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Using digital and hand printing techniques to compensate for loss: re-establishing colour and texture in historic textiles

Abstract
Conservators use a range of 'gap filling' techniques to improve the structural stability and presentation of objects. Textile conservators often use fabric supports to provide reinforcement for weak areas of a textile and to provide a visual infill in missing areas. The most common technique is to use dyed fabrics of a single colour but while a plain dyed support provides good reinforcement, it can be visually obtrusive when used with patterned or textured textiles. Two recent postgraduate dissertation projects at the Textile Conservation Centre (TCC) have experimented with hand printing and digital imaging techniques to alter the appearance of support fabrics so that they are less visually obtrusive and blend well with the colour and texture of the textile being supported. Case studies demonstrate the successful use of these techniques on a painted hessian rocking horse and a knitted glove from an archaeological context.

Keywords
Image re-integration, visual infilling, textiles, printing, digital printing

Introduction
New materials are commonly added to fill voids in historic artefacts. These may give structural support, provide a visual infill in missing areas, or perform both functions simultaneously. The conservator uses his or her judgement to decide the most appropriate treatment in any given case. This may depend on the role of the object: artefacts displayed in the context of social history are often shown in a less complete form than those exhibited as fine art.

Two recent postgraduate dissertation projects at the Textile Conservation Centre, University of Southampton (TCC) have used printing techniques to alter the appearance of support fabrics. In both cases the intention was not to restore the original appearance of the object, but to make the support fabrics less visually obtrusive and blend well with the colour and also with the texture of the textile being supported. Hand printing techniques were used in the treatment of a painted hessian rocking horse, while digital printing technology was used with a knitted glove from an archaeological context. This paper introduces the work carried out on these two objects; further information on the two projects can be obtained by consulting the dissertations. Both techniques have been used before but there are not many previous published examples of their use. They have great potential both in textile conservation and in the conservation of other types of objects.

Visual re-integration
Papers presented at the *Image Re-integration* conference (Brown 2007) demonstrate some of the approaches taken in different specialisms to reinstate the aesthetic entity of damaged objects. Where the image is central, as in paintings, works of art on paper and tapestries, techniques to recreate and infill missing areas of design as well as voids in the artefact itself are commonly used (Lennard and Hayward 2006; McAusland 2007). Colour and texture are both important aspects of visual infilling; a difference in texture affects the way light is reflected from the surface and can make an infill more obvious. The surface texture of infills used in missing areas of paper artefacts is selected so as not to cause visual disruption (Enshaian *et al* 2007). It is not always necessary to use the original technique or material to create a satisfactory visual infill. Paintings conservators sometimes use visible techniques to camouflage damaged areas,

such as *tratteggio*, where brushstrokes are built up to create an effect of the original colour (Ramsay 2007).

This paper focuses on textile conservation treatments, the authors' specialism, and does not aim to explore different approaches in other conservation specialisms, but visual infilling techniques are common to all. Different gradations of visual infilling are used in the field of ceramics conservation, for example. Conservators tend not to fill gaps in archaeological ceramics unless there is a structural need to do so. When fills are used a clear distinction is generally made between the original object and the fill, although the material is often coloured so that it blends with the object better. This is not intended to give the illusion of completeness, but to make the re-integration less distracting. In the field of decorative ceramics, where the primary function is aesthetic, missing sections of pattern are more likely to be reconstructed, depending on the context. The texture of the object is also important; a rough-bodied pot may be infilled using a smooth fill but this may be scumbled with paint to suggest the original texture. A high-fired hard-paste porcelain vessel with a very glossy surface needs a fill with a similarly glossy shine if it is to appear unobtrusive (Buys and Oakley 1993:149-157; Williams *et al* 2002:106-109, 138-142; Smith 2007).

In other fields, such as furniture conservation, an even more seamless appearance is often desired and infills tend to be more integrated visually so that it may be difficult at first glance to identify material that has been added. This is partly due to the maintenance of function, but is also a continuation of traditional methods preferred by owners and dealers who expected an invisible match. In the same way, before the mid-twentieth century, it used to be common for losses in tapestries to be rewoven because conservation stitching worked through support patches denoted repair, whereas reweaving techniques could be virtually invisible.

Visual infilling in textile conservation

In the field of textile conservation common practice is to support weak and damaged areas with new fabrics using stitching or bonding techniques. There is no standard or neutral material that can be used for all textiles; a choice has to be made. A support fabric is selected primarily on the basis that it is of an appropriate structure, weight and fibre to provide support to the textile. It is generally dyed so that it is a good colour match for the damaged areas of the object; this makes it unobtrusive and stops the viewer focusing on missing areas. It also aids understanding, by infilling missing areas and making the object appear more complete from a viewing distance. Textile conservators also use semi-transparent fabrics stitched or adhered to the surface of textiles to stabilise and protect areas of damage.

Problems can arise when losses occur in areas of more than one colour, where a single coloured support or overlay fabric can be visually distracting, but joining different coloured dyed fabrics may reduce the effectiveness of the support. Printing and painting techniques have been used to colour sections of semi-transparent and pale-coloured support and overlay fabrics. Lochhead (1995) uses screen printing pigments to colour sections of silk crepeline overlays on painted trade union banners. Overlays can also be used to change subtly the appearance of dyed support fabrics or to alter the appearance of an object. Schmalz (1999) selectively applied acrylic paint to a semi-transparent overlay to tone down areas of exposed white batting in a quilt.

The additional infilling of missing areas of pattern or image may be necessary to aid understanding or where the image is particularly important. Thüsing (2000) explored methods for the localised application of colour to support fabrics, to

recreate missing areas of pattern; she investigated fabric paints, silk screen printing and digital imaging. Allan (1993) screen-printed fabric to fill a large void in the skirt of an early nineteenth century dress.

There are a few published examples of printing techniques being used to infill missing areas: Brooks *et al* (1994) described a painted technique for infilling the missing lettering on the support fabric for a trade union banner, while stencilling was used to paint a design onto a support fabric to visually infill areas of loss in a fragmented bedcover (Blum *et al* 2000). Flury-Lemberg (1988: 223) used linoleum block printing to suggest damask-woven fabric for large areas of infill on a silk doublet. Rollins printed fabric to recreate missing areas of a dress dated c. 1770 which had been altered for fancy dress and was reinstated in its earliest condition. The fabric was printed in stripes so that it blended with the patterned fabric but it was clear that it was not original (Rollins 1992; Brooks *et al* 1994). Mailand (1993) printed onto knit fabric, chosen for its stretch, using silk screen and airbrushing techniques with water-soluble pigments, to infill missing areas on the covers of an American nineteenth century chair.

It is generally accepted that such infills should be identifiable as additions so that the viewer is not misled as to the actual condition of the object. In some cases it is desirable that infilling material should only be seen when close to the object, so that the object appears whole from a viewing distance. In other cases, visual infills are intended to be more obvious, for example where areas of damage and loss can provide valuable information on the history and past use of an object. Fragmented archaeological textiles from the first to third century AD, excavated in Jordan, were treated at the British Museum. They were displayed mounted on flat boards, using dyed and painted fabric patches and overlays to help viewers to understand their original shape and design while making the actual extent of the fragmented textiles apparent (Cruickshank *et al* 2002).

Texture is an important property of textiles and the provision of an appropriately textured support fabric is also desirable. The term *textile,* although derived from the Latin word *'to weave'* is generally used to include fabrics and structures made from a wide variety of woven and non-woven techniques including felting, knotting, crochet and knitting. Different techniques have been employed to provide appropriately textured supports. Cogram and Haldane (forthcoming) treated knitted wool 1930s ballet costumes for the Victoria and Albert Museum's 2007 exhibition *Surreal Things: Surrealism and Design* using an adaptation of a traditional darning technique. They infilled holes with a looped Swiss darning stitch, in some areas worked through an underlying support fabric, recreating the knitted structure in areas of loss.

Case studies

Two recent student research projects at the TCC, supervised by Frances Lennard, focused on different ways of creating printed infill fabrics for historic artefacts where texture was an important property of the original textile. One used hand printing techniques to change the appearance of the support fabric used to infill missing areas on a coarsely woven bast fibre fabric (hessian) used as the main body of a rocking horse (Loosemore 2005). The other used a digital printing technique to give the illusion of texture on fabric used to cover mounts for archaeological knitted gloves (Baldursdóttir 2003). Both drew on previous expertise to inform the conservation treatments; Loosemore in printmaking, and Baldursdóttir in the use of a digital image manipulation programme. Surveys carried out by the two students suggested that printing techniques are not often used by textile conservators as possible solutions to problematic areas of loss. Responses suggested that this is due to a lack of experience with the techniques, and concerns about the cost and time involved. The findings of the surveys

highlight the need for more information and for further experimentation and testing in the field of both hand and digital printing.

The aim of both treatments was to use a printing technique to create an appropriately textured support fabric, not to recreate an image or design. Textile conservation support techniques have been developed primarily for the conservation of woven textiles and generally employ woven support fabrics. However the weave structure can be visually distracting when used to support or infill non-woven textiles like knits, or even coarsely woven fabrics such as hessian. Stockwell (1990) found that woven patches could cause tension in knitted materials. Hand or machine knitted fabric support patches can also be too thick and bulky. When treating areas of loss in knitted costume Wulfcrona-Dagel (1980) experimented with using knitted patches of similar material but found them too distracting visually; they were too bulky when the costume was placed on a mannequin and caused distortion of the fabric surface. It is expected that the experimental treatments described will have a wider application and could potentially be used on objects made by other textile techniques and on different weave structures.

Hand printing techniques used to colour support patches for a rocking horse

The privately owned rocking horse was treated by Vicky Loosemore. Its materials and construction indicated that it was of 19th century, possibly German, origin. It was based on a wooden structure with a painted hessian cover stuffed with 'wood wool' (shredded wood commonly used as a stuffing for toys) and mounted onto painted wooden rockers (Fig. 1). The painted hessian had suffered from paint loss and cracking, causing areas of loss in the fabric which revealed the wood wool filling and the wooden structure beneath. The paint surface had a very distinctive texture; the weave structure of the hessian was clearly visible beneath it, and in many areas the paint had broken up and only still adhered to the crowns of the weave.

It is not general textile conservation practice to retouch missing areas of paint because it is seen as restoration.[1] Structural areas of loss in the hessian fabric were filled using fabric patches positioned between the hessian and the wood wool filling. Adhesive-coated silk crepeline patches were used to hold the infills in place and to stabilise the damaged areas. Patches of a similar weight and weave structure to the hessian would have been too bulky, so it was necessary to use a thinner fabric. This however looked very different to the painted hessian. As the painted surface of the rocking horse was very textured, colour-matched but single-coloured infill patches stood out, making the areas of loss more obvious. It was therefore decided to print onto the patches to help them to tone better with the painted hessian. After experimenting with different colouring media, textile printing pigments were selected because they were easily applied and fixed. Helizarin pigments were used with Bricoprint Standard binder TS125 and Bricoprint Opaque White T binder to obtain good colour matches with the colours used on the rocking horse. A light-weight cotton fabric, dyed to the most appropriate background colour, was chosen and printing techniques were applied to give it an illusion of texture.

A new piece of hessian with a similar weave structure to that of the rocking horse was used as the printing base. It was placed on top of the pre-dyed support fabric, and off-white pigment pushed through the hessian onto the cotton with the aid of a rubber squeegee. The hessian was then removed from the cotton leaving a print where the pigment had been pulled through the holes in the weave, and the print was left to dry. Grey-coloured pigment was then painted directly onto another piece of hessian, which was placed onto the printed support fabric (Fig.

2). When removed the printed cotton resembled the painted hessian. The print was allowed to air dry before it was fixed using an iron on its hottest setting for five minutes. The printed cotton was rinsed with water to remove any excess pigment, then ironed again in the same way.

Overall it was felt that the printed infill patches were very successful. Toning down the patches with this technique allowed structural voids to be stabilised without making them appear more obvious, whilst not detracting from the integrity of the object (Figs. 3-4). Where printing techniques have previously been used on textile support fabrics, the aim has usually been to recreate a missing area of pattern or design. This treatment made an unusual use of printing to camouflage the areas of loss by visually mimicking the damaged painted surface. Only one other published instance of this was found: Bilson (1992) used a relief printing method to infill the support fabric for a Roman Egyptian painted shroud fragment with a similar aim and result.

It was interesting that reactions to the treatment included a few comments that the work verged on restoration, because it used printing techniques to recreate the visual appearance of the painted hessian, rather than using plain-dyed patches alone. Presumably this appeared to be acting in contravention of the conservation principle that minimal amounts of original material should be added. However it is also generally accepted that conservation interventions should be unobtrusive, though not invisible, and should not draw the viewer's attention. Although originally a toy, the rocking horse had become a decorative object, displayed in a private home for its aesthetic qualities as well as its historic interest.

In this case using a single coloured fabric to support the damaged areas would have made the losses more evident, not less, because the textured surface of the wood wool visible through the voids helped to break up the surface and detract the eye from the losses. If they had been replaced by a flat area of colour, even though matched to the background colour of painted or unpainted hessian, the losses would have appeared much more obvious. There was no attempt to deceive the viewer into believing that the rocking horse was undamaged. Although unobtrusive from a distance, at close quarters the printed fabric had a very different appearance from the painted surface of the hessian.

Digitally produced, non-interventive infilling for archaeological knitted gloves

The second project tested a digital solution for the conservation and display of textiles with areas of loss. Thórdís Baldursdóttir used photographic digital reproductions on fabric of undamaged areas of knitted gloves to provide visual infills in areas of loss. Knitted textiles were chosen for this dissertation project as they provided an opportunity to evaluate the printed appearance of both texture and colour. A survey indicated that while knitted textiles are not frequently presented for treatment to textile conservators in the UK, methods used for conserving areas of loss are extremely varied. They range from typical support treatments used for woven textiles, ie woven fabric patches stitched to the object, to customised methods such as re-looping into the knitted structure, as described for the dancers' costumes above.

Digital technology is increasingly used in the heritage sector, particularly to aid the interpretation of damaged objects by demonstrating their original appearance (Rogerson 2002; Geary 2004). Full-scale digital replicas are increasingly used to replace tapestries removed for conservation, such as the three tapestries created and displayed at Houghton Hall, Norfolk (Cole forthcoming), though the quality of the replicas varies greatly, depending on the quality of the original image.

Conservators have begun to investigate the potential uses of digital imaging for conservation. A poster for the Great Exhibition of 1851, treated at the Museum of London, had one corner missing. Fortunately in this case a smaller version of the poster provided the missing information, and was used to recreate the corner by scanning, scaling up and printing the design onto suitable paper.[2] However the emphasis to date has been on using digital software such as Photoshop for documentation, mapping and replica making, rather than the production of printed materials to use with the objects themselves (Godla & Hanlon 1995; Ahmon 2003; Boersma 2003).

The method used for digitally printing support and infill fabrics is relatively simple, quick and inexpensive. An image is printed onto a transfer film and then applied and fixed to a fabric using heat. It is also now possible to print directly onto fabric. Access to certain equipment is necessary: a scanner or a digital camera to capture an image, a computer with Adobe Photoshop® or other similar image manipulation software to process it and an ink-jet printer to create the print. However it was found that very little work had been done on digitally producing support fabrics. Its use was only reported in one case in the survey mentioned above, and no published examples have been found.

Baldursdóttir had some previous experience of the technique and was therefore aware of its possible potential. Tests carried out by textile conservators to evaluate the stability of coloured materials for use with textiles also indicated that this would be a useful technique. The transfer film and inks used in colour photocopiers, which are often identical to the inks used in ink-jet printers, preformed well in colour fastness, off-gassing and accelerated light aging tests (Kaldany *et al* 1999). Baldursdóttir's preliminary investigation looked at the possibility of using a printed photographic reproduction to infill a damaged object, and explored the potential of using image manipulation software to produce samples which matched the object in colour and texture. This was done by looking for software designed for other purposes and testing new ways of using it. The colour and texture matching method outlined could be used for any type of digital printing on paper, fabric or any other material onto which a print can be transferred.

1. Tests on different fabrics

Key selection criteria for a digitally printed support material were: it should be safe for use with historic textiles; it should be thin and flexible; the fabric structure should not interfere with the printed image; and it should be unaffected by the heat applied during the transfer.

Six different undyed fabrics were selected for testing: three lightweight woven fabrics (polyester, cotton and silk) and three heavier-weight fabrics (woven linen, woven cotton calico and a non-woven polyester fabric, Vilene™). Three sacrificial knitted objects were specially purchased for the testing so that different colours and types of knits could be compared. Samples were cut from the textiles and scanned using a flatbed scanner[3] on the True Color (16.7 million colours) setting, at a resolution of 200 pixels/inch. The scanned images were printed on the transfer sheets[4] using an ink-jet printer.[5] They were then transferred on to the fabric samples using a dry iron.[6] The knitted texture was clearly reproduced on all the fabrics, but the texture of the woven fabrics was still visible beneath the printing. The polyester and the silk were ruled out as they reacted badly to the transfer process becoming distorted and stiff. The background colour strongly influenced the colour of the print; especially for the lighter coloured knits (Fig. 5).

Vilene, the non-woven polyester fabric, was chosen as the best material for the infills: it took the transfer successfully, had a matt appearance and clearly displayed the knitted texture. It can be cut without any finishing of the edges, which is both time effective and eliminates bulk. It is also white, allowing for a more accurate reproduction of colours from the originals, as ink-jet printers are designed to use the white colour of paper to produce white and pale colours (Penfold 2003).

2. Using digital infills with knitted objects

Knitted gloves, belonging to The National Museum of Iceland, were used as case studies for the trials. For this investigation it was important that the objects had significant areas of loss and that some of these were situated on the sides or edges to evaluate the success of infilling three-dimensional objects. They also had to include areas of loss in differently coloured areas for comparison of colour matching. The objects chosen were a brown glove[7] and a pair of cream gloves with a multicoloured pattern.[8] The brown glove (Fig. 6) is thought to date from the early 16th century based on archaeological evidence. It was excavated in 1981 in Southeast Iceland, and is believed to be the earliest preserved example of knitting in the country (Snæsdóttir 1982).

To produce an original for the printed samples it is necessary to work from a digital image of the textile. This image can be obtained by photographing the object or by scanning. Both methods have advantages and disadvantages; both involve some handling and exposure to light. After consulting an investigation into the levels of light exposure experienced by a scanned object, which demonstrated that the average light exposure from the scanners tested measured 11 lux-hours (Vitale 1998), it was decided to capture images of the gloves using a flatbed scanner.

It had been established while evaluating the different fabric samples that a transfer print of the original did not necessarily provide a good colour match with the object, even though what is being produced is basically a digital photograph of the textile transferred on to a fabric. The scanning, printing and transfer processes and the background fabric all have a possible effect on the final outcome. The method chosen to produce samples of different colours and textures was to use the software Adobe Photoshop®, a pixel-based software. Pixels are very small dots that together make up an image; each individual pixel is a separate unit showing information on its location and colour. This gives excellent control over manipulation of the image (Penfold 2003; Franz 2002). The Jpeg file format was used; the resolution of the image on monitor and prints was 200 pixels/inch.

The colour model and mode used in this case was RGB (red, green, blue). RGB is the default mode setting and is used on computer monitors; a total of nearly 16.8 million colours are available. Commercially printed images produced on an ink-jet printer are converted to the CMYK (cyan, magenta, yellow, black) mode as this gives more accurate reproduction. Adobe standard RGB profile can be used to ensure accurate colour information between devices but when working with less sophisticated printers this is not necessarily advised as the printer's own software converts the colours reasonably successfully and it is simpler to work within the RGB mode (Penfold 2003). Tests carried out using the two different colour modes showed very little difference in outcome with the particular printers used in this case, so it was decided to use the RGB mode throughout to simplify the procedure. Alterations to the images were made using three options: Colour Balance, Hue/Saturation and Brightness/Contrast.

A range of different transfer films is available for heat fixing printed images onto textiles. Two types were compared in this project, made by ImediaT and Epson, although the Epson film selected for use in this treatment is no longer available. The manufacturers of both types of film were contacted but could not supply information on the films' composition, so the material used for the carrier for the ink was unknown. Wet fastness tests were carried out on both types of film and showed no colour bleeding. There was a considerable difference in the appearance of the two films once they had been transferred onto the fabric; the ImediaT film had a shinier, more plastic appearance. Samples printed at the same time using different types of film showed noticeable differences in the colour reproduction once transferred onto the fabrics. This highlights the need to compare different types of available film; the accuracy of colour reproduction might be consistently better with some types of film, whereas the properties of individual textiles may dictate the use of different films.

In textile conservation colour matching of support and infilling fabrics is usually carried out through a dye process producing a variety of samples, each with a unique and reproducible 'recipe', that can be compared to the textile itself. When using Photoshop the starting point is an image of the object, but in the same way an accurate record can be kept of any changes made to the original scanned image. To create the different coloured samples, a section of the image can be selected and multiplied as many times as desired. Displaying several 'layers' of the image on the screen at once is like looking at a stack of transparent sheets; it is possible to view them simultaneously and to compare details on all of them as long as they do not overlap. Keeping each different sample in a separate layer makes it possible to make repeated alterations to one sample without affecting the others. In this way a large number of samples can be printed onto the same transfer sheet and then compared to the textile once they have been transferred onto fabric. It is important to keep a precise record of the alterations made to the different samples; this can be easily done as all variations are expressed in numerical values (Fig. 7).

The first sets of samples were produced from both brown and cream gloves, selecting a typical, complete area from the original image. Other sets of samples were then produced, based on the information from the previous set. Finally the infill patches themselves were created in exactly the same way as the samples. As the objects were quite small, the infills could be made using A4 size transfer film.

The knitted texture was clearly reproduced but the colour matching could not be achieved without considerable work being carried out on the original. Inconsistencies between printed sheets meant that it was necessary to produce a large number of samples. The ink-jet printers were part of a communal student facility and the samples were produced over a long period of time, so that the ink levels seemed to fluctuate considerably. Consistency between each printed set is in many ways the most important quality desired, so it is advisable to have complete control of the printer used.

The aim of this project was to explore a technique to display the gloves in their damaged form, while suggesting a more complete appearance. A non-interventive method was used as this was considered appropriate for an archaeological textile. The infills were sandwiched between the objects and their three-dimensional mounts but were not attached to the gloves or the mounts and can be easily removed. The areas of loss are clearly visible even with the infills inserted, partly due to the coarse nature of the materials. There is no suggestion that the objects are now complete but the colour and texture of the printed infills blends visually with the gloves, which can be more easily interpreted on display,

particularly to an audience used to looking at images produced using photographic reproduction techniques (Fig. 8). As with the rocking horse, the use of the printing technique aimed to minimise the impact of the voids in the fabric of the glove. In this case, because the brown glove is single-coloured, plain dyed infills may have had the same effect of making the glove appear more complete from a viewing distance but the printed infill fabric provides visual confirmation that the glove was once complete. It can be understood as part of the display mount, rather than part of the object.

Conclusion

The hand printing technique discussed here is a low-tech, fairly cheap and quick method which needs a relatively small input of time for experimentation. The pigments used have been demonstrated to be safe for use in conservation when used in accordance with the manufacturer's instructions (Loosemore 2005). The digital printing technique uses technology and equipment available to most conservators although it requires a certain amount of initial practice and experimentation. Like the hand printing technique, it has the potential to produce a very large number of samples and infills much more quickly than by using a dye process.

Many conservators would find further training in this field helpful, although the more firmly embedded information technology skills of younger generations mean there is an increasing familiarity with digital image manipulation. However the technology is in a constant state of flux and as digital printing is a highly competitive and commercial field, it is difficult to get precise information from manufacturers and suppliers. This means comprehensive on-going testing of materials and methods needs to be carried out to ensure they are safe for use in conservation.

Both techniques widen the repertoire of treatments available to the textile conservator. Both have much wider applications and could be used with textiles made using different techniques, such as lace, crochet and embroidery. They can be used in different ways, either to make support fabrics more unobtrusive, or to infill missing elements of pattern or design. The applications are not limited to textile conservation; the ink jet transfer printing technique in particular could be used on a range of other materials, such as ceramics, or even paintings.

The two conservators employed techniques with which they were already familiar but it is likely that they can be used interchangeably, although the hand printing technique is perhaps more successful in giving an illusion of depth. The digital printing method could also have been used to create a *trompe l'oeil* impression of the hessian fabric of the rocking horse, whereas a print created using a knitted fabric of matching gauge could also have been appropriate for the glove. The comments on the printing technique used on the rocking horse indicated a perceived link between the camouflage of losses and a higher degree of intervention, but this is not necessarily the case. The use of creative infilling may mean that an object can be understood and displayed with only a minimum degree of direct intervention on the object, as was the case with the gloves.

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Materials and suppliers

Helizarin pigments and Bricoprint binders
Selectasine Serigraphics Ltd
Screen Printing Supplies
65 Chislehurst Road
Chislehurst
Kent BR7 5NP
UK
www.selectasine.com

ImediaT and Epson transfer papers
From local computer suppliers

Biographies

Frances Lennard gained the Postgraduate Diploma in Textile Conservation awarded by the Textile Conservation Centre and the Courtauld Institute of Art in 1985. She worked as a conservator for the TCC until 1990, and then in the south-west of England in partnership with Fiona Hutton. She returned to the TCC in 2001 and is now a Lecturer and Programme Leader of the MA Textile Conservation.

Vicky Loosemore has a BA (Hons) in Textile Design, specialising in printed textiles, and gained the MA in Textile Conservation from the Textile Conservation Centre, University of Southampton in 2005. She worked as a textile conservator for Textile Conservation Ltd in Somerset from 2005 to 2007.

Thórdís Baldursdóttir obtained a BA in Textiles at the Iceland Academy of the Arts and a MA in Textile Conservation at the Textile Conservation Centre, University of Southampton in 2003. She has focused on the conservation of archaeological textiles working for the National Museum of Iceland, the British Museum, the Victoria & Albert Museum and privately in Reykjavík.

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Captions

Fig. 1 The rocking horse, before treatment.
Fig. 2 Vicky Loosemore carrying out the printing of infill patches.
Fig. 3 Wood wool showing through an area of loss in the painted hessian, before treatment.
Fig. 4 The same area after treatment – the hand printed infill patch blends with the painted hessian.
Fig. 5 Digitally printed samples on different fabrics, from left, top: Habutai silk and polyester; middle: cotton calico and linen; bottom: cotton and Vilene.
Fig. 6 The brown glove, before treatment.
Fig. 7 A sheet of digitally printed fabric samples for the brown glove showing alterations made to the original.

Fig. 8 The digitally printed Vilene infills sandwiched between the glove and the three-dimensional mount.

Footnotes

1 Although collaborative work with paintings conservators has sometimes resulted in the use of in-painting (Pollack 2003).
2 Treated by Johan Hermans, Senior Conservator (Paper).
3 Hewlett Packard Scanjet, Color Precision A4 Scanner.
4 Epson transfer sheets.
5 Epson Stylus Colour 1520 printer.
6 Loytron model E191 iron.
7 National Museum of Iceland þjms. 1981:587; TCC 2790.1
8 National Museum of Iceland þjms.8007; TCC 2790.2

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