Stellar Regeneration

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Stellar Regeneration is a garment produced with an awareness of closed environmental ecosystems, particularly in relation to clean water and responsible consumption and production. Just as stars are born from the expelled waste of dead stars, fashion too can emerge from the discarded garments of the textile industry. There are many ways that the fashion industry takes a toll on the environment. However, one major issue lies with the dye method and disposal known as wet processing which includes dying, printing or finishing methods, uses the bulk of the chemicals put into textile production and often ends up in water systems upon disposal (Roy Choudhury, 2014; Karthik & Gopalakrishnan, 2014). Out of all industrial water pollution, about 20% is from the manufacture of textiles (Chen, 2019). Another environmental problem is an overwhelming amount of fashion consumption and then subsequent waste. In 2019, there was estimated to be 16.1 million tons of textile waste in the United States (Weber, Lynes & Young, 2017).

Furthermore, to address the fashion industry’s excessive post-consumer garment waste due to rapidly changing trends and consumption patterns, this design was developed to find an innovative use of sustainable practices by reusing and upcycling post-consumer garments. The idea of using post-consumer recycled clothing as new materials for the design of new products as a sustainable apparel design method has been explored as one of the studies (Young et al., 2004). Emerging sustainable fashion brands such as Re;code was established by specializing in upcycling post-consumer garments from second hand stores by deconstructing used materials and reinterpreting their design creating something new (Kolon Mall, n.d.).

In an effort to create a garment that improves on both of these concerns, Stellar Regeneration was created using white second-hand men’s dress shirts as the main materials for the dress which were cut on the bias into ½” strips and naturally dyed with turmeric and with cochineal. The strips were cut against the bias grainline to reduce fraying. The strips were then woven by hand in a triaxial pattern to create a star-like pattern. The garment itself is an above-the-knee sheath style dress with long wide sleeves. The only chemical necessary in the dye process was alum which is a fairly safe and the least toxic mordant when used appropriately (Mitra, 2015). Utilizing the strategy of upcycling, combined with a triaxial pattern hand weaving technique, the purpose of this design was to develop a sustainable garment through refashioning, using natural dyes and adding significance to second-hand men’s dress shirts, while also creating a sheath dress with innovative surface designs.

The process started with acquiring four men’s white dress shirts that were made out of 100% cotton fabric. Then one shirt was naturally dyed with turmeric and the other shirt with cochineal. The other two shirts were not dyed, and all four dress shirts were then deconstructed to be cut into ½” strips. Patterns for a basic sheath dress with a V-neckline and wide sleeves were created using a flat pattern. Based on the sheath dress with sleeve patterns, a woven surface was developed using three different colored strips applying a triaxial weaving pattern. After the weaving was completed, the edges of the neckline were finished with the cuffs from two naturally dyed shirts. The sleeve cuffs were finished using two dyed shirts plackets. Collars from two dyed shirts were then used as a belt to accentuate the waistline.

This design project was able to integrate handcraft weaving techniques and use a sustainable design practice by re-using post-consumer garments to inspire others to think about our environment’s ecosystem in relation to sustainable design practices. Furthermore, this design project was developed to demonstrate creative and innovative ways to change how we view the current existing fashion paradigm from where consumers demand fast, low priced, trending fashion products to a more humanistic, sustainable, and craft culture.

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