

Environmental Sustainability at Duke

Sustainable Art Proposal: Fitzpatrick Center

ENV 245: Sustainability Theory and Practice

Hannah Anderson-Baranger, Gaby Benitez, Jen Lunde, Corinne Santoro, Kevin Shenk

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Introduction

As the service-learning aspect of Charlotte Clark's course « Environmental Studies 245 : Sustainability Theory and Practice », our group seeks to implement a temporary art installation on campus which uses post-consumer materials to communicate a message promoting sustainability. The team consists of five Duke students, ranging in age, field of study, and interests, a local artist, Bryant Holsenbeck, and a member of Duke's art faculty, Bill Fick. We have completed research and drafted designs on the subject of this project, and have developed a specific model and message on which we would like to focus. This report serves as a proposal to install our completed art project in the Fitzpatrick Center for a period of time in the near future.

Objectives

The main objectives of our class are as follows: (1) to provide opportunity for students to study the breadth of sustainability issues including economic, social, and environmental factors, and the local to global reach of sustainability challenges, (2) to utilize the Duke University campus as a primary case study to illustrate institutional practices such as sustainability education and communication; students will work in project teams with Duke clients to research avenues to improve the sustainable practices of the campus experience.

With these course objectives in mind, our team has created a number of underlying goals and objectives to accomplish through this specific project, detailed below:

Raise awareness about sustainability on campus:

- Expose the issues created by usage of Dasani water bottles and other partial bioplastics
- Bring to light simple choices students can make in their everyday lives to promote self and campus sustainability

Create an aesthetically pleasing work of art which serves to relay a message and spark conversation and change in our community

Engage students and other Duke community members by providing opportunity for involvement through building process

Our overarching goal is to create and install a hanging bottle sculpture in the Fitzpatrick Center. This structure will serve to educate and entertain our campus and community; we aim to educate our audience about the damaging plastics used in Dasani water bottles as well as to promote overall sustainability on Duke University's campus.

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Motivation for Use of Fitzpatrick Center

The Fitzpatrick Center is a focal point of the Engineering Quad and Duke's Campus as a whole. The large glass windows and wide open layout make it a very aesthetically pleasing structure, and it also experiences heavy foot traffic and use as a study space by many students on a daily basis. This unique combination makes it an ideal location for a sustainable art display, as the art structure would be able to complement the structure aesthetically while simultaneously promoting its message to a large number of Duke students. Additionally, the building's LEED Silver Certification is consistent with the sustainable message that we wish to communicate with our piece of art, making the two very effective complements to each other.

Description of Art and Installation

In order to promote our message of sustainability and, more specifically, raise awareness about the harms of the plastics used in Dasani water bottles, the art display will consist of several structures made of recycled plastic bottles. The bottles will be cleaned and de-labeled, then strung together and assembled. We have created a preferred design for the installation, which is described in detail below, as well as a secondary alternative option.

Water Droplet Design

The first option relies on an internal frame to support the bottles and resemble a three-dimensional shape of a water droplet, closely resembling the classic teardrop shape. This design is our first choice, and was motivated by the desire to create a sculpture that demands attention and has a dynamic appearance, appearing as though it is moving, even though it is now. With this design, we maintain water as a central motif in the piece.

It is our hope to hang several of these droplet structures in the open space of the Fitzpatrick Center atrium. We aim to achieve this using a system of wires in tension from which the droplets will hang; while the exact method by which the wires will attach to the building is still under consideration, we are working with a member of the Duke art faculty who has experience in this area to finalize the plans. Please see Figure 1 below for an image illustrating our vision.

Cascading Wave Design

We have also come up with an alternative design for a bottle art sculpture that could be put on display in the Fitzpatrick Atrium in the event that the water droplet design is not feasible. The second option is also consistent with the water motif and is modeled after a cascading wave/waterfall. This design would likely take up more floor space than the first design, although this design could be modified to accommodate the space. This design would be incorporated on the 3rd floor of the Atrium by the window that views the Duke Chapel and the surrounding parts of campus. Please refer to Figure 2 below for an image illustrating our vision.

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Figure 1



Figure 2

Logistics

Collection and storage of the materials needed will be done off site, as well as the majority of the actual artistic process. Length of installation will depend on which structure is created, but is expected to take no more than 2 or 3 multi-hour sessions. Ideally, the structure will be completed and installed by early April, and will be exhibited for at least 1 month, if not longer. A sign or plaque will accompany the piece of artwork, which will contain an artist's statement revealing the meaning behind the sculpture and providing other educational information for the targeted audience of Duke students and staff.

Materials

Our main material will be Dasani "plant-bottles" collected from the Duke Recycling Center, and other plastic bottles may be included if a larger quantity is needed. The reason for this choice is the misleading effect these bottles, labeled as more environmentally friendly, have on Duke's general population. While at first glance, it would seem that these bottles, which are made with up to 30% plant-based substances, would be more beneficial for the environment; it appears that this is not the case. A recent study performed by NC State discovered that these partially biodegradable bottles, because of the rapid speed at which they decompose, release more emissions than standard bottles while in the landfill. Additionally, because the plant-based plastic has a lower melting point than standard plastics, the bottles actually end up causing jams and damage to recycling machinery, and serve as a pollutant to the plastic waste stream in this manner. These complications make the Dasani bottles relatively unsustainable, for they don't produce any comparative benefits and can neither be effectively recycled nor thrown into landfill.

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Installation Process

The installation process will slightly differ between the two potential designs.

For the teardrop design, the structures would be pre-assembled completely prior to the installation date. In order to be installed, they would then be strung across the wire in the Fitzpatrick Atrium with the supervision and discretion of the students as well as our faculty advisors who have experience in the matter. The specific manner in which the wires would attach to the building is still under examination, but in whatever design utilized, the condition of the building would be of highest priority. Installation could be completed at any time that proved most convenient for the users of the building, as it may provide temporary disruption for the study space and minimal area closures where the wires would be attached.

The waterfall design would also consist of some degree of pre-assembly. We would string together several strands of the bottle prior to arriving at the location, and then attach them to the window on scene. The attachment would be performed through either tying off to the structure of the window, or perhaps even using suction cups on the glass itself. Of course, leaving no trace on the building would be of highest priority, and installation could occur at whatever time desired. The installation process would not restrict access to any part of the atrium, but could perhaps disrupt students studying.

Impact During Installation

The installation process itself may minimally reduce space available for students. Once installed, the sculpture will not alter the existing space in any form, only complement it.

It is our objective to create a piece of art that has minimal physical impact on the space in which it is located. Both designs would present zero impact on the usable space of the Fitzpatrick Atrium, instead occupying air space in which their presence would only be felt visually.

Structure Removal

Removal of the installation will be taken care of by our group. If the structure is to be disassembled prior to the last day of classes, it will be taken care of by the students responsible for its creation. Our faculty and community volunteers have so graciously volunteered to take care of removal if it should happen over summer break, if it is possible to maintain the installation for so long.

We have heard that there are plans for a permanent hanging structure in the Fitzpatrick Center in July of 2013, and we are happy to adjust the date of removal so as not to interfere with that process.

Conclusions

We thank you for your consideration of our proposal and look forward to hearing from you. Feel free to contact us with any questions or concerns you may have regarding this project.

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Contact Information

Hannah Anderson-Baranger – hla4@duke.edu

Gaby Benitez – pgb8@duke.edu

Jen Lunde – jal64@duke.edu

Corinne Santoro – cas93@duke.edu

Kevin Shenk – kms92@duke.edu

Charlotte Clark (Course Instructor) – cclark@duke.edu