

## Stained Glass in Three Dimensions

Charity Calvin Armstead

Keywords: Digital textile printing, historic inspiration, Art Nouveau, stained glass

Creative design scholars have used stained-glass pieces as inspiration for garment design, both in the structural design of a garment (Parsons & Kowalsky, 2015) and as surface design (Wooden & An, 2015). Unlike previous designs, however, my design for this dress transforms a two-dimensional stained-glass design into an engineered digital textile print that conforms to the contours of the body. In examining antique pieces of stained glass, I have noticed that the shrinkage of wooden frames over time have caused some stained-glass pieces to expand outward to form three-dimensional shapes, an effect that I have used as inspiration for the contours of this design. Parsons and Campbell (2004) observe that the use of digital printing can facilitate new types of garment designs; in this case, using a digital textile print facilitated the process of creating an engineered textile design and enabled the use of the large number of colors necessary to create a credible representation of a stained-glass window.

Rather than referencing historic silhouettes or garment design details, the historic inspiration for this dress was found in Art Nouveau stained glass designs of the early 1900s. The sinuous design lines of Art Nouveau style were particularly suited to fit the curves of the body in creating a three-dimensional, stained-glass design. I created the dress design using the flat-pattern method. The upper portion of the dress features a princess-line design with additional piecing at the shoulder and above the flounce, used to mimic the construction of stained glass.

The pattern pieces were digitized into Optitex, exported to Adobe Illustrator, and printed in half scale. I drew the design by hand onto the printed pattern pieces, physically aligning the pieces to continue the design across seamlines. I then scanned the pieces and used the pen tool in Adobe Photoshop to trace over the hand-drawn design lines. To create the glass patterns used to fill the outlines of the design, I photographed pieces of two stained glass windows from my personal collection and converted the photographs into half-drop repeat prints in Adobe Photoshop. I also used Photoshop to isolate faceted jewels from my windows, which were then used as individual objects within the design.

The design was digitally printed onto silk charmeuse. The fabric was chosen because its drape was suitable to the design and because the luster of the silk is suggestive of the sheen of glass. Because the charmeuse is lightweight, I hand basted the charmeuse pieces onto a silk organza interlining and lined the garment in china silk. To ensure accurate alignment of the pieces, which was necessary for an uninterrupted flow within the design, I slip basted the pieces together prior to stitching them. To achieve the desired drape at the hem of the circular flounce, I used a hand-rolled hem.

This garment reinterprets the two-dimensional designs found in Art Nouveau stained glass into a three-dimensional, digitally-printed form, giving a new shape to the use of stained glass in garment design. The design also redefines historic inspiration by utilizing historic architectural elements, rather than historic dress, as the primary source of design inspiration. Future designs could further explore the use of historic architectural elements in garment design, perhaps expanding to the adaptation of other architecture elements such as building shapes, antique door hardware, or antique light fixtures.

## References

- Parsons, J. L., & Campbell, J. R. (2004). Digital apparel design process: Placing a new technology into a framework for the creative design process. *Clothing and Textiles Research Journal*, 22(1/2), 88-98.
- Parsons, J., & Kowalsky, K. (2015, November 12). *Faces of El Salvador*. Design presented at *International Textile and Apparel Association (ITAA) Annual Conference*, Santa Fe, NM. Paper 46.
- Wooden, C., & An, S. K. (2015, November 13). *Diagonal Paine*. Design presented at *International Textile and Apparel Association (ITAA)*, Santa Fe, NM. Paper 37.

