

**TEXTILE & DESIGN LABORATORY
CASE STUDY 01/2008**

PROJECT TITLE: MAI I TE AROHA, KO TE AROHA

T&DL PARTNER: LISA REIHANA

CONTACT DETAILS: reihana@ihug.co.nz

WEBSITE: www.lisareihana.com

PROJECT PERIOD: MARCH - MAY 2008

BACKGROUND: Highly acclaimed Maori artist, Lisa Reihana, was awarded a major new art commission by the Museum of New Zealand, Te Papa Tongarewa, in late 2007. The project required a quantity of fabric intended for decorative wall panels and seating to be printed. Already aware of the AUT's Textile & Design Lab's digital printing capability, Lisa approached the lab with a view to having test prints carried out on a small range of woven natural linen and bleached white hemp fabrics.

PROJECT METHODOLOGY: The lab had only limited previous experience of printing linen fabrics and no experience at all with hemp. Lisa supplied a range of digital image files that she had extracted from some of her video work in order to have a series of test prints carried out, initially on the hemp fabric that she had selected. In order to achieve maximum colour intensity, colour and rub fastness, it was decided to print using reactive dyes. The fabric was initially pre treated with a synthetic urea solution, atmospherically dried, digitally printed, steamed for a period of 12 minutes, and finally washed to remove any residual dye.

The results of these initial test prints were positive although the colour intensity was lacking. Further test prints were carried out with an increased print resolution and a minimal amount of adjustment was made to the image files in order to achieve the desired colours. The test pieces were generally around 0.5 m². The design chosen for the hemp fabric was a geometric black pattern and would be used to upholster 3 large mattress-size seats, which would be placed in the space leading to the Te Papa Marae.

The go ahead to print several full size pieces of the hemp fabric was given. Each piece was approximately 3 m². After washing and drying, creases became evident, which randomly affected the quality and clarity of the printed design. On further investigation, it was found that the fabric used for the test prints had been 'prepared for printing'. The 'bulk' fabric however, was standard finished fabric and still contained size (starch), which made it more prone to creasing. In an attempt to avoid this on subsequent pieces, they were pre washed and tumble dried before the pre treatment solution was applied. The resultant printed fabric was deemed acceptable, although small creases were visible on close inspection.

Lisa's linen fabric was to be used for decorative wall hangings in the same space as the upholstered seating. As this had also been given a regular finish, there was a risk of creasing during the pre wash and wash-off processes. It was therefore decided to digitally print these fabric lengths with pigment inks, which would not require either of these wet processes. Three designs were digitally printed onto the fabric pieces and heat cured through the lab's recently acquired tunnel dryer. In order to protect the fabric from mildew, it was suggested that a water repellent finish be applied to the wall hangings prior to installation. This would also help to preserve the prints from UV degradation.

LEARNING OUTCOME: Woven hemp and other similar heavy fabrics that are prone to creasing will in future be sent out to a commercial laundry for enzyme washing to prepare them for printing. Whilst the degree of creasing was improved by pre washing, this method did not eradicate the problem.

FEEDBACK: Printing of the fabrics was completed in May 2008 in readiness for the June launch of the newly designed space. The finished products, now in situ at Te Papa (see images below), are a credit to Lisa and an excellent example of the benefits offered by digital printing technology. Lisa commented "I've had a long-held interest in creating textiles and was able to satisfy this craving. I worked with the Textile & Design Laboratory, which allowed me to do short production runs of the different patterns".



*Digitally printed upholstery fabrics and decorative wall hangings by Lisa Reihana –
Museum of New Zealand Te Papa Tongarewa - June 2008*