

Q&A Sandra Smith

Textile technologist

London's Victoria and Albert Museum holds more than 100,000 textile pieces. From next week, all tapestries, lace, kimonos and more not on display will be stored in the new Clothworkers' Centre for the Study and Conservation of Textiles and Fashion. Head conservator Sandra Smith talks about fabric-feasting insects, gas-emitting sequins and leaky, sticky PVC dresses.



What are your main conservation challenges?

The best thing for these objects is to be kept in the dark and cold, but we want them to be visible and available. So we take a preventive role, managing the environment to slow

down ageing processes. We use paper boxes that emit none of the gases or pollutants that accelerate deterioration. Relative humidity is kept below 70%, the point above which moulds kick in. We try to keep light damage, which is irreversible on textiles, to an absolute minimum. Organic dyes can be really affected by light. If you look at old tapestries, the trees can appear blue, because the dye was originally a combination of yellow and blue, and the more light-sensitive and fugitive yellow is gone.

How do you protect against insect attack?

Two species of carpet beetle and their larvae, as well as the webbing clothes moth [*Tineola bisselliella*] — the silvery-white one that people see fluttering out of their wardrobes — are of particular concern. Many chemicals used 15 years ago, such as the organophosphorus insecticide dichlorvos, are banned now, so our whole emphasis is on prevention. We avoid using partition walls to separate spaces, which can collect dust for insects to breed in. We also use insect traps in all the storage areas, and pheromone traps to lure the males.

Do embellishments such as sequins present particular problems?

In the 1920s, many sequins were made of cellulose nitrate. These might shrink, change colour, or give off acidic and oxidizing gases such as nitrous oxide. These gases can tarnish decorative metal threads and may weaken the core fabric, ultimately

affecting surrounding fibres. Activated charcoal cloth, used in displays and storage containers, and other materials can absorb such 'off-gassing'. We also have tiny mass-produced beads from the late nineteenth and early twentieth centuries. These can go opaque, change colour or get sticky because they absorb moisture



A conserved 1954 Dior ensemble.

— a condition known as 'glass disease'. They can also give off alkali salts that accelerate fibre degradation. But there are times when we have to accept that there is no treatment. So we just photograph the object in case it goes.

What about late-twentieth-century materials?

Polyurethane, an early foam used in shoes, can degrade into a dust. We have red vinyl Italian pumps from 1971 with polyurethane soles that are deteriorating and breaking away. Polyvinyl chloride [PVC] contains phthalate plasticizers — they are short-chain compounds which lubricate a stiff material by slipping in between the rigid polymer chains, allowing them to move more freely. But because the plasticizers are not chemically bonded to the PVC, they can migrate to the surface, forming a viscous layer.

Do you restore any pieces?

We carry out practical treatments on objects that will go on display in the galleries. This can be about strengthening them. For example, if we want to put a very fragile handkerchief on the wall, we might place another textile of the same size behind it. Then — using the tiniest threads and needles, normally used in medicine — we sew between the fibres of the handkerchief so that it is completely secured to the stronger material underneath.

Have any iconic designer outfits presented real conservation challenges?

For the museum's 2007 exhibition *The Golden Age of Couture*, we bought an extremely rare Christian Dior 1954 fuchsia-pink costume in the 'Zémire' design, made from synthetic cellulose acetate. The bodice, skirt and jacket ensemble was heavily soiled and creased, with a blackened hem and extensive water staining. Wash tests showed that cellulose acetate released its dye in acidic solutions, but the silk lining released colour in alkali solutions. So we dry-cleaned it with the solvent perchloroethylene, with limited success. We then decided to wash the costume in a pH close to neutral and with the addition of triammonium citrate, which is very effective at removing black soiling. The colour of the costume remained intense and, after hot steam removed the creasing, the fabric was once again pristine. The final task was to reinstate the complex box pleating of the heavily altered skirt. Once done, the stunning creation was close to Dior's original vision. ■

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