THE INSTITUTE OF CONSERVATION

Turn and Face the Change:
Conservation in the 21st Century

Birmingham
16-17 June 2016

#IconTF16

Patricia Cain, *Glasgow Overhang* (2004), Mixed Media, 92 1/2" x 59" (235 x 150 cm), Kelvingrove Art Gallery & Museum, Glasgow, UK

Turn and Face the Change: *Conservation in the 21st Century*

Birmingham
16-17th June 2016

Conference Aston,
Birmingham

With events at
Thinktank
Birmingham Museum
and Art Gallery

ICON 16
THE INSTITUTE OF CONSERVATION

Cover Image
The Past Gallery at Thinktank, Birmingham
Photo courtesy of the Birmingham Museums Trust

Photo: Matt Wreford

Contents

Welcome by Chair of Icon's Board of Trustees

Welcome to Icon's third triennial conference in the great surroundings of Conference Aston in Birmingham.

The conference is set to deliver a packed programme of speakers offering a wealth of presentations that will question accepted practices, explore how science and technology can contribute to our knowledge and provide insights into developing practice.

The arena is set for conservators within every discipline and the wider heritage profession to come together to share skills, knowledge and understanding. I hope that the conference will stimulate debate, expand our horizons and offer some possibilities for how the modern conservation can rise to the challenges of the 21st century.

As we consider the fast moving pace of change in the creative and cultural sectors, it also provides a chance to pause, take stock, and to explore how conservation of our past can make a vital contribution to our future. This is an important opportunity for us to focus on the value of conservation and how we can bring that to the attention of decision makers, advocates and the wider public.

Whether you are an experienced conservation professional or are active in the wider heritage sector, please enjoy your experiences in the coming days and return home from Icon 2016 informed, engaged, and above all inspired.

Siobhan Stevenson ACR
Chair of Icon's Board of Trustees

Welcome by Director of BMT

I am delighted that Icon is working with Birmingham Museums Trust to bring the third triennial conference to Birmingham. Like many other cities, Birmingham has been undergoing a period of unprecedented change. In 2012 the City Council established its museum service as an educational charity. The Trust's independent status has enabled us to adjust to the rapid decline in public funding for arts and culture by becoming more responsive and entrepreneurial. Birmingham Museums Trust now generates over 60% of its own income, our visitor numbers are rising and we are attracting more diverse audiences.

The Trust is fortunate in being one of very few museums in the West Midlands to have a conservation department. Our award-winning team are active across many areas, including research, volunteer programming and professional development. As a consequence the Trust and department are committed to supporting Icon and the professional standards it represents.

I look forward to attending the conference and discovering how the conservation profession is facing and adapting to the changes that these challenging times are providing.

Dr Ellen McAdam
Director of Birmingham Museum Trust

Welcome from the Chair of Icon16 conference committee
Deborah Cane ACR

As a supporter and an active member of the profession for many years, and having attended two previous Icon conferences, I was keen to host the conference and showcase Birmingham. As a relative newcomer to Birmingham I have always been impressed by the city and its willingness to embrace change. This seemed like an ideal opportunity to showcase the city and the Museums Trust

Here at the Birmingham Museums Trust we are very aware of change, with the demolition of the central library occurring outside our windows, High Speed 2 impacting both the museum store and Thinktank, and the potential redevelopment of the Birmingham Museum and Art Gallery in the next few years. We know that as a department we will be heavily involved in all these changes, and we are looking forward to hearing how our colleagues across the profession are facing the changes confronting them.

We hope that you will enjoy your time in Birmingham and enjoy seeing how the city has changed and is changing, living up to its motto of 'Forward'.

Deborah Cane ACR, FIIC, MA
Collections Care Manager
Birmingham Museums Trust

Keynote speaker: Dr James Noyes

Icon is proud to announce Dr James Noyes as keynote speaker for the opening address for the triennial conference, Turn and Face the Change: Conservation in the 21st Century.

James is the author of The Politics of Iconoclasm: an account of the destruction of visual heritage which has been acclaimed by reviewers on both sides of the Atlantic and has been described by the Times Literary Supplement as "making a crucial contribution to the body of recent landmark publications in the field".

Dr Noyes holds a PhD from the University of Cambridge and has taught on social, cultural and conflict studies at the Paris Institute of Political Studies. A research associate of University College London and a fellow of both the London think tank ResPublica and the Centre for Religion, Conflict and the Public Domain at the University of Groningen, his ideas on iconoclasm have featured regularly in the international media.

James will discuss the impact of social and political change on both the tangible and intangible concept of heritage. He will argue that far from being a niche concern, the question of heritage destruction and conservation is central to the global challenges facing governments, markets and communities today. Heritage professionals have a vital role to play in understanding and meeting these challenges. Dr Noyes will highlight this role, leading us to a new way of seeing, understanding and participating in the heritage sector.

http://www.jamesnoyes.co.uk

Photo: Holywell Glass

Our special guest opening speakers

Tristram Hunt MP

Tristram Hunt is the Labour Member of Parliament for Stoke-on-Trent Central and Senior Lecturer in History at Queen Mary, University of London. Since entering Parliament in 2010, Tristram has focused on educational excellence; the regeneration needs of Stoke-on-Trent; the ceramics industry and energy intensive sector. He is a Trustee of the History of Parliament Trust and fellow of the Royal Historical Society. From October 2013 until September 2015, Tristram served as Labour's Shadow Education Secretary, and he is currently Chair of the PLP Committee on Communities and Local Government.

Stoke-on-Trent MP and historian Tristram Hunt will be drawing on his experience of battling to save the Wedgwood Collection and Staffordshire Hoard, promoting heritage-led regeneration in The Potteries and reviving the ceramics industry, to explain how the West Midlands can explore and exploit its industrial heritage for economic growth, civic pride and regional identity.

Boris Pevzner
Founder and CEO of Collectrium

Boris is a serial entrepreneur, builder of enterprise software companies, and an avid art lover. In 2009 he founded Collectrium, the leading collection management platform for high-value fine art and collectibles. The company was acquired by Christie's in 2015 and continues to operate independently, ensuring client and data privacy. Collectrium was designed specifically for collectors, by a technology expert. Known for innovation, Collectrium has earned the trust of thousands of clients around the world.

Prior to Collectrium, Boris founded Centrata, a pioneer in cloud computing for Fortune 500 data centers. Additionally, Boris co-founded xfire which was later acquired by Viacom. Boris holds undergraduate and graduate degrees in Electrical Engineering and Computer Science from MIT.
In addition to his art obsession, Boris is a physics enthusiast, opera lover, and the founder of The New Bohemians, an international circle of friends that celebrates the marriage of intellect and fun.
He is also a father to a precocious toddler, whose ability to make sense of his quadrilingual family fascinates his proud papa.

COLLECTRIUM™

Conference Floorplan

Trade Fair vendor information

1 Tru Vue, Inc	With over 45 years of proven protection and preservation, Tru Vue acrylic and glass solutions, including Optium® Acrylic Glazing and UltraVue® Laminated Glass, are trusted to protect and display the most celebrated artworks in the world. We work closely with the museum community to develop products that meet superior aesthetic and conservation standards.	9400 West 55th Street McCook, IL 60525 USA Contact: Carolyn Hays Phone: +1 (0) 708 854 2618 Fax: +1 (0) 708 854 2660 chays@tru-vue.com www.tru-vue.com/museums
2 Taylor & Francis Group	Routledge is proud to publish Journal of the Institute of Conservation, the official journal of Icon. Visit our stand at Icon 2016 to browse the latest research published in the journal and to find out how you can submit your own paper. We look forward to meeting you!	4 Park Square, Milton Park Abingdon, Oxfordshire OX14 4RN Contact: George Cooper Phone: +44 (0) 20 7017 4370 George.Cooper@tandf.co.uk www.tandfonline.com/rcon
3 The Institute of Historic Building Conservation	The Institute of Historic Building Conservation (IHBC) is the UK's lead professional body for built and historic environment practitioners working for the conservation, care, regeneration and future of our places. The IHBC supports and regulates standards, promotes effective protection and enhancement, and encourages heritage-led regeneration and access for all.	Jubilee House, High Street Tisbury, Wilts SP3 6HA Contact: Seán O'Reilly Phone: +44 (0) 131 5583671 director@ihbc.org.uk www.ihbc.org.uk
4 The IMC Group	The Hanwell wireless monitoring and control range is world renowned for offering conservators accurate and reliable environmental monitoring products specifically designed for discreet monitoring. Our data loggers, radio and GPRS transmitters cover a full range of critical parameters including relative humidity, light, UV, insect pest control and much more.	Pendle House, Jubilee Road Letchworth, Hertfordshire SG6 1SP Contact: Cristina De Jesus Phone: +44 (0) 1462 688070 sales@the-imcgroup.com www.the-imgroup.com
5 Lynton Lasers Limited	Lynton Lasers Ltd. is one of the world's leading suppliers of laser cleaning systems to the conservation profession. Lynton has over twenty years' experience of building laser systems, training and providing support to conservators in the UK and abroad. Our Compact Phoenix system, with interchangeable NdYAG (1064nm) and ErYAG (2940nm) laser handpieces, is a highly versatile and portable laser designed for workshop and site work.	Manor Lane, Holmes Chapel Cheshire, CW4 8AF Contact: Martin Cooper Phone: +44 (0) 1477 536977 mcooper@lynton.co.uk www.conservationlasers.com
6 Willard Conservation Limited	Willard Conservation Ltd is a British manufacturer, engineering world-class conservation tools and equipment, ranging from small heated micro spatulas to large suction tables and studio equipment, which are used by conservation and archive professionals globally. Willard products can be tailored to meet both size and specification requirements. Please visit us at stand No.6 to see a sample of our latest range of tools.	Conservation Equipment The Workshop, Leigh Road Chichester PO19 8TS United Kingdom Contact: Paul Willard Phone: +44 (0) 1243 776928 Fax: +44 (0) 1243 776928 paul@willard.co.uk www.willard.co.uk

7 Meaco Measurement & Control	Through listening to you, Meaco now offer the widest choice of environmental monitoring and control equipment for collections care. Our priority is to ensure that we make monitoring and controlling your environmental conditions as easy as possible - so that you can spend your time doing what you do best – managing your collection.	Lymedale Business Centre, Lymedale Business Park, Hooters Hall Road Newcastle, Staffordshire ST5 9QF Contact: Samantha Greatbatch Phone: 0845 838 6963 samantha@meaco.co.uk www.meaco.co.uk
8 National Heritage Science Forum	NHSF promotes collaboration amongst the producers and users of heritage science research and leads the implementation of the National Heritage Science Strategy. Find out more about our work, the benefits of institutional membership and the resources available to Icon members, such as Kit-Catalogue, at Stand 8.	Contact: Caroline Peach administrator@heritagescience-forum.org.uk www.heritagescienceforum.org.uk
9 International Institute for Conservation of Historic and Artistic Works	IIC, *the International Institute for Conservation of Historic and Artistic Works,* is a high level international membership organisation working to bring together conservation professionals from around the world to enable and recognise excellence and to promote the profession internationally. IIC's Studies in Conservation publishes the latest developments in the field; News in Conservation disseminates news on recent work and current issues. Our Awards recognise great achievements in the field and our highly sought after Fellowships and Honorary Memberships acknowledge the status and contribution of the highest achievers of the profession.	3, Birdcage Walk London SW1H 9JJ Contact: Graham Voce Phone: +44 (0) 20 7799 5500 Fax: +44 (0) 20 7799 4961 iic@iiconservation.org www.iiconservation.org
10 Zeutschel UK Limited	Zeutschel UK are sole UK distributor for Zeutschel, the leading specialist provider of digital and analogue storage systems for documentation and archive management. We have installed Zeutschel systems most of the National Libraries and Archives in the UK and Ireland. Zeutschel manufacture a range of book scanning systems which are able to digitise material up to A0.	Park Leys, Botyl Road Botolph Claydon Buckingham MK18 2LR Contact: Trevor King Phone: +44 (0) 330 2230170 or +44 (0) 781 4692701 tking@zeutscheluk.co.uk www.zeutscheluk.co.uk
11 PMI Analytical (XRF Specialists)	PMI Analytical was established in 2010 to promote and supply a range of Hand held XRF units manufactured by Bruker Elemental to the UK market. Servicing customers involved in many industrial and research applications ranging from Art and Conservation, Oil and Gas, Aerospace, Metal recycling and Geochemical industries.	18 Ashwood, Netherton Lanarkshire, Scotland ML2 0FE Contact: Martin Lees Phone: +44 (0) 1698 356241 martin@pmi-analytical.co.uk www.pmi-analytical.co.uk
12 Harwell Document Restoration Services	Harwell is a UK –based, award-winning company providing emergency planning and disaster recovery services for collections affected by fire, flood, mould, biohazard and explosion. We provide training, emergency equipment, salvage crews, drying and cleaning services for libraries, archives, museums and historic houses, as well as contract collection clean and removal services.	Dalton Building, Maxwell Avenue, Harwell Science and Innovation Campus, Didcot, OX11 0QT Contact: Emma Dadson Phone: 0800 019 9990 /+44 (0) 1235 432245 Fax: +44 (0) 1235 432246 24 Hour Hotline: +44 (0) 1235 434373 www.hdrs.co.uk
13 Conservation By Design	Since 1992, conservators from museums, libraries and archives worldwide have turned to Conservation by Design (CXD), holders of the Royal Warrant, for our comprehensive range of high quality storage and display equipment. Please come and visit us on the stand and find out how we can help you.	2 Wolseley Road, Kempston Bedford MK42 7AD Contact: Lesley Jones Phone: +44 (0) 1234 846359 lesley.jones@cxdltd.com www.conservation-by-design.com

Conference Day 1 – Thursday 16th June

Time	Session	Venue
08.30 – 09.10	**Registration**	**Litchfield Lounge**
09.10 – 11.30	**Plenary Session – Chair: Simon Cane**	**Great Hall**
09.10 – 09.15	Welcome and Introductions: Siobhan Stevenson	
09.15 – 09.35	Address: Tristram Hunt MP	
09.35 – 09.45	Boris Pevzner, Collectrium	
09.35 – 10.35	Keynote: James Noyes. Cultural Heritage in a Wobbly World: How Conservators have a Role in the Global Challenges of Today.	
10.35 – 10.55	Thinking outside the box – making archaeology work across disciplines and across sectors. Henry Chapman	
10.55 – 11.15	Losing the edge – the blunting of practical intervention. Jonathan Ashley-Smith	
11.15 – 11.30	**Questions**	
11.30 – 11.55	**Break** **Trade Fair, Posters, Coffee**	**Litchfield Lounge**
11.55 – 13.20	**Plenary Session – Chair: Naomi Luxford**	**Great Hall**
11.55 – 12.15	Applying science to daylight management in historic houses for collection and visitor benefit. Mardaljevic, J. Cannon-Brookes, S. Lithgow, K. Blades, N	
12.15 – 12.35	Regenerating arts – the stone sculpture preservation and application of 3D panoramic guide of the Juming Museum, Taiwan. Ruo-Xuan Chen	
12.35 – 12.55	Science behind Henry VIII's tapestries: Finding new technologies for a sustainable future. Constantina Vlachou-Mogire, Ian Gibb, Kate Frame	
13.00 – 13.20	**Questions**	
13.20 – 14.20	**Lunch**	**Litchfield Lounge**
	Table Talk Session: PACR Drop in. Host: Patrick Whife *Lunch will be served*	**Stafford Suite 1**
	Drop-in Session: Icon Mentors. Host: Patrick Whife *Lunch will be served*	**Stafford Suite 2**
	Drop-in session: Digitization and Preventative Conservation. Host: Laura Uccello, Collectrium *Lunch will be served*	**White Hall Room 1**
14.20 – 15.40	**7 Parallel Group Sessions**	**Various**
	Archaeology Group Session 1 Chair: Angela Middleton	
14.20 – 14.40	Re-housing the Papa Stour Archaeological Textile Collection from the Shetland Museum and Archives. Geraldine Sim and Sarah Foskett	**Stafford Suite 1**
14.40 – 15.00	Recreating the Staffordshire Hoard: Using new technologies to allow greater access to archaeological objects. Pieta Greaves, Frank Cooper, Kayleigh Fuller and Lizzie Miller	
15.00 – 15.20	The Staffordshire Hoard: a model for cross-disciplinary working. Pieta Greaves, Kayleigh Fuller and Lizzie Miller	**Stafford Suite 1**
15.20 – 15.40	**Questions**	
	Book & Paper and Photographic Materials Joint Group Session 1 Chair: Zoe Kennington	
14.20 – 14.40	SHS Structural Housing System. A proposal in archival housing for storing and protecting daguerreotypes. Clara M. Prieto	**Great Hall**
14.40 – 15.00	Silver Gelatine Prints Blocked to Glass: An Investigation into the Adhesion Mechanism and their Conservation Treatment. Emma Lowe, Ian L. Moor and Angela H. Moor	
15.00 – 15.20	New Materials, Emerging Techniques. Julia Wiland	
15.20 – 15.40	**Questions**	
	Collection Care and Historic Interiors Joint Group Session 1 Chair: Lisa Nilsen	
14.20 – 14.40	Review, Reflect and Develop: Meeting the future needs of the V&A. Sandra Smith	**NG09**
14.40 – 15.00	Conservation as the agent of change: The parochial library conservation project at St Mary the Virgin Church, Hatfield Broad Oak, Essex. Janet Berry, Annie Elliott and Tobit Curteis	
15.00 – 15.20	Lighting strategies for exhibitions: when is it acceptable to break the rules? Isobel Griffin	
15.20 – 15.40	Keeping up with Contemporary Collecting – How conservators at Birmingham Museums Trust are adapting to working with complex modern artworks. Lizzie Miller, Deborah Cane	
	Textile Group Session 1 Chair: Alison Lister	
14.20 – 14.40	The Assessment and Cleaning of the Large-scale 'Christ in Glory' Tapestry, Coventry Cathedral. May Berkouwer, Alison Lister, Stella Gardner and Maria Armstrong	**Stafford Suite 2**
14.40 – 15.00	Digital Mapping in Textile Conservation – New Documentation Methods with MetigoMap 4.0. Christine Supianek-Chassay	
15.00 – 15.20	Feather in My Cap: A Conservation Treatment & Collaboration. Danielle Connolly	
15.20 – 15.40	Preserving the Visionaries: Fashion Preservation and the Designers Intent. Leanne Tonkin	
	Emerging Professionals Session 1 Chair: Rachel Morley	
14.20 – 14.40	The use of Solid-Phase Microextraction Gas Chromatography Mass Spectrometry (SPME-GC/MS) and Fourier Transform Infrared (FTIR) spectroscopy for analysis of plastic materials in historic collections: A case study of handbags in the Museum of London. Abby Moore, Giovanni Verri, Katherine Curran	**White Hall 1**
14.40 – 15.00	Conservation- Survival Strategies from the Fringe. Michelle Lisa Gayle	
15.00 – 15.20	Promoting Awareness and Understanding of Conservation through Social Media at the Corning Museum of Glass. Nicole Monjeau and Natasa Krsmanovic	
15.20 – 15.40	**Questions**	

Metals Group Session 1
Chair: Alex Coode

14.20 – 14.40	Developments in the conservation of decorative ironwork, using a large pair of 16th Century Spanish gates to illustrate treatments. Alex Coode	**White Hall 2**
14.40 – 15.00	Current Treatment Trends: Do nothing or go the Full Hog and Build a Replica? Matthew Hancock	
15.00 – 15.20	Turn and Face the Change: Conservation and Professional Integration Brian Hall	
15.20 – 15.40	**Questions**	

Heritage Science Group Session 1
Chair: Matija Strlic

14.20 – 14.40	Biology and conservation: Not just for wildlife and wildernesses. Sophie Downes	**White Hall 3**
14.40 – 15.00	Investigating the Mechanical Properties of Historic, Doped Fabric Aircraft. Ben Regel, Jannicke Langfeldt, Finn Giuliani, Louisa Burden and Mary P. Ryan	
15.00 – 15.40	**Questions**	
15.40 – 16.10	**Break** **Trade Fair, Posters, Tea**	**Litchfield Lounge**

16.10 – 17.30	**7 Parallel Group Sessions**	**Various**

Archaeology Group Session 2
Chair: Helen Butler

16.10 – 16.30	Megalocerous Giganteus: the removal of a degraded shellac coating from fossil skeletal material using lasers. Christopher Weeks and Lucie Graham	**Stafford Suite 1**
16.30 – 16.50	How much more can we see? The Application of Digital X-radiography and CT-Scanning in Archaeological Conservation. Angela Middleton and Karla Graham	
16.50 – 17.10	Student Poster Presentations	
17.10 – 17.30	**Questions**	

Book & Paper and Photographic Materials Joint Group Session 2
Chair: Cordelia Rogerson

16.10 – 16.30	The Preservation of Black and White Polaroid prints: Research based on three albums from the Stanley Kubrick Archive. Ioannis Vasallos	**Great Hall**
16.30 – 16.50	Papers, plastics and process: The conservation of animation artwork, an interdisciplinary approach. Aafke Weller, Mette Peters & Carien van Aubel	
16.50 – 17.10	Preserving the Materiality of Digital Surrogates, Lisa Forman. Melissa Huddleston, Nathaniel Deines and Benjamin Lord	
17.10 – 17.30	**Questions**	

Collection Care and Historic Interiors Joint Group Session 2
Chair: Julie Phippard

16.10 – 16.30	Stage Management: Running Conservation-Safe Experiential Visitor Activities in Historic Interiors. Kate Frame, Kathryn Hallet, Kerren Harris and Aimee Sims	**NG09**
16.30 – 16.50	Thoroughly Modern Militating. Vicki Marsland	
16.50 – 17.10	Eyemat: protecting vulnerable floor surfaces; performance and proliferation. Sandra Howe & Charlotte Owen	**NG09**
17.10 - 17.30	Joining in: Documenting the Historic Interior on Collections Management Systems. Christine Leback Sitwell	

Textile Group Session 2
Chair: Leanne Tonkin

16.10 – 16.30	Hanging by a molecular thread: Exploring the strength of historic wool proteins in Tudor tapestries. Nanette Kissi, Katherine Curran and Constantina Vlachou-Mogire	**Stafford Suite 2**
16.30 – 16.50	Blurred Lines: Conservation of Costume/Restoration of Aesthetic. Tess Evans	
16.50 – 17.10	Crowd-sourcing Conservation. Wendy Hickson, presented by Janie Lightfoot	
17.10 – 17.30	The power of two: uniting chemical and historical research of 19th century early synthetic dyes for conservation. Anita Quye	

Emerging Professionals – Conservation Standards Session 2
Chair: Rachel Morley

16.10 – 16.30	Conservation standards - challenge or opportunity? David Leigh	**White Hall 1**
16.30 – 16.50	Professional Standards: Supporting CPD and Best Practice. Pierrette Squires, Jacqui Hyman	
16.50 – 17.10	Using standards to support decision making in relation to the impact of building works. Deborah Cane	
17.10 – 17.30	**Questions**	

Metals Group Session 2
Chair: Alex Coode

16.10 – 16.30	Conservation of Polychrome Outdoor Painted Metal Sculptures in Taiwan:Test for Ju Ming's Living World Series-Armed Forces. Chun-Hao Wang	**White Hall 2**
16.30 – 16.50	An Investigation into Commercial Silver Cleaning Products. Katie Snow	
16.50 – 17.10	Peggy: Schooner Rigged and Rakish – the Conservation of an 18th Century Yacht. Christopher Weeks	
17.10 – 17.30	**Questions**	

Heritage Science Group Session 2
Chair: David Howell

16.10 – 16.30	Do we need conservation heating in summer? Evaluating the use of climate analysis tools to answer a practical question. Nigel Blades	**White Hall 3**
16.30 – 16.50	The Application of Winter Statue Covers for Historic Marble Monuments. Melanie Keable, David Thickett, Matija Strlic	
16.50 – 17.10	Uncertainty of Damage Functions in Preventive Conservation of Collections. Puja Bharadia & Tom Fearn	
17.10 – 17.30	**Questions**	

Conference Day 2 – Friday 17th June

Time	Session	Venue
08.30 – 09.15	Registration, Trade Fair, Posters, Coffee	Litchfield Lounge
09.30 – 10.50	**7 Parallel Group Sessions**	**Various**

Heritage Science Group Session 3
Chair: Anita Quye

09.30 – 09.50	Zinc White: A Preliminary Study of the Fluorescence of Pigment Particles as they Change with Degradative Processes. Vanessa Johnson, Charis Theodorakopoulos, Justin Perry, Jane Colbourne	**Stafford Suite 1**
09.50 – 10.10	Scientific Characterization of Islamic paper. Hend Mahgoub, Dirk Lichtblau and Matija Strlic	
10.10 – 10.30	Fingerprints and White Gloves - What are we doing to our documents? Terry Kent	
10.30 – 10.50	**Questions**	

Book & Paper and Photographic Materials Joint Group Session 3
Chair: Fiona McLees

09.30 – 09.50	Dealing with large collections: prioritise, optimise... and conserve? Louise O'Connor, Elodie Lévêque & Gabrielle Vergnoux	**Great Hall**
09.50 – 10.10	A large scale challenge! Rowena Doughty	
10.10 – 10.30	Using Eularian video magnification to discover movement in objects. Karen L. Pavelka & Ayshea Khan	
10.30 – 10.50	**Questions**	

Education & Training Group Session 1
Chair: Susan Bradshaw

09.30 – 09.50	Looking outwards as well as inwards, and putting the personal into the conservation professional. Katy Lithgow	**Stafford Suite 2**
09.50 – 10.10	The Next Generation: The Conservator's Role in Collection Management. Anna E Bülow, Janien Kemp, Agnes W Brokerhof	
10.10 – 10.30	The RCS Collections Review: Towards better collections and conservation management plans. Beth Astridge	
10.30 – 10.50	**Questions**	

Documentation Network Session 1
Chair: Jennifer Marchant

09.30 – 09.50	Towards a national documentation strategy: the role of the Icon Documentation Network. Athanasios Velios	**White Hall 1**
09.50 – 10.10	The issue of documentation. Clare Finn	
10.10 – 10.30	Development of the Northumbria University art, materials and conservation research archive. Charis Theodorakopoulos and Jane Colbourne	
10.30 - 10.50	**Questions**	

Icon Scotland Group Session 1
'We can be heroes - conservators take on new roles.' Chair: Rob Thomson

09.30 – 09.50	'Unity is Strength' - Rediscovering Glasgow's Union and Community Banners at Maryhill Stores: a Cross-disciplinary Documentation and Engagement project. Helen Murdina Hughes and Lauren Palmer	**White Hall 2**
09.50 – 10.10	Boys' Club to Museum Display: Conserving the Dundee Burns Club banner. Rebecca Jackson-Hunt	
10.10 – 10.30	Collections environment standards: useful or obstructive? Dr Isobel Griffin	
10.30 – 10.50	Heroic Shipmates: The importance of developing educational outreach programmes in ship model conservation. Davina Kuh Jakobi and Glen Smith	

Stone & Wall Paintings Group Session 1
Chair: Lizzie Woolley

09.30 – 09.50	Victory and longevity: New approaches to conserving Maclise's wall painting of Waterloo and Trafalgar in the House of Lords. Caroline Babington	**White Hall 3**
09.50 – 10.10	New uses for modern materials in stone conservation. David Odgers	
10.10 – 10.30	The strategic stone study. Clara Willet	
10.30 – 10.50	**Questions**	

Collection Care & Historic Interiors Joint Group Session 3
Chair: Christine Sitwell

09.30 – 09.50	The Cumberland Art Gallery: a collaborative approach to designing an art gallery within an historic interior. Rebecca Rees and Kerren Harris	**NG09**
09.50 – 10.10	Striking a sustainable balance: conservation and presentation in a working Royal Residence. Lizzie Keay and Jennifer Wideson	
10.10 – 10.30	Guidelines for Cleaners and Property Managers at the Swedish State Property Board. Lisa Nilsen and Catharina Nordenstedt	
10.30 - 10.50	Forever, For Everyone: extended opening and collections care in the National Trust. Amy Foulds and Victoria Witty	
10.50 – 11.20	**Break** **Trade Fair, Posters, Coffee**	**Litchfield Lounge**
11.20 – 11.40	**7 Parallel Group Sessions**	**Various**

Heritage Science Group Session 4
Chair: Siobhan Watts

11.20 – 11.40	How is the profession using new technologies, techniques and science? Current and potential uses of 3D printing in the profession; looking at the suitability of plastics. Gabrielle Flexer, Nigel Larkin and Julian Carter	**Stafford Suite 1**
11.40 – 12.00	Application of ventilation rate measurements using CO2 as a tracer gas in historic buildings. Lisa McCullough and Nigel Blades	

12.00 – 12.20	Cast In A New Light: Surface Shape Studies of Paul Gauguin's Transfer Drawings. Mary Broadway	**Stafford Suite 1**
12.20 – 12.40	**Questions**	

Book & Paper and Photographic Materials Joint Group Session 4
Chair: Sonja Schwoll

11.20 – 11.40	The conservation of the Exsiccata Collection at The Royal Botanic Gardens, Kew: practical treatment techniques for bound herbaria. Sarai Vardi	**Great Hall**
11.40 – 12.00	Miniaturization: A New Day and New Tools for the Paper Conservator. Ted Stanley	
12.00 – 12.20	Multiple skills required! A book and paper conservator's approach to the treatment of a 20th century photographic album. Françoise Richard	
12.20 – 12.40	**Questions**	

Education & Training Group Session 2
Chair: Susan Bradshaw

11.20 – 11.40	The Role of a Community Interest Company in Conservation Training and Outreach. Elizabeth Neville	**Stafford Suite 2**
11.40 – 12.00	Understanding Apprenticeships in Conservation. Patrick Whife	
12.00 – 12.20	To infinity … and beyond. Robert Turner and Susan Bradshaw	
12.20 – 12.40	**Questions**	

Documentation Network Session 2
Chair: Jennifer Marchant

11.20 – 11.40	A Significant Statement: New Outlooks on Treatment Documentation. Jan Cutajar, Abigail Duckor, Dr. Dean Sully and Harald Fredheim	**White Hall 1**
11.40 – 12.00	**Questions**	
12.00 – 12.20	**Discussion session 1** - Documentation in practice: what is the current state in the profession?	
12.20 – 12.40	**Discussion session 2** - Scope of documentation in conservation: How are documentation records used?	

Icon Scotland Group Session 2
'We can be heroes – conservators take on new roles'. Chair: Rob Thomson

11.20 – 11.40	Conservation Undercover: the National Trust presents a new way to experience conservation in action. Freda Gibson-Poole	**White Hall 2**
11.40 – 12.00	Sound and Vision: Expressing conservation – a crowd-sourced thesaurus. Ylva Dahnsjo	
12.00 – 12.20	Monitoring Costume on Display: a collaborative project between University of Glasgow and Glasgow Museums. Michelle Hunter, Sarah Foskett, Maggie Dobbie	
12.20 – 12.40	Discussion: We can be Heroes – Conservators Take on New Roles	

Stone & Wall Paintings Group Session 2
Chair: Lizzie Woolley

11.20 – 11.40	William Morris and Edward Burne-Jones' wall paintings at Red House: Context and Conservation. Katy Lithgow and Tobit Curteis	**White Hall 3**
11.40 – 12.00	The Apollo Theatre ceiling catastrophe: Investigation and treatment of fibrous plaster ceilings, development and application of conservation techniques for preserving the past and maintaining the future. Richard Ireland	

12.00 – 12.20	Recent advances in imaging technology for the conservator. Samuel Whittaker	**White Hall 3**
12.20 – 12.40	**Questions**	

Collection Care & Historic Interiors Joint Group Session 4
Chair: Kerren Harris

11.20 – 11.40	Increasing the Profile and Influence of Conservation - An Unexpected Benefit of Risk Assessments, Dr. Cordelia Rogerson and Dr. Paul Garside	**NG09**
11.40 – 12.00	Hanging out: strain monitoring of tapestries. Frances Lennard and Lynsey Haworth	
12.00 – 12.20	A Challenging Conservations Environment: Climate Change and Innovative Mould Treatments. Bethan Stanley, Naomi Luxford, Sophie Downes and Timothy Hill	
12.20 – 12.40	Taking on mould in a multidisciplinary team. Hannah Clare and Sarah VanSnick	

12.40 – 13.40	**Lunch**	**Litchfield Lounge**
	Table Talk Session: PACR Drop-in. Host: Patrick Whife *Lunch will be served*	**Stafford Suite 1**
	Drop-in session: Icon Mentors. Host: Patrick Whife *Lunch will be served*	**Stafford Suite 2**
	Drop-in session: Minimizing Risk through Documentation. Host: Laura Uccello, Collectrium *Lunch will be served*	**White Hall Room 1**
	Drop-in Session: Conservators as Leaders. Host: Katy Lithgow *Lunch will be served*	**White Hall Room 2**

13.40 – 15.00	**Plenary Session – Chair: Deborah Cane**	**Great Hall**
13.40 – 14.00	Does access to an extensive range of sophisticated analytical equipment help or hinder our approach to treatment planning? Gill Comerford	
14.00 – 14.20	Modern Conservators for Modern Times. Louise Lawson and Deborah Potter	
14.20 – 14.40	The evolving relationship between conservation and the digital world at Birmingham Museums Trust. Ciaran Lavelle, David Rowan, Deborah Cane	
14.40 – 15.00	**Questions**	
15.00 – 15.30	**Break Trade Fair, Posters, Coffee**	**Litchfield Lounge**
15.30 – 17.30	**Plenary Session – Chair: Jane Henderson**	**Great Hall**
15.30 – 15.50	Crime and the Conservator: Exhibiting a body of evidence. Sharon Robinson and Jon Readman	
15.50 – 16.10	Making, Breaking and remaking: Iconoclasm and conservation. Simon Cane, Jonathan Ashley-Smith	
16.10 – 16.30	Number 236 – Conservation in the Age of the Robot. Alastair McCapra	
16.30 – 16.45	**Questions**	
16.45 – 17.10	**Final Key Speaker Sarah Staniforth**	
17.10 – 17.30	Conference Round-Up & Discussion. Jane Thompson-Webb	

Plenary Session 1
Great Hall, 9.15-11.25
Chair: Simon Cane

Cultural Heritage in a Wobbly World: How Conservators have a Role in the Global Challenges of Today

James Noyes

James is the author of The Politics of Iconoclasm: an account of the destruction of visual heritage which has been acclaimed by reviewers on both sides of the Atlantic and has been described by the Times Literary Supplement as "making a crucial contribution to the body of recent landmark publications in the field".

Dr. Noyes holds a PhD from the University of Cambridge and has taught on social, cultural and conflict studies at the Paris Institute of Political Studies. A research associate of University College London and a fellow of both the London think tank ResPublica and the Centre for Religion, Conflict and the Public Domain at the University of Groningen, his ideas on iconoclasm have featured regularly in the international media.

James will discuss the impact of social and political change on both the tangible and intangible concept of heritage. He will argue that far from being a niche concern, the question of heritage destruction and conservation is central to the global challenges facing governments, markets and communities today. Heritage professionals have a vital role to play in understanding and meeting these challenges. Dr. Noyes will highlight this role, leading us to a new way of seeing, understanding and participating in the heritage sector.

Thinking outside the box – making archaeology work across disciplines and across sectors

Henry Chapman

Archaeology is the study of change. We classify periods by changes in material culture and situate these changes within the diverse and shifting landscapes and environments within which people lived and worked. With such a focus on change in the past, it is perhaps ironic that less attention is commonly given by archaeologists to contemporary processes of change. In addition to being fundamentally important for protecting the past, consideration of these processes can have incredible significance for aiding the interpretation of the past. Closer dialogue between practitioners from different disciplines, regardless of sector, has considerable demonstrable mutual benefits. Doing so also opens up new opportunities for communicating what we all do to wider audiences and ensuring continued public interest and support.

Losing the edge – the blunting of practical intervention

Jonathan Ashley-Smith

There is a danger that the opportunities to learn and maintain the necessary skills for high level interventive conservation are diminishing. The causes of this loss are many, but they impact at every stage of the development of a potential or developing conservator. The time dedicated to practical craft in primary and secondary education is being reduced and the qualifications for non-academic studies are being downgraded. The curricula of conservation training colleges are taken up with activities that accentuate academic pretensions and must also reflect the current needs of employing institutions. In museums and heritage organisations priority is given to surveys and storage, or to quick turn-round loans and exhibitions. Of course, this is not a worry if there is no real need, now or in the future, for high quality practical intervention. So let's not worry.

Plenary Session 2
Great Hall, 11.55-13.20
Chair: Naomi Luxford

Applying science to daylight management in historic houses for collection and visitor benefit

John Mardaljevic, Dr Stephen Cannon-Brookes, Katy Lithgow, Nigel Blades

Managing daylight is a major factor in the environmental control of museums, galleries and historic buildings. Daylight exposure can be measured directly or estimated using models. This presentation describes the application of two advanced techniques to two National Trust houses. The first technique, climate-based daylight modelling (CBDM), is a computer simulation method that predicts both the spatio-temporal dynamics of daylight and the cumulative annual total for daylight exposure. The second, high-dynamic range (HDR) imaging, compiles a computer-controlled sequence of multiple exposures into a luminance (i.e. HDR) image. From the HDR image it is possible to measure actual illumination across surfaces. The application of CBDM and HDR to investigate top lighting at Mount Stewart, and side lit rooms at Ickworth House illustrates the benefit of these new techniques in improving the management of daylight to enhance the conservation and visitor enjoyment of historic house interiors and collections.

Regenerating arts – the stone sculpture preservation and application of a 3D panoramic guide of the Juming Museum

Ruo-Xuan Chen

In recent years, the application of 3D scanning has become a trend of digital archives project. In order to sustain the conception of the artist for his stone sculptures, Juming Museum in Taiwan preserved 30 stone sculptures in-situ, and it reactivated the original display area as a Stone Conservation Lab. This project included newly installed rain canopies, a wooden plank roadway, 3D digital project, and web page. The roadway increased the safety distance between visitors and the artworks, however, it also caused the difficulty of closer appreciation. The application of 3D panoramic guide successfully solved this problem and brought additional benefits. Unlike general museums which used virtual street-viewing and sometimes had the problems of lack of artworks information, presenting two-dimensional photographs only, 3D panoramic guide in Juming Museum offered different services. Users could access this web and acquire information of every stone sculpture easily, reverse and zoom in the 3D models. These 3D digital data were also meaningful in public education. Being put into practice extended the value added application of 3D digital data as well.

The science behind Henry VIII's tapestries: Finding new new technologies for a sustainable future

Constantina Vlachou-Mogire, Ian Gibb, Kate Frame

Four years ago Historic Royal Palaces (HRP) launched a multi-phased research project to establish a scientifically-based strategy for the preservation of the tapestries in the Tudor apartments at Hampton Court Palace. This paper will discuss how this project informs HRP's strategy for the protection of these rare tapestries, whilst displayed in their original setting - balancing conservation judgement with 'use' of the collection.

We will summarise the findings of our comprehensive environmental monitoring campaign showing how rich data sets were interrogated using mapping techniques. Based on this evidence, we are now defining targeted innovative protection measures. Initial examples for light management include the use of LED lamps and liquid crystal "smart" films. Associated exciting collaborative research initiatives with the Centre of Doctoral Training for Heritage Science in Art, Heritage and Archaeology (SEAHA), IBM Research, Wilanow Palace Museum and the Centre for Digital Documentation and Visualisation (CDDV) will be described.

Conference Day 1 – Thursday 16th June

Archaeology Group Session 1
Stafford Suite 1, 14.20-15.40
Chair: Angela Middleton

Re-housing the Papa Stour Archaeological Textile Collection from the Shetland Museum and Archives

Geraldine Sim and Sarah Foskett

Previously submitted in partial fulfilment of the requirements for the Degree of Master of Philosophy in Textile Conservation in the School of Culture and Creative Arts, University of Glasgow. This study seeks to propose a rehousing storage method for a collection of archaeological fragments from Shetland Museum and Archives that will reflect the object's role, the institution's resources while promoting the recent advances of best practice in the care of archaeological textiles.

The archaeological collection's storage environment and condition were surveyed in order to understand its specific needs. However, in order to determine decision making processes and techniques of mounting archaeological material, one-on-one interviews with heritage professionals at leading museums in the United Kingdom was conducted.

Through this process, various issues, not previously considered, affecting rehousing strategies were uncovered. These include the practical aspects of mount construction, to trends within conservation, how archaeology and museums, and even macro environmental issues such as sustainability and economy. Taking all those considerations in mind, a prototype mount was finally constructed and proposed.

Recreating the Staffordshire Hoard: Using new technologies to allow greater access to archaeological objects

Pieta Greaves ACR, Frank Cooper, Kayleigh Fuller and Lizzie Miller

Presenters:
Pieta Greaves ACR, Kayleigh Fuller

Discovered in a field near the village of Hammerwich, England on 5 July 2009, the Hoard is the most important and high profile Anglo-Saxon archaeological discoveries since Sutton Hoo in 1939

Birmingham Museums is partnering with the Jewellery Industry Innovation Centre (JIIC), part of Birmingham City University School of Jewellery, to create as exact as possible replicas of objects which will be displayed in the new Hoard gallery. Plus, capturing these objects digitally has enabled a range of replicas, including enlarged versions, to be produced for handling by visitors, including those with additional access needs. It has also opened up the possibility to re-create objects as they would appear when newly produced and undamaged, an exciting prospect due to the fragmentary nature of the collection. These iconic objects are being replicated with the help of a number complex digital manufacturing technologies including laser scanning, Computer Aided Design (CAD) and 3D Printing. The replicas are then skilfully finished by hand utilising many of Birmingham's long-standing traditional jewellery craft skills.

This paper explores the process used by JIIC to create the replicas as well as the outreach possibilities of the items created.

The Staffordshire Hoard: A model for cross-disciplinary working

Pieta Greaves ACR, Kayleigh Fuller and Lizzie Miller

Presenters:
Pieta Greaves ACR, Kayleigh Fuller

The discovery of the Staffordshire Hoard in 2009 led to the development of a cross-disciplinary programme to conserve research and disseminate the find. The Hoard is the largest assemblage of 7th century Anglo-Saxon gold and silver objects to be discovered, consisting mostly of battle regalia. The research carried out is building on previous work on Anglo-Saxon objects, but access to a range of specialists working in an integrated manner has uncovered new secrets about Anglo-Saxon craft-workers and the weaponry they adorned. This presentation will show how an integrated way of working in a conservation team can be of a large benefit to the project overall. It is believed that the unique and challenging cross-disciplinary relationship between materials sciences, archaeology and practical conservation is key to enhancing conservation as a discipline, actively engaging with as varied an audience as possible and supporting the ever difficult aim of securing further research funding.

Conference Day 1 – Thursday 16th June

Book & Paper and Photographic Materials Session 1
Great Hall, 14.20-15.40
Chair: Zoe Kennington

SHS Structural Housing System: A proposal in archival housing for storing and protecting daguerrotypes

Clara M. Prieto

Until now, tertiary housing systems for cased daguerreotypes have basically consisted of boxes from which the objects have to be extracted for examination, thus being exposed to the all the risks of direct manipulation. Furthermore, for unprotected cased daguerreotypes with a missing lid or no case at all, no specific protection system exists for avoiding direct manipulation while facilitating examination: reflections from the mirror-like plate makes viewing difficult without the aid of a mobile cover.

As a result of multidisciplinary research conducted and based on the professional experience as a conservator, the Structural Housing System SHS has been conceived and designed to address all of these needs. SHS can be defined as a tertiary housing system that efficiently stores and protects cased daguerreotypes, taking into account the original structure, its movement and its specific viewing needs.

In line with the trend towards resource efficiency, the SHS is an inexpensive housing structure, simple to assemble and implement.

Silver gelatine prints blocked to glass: An investigation into the adhesion mechanism and their conservation treatment

Ian L Moor, Angela H. Moor and Emma Lowe

Presenters:
Ian L Moor and Emma Lowe

Whether from prolonged contact, contact in less than ideal environmental conditions; high RH and high EMC, from water egress or the aftermath of a flood, the blocking of gelatine photographic prints to their cover glass within the confines of a frame, mount or case, presents its own unique set of challenges to the Photographic Conservator. Silver gelatin prints are particularly susceptible to this form of damage, which is so problematic, that some conservators consider the safe recovery of prints affected in this way to be impossible.

Academic literature and conservation textbooks are silent about how to treat prints blocked in this way. Up until now there has been no research chronicling existing treatments nor has the nature of the adhesive bond between the materials been investigated.

This presentation will provide the results of an experimental design in the laboratory using XRF, FTIR and SEM-EDS to analyse the nature of the adhesive bond formed between the materials, an overview of unpublished contemporary techniques presently used by photographic conservators, and finally a case study analysis of treatment procedures developed by The Centre for Photographic Conservation

New materials, emerging techniques

Julia Wiland

While recently completing a project to rehouse gelatin dry plate photographs on glass, I used a new material called Vivak.

On the badly damaged photographs I decided to try a new technique of rehousing the broken photographs in Vivak sandwiches, instead of glass sandwiches. This meant I could store the repaired photographs vertically with the rest of the items, and I could use pieces of Vivak to replace the missing glass fragments, so the sandwiches were stable and could be done without adhesive for incomplete photographs.

In order to find out more about the ageing properties of Vivak, I enlisted the help of our Conservation Scientist and we devised some basic ageing tests, which are now in progress. On completion of the testing I plan to share the results, so others can benefit and contribute to our collective knowledge of Vivak as a new conservation material.

Conference Day 1 – Thursday 16th June

Care of Collections and Historic Interiors Joint Session 1
NG09, 14.20-15.40
Chair: Lisa Nilsen

Review, reflect and develop: Meeting the future needs of the V&A

Sandra Smith

The V&A museum has recently published its Strategic Plan 2015-2020, a five year vision which will result in a major expansion of our physical and digital reach, using the lens of design to make our collections increasingly accessible and relevant.

Based on five pillars of activity the museum will:

- *Create a world class visitor and learning experience across all V&A sites and collections*
- *Focus and deepen the relevance of our collections to the UK creative and knowledge economy*
- *Expand the V&A's international reach, reputation and impact*
- *Showcase the best of digital design and deliver an outstanding digital experience*
- *Diversify and increase private and commercial funding sources.*

The Department of Conservation has a role to play in each of these objectives but to do so it needs to consider its current practice, recognize where change is needed and develop the skills, behaviours and expectations of the staff to meet those needs.

This paper will reflect way the V&A's Strategic vision and objectives are resulting in a change of focus for the conservation department. It will discuss how this is being implemented through changing expectations of the role and how it is manifest through changes in behaviour, sharing of knowledge and being open to the influence of the expertise of others.

Conservation as the agent of change: the parochial library conservation project at St Mary the Virgin Church, Harfield Broad Oak, Essex

Janet Berry, Annie Elliott and Tobit Curteis

Presenter: Janet Berry

We are used to discussing conservation as the management of change. This presentation will argue that conservation can get ahead of the curve and influence decision making when it acts as the agent of change. That is, when conservation acts as the catalyst for positive changes that would otherwise not happen. These changes are not only to the physical integrity of the object but also in the social and intellectual interaction of people with the object and conservation processes.

This will be demonstrated using the conservation of the parochial library at St Mary the Virgin Church, Hatfield Broad Oak, Essex. The library was an underutilised resource in poor condition and at risk of disposal. A conservation project initiated by ChurchCare has improved the condition of the collection, initiated improvements to the building fabric and environment, and introduced new approaches to the interpretation and development of the library by the parish.

Lighting strategies for exhibitions: when is it acceptable to break the rules?

Isobel Griffin

Most major museums, galleries and libraries have lighting policies to try to control the amount of light their objects are exposed to while on display. A good starting point is to set a target for the 'displayable lifetime' of the collections, and most organisations will plan to ensure a lifetime of several hundred years. However, there may be situations where the 'rationing' of light exposure seems inappropriate. What if the object is so light sensitive that it uses up its lighting allocation very quickly? Or supposing the artist, donor or lender specifically requests a particular type of display? This presentation will discuss the case study of the long-term loan of a collection of book sculptures to the National Library of Scotland. Colour measurements and detailed photography were used to predict the lifetime of the sculptures, and a display strategy was created in consultation with the lender.

Keeping up with contemporary collecting: How conservators at Birmingham Museums Trust are adapting to working with complex modern artworks

Lizzie Miller, Deborah Cane ACR

As is the current trend in many museums, Birmingham Museums Trust (BMT)'s five year collecting policy focusses on contemporary sculpture, including installation artworks containing moving elements and time-based media. Yet with no specialist conservator in this discipline, how can the department ensure the preservation of these complex new acquisitions?

A key example is the recently acquired modern art installation, ARTicle 14, Débrouille-toi, toi-même! by Romuald Hazoumè, comprising over 711 individual items, 300 of which are plastic, including mobile phones, trainers and toys. With no budget to employ specialist conservators the BMT conservation team have had to change and adapt to work with such complex pieces, with unstable modern materials, whilst honouring the Artist's original intent. This paper will explore how conservation are learning to adapt to changing collections policies, by collaborating with external experts and taking on new training and research, to ensure the long-term preservation of these challenging works.

Conference Day 1 – Thursday 16th June

Textile Group Session 1
Stafford Suite 2, 14.20-15.40
Chair: Alison Lister

The assessment and clearing of the 'Christ in Glory' Tapestry, Coventry Cathedral

May Berkouwer ACR, Alison Lister ACR, Stella Gardner, Maria Armstrong

Presenter: May Berkouwer ACR

In 2014 two independent studios, Textile Conservation Limited and May Berkouwer Textile Conservation, came together to assess and clean the 23m high by 12m wide Christ in Glory tapestry in Coventry Cathedral. Designed by Graham Sutherland and installed in 1962 the tapestry is an integral element of this iconic 20th century building. Mounted on a scaffold-type framework and on permanent open display the unlined tapestry is exposed to many damaging environmental factors including airborne pollutants. Several previous cleaning treatments, initially by dry cleaners and later by conservators, have removed significant amounts of surface particulates but dirt continues to collect in bands across the tapestry dulling the colours and reducing the definition of the design. Environmental fluctuations are cementing the dirt in place making it increasingly difficult to remove.

This paper will describe the most recent intervention including the assessment of the tapestry's overall conservation needs and the testing of various cleaning methods. Through active engagement with the audience approaches to the future care and conservation of this extraordinary textile will be explored.

Digital mapping in textile conservation: New documentation methods with MetigoMap 4.0

Christine Supianek-Chassay

Comprehensive documentation is key to conservation. Successfully used for many years in the heritage sector and for the conservation of paintings, the mapping software MetigoMap 4.0 is a helpful tool for object documentation, analysis as well as planning, costing and promoting a conservation project.

As a free-lance conservator in Germany since 2013, I have had the opportunity to use MetigoMap in various ways. Through case studies, this paper will demonstrate the use of the software in the field of textile conservation. Examples are: The analysis of a 16 C. tapestry, evaluating original vs. high quality material in weaves from the 1900's. The interpretation of the condition, detailed planning and calculating of the proposed treatment for an 18 C. wall-hanging. The pattern reconstruction and presentation of a rare 15 C. silk lampas through picture montage which will remain hidden to the visitor.

Feather in my cap: a conservation treatment & collaboration

Danielle Connolly

The conservation of seven hats for the new Fashion & Style gallery at National Museums Scotland brought up many challenges, due to the hats' ornate decoration. Five of the seven hats required complex conservation treatment to their decoration, which varied from humidifying bows and ribbons, to adhesive treatment of silk flowers and the conservation of feathers. The paper focuses on the conservation methods, materials and treatment of the feathers of two of the hats designed by Elsa Schiaparelli and dated 1930s-1950s, and the third wide brimmed hat dated 1910.

With knowledge and practice in feather conservation being minimal, the conservation treatment relied on collaboration and consultation with fellow conservators in Textile, Paper and Artefact Conservation at National Museums Scotland. Vigorous testing to find the most suitable treatment method and materials was carried out to produce a good result whilst keeping the conservation treatment within the time estimate.

Preserving the Visionaries: Fashion Preservation and the Designers Intent

Leanne Tonkin

The commercial implementation of plastic and synthetically produced materials on textile technology during the twentieth century has been profound and continues into the twenty-first century. The impact these early developments had in manufacturing promoted exploitation and creative freedom for the fashion designer in the mid-twentieth century. Cultural attitude accepted even encouraged change, pluralism and variation.

This paper will explore preservation dilemmas of problematic pieces made from synthetically produced materials held within the Costume Institute and the Brooklyn Costume collection at the Metropolitan Museum of Art. Unrestrained designers like Elsa Schiaparelli, a French couturier and Beth Levine, an American shoe designer, who took advantage of newly developed plastic materials to formulate their visions, will be used as early case studies. Comme des Garçons, a current Japanese fashion label headed by Rei Kawakubo, will provide an example of the conservation of modern fashion involving complex pattern-making and continued experimentation with man-made materials.

Conference Day 1 – Thursday 16th June

Emerging Professionals Session 1
White Hall 1, 14.20-15.40
Chair: Rachel Morley

The use of Solid-Phase Microextraction Gas Chromatography Mass Spectrometry (SPME-GC/MS) and Fourier Transform Infrared (FTIR) spectroscopy for analysis of plastic materials in historic collections: A case study of handbags in the Museum of London.

Abby Moore, Giovanni Verri, Katherine Curran

Accurate identification of plastic materials in heritage collections is challenging due to a number of factors such as the volume and range of plastic formulations present in collections, and the difficulty in visually distinguishing between different materials. Identification is becoming increasingly important as the collection of plastic materials, particularly for social history and modern art museums, continues into the 21st century.

By analysing plastic components of eight 20th century handbags from the Museum of London's handbag collection, this paper demonstrates how an emerging plastic identification technique, Solid-phase Micro-extraction Gas Chromatography Mass Spectrometry (SPME-GC/MS) can be used to complement a more established technique, Fourier Transform Infrared (FTIR) spectroscopy.

Conservation - survival strategies from the fringe

Michelle Lisa Gayle

Every year we see cuts affecting such sectors as heritage. Is it time to accept that standards of work need to adapt to resources that are available and use methods that would make some institutions toes curl? Am I on my own in believing policy should be revisited and written in regards to conservation resources available to the museum? Has increased volunteer engagement been best used to improve collections management?

Increases in collections, and awareness of collection care have increased the need for knowledge and labour. Is this is an ideal time for both ends of the work spectrum to be emerging into conservation? What if like me, you are a late arrival, via volunteering, to a specialist field like conservation? I've learnt on the job. Are there any striking advantages of employing a first class honours degree student with little practical experience over an experienced but under qualified worker?

Promoting awareness and understanding of conservation through social media at the Corning Museum of Glass

Nicole Monjeau and Natasa Krsmanovic

This abstract outlines the use of social media during a paper and photographs conservation internship. In the summer of 2015, Nicole Monjeau and Natasa Krsmanovic interned at the Corning Museum of Glass, in conjunction with West Lake Conservators. The internship focused on the treatment and preservation of stained glass cartoons by Whitefriars, a company based in London from 1834 to 1980.

Social media allowed the world to learn about the Whitefriars Collection. It provided a platform to instantaneously share details about the project, highlight the collection, and promote an awareness and understanding of conservation. The project was a large success, due in part to the overwhelming public interest in the role of the conservator within institutions. The collection received international attention, and the CMoG's social media accounts gained recognition for their conservation content. As the digital world evolves around cultural heritage, social media can be used to bring conservators into the conversation.

Conference Day 1 – Thursday 16th June

Metals Group Session 1
White Hall 2, 14.20-15.40
Chair: Nicola Emmerson

Developments in the conservation of decorative ironwork, using a large pair of 16th Century Spanish gates to illustrate treatments

Alex Coode

The restoration of decorative ironwork has historically been a low conservation priority and has been often overlooked in the past. Work has often been handed to inappropriately skilled operatives who have conducted a series of invasive and damaging treatments often compounding the existing damage as well as creating major issues for remedial repairs.

The National Heritage Ironwork Group is driving standards, awareness and training in this area, creating an environment where the craft skills of trained blacksmiths are combined with conservation principals and priorities.

The application of these principals can be seen in the work undertaken on a large pair of gates, possibly originally from Seville Cathedral, illustrating many of the conservation driven treatments involved in their restoration. This will include initial recording, clarifying their origin, materials and fixing techniques (this involved a trip to Seville). Informed by this research, examining the steps taken to complete the brief; which was to restore the gates to working order.

Current treatment trends: Do nothing or go the full hog and build a replica?

Matthew Hancock

This abstract is the study of the conservation issues of a rare mid 17th Century Dutch composite gun recovered from the sea. This gun has many conservation issues and many options as to conservation treatments.

The gun has recently been recovered from the Kent coast and is one of only 7 remaining from several hundred built.

The gun is currently in a desalination tank and is relatively stable in the tank but needs to be on display as part of the collection.

The question is should the gun be on display in a tank with no treatment and a replica built or should conservation treatment be completed to enable the gun to be displayed in a case ? The gun is made of 4 different metals and therefore there is no simple solution, but with the current t tend for minimal intervention is the tank and the replica the conservation solution. The paper will discuss and address questions in this abstract.

Turn and Face the Change: Conservation and Professional Integration

Brian Hall

The history of conservation has seen the profession move from the back rooms of museums out into the wider community. Over this time the conservation profession has seen the integration of other professions such as the conservation architect and craftsmen.

While some areas have seen an expansion of their role within the heritage sector, the conservation professional has seen budgets cut and resources dedicated to the funding of projects slashed. Assuming this trend continues budgets within museums will continue to be cut resulting in smaller museum conservation departments and more demand put upon the conservators working in private practice. As a result many emerging professionals are not currently equipped with the skills to face the requirements placed on the private sector, such as contracts, the tendering process, specifying work, undertaking project management roles, and keeping up with craft skills.

Conference Day 1 – Thursday 16th June

Heritage Science Group Session 1
White Hall 3, 14.20-15.40
Chair: Matija Strlic

Biology and conservation: Not just for wildlife and wildernesses

Sophie Downes

Heritage collections are a readily available source of nutrition for biological organisms and if conditions are favourable then infestation can quickly spread. This is particularly so in the case of the small, spore producing micro-fungi.

In order to gain a complete understand the effect of fungi on organic heritage collections, a biological approach has been taken to study the way in which the most common of these organisms interact with their substrates. The physical, chemical and mechanical impact of three fungi on 10 organic materials has been studied within the confines of a microbiology laboratory in order to determine the actual damage that might be caused by fungal colonisation.

Physical- Using confocal laser scanning fluorescence microscopy, it has been possible to duel label the live fungi and substrate to clearly see the way in which the fungal hyphae can penetrate and interact with the structure of growth media. This technique enables laser penetration of the material so that orthogonal cuts can be taken through the z-plane, giving an impression of how deeply into the substrate fungi grow. This technique is commonly employed within the field of cell biology and allows live cell imaging of the organism.

Chemical- SPME/GC-MS has been used to identify the volatile organic compounds than are released during growth on organic substrates. This technique was used in combination with a solvent extraction technique to remove metabolic products from the substrates after growth which was subsequently analysed using mass spectrometry. Enzyme assays were also conducted to determine whether the fungi selected were capable of producing the enzyme complexes necessary to digest polymer structures commonly found in heritage materials.

Mechanical- ATR-FTIR spectroscopy was used to determine whether any significant changes occurred in the structure of materials. Crystallinity indices were calculated where possible to monitor changes in the conformation of the polymer. This was used in conjunction with tensile strength testing to monitor changes in the tensile properties and energy of rupture.

This presentation will evaluate the work completed so far on understanding these three parameters of damage and the analytical techniques employed. Finally, the impact of this on the field of conservation and heritage management will be discussed and the issue of dissemination of scientific research. One of the key aims of this research is to make the findings publically available but also in an accessible format for those who will benefit conservation professionals.

Investigating the mechanical properties of historic, doped fabric aircraft

Ben Regel, Jannicke Langfeldt, Finn Giuliani, Louisa Burden, and Mary P. Ryan

Presenter: Ben Rengel

Tears are occurring in the fabric coverings of historic aircraft in the Science Museum collection. These are made from linen or cotton-based textiles, impregnated with a chemical compound called "dope", which was usually cellulose nitrate or cellulose acetate based. A PhD research collaboration is underway between the Science Museum and Imperial College London to characterise chemical changes in this material and determine the corresponding evolution of mechanical properties to inform tear repair techniques.
Modern surrogate materials are being used to evaluate techniques for analysing the aircraft in-situ on display, to aid our understanding of historic samples from the aircraft, and to develop and test repair techniques. This includes investigating the application of strain gauges, interferometry techniques and in-situ Environmental-SEM tensile testing to measure how stress is introduced and distributed by dope. The intention is to use these data on artificially-aged samples to develop appropriate models of the historic material.

Archaeology Group Session 2
Stafford Suite 1, 14.20-15.40
Chair: Helen Butler

Megalocerous Giganteus: the removal of a degraded shellac coating from fossil skeletal material using lasers

Lucie Graham ACR, Conservation Officer - Natural History, Lancashire Conservation Studios

Christopher Weeks ACR, Objects Conservator at Manx National Heritage (Isle of Man)

The Manx Museum in Douglas on the Isle of Man, houses a well-preserved giant deer specimen excavated locally 120 years ago. Familiar to generations of school children, the skeleton has been on display continually since 1900.

In common with similar specimens elsewhere, nineteenth century craftsmen had painted the skeleton with a dark wash and shellac varnish. Over time these coatings had become almost black and markedly acidic.

Gallery redevelopment has finally provided an opportunity to dismantle, study and conserve the giant deer. The discoloured varnish was successfully removed using lasers.

In the course of conservation, we have come to appreciate the skill of the original articulators, and DNA analysis is set to shed light upon outstanding questions in local geological history.

How much more can we see? The application of digital x-radiography and CT-scanning in archaeological conservation

Angela Middleton and Karla Graham ACR

Presenter: Angela Middleton

Documentation and visualisation has always played a paramount role in conservation. With advances in technology, it was not long before the conservation profession took advantage of new or improved imaging tools. Digital X-radiography equipment is becoming more and more common in labs and institutions as has access to CT scan facilities.

This paper will explore how digital recording and visualisation was used in 3 projects to unlock information and devise a conservation treatment or programme of research based on the knowledge gained from X-radiography and CT-scanning. The examples range from a Roman cremation urn containing a multitude of artefacts, to reburied archaeological wood to a concreted chain pump from a shipwreck.

Conference Day 1 – Thursday 16th June

Book & Paper and Photographic Materials Joint Session 2
Great Hall, 16.10-17.30
Chair: Cordelia Rogerson

The preservation of black and white polaroid prints: Research based on three albums from the Stanley Kubrick Archive

Ioannis Vasallos

The Stanley Kubrick Archive has a unique set of albums with Polaroid prints made during the filming of ''The Shining''; these objects are an important source for the study of the work of the acclaimed director. Research was carried out in 2012 in order to determine the cause of fading in a large number of prints from these albums. Over the course of the research, both the materials of the photographs and the albums were examined. The study and the identification of the Polaroid prints yielded interesting results that helped the decision-making process for subsequent treatments on the objects, in order to ensure their preservation and accessibility. Furthermore, issues are raised on the complexity of the nature and preservation of Polaroid prints and the need for further research on the topic. Finally, the importance of keeping the integrity of the albums is discussed.

Papers, plastics and process: the conservation of animation artwork, an interdisciplinary process

Aafke Weller, Mette Peters, Carien van Aubel

The Eye Film Museum in Amsterdam holds a unique collection of archives of Dutch animators and animation studios dating from 1910's to the present day. Besides films, photographs and documents, these archives contain 27 meters of animation artwork from the 70's, 80's and 90's; a period in which animators experimented with a wide variety of materials – both plastic foils (cells) and paper – as they developed individual working practices and techniques.

Unusual in their composition and scale, the preservation of these archives called for the combined expertise of an animation researcher, a paper conservator and a contemporary art conservator.

Initial research concerned a survey of the collection, archival research and interviews with animators and suppliers of animation materials. Because of the inherent instability of the plastic foils and the imminent loss of the knowledge still present in the memories of those involved in the production of the animation films, the urgency to take action is higher than ever.

Preserving the materiality of digital surrogates

Lisa Forman, Melissa Huddleston, Nathaniel Deines, Benjamin Lord

Presenter: Lisa Forman

Letters from the artist Joseph Cornell to an assistant, Susan de Maria, in the Getty Research Institute Special Collections are only accessible to researchers in digital format. The letters contain many types of papers in the form correspondence, mail art, ephemera and an eclectic mix of small objects. Many of the letters contain items within items, the order of which has been carefully retained by de Maria. In digital format the contents of the letters are well represented. Yet much of the material qualities of the papers are lost. This presentation will address the conservator's attempt to preserve the materiality and organization of the artist's letters and convey the experience or performance of opening the letters using traditional conservation condition report descriptions, additional photography and short video.

Conference Day 1 – Thursday 16th June

Care of Collections and Historic Interiors Joint Session 2
NG09, 16.10-17.30
Chair: Julie Phippard

Stage management: running conservation-safe experimental visitor activities in historic interiors

Kate Frame, Kathryn Hallett, Kerren Harris and Aimee Sims

Each year Historic Royal Palaces stages over 600 events across six palaces. The ambition to increase our learning offer and deliver it through experiential, performance-based activities has given rise to new risks, which in turn has led to the expansion of the conservators' repertoire of risk management techniques and the need to influence the staff and contractors charged with designing and delivering these new-style, often large-scale events.

This paper will explore the new risks that these experiential events and activities pose to the palaces' decorative historic interiors and their collections, and how they differ from the "wear and tear" caused by daily visitors. Case studies will illustrate our approaches for safeguarding from these risks - focusing on an immersive processional theatre production ('TimePlays') and an interactive multi-sensory family learning experience ('TimeQuake') - outlining strategies that have worked well and those that have needed adapting. The evolution of Historic Royal Palaces' protocols for hosting events and activities will be evaluated in response to these lessons learned.

Thoroughly Modern Militating

Vicki Marsland

Over the last ten years National Trust properties have been used increasingly as locations for filming, ranging from adverts and docudramas to high impact dramas produced both for television and feature films. A key strategy for mitigating the risks of damage to collections, interiors and building fabric while opening our doors to film crews, is to deploy conservators who have broadened their skills and knowledge to specialise as filming project conservators. This illustrates how being an effective advocate for conservation is now as much about managing people relationships as it is about developing technical expertise. This presentation will describe the evolving role and ingenuity of filming project conservators in the Trust in managing effectively the risks associated with a 60 to 200+ strong film crew and enabling them to do their job, whilst upholding museum standards of collections care and enabling properties to earn their keep.

Eyemat: protecting vulnerable floor surfaces; performance and proliferation

Sandra Howe & Charlotte Owen

In the last decade Eyemat technology has been introduced into historic houses as a means of protecting vulnerable floor surfaces whilst maintaining the visual continuity of the existing floor design. The technology has grown to include the reproduction of a variety of different types of floor surfaces and wall coverings not only in historic houses but also carriages, chapels and colleges.

Although the high quality photographic reproduction produced by the Eyemat is convincing, there have been issues related to its manufacture which includes colour rendition, the physical interaction between the original surface and the Eyemat, potential creep and methods of restrain (particularly when used within a significant historic environment where minimum intervention and reversibility is non-negotiable) and their durability in areas of high visitor footfall.

As Eyemats begin to appear throughout the National Trust and other institutions it is an appropriate time to discuss their suitability, permanence, cost effectiveness, maintenance and overall appearance for different interiors, and their performance both visually and practically within the historic environment.

Joining in: Documenting the historic interior on collections management systems

Christine Leback Sitwell

Collections Management Systems are well established for the documentation of objects in museums and heritage organisations in terms of curatorial and conservation information. However, the conservation documentation for interiors with regard to fixtures, fittings, architectural elements and paint schemes is less developed. The complexity of recording multiple aspects of an element which is part of the historic interior creates numerous challenges. In addition, how does this information provide a cross reference to the building section which is responsible for maintenance and documentation? The National Trust has been tackling this problem and this paper will discuss our progress to date in attempting to capture information related to decorative schemes not only in terms of paint analysis, curatorial information, conservation treatment or redecoration but also the importance of the documentation as a reference for noting increased wear and tear on the interior due to increased access and visitor numbers.

Conference Day 1 – Thursday 16th June

Textile Group Session 2
Stafford Suite 2, 16.10-17.30
Chair: Leanne Tonkin

Hanging by a molecular thread: Exploring the strength of historic wool proteins in Tudor tapestries

Nanette Kissi, Katherine Curran, Constantina Vlachou-Mogire

Presenter: Nanette Kissi

The complex light, thermal, and humidity-related processes resulting in fibre degradation put hung historic tapestries at a risk of mechanical failure making condition assessments a challenge. Studies have used size exclusion chromatography (SEC) and tensile strength to infer the mechanical strength properties of historic silk potentially highlighting this risk. Investigations with historic wool degradation however, remain limited. Within this research, sacrificial wool threads from a collection of historic tapestry repair samples at Hampton Court Palace are analysed using a range of methods including keratin reduction, SEC and Fourier transform infrared spectroscopy. The extracted keratin molecular information and multivariate data analysis will be incorporated into a previously developed non-invasive tool for condition assessment based on near infrared (NIR) spectroscopic analysis and the tensile properties of historic wool. Using NIR as a non-invasive tool, conservators may be able to assess the condition of wool fibres in historic tapestries providing valuable information to support the prioritisation of future treatment.

Blurred Lines: Conservation of costume/ restoration of aesthetic. Costumes from the 'Golden Age of Hollywood' exhibition

Tess Evans ACR

Webster's New Collegiate Dictionary (1975) defines restoration as, "a bringing back to a former position or condition." In restoring an art object, the most important requirement is the final appearance. The client and restorer determine the most desirable period of an object's life; and the restorer does whatever is necessary to return the object's appearance to that period.

In conservation however, the absolute maximum amount of the original material, in as unaltered a condition as possible, is preserved. Conserving an object means the object dictates all choices on how it is treated. Conservation does not involve artistic choices or material experimentation on the object. As far as possible all repairs or additions must be reversible and removable without affecting the condition of the original material now, and in the future.

This presentation showcases the conservation of a private collection of Hollywood costumes for the 'Costumes from the Golden Age of Hollywood' exhibition, Museum of Brisbane 2014-2015. As a goal of the project was to recreate the splendor of the costumes in their prime, it was necessary to blur the lines between conservation and restoration, by ethically conserving the garments, whilst restoring the aesthetic.

Crowd-sourcing conservation

Wendy Hickson

Presenter: Janie Lightfoot

Using the case study of The Country Wife, a 4.5m x 5m stumpwork and appliquéd embroidered mural designed by Constance Howard and made by her and her students at Goldsmiths College for the Festival of Britain in 1951, this paper reviews the challenges and rewards of using teams of conservation volunteers. Following the failure to secure sufficient funding for its conservation by both the National Federation of Women's Institutes (who housed the mural from 1951 – 2009) and Goldsmiths, Linda Connell of the National Needlework Archive accepted the project and appointed Alison Lister and Janie Lightfoot as conservation consultants in 2009. Drawing on her experiences as the on-site conservator over the last 3 years the author considers some of the practical and conceptual issues her and her team of volunteers are facing in stabilising and mounting a large, complex, mixed media embroidery on a limited budget. The paper explores some of the problems confronted and the creative solutions employed, from working in an improvised studio in view of the public to training every volunteer to question the impact of their actions and respect conservation ethics.

The power of two: uniting chemical and historical research of the 19th c. early synthetic dyes for conservation

Dr Anita Quye

Dye analysis is a common conservation request for coloured 19th c. textiles, especially if purple, magenta or a bright hue. Is the dye a synthetic with known poor fastness? Does it fit the artefact's date or help with dating?

General modern literature raises expectations that these are easy questions for the dye analyst to answer by offering one signature chemical structure for a named dye and date of first appearance.

However, a systematic analytical study of 19th c. dyeing manuals and dyed references by ultra-high performance liquid chromatography says otherwise. Similarly, the historical literature of 19th c. dye chemists, manufacturers and dyers reveals a complex chemical and industrial picture of different synthetic routes to the 'same' dye, confusing names, and time lag from discovery to commerce.

Effective conservation for historical synthetic dyes therefore calls for interpreting modern analysis with past manufacturing insight.

Conference Day 1 – Thursday 16th June

Emerging Professionals – Conservation Standards Session 2
White Hall 1, 16.10-17.30
Chair: Rachel Morley

Conservation standards – challenge or opportunity?

David Leigh

Conservation standards continue to excite little interest among Icon members and not a little hostility. Although we rely on non-conservation BSI standards in our personal lives, we have been reticent to apply similar standards to our own professional practice. This paper reflects on ten years' development of conservation standards and anticipates the next ten.

Conservation architects rely on regulations and standards, for instance BS 7913 Guide to the conservation of historic buildings; and archivists have been using BS 5454 for sixteen years. More recently, a range of moveable heritage standards have been developed. Whilst Icon has itself has set standards of individual practice, as adjunct to its Code of Conduct, these new BSI standards are complementary to those, providing guidance on the nitty-gritty of the conservation process.

It will be argued that Icon needs more actively to promote these standards because they are likely to underlie future definitions of professionalism.

Professional Standards: Supporting CPD & Best Practise

Pierrette Squires and Jacqui Hyman

This paper will illustrate how professional standards practically fit into the day to day working life of a conservator. A range of professional standards likely to be encountered in conservation and museums will be briefly introduced.

Focusing the talk on Icon's standards, Pierrette Squires will present case studies from both the public and private sectors to demonstrate how following professional standards are implemented and how this enables conservators to achieve best practise & meet requirements of PACR.

Using standards to support decision making in relation to the impact of building works

Deborah Cane ACR, Collections Care Manager, Birmingham Museums Trust

Although there are no specific standards for the impact of dust and vibration from building works on historic artefacts during demolition and build phases, there is a plethora of data within the heritage sector that can be shared to advise on setting guidelines. This presentation will describe how this shared knowledge has been put to use to support discussions with corporate infrastructure companies such as Carillion and HS2. It will also highlight how conservation standards and ethics back up the decision making process.

Conference Day 1 – Thursday 16th June

Metals Group Session 2
White Hall 2, 16.10-17.30
Chair: Nicola Emmerson

Conservation of Polychrome Outdoor Painted Metal Sculptures in Taiwan: Test for Ju Ming's Living World Series – Armed Forces

Chun-Hao Wang

The Juming Museum is not only one of the important museum in Taiwan but also the largest outdoor museum in Asia so far. Due to the subtropical zone climate of Taiwan is hot and damp, polychrome painted metal sculptures are subjected to the outdoor environment, which makes conservation a truly difficult task. Paint layers on painted metal sculptures in the natural environment are susceptible degradation by sunlight, rainwater and aerial contaminant, damages in the paint layers not only are the problem of aesthetics but let the metal structure underneath to corrode easily.

Living World Series-Armed Forces by Ju Ming was selected as a case study. In order to investigate the possibilities of protect the original outer layer and enhance the weatherability of retouching material to addressing local damages, this study selected two types of paint systems after literature survey and consultation with the artist, paint industry, professional painters, and conservators, and also selected three types of light stabilizers, UV absorbers (Benzotriazole,BTA) and hindered amine light stabilizers(HALS), were added to the paint in different types and mixed formulation. After accelerated aging test (QUV), variations in the properties of the paint were measured. The results of experiments showed that the best one against weathering performances was the Paraloid®B-48N or two-component polyurethane ester paint containing 2%(wt/wt) BTA and HALS.

An investigation into commercial silver cleaning products

Katie Snow

In order to maintain the bright appearance of silver objects on display, the Museum of London conservators use a range of products including commercial abrasive cleaner Goddard's Foaming Silver Polish™ to remove tarnish. However, this product is being replaced by a new, untested product so a study was devised to find a suitable product to replace it.

Eight products were tested on sterling silver tokens with the aim of assessing the following: whether the product removed tarnish; how abrasive the product was; how quickly it worked and how rapidly the object would re-tarnish. The number of scratches visible per 5mm² under 50x magnification were counted after cleaning for one minute with each product, and a set of pre-tarnished tokens were used to assess time taken to remove tarnish.

A number of products were identified which could safely be used on museum objects. However, the results were in some cases surprising.

Peggy: schooner rigged and rakish – the conservation of an 18th century yacht

Christopher Weeks

The clinker-built Manx yacht Peggy is an exceedingly important survival from the Napoleonic era. Immured in a cellar for 140 years, she remains very well-preserved, but was subject to occasional tidal flooding. Following six years of preparatory work she was removed to a conservation facility in Douglas, in 2015. This paper will illustrate her colourful life and explore the technical challenge of preserving her timbers, paint, and chloride-contaminated iron fixings.

Conference Day 1 – Thursday 16th June

Heritage Science Group Session 2
White Hall 3, 16.10-17.30
Chair: David Howell

Do we need conservation heating in summer? Evaluating the use of climate analysis tools to answer a practical question

Nigel Blades

Many historic house organisations, the National Trust included, use conservation heating as their main form of environmental control. Heating is enabled 365 days per year to maintain a stable relative humidity. In summer, heating will operate on warm humid days, often making conditions uncomfortable for visitors and leading to high energy consumption. Is summer heating really beneficial for collections care? The presentation will explore this question through the application of climate data analysis tools that have been developed by researchers to assess physical, biological and chemical modes of deterioration. The output from the analytical tools will be critically evaluated and compared with other evidence including condition reports and conservators' observations and experience. The benefits and limitations of using climate data analysis in practical conservation decision-making will be discussed.

The application of winter statue covers for historic marble monuments

Melanie Keable, David Thickett, Matija Strlic

Presenter: Melanie Keable

The action of rainfall and pollutant leads to the roughening of marble surfaces and areas of localised erosion primarily through the process of dissolution. Winter statue covers attempt to protect marble statues during UK winter conditions. This project aims to provide a framework in which the decision to deploy winter sculpture covers can be taken. Environmental data under four cover types and continuing condition mapping of identical marble sculptures undertaken at Brodsworth Hall, Doncaster has fed into the optimisation of cover designs. Analytical investigation using SEM analysis, 3D microscopy, loss of gloss and ultrasonic velocity measurements is being undertaken on marble samples. The samples are being exposed at Brodsworth Hall and under simulated rainfall and high RH conditions, allowing for assessment of deterioration rates for covered and uncovered marble surfaces. The environmental data and analytical investigations will be combined to produce a dose response function for the deterioration of marble.

Uncertainty of Damage Functions in Preventive Conservation of Collections

Puja Bharadia and Tom Fearn

Presenter: Puja Bharadia

Damage functions are models that attempt to predict the levels of variables that cause unacceptable change (damage). Artificial ageing techniques can be used to develop these models. Applying these models to a natural ageing process can therefore contain uncertainty. Using historic paper as case study, a damage function will be derived using design of experiment principles and artificial ageing. Colour change (ΔE 2000) will be assigned as the damage variable and relative humidity, temperature and illuminance as explanatory variables. Using multiple linear regression, interaction effects in the explanatory variables can result in different model outcomes, the model fit will be explored using different terms. The uncertainty of the damage function, applied to natural ageing, can be described by the confidence and prediction levels to aid decision-making in preventive conservation.

Conference Day 2 – Friday 17th June

Heritage Science Group Session 3
Stafford Suite 1, 9.30-10.50
Chair: Anita Quye

Zinc white: A preliminary study of fluorescence of pigment particles as they change with degradative processes

Vanessa Johnson, Charis Theodorakopoulos, Justin Perry, Jane Colbourne

Presenter: Vanessa Johnson

Artworks containing zinc oxide pigments typically experience degradation related to the material's photocatalytic properties, resulting in metal soap formation in oil paintings as well as hydrogen peroxide formation and efflorescence in both works of art on paper and oil paintings. Zinc oxide pigments are also characterised by varied UV fluorescence, which is linked to differences in production and degradation.

Previous studies suggest that zinc oxide's unique and varied UV fluorescence can be employed to develop a method to glean information from watercolours regarding the pigment's origin, composition, and photocatalytic behaviour.

This study explores the possibilities and implications of such a method by examining representative ZnO watercolour pigments manufactured by a range of traditional methods and processed according to historical recipes. The study extends to accelerated aging by light cycles and then monitoring degradation and UV fluorescence with a range of analytical tools such as multispectral imaging, UV/VIS and fluorescence spectrophotometry as well as crystallography.

Scientific characterisation of Islamic paper

Hend Mahgoub, Dirk Lichtblau, Matija Strlic

Presenter: Hend Mahgoub

Paper has been one of the most important supports for information transfer between generations and cultures. Since its invention in China (105AD), its material characteristics changed as the knowledge of papermaking craft travelled from the East to the West. Due to the distinct different cultural and natural environments, a variety of raw materials and techniques were used in papermaking which impart unique properties to paper produced in different geographic and cultural regions.

In contrast to European paper, we have relatively little scientific information about Islamic paper despite its cultural value.

This research introduces a new non-destructive spectroscopic methodology for characterization and surveying of Islamic paper based on Near Infrared (NIR) Spectroscopy. A substantial collection of Islamic papers has been characterized using both traditional methods of material analysis and NIR, specifically focusing at paper polish, presence of starch, acidity and degree of polymerization of cellulose in paper.

If the novel technique is applied across paper collections, it could be used to systematically develop evidence-based preservation policies in Islamic libraries and archives.

Fingerprints and white gloves: what are we doing to our documents?

Terry Kent

Developing new chemical and physical forensic techniques for fingerprint detection required a better understanding of the chemistry of typical latent fingerprint deposits. Internationally coordinated research has provided a detailed breakdown of the hundreds of amino acids, fatty acids, salts and other components. Whilst individual single finger deposits may only be of the order of 5 micrograms repeated handling will result in significant levels of contamination.

Handling policies in some museums and other institutions appears to have been formulated on the basis of reports that fingerprints are 98% water. In reality, although eccrine glands secrete significant quantities of water most of this evaporates or is reabsorbed, it is not the major component of a latent fingerprint deposit and organic residues are present that in time can cause darkening and irreversible effects to paper and other surfaces.

Conference Day 2 – Friday 17th June

Book & Paper and Photographic Materials Session 3
Great Hall, 9.30-10.50
Chair: Fiona McLees

Dealing with large collections: prioritise, optimise… and conserve?

Louise O'Connor, Elodie Lévêque & Gabrielle Vergnoux

Presenters: Louise O'Connor, Elodie Lévêque

Finding compromises in conservation is necessary when dealing with a large number of items. This means difficult choices for conservators who value preservation and are always tempted to try and save everything.

Intuitively we direct our resources towards the most 'vulnerable'; such as single objects of high value which are likely to be lost without the conservator's attention. But "He who defends everything, defends nothing" (Frederick the Great).

Digitisation and exhibition schedules, budget, space and staff restrictions have further limited conservation options at the National Library of Ireland. This directly impacts the conservation treatments of large collections. Recent conservation planning has therefore focused on offering flexible approaches to prioritising and optimising preservation and conservation actions. This paper will overview some approaches across several NLI collections.

A large scale challenge!

Rowena Doughty

The challenges of conserving 41 tightly rolled, full sized designs of stained glass windows by the artist and designer Reginald Hallward, which consist of pencil, charcoal and colour pigment on thick woven fragile paper.

This involved research into various supports that can hold tears ranging from 3cm to 3m, an adhesive strong enough to hold the support in place that was flexible with a minimal moisture content to prevent tide marks and the addition of moisture to the paper. Also the techniques tested and used to apply the support and adhesive, and lastly the storage and production methods used to ensure their safe handling.

Some of the techniques and materials used are a result of research into disciplines other to my own, such as art works on paper, painting conservation and digital preservation that have been adapted to resolve the complex challenges this project entailed.

Using Eularian video magnification to discover movement in objects

Karen L. Pavelka, Ayshea Khan

Eularian Video Magnification (EVM), an analytical technique initially developed for use in the medical field, can be adapted in conservation for enhanced examination of cultural heritage objects. By amplifying subtle variations in the video signal, EVM reveals movement invisible to the unaided eye. Funded by the National Center for Preservation Technology and Training, our study systematically employs EVM to film paper and other materials as they are exposed to fluctuating relative humidity. Preliminary work has revealed unexpected movements and previously unseen stresses within the paper structure. A video is posted at http://youtu.be/VJJ_x7kfk2Q

We are creating a library of videos that will be shared with the conservation community. A primary goal is to develop a protocol that requires only inexpensive and easily available equipment as well as minimal involvement of a computer programmer. Massachusetts Institute for Technology (MIT) released the EVM software open-source.

Conference Day 2 – Friday 17th June

Education & Training Group Session 1
Stafford Suite 2, 9.30-10.50
Chair: Susan Bradshaw

Looking outwards as well as inwards, and putting the personal into the conservation professional

Katy Lithgow

What are the skills conservators will need to remain relevant to the needs of the cultural heritage sector? Speaking from over 10 years' experience of PACR accreditation, and leading collections conservation in the National Trust, I will reflect on how professional accreditation and the growing visitor attraction business have added business, risk management, communication and training skills to the technical knowledge and experience required by the conservation professional. I will argue that, to remain relevant, the profession needs to develop the scientific paradigm that has governed it for over half a century, to embrace an external focus which benefits people as much as materials. It means changing expectations to work through others as much as doing the work yourself, and developing professional judgement as much as technical knowledge, to enable the cultural heritage business to pursue a strategy of growth without trashing the asset.

The next generation: The conservator's role in collection management

Anna E Bülow, Janien Kemp, Agnes W Brokerhof

Presenter: Anna E Bülow

The increased demand for objects and their information for exhibitions, loans and digitisation, triggered by technical developments and globalisation, has put increased pressure on organisations. This, in combination with diminishing resources, requires a more strategic approach to collection management. While organisations may outsource technical skills to freelance conservators, in-house conservators need to think both analytically and systematically to prioritize the work. As an example of the necessary skill set the authors refer to work carried out at the Amsterdam City Archives and the British Museum. Both organisations continue to prepare objects for use, display and storage through conservation treatment. Managing such large collections holistically requires a structured approach. For this they applied the Value Management methodology as developed by the Cultural Heritage Agency of the Netherlands. This method requires consultation with all stakeholders. In order to fully function in these groups, conservators need to bring technical expertise, strategic thinking, a good awareness of institutional aims, and social skills to the table.

The RCS Collections Review: Towards better collections and conservation management

Beth Astridge

Our presentation will introduce the pan-domain collections review taking place at the Royal College of Surgeons of England museums, archives and library. The collections review process is fundamental to the development of good collections management plans. It involves consideration of the significance of collections alongside a review of collections management practices. It enables analysis of strengths and weaknesses in collections care and management, identification of the most significant collections and assessment of their usage. The significance assessment aspect is used to focus on targeted questions about collections. Both parts feed directly into the collections management planning process enabling the prioritisation of resources to where they are needed most. The collections review and significance assessment process has helped us to understand our collections better and make more effective collections management decisions. We will explore how you can apply the same methodology to the effective preparation of conservation management plans and the management of other heritage assets.

Conference Day 2 – Friday 17th June

Documentation Network Session 1
White Hall 1, 9.30-10.50
Chair: Jennifer Marchant

Toward a national documentation strategy: the role of the Icon Documentation Network

Athanasios Velios

Conservation work is undertaken in a range of organisations and by many professionals. Their output varies and the resulting records also vary. While the collective knowledge generated is significant, it is currently impossible to use because of the lack of resource integration. While standardisation and integration at system level is impossible (i.e. software incompatibility) generating a single point of access for querying such systems is possible. Previous work in cultural heritage integration has resulted robust methods of expressing records as standardised concepts and relationships through the use of domain ontologies. This paper will provide examples of how one ontology (CIDOC-CRM) can be used in this way.

This paper will also outline the role of the Icon Documentation Group in supporting the profession towards this goal with a number of activities including the compilation of a library of documentation forms, the development of visual thesauri and the formulation of guidelines for best practice.

The issue of documentation

Dr Clare Finn

Why do conservators do documentation? Collection management systems used around the world all seem to treat conservation data differently. What is and what is not working from the conservators' point of view. To answer this we need to identify the varying purposes documentation is carried out for in both institutional and the private sectors. As well as the levels of possibility, that is the circumstances in which items are viewed and hence the amount of data one might be expected to gather. Having clarified this certain formats in which might best be achieved be looked at, as well as how that information may be received by our service users.

Development of the Northumbria University art, materials and conservation research archive

Charis Theodorakopoulos, Jane Colbourne.
Presenter: Charis Theodorakopoulos

Archive material and collections have been important aspect of contextualizing teaching and research at Northumbria University for several decades.

Significant collections comprise of early and mid-twentieth century British and European works of art including diaries and sketch books. The archive includes artist's materials, organic dyes, pigments, mediums, adhesives, European and Oriental paper supports, frames and frame components, several of which date back to the mid-eighteenth century. Documentation and analytical outputs of historic materials, multispectral images and actual samples of resin embedded fibres and paint cross-sections also forms part of this comprehensive archive.

The material is currently accessible to student and scholars but availability is impeded by physical access and reliance on staff supervision. Our concerns are these valuable resources are underused because: a) there are no accessible electronic records currently available; b) only selective photographs of individual artists' work exist whilst other noteworthy items are unrecorded; and c) it is not linked to other heritage and educational networks. We anticipate that Northumbria University is just one amongst many organizations with similar issues.

The aim of this discourse is to make this collection available to a wider audience using contemporary data integration methodologies, which will offer efficiency in locating information and facilitating future research and enterprise.

Conference Day 2 – Friday 17th June

Scotland Group Session 1
White Hall 2, 9.30-10.50
Chair: Rob Thomson

'Unity is Strength' – Rediscovering Glasgow's union and community banners at Maryhill Stores: a cross-disciplinary documentation and engagement project

Helen Murdina Hughes and Lauren Palmer

Glasgow Museums provides a home for a wonderful but little-documented collection of banners, dating from early precursors of trade union groups to modern disputes and peace protests, charting the history of the City's social conscience. Many of these banners have been kept at Maryhill Stores: a series of old industrial units with basic climatic controls, a skeleton staff and limited access. The arrival of a new 'decant and inventory' project team offered an opportunity to change this. The banners project became an invaluable opportunity for cross-disciplinary working, with Conservators, Documentation, Photographers and Students collaborating to create integrated inventories and condition assessments. The work also helped facilitate another concurrent project, 'Banner Tales', which took event-specific banners back into the communities that created them, inspiring collection engagement around Glasgow.

Boys' club to museum display: Conserving the Dundee Burns Club banner

Rebecca Jackson-Hunt

This paper describes the collaborative conservation of a silk banner donated to the McManus by Dundee Burns club. The banner was used at the unveiling of the Burns Statue outside the McManus in 1880, an event that attracted an estimated crowd of 40,000 people, a third of Dundee's population.

The poor condition of the banner meant that it required conservation in order to be displayed. The museum employs only one conservator, trained in objects, and resources for external conservation were not available. A plan was therefore devised to employ an accredited textiles conservator to act as a consultant and supervisor for the objects conservator.

The project was funded through the Museums Galleries Scotland small grants scheme, and offered links with the Dundee Burns Club and partnership working and skills development for the objects conservator. It raised the profile of conservation within the museum and allowed this important object to be displayed.

Collections environment standards: useful or obstructive?

Isobel Griffin

How can collections environment standards such as PAS 198 and PD 5454 practically help us in informing decision-making? This paper will discuss whether standards are too prescriptive, or too vague, and will use experiences from the National Library of Scotland to focus on two particular areas: the world of exhibition loans, where requirements still vary between organisations despite the 2014 IIC and ICOM-CC Declaration and the guidelines issued by various groups; and the preservation of film, which is informed by detailed research predicting the effect of the environment upon the lifetime of film collections. Finally, with ambitious targets for reductions in carbon dioxide emissions lying ahead, the paper will ask where we go from here. Is there room for further relaxation of target temperature and Relative Humidity values? And if the rate of change is just as important as the absolute values, how can we measure and control it?

Heroic shipmates: The importance of developing educational outreach programmes in ship model conservation

Davina Kuh Jakobi and Glen Smith
Presenter: Davina Kuh Jakobi

Ship models are found within a wide variety of institutional collections around the world. These complex objects incorporate a number of different materials, and may therefore be considered a technical challenge to conserve, with conservation treatments often requiring specialist knowledge and cross-disciplinary collaboration. However, a distinct lack of specialists mean that it is imperative that existing ship model conservators strive to cultivate inter-museum and multidisciplinary relationships to promote understanding of ship model conservation.

Over the past year, several initiatives have been developed by conservators at the Rijksmuseum and the National Maritime Museum, Greenwich, surrounding ship model conservation. Using these initiatives and the resulting programmes as the lens for this discussion, this presentation will illustrate the importance of collaborative working in conservation to preserve, conserve, and research ship models. Additionally, the importance of collaborative professional educational outreach programmes to disseminate the specialised knowledge of ship model conservation will be discussed.

Conference Day 2 – Friday 17th June

Stone & Wall Paintings Session 1
White Hall 3, 9.30-10.50
Chair: Lizzie Woolley

Victor and longevity: New approaches to conserving Maclise's wall painting of Waterloo and Trafalgar in the House of Lords

Caroline Babington

The subject of my talk is the proposed conservation of two of Maclise's magnificent wall paintings in the House of Lords, and our recent research partnership with Cologne University of Applied Sciences. The paintings are monumental, both measuring around 50m2, and were painted in Waterglass technique on plaster. Painted between 1859 and 1865, both works have a long history of restoration, and we are now planning a rather new approach to their treatment and care. There had been a sense from early on that Maclise's painting technique had somehow failed, affecting the appearance of the works. In fact pollution, heavy-handed restoration and applied coatings seem far more to blame. Recent research and tests however indicate that the presentation of the paintings can be significantly improved and we now plan a combined approach of lighting and treatment. Innovative LED technology transforms what is possible, and our proposed approach uses lighting almost as a conservation tool.

New uses for modern materials in stone conservation

David Odgers

Stone conservation treatments tend to use tried and tested materials. This paper will propose that the research and development that has gone into new materials for other parts of the construction industry could be harnessed for use in conservation. Examples of use of carbon fibres, Kevlar, protruded basalt and others will be shown.

The strategic stone study

Clara Willett

In conservation work, it is vital to obtain stone which matches the original in its mineral composition, density and porosity. If not, the new stone could hasten the decay of the original and is unlikely to weather in the same way, therefore looking very different.

However most of the original quarries have closed and detailed information on the different types of stone used is difficult to find. This means that it can be extremely challenging to find suitable alternatives.

The Strategic Stone Study (SSS) project aims to address these problems by identifying the most important building stones used, their historic and current sources and representative buildings.

For the first time, this information is freely available as a single resource, through a web portal that contains a searchable GIS map, spreadsheets and county atlases, located at: http://www.bgs.ac.uk/mineralsuk/buildingStones/StrategicStoneStudy/HE_project.html

Commissioned by Historic England (HE) , the project involves the British Geological Survey (BGS) and geological consultants to provide the national and local expertise.

This resource is available to all concerned in safeguarding the built heritage, as well as providing guidance for those who need to source appropriate stones to repair existing buildings and for new projects in sensitive areas.

The SSS is currently 80% complete and work continues to provide nationwide coverage.

Conference Day 2 – Friday 17th June

Care of Collections & Historic Interiors
Joint Session 3
NG09, 9.30-10.50
Chair: Christine Sitwell

The Cumberland Art Gallery: a collaborative approach to designing an art gallery within an historic interior

Kerren Harris, Rebecca Rees

Hampton Court Palace has always had a tradition of displaying great art, often in its original historic setting, to help tell the Palace's stories.

In 2013-14 we undertook a re-development project to upgrade a suite of historic 18th Century rooms at the heart of the Palace with the purpose of displaying major Royal Collection artwork.

This paper will explore how we were able to keep conservation at the core of this project throughout without compromising either the historic architectural integrity of the rooms or the overall design vision.

It will look at how, by keeping conservation as the main focus of the reinterpretation plan, we have been able to make innovative use of both traditional building techniques and cutting edge technologies to achieve an end result that is sympathetic to its historic setting whilst protecting our collections.

Striking a sustainable balance: conservation and presentation in a working Royal Residence

Lizzie Keay, Jennifer Wideson

In a working Royal Residence and home, the highest levels of presentation are essential. Using recognised conservation standards and considering the requirements of the organisation, and that of the conservation professional, we will discuss how we are working to achieve a sustainable balance in the care of a working collection and interior.

The care provided for the Collection needs to enable the historic settings to be presented the expected standard. In aligning processes across multiple sites there must be an emphasis both on organisational requirements and the durability of our recommendations.

The introduction of a Light Blocking Policy and Cleaning Frequency Programme are examples of how we are striving to strike the balance needed to preserve a working collection whilst maintaining its core function; demonstrating the importance of working collaboratively with flexibility and understanding to influence the policies and practises of an organisation.

Guidelines for cleaners and property managers at the Swedish State Property Board

Lisa Nilsen and Catharina Nordenstedt

Presenters: Lisa Nilsen

The Swedish State Property Board (SFV) is responsible for the care and administration of 1800 properties owned collectively by the Swedish people, including 300 listed historic houses.

Leases and contracts for tenancy are managed by SFV but cleaning staff are hired by the tenant, often employing firms with little or no knowledge of historic interiors. The risks are clear – floors could be destroyed by inappropriate cleaning methods and decorative details damaged. Activities such as press conferences, filming and corporate events also cause concern.

To mitigate risks, SFV contracted a preventive conservator, and organised a series of seminars with property managers. This was combined with fully illustrated housekeeping guidelines, highlighting preventive and low-cost methods. An effort was made to explain cleaning methods plainly, avoiding technical conservation language.

This presentation explains how the work was organised, including pilot programs involving the cleaners and a review of guidelines and workshops. A questionnaire about the impact of the guidelines completed the project.

Forever, for everyone: extended opening and collections care in the National Trust

Amy Foulds and Victoria Witty

As the National Trust is extending opening hours, individual properties are facing the challenge of conserving historic interiors and collections while maintaining and improving visitors' experience.

With the loss of the traditional closed days and winter season combined with the increase in visitor footfall, conservation teams are having to adapt working procedures and creatively manage preventive conservation to maintain stable conditions and arrest deterioration. Whilst the increased risk of accidental damage, dust and light exposure levels will inevitably have an effect, the conservation team at Standen are trying a number of ways to combat these issues.

These include making use of new developments in equipment and research, moving vulnerable objects and changing the visitor offer to allow more time for conservation work. The lessons learned from this project in its early stages can be built upon in the coming years and applied across the sector.

Conference Day 2 – Friday 17th June

Heritage Science Group Session 4
Stafford Suite 1, 11.20-12.40
Chair: Siobhan Watts

How is the profession using new technologies, techniques and science? Current and potential uses of 3D printing in the profession: looking at the suitability of plastics

Gabrielle Flexer and Nigel Larkin.
Additional testing by Julian Carter

Presenter: Gabrielle Flexer

3D printing is not new to conservation, however typically up until now uses have stopped short of 3D printed materials being used directly with objects. Due to the lack of knowledge on the long term stability of 3D printed materials, conservators feel safer using more traditional materials when the situation calls for direct object contact/ interaction.

This adds additional lengthy steps to what could be a streamlined method for replacement of missing areas, production of replica objects or custom made mounts.

Launching from a project to conserve a deteriorating pair of George Best's football boots a range of 3D plastics have been Oddy tested to determine their suitability for long

term display with objects. Further testing is currently being undertaken, both to understand the deterioration of the plastics and also their effect on materials through artificial aging by UV. We would like to open the discussion on the use of 3D printed materials with objects by sharing our results from these tests.

Application of ventilation rate measurements using CO2 as a tracer gas in historic buildings

Lisa McCulloch and Nigel Blades
Presenter: Lisa McCulloch

Ventilation rate measurements are frequently used in the building sector to establish building characteristics such as heat loss or air exchange. This procedure has since been adapted to the heritage sector for measuring the air change rate of showcases and to a lesser extent that of historic spaces. Often these measurements are just for one specific time period however at Blickling Hall there has been the opportunity to continuously monitor CO2 levels for a year using the CO2 produced by visitors as the tracer gas. Using this large amount of data it will be possible to establish how the calculations are impacted by factors such as the external weather conditions or number of visitors. This research will evaluate the ventilation rate measuring procedure and highlight some of the adaptations needed when working in historic spaces and inform a method of best practice for ventilation rate calculations in historic buildings.

Cast in a new light: Surface Shape Studies of Paul Gaugin's Transfer Drawings

Mary Broadway, Northwestern University
With research and development collaboration from:
Oliver Cossairt, Northwestern University
Jack Tumblin, Northwestern University
Xiang Huang, Northwestern University
Harriet Stratis, Art Institute of Chicago
Dale Kronkright, Georgia O'Keefe Museum
Eric Doehne, Scripps College
Marc Walton, NU-ACCESS
Nathan Matsuda, Northwestern University
Aggles Katsaggelos, Northwestern University
Presenter: Mary Broadway

Starting in the 1890s the artist Paul Gauguin (1848-1903) created a series of prints and transfer drawings using techniques that are not entirely understood. To better understand the artist's production methods, conservators from the Art Institute of Chicago and computer scientists from Northwestern University adapted the principles of photometric stereo to assess the surface shape of a number of these graphic works that are now in the Institute's collection. Photometric stereo uses multiple images of these works captured from a fixed camera position, lit from multiple specific angles to create an interactive composite image that reveals textural characteristics. These dynamic images reveal details of sequential media application upon experimental printing matrices that help resolve longstanding art historical questions about the evolution of Gauguin's printing techniques. This study promotes the use of photometric stereo to capitalize on the increasing popularity of Reflectance Transformation Imaging (RTI) among conservators in the world's leading museums.

Conference Day 2 – Friday 17th June

Book & Paper and Photographic Materials Joint Group Session 4
Great Hall, 11.20-12.40
Chair: Sonja Schwoll

The conservation of the Exiccata Collection at the Royal Botanic Gardens, Kew: practical treatment techniques for bound herbia

Sarai Vardi

An exsiccata is a bound volume which contains dried and pressed plant specimens mounted to the pages, usually arranged in a theme. Kew's collection dates back to the 18th century and is made up of a wide range of different bindings, housing various botanic specimens from around the world.

This paper will discuss the issues concerning the conservation of this bound herbaria collection. Particular focus will be paid to the various historic mounting techniques used to attach plant specimens to the pages, and the subsequent consequences to the stability of the specimens. The historic pesticides used on the botanic material and their side effects will also be covered.

Through discussions with botanic conservators, curators of natural history collections and other botanic institutes, various treatment options were developed for reattaching loose or lifting specimens to the pages of a book. The binding conservation also had to be adjusted to allow for the fragile material within the pages.

This interdisciplinary project required an amalgamation of book, paper and botanic conservation techniques. Although primarily a social history collection, the Exsiccatae were treated with the view that they could still be used as a scientific resource, meaning that preservation of the DNA of the plant specimens had to be taken into consideration.

Miniturization: A new day and new tools for the paper conservator

Ted Stanley

This paper highlights the practical application of miniaturized noninvasive spectroscopic instrumentation in paper conservation. This new technology for the bench conservator replaces the old invasive chemical and microscopical approaches to identifying materials for research and testing in the conservation laboratory.

Paper conservation covers a wide range of organic materials such as adhesives, resins, dyes and polymers as well as inorganics found mostly in inks and pigments. Fourier transform infrared spectroscopy (FTIR) is very flexible in this regard as it can be used to analyse both organic and inorganic materials.

The paper will study two instances where FTIR performed well in helping to research and identify materials comprising a unique late sixteenth century erasable notebook bound in Antwerp and a rare mid-sixteenth century polychrome Aztec map on deerskin. The paper will also briefly review the treatment case study of a severely discoloured early nineteenth century watercolour in which it was important to accurately identify the pigments to form a satisfactory and safe approach for a complex treatment.

Multiple skills required! A book and paper conservator's approach to the treatment of a 20th century photographic album

Françoise Richard

The Knox Shaw photographic album gathers photographs of students from Sidney Sussex College, Cambridge, along with manuscript notes and attachments dating from 1910 to 1958.

This album is regularly requested for consultation or exhibition. However, the state of decay of the binding structure, the brittleness of the cardboard pages, and the presence of previous improvised repairs compromised its use and functionality.

Conservation choices were guided by three imperatives: to keep the records integrally and in sequential order; to improve the condition of the object, particularly regarding the direct contact between photographic prints and acidic album pages; and to provide suitable housing to access the album as well as individual pages.

This paper presents tailored solutions, including inventive mounting and binding strategies that could easily be transferred from this case study to similar objects.

Conference Day 2 – Friday 17th June

Educaton & Training Group Session 2
Stafford Suite 2, 11.20-12.40
Chair: Susan Bradshaw

The Role of a Community Interest Company in Conservation Training and Outreach

Elizabeth Neville ACR, Gwendoline Lemée, Corinne Henderson, Keira Mckee
Presenter: Elizabeth Neville ACR

The presentation will take the form of three sections:

Starting and Running a Community Interest Company
PZ Conservation C.I.C. is a successful community interest company funded by the HLF to provide work-based training to emerging professionals, and engage in community outreach. Founder and director Lizzie Neville will speak about the benefit of setting up a C.I.C., and the part it can play in communities and the conservation profession.

The Role of Outreach Work
The trainees spend a fifth of their time on pro-bono, outreach activities: providing training for local heritage organisations, running workshops, maintaining a blog, and working on conservation projects.

The Importance of Work Based Training for Graduates and New Starters
The traineeship offers an excellent bridge between conservation training and the world of work, and invaluable pre-course training for 'new starters' in a busy studio environment. The trainees will speak about their experiences and the importance of such opportunities to the field.

Understanding apprenticeships in conservation

Patrick Whife

The Government has set the target of creating over three million apprenticeship starts by 2020 across the UK business sector as a whole. Traditionally many of creative skills were developed through practical learning, indeed this is still the case with much of the conservation sector. Apprenticeships offer the opportunity to go some way to help formalise this process, and offer an alternative entry route for those who have a more hands on approach to their learning. Icon is currently in the first steps of working with a consortium of partners in developing the Heritage Environment Practitioner Apprenticeship framework, the first step in development of specialised conservation apprenticeships in sectors where they are appropriate. Through this session we will discuss apprenticeship programme as a whole and look further into these changes and seek to explain how apprenticeships can work for the sector.

To infinity… and beyond

Robert Turner ACR and Susan Bradshaw

Retirement can be a daunting issue but it can offer a range of different options for conservators – for example, project consultancy, volunteering, membership of related professional Boards, mentoring all of which are continuing professional development. For some though it is not just a matter of making changes in their life. Private practitioners that want to hand over their business to the next generation needs to be planned. Robert will reflect upon his own experiences at Eura Conservation Ltd to highlight what plans need to be made to ensure a business successfully continues once the reins are handed over.

Susan will look into the statistics about how the profession is aging and question what needs to be done for future generations of conservators to uphold conservation businesses that are relied upon.

The objective of this session is to encourage debate amongst the attendees about what options there are to support retiring professionals and successive practitioners and will not necessarily be able to offer any specific answers but expect to come up with ideas to take forward.

Conference Day 2 – Friday 17th June

Documentation Network Session 2
White Hall 1, 11.20-12.40
Chair: Jennifer Marchant

A significant statement: New outlooks on treatment documentation

Jan Cutajar, Abigal Duckor, Dr Dean Sully, Harald Fredheim

Values-based conservation is an increasingly dominant theme in heritage conservation theory. It is less routine in the application of object conservation practice, where the focus of conservation work on the physical fabric of heritage prevails. In order to reconnect with the importance of conservation treatment, a renewed focus needs to be given to the object's value, which is ascribed by the people to whom it is significant.

In light of this, a new treatment documentation format has been developed at the UCL Institute of Archaeology. The documentation procedure focuses on the significance of an object above all other considerations. This presentation will discuss the theoretical approach to the documentation and outline its use through practical case studies. A critical review of this process, within the teaching of conservation practice at UCL, has examined the benefits and drawbacks of a values-based approach.

Consequently, contemporary practice and its documentation may be brought in line with contemporary theory to ultimately improve conservation decision-making.

Conference Day 2 – Friday 17th June

Scotland Group Session 2
White Hall 2, 11.20-12.40
Chair: Rob Thomson

Conservation undercover: the National Trust presents a new way to experience conservation in action

Freda Gibson-Poole

This paper describes a project to present conservation in action to a wider audience, which was run during the winter as part of the National Trust's '363 Opening' programme. Visitors to Kingston Lacy House were invited to go on a journey of exploration wearing blue overshoes, gloves and using a torch. They began their tour in the Entrance Hall, where information boards introduced the project, and they proceeded through five state rooms learning about the individual aspects of the 10 Agents of Deterioration. The rooms were dimly lit and staffed by trained volunteers, who demonstrated how the Trust looks after its properties during the winter time, when the house is traditionally closed following the annual deep clean. The visitors were also encouraged to try out some of the activities, and the majority thoroughly enjoyed their experience and left with a better understanding of how and why the Trust cares for its collections.

Sound and Vision: Expressing conservation - a crowd-sourced thesaurus.

Ylva Dahnsjo ACR

This paper reviews the verbal and visual images used to describe and define conservation from without and within the profession. How can we communicate more effectively? Who are our allies, and what should we be doing as Masters of the Secret Life of Things? Grayson Perry refers to conservation as a "weirdly mystical science". What can comedians, artists, poets and mathematicians contribute to the way we describe our work? It can be argued that conservators keep the sensuality of material things to themselves, hidden behind "professional" language. What mysteries can conservators reveal of the texture, colour and hue of artefacts? Conservation offers a unique view of "the silent signs of lives long past", and conservators often find decay interesting in itself. The author invites the audience to be part of a conference crowd-sourcing exercise to create a Conservation Thesaurus of alternative words and images to replace the usual dull and unrevealing words applied to conservation; the author's favourite being "painstaking".

Monitoring costume on display: a collaborative project between University of Glasgow, and Glasgow Museums

Michelle Hunter, Sarah Foskett and Maggie Dobbie

Presenter: Michelle Hunter

Collaborative work between conservation students, established conservation professionals and museum institutions offers a valuable opportunity for all concerned, especially for students for whom it provides a platform to gain real world experience and contribute to the profession. Second year students at the University of Glasgow's Centre for Textile Conservation and Technical Art History joined forces with Glasgow Museums to undertake environmental monitoring of a major temporary exhibition held at Kelvingrove Art Gallery and Museum, A Century of Style: Costume and Colour 1800-1899. The exhibition showcased some rarely seen examples of European costume, much of which was on open display. Students focused on dust monitoring, using low-cost and low-technology methods of collecting, analyzing and quantifying the levels of dust within the exhibition. This paper aims to outline, examine, and evaluate the efficacy and limitations of the methods used and will discuss the student conservator's role and responsibility within this project.

Conference Day 2 – Friday 17th June

Stone & Wall Paintings Session 2
White Hall 3, 11.20-12.40
Chair: Lizzie Woolley

William Morris and Edward Burne-Jones' wall paintings at Red House: Context and conservation

Katy Lithgow and Tobit Curteis

Presenter: Katy Lithgow

The recent conservation of wall paintings decorating Red House in Bexleyheath has transformed our understanding of the young William Morris. Revealing the interiors he created to decorate the house he commissioned from Philip Webb in 1859 involved paint analysis, environmental control, and an archaeological approach using remedial conservation. Completed in 1860 Red House's original schemes by Morris, Burne-Jones and friends turn out to be in startling contrast to the later complex naturalistic designs still sold by Morris & Co. Abandoned in 1865 after business failure and illness, and concealed by later decoration, the wall paintings in the Bedroom, Drawing Room and Staircase have been uncovered and re-presented through preventive and remedial conservation. This presentation will describe how conservation has breathed new life into a house hailed as a modernist icon through its free creation of form through function, by revealing the house's interiors to be simultaneously a romantic evocation of the gothic period.

The Apollo Theatre Ceiling catastrophe: Investigation and treatment of fibrous plaster ceilings for preserving the past and maintaining the future

Richard Ireland

The auditorium ceiling of the Apollo Theatre suffered catastrophic failure during an evening performance on the 19th December 2013, collapsing onto the audience beneath and injuring many people. The Apollo Theatre was constructed in 1898 using fibrous plaster for its decorative ceiling fabrication. Since its patent in 1856, fibrous plaster had become ubiquitous by the latter part of the nineteenth century for forming complex decorative ceilings spanning a wide range of buildings and used in the Royal Works at Osborne House, country houses, civic halls and theatres. In comparison with lath and lime plaster, it was lightweight, cheap and rapid to fabricate. Theatres are a particularly hostile environment and can experience wide diurnal temperature and humidity fluctuations nearly every day of the year. The Apollo investigation exposed hitherto unknown issues implicating failure of the composite plaster and hessian wadding ties used for suspending the fabricated panels by ageing. Extensive materials research and testing is being undertaken to develop a means of amending performance without perpetuating the deficiencies of the extant materials. This paper will look at the causes and issues facing conservator and owner, and the application of old and new technologies to enable both the long term preservation of such buildings, but also their continued and safe use.

Recent advances in imaging technology for the conservator

Samuel Whitaker

Increased availability of high-quality imaging hardware and software puts in the hands of the conservator digital tools to accurately document and investigate cultural heritage artifacts. Aiding the conservator in understanding original technology, non-original materials, physical history and condition.

Panoramic imaging can be used to document 2D artifacts whilst 3D solutions based on overlapping images document both 2D and 3D subjects, facilitating the digital visualization of complex artifacts in ways previously unattainable without high cost 3D laser scanners or photogrammetric work stations. 3D and faux 3D imaging techniques allow the digital interrogation of surfaces, revealing details not easily discernible or wholly invisible to the naked eye. Fluorescence imaging and reflected imaging at specific wavelength bands can provide insight into original materials such as organic colorants and binders.

These techniques, amongst others, can be built into conservation workflows at minimal cost whilst providing high quality qualitative and quantitative data and archival records.

Conference Day 2 – Friday 17th June

Care of Collections & Historic Interiors Joint Group Session 4
NG09, 11.20-12.40
Chair: Kerren Harris

Increasing the profile and influence of conservation – An unexpected benefit of risk assessments

Dr Cordelia Rogerson and Dr Paul Garde

Presenter: Dr Cordelia Rogerson

Risk assessment prior to treatments, exhibitions or loans is vital to conservation, allowing potential problems to be identified and mitigated. After recent work on British Library 'Treasures', including Magna Carta, the Lindisfarne Gospels and Shakespeare's mortgage deed, it became apparent that these assessments also served to significantly raise the profile and influence of the Conservation Department within the institution. By presenting risks in a clear, impartial and unambiguous manner, concerns held by conservators can be readily explained to other stakeholders, and this proved invaluable when promoting outcomes not in accordance with their initial aims or requirements. Furthermore, this approach allows complex arguments based on specialist knowledge and experience to be clearly conveyed to non-specialists, emphasising the importance of the conservator's expertise. The risk assessment models developed as a result are now used widely across the Library, cementing the role of conservation as central to the functioning of the institution.

Hanging out: strain monitoring of tapestries

Frances Lennard, University of Glasgow

Lynsey Haworth, Historic Environment Scotland

Tapestry conservation research has tended to focus on chemical degradation. But what impact does the physical structure of a tapestry have on its eventual decay? In early 2015 a collaborative research project was initiated between the University of Glasgow's Centre for Textile Conservation and Historic Environment Scotland. The project is capturing high quality images of the newly completed Mystic Hunt of the Unicorn tapestry from Stirling Castle, using time lapse photography. The images are fed through a software program turning them into 'strain maps', highlighting areas where deformation has taken place. This will show how much strain the tapestry is under and how this changes over time, and highlight areas where damage is likely to occur.

This project is part of wider research into tapestry conservation techniques. Strain data and computer modelling are being used to investigate the effects of different treatment and display methods.

A challenging conservation environment: Climate change and innovative mould treatments

Bethan Stanley, Naomi Luxford, Sophie Downes, Timothy Hill

Presenter: Bethan Stanley

Almost one third of English Heritage's archaeological collections are stored in several areas of Fort Brockhurst, Gosport. For the last decade an adequate environment was maintained in the Casemates. During summer 2014 a combination of extreme moisture ingress from heavy rainfall patterns, coupled with the catastrophic failure of the industrial dehumidification units resulted in a widespread mould outbreak.

This paper will discuss certain assumptions; including the 'safe' environmental range of below 65% relative humidity (not applicable to this Aspergillus strain) and suitable treatment methods, following research carried out at Birkbeck College indicating alcohol based treatment was also ineffective against Apergillus. With relatively little literature available regarding the efficacy and risks of alternative methods the presentation will discuss several treatments considered and the UVC method trialled and approved in more detail. Finally, it will discuss certain logistical and practical considerations relating to a large scale treatment of approximately 36 metric tons of stonework.

Taking on mould in a multidisciplinary team

Hannah Clare and Sarah VanSnick

Presenter: Hannah Clare

The National Archives, UK has recently reviewed how it treats and manages existing mould in the collection to mitigate against further outbreaks or reinfection. Mould is a complex issue for any cultural heritage institution to deal with and requires a multidisciplinary and evidence based approach. This paper will present how the conservation team critically evaluated practices within the sector, advice and guidance from external bodies and newly commissioned evidence. It will examine the skills required and challenges to be faced in starting discussions that lead to changes in policy and practice that are relevant to the rest of the sector.

Conference Day 2 – Friday 17th June

Plenary Session 2
Great Hall, 13.40 -15.00
Chair: Deborah Cane

Does access to an extensive range of sophisticated analytical equipment help or hinder our approach to treatment planning?

Gill Comerford

The use of imaging and analysis tools such as XRF for checking for the presence of heavy metals on taxidermy or DNA sequencing to identify the type of mould on our collections is becoming more common place amongst conservation practitioners. Analysis is no longer just the domain of the conservation scientist. Analytical instruments that are the used to support the principle of a treatment are now used as regular tools in the daily pursuance of routine conservation treatment planning. They allow understanding of the surface structure of materials, elemental composition and effects of treatments. Do these tools enable us to develop better methods and informed approaches to our planning or do they distract and delay us from getting on with the conservation work?

Modern Conservators for modern times

Louise Lawson and Deborah Potter

As the New Tate Modern moves towards completion (opening 17 June 2016) it has afforded an opportunity to ask "what is the museum of the future?" In the recent TATE Etc publication, the Director of Tate Modern, Chris Dercon, considered this question within the context of the Tate Modern expansion. He discussed possibilities ranging from the transformation of museums from "restrained container to exuberant companion" to spaces that are "full of ideas, activities and people" offering a "new type of public spaces" with "new types of exhibitions".

How does this debate impact on conservation? What is our role in developing and sustaining the museum of the future? What does a modern conservator look like? What change and evolution is required? What does the future hold?

The expansion of the New Tate Modern will increase display space by sixty per cent, encompassing traditional gallery spaces alongside performance spaces and large scale immersive environments such as "the tanks". Modern and contemporary works acquired by Tate since the opening of Tate Modern in 2000 will be presented and displayed throughout the building. The nature of these works has evolved substantially over the past fifteen years, reflecting a drive toward greater complexity, diversity and significance. This ambition, accompanied by an equally strong desire to increase access, embrace new audiences and accommodate high visitor numbers and interaction with the works on display presents unique challenges for the conservator.

Conservators are skilled, technical specialists with a deep knowledge of materials. The modern conservator must add advocacy, influencing, the ability to communicate the ethics of the profession and innovative thinking to this core skill set. The evolution of the modern conservator and how our teams are working to achieve the vision for the collections on display at the New Tate Modern will be illustrated in the presentation through case-studies of artworks and collaborative ways of working. The presentation will look to the future of museums and conservation exploring how conservators can evolve further to ensure a sustainable approach both for the profession and the collections in our care.

The evolving relationship between conservation and the digital world at Birmingham Museums Trust

Ciaran Lavelle and David Rowan

Museums have evolved from cabinets of curiosity to all-inclusive entertainment experiences. The advent and advancement of digital technology has opened up museums to a worldwide audience which are living more and more vicariously through this digital medium. Museums as result are moving towards becoming virtual exhibition spaces as well as a physical one. Where does this leave the role conservation in this increasingly digital world?

At BMT the conservation department produces the second highest number of digital media content in the institution, second only to the photography department. Alongside BMTs large diverse physical collection the institution boasts an expanding digital collection. It is through the relationship between conservation and photography which is leading the charge into the digital age. Conservation is increasingly involved in the long-term preservation of BMT's digital collection.

Conference Day 2 – Friday 17th June

Plenary Session 4
Great Hall, 15.30-17.30
Chair: Jane Henderson

Crime and the conservator: Exhibiting a body of evidence

Sharon Robinson and Jon Readman

For the first time in its history the Crime Museum collection held by the metropolitan police has been put on public display at the museum of London. Until now access to the collection has been restricted to invited guests and serving police offices. 600 unique objects from some of Britain's most notorious crimes tell the story of the history of policing and development of forensic science from the mid 1870's to the present day.

Displaying the collection presented the conservation and collection care team with a number of ethical and legislative challenges never before encountered. This presentation will explore the approaches adopted for a collection whose status remains as police evidence, how an ethical screening board influenced object selection and decision making and how the team adapted its working practices to produce the unique exhibition that is the Crime Museum Uncovered.

Making, breaking and remaking: Iconoclasm and conservation

Simon Cane and Jonathan Ashley-Smith

There has been a recent upsurge in the study of iconoclasm. The original historically restricted definition has been extended [1}. Acts and attitudes within object conservation are now included [2].

The extreme changes in value that follow an act of iconoclasm make it worthy of study. Although worst-case scenarios should be used with caution, the study of iconoclasm provides useful examples of the way heritage values change. Importantly it also provides insights into motives, and the communication and acceptance of attitudes. These are missing from conventional analyses of significance and risk relating to landscapes, buildings or collections.

Iconoclasm can be directed at knowledge and beliefs as well as at collections, physical structures or landscapes. Cherished beliefs may have outlived their contextual relevance thereby creating the conditions for change. This may result from dramatic interventions by religious iconoclasts such as ISIS, from alterations managed through negotiated heritage protocols (Venice, Burra, Narra) and attitudes developed in response to key texts (Brandi, Thomson).

Those responsible for the care, conservation and management of heritage generally follow orders (guidance) and are therefore not conscious iconoclasts. Practical intervention is constrained by common ethical beliefs, by supervision of practice and application of guidelines. Yet the decision maker, in choosing whether to hide or reveal past damage, or alter a building or landscape, or disregard sacred mystery in the search for scientific truth, may be deemed iconoclastic.

[1] Striking Images: Iconoclasms Past and Present. Eds. Stacy Boldrick, Leslie Brubaker and Richard Clay. Ashgate, 2013

[2] Simon Cane and Jonathan Ashley-Smith, "Iconoclasm as Conservation, Concealment and Subversion" in [1], pp 183-198

Number 236 – Conservation in the age of the robot

Alastair McCapra

Conservators are 326th on the ranking of 702 jobs most likely to be replaced by robots (on the same ranking, Public Relations Specialists appear at number 201).

Artificial Intelligence (AI) is already starting to have an impact on a number of different professions, and this will expand rapidly over the next five years. This paper will firstly provide a broad context for the spread of AI into professional activities and look at some of its consequences.

Next it will consider the potential impacts on conservation of increasing AI deployment. These will probably include changes to the scope of work conservators are asked to undertake, as well as to education and training, and to the elements of conservation work which are most financially rewarded.

Ultimately the paper suggest that the introduction of AI is likely to reverse the trend towards greater emphasis on preventive conservation and re-establish the importance of remedial conservation, with mixed consequences for the profession in the future.

Lunchtime Sessions Thursday 16th and Friday 17th June

PACR Drop In
Stafford Suite 1
16th & 17th June, Lunchtime

Being an accredited conservator is worthwhile and offers professional rewards, such as public recognition to demonstrate a high degree of competence, sound judgement and an in-depth knowledge of the principles which underpin conservation practice.

The accreditation frame-work applies a common standard across the profession, regardless of how the applicant has reached a professional level of capability, the specialism of the conservator-restorer, or the context in which they practice, as well as providing an audit against nationally recognised professional standards

Our Training & Development Manager, Patrick Whife will be running drop in sessions available over the lunch breaks to answer any questions aspiring ACRs may have over the accreditation process.

Icon Mentor Drop In
Stafford Suite 2
16th & 17th June, Lunchtime

The Icon mentor scheme is designed to support any Icon member on the in career development advice, working towards accreditation or general continuing professional development. All Icon mentors have undergone the same mentor training and all are Accredited Conservator-Restorers.

A group of our mentors have kindly agreed to provide mentor drop in sessions for any delegates who are interested in taking part and speaking with a mentor. If you have not already registered your interest, please speak with Patrick Whife, Training & Development Manager and he will be able to confirm the availability of the mentors and book you in to see them.

Digitization and Preventative Conservation
White Hall Room 1
16th June, Lunchtime

As individual collectors and institutions focus their attention on mitigating risks and preventing damage before it takes place, storing collection details in digital inventories is becoming a vital part of collection care.

Laura Uccello, of Collectrium, discusses best practices for managing condition projects, organizing documentation and sharing data, highlighting how the leading digital management platform, can be a secret weapon for preventative conservation.

Minimizing Risk through Documentation
White Hall Room 1
17th June, Lunchtime

Detailed documentation is a key part of minimizing risk when undergoing conservation. Proactively recording all aspects of a project from start to finish can help prevent further deterioration and act as a resource when undergoing other similar treatments.

Laura Uccello, of Collectrium, explains how digital platforms like Collectrium innovate in conservation documentation, enhancing how conservators organize and catalog objects, and letting them share progress on a project with clients and colleagues, seamlessly and securely.

Conservators as Leaders
White Hall Room 2
17th June, Lunchtime

There are many conservators at Head level, but few examples of conservators in more senior heritage posts. Why is this? Often conservators are attracted to the field to work hands-on with heritage. Might a strong sense of satisfaction at bench level explain the disparity? Alternatively, is there something more systemic about the profession and how others see it? Conservators can certainly be great managers, who are evidence led, scientific in their outlook and well-organised; but does the scientific paradigm and the strength of that professional identity mean that we aren't able, or cannot convey that we are able, to demonstrate the communication, confidence, charisma, vision and strategic skills wanted from leaders in wider heritage roles, such as Directors?

In the lunchtime tabletalk session Conservators as Leaders, two eminent speakers with experience operating at Director level – Sarah Staniforth CBE ACR and Simon Cane ACR – put forth their thoughts on conservators as leaders in the heritage sector, leading a discussion on the barriers that need to be addressed and the support that can be offered to help conservators reach the top.

Student Poster Competition

Assessment of museum collection storage in Ibadan, Nigeria: Its implication for archaeology, conservation, and museum practices

Odunyemi Oluseyi Agbelusi,
University College London, Doha, Qatar

For the past five decades, the storage room of the museum of The Department of Archaeology and Anthropology, University of Ibadan, Ibadan, Nigeria has housed a large collection of artefacts recovered from several archaeological sites located across Nigeria. Oral and archival sources reveal that all of the artefacts were recovered through archaeological investigations (reconnaissance survey and excavations) that were carried out by indigenous and foreign archaeologists working in the country during the 1960s to the 1990s. These artefacts were stored in various storage materials and kept in a room with the aim of using them as teaching and research collections, museum exhibitions, and packages for public education.

Over the years, little or no attention has been paid to the preservation of these valuable collections. Most of the artefacts were not properly stored and cared for and this has resulted in the entire storage areas falling into despair. A recent condition assessment of the room revealed a lack of preventive measures and poor attempts at restoration of artefacts.

Cleaning by experimental enzymatic proteins

Chiara Chillè, Conservator, Palermo, Italy
Enza Di Carlo, Università degli Studi di Palermo, Department STEBICEF
Giovanna Barresi, Università degli Studi di Palermo, Department STEBICEF
Sabrina Sottile, Senior Conservator at the M.A in Conservation and Restoration of Cultural Heritage, Palermo
Giuseppe Lazzara, Senior Conservator at the M.A in Conservation and Restoration of Cultural Heritage, Palermo
Matteo Cammarata, Università degli Studi di Palermo, Department STEBICEF
Franco Palla, Università degli Studi di Palermo, Department STEBICEF

The cleaning of painting is usually defined as the ability to dissolve, in a selective and controlled way, specific materials (e.g. dirt, a discoloured varnish layer and non-original repaints) from the paint surface, without altering the underlying layers. In recent decades scientific research in the conservation field has provided sustainable alternatives to traditional procedures for cleaning paintings' surfaces using enzymatic cleaning.

The aim of this research is to evaluate the use of enzymes, supported by gels, during the cleaning phase on the painting surface. Bioactive Molecules (BMs), extracted from marine invertebrate organisms (Anthozoa), were tested for the hydrolysis of protein and lipidic layers on different laboratory specimens. The distinctive features of this enzymatic protein is that it functions within a temperature range of 4-30°C. This Hydrolytic activity has been compared with Commercial Protease and Lipase (Protease type XIX and Lipase type VII, SIGMA). It has been using different kinds of thickener supports, such us: Block Copolymer Surfactant (Pluronic® F108), Xanthan Gum (Vanzan NF-C®) and Hydroxypropylcellulose (Klucel G®). Researching the best viscosity, in order to identify a suitable enzyme support, an easily spreadable and sufficiently compact gel to support the next enzymatic cleaning test, perfected the thickener preparation method.

In order to create specific facsimiles, n. 4 oil on canvas painting samples were carried out referring to the T. Turque de Mayerne manuscript. A linen canvas (pattina) was stretched on wooden spruce stretchers, the first preparatory ground was made with Litharge pigment (PbO) and linseed oil binder at ratio of 1:4 in order to fill the canvas pattern; the second and third preparatory ground was made with Litharge and Ochre pigment, stand oil binder and CaCO3. The paint layer was accomplished using stand oil binder and dark green pigment. The varnish layer, laid with a paintbrush, was obtained by Ulisse Forni manuscript.

Subsequently, two different types of repainted layers were put on the samples: one with protein-base layer (Casein binder and Yellow Ochre) and the other one with lipid-base layer (Stand oil binder and Verona Red). These two repainted layers were laid down on the front side (recto) of the specimens, on specific pre-selected portions, in order to mimic the removal of overflowing, disfiguring or simply an altered repainting, frequently performed during the lifetime of the painting. The samples, without the repainting layers, have been subjected to an artificially aged treatment with the parameters: UV-A 300– 400 nm; T = 22 ± 5°C; RH =60-65%, for 1000 hours and then with the repainted layers, with the same parameters, for 1220 hours. On these samples an assessment was carried out in order to establish potentials chromatic variations. Spectrophotometric measurements have allowed us to verify that an effective chromatic alteration of paint layers was generated after the artificially aged treatment.

The selective cleaning tests were carried out on a 2cm2 casein and oil layer (size respectively 7,3x10 cm) on single oil painting specimens. The appropriate BMs mix reaction was used at a significantly lower concentration (1 mg/ml) 1:10 with respect to the commercials one, and applied at room temperature (19-26°C) and RH 60%1 while for commercial enzymes, heating at 37°± 3°C was needed. Negative control tests were conducted (pH 7.5) without the addition of any enzyme, for each experiment. All the solutions have been supported with Block Copolymer Surfactant 30% (Pluronic® F108), Xanthan Gum 3% (Vanzan NF-C®) and Hydroxypropylcellulose 5%(Klucel G®).

Photo: Marta Garcia Celma

The cleaning tests, via the Bioactive Molecules (BMs), have allowed us to remove in a selective way two different kinds of repainted layers (Casein and oil layers). The casein layer was selectively removed after 10 min of application, by both BMs and commercial protease solutions, whereas the same application of BMs on the oil layer showed less efficiency than a commercial lipase solution.
In our hypothesis, these molecules provide an important contribution to the development of innovative protocols for bio cleaning based on fast and easy applications, operator friendly and environmentally sustainable molecules. To sum up these bioactive molecules represent a valid alternative to the traditional procedures in sustainable restoration projects.

Exploring methods for determining the age of clock mainsprings

Mostyn Gale

Many mechanical clocks utilize mainsprings made of steel as their power source. Through normal use and ageing these mainsprings may break or become weak which leads to their replacement. In essence, mainsprings have a finite life and are generally treated by clockmakers as a consumable part of the clock. As a result, historical data is lost when old mainsprings are discarded. Today, an original mainspring in an 18th century clock is rare. A survey of nearly seventy horologists demonstrated that 90% of what are perceived to be weak mainsprings are replaced during repairs or restoration projects. The survey also showed that maintaining a clock in working condition is amongst the most important goals for horologists. This goal stands in opposition to widely accepted conservation practice—maintaining historical integrity with minimal intervention—a functioning clock is destroying itself through use and normal wear. For the conservator, this raises the question of whether a mainspring can legitimately be treated as a consumable, or should be preserved as part of the historic integrity of the clock above all other factors. A literature search indicated that published articles relating to conservation of clock movements are few, and those relating to mainsprings—particularly determination of the age of a mainspring—even fewer to non-existent.

The goal of this research is to provide a guide for determining the age of a mainspring so that a more informed decision can be made about its retention or replacement. An historical study of the mainspring manufacturing process led to the definition of four broad eras that may be differentiated by visual and analytical techniques. An initial study of twenty mainsprings was conducted using visual inspection, microscopy, and x-ray fluorescence techniques. The test results demonstrated that the general date of a mainspring can be determined. A case study has been used to demonstrate issues in an actual clock and resulted in the determination that its mainspring was most likely original to the clock. The work carried out points the way for further study, testing, and analysis.

Conserving the Plans for Edwards James's Footprint Carpet

Jessica Hyslop, Lucy Cokes, Laura O'Farrell, Avery Bazemore, Fang Zheng Ong, Rosie Bolton, and Sakura Tohma

The original plans for Edward James's iconic 'footprint carpet' have been stored in the archives at West Dean House for decades. The plans consist of two large, flat, paper items (one larger than the other) and have been stored folded; as such, they had accumulated surface dirt as well as suffering many edge tears to the paper and abrasions to the media. There was information on both sides of the items, and the nature of the media on the recto was unknown; the surface dirt also included what might be called 'evidential dirt' that suggested how the items had been used. Last summer, the students of Books & Library Materials Conservation at West Dean College were tasked with the conservation of these plans, with the aim of stabilising the physical objects while making both recto and verso available to researchers; space limitations in the archive also had to be taken into account. Research into the historical context of the items, their future storage conditions, as well as the composition/solubility of the media enabled us to decide on and carry out a treatment plan for the smaller item of localised flattening, minimal surface cleaning, and tear repairs. Treatment for the larger plan is yet to be decided, as its greater size makes flat storage more difficult.

Devising methodology for testing the effects of aqueous treatments on multispectral imaging.

Christina Romanowski Bean

Multispectral imaging is an emerging technology that uses monochrome pictures taken in different light wavelengths to reveal information about objects. As this technology has evolved and become safer questions have arisen to try and determine the best place within a conservation treatment plan to spectral image.

My theory is that after humidification would be the best point to image, and that possibly still damp images could yield even greater results. However, discovering a repeatable methodology to test out this theory proved to be an interesting challenge.

Adverse effects of hot-melt cyclododecane on red printing inks

Carina Rosas, Northumbria University

This poster presents the results of a pilot study on the adverse effects of cyclododecane on red oil-based printing inks, through the assessment of its interaction with a group of early 20th Century commercial entertainment poster inks. Focus on the potential solubility of synthetic organic pigments in hot-melt cyclododecane brings to the fore the complexities of working with a relatively new material – first used in paper conservation in 1999 – whose chemical behaviour is not yet fully understood. As the use of cyclododecane expands both within the range of treatments in which it is applied and across conservation fields, its risks need to be acknowledged and identified to enable its safe use.

Tour Descriptions

Coffin Works

A historic Jewellery Quarter factory brought back to life by the Birmingham Conservation Trust.

The shelves and workbenches at Newman Brothers are full of original stock and tools of the trade. With the original machinery working again, you can truly experience how this old Jewellery Quarter Firm once operated on a day-to-day basis, producing some of the world's finest coffin furniture, including the fittings for the funerals of Churchill, Chamberlain and the Queen Mother.

Tours last approximately one hour and can accommodate 15 delegates at a time.

Conservation of the Staffordshire Hoard

Escorted tours of the Conservation Studios at Birmingham Museums and Art Gallery. The Hoard Conservation team will be on hand to demonstrate how they are conserving the Staffordshire Hoard.

You will hear about recent findings and research and also have the chance to view the Hoard under microscopes. There will be ample opportunity to ask questions.

Tours last approximately one hour and can accommodate 12 delegates at a time.

Museum Collections Centre, Birmingham

The Museum Collections Centre is a 1.5 hectare site that holds 80 per cent of Birmingham Museums' stored collections under one roof.

Among the thousands of objects stored here are steam engines, sculptures, an entire collection of Austin, Rover and MG motor cars and even a red phone box.

The tour will provide an opportunity for delegates to view the stored collection and discuss the challenges of running a busy museums store.

The tour will last about 90 minutes and will accommodate up to 30 people.

Thanks to our funders and sponsors

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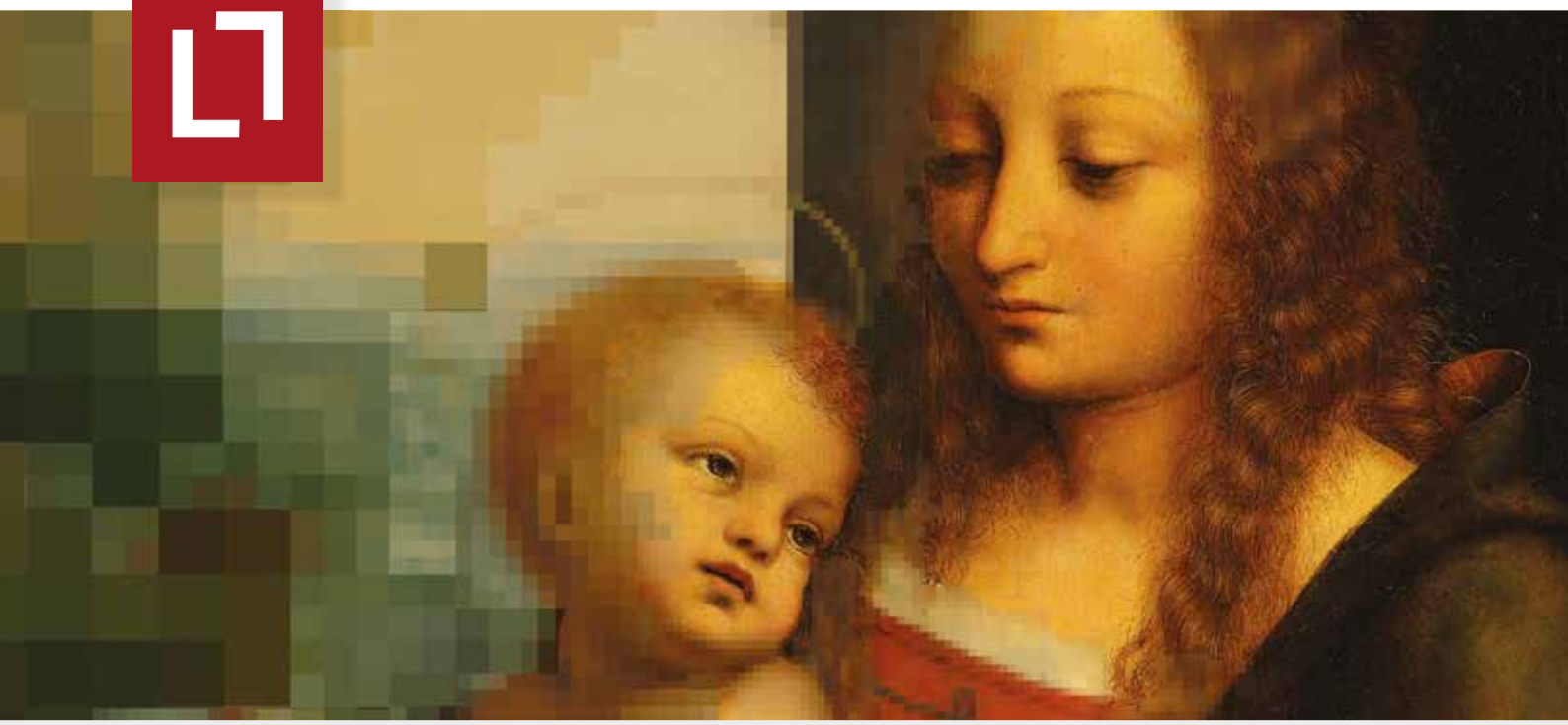
A big thank you to everyone involved including all the volunteers.

TECHNOLOGY TRANSFORMING CONSERVATION



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