

Sheer Force Sustainable Draped Ensemble No. 4

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Sustainability, Textile innovation, Couture techniques

Bust 36", Waist 27", Hip 36", Length 60"

Apparel design has the potential to be a powerful communicator and designers can effectively act as facilitators to encourage environmental change in apparel design (Fletcher & Grose, 2012). The overarching purpose of the project was to explore and then combine a number of sustainable approaches to create an original ensemble that will be used as a teaching tool in apparel design curriculum. Educators can foster student awareness about sustainable design practices by teaching by example as is evident in the work of Timo Rissanen (2016). This project builds on this idea in two ways. First, by developing first hand knowledge through the activity of making from the standpoint of the educator (Nimkulrat, 2009). Second, students benefit by interacting with an actual 3-D garment to encourage their own development of sustainable apparel design solutions.

Sheer Force resulted from the exploration of sheer and semi-transparent fabrics in sustainable draped design. Manipulating the sheer printed silk organza fabric created visual interest in the outer garment by creating varying levels of visibility of both the print and of the form underneath. Initial inspiration for the outer garment came from images from the state capital of a mid-western city that were later altered and used for the creation of the digital print. In contrast to the outer garment, the sand-washed silk charmeuse dress follows the contours of the body and both conceals and accentuates areas of the body using the extra fabric to create drape in order to avoid fabric waste.

The outer garment was developed first by using the geo-cut method. Geo-cut is based on the use of basic repeated geometric shapes. (Aako and Niinimaki, 2013). The garment was created from four cut rectangles that were draped, twisted and pleated on a dressmaker form. Edges were finished prior to garment assembly and all of the fabric was incorporated into the design resulting in zero waste. It features a digitally engineered print that was created from an image of ornate ceiling architecture. The desirability and acceptance of eco-friendly garments increases substantially by incorporating other features and this design builds on this research by pairing a one of a kind print with zero waste patternmaking (Fletcher, 2010). In addition, digital printing was an appropriate choice for this piece because it has many advantages over other printing processes and can potentially save energy, water, ink and fabric (Aako and Niinimaki, 2013).

Inspired by Madame Vionnet's bias cut designs, the off-white dress provided the foundation garment and was draped on the bias therefore utilizing grainline to aid in shaping the garment at the bust along with tiny gathers (Kirke, 2012). The zero waste dress was created from two large triangles (front pieces), two large pentagons (back pieces) and small rectangles (neck strap and optional belt). Creative use of all the fabric yardage resulted in a unique hemline and this was not surprising because creative outcomes are often realized through minimal waste pattern making (Carrico & Kim, 2014; Townsend & Mills, 2013).

Careful consideration was given to all of the materials used in the creation of the dress in an effort to minimize material contamination. Simply defined, material contamination occurs when disparate materials are used in

garment assembly that later prohibit easy disassembly as well as breakdown of the fibers at the end of a garments life cycle (Gam, Cao, Bennett, Helmkamp, Farr, 2010). As stated before, the dress is comprised of 100% silk and was also sewn entirely with silk thread. The waistline and neckband interfacing is silk organza and bar clasps and nylon snap closures can be easily removed when the time comes to repurpose or recycle.

Finally, the bias cut design provides drape that allows for some variation in sizing that makes the garment more sustainable by extending wearability because it is somewhat adaptable to a changing body (Fletcher & Grose, 2010). The dress can accommodate approximately sizes 6-10. The outer garment is also adaptable and is one size fits most.

Important to note is that while both garments were zero waste, they differed in draped design approaches. The outer garment design started with a predetermined shape that was then manipulated. In contrast, the dress was draped with three initial constraints that include grain line, fabric dimension and a fixed amount of yardage. The pattern pieces for the dress emerged as a result of the draping process. Overall, the resulting ensemble provides a teaching example that is unique because it represents sustainable apparel design on multiple levels in a one of a kind garment. This is one of four ensembles that will be used for teaching purposes. The goal is to provide real-life examples for students to interact with in the classroom that will ultimately increase awareness about sustainable apparel design and inspire new solutions for the future.

References

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