TEXTILE + DESIGN LAB

Case Study Number: 05/2017

Project Title: Aperture Divider

Researcher: Connor Hickey (Year 3 Bachelor of Design – Product Design)

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Project Period: July 2017 / ongoing

Project Description:

This project responded to a proposal initiated by AUT's Textile and Design Lab and their partner organisation, the Wool Research Organisation of New Zealand, who challenged students from across the university to find new applications for coarse wool. Coarse wool, or strong wool as it is often referred to, has decreased in market value due to the aggressive global marketing of oil based synthetic fibres. Finer micron wool, particularly merino, has gained in popularity due to its ability to be worn next to the skin and has been well marketed by brands such as Icebreaker, Armadillo, Kathmandu and Patagonia. As a result, demand for finer wools currently exceeds supply.

Aperture Divider responded to the above brief by exploring the application of coarse wool within an interiors context, where the durability of the fibre and its acoustic properties made it a desirable choice. Shared working spaces were investigated by the researcher, who identified a need for transitional and flexible privacy solutions that created focus within collaborative working environments. The Textile Design Lab was approached by the researcher to help create an acoustic knitted divider using its Shima Seiki Knitting Technology.

Background:

Connor has just completed his Bachelor of Design degree, majoring in Industrial Design. He has long held an interest in using textile and soft materials within industrial design applications. His interest in knitting technology arises from the ability to produce material surfaces that are flexible, tactile, interactive and immersive for the user.

Process:

The first part of the process involved research into shared working spaces to establish the disadvantages and advantages of these environments. Once a need for flexible and private alternatives was established, the application of an adjustable privacy screen was created to address the problem. Wool fibre was used due it its ability to absorb rather than reflect sound within open spaces. Around 60 percent coarse wool was used within the final product.

Sketching, modelling and prototyping formed the initial part of the design process. A movable frame was digitally designed using Rhinoceros three-dimensional modelling software that would contain and enable the rotation of an acoustic wool panel. The frame was designed to be made from standardised parts, to make for easy assembly. Shima Seiki design and knitting technology was used to develop and construct the acoustic knitted panel for the divider. Prototyping here involved experimentation with the transparency of the surface, through the placement of ladders and lace within the knitted textile. The user could then touch and rotate the panel to increase or decrease the degree of privacy. The designer notes that the knitting technology used was the best choice for producing the knitted component of the project, as it allowed for the production process to be streamlined resulting in zero waste. The panels were knitted to the required shape and dimensions in one process to create each panel.

Project Outcomes:

The designer has secured funding to develop the initial working prototype. Development of the prototype for commercial applications will involve the investigation of a static simplified version of the current design, making the product easier to implement and suitable for the target market. Currently a working model has been installed in a collaborative shared space, where the designer has gained positive feedback regarding the tactile and flexible dimensions of the divider. The product was also exhibited at AD17, AUT's graduate exhibition. More information about the designer and his wide range of interests can be found in the website link below.

Publications:

Personal Website: https://crimespeaks.com/home

Images: