International Journal of Engineering Research and Advanced Development
ISSN 2395-5163
Volume 2, Issue 3,
DIP: 18.03.02/20160203
http://www.ijerad.redmac.in | April, 2016

04

ENVIRONMENTALLY FRIENDLY DESIGNING

Prof. Radha Kashyap[1]
[1] *Prof., Department of Fashion & Textile Technology, The IIS University, Jaipur, India*

Keywords- Environmental, Friendly, Designing

1. INTRODUCTION

Sustainable fashion, eco fashion and eco-friendly designs are terms that refer to a holistic approach to fashion design. All the businesses can become more sustainable by reducing, reusing and recycling their resources; however there are specific decisions that a designer can make to support a more sustainable future for fashion. The complexity of creating a more sustainable apparel industry reaches across all elements of business, from production to retailers to consumers. Hence understanding the entire life of an apparel item has an impact of the garment. During their life, most apparel items pass through the following phases:

- Fiber Production
- Textile Production
- Apparel Design
- Apparel Manufacture
- Packaging and Shipping
- Retail Outlets
- Consumer
- Post Consumer

The designers can make an impact on sustaining the environment through knowledge of the life cycle of their products.

2. FIBER PRODUCTION

Growing crops for fiber production requires water and usually fertilizers and chemicals to control pests and weeds. Natural fibers like cotton, silk, linen and wool require chemicals not only in growing, rather in treating of the fibers. Manufactured fibers generally require less water in the production process than natural fibers, but the amount of energy consumed and the use of nonrenewable resources is much greater. Organic and low–chemical crops can be grown under careful conditions to mitigate the harm to local water supplies. Recycled fibers and renewable fibers, such as bamboo, lyocell, or PLA, which is made from corn are viable alternatives to more

© 2016 R Kashyap; licensee IJERAD. This is an Open Access Research distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/2.0), which permits unrestricted use, distribution, and reproduction in any Medium, provided the original work is properly cited.

traditional fibers. For example bamboo is a fast-growing renewable resource that requires little or no pesticides because it is naturally resistant to many pests. However, bamboo fabrics are often finished using traditional, chemical-based dyeing and finishing processes that may contribute to water pollution.

3. TEXTILE PRODUCTION

Converting raw fiber into finished fabric requires energy, water and most often toxic chemical but the production process is constantly being improved to reduce the impact on the environment. Designers should consider fabrics made from natural undyed fibers, such as wool or alpaca, instead of fabrics dyed in hues like red or black. Also more chemicals are required to create deep colors. Interesting color and print patterns can be derived from experimenting with a variety of natural plant dyes ranging from madder and indigo to rhubarb root and walnut hulls. These dyes require polluting and fixing agents to set the colors.

4. APPAREL DESIGN

For sustainable apparel design the opportunities range from recycling and no waste designing to multi–use apparel and garment customization.

- ***Recycling:*** Any action that keep materials out of the landfills can contribute to a cleaner environment. Knitted sweaters can be unraveled and the yarn can be reused. The sheer abundance and limitless availability of denim jeans makes reworking denim apparel feasible.
- ***No-Waste Designing:*** Roughly 15 to 20 percent of the yardage of a typical garment fall out as waste between the pattern pieces on a typical marker or pattern layout. This new fabric will be disposed off without ever being utilized. Designers can make use of these scraps by piecing or quilting them together in innovative ways. Else designers can work with their patternmakers to create designs that yield little or no waste. For knitted garments, the pattern can be planned so that only the exact pattern pieces are knitted and then sewn. In full fashion knitting, needles are dropped to create an exact shape of the piece. Full fashioned knitting in garments results in no yarn wastage. Woven garments can also be made with no waste. Rectangular-shaped pieces are conductive to no-waste designing because they can fit together and interlock, in jigsaw fashion. By manipulating the size of the pleats and seam allowances and using elastic smoking for fit, the designer can create a range of sizes from a single full utilization marker.
- ***Fast Fashion:*** The low cost and easy availability of today's fashion have helped to create a throw away fashion culture wherein items are worn for one season and then discarded. This practice is detrimental to the environment because of overabundance of clothing is transferred to landfills. It takes hundreds of years for a polyester clothing item to decompose. One way to address this sustainability issue is to create coordinates that can be mixed and matched to create several outfits from varying combinations of a limited number of pieces. Another method is to produce single garments that are versatile.

Clothing that can be worn in different ways for many occasions and can satisfy consumer's desire for variability without purchasing multiple apparel items.

- ***Customization:*** Involving the consumer in the design process can also lead to more eco-friendly designing because consumers are more likely to keep and wear. It is less likely to discard, pieces that they either had a hand in creating or that were designed just for them. This kind of designing capitalizes on the emotional attachment that can form between a user and a garment. Personalized and individualized garments can range from customizable jeans to digitally printed textiles. With digital printing, prints can be manipulated to individual tastes and personalized to have meaning to the wearer. The size of prints can be altered to better correspond to a person's stature or augmented to accent a person's figure. By strategically placing the digital graphic design on each individual pattern piece, designers are no longer constrained by the fixed textile designs of mass-produced piece goods, and no dye is wasted by printing fabric that will not be used. Designers can accentuate figure attributes and restrain problem areas.

5. APPAREL MANUFACTURING

Apparel manufacturing is often referred as the cut make trim stage. The manufacturing of apparel is a largely operated manually, focusing on social and worker concerns, rather than environmental issues. This manufacturing is followed where the labor is least expensive. A lot of energy is used in the transportation of fabrics, cutting garments pieces and sewing garments. A single garment style could have components manufactured in several different countries. Manufacturing in the country where the clothing items are sold saves the energy required for slipping. Manufacturers can also consider how their product can be cleaned and cared for by the consumers. Garments that can be laundered in cold water and hung to dry have less environmental impact than garments that must be dry cleaned and professionally pressed.

6. APPAREL PACKAGING AND SHIPPING

Packaging has undergone a lot of scrutiny in recent years. Although some packaging materials are required to protect the product and keep it visually attractive, excessive and extraneous packaging has become harder to justify. Bagging and shipping multiple items together, instead of piece, consumes less energy and also requires fewer packaging materials. Shoes and handbags are often shipped with large amounts of packaging. This packaging is immediately discarded after it reaches the final consumer.

7. RETAIL OUTLETS

Efforts toward sustainable design do not have to stop after garments are shipped to retail outlets. Retailers can also carefully consider their own sustainable practices. Packaging accompanies the sale of nearly every retail apparel item. The packaging, which often includes multiple layers of tissue paper a folded box, and a bag, is most often discarded as soon as the customer arrives at home. Recycled and biodegradable bags and boxes can be used to reduce the impact that

packaging makes on the environment. Some retail stores are reducing waste by encouraging customers to bring their own reusable bags when shopping.

8. CONSUMER

Consumers support designers' efforts to become environmentally friendly. Consumers want to purchase eco-friendly attire, but it is just that they do not want to spend a lot of extra money on it or time researching the products.

With the goal of transparency, several, companies are taking the lead in educating their customers in their sustainability efforts. Timberland has initiated a green index that investigates the climate impact, chemicals used, and resources consumption of their products. Patagonials "Footprint Chronicles" is an interactive website that allows viewers to track the impact of some of their key products from design to delivery.

8.1 POST CONSUMER

Many may consider the consumers to be the end of the line for apparel items, but what consumers ultimately do with their clothing items can make a big impact on the environment.

9. CONCLUSION

Ecofriendly Industry is in its infancy and the responsibility lies in the hands of designers, manufacturers and consumers. Making the earth free from chemicals is the best way to achieve sustainable fashion. In order to make a change it is important to adopt sustainable practices that will motivate the industries and consumers to adopt sustainable practices.

10. REFERENCES

1. Feltcher, K, (2014), "Sustainable Fashion & Textiles Design Journey", Routledge, New York
2. Fletcher, K, & Grose, L, (2011), "Fashion & Sustainability: design for Change", Laurance King publishing, London
3. Jenning, T, "Creativity in Fashion Design: An Inspiration Work Book", Fairchild Books, USA