10m wide x 5m tall) would be reassembled and the missing areas ghosted in 'digitally' using a combination of virtual and augmented reality. Such a museum display would have a striking visual impact, much like the displayed archaeological ships *Mary Rose* in Portsmouth, UK and *Vasa* in Stockholm, Sweden

Numerous articles, both scholarly and popular, have been written about the ship project, as well as several documentaries. A comprehensive digital data set has been deposited with the Archaeology Data Service and is free to access: https://archaeologydataservice.ac.uk/archives/view/newportship_2013/.

The ship project is currently open to the public on Fridays and Saturdays through the Autumn. Events to mark the 20th Anniversary included a summer open day on 30 July and a major one day conference is taking place on 11 October 2022. More information can be found at www.newportship.org.

The Newport Medieval Ship Project is part of the Newport City Council's Museums and Heritage Service. The project has benefited from a variety of funders over the course of the project, including Newport City Council, Welsh Government, The Heritage Lottery Fund, The Friends of the Newport Ship and numerous others.

Further/Suggested Reading:

Jones, T. and Panter, I., 2018. 'The conservation of the Newport Medieval Ship: quantifying post-conservation shrinkage and distortion of PEG pre-treated and freeze-dried hull timbers using contact digitisers,' in *Proceedings of the 13th ICOM-CC Group on Wet Organic Archaeological Materials Conference : Florence 2016*, eds. E. Williams and E. Hocker. pp 338-346. Florence: ICOM-CC WOAM

Nayling, N. and Jones, T., 2013. 'The Newport Medieval Ship, Wales, United Kingdom.' *International Journal of Nautical Archaeology*, 43: 239-278. DOI: 10.1111/1095-9270.12053

Nayling, N. and Jones, T., 2014. 'Newport Medieval Ship [Data-Set].' Archaeology Data Service. Available from: http://archaeologydataservice.ac.uk/archives/view/newportship_2013/. DOI 10.5284/1020898.

Nayling, N. and Jones, T., 2018. 'The Newport Medieval Ship: Archaeological Analysis of a Fifteenth Century Merchant Ship,' in Jones, E. and Stone, R. (eds), *The World of the Newport Medieval Ship: Trade, Politics and Shipping in the Mid-Fifteenth Century*. University of Wales Press. pp 19-35.

DRESSED FOR SUCCESS

Gwen Thomas on embedding volunteering within a collections care project, with some of the volunteers giving their perspective

Gwen Thomas is Collections Care Officer at Museums & Galleries Edinburgh and Chair of the Icon Scotland Group

About the project

Museums & Galleries Edinburgh's dress history collection had been stored for many years in an unsuitable environment with poor access. This limited curatorial work and prevented researchers from visiting. The *Dressed For Success* project recruited volunteers to work alongside existing staff to document, condition check, photograph and rehouse the costume collection at the Museum Collections Centre.

The project aims were:

- To improve the information on the collections management database
- To aid the long-term preservation of the collection
- To re-site the costume in a location more suitable for visitors and researchers
- To enable items to be viewed without being handled wherever possible
- To provide staff and volunteer development opportunities

This was an opportunity for conservation and curatorial staff to become familiar with the entire dress history collection. Crucially, the project also offered the chance for volunteers to gain new skills and knowledge from handling a wide variety of costume items, packing, marking and recording their condition.

The recruitment process

Volunteers have previously been involved in conservation and collections care tasks in a more general way within core documentation and collections management work. Fixed term volunteer teams have also been recruited to assist with the month-long deep clean at Lauriston Castle, where historic

Volunteer Frances Campbell, Collections Care Officer Gwen Thomas and Curator Victoria Garrington discuss packing solutions for ruffled skirt with train



interiors and objects on open display are given an annual inspection and surface clean. However, *Dressed for Success* was the first project that worked specifically with one collection type i.e. costume, which meant approaching volunteer recruitment slightly differently.

As well as promoting the opportunity through local volunteering networks, online listings and internally, we targeted students at University of Glasgow studying Textile and Dress History. Our selection process looked for demonstrable hand skills developed through relevant hobbies or work experience; an enthusiasm for costume or historical collections; good written and verbal communication; and teamworking. Specific experience was not required, as training was built into the project timeline.

Volunteers worked from 10am-2:30pm one day per week, initially for a period of five months. This was extended as the scale of the project became clearer, and with full discussion with the team about whether they could extend their commitment with no expectations.

We eventually recruited six volunteers, rather than the anticipated four, due to the high calibre of candidates. This meant adding to our plan of having four volunteers assisting the Collections Care Officer and History Curator one day a week for the duration of the project. We added the additional team of two on a separate day, for a shorter period of ten weeks, working alongside the Collections Care Officer and Applied Art Curator. This created more capacity for processing objects, but also provided a practical opportunity for more people to gain practical experience of the reality of working within a local authority museum service and the challenges that historic buildings can pose.

The nature of the team

Of the six volunteers, three were full time students and three worked part-time in non-museum collection roles. We had a diverse group in terms of gender, ethnicity, disability and sexuality. However, the applications received overall was not representative in terms of age groups and level of education, which has made me reconsider how we promote similar roles in future.

Travel costs within Edinburgh were reimbursed, which was not ideal with two volunteers travelling from Glasgow. This triggered an internal discussion about our volunteer travel expenses policy.

As there is no requirement for a volunteer to attend, sometimes there were last minute cancellations due to volunteers prioritising other commitments. This meant adopting a flexible approach with broad, rather than specific, daily targets, as we could not be certain exactly how many people we would have on a given day.



Volunteer Emma Pattinson compiling a condition report for a 19th century waistcoat

The volunteer team together brought a range of knowledge and experience: an understanding of sewing and dress construction, knowledge of historic dress, conservation, and the history of Edinburgh. Some had more practical skills, others more academic knowledge. Bringing this team together meant that they complemented each other's skills and knowledge as well as those of the project staff.

We provided training in object packing, handling, marking and condition checking, as well as ongoing support and resources while working alongside the volunteer team. However, we also gained so much from their unique knowledge bases.

Two of our volunteers were studying historical dress, which meant that on the days when our costume curator was absent, I really relied on them to use their knowledge to identify different garments. The vocabulary of historical dress was new to me, so I learned from them. Another volunteer, being a recent conservation graduate, could cover for me if there were a couple of issues that came up at the same time and I was needed in more than one place.

Detail of 18th century silk gown in box



We formed a companionable team over tea, cake and biscuits, as the best museum teams always do. A volunteer who had previously worked in auction houses gave us pithy reflections on the difference between that environment and ours. Our youngest volunteer, in his third year of university, would regularly wow us with his fashion choices and incredible adventures. Informal chats about the work, problem solving, future plans and more meant that everyone felt comfortable working together, asking questions and seeking advice. Even as staff, we felt happy to say if we didn't know something and work as a team to solve a problem. The atmosphere of mutual respect and openness meant that hierarchy was kept to a minimum, and everyone's contribution was valued.

The nature of the role

Voluntary roles can be incredibly rewarding and offer enjoyment or experience to the post holders. However, it is vital that they are not expected to complete work that should be done by a paid member of staff. Museum staff worked alongside the volunteer team every step of the way. There was no expectation of voluntary work taking up even a full day each week, and the time-bound nature of the project and anticipated duration was explained at interview.

Staff could provide useful, reflective references for the volunteers when they applied for roles subsequently and offer support with applications and interviews. The roles were never envisaged as internships, because there was a specific task to complete. However, much thought was given to making the time being gifted to our organisation as valuable and interesting as possible.

The volunteer voices

Emma Pattinson, Volunteer Collections Assistant, Dressed for Success project

Current MPhil Textile Conservation student, University of Glasgow

I had two main reasons for volunteering with *Dressed for Success*. The first was personal interest. I have always loved costume for the kinds of stories it can tell us. Getting to know the costume collection connected to my local area sounded fascinating. Secondly, I was in the very early stages of considering a career move into conservation; I thought this would be a great way to test out if it might be for me.

Reflecting on my time volunteering with the project, my main recollection is that I left the collection centre happy and energised every week. I loved being around such a variety of local objects. Garments that came with photos of them being worn, or items of theatrical costume where we could listen to a recording on the internet of the singer to whom it belonged, were amazing.

An aspect of volunteering that was really helpful was that it was relatively flexible and could fit in with my job, for example if I had to leave a bit early to attend a meeting. It made volunteering really accessible.

I developed an increased confidence being around the objects, getting to grips with terminology and basic tasks like making puffs and sausages from tissue, manoeuvring boxes safely around a collections centre, and drafting condition reports.

Dressed for Success was a rich and rewarding experience as a volunteer and there was **always** something new to learn – about materials, terminology, public donations, museum storage, preventive conservation, from the curators during coffee break and about Local Authority politics and the funding landscape. We volunteers developed a great rapport over the weeks and months and I enjoyed the teamwork.

After a while volunteering confirmed my desire that studying textile conservation was a step I wanted to take. Gwen gave me some advice around this and was able to put me in touch with some of her professional contacts to discuss further which was useful.

Thanks to the work of Gwen and other staff involved in the project I'm proud to have volunteered with Museums & Galleries Edinburgh and feel invested in its collections. The volunteer placement was a great success for me on a personal level. I'm happy to report it also provided an excellent springboard onto further study.

Sophie, Volunteer Collections Assistant, Dressed for Success project

It was an opportunity to become more involved in object handling and gain more experience in a museum collections environment...Both supervisors were always around to answer any questions that came up whilst inspecting and doing condition reports. They also valued our opinions whenever we came across something unusual and had discussions about an object's condition or provenance. I learnt a lot whilst working on this project and really appreciated the opportunity to meet and work with the staff and the other volunteers.



Curator Victoria Garrington explaining object marking for textiles to volunteers

Frances Campbell, Volunteer Collections Assistant, Dressed for Success project

I volunteered on the project with the aim of gaining more hands-on experience working with museum collections and learning about best practice in museums. The project was excellent for providing this, the team was very welcoming and always happy to answer questions and discuss the collection and their work. The project offered me the chance to develop valuable practical skills and experience what it is really like to work with collections.

I really enjoyed the experience and looked forward to going to the Collections Centre each week. I found it valuable to work with other volunteers who had a similar interest in collections and aspirations to work in the heritage sector and the project confirmed my interest in pursuing a museum career.

Since the project I have gone on to more volunteering with the National Mining Museum Scotland and I have taken up a job with my local museum service.

This project was kindly supported by Museums Galleries Scotland's Small Projects Grant.

Background image © The City of Edinburgh Council Museums & Galleries/Gwenllian Thomas

Volunteers Joshua, Emma and Frances at work assessing garments



BOOK

THE ART AND SCIENCE OF THE CRYSTAL PALACE DINOSAURS

Mark P. Witton & Ellinor Michel
The Crowood Press 2022
ISBN 9780719840494

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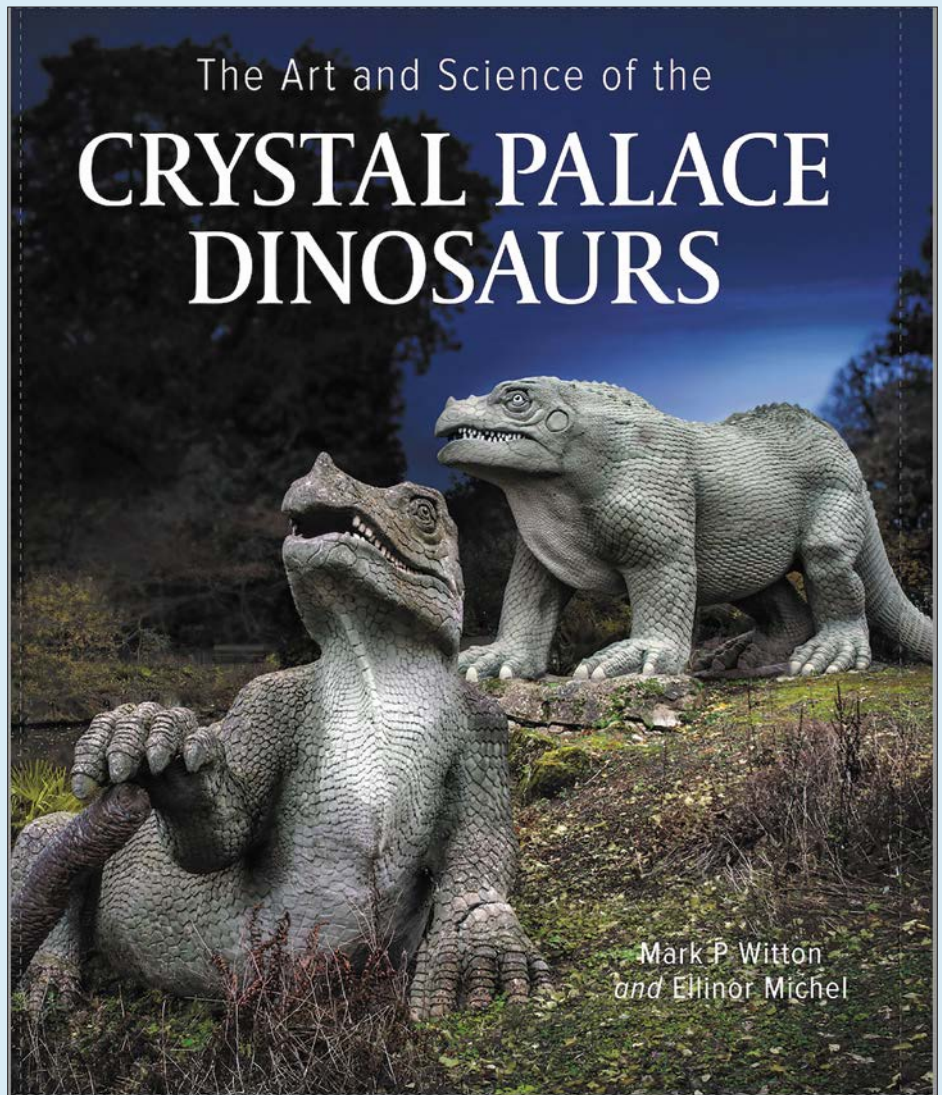
This fascinating book is the first comprehensive study of the Crystal Palace dinosaurs to be published. In fact it covers far more than the dinosaurs themselves, one of the first attempts at life-size palaeontological reconstructions, as it looks at their context as part of a wider landscape, the 'Geological Court'. Set out in the early 1850s and first unveiled in 1854 this was part of the setting of the Crystal Palace that had originally housed the Great Exhibition before being relocated to Sydenham and enlarged.

The Geological Court included reconstructions of landscapes as well as the 'dinosaurs' themselves – in fact the creatures are not just dinosaurs, all set around an ingenious arrangement of lakes and islands to illustrate the geological progression. Needless to say the science, particular of the reconstructions, was soon outdated, but this remains a remarkable survival and one that has been loved for generations, fully warranting its Grade I listing. This is all described by recognised experts Witton and Michel in detail, including a catalogue of the creatures, well researched and referenced whilst remaining eminently readable.

The dinosaurs were made by the artist sculptor Benjamin Waterhouse Hawkins using Portland Cement – the first known use of this material for sculpture – cast and modelled around brick and stone as well as iron armatures, and then painted. The whole project was under budgetary pressure as well as with limits to working space and time, but nonetheless the resulting sculptures were magnificent. The production is recorded in part by early photographs as well as drawings, and this together with the results of subsequent research and analysis is described in Chapter 3.

Portland cement, reclaimed building materials, iron reinforcement, a lakeside setting, and until relatively recently little in the way of maintenance, are a combination destined to challenge the conservator and the last ten pages of this 192 page book are dedicated to describing the conservation campaigns primarily since 2000, with the only significant previous campaign being in 1959.

Although the superheated steam cleaning with the DOFF system is illustrated and described, the justification for using this



method isn't mentioned (research into historic paint layers had been carried out establishing that there were no significant traces of early paint layers present). Meanwhile, the type of paint finish chosen, and why, isn't covered and the mortar fills are simply described as 'mortar'. Do not expect this to be a technical handbook of how to conserve early Portland cement sculptures. Also, disappointingly, reference is not made to the comprehensive conservation treatment records, or where they might be accessed. It is however anticipated that this will all be addressed by a further specialist conservation publication in due course.

There are a useful few pages on the use of 3D modelling and recording, which proved an invaluable resource for the repair of damage to the jaw of *Megalosaurus* in 2020. Also of note is the case made for broader access and interpretation being an invaluable part of the conservation process, and that an approach which is both holistic and with a realistic maintenance programme is required moving forwards. Indeed, many of the dinosaurs remain in urgent need of conservation and this book, supported by The Friends of the Crystal Palace Dinosaurs, makes a compelling case for this work to be carried out.

Whilst the sculpture conservator will be wishing for more technical treatment detail, this excellent publication provides a fascinating and readable description of a truly important landscape as well as a thorough account of the context, history and making of the Crystal Palace dinosaurs.

Dr David Carrington ACR

CONFERENCES

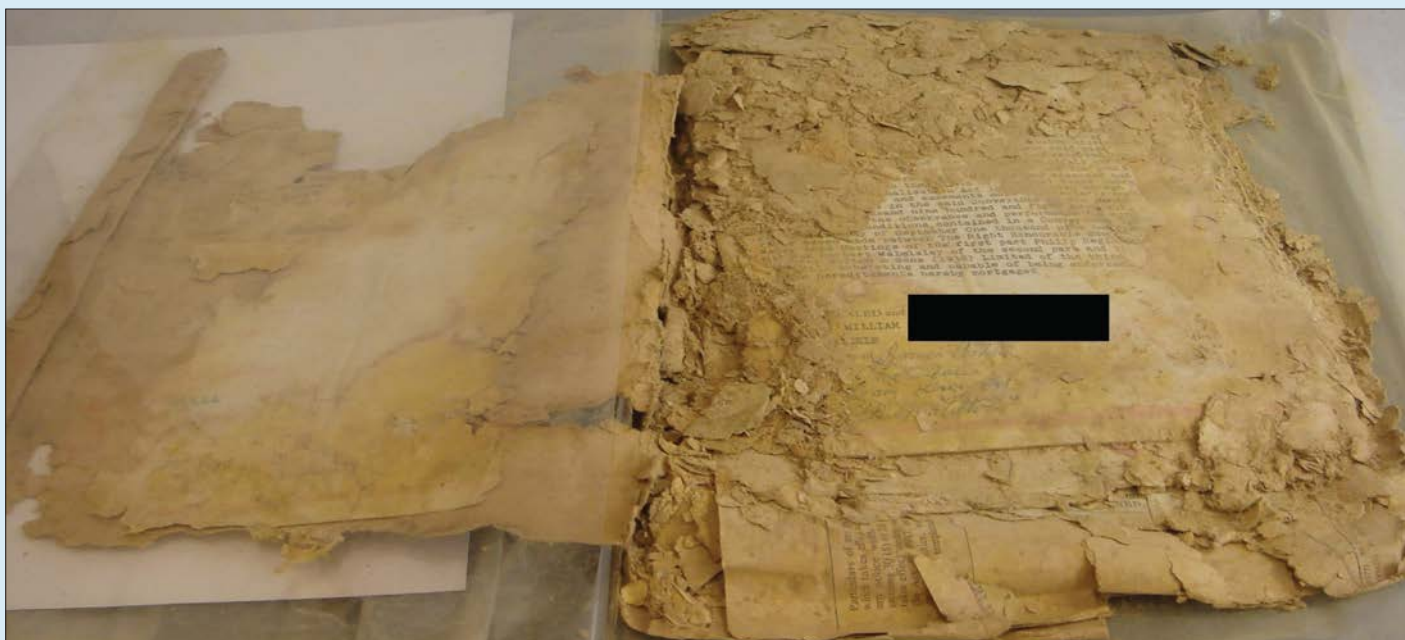
AIC 50th ANNUAL MEETING: Textile Speciality Group

15 -17 May 2022 Los Angeles

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The 2022 Annual Meeting of the American Institute for Conservation included a diverse range of talks, workshops, and tours for members of the Textile Specialty Group (TSG). Prior to the conference's start, workshop offerings included 'Textile Cleaning: Stain Reduction', taught by Laura Mina and Laura Garcia-Vedrenne in the conservation lab at the Los Angeles County Museum of Art, and 'Introduction to Costume Mounting' with Jennifer Nieling.

Textile related talks ranged broadly in topic. Established and emerging conservators presented on the treatments and mounting



The deeds (redacted) in their original plastic envelope, discussed by Zoe Findlay in her five minute presentation to fellow paper conservators in Scotland

of costumes and large-scale works. New materials and procedures were also introduced, including methods for reversibly restoring colour using paper overlays and the adaptation of paper conservation methods to treat iron-mordanted textiles. Six of the twelve talks were recorded as part of the virtual conference and are available online. Textile conservators could also find useful information in sessions focused on collection care, contemporary art, sustainability, and others.

In addition to presentations, attendees could register for a behind-the-scenes tour of the FIDM Museum (serving the Fashion Institute of Design & Merchandising) and the TSG Reception. During the tour, participants were shown key pieces within the FIDM permanent and study collections and received a guided tour of the exhibit 'Art of Costume Design in Film'. This was a wonderful treat that highlighted the costume and textile collections within Los Angeles!

Following the Annual Meeting, TSG members gathered virtually for the TSG Business Meeting. During the session, Annabelle Camp and Sarah Scaturro gave presentations on the history of textile conservation in the United States, which had originally been scheduled for the conference general session '50 Years in the Making: The Evolution of Our Profession and Thoughts about Its Future'. Additionally, the 2022 recipient of the TSG Award was announced: congratulations to Kathy Francis of Francis Textile Conservation LLC!

Annabelle Camp

Victoria and Albert Museum intern
Graduate fellow, Winterthur/University of Delaware Program in Art Conservation,

PAPER CONSERVATORS IN SCOTLAND: News and Ideas Exchange Edinburgh 4 May 2022

Following on from last year's successful online gathering of paper conservators in and near Scotland, the seventh annual 'five-minute presentations' event was, once again, held online. Like last year, the event was run on Teams with pre-recorded presentations (to limit technical mishaps) and live Q&A sessions fielded by **Elizabeth (Tizzy) Hepher ACR**. **Genna Bard** and **Mindy Lynch** were on duty helping with the technical side of the event and **Lynn Teggart ACR** assisted with questions in the chat box.

The aim of the event is to better connect the paper conservation community in Scotland. The event's founder and organiser, **Helen Creasy ACR** of The Scottish Conservation Studio (SCS) envisioned a gathering where 'paper people' could meet, catch up, and provide an opportunity for networking. The event fosters the sharing of information, news, observations, ideas, research, and both successful and troublesome treatments. Paper (and book) conservators of all levels of experience are encouraged to contribute or simply come along and listen.

This year, sixty individuals joined the event live online, more people attended by watching together in their institutions; and yet more watched the recording of the event later. While the concept of in-person mingling and enjoying the infamously spectacular home baking may seem like a somewhat distant memory to those who have been regular speakers and/or attendees of this event, like last year everyone was encouraged to attend with a cup of tea and their own baked goods to keep the tradition alive.

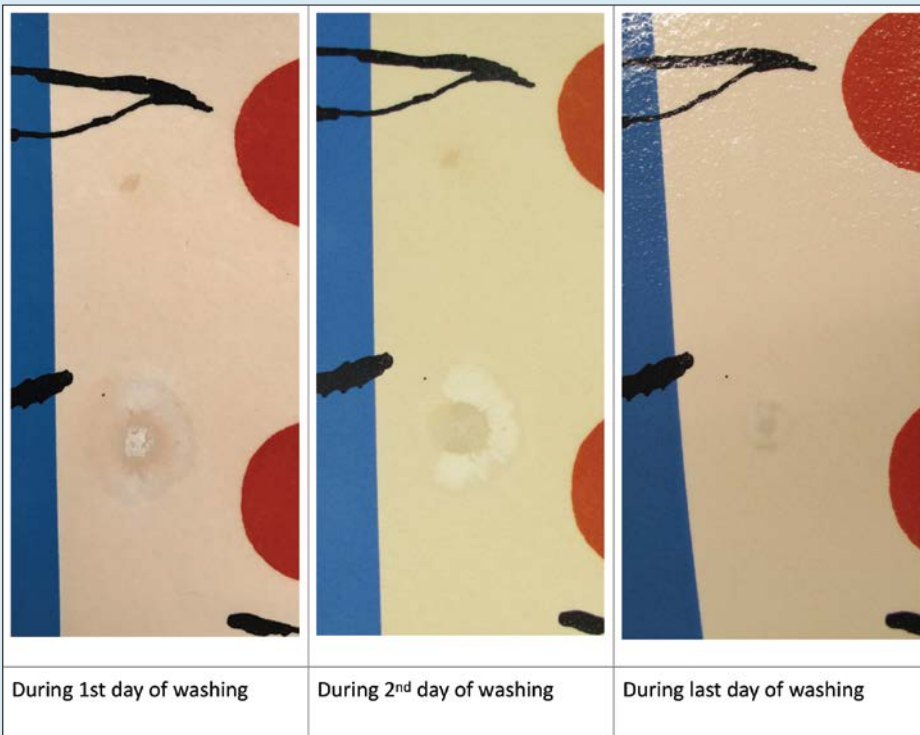
After an introduction from Helen and pre-event greetings, the talks began.

Charlotte Park (National Galleries of Scotland (NGS)) started off with an update on the building works at the Scottish National Gallery, which will improve the display of pre-twentieth-century Scottish art, provide vistas out towards the Scott Monument, and showcase a dedicated prints and drawing gallery.

Next, **Fay Humphries** (Cumbria Archive Service (CAS)) discussed the long-term preservation of the large Sankey photographic collection, which includes glass plate and plastic sheet negatives, photographic postcards, and image catalogues. The collections were digitised, and packaging was upgraded. CAS has impressive facilities for storing the different parts of the collection in optimum environmental conditions.

Anna Trist shared her experience of working as a freelancer during the pandemic, splitting her time between the SCS and a contract at the National Library of Scotland (NLS), which stopped and started as the pandemic progressed. The latter involved conserving photographs related to Sir Patrick Geddes and improving their storage. **Lizzie Fuller** (NLS) then spoke about the Series 7 Project, a collection of two hundred boxes containing mixed collection materials which, in their current state, are unmanageable and hard to access. She surveyed and treated an entire box to help develop a methodology for the remaining boxes.

Lynn Teggart ACR (Historic Environment Scotland (HES)) talked us through her impressive treatment of numerous tracing paper fragments. Lynn completed a giant jigsaw puzzle and discovered the pieces formed several individual drawings. She discussed their treatment, which included overall lining and infilling losses.



Images of the dark spot that appeared on the Miro lithograph treated by Helen Creasy ACR

Mel Houston ACR gave a whistle-stop review of how environmental monitoring equipment and technologies have changed over the past couple of decades, showing how the field has been revolutionised by emerging technologies, but is also dogged by problems of cost and enforced loyalties. New ways of monitoring at NLS were described.

Tizzy Hepher ACR (HES) spoke about the pandemic-related hurdles involved in conducting a collaborative book survey at Duff House in Banff, Aberdeenshire, which included cancelled site trips, working from home, and the remote training of onsite staff.

Louisa Coles (University of Glasgow) talked about the strain on historic collection items due to their increased use as teaching resources since the pandemic began. She discussed some of the guidelines they have introduced to reduce the associated risks, balancing their access and preservation.

Sarah Partington (Centre for Research Collections) spoke enthusiastically about some of the projects she worked on as part of the Kickstart Scheme, a government scheme that has allowed her to gain pre-masters experience in the conservation field.

Carrie Farnell talked us through some of the bound volumes she conserved at High Life Highland Conservation Service. Several of the books had been repaired along the spines with very sticky, obnoxiously red gaffer tape, and it was amazing to see their before and after transformations.

Zoe Findlay (Durham Record Office) wowed us all with her treatment of a flood damaged house deed and the painstaking separation of the fragile, crumbly, mouldy, and slightly damp pages in order to salvage important information for a client. This treatment was

very much for the present, not for long term preservation needs: now the vital parts can be read, the document will be recreated by a specialist lawyer, enabling the client to move on from a legal impasse and sell her deceased father's house.

Vicki Hanley (NMS) shared with us a conservation studio's steps towards being greener, with a focus on sustainability, recording their carbon footprint, buying reusable envelope-style bags from ArtPakk to transport collection items, and transitioning to greener chemicals for use in treatments. Also from NMS, **Kiri Douglas** shared some insights from her research so far into synthetic paper, which artists are using more frequently. She surveyed collections in the UK and USA to understand more about the deterioration characteristics and preventive conservation measures that have been used. Kiri will be continuing the research during a three-year Fellowship at the National Gallery of Art in Washington DC.

Ann Evans ACR (Glasgow Life) discussed the creative, cross-disciplinary treatment of a pastel on a stretcher. Learning from a painting conservation colleague, a dry backing was crafted and carefully applied to the verso using polyester wadding and sail cloth to support the work and reduce distortions.

Helen Creasy ACR detailed the unwelcome appearance of a large dark spot when treating a Miro lithograph. Previous treatment of the work had not been apparent, but humidification revealed former solvent treatment, in the form of an alarming bullseye mark. This was visible in all the wet treatments, but slowly became smaller; it was invisible when the print was dry. A conservation scientist's explanation was given.

Sarah Laing (NGS) described an ingenious and elegant solution for mounting and framing twenty Henri Matisse plates in preparation for exhibition. They were mounted in such a way as to retain their appearance of folded and curving book pages. The attachments are readily reversible, allowing the plates to be returned to their original place in the volume after display.

The final talk for the day was from **Erika Freyr** (CAS) who shared lessons learned when relocating several giant oil paintings. This massive undertaking snowballed from what at first appeared to be something the paper conservation team could do themselves, to using bespoke packaging, scaffolding, and teams of contractors to help make it a reality.

Many thanks go out to Helen Creasy, the team at HES for facilitating this event, to all who presented, and to everyone who attended. Fingers crossed next year we will all meet in person.

Anna O'Regan

Paper conservator and picture framer
Edinburgh

TALK

WHAT HAVE WE GOT TO LOSE?

Icon Historic Interiors Group
Online 5 June 2022

In June the Historic Interiors Group was delighted to host a talk from **Rachel Morley**, Director of the Friends of Friendless Churches (FoFC), and **Helen Hughes ACR** of Historic Interiors Research and HIG committee member.

The talk was online and we were delighted that fifty-seven people had signed up to join us that evening. Rachel wasted no time in telling us that churches were her favourite thing to talk about and her energy, enthusiasm and knowledge on the subject had us captivated.

Now, forty-five minutes is a very short time to cover all things churches and the work of FoFC but we were asked to think about what churches meant to us, to society and the part they played in the way we thought about our ancestors. The parishioners of East Hatley, for example, constructed their church from field stones and evidence of centuries of dedicated attendance was visible in the worn stones of the entrance steps. Yet so many churches no longer see the same level of attendance, to the extent that the church and parishioners have decided to walk away. However, as Rachel so clearly described, this did not diminish the significance of the building and what it represents.



Graining the reticulated ceiling at St Mary's, Long Crichel, Dorset

The church is also more than the stone and mortar that binds it together as building; its location is also significant. The landscape and setting cannot be underestimated. We were shown St Baglan's church, Caernarfon, Wales where a visit to church saturates the visitor with the whole experience – one that Rachel noted is very personal and cannot be put into words.

It was heartening to hear that some rescued churches can have a new life. St Peter's in Wickham Bishop, Essex, was almost demolished. It was one of the FoFC earliest saves. It needed a new roof, floors and glazing. In 2007, conservation of the wall plaster revealed four fragmentary schemes of wall-paintings – the earliest dating to the 13th century, the latest dated 1637. This 13th-century church is now a stained-glass workshop. Another near miss was St Matthew's church, Lightcliffe near Halifax. Sadly, the body of this early iron frame church met the wrecking ball in the 1970s, but the tower and monuments were saved and now see much interest from fans of a certain television programme regarding the life of Ann Lister.

Changes in faith are not the only factor affecting how we use our parish churches. In 1801, 20% of the population lived in urban centres. By 1901, this had increased to 75%, so older, rural churches fell out of use. Even today a fifth of all the churches in England are



SPAB Fellows have a go at wood-graining at St Mary's, Long Crichel, Dorset

in places where only 0.3% of the population live. We were shocked to hear that of the 16,000 Anglican churches in England and Wales only 12% are accurately surveyed. Numbers that make the work of FoFC seem all the more significant, and daunting. Fundraising is vital, as is the support of volunteers. Changes in National Lottery Heritage Fund support for Places of Worship mean that as an organisation the charity's funding is down 80%. A recent consultation from the Church Commissioners seeks to make it easier to close churches.

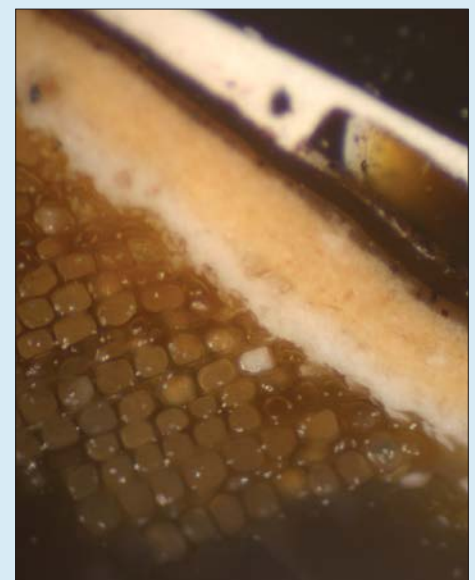
Despite all these hurdles Rachel engaged the attendees with her passion. FoFC started life in 1957, thanks to Ivor Bulmer Thomas, and now has sixty-one buildings in its care. It has limited staff but dedicated volunteers. It manages to care for and conserve with ongoing projects including St Mary's at Long Crichel in Dorset where **Helen Hughes ACR** has undertaken architectural paint research to inform understanding and restoration of the interior of the church. Helen got involved in the project in 2021 and has taken and analysed paint samples prior to undertaking mechanical exposure of decorative schemes. Producing digital recreations enabled the project team and volunteers to understand what the paint research was finding. Paint research not only helped in understanding the decorative interior but periods of restoration with a variation in the timber substrate noted during microscopic examination.

Such research feeds into the decision-making process, which is not necessarily about restoration but about informed conservation - to decorate a space that has been understood and inspired by an earlier scheme. Final decisions have been informed by local support and parishioners, since they will be the significant users of the building. We also learnt that the work at Long Crichel included

visits by Fellows of SPAB (Society for the Protection of Ancient Buildings) and Scholars of QEST (the Queen Elizabeth Scholarship Trust) - highlighting that these projects are a vital part not just of the history of a building and the significance of that space to its parishioners, but also an opportunity for heritage professionals at all stages of their careers to get hands-on experience that records and re-establishes our connection with our historic places.

Charlotte Owen
Hirst Conservation

Image of a cross-section showing the original graining of the mouldings at St Mary's in Long Crichel, Dorset. They were overpainted in white c.1970. This graining is being recreated.





Volume D/Co 33/1/5, before treatment



Volume D/Co 33/1/1, before treatment

SAVING HISTORIC REGISTERS

Zoe Finlay, Paper Conservator at Durham Record Office and Freelance, details the treatment challenges in the repair of a unique piece of industrial heritage

INTRODUCTION

The Consett Iron Company of North East England existed from 1864 until its closure in 1980. The company's unique approach to business established it as one of the world's leading iron and steel works, resourcefully centralising the requisite collieries, blast furnaces and quarries within the town of Consett, rather than merely owning them elsewhere. The town owed its existence to the company, and as virtually the sole employer, workers' families lived and worked beneath the shadow of the giant steelworks.

The company's vast fleet of locomotives demanded the building of specialist repair workshops. From the early 1870s, all locomotive repairs, transfers and scrapping were recorded in detail within standard registers. Seven of these registers dating from 1915 to 1954 were deposited at Durham County Record Office. Of these, three were completely inaccessible and posed a health risk to staff and public. Many pages of these registers lay in fragmented piles, unable to be turned and containing the soot which used to fill the air of Consett, as well as active mould.

Conservation was highlighted as essential both to physically and chemically stabilise the registers as well as to enable access and digitisation. As the Company's centralised approach to locomotive maintenance was unique to the industry, the Consett Iron Registers are a major resource of information to future researchers, providing an insight into the industrial and social heritage of the area. In recognition of their importance, the Business Archives Council funded cataloguing, and National Manuscript Conservation Trust awarded funding for their conservation.

GENERAL CONDITION OF THE REGISTERS

The bindings, each measuring 340mm x 310mm, had all been purchased from a commercial stationer. They were heavy and, whilst the sewing was mostly stable, some boards were either missing, heavily distorted or mouldy.

Each register had originally contained 602 pages although some had missing pages. Four of the seven registers were in good condition and required just cleaning and minor repairs, however the remaining three had moderate to advanced stages of mould and fragility. In those registers, the paper had disintegrated into a jumble of soft fragments.

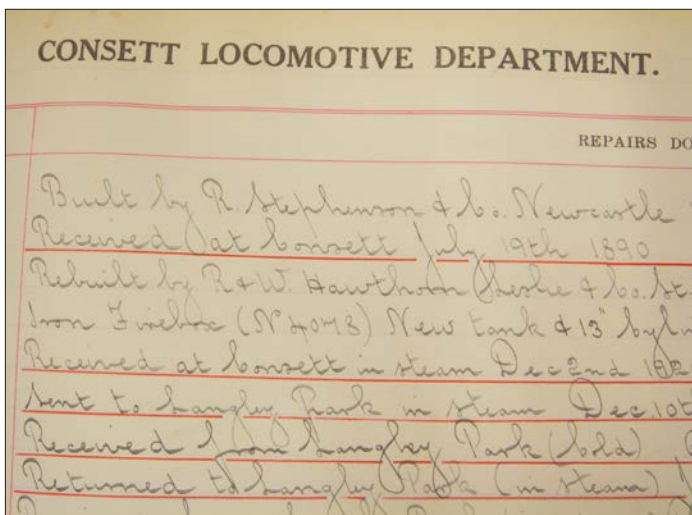
The original function of the registers invited many different writing media to be used. Most were in excellent condition, but occasionally the red inks showed fugitivity in response to previous exposure to moisture.

PLANNING A CONSERVATION TREATMENT

The conservation challenge lay in balancing many factors such as best practice for the registers, future access requirements and available resources for treatments, including those which impacted on health and safety. It was soon apparent that more than one treatment solution was required and that each page would require a tailored approach, with many pages requiring multiple treatments.

Treatment steps were co-ordinated to maximise the efficiency of such a large project. Planning began by allocating a treatment grade to each page of the three worst registers:

- GRADE 1:** best condition, minimal intervention required
- GRADE 2:** requires moderate treatment to enable handling.
Up to 10% of data obscured or missing
- GRADE 3:** requires extensive treatment to enable handling.
10%-70% of data obscured or missing



Detail from one of the stable volumes, D/Co 33/2/3, detailing the arrival into the Consett workshop of one of Robert Stephenson's locomotives

CHALLENGES TO TREATMENT PLANNING

Planning the treatment was challenging, with potential solutions often ruled out by complications that made them impractical.

Writing Media

Testing all writing media is normally an essential early stage of a conservation treatment, but in this case it was neither realistic nor possible due to the wide variety of writing and stamping inks applied over a period of thirty-nine years. This large number of inks meant it would be impossible to know if one had been tested or not, with some reappearing in another locomotive section further into the same volume.

Testing fragments would have been unreliable as it was sometimes unclear which page they had come from, with the handwriting often giving the only, albeit unreliable, clue. Even more problematic was the fact that some pages could often not be turned until supported with a repair, necessitating an adhesive decision first.

Adhesives

The chosen adhesives had to accommodate repairs to pages where around 70% of the page was fragmented, sometimes requiring a repair as large as 330 x 305mm which would not curl the repair paper during application. It had to be suitable for gallo-metallic inks and, for the more damaged volumes, preferably be non-aqueous to discourage fugitivity of some inks and moisture from reactivating the mould. This latter was a safeguard despite future housing in a climatically controlled strong room.

Ventilation

In addition to the use of a non-aqueous adhesive, treatment required the cleaning away of large amounts of historic soot and active mould. The only studio extraction available was a fume cupboard with fixed plastic frontage. This made easy reach of large, fragile items through a static, relatively narrow aperture challenging, especially considering the weight and large dimensions of the registers. The air currents of the fume cupboard could also disturb the carefully reassembled fragments in addition to the lightweight Japanese tissue. The alternative of wearing a facemask instead of using a fume cupboard would not protect nearby staff and would be uncomfortable to sustain for long working periods.



Detail of fragments lying on D/Co 33/1/5

Repair Paper

A wide search for a suitable repair paper was undertaken. Where large areas of pages had to be pieced back together, it was likely that repair paper would have to be applied to both sides in order to provide adequate support. So it was essential that the chosen paper was lightweight yet strong enough to support the large areas, and that the addition of an adhesive would not reduce its flexibility. It was also essential that repaired areas would not become too strong and inflexible in relation to the rest of the weaker page. The paper also had to be capable of having its edges feathered to distribute stress. This last point eliminated re-moistenable tissue. It also had to be transparent to aid access and digitisation and not be tonally displeasing.

TREATMENT DECISIONS AND PROCEDURE

Cleaning and Page Separation

The more stable registers were cleaned using a combination of a soft goat hair brush, a latex sponge and a Museum Vac® fitted with a HEPA* rated filter. However, cleaning and repairing a page that you can neither pick up nor turn was challenging.

For the more damaged registers, sections and fragmented pages were removed from the bindings by sliding a sheet of 75-micron archival polyester beneath each page whilst reassembling fragments which appeared with certainty to belong together. A second sheet of 75-micron archival polyester was placed on top and the sandwich was lifted out into an archival paper folder, with a base sheet of archival board to prevent flexing. The small amount of static imparted by the polyester helped to keep the fragments in place until repair could begin, allowing for reconstruction to occur outside the restrictive fume cupboard, and without the need to transfer again for adhesive application.

This method proved successful due to the thin, smooth properties of the polyester. In the case of damaged sections, it



Work in progress: separating the pages and rolling them back until a section was completed and could be lifted out. (D/Co 33/1/1)

allowed for the pages to be gently rolled over to work on the next without disturbing the fragile paper more than necessary. Individual pages or sometimes whole sections could be removed this way after the sewing had been cut.

Repairs

The methods and materials of repair varied by volume and sometimes even by page, depending on the condition of the paper and the presence or absence of inks and mould.

Wheat starch paste or remoistenable tissue with gelatine was used for repairs within the more stable registers, however, the more damaged registers with soft, weak, mould-damaged pages demanded a different approach. Any which did not require a full repair were treated by brushing multiple coats of carboxymethylcellulose dissolved in Industrial Denatured Alcohol (IDA) onto both sides until the desired strength was achieved. The adhesive penetrated the paper, providing renewed strength and flexibility to weak areas and behaved as a size. This allowed the pages to be turned safely, sometimes avoiding the need for a full repair.

Adhesive

Many pages however were beyond the help of such treatment alone and were combined or substituted with a repair. A literature review into different adhesives and methods of their application was carried out and despite the disadvantages of the fume cupboard, it was judged safest for the registers to be treated with a non-aqueous adhesive. A 3% solution of Klucel-G dissolved in Propan-2-ol was chosen.

This adhesive has many benefits; it is non-aqueous; it sinks quickly into the page to consolidate fibres and it improves strength and flexibility. Inexpensive, it also has a good shelf life once prepared. Although scientific research indicates it can be prone to yellowing during ageing, it was felt this risk outweighed the benefits to these deteriorating registers.

Pre-shaped repair tissue was placed over the damaged area, weighted down lightly and the adhesive was brushed through with a wide, soft, synthetic brush. Repair shapes, applied to both sides of the same page, were staggered to distribute the

Brushing adhesive through the repair paper held in place with Tyvek-covered curtain weights





Detail of trimmed repairs, D/Co 33/1/5

weight. Teflon sheets of the type normally used as oven liners proved invaluable as a non-stick surface during application and by interleaving the drying pages, these greatly speeded up the drying time within the fume cupboard, allowing pages to be prepared in batches.

A raking light positioned next to the fume cupboard helped to judge if a layer was too thick or uneven and any excess adhesive could be removed with a brush.

Repair Paper Selection

Tengucho Fuji-Kozo, (5gms)** was chosen as a repair paper, offering the necessary strength, tone, and transparency to the pages. To counter the disruptive effects of the air current in the fume cupboard causing paper and fragments to move during repair, small lead stick curtain weights weighing 24 gram each were covered with Tyvek. These provided enough weight to secure the fragments and repairs yet were small enough not to intrude on treatment. They could also be

Volume D/Co 33/1/5, before treatment showing softened, mould damaged spine and distorted board





Volume D/Co 33/1/5, after treatment

stacked inside the Tyvek before sewing in to customise the weight and proved to be a real asset. Treatment would have been far more difficult without them.

It was decided to trim the repairs with a slight margin to protect the often-jagged edges of the pages during handling. This also afforded the advantage of keeping the repairs visible to users as a reminder of the fragility of the pages, particularly as the repair paper was almost invisible once applied.

Rehousing

The completed registers were housed in custom-made archival boxes. Fragments which could not be confidently reattached in the correct place were mounted and housed with the registers. Boards which required removal were cleaned and boxed, particularly as they each carry a label on the pastedown providing information on the stationer and assist the chronological ordering of the registers.

REFLECTIONS

This large project drew together not only multiple approaches but also multiple considerations. Balancing best practice for an object as well as for staff and resources can incur many obstacles, however these challenges can also bring with them opportunities to research, to try different treatments and to generate solutions to problems.

These unique registers are once again accessible for the first time in many years, preserving a valuable insight into an important era of our industrial heritage.

Acknowledgements

My thanks go to Liz Bregazzi, (ex-County Archivist, Durham County Record Office) for her ongoing support, and to the NMCT for their patience during the pandemic and the delays it brought to the project.

Thanks also go to Shirley Jones, (Head of Conservation, West

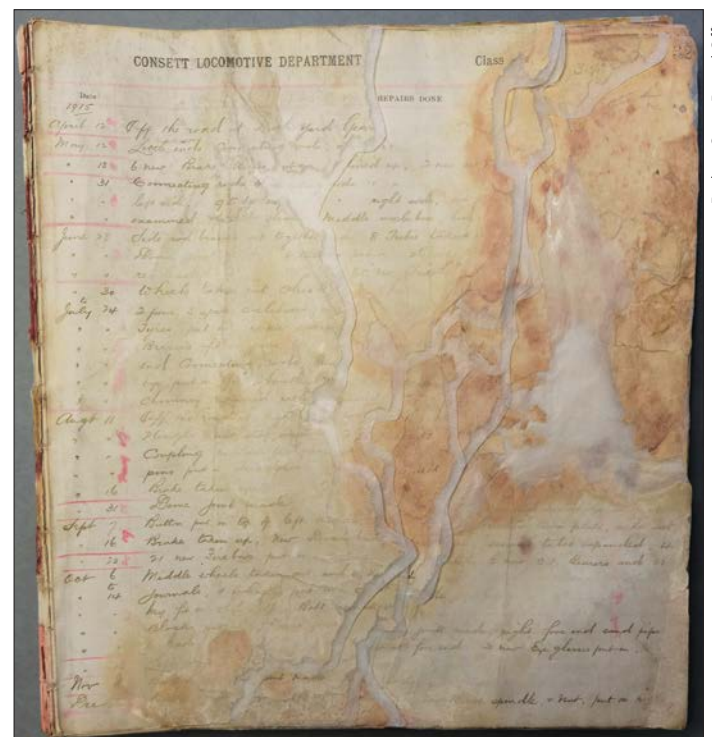
Yorkshire Archives) and Victoria Stevens ACR, (Library and Archive Conservation and Preservation Ltd) for their invaluable advice.

This article is dedicated to the late railway historian, Colin Mountford, who first identified the importance of this archive. Colin petitioned to secure funding for its conservation but sadly was unable to see it begun. Without his foresight and efforts, this project would not have been possible.

* Hepa: - High Efficiency Particulate Air

** Sourced from the Japanese Paper Company, japanesepapercompany.com

Volume D/Co 33/1/1, after treatment



the emerging professional

GREENER SOLVENTS

Natasha Waddell, student at West Dean College of Arts and Conservation, examines the properties and substitutability of greener solvents and their application in metalwork conservation



About me

I am currently studying for my Master's in Metalwork Conservation and, as with many others, I am increasingly fearful of the threat of climate change, and I share the urgency to implement more sustainable changes to my lifestyle. Throughout my conservation studies, I have made efforts to infiltrate this sustainable mindset into my practice.

I joined Sustainability in Conservation (SiC) as conference coordinator for the Student Ambassador Programme (SAP), which has provided me with a supportive space to discuss sustainable techniques and what we can do to make an impact.

As a result, I thought it imperative to make the most of my time as a student to research greener alternatives for common treatments in metalwork conservation that I can employ in my

work as an emerging professional. For my Master's thesis, I then decided to explore greener, less toxic solvents and their possible substitutability for petroleum-based solvents that are commonly used in my practice.

What are the aims of my thesis?

- To create an accessible Greener Solvent Properties Table (Fig 1) which provides information on the production, disposal and properties of a range of greener solvents. This will allow conservators to make ethical decisions about the solvents they use within their practice by incorporating a holistic view of these products and their life cycle.
- As a case study, I aim to explore the substitutability of a range of less toxic greener solvents to reduce or replace the use of white spirit, xylene and toluene within my metals specialism. I will test the extent of removal of Renaissance™ wax from polished copper tokens using **n-Butyl Acetate, d-Limonene, Ethyl Acetate and Dimethyl Carbonate**. This will be achieved by conducting Oddy tests on possible solvent films; testing the solubility of Renaissance wax in the selected solvents; and using Fourier Transform Infrared Spectroscopy (FTIR) with Attenuated Total Reflection (ATR) accessory to test the extent of removal of the wax from copper tokens using the successful solvents from solubility tests.

Why test the removal of Renaissance wax?

Renaissance wax is extensively used in metalwork conservation to provide a protective coating to objects. The product is made up of 'Cosmoloid 80H' (microcrystalline), 'Wax A' (polyethylene), also known as 'Lumax A' by BASF™, and white

Fig 1. The draft greener solvent properties table

Greener Solvent	Solvent Class	Supplier	CHEM21 Ranking	Price per L	Green Chemistry Principles	Solvent Production	Disposal Requirements (SDS)	Hazard Statements (SDS)	Boiling Point Range	Flash Point	Kauri-Butanol Value	Evaporation Rate	WEL	Teas Chart Values (Fd, Fp, Fh)
N-Butyl Acetate														
D-Limonene 96%														
Dimethyl Carbonate														
Ethyl Acetate														
Dipentene (Limonene)														
Isopropyl Myristate														
Isopropyl Palmitate														
Heptane														
Ethanol														
2-Propanol														
BioRenewable Acetone														
1-Butanol														
Petroleum-based Solvents														
White Spirit														
Xylene														
Toluene														

spirit. Toxic petroleum-based solvents, like white spirit and xylene, are commonly used to remove the wax from artefacts as the product is known to lose its protective quality over time. Studies also suggest that hot xylene is the only solvent with the ability to remove the thermoplastic, polyethylene 'Wax A' component. Build-up of wax, if not properly removed, can attract dust and grime, further increasing the risk of corrosion to the object.

What are greener solvents?

When discussing green chemistry, there are twelve principles that are fundamental in order to develop sustainable practices, originally outlined by P. T. Anastas and J. C. Warner in 1998. The ones most relevant to the use and production of greener solvents relate to 'prevention of wastes, energy efficiency, renewable feedstock, benign chemistry, and pollution prevention'. However, in order to be classed as 'green', the solvents have to abide by **at least one** of these parameters **but not all**.

What is 'greener' about my selected solvents?

Solvent	Greener Properties	Hazards and other
n-Butyl Acetate	Non-toxic	H226: Flammable liquid and vapour.
	Can be derived from fruit	H336: May cause drowsiness or dizziness.
	Can be coproduced using Ethyl Acetate	Harmful to aquatic organisms
	Biodegradable	
d-Limonene	Non-toxic	H226: Flammable liquid and vapour.
	Derived from citrus oils	H315: Causes skin irritation.
	(slightly) Biodegradable	H317: May cause an allergic skin reaction.
		H410: Very toxic to aquatic life with long lasting effects.
		H304: May be fatal if swallowed and enters airways.
	Slightly bio accumulative	Highly prone to oxidation
Ethyl Acetate	Non-toxic	H225: Highly flammable liquid and vapour.
	Bio-friendly	H319: Causes serious eye irritation.
	Can be coproduced using n-Butyl-Acetate	H336: May cause drowsiness or dizziness
		Hygroscopic – slowly decomposes in the presence of water to form acids
Dimethyl Carbonate	Non-toxic	H225: Highly flammable liquid and vapor.
	Biodegradable	Vapours may form explosive mixture with air.
	Less hazardous chemical synthesis	

What are the results of my preliminary tests?

I conducted solubility tests on my selected solvents by placing 0.5g of Renaissance wax in 50ml of the solvent and agitated in a magnetic stirrer for one hour. Through the creation of a Teas chart, displayed [below], I was able to predict that most of my greener solvents were not going to solubilise the wax to the same extent as the hydrocarbon solvents alone. Nevertheless, it was a useful process to visualise how the solvents affected the wax.



Fig 2 .Results of solubility tests after 1 hour - Dimethyl Carbonate (top left), Ethyl Acetate (top right) and white balls sampled from Ethyl Acetate (above)

Dimethyl Carbonate and Ethyl Acetate seem to separate the wax into white flake-like particulates and large white balls (Fig 2). After completing FTIR analysis on the white balls, the results correlated with polyethylene wax.

N-Butyl Acetate becomes cloudy but there is still the presence of the polyethylene wax balls. D-Limonene is also cloudy, but the wax balls are smaller in size (Fig 3).

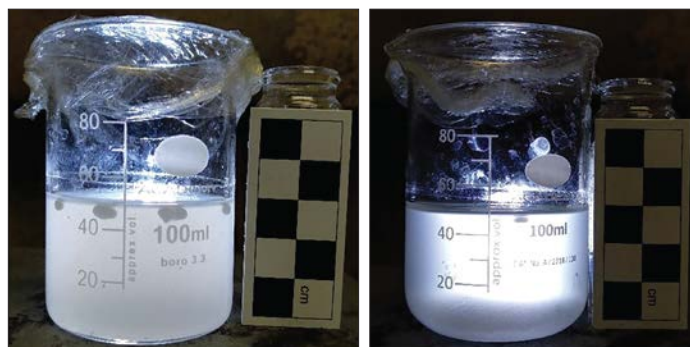


Fig 3. Results of solubility tests after 1 hour - n-Butyl Acetate (left) and d-Limonene (right)

To compare, I also conducted solubility tests on white spirit, xylene and toluene. All three solvents became cloudy, and the polyethylene wax balls have been completely dissolved (Fig 4).

Creating solvent mixtures

Influenced by SiC's *Greener Solvents in Conservation* handbook, I decided to create mixtures of my greener solvents with Heptane in the hope of mimicking the performance of the hydrocarbon solvents. Heptane is also a greener solvent than its counterpart Hexane, as it is non-toxic and less volatile. It is also completely non-polar, so it plots in the far-right corner of my Teas chart (Fig 5). However, it is still regarded as 'problematic' by the CHEM21 solvent selection guide due to its production from crude oil.

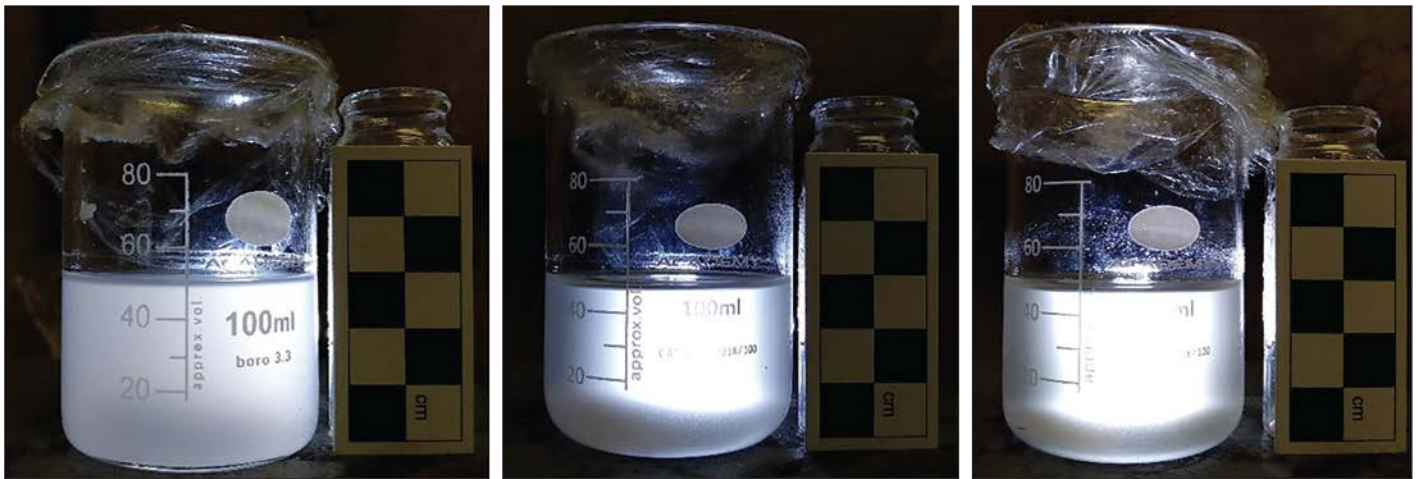


Fig 4. Solubility results after 1 hour - White Spirit (left), Xylene (centre) and Toluene (right)

First, I tested the solubility of Heptane alone and, to my surprise, it performed just as well as xylene where the polyethylene wax balls were completely dissolved (Fig 6). However, I continued with testing my solvent mixtures as I would like to reduce the amount of solvents I use that are derived from crude oil. I began with a 40/60 mixture of Dimethyl Carbonate and Heptane, which unfortunately provided similar results to Dimethyl Carbonate alone.

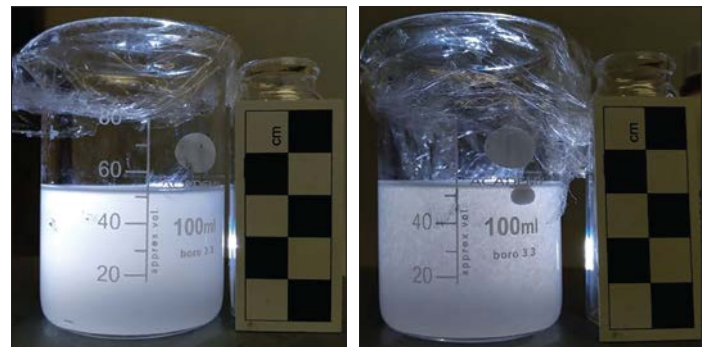


Fig 6. (above) Solubility results of Heptane after 1 hour

Fig 7. (above right) Solubility results of Dimethyl Carbonate and Heptane at 40/60 mixture after 1 hour

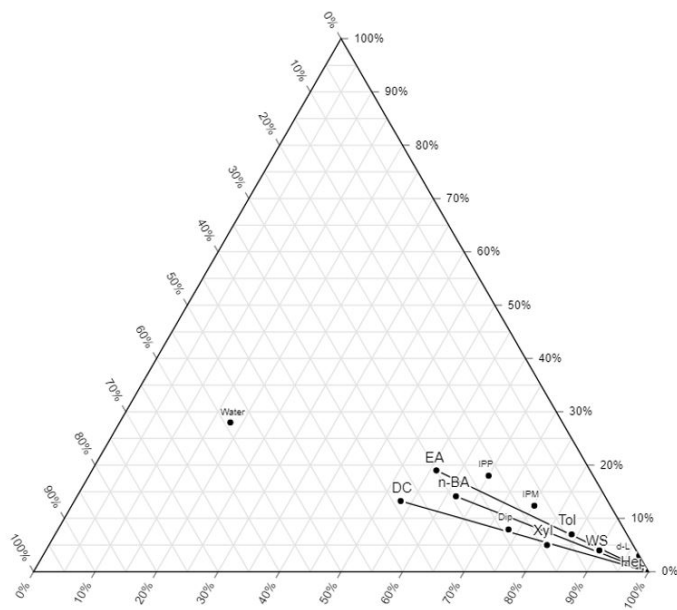


Fig 5. My Teas chart displaying greener solvent mixture options

I then attempted a 40/60 mixture of Ethyl Acetate with Heptane which performed as well as Heptane alone. As a result of this success, I wanted to test how far I could reduce the concentration of Heptane within the mixture. As per my tests so far, a 50/50 mixture supplies the best performance; anything below a 50% concentration of Heptane within this mixture results in the presence of the wax balls.

What are my next steps?

I will continue with the solubility phase of my solvent mixtures to create a spectrum of results to plot onto my Teas chart.

Those that are successful, such as the 50/50 Ethyl Acetate and Heptane mixture, will move onto my FTIR phase.

Using five polished copper tokens per solvent mixture, each evenly coated with 0.1g of Renaissance wax, the mixtures will be used to swab the tokens for up to five rounds until the wax is not detectable on the FTIR spectrum. I have created a mask to make sure I measure the same point on the copper tokens each round (Fig 9). I will then collate the spectra for each hole and the percentage decrease of the peaks will be tabulated for accessibility and readability.

A preliminary test of this protocol has been completed using white spirit. You can see how the left peaks decrease until the Renaissance wax is almost undetectable (Fig 10). In terms of my success criteria, if the wax is undetectable in all ten holes, that mixture will then be deemed as a successful alternative for this common treatment.

Current conclusions

It is exciting to see interesting results already during my preliminary testing for my thesis. It has also been insightful to put proposals from the *Greener Solvents* handbook into place, especially within my metals specialism. I hope that my information collated on these greener solvents, that go beyond their physical properties to include life cycle aspects, will allow conservators to have a holistic view on the solvents within their practice. Of course, it is still important to state that it is always advisable to test new material suggestions before incorporating them into treatments. I hope to be able to

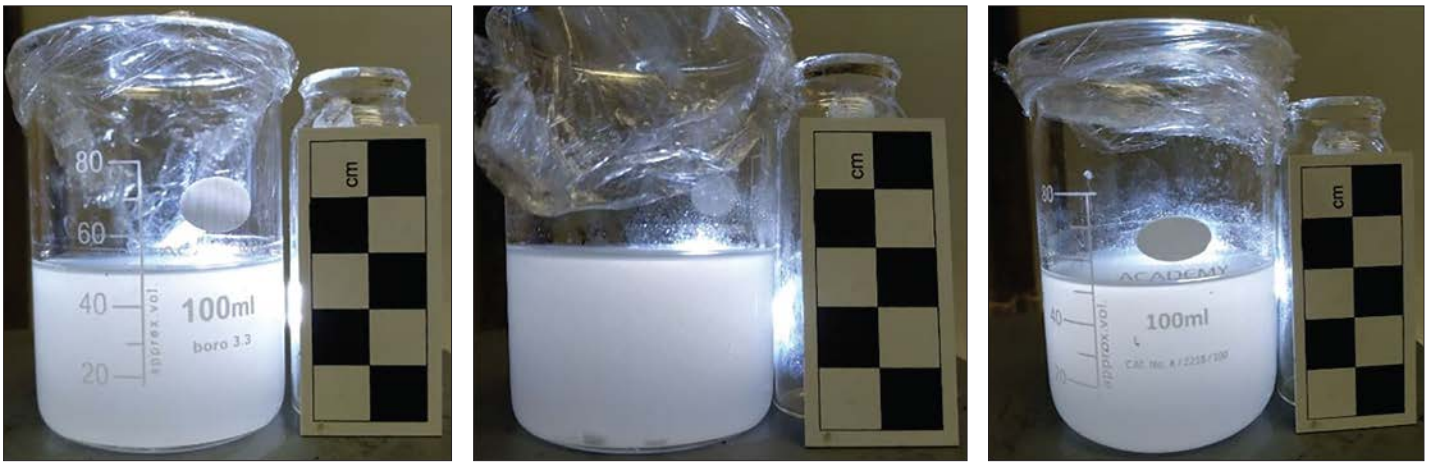


Fig 8. Solubility results of Ethyl Acetate and Heptane at 40/60 mixture (left), 60/40 mixture (centre) and 50/50 mixture (right) after 1 hour

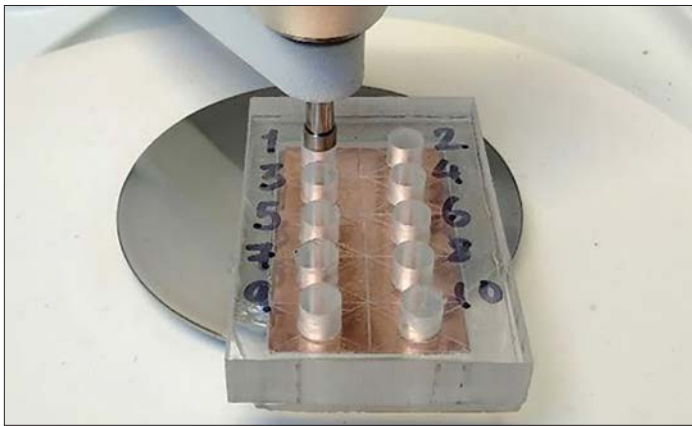


Fig 9. Mask for FTIR phase

apply these mixtures to my practice so that we can gradually make a more sustainable impact in the field.

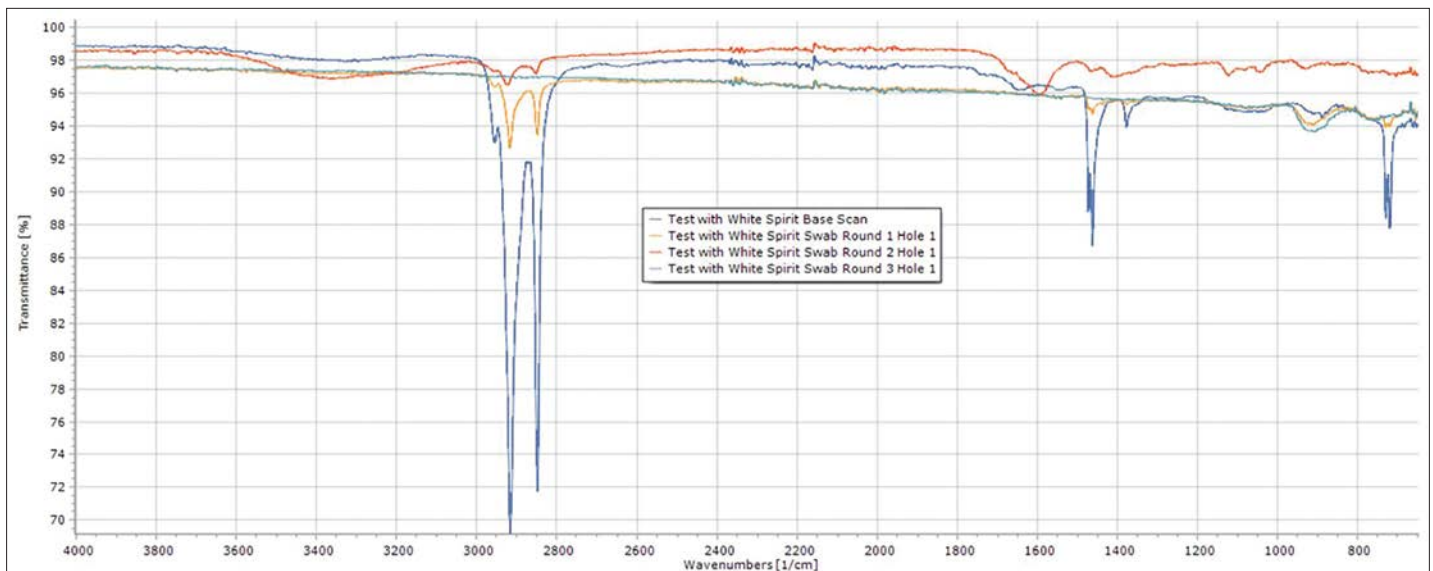
Key resources

- For a carbon calculator of common conservation materials, visit Sustainability Tools in Cultural Heritage - <https://stich.culturalheritage.org/>
- The *Greener Solvents* handbook is free to download - Fife, G.

(2021) *Greener Solvents in Conservation: An introductory guide*, Archetype Publications LTD: London. Available at: <https://siconserve.wpengine.com/greener-solvents/greener-solvents-hand-book/>

- The CHEM21 solvent selection guide provides rankings on the health, safety and environmental impact of solvents - Prat, D., Wells, A., Hayler, J., Sneddon, H., McElroy, C. R., Abou-Shehada, S. and Dunn, P. J. (2016) 'CHEM21 selection guide of classical- and less classical-solvents' in *Green Chemistry*. The Royal Society of Chemistry, 18 (1), pp. 288–296. doi: 10.1039/C5GC01008J.
- For a previous study on other bio-based solvents tested in metalwork conservation - Christophersen, T. (2019) 'Green and clean? Investigating bio-solvents as eco-friendly, less toxic substitutes for white spirit in wax removal on metals' in *Making Conservation*, AICCM National Conference. Melbourne: Australian Institute for the Conservation of Cultural Materials (AICCM) Inc., pp. 62–63. Available at: https://aiccm.org.au/wpcontent/uploads/2020/07/AICCM_Conference_Handbook.pdf (Accessed 22/12/2021).

Fig 10. Preliminary tests results using White Spirit to remove Renaissance wax through hole 1





Mud, glorious mud!
Archaeologists lift a section of the keel of the Newport Medieval Ship
© Newport Museums and Heritage Service



An 'epically-scaled' pulpit in Sint Pieterskerk in Leuven viewed from the back.
See Sara Crofts' column on page 2
Image Sara Crofts