



Depth of Color

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This project proposes an aesthetic clothing design for visually impaired people with communicative qualities. This garment, Depth of Color, is part of ongoing research project to develop design strategies for clothing for vision-impaired people. To gain a deeper understanding of this market, we conducted a focus group interview with a group of 13 people living with visual impairments. This design concept focused on aesthetic values of the focus group participants. In a few previous studies, researchers have examined the process of clothing decision making (Ramatla & Mastamet-Mason, 2013) or identified the apparel needs (Chang & Lee, 2015; Williams, Neylan, & Hurst, 2013) of the population. This design concept is an extension of their work, especially focusing on suggesting a new design strategy for the target group.

One of the main challenges for people with visual impairments is navigating and understanding the colors of clothes (Chang & Lee, 2015). When buying clothing, they usually rely on advice from helpers or other shoppers. However, a verbal description of the depth of color can be challenging because color is arbitrarily visually perceived and consists of a variety of shades, hues, and categories. For example, in the focus group interview, one of the participants described being given diverse names of color shades such as midnight blue when shopping; however, the person did not know “what some of those blues really are.” (Anonymous, personal communication, March 11, 2017). Sometimes, it is insufficient to describe and recognize certain colors with only a verbal description. Therefore, this design transposes the verbal descriptions to tactile ones to extend the aesthetic color ranges of people living with vision impairments. Tactile expression of color, as explored in this concept is a new approach in clothing design that expresses the color without exploiting visual elements.

To express the depth of color, the designer employed a laser cutting technique to communicate changes in color hues by creating cutouts from a fabric overlay that has a strong tactile texture to reveal a hand-painted colorful fabric underneath. The designer laser-cut the main textile of the first layer with ellipses of various sizes. The size of the ellipse corresponds to the size of the shape where lighter shades of blue are represented by smaller circles and darker shades are represented by more elongated ellipses. The laser-cutting results in a strong aesthetic effect

where the garment represents the deep and lighter colors by the variation of frequency or size of the circles. The outer layer is velvet-textured 100% polyester.

To create the colorful under layer, the designer used a brush dye technique to express the strength of the shade of blue. The designer referenced the laser cut overlay to figure out the orientation of the blue shades, so when sewn together, the overlayer and under layer align. The under layer is 100% cotton twill.

The initial dress patterns were developed through flat pattern and draping techniques on an *Alvanon* Missy Size 6 dress form. The design includes an 18-inch polyester invisible zipper at the center of the front of the garment and at the side seam for easy dressing and undressing in consideration of the user group. The designer chose to do a dress and designed the competitively simple silhouette to make visually impaired people to easily understand the overall shape of the garment by describing it as “a grey A-line dress”. The designer then digitized the patterns directly into the *OptiTex PDS* and revised them for better fit. The patterns were then exported from *OptiTex PDS* and imported to *Adobe Illustrator* to design an organic and harmonious laser-cutting motif in accordance with the digitized garment pattern. Special attention was paid to ensure the motif looked good across multiple seam lines to ensure continuity of the design. The outer layer of fabric was cut using a *Full Spectrum CO₂* laser cutter with a cutting bed 48” X 36”. To save materials and times, accurate and precise calculations before printing were required.

This prototype design allows visually impaired people to enjoy the design using their sense of touch to understand and feel the depth of color. This concept, communicating depth of color, is transferable to other garments. For example, this concept can be used in not only dress but also in some design details of shirts or blouse in the mainstream market.

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Reference

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