



Star Flower Remade

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Contextual Review and Concept. Digital printing is an ideal partner for zero-waste design, allowing the garment pattern pieces and textiles designs to be printed onto a fabric simultaneously. Digital printing has been used by designers like Holly McQuillian to explore cut and sew zero waste garments (McQuillian, 2016). Digital printing and zero-waste design concepts provide an opportunity to reduce the environmental impact of textile printing and garment manufacturing by saving water and reducing the amount of textile waste sent to landfills (Bowles & Isaac, 2012; Rissanen & McQuillian, 2016). Issues related to achieving contoured body garments and the use of excess fabric in garments designs has been cited when using the tessellation method in zero waste design (Carrico & Kim, 2014).

My great grandmother's Star Flower block quilt was the **inspiration** for this three-piece ensemble. The quilt was made from fabric scraps and old clothing. It was hand sewn in the little leisure time she had with the intention to keep her family warm. Her clever use of materials to create a beautiful design inspired me to mindfully and intentionally use digital textile printing to create a zero waste engineered print design and garment ensemble. Drawing on the instincts of my grandmother to utilize all of the fabric she had available dictated the zero waste design approach used in this ensemble.

It was my goal with this design to demonstrate sustainability through waste reduction or elimination as a result of garment pattern cutting and construction. The **purpose** of this ensemble was to fuse the concepts of engineered digital textile printing, quilting, and zero waste design, while solving problems previously cited with the zero waste tessellation method (Carrico & Kim, 2014). This purpose reflects my grandmother's strategies to use the fabric she had available in the most efficient way possible.

Aesthetic Properties and Visual Impact. This zero waste ensemble includes a laced back top, pleated skirt, and coat constructed from 19 engineered pattern pieces digitally printed in a layout that created no fabric waste. Rectangular pattern pieces were chosen as a symbolic link to the shape of the quilt inspiration. The Star Flower quilt block pattern from the inspiration quilt was manipulated to create eight repeat patterns and one larger flower motif that was used in the ensemble's printed pattern pieces. The engineered layout of the pattern pieces created larger flower motifs around the skirt when it was pleated.

Process, Technique, and Execution. Environmental concerns regarding the impact of the apparel industry guide the **process** for this design in both material selection and design methods. When using zero-waste design techniques, one must first consider the materials and their capabilities, then work backward to establish the overall garment design. The fabric type was selected after a color test print and prior to starting the design process. Cotton denim fabric was selected for its color saturation, durability, and fabric width.

Several techniques were used to achieve sustainability in the design and construction of this ensemble: 1) zero waste tessellation pattern cutting 2) half scale fit testing 3) digital textile printing, and 4) the integration of reversibility in aspects of the design. The fabric repeat patterns and engineered print was created in half scale in Adobe Illustrator. This design approach incorporated the tessellation method (Rissanen & McQuillan, 2016) of zero waste design in its use of one shape repeated for pattern cutting to insure no gaps or fabric waste were created between pattern pieces. In accordance with this approach all three of the ensemble pieces were constructed of the same rectangle shape in varied sizes. This zero-waste design approach worked to eliminate textile waste starting at the design stage (Rissanen & McQuillan, 2016). To achieve a fit that contoured the female body's curves, pleats and darts were used to shape the garments to the body. The garments fit to the body was tested by printing the file in half scale on paper and was tested on a half scale dress form. Using this type of pattern fit testing helped to further reduced the environmental impact of the design process. Once the design was finalized it was scaled to full size for printing. The final engineered digital textile print utilized the entire printable width of the fabric. The underarm and side seams of the coat were hand stitched together using an invisible ladder stitch to create reversibility in the coats design therefore extending the wear possibilities.

Cohesion. The design utilized dyed cotton bias tape for the seam finishing and laces for the top. The reversible coat was machine quilted using a diamond pattern mimicking the hand stitching on the inspiration quilt and printed binding was applied to the coat in flat form just like a quilt.

Design Contribution and Innovation. In accordance with the purpose of this design a sustainable ensemble was created fusing digital textile printing, quilting, and zero waste design while providing solutions to previously cited issues found with the tessellation method for zero waste design. The issue of being able to achieve contoured body garments with zero waste design (Carrico & Kim, 2014) was resolved in this design through the use of pleats and darts. Another issue resolved in the design that previously occurred with the tessellation method is the use of excess fabric in garment design. Through garment style selection and pattern cutting layout consideration, no more fabric was used than in traditional pattern cutting for a similar design.

References

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