Published by V&A Conservation
ISSN 0967022273

Conservation Journal

Spring 2009 Number 57 £2.50 @ point of sale

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Front Cover image: E.1539-1925 Set model for the 'City of Coral' scene (detail) in *Humpty Dumpty* by Henry Emden, 1903 (Photography by Louise Egan)

Contents

V&A Conservation Journal No.57

Conservation Department

Staff Chart Spring 2009

Head of Conservation
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PA & Dept Secretary
Cherry Palmer

Sculpture, Metals, Ceramics & Glass (SMCG)	Furniture, Textiles & Frames (FTF)	Paper, Books & Paintings (PBP)	Science	Information Management & Administration
Victoria Oakley	**Marion Kite**	**Alan Derbyshire**	**Graham Martin**	**Fiona Campbell**
Sculpture Charlotte Hubbard Sofia Marques Victor Borges Brendan Catney (c) Johanna Puisto Lisa Wagner Jonathan Kemp (c) Sarah Healey-Dilkes Linda Temmink Phil James (s) *Metals* Diana Heath Joanna Whalley Sophy Wills Donna Stevens Catia Viegas Wesolowska Gates Sofer (c) Eva Annys (c) *Ceramics & Glass* Fi Jordan Juanita Navarro Hanneke Ramakers Amanda Barnes (c) *Stained Glass* Sherrie Eatman Ann Marsh (c)	*Furniture* Shayne Rivers Tim Miller Nigel Bamforth Dana Melchar Carola Schueller Kerstin Wadewitz (c) *Gilded Furniture and Frames* Christine Powell Zoë Allen Tom Barrow (c) *Textiles* Albertina Cogram Frances Hartog Susana Fajardo-Hunter Elizabeth-Anne Haldane Lara Flecker Cynthea Dowling Joanne Hackett Roisin Morris Lynda Hillyer (c) Keira Miller (c) Sam Gatley Sarah Glenn Sung Im Janine Spijker (c) Marilyn Leader (c)	*Paper* Merryl Huxtable Victoria Button Michael Wheeler Susan Catcher Lisa Nash (RIBA) Pernille Jensen (c) *Preservation Conservators* Clair Battisson Simon Fleury Chris Gingell Eoin Kelly (c) Anne Greig (c) *Books* Jane Rutherston Anne Bancroft *Paintings* Nicola Costaras Rachel Turnbull (c) Sophie Reddington (c)	Boris Pretzel Brenda Keneghan Valerie Blyth Lucia Burgio Bhavesh Shah	Michelle Jensen Louise Egan Helen Nodding

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Joanna Baden-Morgan (RCA)
Harriet Standeven (V&A)

RCA/V&A Conservation

Preventive Conservation
Artemi Chaviara, MA
Jenny Studer, MA (with English Heritage)

Textile Conservation
Jennifer Barsby, MA

Conservation of Post-19th-Century Bronze Sculpture
Lucy McLean, p/t In-Post MA

Conservation Science
Philippa Duffus, MA (with the British Museum)

Conservation of European Portrait Miniatures
Satomi Kitano, MA

Conservation of Metals and Surface Finishes
Sia Marshall, MA (p/t with the National Maritime Museum)

Hans Holbein the Younger: An Investigation Into His Choice and Use of Materials & Techniques
Victoria Button, MPhil

Harming Works of Art: The Challenges of Contemporary Conceptions of the Artwork
Iris Kapelouzou, PhD

The Drawing Media & Working Technique of David Smith (1940-1965)
Richard Mulholland, PhD

Still Adorned in Plastic? A Study of Plastics in Jewellery Making to Determine the Consequences for Preservation
Cordelia Rogerson, PhD

Conservation of Stringed Instruments
Chris Egerton, p/t In-Post MA

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Enabling Museum Professionals with New Collections Management Tools
Emma Richardson, University of Southampton/V&A Collaborative PhD

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Mechanical Engineering
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Editorial

Sandra Smith

The publication of the Demos pamphlet *It's a Material World: Caring for the public realm*[1] in November 2008 articulated the need for conservators to become more politically aware if we are to maintain skills for the future. The document has laid the ground for this to happen, emphasising that conservation plays an essential role in social identity, social well-being and the care of the material world. Reinterpreting our daily work in this context requires us to think beyond its (immense) value in preserving and interpreting the nation's heritage, whilst translating its outcomes as opportunities for social innovation.

Every time conservators and scientists engage with an object or engage with the public, they have the potential to change thoughts and perceptions. From the complex (Melchar and Bamforth, Turnbull), to the grotesque (Sofer), from the eccentric (Rutherston) to the obscure (Marsh, Haldane et al) all our collections contain fascinating and enthralling stories. The Berkswell 'Cello (Egerton) is a classic example of how conservation can 'unlock' an object, creating links between the past and the present. Whilst the challenges of preserving theatre collections which were not designed to last longer than the performances in which they featured (Huxtable, Pendlebury) resonate with many of the issues that society faces today.

Through the continued improvement to display methods (Gatley), and practical treatment (Melchar and Bamforth), Conservation has helped to deliver 14 exhibitions, 24 displays, 10 FuturePlan projects (Oakley and Jordan), 9 Museum of Childhood events, as well as loans (Nodding and Oakley), and publications in 2008, many of which have received very positive reviews. Of the 6,000 or so objects conserved this year, some will have altered people's lives.

Most museums recognise the unique value of conservation and the potential for positive press as collections are prepared for galleries and displays, but conservators also need to recognise that their skills enable the institutions to meet more diverse government agendas; with 22 International and 21 UK touring exhibitions this year, safeguarding collections continues to be a focus of our research and development (Kelly). Venues now extend beyond Europe, America and Australia to the Near East and to the Indian Subcontinent. The concept of 'controlling the environment' takes on much larger connotations than simply that of light, temperature and humidity as events in Mumbai vividly highlighted to us in November whilst *Indian Life and Landscapes* (Wheeler) was being installed. The returns can be immense; In his Guardian article Simon Jenkins[2] praised the V&A's *World Ceramics: Masterpieces from the V&A* exhibition as being the first star-quality loan exhibition ever seen in Syria, recognising that 'Here is Britain taking Syria and Syrians seriously and at face value', dealing with them 'culture to culture' whereby the importance and value of 'soft' cultural diplomacy is increasingly recognised.

Everyone in conservation and conservation science needs to engage with the issues raised by Demos and to recognise and find the opportunities to highlight the value of their work within the widest contexts. My thanks go to all the staff in the V&A Conservation Department for their professionalism and hard work, without their positive 'can do' approach the Museum could not have achieved such success this year.

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V&A Conservation Journal No.57

Investigation of a Victorian ornithological adornment

Gates Sofer
Metals Conservator

The Victorians tend to be remembered for doing things with exuberance and flair, and their penchant for wearing entomological and ornithological specimens was no exception. In the mid- to late-nineteenth century: 'The proliferation of such adornment in middle-class life belied an increasing disengagement from nature brought about by the industrial revolution... [providing] an opportunity for women to reconnect with nature'.[1] Ladies would embellish their dresses with beetle carcasses and colourful feathers; hats were fashionably arranged with entire birds stuffed and poised amidst their natural foliage, while goldsmiths tended to make use of smaller birds to add the finishing touches. With the opening of natural history museums on either side of the North Atlantic, women's journals of the day encouraged women to skin and mount their own creations, while established goldsmiths and jewellers manufactured bespoke items.

One such example from this period is the exquisite ruby-topaz humming bird earrings (M.11:1&2-2003) recently conserved for display in the new William and Judith Bollinger Jewellery Gallery (Figure 1). Just over 3 cm in height, the birds' heads are delicately mounted on gold with the back of the earrings stamped with the maker's mark for Harry Emanuel and Patent No. 1779 (Figure 2).

(Photography by Gates Sofer)

Figure 1. The ruby-topaz hummingbird earrings (M.11:1&2-2003) after conservation

(Photography by Gates Sofer)

Figure 2. Harry Emanuel's maker's mark and patent number

Harry Emanuel's Patent No. 1779 dated 5 July 1865 states:

> The object of my Invention is a new manufacture of or improvement in ornaments for personal wear... For this purpose I form a setting frame, back for mounting in gold, silver, or other metallic substance or rigid material, by casting, cutting or otherwise, and in any desired shape; to this I affix feathers or plumage of birds, preferring those which are celebrated for their varied effects of colour and light; I attach them by means of shell lac, or other mastic or cement, or adhesive substance, by which a firm adhesion is obtained... By these means a wholly novel article of manufacture is obtained.[2]

Analysis was carried out to understand Emanuel's manufacturing techniques and if they were different to traditional taxidermy techniques.

The earrings were tested for heavy metals by Dr Lucia Burgio, Senior Object Analysis Scientist, using X-ray fluorescence (XRF) to see if arsenic was present in the humming bird heads. This was suspected as arsenic powder or solution was widely used in taxidermy during the nineteenth century. An ArtTAX XRF spectrometer (50kV, 600 µA, livetime 100s) showed significant levels of arsenic. Appropriate labels and handling procedures were then provided for conservators, curators and technicians.

Four feathers had become detached and needed to be replaced. Although the head of one bird (M.11:2-2003) was missing more than four feathers, the size and colour of the loose feathers matched this area so they were replaced with careful spacing to fill in the gap as much as possible. Using a microscope, the attached feathers were gently lifted using a steel spatula and each of the loose feathers reattached to the head by dipping the tip of each feather into Mowilith® 50 (a poly(vinyl) acetate homopolymer) in acetone for adhesion.

The matt gold mounts, settings and red glass eyes were lightly degreased using Industrial Methylated Spirit (IMS) on a cotton swab. Small spots of dark oxidation were found on the borders of the gold mounts. These were most likely to have been caused by the use of a lower alloy solder. A matt surface texture can be easily damaged if an incorrect manual or abrasive treatment method is used. Therefore, Goddard's® Silver Dip was chosen as the most suitable material to remove the dark areas of oxidation and even up the original colour of the surface. Goddard's Silver Dip was diluted with de-ionised water and lightly applied with a cotton swab before repeated rinsing with IMS.

X-rays revealed more about the internal manufacture of the earrings. One X-ray, taken at 35KV, shows that the birds' skulls are present, which is consistent with traditional taxidermy techniques (Figure 3). A small amount of organic adhesive can be seen on one earring behind the feathers and on top of the gold mount. The organic residue is too small to test without damaging the bird. The X-ray confirmed that organic adhesion would have been the main attachment method between the bird and the mount as there were no tell-tale wires or pins connecting the two – this corresponds with Emanuel's patent. The X-ray also revealed that the eyes had been pinned directly into the heads' stuffing material, which can be seen behind the settings when viewed under a microscope. It is difficult to tell whether any part of the natural beak is still present due to the gold beak attached in its place. The X-ray reveals that the gold beak is connected to the backing mount with an internal wire. It is most likely that the natural beak was snipped short and the gold beak inserted over it before being riveted onto the back of the large gold mount, further strengthening the attachment of the bird to the mount.

(X-ray taken by Paul Robins, Photography by Phil Sofer)

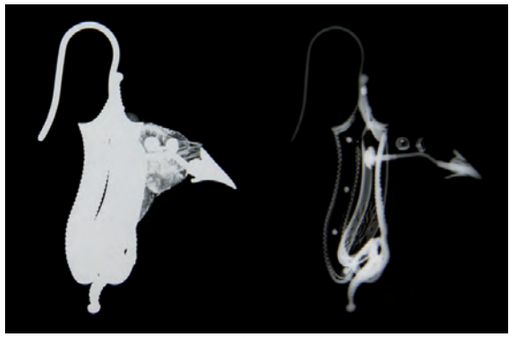

Figure 3. An X-ray showing the internal structure of the earring at 35KV and the metal wires at a higher KV

The earrings are now on display in a drawer unit for the benefit of the feathers as their colours tend to fade over time in light higher than 50 lux. The conservation carried out has allowed the earrings to look more complete and as they were originally intended to look. From the XRF analysis, the presence of arsenic raises an important health and safety concern. The presence of arsenic and the skulls validate traditional taxidermy procedures inferring that Emanuel did not have to alter traditional methods to accommodate his new patent.

Acknowledgements
I am grateful to Marion Kite and Ann Eatwell at the V&A, and Katrina Cook and her colleagues at the Natural History Museum.

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The invisibles

Sam Gatley
Textile Display Specialist

Christian Dior is believed to have said: 'Without foundations there can be no fashion.' This was in reference to the crafted underwear that had been designed to sculpt a woman's figure to best show off his creations. But his comment could just as easily apply to the costume display mount. In the display of costume and dress the mount must be the foundation that allows for accurate historical interpretation as well as offer an appropriate level of support to an often fragile garment.

In response to Museum's objectives to exhibit costume in ever more striking and elegant arrangements, which reflect the modern zeitgeist for sharp, clean lines, there has been an increasing trend for the 'concealed' or 'invisible' mount. This style of support gives the garment fullness of figure without any part of the foundation mannequin or dress stand being on show.

From a design point of view the invisible mount offers a tidy solution to a number of problems, such as choosing the figure best suited to compliment the garment and the overall look of an exhibition. But the practicalities of producing the ideal invisible support structure can be complex. At the V&A there are currently two techniques regularly employed as a means to achieve this kind of minimalist display using inert materials, such as buckram and Perspex®.

Buckram is a material traditionally used by milliners and can be purchased ready for use, however the V&A Textile Conservation Studio produces its own buckram to avoid unwanted additives used in the manufactured product. Short bandages of scoured linen textile are soaked in wheat starch paste and then overlapped in a succession of layers around a figure that has been padded to a suitable shape and size with polyester wadding (Figure 1). The wheat starch paste acts as an adhesive and stiffener. Once dry, the buckram can be cut from the figure mould as a hardened shell. The edges of the hollow form can then easily be cut away to match the edges of the garment, thereby forming the basic structure of the concealed mount.[1]

(Photography by Sam Gatley)

Figure 1. Mannequin figure layered with starched linen bandages

This technique has been employed to display two ballet tutus to be included in the V&A's new Theatre and Performance Galleries, due to open in the spring of 2009. The cut-away buckram mount was especially suited to the objects due to the fact that the tutu skirts were attached to tight knickers. It was therefore not possible to display them on a dressmaker's stand without extensive modification. It was essential that life-like figures with legs were used. The exceptionally small size of the tutus made it difficult to source a figure small enough to be used either as the support itself, or as a mould to produce directly a buckram form of the appropriate size. Therefore, the buckram cast of a larger figure was reduced to the correct shape and size by removing sections of the buckram shell and then rejoining the form with starched patches. In order to provide a smooth and unobtrusive interior for the mounts, cotton jersey was dyed to match the dominant colour of each tutu and was then secured by stitching it directly into the buckram. The lightness of the mounted tutus allows them to be easily suspended from the display case ceiling using monofilament line, thus removing the need for obtrusive stands (Figure 2).

(Photography by Sam Gatley)

Figure 2. S.387-1985 Tutu for leading female dancer in George Balanchine's ballet *Bugaku*

(Photography by Sam Gatley)

Figure 3. T.629-1995, 1950's nylon corset brassiere

The V&A's 2007 winter exhibition, *The Golden Age of Couture: Paris and London 1947–1957*, featured a collection of early 1950s underwear. The design team had stipulated that the garments should appear to float within the display. This presented a challenge as two of the brassieres were constructed from a translucent nylon, a quality that the curators wanted to retain in the display as a significant feature of the period underwear. As a result, buckram could not be used to support the garments and a mount that was truly transparent was required. The solution was to use a shaped Perspex band to form the basic torso structure, although it could not be used to form well-fitting supports for the cup areas of the bras without vacuum forming the shapes. A paper pattern of the cups was taken from the original garments and then made up in a heavyweight Melinex® that could be stitched to holes drilled into the Perspex torso band. The sharp edges of the Melinex were softened with milliners crin, a nylon mesh that could be eased over the Melinex in a single piece. Traditionally, fabric-covered Rigilene® strips have been used to support garment straps but, due to the fact that the exhibition would be touring, a more rigid support was needed for travel. Lengths of brass were covered in fabric and screwed onto the Perspex thereby completing a robust and concealed form that the objects could travel upon (Figure 3).

Whilst both of these methods can be successfully employed to prepare concealed mounts for the display of costume, each can be said to have their drawbacks. Whilst buckram is versatile, light, rigid and inexpensive, the production of the buckram support is a time-consuming process. The ideal Perspex mount would be vacuum formed in order to incorporate the complex curves so often a feature of fitted garments. However, to do this would necessitate the production of bespoke moulds that could withstand the heat of the vacuum forming process. At present this remains a lengthy and expensive option.

There are other materials that have been used to produce concealed mounts. The resin-impregnated cotton mesh X-lite® has been deemed unsuitable for long-term display of objects by the British Museum.[2] However, it is thought that other thermoplastics currently used in medical or theatrical fields; such as Varaform™ and Rhinoflex™, warrant further investigation. The V&A plan to continue their research into materials and techniques used in the production of invisible mounts for costume.

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V&A Conservation Journal No.57

The conservation and technical examination of Bernadino Fungai's Virgin and Child with Two Saints

Rachel Turnbull

Senior Paintings Conservator

Virgin and Child with Two Saints (766-1865) was painted by Bernadino Fungai around 1480 and is being treated in the Paintings Conservation Studio for inclusion in the Medieval & Renaissance galleries. Fungai was born in 1460 to a family from Fungaia, near Siena, and by the age of 21 was working with Benvenuto di Giovanni, raising the possibility that the two were master and pupil. He was active at a point in Italian art when there was a change to a more naturalistic style, away from a 'flat', Byzantine depiction of form to the more three dimensional approach of the Renaissance: the Virgin's halo is a tooled gold circle, while the haloes of the saints and the Child are foreshortened. It was also a time when artists were moving from the use of tempera (egg yolk) to oil as a paint medium. These transitions were not straightforward, as artists and craftsmen experimented with their materials and the depiction of perspective, but this work provides a chance to observe some of the developments in practice.

The work is on a single poplar panel (62 x 42 cm) which has previously been thinned and a wooden cradle applied to prevent warping. Traditionally, fifteenth-century panels would be prepared with a layer of fabric stuck to the surface of the wood with animal glue prior to the application of gesso ground layers. In this panel, no continuous layer of fabric is present, possibly as it was not deemed necessary for such a small work on a single panel. However, X-radiography reveals that there is a patch of fabric covering a small split in the wood at the lower edge. This fabric lies underneath the ground layers, revealing that the workshop was aware of this defect in the wood and added the fabric in an attempt to protect the subsequent paint layers from cracking.

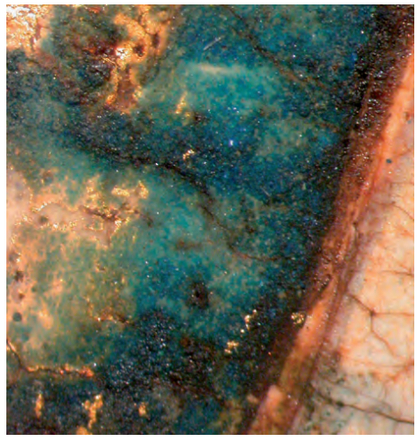
In *Virgin and Child with Two Saints*, the flesh paint is made in egg tempera, while the blue robe and red glazes applied on top of the gold are in oil. Later works by Fungai, such as *The Virgin and Child with Cherubim* at the National Gallery, London, are entirely in oil[1] and, while we cannot be sure of the exact reasons behind the use of different media in this work, we can be certain that it was a considered decision to achieve certain effects as the understanding of the possibilities afforded by oil paint increased.

While Fungai's understanding of oil paint was still developing, his mastery of the technique of painting in tempera was fully evolved. Individual, short brush strokes are visible in the flesh paint – a characteristic of quick drying tempera which does not allow blending like oil paint (Figure 1). The subtle pink tones are skilfully modulated with fine lines. Green earth underpaint, visible where the upper paint layers are worn in the saint on the left, was traditionally used to model facial features before the application of the pink tempera flesh tones, also helping to achieve the cool depth of colour that blood perceived under skin gives.

(Photography by Rachel Turnbull)

Figure 1. Detail of egg tempera flesh paint (766-1865)

The Virgin's robe, painted with the natural mineral azurite ground in an oil medium, was originally bright blue but has discoloured considerably over time (Figure 2). In oil, azurite is prone to blackening at the surface in addition to the oil medium itself darkening – although the exact mechanism for this is not yet fully understood.[2] It is likely that a previous restorer had seen tantalising glimpses of bright blue



(Photography by Rachel Turnbull)

Figure 2. Photomicrograph of scraped down azurite

under the blackened surface of the paint and decided to scrape down the darkened upper layers to reveal the remaining blue pigment beneath. This rather drastic treatment meant the loss of any modelling in the folds of cloth and the mordant gilding border, leaving a coarse, uneven surface.

The once bright blue robe with delicate drapery is now a flat, mottled brown. This is the artist's original paint, even if not the original paint surface, and we can only guess the exact colour blue the robe may have been and how folds in the cloth may have been depicted. All paint layers go through visual changes as they age, some more drastic than others, and sometimes with help from well-meaning restorers. However, because we cannot know exactly what may have been lost, we cannot restore it; we feel we must accept the robe in its current state, as unfortunate as this is.

This is the first time that the panel has been cleaned since it arrived in the Museum in the mid-nineteenth century and the result was rather dramatic (Figure 3). Thick layers of natural resin varnish made yellow with age, layers of dirt and dark spotty retouchings obscured the original subtle colouring and delicate brushwork of the tempera flesh paint. Gilded areas had the same thick varnish layers, whilst some areas around the head of the Virgin had been over-gilded to disguise the slightly worn original. The punch-work on the gold appeared black, filled with dark varnish and dirt, which prevented it reflecting the light as it was meant to. After cleaning, the gold regained its lustre and it is now easier to imagine how this small devotional work would have looked, the haloes glittering as the tooled surface caught the candle light.

(Photography by Rachel Turnbull)

Figure 3. *Virgin and Child with Two Saints* (766-1865) during cleaning

There are various documented copies and versions of this work, one of which is at the J. Paul Getty Museum in Los Angeles. The Conservation Department at the Getty have been kind enough to examine their version to allow comparison with our painting. It was common practice at the time for workshops to use patterns or cartoons to transfer popular images onto multiple panels. It is possible that a workshop might have made a single cartoon for a particularly popular composition, or that they may have had a stock set of cartoons that they could combine together in different ways. While no evidence of pouncing has been found on either work as yet, by overlaying the Getty and V&A versions we can deduce that they were made either from the same cartoon, moved around during transfer, or from individual cartoons for the Virgin and saints and for the Child, and that the separate forms were placed closer together within the confines of our slightly smaller panel.

I hope to have given insight into the complex techniques employed in this one small devotional panel – woodwork, gesso, gilding, oil paint, tempera paint, mordant gilding, punch work and glazed gold – and shown that it dates from a period of transition in Italian artists' technique. We continue to investigate the relationship with the Getty *Fungai* and are anticipating that further understanding will be gained in the future.

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V&A Conservation Journal No.57

Globe Chair, adhesion and cohesion

Dana Melchar, Furniture Conservator

Nigel Bamforth, Senior Furniture Conservator

The second half of the twentieth century saw extensive development of materials such as plastics, fibreglass and foam for use in furniture. The *Globe Chair* (Circ. 12-1969), also known as the Ball chair, was designed by Finnish designer Eero Aarnio and exemplifies the use of these materials. It was acquired directly from the manufacturer, Asko Furniture Manufacturing Company, by the Victoria and Albert Museum in 1969. Now, several decades after manufacture, many of the modern materials used in the manufacture of the *Globe Chair* have changed in their appearance and mechanical properties. The chair therefore required radical treatment to be included in the V&A exhibition, *Cold War Modern: Design 1945–1970* (25 September 2008 to 11 January 2009). While the fibreglass reinforced polyester shell had remained stable with the external gel-coat suffering only minor abrasions, the appearance within the shell had changed dramatically. The interior had begun to hang limply rather than maintaining the crisp profile intended by Aarnio. The adhesive applied between the orange-red show cover textile and the foam under-upholstery had degraded and failed, leaving the textile unsupported, especially on the top interior of the shell where the textile hung down.

The upholstery within the shell is lined with five concave segments or wedges of pre-formed polyurethane foam with a show covering of an orange, plain weave wool textile. This is stitched to a self piping on the inner rim of the shell with the underside of the textile adhered to the foam. The edges of the fabric covering the five segments overlap onto the underside of the foam and were adhered in place. Based on visual and ultra-violet light examination before treatment, the foam appeared to be merely held in place by compression of the foam segments.

As the foam still maintains some flexibility when compressed and has not degraded into a powdery dust (which is the degradation typically seen in foams), it was decided that it should be retained and a treatment that might enhance its longevity be considered.[1] Whilst being aware that the textile would outlive the foam indefinitely, we aimed to create an option enabling future re-treatment and the opportunity of removing degraded foam while retaining the show cover.

Besides reviewing current literature, we contacted: Dr Joelle Wickens, a former PhD student at the Textile Conservation Centre, University of Southampton, specialising in the fabric/foam interface on the *Globe Chair*;[2] Tim Bechthold, Head of Conservation at Die Neue Sammlung in Munich, experienced in the conservation of twentieth-century materials; as well as scientists and textile conservators at the V&A.

Based on the gathered information, we conducted informal testing using several recommended adhesives and methods. We experimented with two types of adhesives for the interface between the fabric and foam: the first was a 2:1 mixture of Lascaux 360 HV and 498 HV, thermoplastic acrylic adhesives, in test concentrations by volume of 50%, 25%, and 10% diluted in de-ionized water; the second was Beva 371 film, a thermoplastic elastomeric polymer mixture. Impranil® DLV, a polyurethane dispersion, was tested as a consolidant for the foam. Our results provided us with the following information:

- Impregnation of the foam with Impranil DLV was a necessary step, otherwise the adhesives stuck either too well or not enough to the foam
- The Lascaux bond was very weak between the textile and foam
- Beva 371 film worked well in combination with the Impranil, but was difficult to remove from the textile

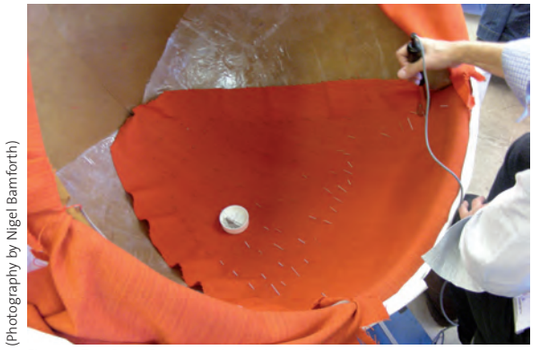
After these findings, as well as discussions with the colleagues mentioned above, Elizabeth-Anne Haldane, V&A Senior Textile Conservator, suggested that, in addition to coating the foam with Impranil, we should try conservation-grade nylon net as a carrier for the Beva. The addition of the net would aid removal of the Beva 371 film and thus help to reduce the adhesive residue left on the textile when it needs to be removed in future. This combination proved to be the most successful test we conducted.

(Photography by Nigel Bamforth)

Figure 1. The *Globe Chair* (Circ. 12-1969), exposed interior

(Photography by Nigel Bamforth)

Figure 2. Applying Impranil® DLV to the chair



(Photography by Nigel Bamforth)

Figure 3. The *Globe Chair*, adhering textile to Beva net

To initiate treatment, the textile was pealed back to the inner rim of the shell exposing the foam. The manufacturer's adhesive between the textile and foam had degraded leaving the textile almost adhesive free. Fourier Transform Infrared Spectroscopy (FTIR) conducted on the original adhesive by V&A scientist Dr Brenda Keneghan indicated that this was a neoprene (rubber based) adhesive, which degrades in the presence of oxygen. Based on this information, it was not surprising the interface had failed.

To facilitate the treatment, V&A Technical Services technicians built a cradle to support the shell and allow removal of the metal base plate, providing flexibility and accessibility to rotate the chair and attain the correct upholstered profile. It was decided to apply the adhesives in-situ so that the stitched edge of the textile around the inner rim of the chair would not need to be disturbed (Figure 1). Using this method, one foam wedge at a time could be worked on. To begin the multi-step process, the foam was coated with Impranil and allowed to dry (Figure 2). A template, based on the size of the foam wedges, was made to prepare a net and Beva film. This was first adhered together on a work surface with a heated spatula and barriers of Melinex film and then laid onto the foam. Darts had to be cut in the Beva/net layer to enable it to lay flat on the concave surface of the foam. It was then adhered onto the surface of the foam with a heated spatula and barrier of Melinex. After this application, the textile was then laid onto the Beva/net and heated with the spatula, but due to poor adhesive penetration into the textile there was an insufficient bond to hold the textile in place. To increase the adhesive bond, an additional layer of Beva film was then applied to the topside of the net. The additional layer of adhesive successfully held the textile in place resulting in a clean, crisp profile on the interior of the shell (Figure 3).

The original materials have been kept, the shell's interior profile has been restored and the treatment executed anticipates the eventuality of the foam's degradation and replacement while retaining the original show cover textile.

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V&A Conservation Journal No.57

From cloister to museum

Ann Marsh

Stained Glass Conservator

The conservation of stained glass takes you as close to the original designer/maker as it is possible to be, simply because one has to reverse completely the making process by taking the panel apart and handling every single piece to clean and repair it. Then the panel has to be put back together using the same basic tools and techniques used up to 900 years ago, although we now have electric soldering irons and tungsten or diamond glass cutters. Every activity after the assessment and conservation decision-making process leads you along the path followed not only by the maker but also by anyone else who has previously worked on the panel. Such intimacy means that the conservator's relationship with a panel goes beyond an academic or scientific appreciation or a purely visual understanding.

The V&A collections include a series of 38 panels from the cloister of the Premonstration Abbey of Steinfeld, in the Eifel region between Cologne and Trier. Some of these panels will be displayed in the new Medieval and Renaissance galleries, due to open in late 2009. The journey made from Steinfeld to the V&A is a dramatic and difficult one and it helps to explain how much change stained glass can undergo during its lifetime. The Steinfeld panels were made between 1522 and 1577, those produced up to 1537/8 having been attributed to the master glass painter Gerhard Remisch, whose monogram appears on one of the panels held by the Museum. As documented by Abbot Norbert of Horichem, these panels were removed from the cloisters in 1632, hidden to protect them at the beginning of the Thirty Years War and put back 12 years later. Between 1654 and 1785 the windows were removed and reinstated four more times. It is likely that they would have sustained damage and been subjected to some repair each time. The windows were finally removed in 1785 and eventually found their way to England by a well-documented route.

In the nineteenth century, after the 1798 French Revolution and during the Napoleonic Wars that followed, huge quantities of stained glass were removed from churches and monasteries in France and Germany. England became the primary market for this glass. John Christopher Hampp (1750-1825), a German cloth merchant who had settled in Norwich in 1782, and his partner William Stevenson were responsible for bringing to England much of the continental glass now to be found throughout the country. Much of this continental glass was used in churches to replace the glass destroyed during the sixteenth-century Reformation. Quantities of it were also set in the windows of private residences and chapels of the newly rich industrialists and by the mid-nineteenth century there was a well-established tradition of stained glass collecting in England. Lord Brownlow (MP for North Shropshire 1866/7) purchased many of the Steinfeld windows along with others from Mariawald Abbey, also near Cologne, and he had them installed in his new chapel at Ashridge Park between 1811 and 1831. It is at this point that the windows would have undergone their most radical changes. In 1928 the contents of Ashridge Park were sold at auction to a private collector who then donated the stained glass panels to the V&A in that same year.

Stained glass is a monumental architectural medium designed for a specific location, light and purpose, either religious or secular. However, in order to install stained glass into another building it is necessary to alter its dimensions to fit the new setting. It is common to see borders added to make panels larger, and borders or columns removed to make panels smaller or more symmetrical for their new location. In the past, when dealing with areas of lost or damaged glass, it would have been common for either a new piece of glass to be cut and painted to match the imagery or for scrapped glass, bearing no relationship to the design, to be taken from redundant panels and cut to fit. At this stage it is highly likely that the intended installation order of the panels would have been completely lost.

In preparation for re-display, the panel depicting The Fall of the Rebel Angels (C.307-1928) (Figure 1) required the removal of a large number of old repair leads to make the complicated, dramatic image easier to interpret. The design is based on one of a series of 15 Apocalypse woodcuts produced by Albrecht Dürer in 1497/8 entitled *St Michael and his Angels fighting the Dragon* (25100:5) (Figure 2). It was immediately obvious that the panel had been significantly altered to fit a window opening in the Ashridge Park Chapel. The left-hand column had been removed and the arching canopy had been added to alter the shape of the top of the panel. The arched top of the panel would also have originally been separate from the lower rectangular section. It was apparent that several of the painted figures and devils were later replacements. When the glass was removed from the lead it was clear how complicated and difficult some of the cuts would have been even for a very experienced glazier. Moreover, the figure detail was painted right up to the edge of the glass resulting in lost detail that spoils the overall effect. This is often a mistake made by novice glass painters, as they forget that they need to allow for the lead flange to cover the edge of the glass. However, the quality of some of the painting indicates that the glass painter was very experienced and would not have made such a mistake. This would suggest that some of the original pieces may have been re-cut during later work to repair and alter the panel. This is illustrated by the head of St Michael: where the edge of the face is also the edge of the glass.

(Photography by Ann Marsh)

Figure 1. Panel (C.307-1928) after treatment, transmitted image

By the sixteenth century, glass production had advanced to enable glass to be produced in larger, thinner pieces, resulting in designs that included larger individual pieces when compared to earlier medieval panels. This thinner glass was more vulnerable and would crack or break more easily and fall out, resulting in permanent loss. The section of painted glass to the right of St Michael is a later replacement and it may be that the glazier reshaped St Michael to fit better with the replacement. The Angel immediately above and behind St Michael appears to have been changed

to include robes of red and green glass. Not only is it more likely that this angel was originally painted and silver stained in its entirety, but also the glass used and the quality of painting on the robes indicate that these are probably later replacements.

Following the removal of as many of the repair leads as possible and the bonding of the glass, decisions had to be taken regarding the width of the leads to be used when reglazing. It is usual to select leads that are as close to the size of the original leads as possible. However, in this case, the decision was taken to use 3 mm leads around the pieces where the detail was painted right up to the edge, instead of the more normal 6 mm leads (Figures 3 and 4). The overall result is a panel that is much easier to interpret than before, showing as much of the detail as should be seen, increasing the potential enjoyment of the viewer and displaying the panel to its best advantage.

(Photography by Ann Marsh)

Figure 2. *Apocalypse* woodblock of *St Michael and his Angels fight with the Dragon* (25100:5), Albrecht Dürer

(Photography by Ann Marsh)

Figure 3. Before treatment (c.307-1928) detail of St Michael showing face partially covered by lead

(Photography by Ann Marsh)

Figure 4. After treatment (c.307-1928) detail showing more painted detail after reglazing

Book in a Jar

Jane Rutherston
Senior Book Conservator

Book in a Jar (NAL Pressmark: X900248), by Colin Hall, was acquired by the Museum in 1984. The object (height 15 x 19cm diameter) consists of a Kilner jar containing 'sour milk, German sketchbook/diary and fermenting rice' (typed description on the label signed and dated by the artist) (Figure 1). The online Museum description explains that:

> Hall noticed the jar containing a small quantity of rice on his kitchen shelf one day and decided to place his German sketchbook inside it, cutting it up to make it fit. He then poured in a bottle of milk and sealed the jar. These curious contents are slowly decomposing in their air-tight container, the glass becoming murkier, the grains of rice resembling maggots. Gradually, this bookwork is undergoing a total physical change and turning into something new. It is one in a series of works in jars that Hall produced during the same period that focussed on the concept of containment and imprisonment.

The moisture is causing high humidity resulting in decomposition and destruction of the contents (Figure 2).

In 2007, Book Conservation and the Science Section were contacted as National Art Library (NAL) staff had noticed that there was a strong smell in one of the display cases in the 20th Century Galleries. On opening the case it was not possible to determine whether the smell was coming from the *Book in a Jar* or another book with bitumen covered cork boards, as the odour appeared to have migrated everywhere. The two objects were removed and isolated in containers in the Book Conservation Studio. After a period of some weeks it became evident that the culprit was the *Book in a Jar* – the cork of the second object had merely absorbed the smell. The gases being emitted through the corroded lid of the jar had left a strong odour within the container (Figure 3).

Brenda Keneghan of the Science Section arranged for analysis of the gases to be undertaken by Dr Lorraine Gibson of the Chemistry Department at Strathclyde University. Samples of the gases emitted were collected by leaving passive sampling tubes near the object for several weeks. The samples were analysed using Gas Chromatography/Mass Spectrometry. The components of the gases were identified as ethyl acetate, butanoic acid and phenol – corrosive compounds that could cause damage to other objects. It was therefore advised that the object should not be returned to its display case or storage in the NAL.

The expectation that *Book in a Jar* might at some point 'require conservation' is noted on the NAL catalogue entry, hinting at the dilemma of acquiring objects that decompose. As conservators and custodians of our collections it is natural to wish to preserve objects for future generations but, as *Book in a Jar* demonstrates, this is not always feasible. From a purely health and safety view, phenol is classed as toxic (a skin irritant and corrosive)[1] and there is no suitable place to store an object emitting these vapours. This has therefore prompted the suggestion, by the Stock Control Manager in the NAL, to put the case forward for de-accessioning it. A report to this end has been submitted and is awaiting a response. The road from decomposition to de-accessioning may not be quite as predicted by either us or the artist.

Acknowledgements

My special thanks to Brenda Keneghan and Dr Lorraine Gibson for arranging and undertaking the analysis.

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(Photography by V&A Photographic Studio)

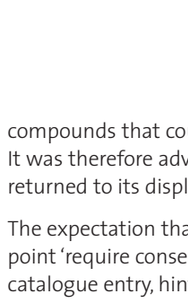

Figure 1. *Book in a Jar* (NAL Pressmark: X900248) around 1988

(Photography by V&A Photographic Studio)

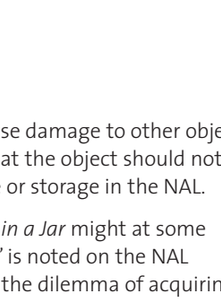

Figure 2. *Book in a Jar* September 2008

Figure 3. *Book in a Jar* corrosion products on lid (Photography by V&A Photographic Studio)

Transforming the Ceramics galleries: an exercise in restraint

Victoria Oakley, Head of Sculpture, Metals, Ceramics and Glass Conservation
Fi Jordan, Senior Ceramics Conservator

The V&A is undertaking a series of gallery developments as part of FuturePlan described on its website as a 'thrilling transformation of the 150-year-old Museum'. FuturePlan aims to present the collections in refurbished galleries with clearer and more engaging displays, providing better access and a greatly enhanced education programme. The Ceramics galleries, on the top floor of the Museum, have been included in this ambitious plan.

The aim is to revamp the galleries that have remained largely unchanged since 1909. The internationally acclaimed collections, encompassing the history of ceramics from the third millennium BC to the present day, will be redisplayed to inspire the enjoyment, understanding and study of ceramics. The galleries are being developed in two phases. The first phase opens in September 2009, with 3,000 objects displayed in seven rooms. An introductory display will introduce a 'world history' of ceramics, highlighting the masterpieces from the collection. Other rooms will focus on materials and techniques, architectural ceramics, changing displays of international contemporary ceramics and twentieth-century studio pottery. There will be a temporary exhibition space, a working studio and demonstration area. The second phase, due to open in 2010, will contrast with the first in appearance and intensity, with over twenty-six thousand objects in dense displays, evoking a 'behind-the-scenes' experience with areas of 'visible storage' where curators can work (Figure 1). A new study centre alongside the galleries will offer researchers and students the opportunity to study and handle objects.

(Photography by OPERA)

Figure 1. 3D visualisation of 'visible storage' for Ceramics galleries Phase 2

Ambitious plans demand detailed planning and careful management if they are to be delivered on time. The preparation of objects for the Ceramics galleries has had to run alongside several other major Museum projects with competing completion dates in 2009. To ensure that huge pressures are not placed on the small team of ceramics conservators, a dramatic rethink to our usual approach has been required. It was clear that limited resources would not allow for thousands of objects to be treated to the highest level, and so expectations had to be refocused to achieve realistic results.

Recent gallery projects, such as the British Galleries and the Jameel Gallery of Islamic Art, have involved a detailed conservation assessment of each proposed object during the preliminary planning stage. The database compiled from the assessments provided not only an indication of the resources needed, but also invaluable detail about the current object's condition, technical and analytical requirements and environmental susceptibilities. However, gathering and processing the information in this way is time-consuming and for the Ceramics galleries project it was an unrealistic ideal. The decision was made to involve curators in checking the condition of the objects as they made their selection for the displays. Training sessions helped to guide the curators in recognising and understanding different types of damage, enabling them to make informed decisions about the need to involve a conservator. This saved valuable time for conservators by eliminating the majority of objects that were in acceptable displayable condition from further unnecessary assessment. A system was devised to flag up those objects that required further examination by conservators.

With limited resources, further time had to be saved during the treatment of the objects, and this was achieved by adopting an approach of minimal intervention. A hierarchy of treatment levels was agreed with curators. Priority was given to objects in an unstable condition. Their position within the displays was another important factor in deciding the level of treatment. Key objects in prominent positions merited a higher level of treatment than less visible objects. Parts

(Photography by Fi Jordan)

Figure 2. Bowl (C.1309-1924), during treatment, dismantled

(Photography by Fi Jordan)

Figure 3. Bowl (C.1309-1924), after treatment

of the object that could not be seen by the visitor, such as the rear or interior, were not treated at all. If a curator or conservator wished to intervene on aesthetic grounds, a good reason was needed. Improving or removing old repairs could only be justified when they were incorrect or misleading, but not if they were unsightly, yellowing or badly executed. It was not always obvious how to decide on the level of treatment and consultation between curators and conservators was often necessary. However, the rapidly diminishing time for the project had the effect of focussing the mind and making the decision-making process increasingly easy.

The closure of the galleries provided an ideal opportunity to select 120 iconic pieces for an international touring exhibition: *World Ceramics: Masterpieces from the V&A*, which traces the development of ceramics from ancient times to the present day. On their return, the objects will form a prominent part of the permanent display. These objects formed the exception to the ruthless decision-making process and were given full conservation where necessary.

The objects where exceptionally lengthy treatments could be justified included a mixture of interesting challenges. For example, a life-size Meissen porcelain sculpture of a goat (C.111–1932) modelled by J J Kändler will be placed on open display. As this had a number of repairs of unknown age and condition, it was felt that a partial treatment, concentrating on the main areas of structural weakness, should be undertaken to ensure stability. An Iraqi lustreware bowl (C.1309-1924), AD 900–1000, is another example of a candidate that warranted a 'full conservation' treatment. The bowl had been chosen for the touring exhibition and was not in a fit state to travel. Previously broken in approximately twenty pieces, the joins were in danger of giving way as the glue had deteriorated on ageing. The object was dismantled, cleaned and re-bonded. A large section of loss to the rim was reconstructed to provide further structural strength. It was decided to retouch the repetitive rim design to restore the aesthetic integrity of the object (Figures 2 and 3). Another exception to the approach of minimal intervention includes a large Egyptian vase (C.459–1927) for the Ancient Cultures display, which on close examination proved to be in a highly unstable state. The object had been restored before the Museum acquired it and the materials employed had contributed to the deterioration of the object. It was necessary for the conservator to remove old repairs, stabilise the object and partially reconstruct an area of the rim to provide structural support.

The new galleries will include a room devoted to large-scale architectural ceramics. Many of the tile panels have demanded a more interventive approach. A number of tiles required mounting on new backings. These included loose tiles to be displayed as a group and existing panels of tiles that needed to be rearranged. There were a number of panels mounted during the last century that had become unstable on their supports and required stabilising or, in some cases, dismantling and remounting. To help save conservation time, curators would try to find alternative tile panels as substitutes for those requiring potentially lengthy treatments.

From the conservator's perspective, adopting an approach of minimal intervention and making compromises has been a challenge. Having to perform basic treatments where so much more could have been done, was an exercise in self-restraint, as well as a battle of professional ideals. A very clear understanding of the expectations of the project was crucial to maintaining a balanced perspective. Viewed holistically, the galleries will be a vast improvement on what was there before in terms of the understanding and enjoyment of the displays.

V&A Conservation Journal No.57

The Hampton Court terracotta roundels project

Lucia Burgio, Victoria and Albert Museum, London
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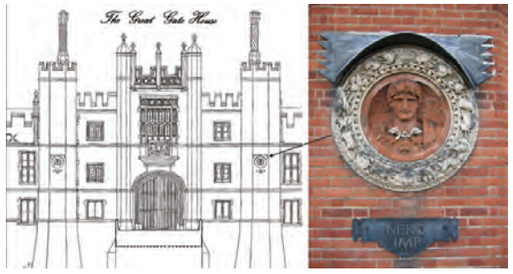
Kathryn Hallett, Zoe Roberts, Kent Rawlinson and Sophie Julien-Lees
Historic Royal Palaces, Hampton Court Palace, Surrey

In the late 1510s, Cardinal Thomas Wolsey commissioned the Italian sculptor Giovanni da Majano to create eight painted and gilded terracotta roundels (*'octo rotundas imagines, ex terra depictas et deauratas'*), each representing the bust of a Roman emperor.[1] The roundels were destined to decorate Wolsey's newly-refurbished palace at Hampton Court in Surrey. In the following years, further sets of similar terracotta roundels were also made for other residences, such as Whitehall Palace.



(Photography by Historic Royal Palaces)

Figure 1. Drawing of the Great Gate House and photo of the roundel representing Emperor Nero

Remarkably, the set of roundels survives at Hampton Court Palace in its original context, nearly 500 years since its manufacture. Presently there are a total of 10 roundels mounted on the exterior of three gatehouses (Figure 1) and, in addition to these, a single roundel of a Roman empress is kept in store within the palace. The addition of three roundels to the original Wolsey set of eight is accounted for by historic repair and restoration programmes. During the early 1840s, two or more roundels were taken to Hampton Court from other sites and an extensive programme of restoration was concurrently undertaken on the entire set.

Historic Royal Palaces, the independent charity that looks after many famous London landmarks (including Hampton Court and the Tower of London), initiated a full investigation into the terracotta roundels in the hope of discovering more about their history, manufacture and condition. As part of this project, samples from the roundels at Hampton Court (Figure 2) were analysed at the Victoria and Albert Museum by optical microscopy and at University College London by Raman microscopy. This analytical programme aimed to determine how the roundels were originally decorated or subsequently redecorated by identifying whether traces of the original polychromy, or of any later intervention, were present.

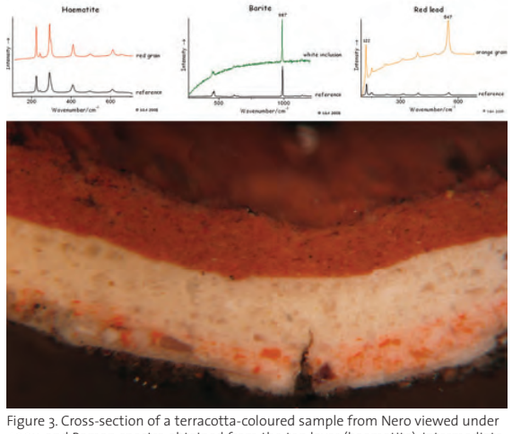
(Photography by Charlotte Hubbard)

Figure 2. From left to right: Lucia Burgio, Carlotta Zannini and Charlotte Hubbard preparing to sample Augustus

No unequivocal evidence for the survival of the original polychromy was found. However, modern pigments (Prussian blue, chrome yellow and chrome orange) were detected in some of the samples taken.[2,3] Eight of the roundels contain at least one modern pigment. Moreover, chrome yellow (first synthesised in the early nineteenth century) was detected in some of the layers applied directly onto

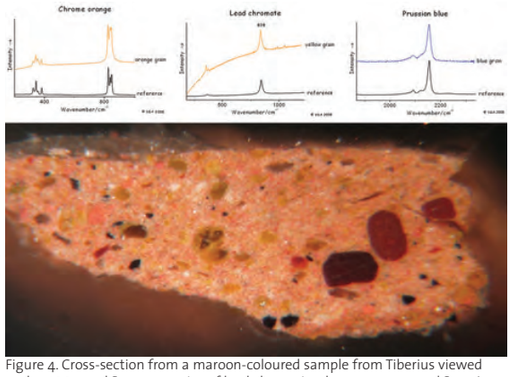
the terracotta busts of Trajan and Hadrian. This shows that, at least for some areas of these roundels, there is no original polychromy left and that the layers which can be seen today were applied in the nineteenth century or later. Prussian blue (first year of manufacture 1704) was detected in many of the outer terracotta-coloured layers of the Tiberius, Augustus and other roundels.

Many other more traditional pigments were found on the roundels, including red lead, lead white, calcite, barite, vermilion, carbon black and haematite. These could have been part of the original polychromy, as one would expect to find them in the sixteenth-century artist's palette. However, the position of these traditional pigments in respect to the layers containing modern pigment indicates that they were applied during or after the nineteenth century. There is also evidence that at various stages in the roundels' history, probably to hide signs of weathering and degradation, they were repainted with a terracotta- or a maroon-coloured coat of paint to look more terracotta-like (Figures 3 and 4).



(Photography by Lucia Burgio)

Figure 3. Cross-section of a terracotta-coloured sample from Nero viewed under 400x, and Raman spectra obtained from the top layer (haematite), intermediate layer (barite) and bottom layer (red lead)



(Photography by Lucia Burgio)

Figure 4. Cross-section from a maroon-coloured sample from Tiberius viewed under 400x, and Raman spectra of lead chromate, chrome orange and Prussian blue obtained from various inclusions in the sample

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What a performance! The final curtain for the Theatre Museum

Merryl Huxtable
Senior Paper Conservator

On the anniversary of Shakespeare's birthday, 23 April 1987, the Theatre Museum opened in London's Covent Garden and ran until 6 January 2007 when, following unsuccessful and protracted efforts to fund its refurbishment, the galleries were finally closed. Over the years the Theatre Museum maintained a schedule of enthusiastic exhibitions and displays together with educational programmes, live theatre events and a busy, frequently accessed archive housed primarily at Covent Garden and at Blythe House, West London.

Some of the objects on display had originally been made for the 'dramatic moment' and were not designed to last longer than the performances they had featured in. However, due to limited resources, many of the objects remained on display for longer than was originally intended and in display conditions and old cases unsuitable for long-term display resulting in many objects requiring surface cleaning and careful handling prior to their return to the Archive

In March 2007, a project team was convened with a brief to empty the site by the end of the year. In August that deadline was revised to November accompanied by an increase in funding to allow for external packers and the retention of one member of the V&A's Packing and Transport Team to provide guidance and continuity of V&A standards and procedures. The instruction to empty the Theatre Museum came at a point when the V&A's Conservation resources were fully stretched dealing with major planned projects plus the work associated with the full and ongoing Public Programme. The only commitment Conservation could make was to provide a conservator from each discipline to carry out a one-day basic assessment of the objects in the Theatre Museum galleries with a view to any necessary work being carried out by contract staff. For those objects which could clearly be handled, packed and stored using standard methods and materials routinely employed by both Museum technicians and Theatre Collections, a 'standard' treatment was allocated. Each conservator assessing the work also provided guidance notes on handling and suitable long term packing materials where it was known that the object was to remain wrapped in 'deep' store. Conservators also advised on the removal and packing of a few very large objects by specialist companies. These included a metal-based theatre lighting console which needed to be de-installed from a high level, two tiers of theatre box seating and three large glazed paintings.

The conservation assessors identified which objects required 'non-standard' treatment in the following categories:

- first aid treatment (e.g. essential surface cleaning, stabilisation repairs)
- handling
- packing for short-distance transport
- transport housings for long-term storage

This basic assessment indicated that 38% of the objects on display required a more individual, 'non-standard' treatment and the calculated hours provided the basis for applications for two contract conservators to be employed to help with this. Two five-week contracts were established at short notice with a textile and a paper conservator to carry out the more time consuming conservation work. Part of the paper conservator's brief was to develop a prototype design for bespoke Correx® storage boxes for set models.[1] In addition, deframing and some essential remounting was carried out by two V&A paper conservators. The conservators worked closely with the Packing and Transport Team and the Theatre Museum Archivist who was responsible for the overall schedule, managing the other external contracts, transport and the re-housing of the objects within the Archive. Four curatorial staff who routinely handled textile objects as part of their job, were given extra training in surface cleaning and handling. They packed most of the costumes and transferred many of the paper objects into primary housings.

The galleries, of just over one thousand square metres, contained approximately 2230 objects defined in the categories tabled below.

Object category	Quantity	Assessed for non-standard treatment	Conservation input for objects requiring non-standard treatment
Paper & Books	1,915	85 (700**)	Around forty were surface cleaned. Some condition reports. 20 set models stabilised and boxed. Some larger posters unframed and packed. Conservator assisted with some de-installation. **Although a standard treatment, over 100 paper objects were unframed and around six hundred needed mounts removed or adapted before being placed in primary storage housings.
Paintings	38	3 (large)	Condition reported all loans. Specific advice on handling & moving large paintings.
Textiles	67	37	Surface cleaned, supports made, stabilising repairs and packed.
Wood, Metal, Ceramics & Glass, Sculpture	170	32	Advice on handling, packing e.g. long-term packing materials for metals and handling of waxes. Specific advice for large/heavy complex objects being moved by specialist contractors.
Loans	132 (37 were paintings)		Condition reported. Where possible this was carried out by trained curatorial staff.

When communicating between two sites with conservators in one and the objects on display in another, the most useful management tool was a digital photographic record of nearly four hundred images showing the contents of each display case and the labels. The cases were sequentially numbered, with numbers appearing in each photograph relating to coded floor plans. The images had several uses e.g. copies were printed off and attached to display cases with instructions for the de-installers and were attached to the outside of packing cases to indicate the contents. The photographic record has been stored on VADAR (the Museum's digital asset repository) for future reference and is already being used in planning future displays of Theatre Collection objects.

By the end of November, all objects had been safely moved to other sites and the project concluded within budget. Whilst the Covent Garden building, display equipment and objects had presented many challenges to Conservation, these were balanced by the enthusiasm of the staff and a certain latent performance 'energy' in the objects. Thankfully this enthusiasm is currently being re-directed into the new Theatre and Performance Galleries at the V&A. Doors open and the performance commences in spring 2009!

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1. Pendlebury, J., 'Big boxes ... who would make 'em? The housing of theatre set models', *V&A Conservation Journal 57,* Spring 2009

(Photography by Merryl Huxtable)

Figure 1. A Theatre Museum display before de-installation showing small and fragile objects in a wide variety of materials

(Photography by Merryl Huxtable)

Figure 2. Some of the many Theatre Museum costumes with complex and fragile surface decoration which required cleaning and packing

(Photography by Merryl Huxtable)

Figure 3. A Theatre Museum display before de-installation showing large, heavy and awkward objects such as a billboard poster, a wind machine and props including an Ali Baba pot, and ostrich legs

V&A Conservation Journal No.57

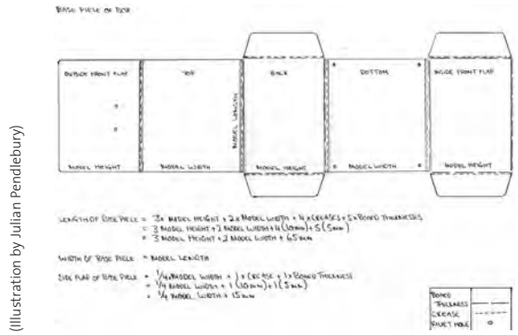
Big boxes ... who would make 'em? The housing of theatre set models

Julian Pendlebury

Paper Conservator (Contract)

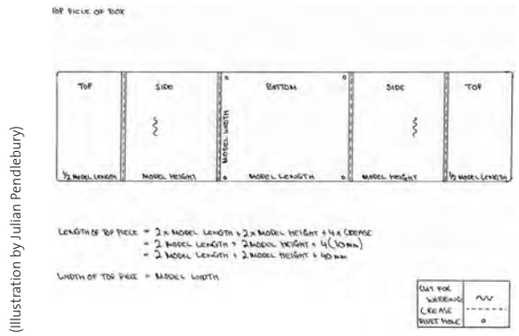
As part of the removal of objects from the Theatre Museum in Covent Garden, London, following its closure in 2007, a small number of theatre set models needed to be packed for long-term storage. The models were of varying size and weight, constructed from a range of materials and in various states of condition. The project called for tailor-made housing that was low cost, light and strong, would provide protection from impact and dust, readily allow access to the objects and could be easily closed again to maintain efficient protection. While the housing could be prepared in the conservation studios at the V&A, measurement of the models, assembly of the housing and packing of the models had to be done at the Theatre Museum.

Given the limited time frame and the requirement to work on-site, a single, simple box design was called for and a number of prototypes were tried. Correx® board, previously used within the Department, met the requirements for a strong, lightweight and durable material. The size of most of the models, and of the supplied board, meant that a design based on two pieces of Correx crossed at right angles was used. The board was hand-cut and creased by placing it, weighted, on the edge of a bench and bending it round on the crease line. Care was needed during measurement as the provided board was not perfectly square. The thickness of the supplied Correx board was 5mm and it was estimated that 10mm of board was taken up in each crease, which meant that extra tolerances had to be built into the design (Figures 1 and 2). Four or five rivets were used to join the 2 box-pieces. This riveted double-thickness created a strong base from which the rest of the box rose. All corners of the board were rounded. Occasionally, the supplied sheet would not be long enough, and so an additional length needed to be riveted on, completing the front flap. Despite the additional time required in their making, the sheets were cut to create small flaps on the sides; they provided a more efficient closure and helped maintain the box's shape. However, instead of being tucked within the box, they were left on the outside preventing possible abrasion against the models contained within, and for general ease during closure. It must be noted that the boxes were not designed to be stacked.



(Illustration by Julian Pendlebury)

Figure 1. Template for the base piece of the box



(Illustration by Julian Pendlebury)

Figure 2. Template for the top piece of the box

Standard disc and cord closures were found to be unsuitable as the softness of the Correx board meant that the discs sank into its surface, making it difficult to loop the cords around them. It was therefore decided that long strips of polyester webbing with Velcro® sewn onto their ends should be laced through the walls of the box to wrap around and close it. Velcro is incredibly strong and allows quick and easy fastening and refastening. The use of webbing also gave additional support to the housing. To ensure the box lay flat when open, one piece of webbing, which was fed between the two riveted layers at the base, wrapped the box vertically, while two separate strips of webbing ran horizontally around the box joining each other at the front and back. Lacing the horizontal strips of webbing (more or less a third from the top seemed to work best) through slots in the board ensured that they were

positioned correctly and in no danger of being misplaced when the box was opened. It also helped correct the problem of the walls bowing slightly under their own weight. Ample lengths of Velcro (200-300mm) were sewn onto the ends of the webbing, which allowed for some adjustment and ensured good adhesion.

A Melinex® sleeve was riveted onto the front flap to allow for an A4 size sheet bearing the object's photograph and relevant information. It was hoped this would reduce unnecessary opening of the box. Riveting only the top two corners of the sleeve also allowed the horizontal webbing to be easily secured underneath it.

Undoubtedly, as with every design, improvements could be made. There was concern that the webbing around the box would be used inappropriately as a handle resulting in the Velcro separating. Generally, however, user tests showed the design was easy to use. The box provides good closure, but is not totally sealed. This may be beneficial in terms of preventing an enclosed environment, but it does mean that the object is not completely protected against, for example, pest attack, pervasive dust or fluctuating relative humidity, control of which could be provided by other means or good housekeeping. Overall it was felt the design was successful and fulfilled the remit of the project.

Acknowledgements
I am grateful to Merryl Huxtable, Jane Rutherston and Anne Bancroft for their help and support.

(Photography by Merryl Huxtable)

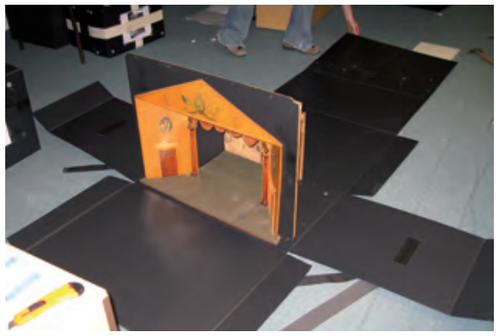


Figure 3. The model was placed onto the base of the housing, facing the front to ensure the contents could be viewed without having to open the box completely

(Photography by Merryl Huxtable)

Figure 4. First the sides and then the front and back of the box were lifted into position

(Photography by Merryl Huxtable)

Figure 5. The webbing running vertically around the box was fastened

(Photography by Merryl Huxtable)

Figure 6. The two pieces of webbing running horizontally around the box were joined and then tightened, ensuring the side flaps were pulled tight

Waking the dead: scientific analysis of an Egyptian tunic

Elizabeth-Anne Haldane, Senior Textile Conservator, V&A
Sara Gillies, MSc student, Scientific Methods in Archaeology, University of Bradford
Dr Sonia O'Connor, Honorary Visiting Research Fellow, Archaeological Sciences, University of Bradford
Dr Cathy Batt, Senior Lecturer in Archaeological Sciences, University of Bradford
Dr Ben Stern, Lecturer in Archaeological Sciences, University of Bradford

One of the textiles currently being conserved for the V&A's new Medieval and Renaissance galleries is a red woollen Egyptian tunic (291-1891) with tapestry-woven appliqué decoration. This tunic, which dates to around AD 600-799, is a rare survivor excavated from an Egyptian burial ground in the late nineteenth century. When the galleries open in the autumn of 2009 it will feature in the display 'Adorning the Dead 300-900'. The short length of the tunic, to about the knee, indicates that it belonged to a man. It is of particular interest because the word 'Allah' in Arabic script is woven into the tapestry decoration at the shoulder.

The Museum purchased the tunic from a dealer in 1891. The site where the tunic was found is unrecorded, but is believed to be Akhmim, in Upper Egypt. Excavation of burial grounds such as Akhmim revealed that from around the third century onwards, as Egypt became a Christian society, bodies were no longer mummified but were laid to rest dressed in clothes, then wrapped in shrouds. Unfortunately, many of these excavations were carried out in great haste and detailed information on the site was often not recorded.[1] Due to such a lack of records the tunic has been dated on stylistic comparison with other textiles of known provenance, including some that have been radiocarbon dated.

There are various alterations to the construction of the tunic; some definitely made post-excavation, others still to be determined. In addition, the front of the tunic is a patchwork of repairs carried out over the years in a variety of fabrics and threads. The back of the tunic is structurally weak, with losses, and heavily stained from burial. The shape of a human figure can clearly be seen on both the outer and inner sides. Some of the stains on the inside are unusual as they form quite regular narrow stripes. There are examples of tunics with a 'lattice' pattern of staining caused by tight bandages wrapped around the body to keep the textiles in place; however the stripes on the V&A tunic are considerably smaller and seem most likely to have been caused by something between the body and the tunic, perhaps relating to the method of burial.

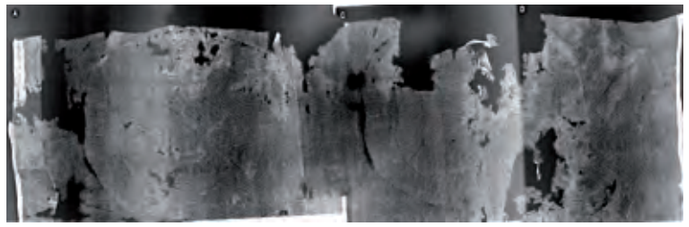
In order to carry out a comprehensive programme of scientific analysis of the tunic, the Conservation Department has formed a new collaborative partnership with Archaeological Sciences at the University of Bradford. At Bradford, natural and physical sciences are integrated in the study and understanding of the human past; the MSc in Scientific Methods in Archaeology particularly focuses on training students in scientific principles and practices as applied to archaeology. The tunic case study forms the basis of an MSc dissertation investigating the potential of several instrumental techniques to expand our understanding of an object's biography, while answering specific research questions.

The aim of the research is to identify and help to explain the unusual pattern of staining on the tunic, provide more specific information relating to the tunic's age and provenance and the chronology of alterations, and also inform the conservation decision-making process.

The analysis of the tunic was structured in two parts. First, the in-situ, non-destructive analysis of the tunic, which included X-radiography (Figure 1), and ultraviolet and infrared photography, was carried out at the V&A with the assistance of the Photographic Studio and Paintings Conservation Studio. Raman analysis was also trialed, however, a test study of several fibres revealed that they were too degraded to produce distinct spectra. Then, based on initial results from the in-situ analysis, small samples were taken from identified, and distinct, staining areas for minimally-destructive analysis in the Bradford laboratories by analytical scanning electron microscopy (SEM) and gas chromatography-mass

(Photography by V&A Science Section)

Figure 1. X-radiography of the tunic (291-1891) at the V&A. From left: Elizabeth-Anne Haldane, Paul Robbins , Dr Sonia O'Connor, Sara Gillies



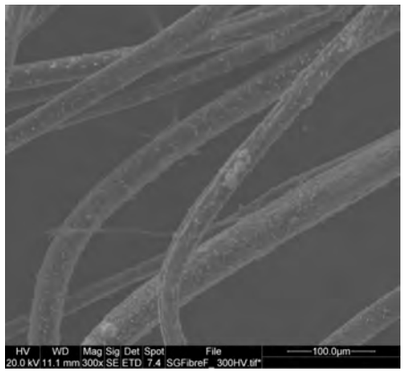
(Radiography by Paul Robbins, mosaic by Sara Gillies)

Figure 2. X-radiograph of the lower edge of the tunic (291-1891) with bright white (denser) 'tide-line' pattern, consistent with water staining and movement of debris to edge of wet region

spectrometry. Initial results suggest several distinct staining events. For example, X-radiography has highlighted a distinct 'tide-line' at the lower edge of the tunic, consistent with water staining and movement of debris to the edge of a wet region (Figure 2). SEM revealed extensive sodium chloride crystal deposition in this area (Figure 3). UV photography of the same area revealed a second staining pattern within the 'tide-line', also consistent with wetting but thought to have occurred prior to the larger stain.

Soil analysis was not feasible for identifying provenance; however, isotopic analysis was proposed as a potential alternative. It is a fairly new concept and there is only one study[2] thus far that has looked at light isotopes in wool for provenance which will form a subsequent pilot study. It is based on the idea that the ratios of light isotopes (carbon, nitrogen and oxygen) in wool fibres vary between locations and could therefore be used as a signature for a place of origin. The isotopes are acquired from the sheep's diet, the vegetation being a reflection of the underlying geology. Samples from the main body of the tunic will be compared with the appliqué decoration as this may indicate whether or not the two parts come from the same location, and they will also be compared with modern and archaeological samples of known provenance.

When the research has been completed the conservation treatment will begin in the autumn of 2008. The aim of the treatment is to stabilise the object for display, whilst preserving access to the reverse of the tunic for future study. Although the tunic is too fragile to be displayed on a life-like form, the Education Department is planning a replica tunic that visitors can try on. The tunic has already been featured on the V&A website and further information on the MSc project will be added which will hopefully inspire new interest in scientific research.



(Photography by Sara Gillies)

Figure 3. SEM image of salt (NaCl) crystals on wool fibres x300 magnification

Acknowledgements

With thanks to Helen Persson, Marion Kite, Graham Martin, Ken Jackson, Paul Robbins, Rachel Turnbull and Nicola Costaras. Sara Gillies received funding from the University of Bradford and the Pasold Research Fund Inc to assist with the cost of the analytical work.

The conservation of the tunic is supported by The Mercers' Company.

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V&A Conservation Journal No.57

Rocket science? A new method of poster display for Cold War Modern: Design 1945-1970

Eoin Kelly

Paper Conservator

By the time of this Journal's publication, the V&A's major autumn exhibition *Cold War Modern: Design 1945-1970* will have closed at South Kensington and embarked upon its international tour. Of the wide variety of material on display; including furniture, automobiles, ceramics and textiles, there were over 130 posters and other paper items, composed of both loans and V&A objects. Items as diverse as Raymond Loewy's designs from his time as habitability consultant for NASA (E.650-1981), Ken Adam's set drawings for Stanley Kubrick's *Dr. Strangelove* and a large cinema poster for Andrei Tarkovsky's *Solaris*, (E.537-2008) all required some form of mounting and framing for display and eventual touring.

Early involvement was crucial to the successful staging of this exhibition. Communication between Conservation and the Exhibitions Team was, as ever, excellent, with lucid and extremely helpful information being shared. Also shared was an enthusiasm to make the objects look as fantastic as possible. It was settled that there should be a cohesive look and design to the mounting and display of the posters and other graphic material. For previous exhibitions, such as *A Century of Olympic Posters* (V&A Museum of Childhood, 17 May – 7 Sept 2008), posters were lined with Japanese paper to give a margin which could then be wrapped around a support board. Alternatively, many had tabs of Japanese paper attached at intervals on all sides. These tabs were then slotted through slits in a support board and adhered at the back. Depending on the thickness of the poster, this had sometimes resulted in a slight bulging where the tabs had been attached with wheat starch paste. It was noted in some instances, particularly after a long tour, that parts of the posters which were not attached with tabs were free to cockle and undulate.

(Photography by V&A Photographic Studio)

Figure 1. Framed posters in the *Cold War Modern* exhibition space

A number of the posters on the *Cold War Modern: Design 1945-1970* tour are printed on very thin paper and, even if the thinnest Japanese paper was used as a tab, this would have been visible from the front. There is also the important issue that many are not Museum objects, and permission would have been needed from each and every lender in order to undertake any treatments. With consideration to staffing and time constraints, it was decided to try and implement a mounting technique which would require no intervention to the objects at all, except where absolutely necessary.

New techniques of mounting, object attachment and display are always welcome, and the Preservation Conservation Studio is well-placed to explore and develop new ideas. The aim was for a neat, unobtrusive method, which required no attachments to be made to the objects and could be relied upon to endure a multi-venue tour.

The poster is placed between two sheets of Melinex® polyester film; the front piece having had a proportional aperture already cut out. Depending on the object's size, a border of 10-15mm is usually sufficient. Using an ultrasonic welder, the two sheets are joined together around the edges of the poster. The excess Melinex edges are then neatly trimmed off as close to the welded edge as possible. This package can

then be attached to a support board by a variety of means. One method used was to place Tesa® double-sided tape on the verso and attach it to a support board. When positioning the package on the support board it is necessary to apply gentle pressure to ensure full adhesion. This can be done with a thumb and a protective piece of Bondina. Care must be taken however to apply the pressure as close to the welded edge as possible, otherwise there is a danger of the polyester edge making an impression on the object. If desired, tabs of Japanese paper could also be used to attach the Melinex package to the support board.

For very thin posters, where there may have been a danger of horizontal slippage, small hinges of Japanese paper were attached on the verso at the top with wheat starch paste, and passed through slots in the back sheet of Melinex and held in place with tape. The narrow Melinex border is not visually distracting as one might expect; particularly when it is displayed behind glass or Perspex®. In fact, it gives a clean, neat look and holds all edges and corners of the poster flush to the support board.

(Photography by Louise Egan)

Figure 2. Corner detail illustrating the mounting method

(Photography by V&A Photographic Studio)

Figure 3. E.137-1972 *Save our Planet, Save our Cities,* Dome above Manhattan by Buckminster-Fuller, 1962. (Poster produced by Olivetti)

The technique was first used for *China Design Now*, the V&A's spring 2008 exhibition, where the posters were displayed in Perspex boxes. The exhibition is still touring and the mounting technique has proved very successful and dependable. As with *A Century of Olympic Posters*, the posters for *China Design Now* required customised frames of varying sizes. With *Cold War Modern: Design 1945-1970* it was decided, where possible, to group the posters by size and display them using V&A standard frames. This simplified the packing requirements for the touring objects and was also more cost-effective as the frames can be re-used for future displays.

Conservators often have to respond to a wide range of demands, some possibly deemed unreasonable, during the staging of any major exhibition. It is always to be hoped that an approach of equanimity and commonsense can produce an equally uncomplicated and inexpensive method of display.

Acknowledgements
I am grateful to my colleagues in the Paper, Book and Preservation Conservation Studios.

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Indian Life and Landscape – taking a travelling exhibition of paintings to India

Mike Wheeler
Senior Paper Conservator

The V&A has a renowned collection of Indian pictorial art; less well known are the substantial number of watercolours by British artists who visited India and faithfully recorded the landscape and the peoples they encountered. Artists were employed by the East India Company which controlled British interests in India from the time of the first diplomatic mission to India in the early seventeenth century until British Concessions in the subcontinent were taken over by the British Crown in 1858. The works produced by these artists were a vital source of documentary information in an era before the advent of photography. These pictures allowed the British public enticing glimpses of the exotic and diverse cultures of India.

The idea to stage an exhibition about British artists working in India came to fruition during a visit by the author to Mumbai in 2002. Discussions with CSMVS (formerly the Prince of Wales Museum) revealed a desire to stage an exhibition featuring works on paper from the V&A. The Paper Conservation Section at the V&A had previously conserved a collection of almost 200 watercolours by William Carpenter, as well as a smaller number of works on paper by William Simpson – both British topographic artists and illustrators. This comprehensive collection of paintings included watercolours of all of the major sites in India – the Taj Mahal at Agra, the Golden Temple in Amritsar and a series of penetrating studies of Indian people, as well as numerous scenes depicting everyday life. As a result of both artists training as illustrators they took particular care to make their renderings of people and places accurate, an aspect which makes their work valuable as a source of documentary reference.

As the themes of the exhibition developed, works by British artists representing other genres were included. Paintings by Thomas and William Daniell were a natural addition as they represent a more picturesque response to the Indian landscape and its monuments. The works of Lockwood Kipling depicting various craft activities were also an important asset to the selection as they provide valuable documentary evidence of the goods which

(Photography by V&A Photographic Studio)

Figure 1. *Two Nautch Girls* by William Carpenter (IS. 157-1882)

helped put India on the world map. Gradually, a plan evolved of an exhibition which would encompass the works of a wide range of British artists who had worked in India and would make use of the current research on the subject as well as the comprehensive collections of the Word & Image Department and the Asian Department at the V&A. A generous grant, provided by the World Collections Programme, allowed a contract conservator to be employed and helped to fund the cost of packing, freighting and transporting the exhibition to India.

In its current form, *Indian Life and Landscape* comprises over one hundred watercolours and oil paintings of Indian subjects. The exhibition opened at CSMVS in Mumbai in December 2008 and is destined to tour other venues in the Subcontinent in early 2009. Although the V&A has always had very strong links to India in the past via its collections, this exhibition represents an important step in establishing stronger links with institutions in India which, it is hoped, will pave the way for future loans and co-operation. This process has been greatly assisted by the inauguration of a new purpose-built temporary exhibition gallery in Mumbai (the Premchand Roychand Gallery) and by the ongoing working relationship of the V&A and CSMVS, which has resulted in sharing of both conservation and curatorial expertise.

Packing and transport of this exhibition has presented some interesting challenges and dilemmas. In order to limit freight costs, it was decided to send the works out to Mumbai mounted – the framing would be done in Mumbai under the supervision of V&A Conservation staff. The Exhibition Gallery and new Conservation Studio at CSMVS greatly facilitate the unpacking and preparation of travelling exhibitions. The provision of this space was particularly pertinent to the *Indian Life and Landscape* project which required a climate controlled area in which mounted works on paper could be framed. The only exception to this rule was the inclusion in the show of a landscape watercolour entitled *West View of Ramgiri* by John Ritso on parchment (IS.169-2007) – this was transported framed and sealed into a frame incorporating Art Sorb® silica gel tiles to minimise the fluctuations in relative humidity occurring within the microclimate formed by the package.

Many of the watercolours in this exhibition have required extensive conservation treatment, including removal of old cardboard backings, washing to reduce staining and occasionally repair and infilling of damaged areas. Many of the original paintings by William Carpenter had already been previously conserved, but still required condition reports and careful re-assessment. Quite a few of the watercolours appeared to have been exhibited for prolonged periods and showed signs of overall discolouration of the paper as well as noticeable fading of pigments. In a few cases it has been possible to improve the appearance of these works slightly by float-washing to remove soluble orange-brown discolouration – this has helped to partially restore the watercolours to something of their former appearance. In all cases they have been mounted to show as much of the composition as possible, which in some cases clearly reveals the extent to which the original colour balance has been altered by fading. In a few cases the preparation of works of art on paper has lead to some interesting discoveries concerning the materials and techniques. Examination of a work by Robert Melville Grindlay, *Young Konkani Woman in a Purple Sari* (IS. 03539), previously thought to be an oil sketch, revealed that it was an aquatint that had been painted over with a layer of oil paint and then varnished. This was confirmed by using infrared photography that revealed the underlying printed outline.

(Photography by V&A Photographic Studio)

Figure 2. *View of the Taj Mahal, Agra* by William Simpson (IS. 1130-1869)

Indian Life and Landscape is the first exhibition organised by the V&A to tour India and acknowledges the need for access to the Museum's collections by the culturally diverse audiences of the Subcontinent. It is believed that this will help to lay the foundation stones for future projects and the continued exchange of expertise and knowledge between the V&A and the many museums and cultural organisations in Asia.

Acknowledgements
I am grateful to Divia Patel, Sophie Connor, Pauline Rohatgi, Dr Graham Parlett, Dr Amin Jaffer.

Materials
Art Sorb® silica gel tiles available from Preservation Equipment Ltd, Vinces Road, Diss, Norfolk, IP22 4HQ

The Berkswell 'Cello? Past, present, future

Chris Egerton
In-Post MA student, RCA/V&A Conservation and Stringed-instrument Conservator

The Berkswell 'Cello Project concerns the recent rediscovery and conservation of an early eighteenth-century English violoncello. The 'cello was made by John Barrett in London, in 1720, during George Frideric Handel's first decade in London, when public musical and theatrical events were well attended by the 'middling classes' enjoying the social prosperity and cultural energy of their time (Figure 1). Musical societies and social music making were important aspects of cultural life for many, and the trade in all kinds of musical instruments and printed music was thriving.

(Photography by Karen Lacroix)

Figure 1. 'John Barrett at the Harp and Crown, Pickadilly, London 1720'. Printed label within the 'cello

John Barrett apparently based his stringed-instrument designs on the work of Jacob Stainer of Absam (around 1617-1683), some of whose instruments were in the collection of James Brydges, 1st Duke of Chandos, at Edgware in Middlesex. In 1720 the 'cello was still at an early stage of design evolution and so Barrett's design was soon superseded by others and the 'cello was traded-in on the second-hand market. Eventually, it became the valued property of the church of St. John Baptist in the ancient village of Berkswell, Warwickshire (Figure 2). Some of its early structural design features have been preserved and early eighteenth-century parish documents record payments for the repair and upkeep of the 'cello, including for the purchase of strings and, in 1825, a specially made 'wooden box for the base viol – 5 shillings'. In the 1970s, Eric Halfpenny (1906-1979), noted musical historian, documented the Berkswell 'Cello, recording some measurements and unusual features. Thereafter, the 'cello seems to have disappeared from knowledge and record until its recent rediscovery.

The instrument was probably used with others, such as bassoon, violin and clarinet, during church services and also at social gatherings and celebrations of all kinds. A special gallery was built in the Berkswell church to accommodate the musicians and choral singers (quire). These galleries, usually built in the west wings of churches, gave the name to the 'West Gallery' tradition of music described by Thomas Hardy in his novels *A Laodicean* (1881) and *Under the Greenwood Tree* (1872). This musical tradition ended in the mid-nineteenth century with the increasingly widespread installation of church organs. West Gallery instruments fell into disuse and only a few known examples survive in museum collections in England, even fewer remain in their original church settings.

The many challenges to the conservation of this instrument made it an ideal learning resource for the author. As well as developing better practical conservation skills, it was an opportunity to explore some aspects of the contemporary theory of conservation as discussed by Salvador Muñoz-Viñas, especially intersubjectivity and the concept of an expressive, creative and communicative role for the contemporary conservator.[1] The author also collaborated with Karen Lacroix, an MA student of Communication Art and Design at the Royal College of Art, and her fellow student Joel Somerfield. The intention was to bring creative expertise to devise new ways of documenting and communicating about the conservation project.

Experimental documentation was an early consideration and we decided to make archives of the entire project. Conservation documentation is usually very selective in its compilation and presentation. The incidental and peripheral materials of decision, process and creative thought are normally edited out or discarded to leave an artificially straightforward narrative record. The novel idea of collecting all the documentary materials used or encountered during the conservation process seemed appropriate. It was a way of directly conveying some rarely recorded information, including the personal role of the conservators involved who are generally noted by name only in treatment reports.

(Photography by Karen Lacroix)

Figure 2. The author holding the Berkswell 'Cello inside the church of St. John Baptist, Berkswell, Warwickshire

The plan was to record and archive everything: condition and treatment reports; all communications, including e-mails, notes and minutes, jottings and sketches. Route maps and train tickets from journeys to visit the 'cello were kept, along with beer caps and receipts for lunches at meetings or for purchased materials, such as DV film tapes, and special paper for the project. We did not stop there: hundreds of photographic images, both technical and aesthetic; some experimental film clips, sound samples, fragments of recorded music; storyboard compositions, as well as online website material were all added to the open archives. Reference objects, such as some eighteenth-century violin pegs, tools and samples of paper and wood were included. As well as illuminating the conservation process and influences upon decision making, such archives offer a rare opportunity for insight into our methodologies, materials, relationships, our ways of communicating, and even travel arrangements and personal dietary habits in the early twenty-first century. These unconventional documentary materials convey valuable contextual information and also act as multi-sensory sources that supplement the written word.

V&A Conservation Journal No.57

The term 'archives' normally refers to a collection or repository of historical records of primary source material. Archives can be specific to a person, organisation or event, they can be thematic or even defy categorisation. Archives can be 'open' or 'closed' denoting whether material continues to be added. The Berkswell 'Cello archives are designed both to act as open archives and to function as conservation documentation and record. The deliberate use of some actual objects as documents is perhaps an unconventional feature, but the presence of objects in other archives generally is not unusual. Such objects can have profound symbolic meanings and values connected with the work or life of the original owner. They may be actual samples of materials or things used in scientific, design or creative work, or part of an object 'library' to which reference was made for inspiration and thought stimulus. Sometimes, they may be humble objects of incidental use such as spectacles or personal artefacts. In all these cases, the traditional practice has usually been to archive the objects after the event or the demise of the owner and to document them, describing composition, known history, results of investigations and explanation of their meanings and values.

The objects placed in the Berkswell 'Cello archives will have no additional documentation other than a brief reference. The objects are intended to be documents in themselves. Although they may have connection or involvement with events or process, no strict specific meanings or values will be ascribed. The viewer is invited to contemplate, handle, interpret or enjoy the objects in a personal and subjective way without the need for any prescribed reference other than the project context. Purely scientific and objective documentation is accessible only to the few, but here the ideas of subjectivity and intersubjectivity, as proposed in contemporary theory, are being taken a step further and consciously introduced into documentation. Such elements of subjectivity introduced into documentation, may enrich and extend accessibility beyond the professional realm to persons with widely differing knowledge, intellectual, mental or physical abilities.

Communicating more widely about conservation was another goal of the project and this would involve film, printed work and online material. The intended audience was the general public, but we wanted to explore different possibilities and ways of discussing and presenting conservation for the consideration of our professional conservator colleagues. Early ideas of filming a conventional documentary were discarded and collaborative creativity was engaged to explore subjective and symbolic representations in image and sound. The resulting short film, *The Berkswell 'Cello – Three Perspectives on Conservation* by Karen Lacroix,[2] discusses aspects of conservation in an indirect way, shifting the focus away from the object itself to talk about the nature of perception, personal experiences of conservation and the reasons for transmitting objects, values and meanings into the future.

Early critiques of this project and its experimental aspects have been encouraging. Further development of the explored themes and some more communicative film work is planned, along with articles in print and online. The Berkswell 'Cello will feature as a major portfolio work in the author's final year of study.

Acknowledgements

I would like to thank NADFAS (National Association of Decorative and Fine Arts Societies) for funding the project, Linda Hickin of Berkswell Museum, the people of Berkswell Village, staff of RCA/V&A Conservation, Alistair Gooch of Moritex UK for the loan of imaging equipment, and most of all I thank Karen Lacroix MA(RCA) for her inspiration and fine work.

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Making a statement: improving the condition reporting process

Helen Nodding, Condition Reporting Administrator
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In August 2007, a post was created for a Condition Reporting Administrator (CRA) within the Conservation Department of the V&A. The job was initially set up as a trial with the aim of relieving conservators of some of the administrative burden and to see whether savings could be made by streamlining the condition reporting process.

The preparation of objects for loans and touring exhibitions is one of the V&A conservators' many responsibilities. In order to qualify for Government Indemnity the condition of each object must be accurately recorded at key stages during a loan or exhibition when responsibility is transferred between the owner and the borrower. If there is a significant change in the condition of the object, the Government will pay appropriate compensation, based on the evidence recorded in the report. With over 3000 objects leaving the Museum last year, as loans or as part of touring exhibitions, the preparation of such condition statements can be time consuming. It is estimated that the completion of 3000 reports requires the equivalent of 1.25 full-time conservators.

The Conservation Department has become increasingly effective in delivering a wide-ranging programme of work which not only includes loans and touring exhibitions, but also involves the preparation of objects for gallery refurbishments and in-house exhibitions. In an endeavour to find more efficient ways of delivering a demanding work load, traditional attitudes and practices are frequently challenged. As part of this, a review of the loans process suggested that many aspects involved in the preparation of condition statements could be undertaken by a non-conservator with appropriate skills and training, enabling conservators to focus on more practical aspects of their role.

Centrally located in the Administration Section of the Conservation Department and directly accountable to the Head of Sculpture, Metals, Ceramics and Glass, the position of CRA was set up to support both the Conservation and Exhibitions Departments. The job description included:

- Photography and the use of photo-editing software
- Preparation of condition statements
- Condition checking
- Archiving records
- Interdepartmental liaison (including co-ordinating condition-checking schedules and keeping track of future projects which may require assistance)
- General assistance to conservation and exhibitions staff

(Photography by Louise Egan)

Figure 1. Helen Nodding, Condition Reporting Administrator, at work

Helen Nodding (Figure 1) was appointed to the post having had experience in several other Departments across the Museum and, consequently, possessing a good knowledge of the Museum and its systems as well other skills beneficial to her CRA role. She also received extra training from conservators, in-house photographers and exhibitions staff in order to develop the job. With no precedent, the role has very much pioneered a new approach, responding to the needs of conservators and exhibitions staff. Within four months, savings and efficiencies had been made to such a degree that a successful business case was made to make the post permanent.

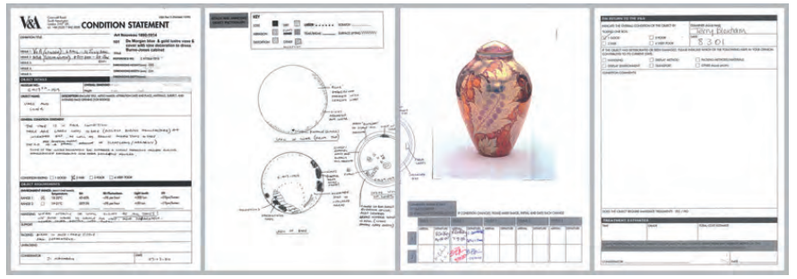

Figure 2. Example of an old-style condition report

The position of CRA provides a unique opportunity to gain a thorough insight into how the condition reporting process works across the entire Conservation Department. Shortly before the post was created, the old condition statement form had been redesigned. Using this template as a starting point, Helen was able to work alongside conservators, reviewing practice and identifying where further improvements might be made.

Research investigating condition statements revealed that, historically, approaches to recording information relating to the condition of objects had been inconsistent across the Department; methods included combinations of a general statement accompanied by annotated images (hand-drawn or photographic with an acetate overlay). Photographs often only displayed one view of an object and were frequently small or unclear (Figure 2). In practice, these statements were often confusing, and problems would arise during long multi-venue exhibition tours where several different couriers were involved. When checking an object at de-installation, the couriers often had difficulty distinguishing between old and new damage, and so would mark any areas of uncertainty on the statement. Consequently, by the end of a tour the statements were often so heavily annotated that they became difficult to read, making it tricky to assess the final condition of an object.

In order to reduce the need for annotation, a key aspect of improving the condition statements has been to include excellent photographic documentation, comprising images of each side of the object as well as detailed shots of any areas of damage. The CRA developed skills in digital photography, photo-editing software (Adobe Photoshop®) and Microsoft® Office. The improved format saves time during the assessment and condition-checking stages. Hard copies of statements are printed out to accompany the objects during the loan or exhibition. Files can also be saved electronically (allowing statements to be reused more quickly and efficiently than the older paper versions, to form the basis of future condition statements).

To encourage uniformity, a guidance document was created to help conservators by suggesting standardised fonts, colours, layout and the inclusion of a thumbnail image on the front of the report to act as a quick reference guide an idea instigated by the Furniture Conservation Studio. In experimenting with ways to create an entirely digitised version of the condition statement, Microsoft® Word was found to offer the simplest option (Figure 3). The CRA has been working with individual conservators training them in the use of the appropriate software to create digital condition statements.

Apart from assisting conservators with the production of condition statements, the role has also expanded to accommodate courier trips, researching methods of condition reporting within and outside of the V&A, and contributing to the Condition Checking for Couriers workshop.

The introduction of the CRA post at the V&A has resulted in benefits that include saved time (and money) for conservators and exhibitions staff as well as improvements to existing Museum practice. The Museum is gradually paving the way towards creating a fully digitised system with the potential for a centralised digital archive for condition statements. Considering the progress made over the past year, this may not be a too distant goal. As a testament to the success of the post, the innovations established have attracted attention from other large cultural institutions hoping to move in a similar direction.

Figure 3. Example of a new-style condition report