

Engineers take the stress out of artwork

ENGINEERS and art researchers have used advanced computer modelling to help preserve old works of art.

The work is based on techniques used to model the stresses and strains of tensioned fabric structures such as the O2 arena in London.

Damaged works of art are often lined with new canvas and re-stretched, ready to be enjoyed by future generations. The new techniques will allow conservators to create canvases with uniform stress and mitigate against the effects of temperature and humidity.

It has been led by Professor Wanda Lewis, at the University of Warwick's School of Engineering, and Dr Christina Young, of the Conservation and Technology Department at The Courtauld Institute of Art.

Dr Young, a senior lecturer in painting conservation, said: "This work will provide invaluable information to help us improve and develop structural conservation treatment for paintings on canvas. It also opens up new options for living artists in finding fabrics which are suitable for novel projects and have longevity."

Professor Lewis added: "We have developed a sophisticated



computer modelling package that predicts the shape of fabric enclosures very accurately. This aspect of design affects the aesthetics, durability and function of these structures. I realised that we can apply the same modelling principles to predict the behaviour of artists' canvases, which is simply a different material and structure."

She added: "We can model every detail down to the number and the position of the staples used, friction of the fabric, the effectiveness of the staples and how the fabric is wrapped around the corner."

The work has been used to improve methods for tensioning canvas to ensure as uniform distribution of stress as possible. Researchers are also predicting the effects of temperature and humidity on the tensioned fabric.