

TDL Case study: 9/2011

Project Title: Thelma McGough - Knitted Intarsia/Jacquard Artwork

TDL Partner: Thelma McGough

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Project Period: September 2011

Partner Profile: New Zealand based textile and visual artist, Thelma McGough, attended The Liverpool College of Art where she developed a passion for seeking new textiles and techniques to use in her fabric creations. Thelma works with fabric through painting, quilting and knitting. Many of her works have received awards and she has exhibited in New Zealand and internationally. Her art work is often highly innovative and she is an advocate of using the latest technologies. In one of her pieces, Thelma manipulated a digital image using Adobe Photoshop, digitally printed her design onto fabric, and then quilted this fabric into a unique three layer fabric mural. During 2011, Thelma worked with the AUT's Textile and Design Lab to create innovative knitted intarsia and jacquard fabric pieces.

Project Background: Thelma has accrued many years experience working with fabrics using different knitting, quilting, painting and digital printing techniques. She wanted to produce trans-media non-objective compositions repeating a single geometric design using the three techniques of painting, quilting and intarsia knitting. Thelma was first introduced to the TDL via one of their workshops and became interested in the potential of the recently commissioned intarsia knitting machine.

Project Aim: To produce fabric with a geometric design using the electronic intarsia knitting technique. Due to the complexity and layout of the design, it was necessary to use a combination of both jacquard and intarsia knitting methods. Unlike the intarsia knitting method that introduces individual colours of yarn into the design of the fabric to produce a single layer, the jacquard method carries the yarns that are not required in the design across the reverse side of the fabric and reintroduces them when required. This has the effect of increasing the thickness and weight of the fabric.

Project Methodology: Thelma sent PDF images of her painted geometric artwork to the TDL via email. Gordon Fraser, the lab's technician, imported the images into the Shima Seiki CAD system in order to create a knittable programme for the 14 gauge intarsia knit machine. The size of the expected fabric piece and the intricate nature of the geometric design, which was reduced to a 3 colour design (black, white and red), was too complicated to produce solely through the intarsia method of knitting. Gordon worked on the programme to combine intarsia techniques with jacquard. The initial test pieces had faults due to the way in which the programming software had interpreted the design. These were remedied by way of some manual changes to the programme. The distances of 4 cm and less between the blocks of colour also posed difficulties for the positioning of some of the knit feeders. Again, manual changes to the programme were required to resolve this. Gordon also added extra stitches manually on the knit programme and removed some sections that could potentially unravel. Further knitting tests produced samples of a satisfactory quality and aesthetic standard. The final piece was knitted using a 100% dyed acrylic yarn that was vibrant in colour and would resist fading caused by sunlight and UV rays. It is Thelma's intention to exhibit this work alongside her other artworks in 2012.

Feedback: Thelma first encounter with the TDL was through the Design and Applied Digital Textile Printing short course presented by Fashion and Textile Department lecturer Angela Fraser. She found the course "beneficial and inspiring". She learned about new technologies for textiles and was inspired with the techniques she learned and the potential that she could envisage. As well as learning about the TDL's facilities through its short courses, she is a subscriber to the lab's monthly newsletter, which keeps her

informed of new and relevant AUT events and conferences.

Thelma described her work with the TDL as “successful, very positive and really interesting“. Due to the positive outcome and her interest in new technologies in textiles, she would like to continue working with the TDL with a view to commissioning small digital print runs.

Conclusion: The artist was pleased with the quality of the knit development and her experience with the TDL. She was also complimentary about the staff’s helpfulness, advice and quick response. The TDL’s technology and expertise supported the development of her complex knit design. This was one of the first intarsia knit projects by the TDL with an external partner and was completed in 2011. The development and production of a work or art is not as tightly prescribed as commercially oriented apparel design and production, which is inevitably limited by costs associated with development time and scales of production. Thelma’s project went through several iterations as Gordon tested and refined a method to produce a successful outcome. This process was valuable for the TDL in gaining greater understanding of the limitations and capabilities of the new intarsia machine and experience in the development and production of complex knitted designs using jacquard and intarsia techniques.



Digital geometric design (left) and intarsia/jacquard knitted design (right)