



Title: Rojo Mistral

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It is well known and documented that the fiber, textiles, and clothing (FTC) industry is a major contributor to environmental harms, through garment manufacturing, production, and distributions to consumer discard. Substantial research exists on the need to reduce environmental impacts of the industry (Allwood, Laursen, Russell, de Rodríguez, & Bocken, 2008; Bevilacqua, Ciarapica, Giacchetta, & Marchetti, 2011; Curwen, Park, & Sarkar, 2013), however implementing sustainable changes are complex and require adoption and adherence by the multiple stakeholders involved along the supply chain. The industry average for textile waste generated through production is 15 percent – which generates an alarming quantity of textile waste destined for landfill (Brown, 2010, p. 254). Adn Around 2.35 million tons of waste comes from the clothing and textile industry per year, which estimates about 40 kilograms (kg) (88 lbs.) per person each year, of which 74% ends up in landfills (Vennström, 2012). “In an industry which is increasingly overproducing, very little is being done to highlight how much is discarded... and yet what is being thrown is often intact, still beautiful, and still usable if thought of in a different way” (Brown, 2010, p. 116). Curwen, Park, & Sarkar (2013) point out that the design stage of the product development process has a direct influence on a final product’s environmental impact (approximately 80%) as this stage is where critical decisions are made, including material selection, garment design, and production approach.

When visiting the university apparel design studio it was evident that many student designers did not consider the textile waste generated by their design, production, and discarding decisions. Rojo Mistral was the third design in a series of Waste-to-Wear (W2W) pieces developed from pre-consumer textile waste. The W2W collection experiments with a variety of patternmaking/draping practices, slow design textile fabrication methods, surface design, and fiber art techniques that embody a recycle, reuse, and redesign approach by utilizing small textile scraps discarded in university apparel design workrooms. Rojo Mistral, and the entire W2W collection, aim to demonstrate, educate, and inspire young professionals to critically consider textile selection and utilization of fabric yardage, waste generated by a design (due to pattern shaping), and how textile waste, made by self, class/company, and the fashion industry as a whole, impacts the environment.

Rojo Mistral approach utilized the design process outlined by LaBat and Sokolowski (1999) that includes the following three phases: 1) problem definition and research, 2) creative exploration, and 3) implementation. The problems that prompted design development are outlined above. Research involved the survey of textiles available, pattern shaping options for optimum textile yardage, surface design ideation for usage of small scrap waste, and the ability to “up-cycle” textile waste into a wearable product (Thomas, 2008, p. 534). Rojo Mistral’s creative exploration phase began by dividing the collected pre-consumer textile scraps by color for palette selection and yardage identification – where larger pieces were set aside for garment body sections and smaller pieces were sorted for surface design technique. Red and black colors of textiles were in excess (compared to other textiles collected) due to student projects involving the ‘women’s heart disease awareness gown’ and ‘little black dress’ design challenges. Creative exploration continued through draping/patternmaking procedures and surface design ideation. Design implementation involved the strategic positioning of available textiles to create contrast (volume) and focal points (coloration emphasis) in the versatile garment. The dress may be worn with the red double-knit lace tube under-skirt for formal events, or without for cocktail dress occasions. Additionally, the dress may be worn with or without neckpiece for further versatility. Rojo Mistral employed a ruffling textile surface design technique where narrow strips (approximately 2” in width) of discarded textiles scraps were sewn together to form long continuous lengths, then pleated to create evenly distributed ruffles for decorative application on the garment body and removable neckpiece. Ruffle inspiration was taken from Michelle Lowe-Holder’s Autumn/Winter 2010/11 sustainable accessory line entitled “Ribbon Reclaim” (Brown, 2013, p. 165). The placement of the ruffles applied on the garment body was inspired by the strong Mistral wind that blows from southern France into the Gulf of Lion (Mistral Associates, 2015). The swirling motions of the ruffles deliver an interesting aesthetic for the wearer while

providing cohesion amongst the other pieces of the W2W collection. The negative space left between the rows of ruffles creates visual movement for the viewer through the contrast of black (dress) and red (ruffles). Dress pattern pieces were shaped to compliment the Mistral swirling influence, as visible along the bodice and skirt side panels of the dress for subtle cohesiveness of the entire ensemble. Hourglass silhouettes that embody princess line seams connect Rojo Mistral to the other pieces in the W2W collection, as well as the similar bateau neckline contour (under ruffled neckpiece) that utilizes black polyester chiffon. All fashion fabric textiles of dress and neckpiece were originally discarded and then upcycled to create Rojo Mistral. These textiles primarily included synthetic fibers in knits, twills, plain weaves, and satins to name a few. Textile edges were singed to minimize fraying throughout the garment. New materials needed to produce ensemble included thread, invisible dress zipper, and hook and eye.

Rojo Mistral contributes to the advancement of the apparel design profession by experimenting with up-cycling, surface design, and draping/patternmaking techniques that suggest through research and product development an approach that may be employed for reducing pre-consumer textile waste. Some sustainable brands, such as *From Somewhere*, have adopted the approach of utilizing production factory textile scraps into their collections (Brown, 2010). From an educational perspective (connectivism), it may be influential for students to see a physical example of how recycle, repurpose, and redesign approaches (including up-cycling) may be executed as opposed to solely reading about how apparel companies are interpreting different sustainable methods (Siemens, 2014). The designer/author pulled further inspiration from Holly McQuillan who envisions herself ‘sitting on the very pointy apex of a three-sided pyramid, made up of sustainable designer, educator, and fashion lover’ (Brown, 2010, p. 154). When designing Rojo Mistral, the designer/author kept this positioning at forefront when developing the garment and while creating educational modules, projects, and challenges for apparel design students. Assisting student awareness of environmental impact and challenges in the FTC industry, and helping them to understand the implications they possess during a garment’s design-stage (Curwen et al., 2013), potentially support future FTC professionals to identify and select sustainable product developmental approaches or promote sustainable opportunities for bi-products (e.g. textile waste). Ultimately, up-cycled designs, such as Rojo Mistral, possess the potential to impact future apparel industry professionals to critically consider human and environmental impacts along the FTC product supply chain and promote sustainability in the industry.

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