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Development and Marketing of a Repurposed Textile Product for Homeless Individuals in Northwest Arkansas

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Development and Marketing of a Repurposed Textile Product for Homeless Individuals in
Northwest Arkansas

by

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and

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Project Submitted in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science

with Honors

In

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Dale Bumpers College of Agricultural, Food, and Life Sciences

University of Arkansas, Fayetteville

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Abstract

Growing concerns over waste disposal methods have led to a greater focus on recycling efforts in the textile industry. Second only to the oil industry, the textile industry continues to be one of the most wasteful among leading businesses around the world and determining ways to repurpose fashion materials could be a reasonable solution to this growing problem (Dobilaite, V., Mileriene, G., Juciene, M., & Sacevičienė, 2017). In addition to alleviating disposal issues, repurposed materials could serve the humanitarian needs of local communities, and even more importantly, could specifically benefit homeless populations. The purpose of this project was to design, execute, analyze, critique and report on the development of a sleeping bag prototype using repurposed materials created to benefit homeless populations in Northwest Arkansas. The product logo for the sleeping bag, identified by the name, “HIP”, was established to represent the slogan, “Homelessness Is Personal.”

Using the design methodology established, the HIP prototype could be distributed to individuals living in homeless communities in Northwest Arkansas. By using repurposed materials for the end product, waste reduction of textile products may result. Further, engagement of the community could be accomplished by using the design methodology to establish work groups for production of the sleeping bags. Ultimately, this design methodology was designed so that distribution to other communities outside of the Northwest Arkansas region could be a foreseeable future goal of the committee.

Materials collected from Goodwill in Fayetteville, Arkansas were used in creating the prototype and production was completed at the University of Arkansas Apparel Merchandising and Product Development (AMPD) design and development labs. Projections indicate that the design, development, and marketing efforts surrounding the HIP prototype are potentially

conducive to the creation of a lasting and sustainable project, which might continue to creatively engage students for many years to come.

Introduction

With the world becoming more earth-conscious in the marketplace, the topic of sustainability and environmental awareness is increasingly important in every aspect of business. The apparel industry has recently been criticized for the amount of waste its consumers and producers generate. Part of this scrutiny has been the result of an increase in the popularity of fast fashion. According to Merriam-Webster (2017), fast fashion is defined as “an approach to the design, creation, and marketing of clothing fashions that emphasizes making fashion trends quickly and cheaply available to consumers.” With the apparel industry exhibiting a quicker turnaround for trends and producing garments made from cheaper fabric, more clothing is being discarded at faster rates. A study conducted by the Environment Select Committee in 2008 revealed that over the past five years, textile waste disposal has escalated from 7% to 30% by weight. (Morgan and Birtwistle, 2009). Decreasing textile waste was investigated in this project through research in sustainability, designing a zero-waste prototype for the homeless, and developing a marketing plan to increase awareness of the problem, as well as the project.

To breakdown the issue of increased textile waste, it was important to analyze the areas of the industry where the problem was being facilitated. The environmental impact was analyzed by conducting research spanning the different stages of garment production, including the pre-consumption and post-consumption levels. To gain a better understanding of what becomes of a garment after it is used, disposal methods also needed to be researched. The environmental implications on all three of the topics were observed to determine the impact each stage of manufacturing had on the overall apparel production process.

It was also important to consider *how* the issue of waste disposal could be solved and ways in which the solution might be marketed in the future. For this project, textile waste was reduced by constructing a prototype using repurposed garment material for a sleeping bag made for the homeless in the Northwest Arkansas region. With a strategic plan for marketing in place, the project focused on providing a lasting product that might better serve the needs of the community in the Northwest Arkansas region.

After determining the overall goal of the project, the development and design of the prototype was divided into three individual components. Each group member was responsible for one of the components, resulting in specific objectives. While each of these objectives were established and worked through as a group, they were assigned according to the individual strengths of each researcher. This was done to solidify the overall focus of the proposal.

Research was conducted by Lindsey Stone to provide justification and understanding of the project and the problems surrounding excess waste in the apparel industry. This included research in textile sustainability, disposal methods, environmental impacts, and pre-consumption and post-consumption waste. Additional research was conducted on the need for sleeping bags in the Northwest Arkansas region by analyzing data from local homeless shelters and local articles.

To understand the design process and the materials needed to create the sleeping bag, McKenna Whitaker researched the homeless population in Northwest Arkansas and their specific needs. Along with researching the NWA area, there was a methodology established for gathering materials from around the community and this information was used to justify the reasons why certain materials appeared optimal for the production of the prototype. A design process was then developed and put into action for producing a sustainable sleeping bag.

The final portion of the project consisted of the development of a marketing plan to promote the humanitarian aspect of the design and to facilitate interest in the project. Through marketing research methods, Beau Broyles explained the need for the blanket in the community, how to efficiently market the blanket to those in need and defined how the blanket as a whole might benefit other communities in the future. Additionally, as a non-profit project, suggestions were made as to how it might be beneficial in the future for local and surrounding communities to adopt the project. The three researchers agreed to give the prototype the name, HIP, which is an acronym for the project slogan, “Homelessness is Personal.” Establishing a registered trademark for the use of “HIP” has not been formally initiated but could be an area for further marketing research and development.

Literature Review

Pre-consumption

Pre-consumer waste is defined as fabric or clothing cuttings and scraps left over after cutting a garment pattern piece, leftover pieces, damaged materials, etc. (Dobilaite et al., 2017). Research on pre-consumption waste explored the effects of product waste on the environment before the consumer has even had an opportunity to purchase and wear the garment. Most studies are primarily focused on the aspect of reducing waste. When a pattern is created and cut out of fabric, extra unused pieces of the fabric contribute to the apparel waste equation. Pre-consumption waste is defined as, “textile scraps after cutting of garment piece, leftover textile samples, selvages, end-of-roll wastes, damaged materials, part-finished or finished clothing samples from the design and production department, etc.” (Dobilaite et al., 2017, para 2). Very little research has been done on pre-consumption waste. Dobilaite and coworkers (2017) state, “There is no widespread investigation of the waste amounts generated in clothing industry and

how they are utilized. The research shows different situations for different countries” (Dobilaite et al., 2017, para 5). To measure wastes produced in the apparel production stage, Dobilaite and coworkers (2017) collected information from three different enterprisers manufacturing differing selections of clothing (enterprise 1: light garments for women; enterprise 2: coats and jackets for women and men; enterprise 3: working clothes and light knitted outerwear for women, men and children). Generated waste was weighed after the manufacturing process of the garment was completed. Through the study it was discovered that waste came from pattern layout and pattern arrangement (Dobilaite et al., 2017). It was found that during the pattern cutting process, 20-25 percent of the total materials used for production result in waste (Dobilaite et al., 2017). They concluded that the innovation of technology would further help reduce waste, and companies should direct their focus towards a more “zero-waste” method of clothing production (Dobilaite et al., 2017). The creation of practical recycling methods and more organized eco-friendly production systems were suggested. The journal entry suggested recycling methods should be further explored in an effort to supply producers with alternative solutions in the event zero-waste is not a practical tactic for the company (Dobilaite et al., 2017).

Post-Consumption

Post-consumer waste is defined as waste created by the consumer after purchase. This includes disposing of garments that are out of style, worn-out, or designed for one-time use (Dobilaite et al., 2017). For the purpose of this study, post-consumer waste testing was the focus. While there may be many causes of apparel waste, the effects of the waste post-disposal are just as important. The case study by Zamani, Svanström, Peters, & Rydberg (2015) explores a post-consumption aspect of apparel waste on the amount of carbon emissions in different versions of apparel recycling and its impact on the environment. This particular study observed the effects of

material reuse of textile waste of adequate quality, separation of cellulose from polyester using N-methylmorpholine-N-oxide as a solvent, and chemical recycling of polyester. The study also compared these recycling methods with the incineration method widely used in Sweden. The analysis of clothing reuse saved the most amount of energy (Zamani, B., Svanström, M., Peters, G., & Rydberg, T., 2015). “The analysis shows that material reuse allows approximately 8 tonnes of CO₂-eq savings in GWP and 164 GJ in primary energy usage per tonne of textile waste, mainly resulting from avoided production of textiles from primary resources” (Zamani et al, 2015, p. 686). One tonne, also known as a metric ton, is defined as “a unit of weight equal to 1,000 kilograms (2,205 lb.)” (University Oxford Press, 2018). This review is understandable due to the lack of extra energy required to dispose of garments, however, the process can be unpredictable and hard to regulate because donated clothing is usually of varying degrees of wear and tear.

A second textile recycling method is the process of separation of cellulose from polyester. “Using a cellulose/polyester separation process for recycling of textile waste results in nearly 5.6 tonnes CO₂-eq savings in GHG emissions and 116 GJ of energy savings per tonne of textile waste” (Zamani et al., 2015, p.686). Researchers further explain that the process may save on energy, but still involve an energy-intensive process.

A third process of textile recycling is the chemical recycling of polyester. Production of polyester yarns by repolymerization produce significant CO₂-eq savings, as well as an even larger primary energy use of savings for textile waste production (Zamani et al., 2015). Unfortunately, Sweden’s incineration method is the most detrimental of the disposal methods. The study reported incineration to have a “...net GWP of 0.23 tonnes CO₂-eq/tonne and a net primary energy saving of only 23 GJ/tonne of textile waste” (Zamani et al, 2015, p. 679).

Overall, this study concluded that a mixture of the first three methods would be highly effective in the efforts to create minimum impact on the environment after garments are discarded. The study further concluded that additional research should be conducted to analyze clothing disposal methods.

Disposal Methods

Countries around the world handle apparel waste differently. Dobilaitė and coworkers (2017) explored the process of incineration in the article, “The Method used in Lithuania.” The article argued that widespread research towards waste amounts and disposal methods is lacking in the apparel industry. Research has shown that each country handles clothing disposal differently (Dobilaitė et al., 2017). For example, “In the UK, more than 1,000,000,000 kg of textiles is sent to landfills each year” (Morgan; Birtwistle, 2009, para. 1). Like the UK, landfills are the current solution to the United States’ waste problem.

Perhaps the most prevalent contributor to the apparel waste epidemic is the world’s increasing reliance on fast fashion. Fast fashion provides a way for consumers to keep up with the latest trends without paying designer runway prices. These garments are often made with cheap fabrics and are meant for minimum wear. Fast fashion is driven by the idea that trends are constantly evolving. Morgan and Birtwistle (2009) discuss the adoption theory, as presented by Rogers (1983). This concept divides the consumers into five different adoption rates (innovators, early adopters, early majority, late majority, and laggards). Innovators are the trendsetters that pay attention to upcoming clothing styles and trends that have not yet been adopted. Early adopters are the consumers that quickly purchase the clothing that innovators start wearing. These individuals tend to be wealthy due to the exclusivity of the early clothing. The vast majority follows after the early adopters sometime after the trend has been worn. The late

majority follow the early majority, and the laggards are the very last consumers to wear the trend after it has already declined, and some consumers may not even wear the trend at all. Adoption theory suggests that eventually, all groups adopt trends with the exception of the laggards which make up 16% of the study (Birtwhistle and Morgan, 2009). With fast fashion becoming a more popular trend in retail, this theory has potential to be long-lasting due to the general consumption tendencies of consumers. With the growth of technology, fashion innovators and early adopters, who start the trends, heavily rely on celebrity influences and social media for the next trend (Birtwhistle and Morgan, 2009). This finding affirms the existence of a fast fashion lifestyle. This new consumption trend becomes more of an issue due to the increase in popularity. "...[The Environment Select Committee revealed that the proportion of textile waste being discarded at council refuse collection points in the past five-years has increased from 7-30% by weight]" (Birtwhistle and Morgan, 2009, pg.191). The increased popularity of fast fashion has certainly contributed, and amounts may be even more since this article was published almost nine years ago; the amount of wastes collected may be much more concerning.

NWA Homeless Population

As fast fashion across the world has become even more popular and people are buying and throwing away clothes quicker than ever before, the importance of understanding how clothes and materials could be reused and incorporated back into communities became very evident. According to the film, *The True Cost* (2015), fashion is the second most polluting industry in the world, just behind the oil industry, this is why the project to use sustainable materials to create a sleeping bag for the homeless population in Northwest Arkansas began to develop. This project not only establishes a new way to recycle clothing, but also contributes to the needs of the homeless population. With the continual growth of homelessness across the

United States, and even right here in Northwest Arkansas, seeking and exploring the needs of the homeless population within the NWA community became the first priority of the authors.

“Research shows that homelessness is a by-product of both structural forces (e.g. wage structures, affordable housing, job loss) and individual factors (e.g. mental illness, substance abuse, relational problems, diminishing networks of social support)” (Fitzpatrick et al., 2015, pg. vi). For this reason, evaluating the size of the homeless population can be difficult as numbers change in response to community and individual circumstances. In 2015, “Approximately 2,462 persons [were] estimated to be homeless in the Northwest Arkansas area (Fitzpatrick et al., 2015, pg. viii). Over the past decade alone, homelessness has nearly doubled in size. Many believe the lack of available inexpensive housing is a contributing factor to the large number of homeless people in NWA.

Lack of housing creates a huge gap, which ultimately causes many people to cohabitate in single living spaces. In some cases, this leaves members of the NWA community without available lodging options. With the large homeless population in mind, the idea of a sleeping bag made from sustainable material was born. The product would also help benefit the homeless while they transition into working jobs and self-sustainment. In describing these populations, Fitzpatrick (2015) suggested that “Over 17 percent were staying on the streets” (Fitzpatrick, et al., 2015, pg. ix). Although this may not seem like a large percentage when compared to the 2,462 number of homeless people, 17 percent still results in hundreds of citizens on the streets on any given night. When the team interviewed members of the homeless community, they found that “The 512 homeless adults counted represents only persons who were clearly without their own housing” (Fitzpatrick et al., 2015, pg. 7). This is a large number without any definite place to stay every night, and therefore lies the importance of creating a sustainable sleeping bag to

sleep on at night. When conducting numbers, Fitzpatrick and the Community and Family Institute concluded “Over half (52.2%) of all homeless individuals counted in Benton and Washington Counties were less than 18 years of age” (Fitzpatrick et al., 2015, pg. 8). This is another staggering number that gives perspective to the demographics of who is suffering from homelessness; clearly it is not just an adult problem. Underage minors having to deal with the problem of finding a place to sleep at night is unconscionable. Although there are shelters available around Fayetteville, some of them only provide daytime shelter. Even with the presence of shelters, the homeless still have problems with these resources for many different reasons. “The most common reasons respondents report usually involves something regarding the facilities; a lack of privacy, noise, safety for their things, and even having problems with other guests” (Fitzpatrick et al., 2015, pg. 38). So, not only is having a place to stay a stress for the homeless population, but even with the shelters provided in the Northwest Arkansas area, many people still do not feel these shelters are a safe option for their problems. For these reasons, the sleeping bag was created to offer a tangible item, durable through all the seasons, to relieve some of the negative effects of being homeless.

Materials and Methods

Pre-consumer waste and post-consumer waste are both problematic in apparel disposal. For this project, the focus is on post-consumer waste, and creating a model for a full-sized sleeping bag using repurposed material. The project is the beginning of what could be an ongoing project, at the University of Arkansas campus to create quilt-like sleeping bags that serve as warming blankets for the homeless.

For this project to be ongoing, a donation system at the University of Arkansas could be implemented, so the materials for additional sleeping bags could be collected on campus or at

local donation centers near the college campus. Because these blankets are meant for relatively cold temperatures, the materials collected should all be of the same composition. For the first prototype created during this project, materials were collected from the local Goodwill, as well as utilizing scraps of fabric leftover from projects in the Apparel Merchandising and Product Development program. After determining which material would be best for durability through the ever-changing weather of Fayetteville, Arkansas, the sourcing process resulted in fleece sweatshirts, raincoats, and other materials suitable for the sleeping bag prototype. Once collected, the materials all went through the same washing process of using a fourth cup of detergent in warm water on the large load setting. The materials were then put through the same drying process in a household drier on the medium dry setting.

Once washed, a pattern was created to cut the different fabric and materials into 15”x 16” rectangles. The next plan of action was to cut the fabric into these 15”x 16” rectangles and begin the quilting process. Once the creation of the sleeping bag was complete, it ended up measuring 84”x 45”, with a pillow included in those measurements. Once it was established that there would be materials leftover from the cutting process, the scraps were weighed. Not wanting to waste any material gathered, the remaining materials on the jackets, pants, and sweatshirts were then cut into smaller pieces to be incorporated into filling for the sleeping bag. The zippers and other hard materials were kept where they were on the materials in this process.

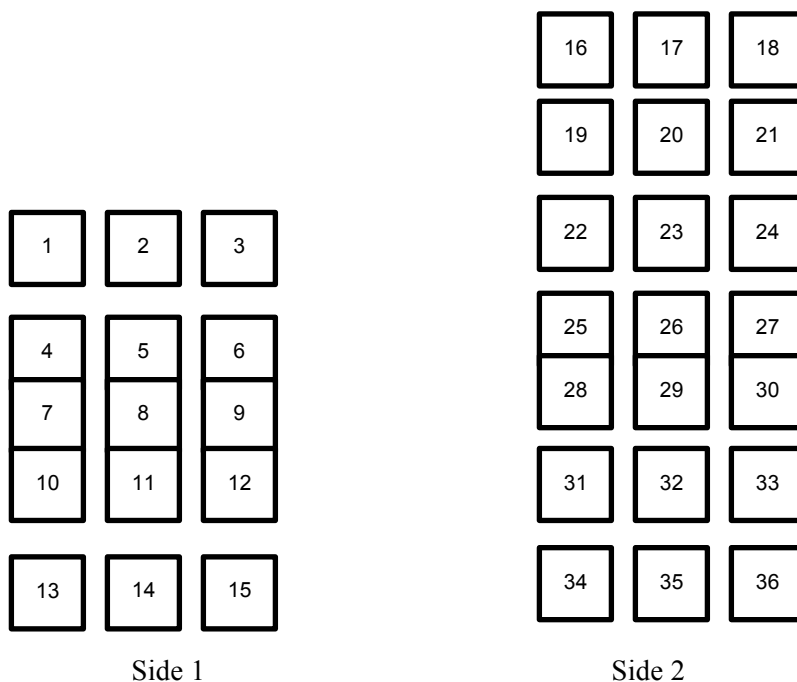
The reconstruction process consisted of using a commercial sewing machine, the JUKI DDL -8700, provided by the University of Arkansas to construct a patchwork quilted sleeping bag according to the diagram (see Figure 1). Standard white thread was used to stitch the squares together. Once the panels of rectangles were constructed, the panels were then pinned and sewn together row by row to make a quilted sleeping bag of appropriate size. When both sides of the

sleeping bag were constructed, the sides were pinned together with the outsides facing each other. The sides were then sewn together with $\frac{1}{2}$ inch seam allowances. Before sewing the sleeping bag up completely, a small hole remained open to allow for the sleeping bag to be turned right-side out. Once the fabric was turned out, the leftover materials used for cutting were stuffed into the hole to create loft. The sleeping bag was filled until it had stuffing evenly distributed throughout. As soon as the sleeping bag was filled, the hole was sewn closed. This was done right along the edges of each square in the sleeping bag. To complete the prototype, stitching was done $\frac{1}{2}$ in from the edge of the sleeping bag to give the blanket a tailored finish.

The Development Plan

For this project, a development plan was put into place from start to finish that ended with the result of the production of a repurposed sleeping bag. The materials needed for this project include: cardstock paper, a pencil, a sharpie, a measuring tape or yard stick, materials/garments for a total of 36, 15 x 16 inch squares, scissors, fabric scissors, a JUKI DDL -8700 sewing machine, white or black thread (depending on color of the majority of the garments being used), a bobbin, approximately 100 pins, a 90 x 90 inch comforter, and a standard size sleeping bag (see Appendix Instruction Sheet for bulleted list of materials needed). For this project materials were gathered from second-hand store donation center, Goodwill. For future project, materials could be gathered from donation boxes set outside classrooms on the University of Arkansas campus from students, professors, and members of the community who may want to donate. Enough material was gathered for 36 quilted rectangular fabric pieces (for this project, a total of 13 different garments were used, including a comforter and a sleeping bag).

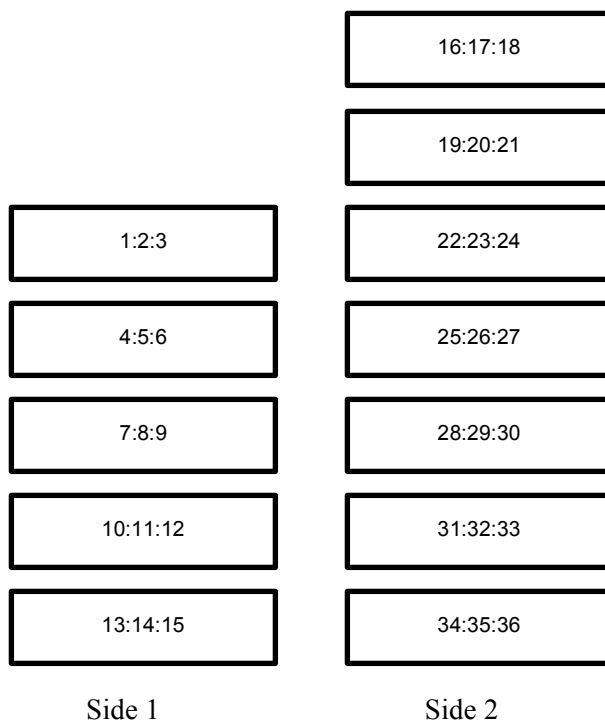
To begin, measure a 15 x 16 inch rectangle using a yard stick or measuring tape to a piece of cardstock. Trace using a pencil. Then, cut out the 15 x 16-inch pattern piece. Depending upon how many people could be working on this project, more or less pattern pieces may be necessary (1 pattern piece for every person). Gather materials that are being used for the sleeping bag. Pin the garment with the pattern piece on top to a push pin-board. Ensure that the garment is fully covered by the pattern piece. Trace a 15 x 16 rectangle onto the garment, and then cut along the traced edge for a rectangle that appears like the pattern piece. Once 36 square pieces are cut out, collect the garment scraps to repurpose later on. Then the 36 rectangle pieces would be laid out to create the top quilted blanket piece. It should look like the picture below (Figure 2).



Starting with Side 1, the squares are sewn together row by row with right sides of the fabric together beginning with Piece 1 and Piece 2 sewing a $\frac{1}{2}$ inch seam all the way down. Once that first step is finished, the process continues by sewing Piece 1:2 to Piece 3. Piece 4 is sewn to

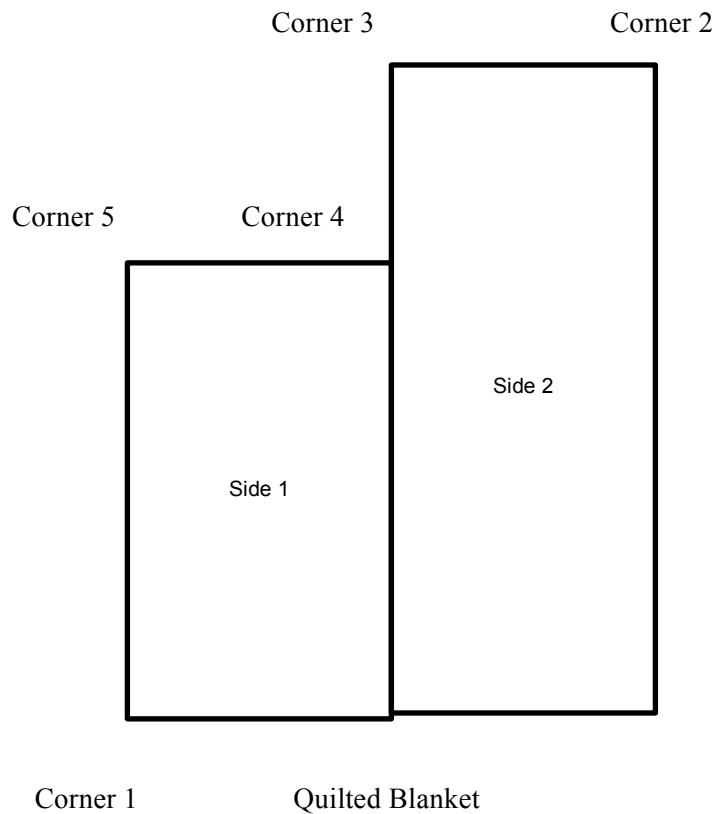
Piece 5 and then Piece 4:5 is sewn to Piece 6. This process continues all the way through Both Side 1 and Side 2 (see Appendix Instruction Sheet for in depth of this sewing process).

Once the squares are sewn together, row-by-row it should look like the picture below. Ensuring that they are still lined up according to Side 1 and Side 2.



The following step is to stitch each row together for Side 1. Sew right side to right side with a ½ inch seam allowance. Begin sewing piece 1:2:3 to Piece 4:5:6. Continue this process for Side 2 (See Instruction Sheet in Appendix for more in-depth detail). After this process Side 1 is sewn to Side 2 with right sides together and a ½ inch seam allowance. Following the creation of the quilted blanket take a 90 x 90-inch Comforter to use as backing. Put the right sides together of the Quilted Blanket and the Comforter and pin along the edge 2 inches apart from Corner 1 to

Corner 2. (Note that it's important to pin about 2 inches apart due to the thickness of the comforter.



Once pinned, fully sew a $\frac{1}{2}$ seam from Corner 1 to Corner 2 turning at the edge. Sew from Corner 3 to Corner 5 pivoting at Corner 4. This process is repeated twice creating 2 different seams an inch apart from each other to ensure secureness of the seams. Cut along the edge of Corner 3 directly between the two seams that were just sewn. Cut a straight line using fabric scissors down to Corner 4. Pivot at Corner 4 and cut directly between the two seams on a line until reaching Corner 5. In cutting this section, a piece of the comforter should be cut off. Keep this piece of the comforter because it will be used as filling later. Sew from Corner 5 to Corner 1 with right side to right side using a $\frac{1}{2}$ inch seam. Flip the sleeping bag from wrong sides to right

side poking the edges to ensure that they are fully pressed out. (The right side of the sleeping bag should be facing outward). Sew down the middle of Side 1 and Side 2 with the right sides out, to guarantee that the filling will stay on Side 2. Place the gathered sleeping bag around the top of Side 2 and topstitch along the edge with right sides together with the sleeping bag edge folded over 1 inch when sewing. Place all fabric scraps from Steps 4 and 14 into the sleeping bag and secure. Add the HIP logo to the bottom left-hand corner of the sleeping bag.

The Design Process

With the amount of clothing waste today, only 10% of donation center clothing is actually bought by customers, according to the film *The True Cost* (2015). This ultimately means that the other 90% of clothing is thrown away as waste or sent to other countries. Knowing the impact of this fueled the reasoning to create a sleeping bag made out of reused materials. In determining the source of materials in this project, Goodwill, a second-hand store, was chosen as the source for materials used for prototype creation. If this project is continued, bins or stations could be situated in buildings around campus to be the resource for old and used clothing that can be repurposed in a valuable way.

A design process was established in order to organize the steps necessary to efficiently construct and compose the prototype sleeping bag. A pattern piece of a 15”x 16” rectangle was used to produce the piece necessary to create a quilted pattern that would be used for the sleeping bag. The 15”x 16” rectangle pattern was used to help cut out pieces from each fabric and material collected. When sourcing garments, there were so many different combinations of fibers and fabrications, the team determined it necessary to test the durability of each by researching basic characteristics of textiles used. For the final project of the prototype, the pieces are placed together in a way that each one might be tested with different terrains, weather, and

unpredictable circumstances that could occur around the Northwest Arkansas region. Throughout the course of choosing materials from Goodwill, items were chosen based on efficiency and reliability, so that the least amount of waste would be produced. Materials were individually examined to ensure there would be little waste resulting in the repurposing process. Figures 2-7 illustrate example garments chosen for this project. The materials used included rain jackets, windbreaker sweatpants, sweatshirts and other fabric scraps. The navy-blue rain jacket and navy-blue rain pants as shown in Figure 5 & 6 are 100% polyvinyl chloride, see Table 1. This material was chosen because it is water-repellent and would be protective during wet weather. Another product selected was a black Athletic Works hoodie, (shown in Figure 3) which was made of 80% cotton and 20% polyester and chosen because of the softness it would offer for the sleeping bag. Another product chosen was a GTM purple Sportswear Windbreaker Pant (Figure 4). This pair of windbreaker pants had a lining that was 100% Nylon on the upper and lower leg and the shell was 100% nylon as well. The turquoise rain jacket (Figure 2) was chosen not only for its fiber content, but for the added utility of the pockets and buttons. The buttons could be used to close the sleeping bag and the pockets are beneficial for the storage of miscellaneous items. The lining of the jacket was 100% nylon and the shell was made of 100% polyester with a 100% rubber backing. Each product was individually cut into as many pattern pieces from each material. All of the products gathered were cut apart until a total of 36 pieces were established. The total of 36 separate 15" x 16" rectangles of repurposed clothing and materials were then laid out to institute the design of the quilted sleeping bag that measured 49" x 84". The 15" x 16" rectangles were laid out on the floor according to a usability plan for the homeless. Factoring where pockets and buttons would be needed were all considered and is shown in Figure 1. The front side of the sleeping bag was created by placing right-sides together for each rectangle sewn

together row by row as shown in Figure 11 and 12. Then they were compiled by sewing column to column until one large rectangle of the quilted materials was the end result. The leftover waste from the materials was measured out before they were repurposed back into the sleeping bag as filling. The materials were measured by weighting, so the weight of scraps could be determined (Figure 13). First, each material's waste was gathered together and placed in a weightless plastic bag. This was done immediately after the material was cut into the rectangles so that each product was separated by its waste. From there, the waste was placed on the scale and recorded according to the ounces displayed on the scale. This was done thoroughly for each material purchased and used and exhibited in the section titled Weight of Waste in Table 1. Altogether the weight calculated to be 68.5 ounces. This would be the weight of the scraps if they were not used for filling the sleeping bag. That would be a considerable amount of waste for the materials collected which is why the development of making sure each item was fully repurposed became important. Once the scraps were individually weighed, they were cut into smaller pieces, taking out zippers and buttons to create a comfortable filling for the sleeping bag. The leftover buttons and zippers were donated to the AMPD program and to metal recycling.

A pattern piece was constructed based on the quilted piece that was sewn together, to make the backing of the sleeping bag. This backing was established through the combination of two different sleeping bags shown in Figure 8 and 14. The sleeping bags were cut out and then sewn together through the same process that was used to create the quilted piece. The backing of each sleeping bag was combined together using the same technique of putting right-side to right-side and sewing a $\frac{1}{2}$ seam. This part was created to act as a protective outer-coating for the sleeping bag being developed. The quilted piece and the one made out of the outer-sleeping bag material were then sewn together on the outside edge using a $\frac{1}{2}$ seam continuously throughout.

Once both sides were sewn together, there was a hole left to turn the sleeping bag from inside-out to its normal state. The uppermost piece of the sleeping bag was created as the pillow and has a larger hole to add a considerable amount of filling so that it is the most padded part of the sleeping bag. Materials and methods were considered throughout the entire design process of the sleeping bag. The reasoning behind what was produced was the importance of a durable outside covering like a sleeping bag, but the quilted effect kept the filling consistent throughout. After the completion of the project, this prototype could be used to test out different fabrics in establishing what would work best in the outside terrain and weather of NWA. The prototype could be tested in the climate and realities of what it would experience, it could then be brought back to the lab where the most accurate version of the sleeping bag may be sketched out and materials could be gathered based on the information received.

Marketing

Just like development and sustainability, marketing is an essential component in the development process and the distribution of the prototype. Both design and sustainability require extensive effort, and marketing is no different, so it has been necessary to work as a group in order to fully realize the goals of the overall project.

It is important to note that the effectiveness of a non-profit or new concept should include a well-planned marketing strategy, both in the beginning and end stages. After the idea is effectively implemented, the marketing plan should be adjusted to reflect and accommodate the maturity of the product. Initially, marketing should focus on product development and increased visibility within the community. After completion, the focus naturally shifts towards increasing distribution efforts and establishing the humanitarian goals of the product. This two-dimensional marketing strategy should help to increase future product effectiveness.

The goal in designing the HIP prototype is to ultimately establish a non-profit concept involving recycled fabrics and materials, and to engage local communities in a unified effort to reduce the hardships surrounding homelessness, which is in keeping with the mission and goals of the Bumpers College. Ultimately, the project benefits the University of Arkansas, the Northwest Arkansas community, and the homeless populations in the surrounding areas.

While design and development are of primary importance, it is the marketing strategy that will ultimately help to garner support from the surrounding community. As a non-profit project, most of the materials needed have been, and will continue to be, acquired through the support and generosity of the local population. The marketing strategy must also center on methods which lead to greater visibility and outreach within the target market, as well as the collective community. While the focus of the project benefits the elderly and homeless populations, the target market for distribution purposes consist primarily of university students and area community members in the Northwest Arkansas region. This includes adults ages 18-24 and 35-63. In addition to gaining community awareness, marketing will also make it possible to reach other regions going forward. This is important because future goals include growth into other states, and even countries.

Marketing Plan

The marketing plan will cover three traditional areas of interest:

1. Current Status
2. Future Goals
3. Strategic Plans.

Current Status:

Currently, the project includes a prototype, design strategy, and a strategic marketing plan. The design of the HIP prototype is completed. Supplies for the prototype were secured from Goodwill, and a detailed plan for securing future donations was created. A marketing strategy consisting of a two-phase plan was formulated which will carry the project from start to finish. All matters relating to the business side of creating and fulfilling the project are non-profit in nature.

Future Goals:

The plan is to achieve maximum exposure through social media marketing, as well as through traditional marketing avenues (flyers, mailings, and print ads). Ultimately, the project could develop into a nationally recognized non-profit organization that provides relief to homeless populations around the country. While the project is only in the beginning phases, the initial goal was to create a foundation for a well-established non-profit organization that could expand and grow and could also serve other communities around the country.

After a great deal of discussion, the team members and project mentor decided that it is both beneficial and appropriate to turn the project over to Apparel Merchandising and Product Development student organizations at the University of Arkansas for the purpose of providing a service project for future students of the Dale Bumpers College of Agricultural, Food, and Life Sciences. By doing so, the long-term goals of the committee to have an ongoing project that will bring recognition, pride, and credibility to the University of Arkansas can be more easily realized. The project will be fully functioning, even after current committee members have graduated.

How committee goals will be realized:

Before the ultimate goal of creating a nation-wide HIP program can be realized, there must first be an adequate supply of HIPs available for distribution around Northwest Arkansas. In order to obtain the necessary donations from around the community, marketing efforts will be put into place to draw the attention of the local community.

Early in the research process, it became abundantly clear that a logo and slogan needed to be established. This was necessary because a marketing strategy for any project is typically centered on branding. While the focus is to ensure ways of communicating the project's message to the community, it is first necessary to establish a logo that could be printed and pasted on all marketing materials. The plan involves ways to ensure that the logo and concept of HIP are known to students and easily recognizable wherever it is seen within the community or campus. To ensure the message is made clear, a symbol will be used as the profile picture on all social media and throughout social outlets.

The ultimate goal is to establish a social media community through Facebook, Instagram, Twitter, and various other sites. Once established, community members will be asked for donations of gently used blankets, clothing items, and old dorm room bedding. These will be collected at drop-off stations located in various parts of the campus (perhaps in the Union and main floors of residential areas), and each of these stations can be clearly identified through recognition of the HIP logo. The plan is to have these stations available to students during traditional university transition times (ie: move-in and move-out periods). It is projected that most donations will be contributed at the conclusion of the fall and spring semesters, because this is when students traditionally discard unwanted items.

After the HIP distribution system is officially established, the production phase of the product will likely evolve to include production centers where members of the homeless

community can also contribute to the production of the product. This is potentially beneficial in two ways, as it will speed the rate of production, and will also provide members of the homeless community an employment opportunity. The plan is to create community “sewing” sites so that members of homeless communities can, along with other volunteers, contribute their time in the production process, teach and learn new skills, establish work ethic, all while providing jobs for those who need them. After the “start to finish” process of creating the blankets has been optimized, efforts will be taken to slowly introduce the concept to other communities across the nation. Ideally, future endeavors will be able to enlist high profile personalities to bring attention to project efforts. This could speed-up the long-term goals of the project tremendously.

Logo/ Slogan

According to Ian Chamandy and Ken Abur, people don't buy *what* you do, they buy *why* you do it (Broadbent, A., & Omidvar, R, 2013). With this in mind, marketing efforts were focused on the project's purpose in creating the blankets; which is to provide comfort and warmth to vulnerable members of society. To achieve this purpose through marketing strategy, committee members began by designing a logo containing the acronym “HIP” which stands for “homelessness is personal.” In the Northwest Arkansas area alone, there have been several attempts at service projects that have also benefited the homeless. The NWA area includes a Salvation Army, Potter's House, Goodwill, and various other donation spots. That said, with so many different donation locations already in place, it is important for HIP to establish a recognizable logo; one that consumers will see, know the concept behind the brand, and always know where their donations will be used.

Differentiating a brand from others within a similar market is critical to brand sustainability (Park, C.W., Eisingerich,A.B., G. Pol and J.W. Park, 2013). This research also

supports the theory that distinctive visual symbols used as logos can be more effective in creating a sense of emotional connection with consumers. The motive behind the logo is to encourage the community to emotionally connect to the project's vision. Consumers should see the logo, and instinctively want to give back to the community. The HIP logo design will aim to display more symbolic visuals, rather than words (Park, C.W., Eisingerich, A.B., G. Pol and J.W. Park 2013).

The slogan included will be "Let's get it covered" along with the acronym on all official correspondence which will be similar to the following, (See Figure 15). As most marketing experts will agree, slogans serve as an extra voice in branding. In *The Advertising Handbook*, Brierly suggests that brand slogans should demand attention. They should motivate consumers to have lasting and meaningful impressions about certain attributes or values that the brand promises to deliver (Brierley, 2002). Slogans also make it easier for consumers and supporters to feel emotionally attached to the overall mission of a company and/or brand. By using "Let's get it covered", the slogan doubles as a call to action. It is meant to inspire those within the target market to join the mission, and to do something worthwhile to care for those in need.

Branding

According to Wright, Barre, and Barry (2013), "Branding strategy is based on the fundamental attributes of products such as their consistent quality or ability to provide an authentic experience; so, for ads to be successful, images must be so vivid and well nuanced that they become trademarks instantly associated with their product" (Barry et al., 2013, para. 5). By referring to the products (the actual blanket) as "HIP", the committee is steering the public towards the fundamental idea and mission, which is to improve the lives of homeless populations in NWA by enlisting the help of those within the community.

Establishing a connection between consumers and the brand can be achieved in a number of ways. First, most individuals know someone who has been (or is currently) without a home. This places the problem on a direct and personal level for the vast majority of the population. By using an acronym (HIP = Homelessness Is Personal) in the logo, (and as part of the branding slogan, the researchers believe that the public will be able to more easily connect the product on both a subconscious and conscious level. The slogan, “Let’s get it covered” refers to the fact that the product will not only *literally* cover the homeless but will also reference the idea that the product has also been designed to cover the overall and bigger problem of homelessness; doing so by coming together as a community and donating gently used blankets. On a subconscious level, people should receive the message that contributing to the cause is the “hip” thing to do. The HIP acronym will therefore serve our branding efforts on multiple levels of the strategic plan.

There are two primary positions when choosing the wording of slogans. Initially, advertisers are faced with deciding whether a slogan will be short and vague, or specific and long. For this project, a shorter, vague slogan has been chosen because using vague branding slogans allows managers to achieve maximum message importance across a wider range of slogan recipients; as stated by Pinker (1997), vague slogans make it difficult for recipient brains to understand, so the brain will typically make an effort to supply the missing information. In other words, evidence suggests that by using the slogan “Homelessness is personal, let’s get it covered,” the message is just vague enough to inspire those within the target market to investigate the product a little more, and to want to know exactly *how* the product can achieve the goal of helping the homeless.

Marketing Methods

The primary method of marketing will be social media, including Facebook, Twitter, Snapchat, and Instagram. These methods will be particularly important for reaching the 18-24 target market. Additionally, researchers will distribute flyers and send information about the project through email.

Several elements have been identified which should optimize the ability to be effective through social media efforts, and these have been threaded into the foundation of the marketing strategy. For example, it has been established that this project is different in many ways from the stereotypical non-profit organization; so, there is a differentiator (Kabani, S. 2014), which means there is a prevailing element that makes this project different from any others. The question, however, is *how* is the project different?

First of all, a sustainable product has been created by repurposing gently used items from items within the community. The group has actually taken items that have been previously created for a particular use, and then transitioned those items into an entirely new product. By doing so, a unique way to provide a community service is being established within the community, which is a fresh, new, and different angle.

In addition to knowing what makes the product different, committee members have identified exactly what the desired outcome should be in creating the blankets. The goal is to ease the burden of homelessness within the community, so the desired outcome is to offer community members an avenue to contribute their efforts towards helping others within the community.

Another important element in determining the project marketing structure is to understand the foundational brand. Simply put, “who are we?” Specifically, HIP is a non-profit project which offers a community service opportunity, and also provides a sustainable product

for the homeless community in NWA. By knowing the project's identity, and knowing how it is different from other projects, the committee has been able to develop a solid foundation on which to build a marketing and social media presence. Shama Kabani (2014) sums up the methodology behind knowing these basics by quoting Samantha Hartley, author of *Enlightened Marketing (2013)*: *The #1 reason people fail at social media marketing is that they don't have a solid foundation. They don't have a brand, they don't have an outcome, and they have absolutely no way of differentiating themselves from the competition. Social media is the ultimate amplifier. If you have a good product or service, it will be amplified until it is perceived as great. If you have a shoddy product to begin with, that will also be amplified* (Kabani, S., 2014).

Discussion

Sustainability

The need for adequate textile waste disposal was researched in order to provide justification for this project. Research on textile sustainability included disposal methods, environmental impacts, and both pre-consumption and post-consumption waste. Through this research, a prototype was designed to decrease the amount of environmental impact and textile waste by constructing a sleeping bag with almost zero percent waste.

Through the research, creating a close to zero-waste sleeping bag prototype was the primary goal of the project in order to fulfill the needs expressed through the research on sustainability. This objective was achieved with the idea that this prototype would reduce the amount of textile waste being put into landfills. One red comforter, two rain jackets, one pair of joggers, two windbreaker pants, four sweatshirts, one hoodie, one pair of rain pants, and a sleeping bag were used to construct the prototype. After finishing the prototype, 179.6 oz was

salvaged from being disposed and put into a landfill. All of the scraps that were produced from production were added to the pillow of the sleeping bag, creating zero-waste.

When shopping for materials at Goodwill, specific garments and textile compositions were chosen to create a more practical prototype for a homeless individual. Being selective made it easier to sew the materials together and ensure effectiveness for the product. The selection of materials of this prototype also helped contribute to creating a zero-waste product. In the future, being selective on textile composition and materials may not be as easy due to only having donations from the University as materials to construct. This may make creating a zero-waste sleeping bag more difficult, contributing to more waste. Investigation into the amount of textile waste produced by additional garments made from donations should be considered for future projects.

Because the vast amount of materials that were used for this project, this objective has been met by reducing a large amount of waste being initially sent to the landfills. If more sleeping bags were to be made from using this prototype, a large amount of textile waste from the Northwest Arkansas region would be reduced. The amount of an impact cannot yet be determined until the project has been taken on in the future and implemented as a volunteer program at the University of Arkansas.

Working with Whitaker and Broyles on this creative project has made me a valuable AMPD graduate, as well as an asset as an employee in the apparel industry. Through working on this project, I have gained a better understanding of a current issue in the apparel industry, a greater understanding of environmental issues and the importance of sustaining the environment, as well as have grown as a collaborative team member to achieve a rewarding task.

By working together with my team, I have become more informed on a topic that is currently a substantial problem in the apparel industry. I will deal with the issue of textile waste by going into the apparel industry as a graduate and may have to find ways to reduce the amount of apparel waste, both on the business side and the production side of the industry. Through my research to justify the need for a sleeping bag for the homeless, I now understand the impact that textile waste has through every single step of the process of production, pre-consumption and post-consumption, and after the apparel has been disposed of. Through researching how other countries dispose of textiles, as well as in the United States of America, I have gained understanding of the environmental impacts of the disposal of different textile fiber compositions.

Not only did I gain a greater understanding of my topic, but I also learned how to work as a collaborative member of a team to achieve a goal. We used all of our strengths, an interest in sustainability research, apparel production, and marketing to take on a project that was larger than what would be asked of one individual. By having a team work on this project, we were able to expand more on the topic of textile waste. As each of us worked towards reaching our objectives, we used our knowledge to create a zero-waste sleeping bag prototype that would be environmentally friendly and marketable. As we worked towards this goal, I grew my ability to work with others in a timely manner.

Being a Bumpers Honors Student working towards graduating with honors has given me opportunities to become a great student and employee and I will use the learning opportunities that I have acquired here at the University to set myself apart in the apparel industry. Through working towards creating a sleeping bag prototype for the homeless, our project could have a

lasting effect on the University by bringing attention to an environmental concern that impacts not only the apparel industry, but the entire world population

Prototype Development

What began as a process to help the homeless, has developed into the expansion of so many different dreams and goals for this project to continue to be successful and grow around the NWA area and then to other communities as well. The possibility that this project could turn into a development system to instruct and educate the homeless in hopes that jobs could be created for them would be a great progression. In this process, the development of more repurposed sleeping bags could be constructed while at the same time creating jobs for those who did not have one before. Through the course of developing, researching and designing this project there has been so much to gain from the trial and error of discovering what works and what does not work. When getting a chance to talk with Dr. Fitzpatrick, the Director of the Community and Family Institute he expressed many suggestions to think about when creating a sleeping bag for the homeless. By using the prototype created in this project, a method to help decrease apparel waste at the University of Arkansas and throughout the NWA region would be beneficial to be put into place. This may include putting up apparel donation boxes out on specific days in each of the on-campus dorms, or even providing a donation box in a central area on campus in which students and staff can donate old and unworn clothing. It could begin in the Home Economics building where the Apparel Merchandising and Product Development classes are held. Apparel students could bring old clothes that do not fit, or they no longer wear. Using our original prototype as a guide, the Association of Apparel Merchandising and Product Development and other volunteers could construct sleeping bags using the donated clothing. They could continue to test products and see what worked best for the repurposed sleeping bag.

This would ultimately supply volunteer hours and fuel a service learning project. This project, with the help of Dr. Fitzpatrick, Mr. Cheramie, Ms. Hubert, Dr. Wood, and Dr. Smith could be the service learning project that constructs 10 sleeping bags that would be included in the homes currently being built in South Fayetteville for the homeless population with the help of Dr. Fitzpatrick. The goal would be that when homeless community members move into the small homes, they would have a sleeping bag quilt that could be used as the comforter on their bed. This project could even continue on from there. With the rate at which the fashion industry is moving, clothing is being bought and thrown away at the highest rate the world has ever seen. To reduce the amount of clothes being thrown away, there could always be a couple donation boxes in the Home Economics building and could even create a project for the AMPD 3003, Apparel Production class where the class could learn how to make a sleeping bag out of recycled material or could use the recycled material to create a repurposed bag for the homeless. One major takeaway from this project is the need for the reduction of clothing waste as well as the large opportunity available to help and reduce the needs of the homeless population in the NWA region.

Reflection

This project has enhanced the committee's knowledge of aspects of sustainability and marketing that were not previously considered. Because of the combination of strengths between the partners in this project, the team was able to learn more than just about their respective academic and creative passions. Each got to exercise growth in other areas as well. Reflecting back on the experience of developing this project, the concept gained much more depth through the different aspects that Broyles, Stone and I all brought to the table. It became a more well-

rounded project because it included all the elements that were established through the collaboration of the three partners.

In addition, the project has expanded the committee's knowledge of Fayetteville and the NWA region. The team's focus was to create a concept outside of the collegiant student norm. In turn, the team learned the importance of taking the time to dedicate oneself to opportunities and people outside the realm of the collegiate experience through this project. It has brought about new perspectives, new visions, and a broader way of thinking about the bigger picture.

The idea behind HIP does more than serve the purpose of fulfilling an academic project, because it also conveys a message. It is a reflection of what the committee has learned, but it is also a way in which the School of Human Environmental Sciences can lead the University of Arkansas's humanitarian efforts through giving back. This project truly represents a business minded endeavor because there are several parts and team members required to make a successful business happen. Through successful teamwork, the project was represented to its fullest extent.

Marketing

Going forward, the project would benefit from the acquisition of a federal trademark and a patent to protect the overall design. This would allow marketing efforts greater flexibility in promoting the "HIP" brand. Additionally, these would protect future efforts, as well as direct attention back to the University of Arkansas. For these reasons, ongoing marketing should focus on obtaining these items in the near future.

The importance of drawing positive attention towards the HIP prototype was paramount to the success of the overall project. The efforts of the project, and the concept behind it, relied

heavily on community involvement and input. The only way to effectively garner the necessary support needed to make this a lasting and worthwhile endeavor, would be to engage in a full-on marketing strategy. As a team, we have seen first-hand the willingness of the community to contribute to this, as well as other humanitarian causes, so getting the word out about the project has been one of the least-taxing (and at the same time, most rewarding) parts of the team's mission.

The HIP project not only showcases knowledge and skills obtained from the Dale Bumpers College of Agricultural, Food, and Life Sciences, but it is also a testament to the academic mission of the greater university system. Marketing, economics, and social behavior are among a much larger number of the necessary skills the committee has relied upon in order to complete this project. Without the commitment that the University of Arkansas has to the expansive and diverse common core offered to students, this project would have been less than what it is. For this, the committee is exponentially grateful.

Conclusion

The primary reason for creating the HIP prototype was twofold: to provide protection from the elements for the homeless population, and to offer an alternative solution for waste disposal in the apparel industry. The main hypothesis was that recycled fabrics could be obtained and refashioned into products that might protect vulnerable citizens, and in doing so, could also provide an answer to excess apparel fabrics being deposited in landfills and at incineration sites. Specifically, the goal was to design, execute, analyze, critique and report on the development of a sleeping bag prototype using repurposed materials created to benefit homeless populations in Northwest Arkansas.

After completing the initial HIP prototype, the committee concluded that the project does provide a sustainable alternative for a small portion of the apparel waste issue in the NWA region. While the process does not entirely solve the problem of waste disposal, it could serve as a beginning for future thinking on eco-friendly alternatives to waste management in the industry. One outcome of successful marketing and product awareness within the community could be that attention would be placed on the larger problems of homelessness and apparel waste management. Additionally, future product development sites for the purpose of creating sleeping bags could also provide a viable option for teaching members of the homeless population the skills necessary for future success. It would also provide workplace training, which in turn could initiate the process of guiding individuals towards self-improvement and financial independence. Ultimately, the researchers feel they have established a meaningful and environmentally friendly option for the problems associated with homelessness, and the issue of excess apparel waste being discarded around the world each year.

References

- Barry, D., & Wright, B. (2013, Jun 26). Product Slogans AND Branding Messages Distinct. *Savannah Morning News* Retrieved from <http://0-search.proquest.com.library.uark.edu/docview/1371639237?accountid=8361>
- Brierley, S. (2002), *The Advertising Handbook* , Routledge, London .
- Broadbent, A., & Omidvar, R. (2012). *Five Good Ideas: Practical Strategies for Non-Profit Success*. New York: Coach House Books.
- Dickson, M. A., & Eckman, M. (2006). Social responsibility: The concept as defined by apparel and textile scholars. *Clothing & Textiles Research Journal*, 24(3), 178-191. doi:10.1177/0887302X06293031
- Dobilaite, V., Mileriene, G., Juciene, M., & Sacevičienė, V. (2017). Investigation of current state of pre-consumer textile waste generated at Lithuanian enterprises. *International Journal Of Clothing Science & Technology*, 29(4), 491-503. doi:10.1108/IJCS-08-2016-0097
- Fast Fashion. (n.d.). In Merriam-Webster. Retrieved from <http://www.merriam-webster.com/dictionary/fast%20fashion>
- Fitzpatrick, K., Collier, S., & O'Connor, G. (2015). 2015 Northwest Arkansas Homeless Report. Retrieved March, 2018, from https://fulbright.uark.edu/departments/sociology/community-and-family-institute/_resources/2015_homeless_report_revised.pdf
- HUD. U.S. Department of housing and Urban Development; Office of Community Planning and Development (2016). *The 2016 Annual Homeless Assessment Report (AHAR) to Congress*. <https://www.hudexchange.info/resources/documents/2016-AHAR-Part-1.pdf>
- Kabani, Shama Hyder (2013;2014;). *The Zen of Social Media Marketing: An easier way to build credibility, generate buzz and increase revenue*. Dallas: BenBella Books, Inc.
- Metric Ton. (n.d.) In *Oxford University Press*. (2018) Retrieved from https://en.oxforddictionaries.com/definition/metric_ton
- Morgan, A., Ross, M., Siegle, L., McCartney, S., Firth, L., Shiva, V., Blickenstaff, D., ...Life is My Movie Entertainment (Firm). (2015) *The true cost*.
- Morgan, L. R., & Birtwistle, G. (2009). An investigation of young fashion consumers' disposal habits. *International Journal Of Consumer Studies*, 33(2), 190-198. doi:10.1111/j.1470-6431.2009.00756.x
- Park, C.W., Eisingerich,A.B., G. Pol and J.W. Park, *The Role of Brand Logos in Firm Performance*. *Journal of Business Research* 66, no. 2 (February 2013): 180-187.

Pinker, S. (1997), *How the Mind Works*, W. W. Norton, New York, NY

Rogers, E. M. (1983). *Diffusion of innovations*. New York: Free Press.

Zamani, B., Svanström, M., Peters, G., & Rydberg, T. (2015). A Carbon Footprint of Textile Recycling. *Journal of Industrial Ecology*, 19(4), 676-687. doi:10.1111/jiec.12208

Zamani, B., Sandin, G., & Peters, G. M. (2017). Life cycle assessment of clothing libraries: can collaborative consumption reduce the environmental impact of fast fashion? *Journal Of Cleaner Production*, 1621368-1375. doi:10.1016/j.jclepro.2017.06.128

Appendix

Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13



Figure 14



Figure 15



Figure 16

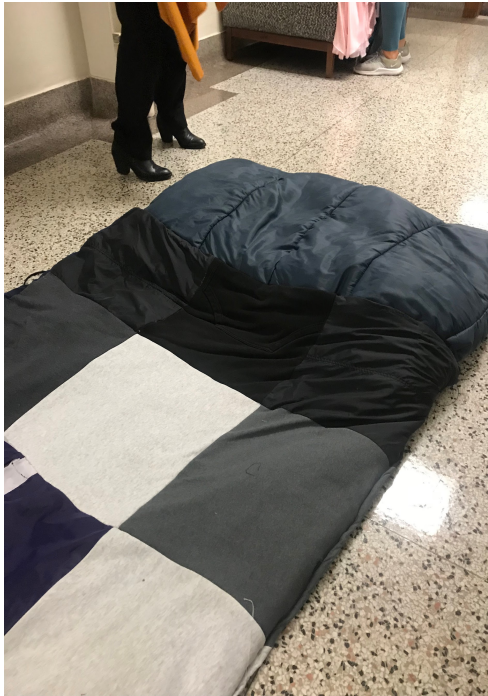


Figure 17



Figure 18



Table 1

Garment:	Fibers:	Weight of Waste
Navy Adidas Joggers with Red Stripes	lining- <ul style="list-style-type: none"> ● 100% nylon superior- <ul style="list-style-type: none"> ● 65% polyester & ● 35% cotton 	5.5 oz.
Black Athletic Works Hoodie	Shell: <ul style="list-style-type: none"> ● 80% Cotton. ● 20% Polyester 	8.8 oz.
Black Pro Spirit Windbreaker Pant	Lining: <ul style="list-style-type: none"> ● 65% Polyester ● 35% Cotton Low Leg: <ul style="list-style-type: none"> ● 100% Nylon 	1.2 oz.
GTM Sportswear Windbreaker Pant (purple)	Shell: <ul style="list-style-type: none"> ● 100% Nylon Lining <ul style="list-style-type: none"> ● (Upper Leg) 100% Nylon ● (Lower leg) ● 100% Nylon 	2.1 oz.
Heather Grey Fruit of the Loom Sweatshirt (dark)	60% Cotton 40% Polyester	6.8 oz.
Heather Grey Fruit of the Loom Sweatshirt (light)	50% Cotton 50% Polyester	9.0 oz.
Heather Grey Fruit of the Loom Sweatpants (light)	50% Cotton 50% Polyester	5.7 oz.
Hanes Dark heather gray sweatshirt	50% Cotton 50% Polyester	9.6 oz.
Turquoise rain jacket	Shell: <ul style="list-style-type: none"> ● 100% Polyester 	0.8 oz.

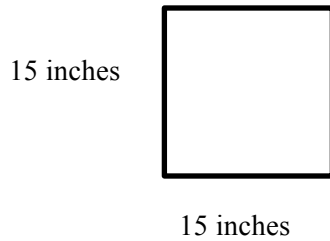
	<ul style="list-style-type: none">● 100% Rubber Backing Lining● 100% Nylon	
Navy Blue Rain Pants	100% Polyvinyl Chloride	8.4 oz.
Navy Blue Rain Jacket	100% Polyvinyl Chloride	10.6 oz.
Red Comforter	Shell: <ul style="list-style-type: none">● 100% Polyester Filling <ul style="list-style-type: none">● 100% Polyester	41.2 oz
Navy Sleeping Bag	Shell: <ul style="list-style-type: none">● 100% Polyester Filling <ul style="list-style-type: none">● 100% Polyester	69.6 oz.

Materials Necessary:

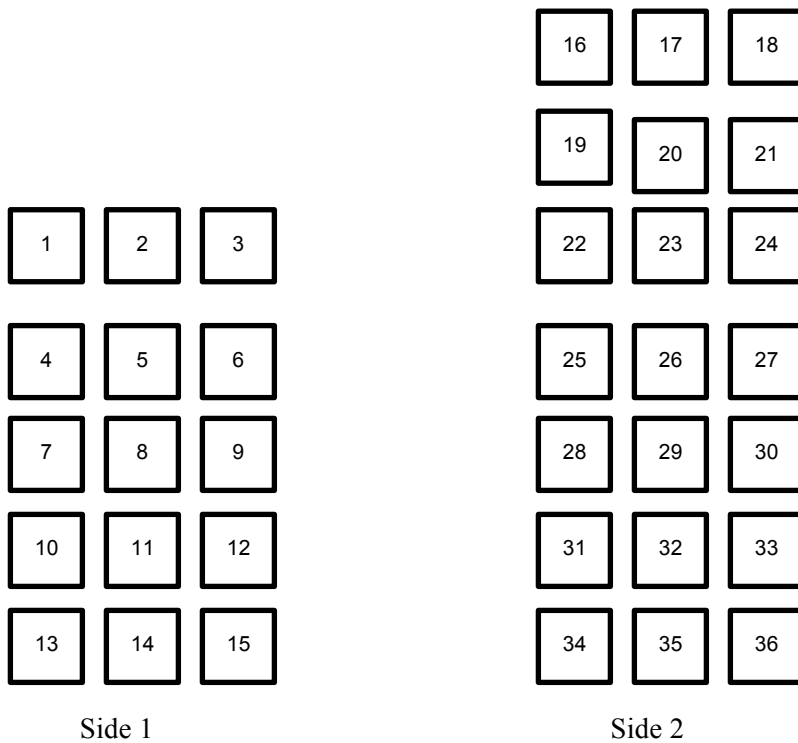
- Cardstock
- Measuring tape or yard stick
- Materials/Garments for 36, 15 x 15 squares
- Scissors
- Fabric Scissors
- JUKI DDL -8700 Sewing Machine
- White or Black Thread
- Bobbin
- Pins (approx. 100 needed)
- 90 x 90 inch comforter
- Standard size Sleeping bag
- Push pin board
- Pencil
- Sharpie

Instruction Sheet

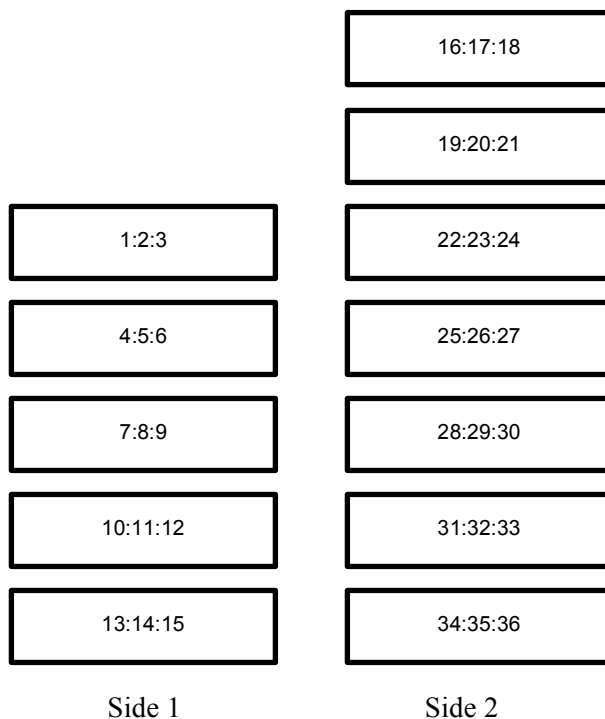
1. Measure a 15 x 15 inch rectangle. [Total 36 pieces]



2. Cut the 15 x 15-inch square out of cardstock using a measuring tape or yardstick to use as the pattern piece. Depending upon how many people are working on this project you may need more. (1 pattern piece for every person).
3. Gather materials that are being used for the sleeping bag. Begin using pattern piece to cut out squares from the garments.
4. Once 36 square pieces are cut out, collect the garment scraps to repurpose later on.
5. Lay out the 36 squares to create the top quilted blanket piece. See picture below.



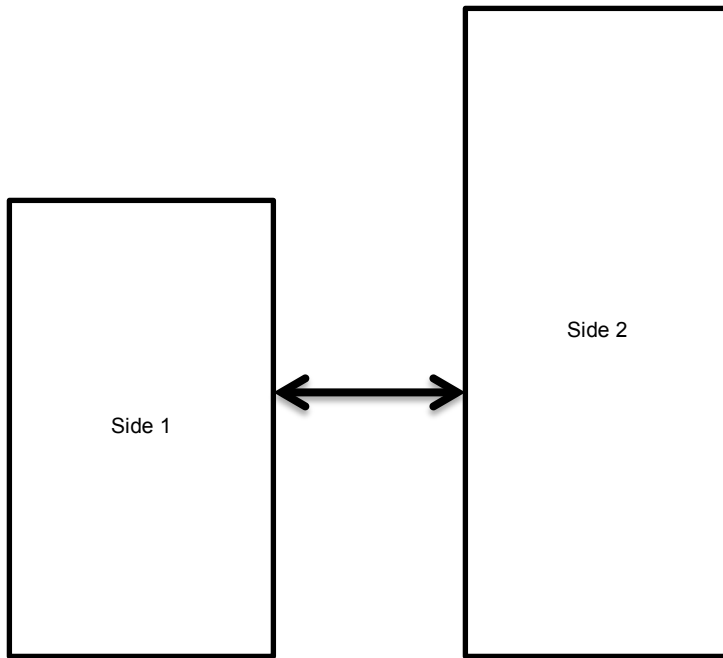
6. Begin with Side 1 sewing squares together row by row with the right sides of the fabric together beginning with Piece 1 and Piece 2 sewing a $\frac{1}{2}$ seam all the way down. Once that first step is done continue:
- Sew Piece 1:2 to Piece 3
 - Sew Piece 4 to Piece 5 then 4:5 to Piece 6
 - Sew Piece 7 to Piece 8 then 7:8 to Piece 9
 - Sew Piece 10 to Piece 11 then 10:11 to Piece 12
 - Sew Piece 13 to Piece 14 then 13:14 to Piece 15
 - Sew Piece 16 to Piece 17 then 16:17 to Piece 18
 - Sew Piece 19 to Piece 20 then 19:20 to Piece 21
 - Sew Piece 22 to Piece 23 then 22:23 to Piece 24
 - Sew Piece 25 to Piece 26 then 25:26 to Piece 27
 - Sew Piece 28 to Piece 29 then 28:29 to Piece 30
 - Sew Piece 31 to Piece 32 then 31:32 to Piece 33
 - Sew Piece 34 to Piece 35 then 34:35 to Piece 36
7. Once the squares are sewn together, row by row it should look like the picture below:



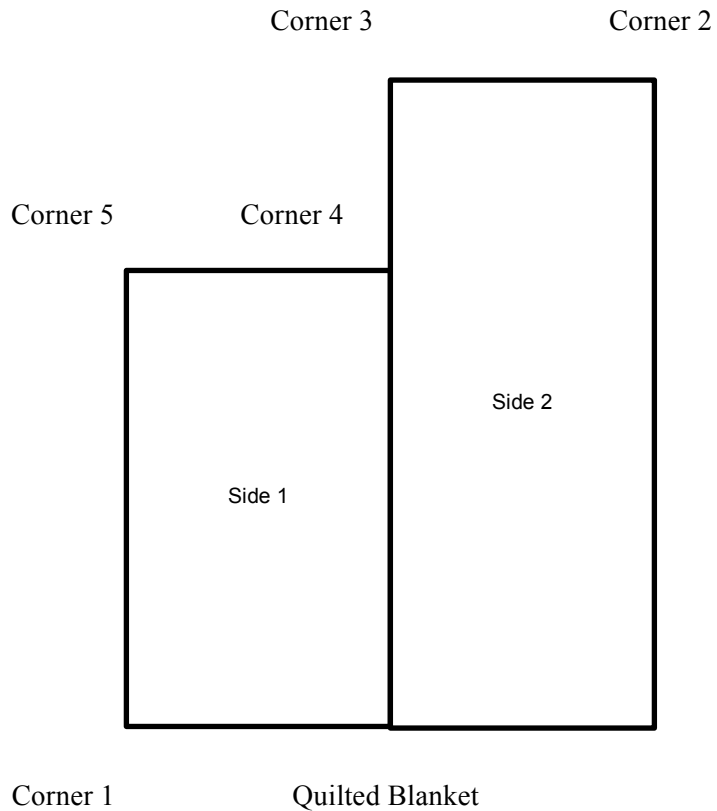
8. The next step is to stitch each row together for Side 1. Sew right side to right side with a $\frac{1}{2}$ inch seam allowance.
- Sew Piece 1:2:3 to Piece 4:5:6
 - Sew Piece 1:2:3:4:5:6 to Piece 7:8:9
 - Sew Piece 1:2:3:4:5:6:7:8:9 to Piece 10:11:12
 - Sew Piece 1:2:3:4:5:6:7:8:9:10:11:12 to Piece 13:14:15.

*Follow the same process for Side Two.

9. Place side 1 and Side 2 right sides together, stitch with a 1/2 inch seam allowance. Picture below shows:



After:



10. Following the creation of the quilted blanket take a 90 x 90-inch Comforter to use as backing. Put the right sides together of the Quilted Blanket and the Comforter and pin along the edge 2 inches apart from Corner 1 to Corner 2. (Note that it's important to pin about 2 inches apart due to the thickness of the comforter.)
11. Once pinned, fully sew a $\frac{1}{2}$ seam from Corner 1 to Corner 2 turning at the edge.
12. Sew from Corner 3 to Corner 5 pivoting at Corner 4. Repeat this process twice creating 2 different seams an inch apart from each other to ensure secureness of the seams.
13. **Ensure before beginning the next step, to ONLY cut the Comforter and NOT the Quilted Blanket.** Cut along the edge of Corner 3 directly between the two seams that were just sewn. Cut a straight line using fabric scissors down to Corner 4. Pivot at Corner 4 and cut directly between the two seams on a line until reaching Corner 5. In cutting this section, a piece of the comforter should be cut off.
14. Keep this piece of the comforter because it will be used as filling later.
15. Sew from Corner 5 to Corner 1 with right side to right side using a $\frac{1}{2}$ inch seam.
16. Flip the sleeping bag from wrong sides to right side poking the edges to ensure that they are fully pressed out. (The right side of the sleeping bag should be facing outward)
17. Sew down the middle of Side 1 and Side 2 with the right sides out, to guarantee that the filling will stay on Side 2.
18. Place the gathered sleeping bag around the top of Side 2 and topstitch along the edge with right sides together with the sleeping bag edge folded over 1 inch when sewing.
19. Place all fabric scraps from Steps 4 and 14 into the sleeping bag and secure. Add a logo to the bottom left-hand corner of the sleeping bag.