

Triple Bottom Line assessment of Sustainability Art Contest

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APSC 261

November 24, 2011

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THE UNIVERSITY OF BRITISH COLUMBIA
Department of Electrical and Computer Engineering

PROJECT REPORT



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TRIPLE BOTTOM LINE ASSESSMENT
OF
SUSTAINABILITY ART CONTEST

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In Partial Fulfillment of the Requirements for
APSC 261 – Technology and Society I

Date submitted: 24 Nov 2011

Abstract

The new Student Union Building (SUB) at the University of British Columbia (UBC) is seeking to decorate its atrium with sustainable art pieces. The piece is intended to raise sustainability awareness among UBC students. Original plan to obtain such art piece was by commissioning a professional artist. This paper challenges this plan. In this paper a triple bottom-line analysis is conducted on the process of obtaining these art pieces by administering a student art contest.

In the social aspect of the analysis it is clear that the art contest possesses many benefits over the traditional means; creation of jobs, engagement of students, as well as having the side benefit of promoting the art department at UBC.

The waste disposal hierarchy which includes: reduce, reuse and recycle are assessed for the commonly thrown away sustainable garbage chosen from the survey and observations of garbage bins in UBC campus. From this analysis, any recyclable material should be promoted to be recycled and reduce wastes which are difficult to recycle, such as plastics and electronic wastes.

The last aspect of the analysis is Economic. In this section we gather cost estimates of commissioning a professional artist to create the artwork and compare this to estimates of the costs of the art contest. In the case of the art contest we are able to recover most (if not all) of the money spent.

From the triple bottom-line analysis of administering a student art contest as a means to obtaining sustainable art pieces for the atrium of the SUB we see that this method not only costs less, but it also does more to raise awareness as it allows students to participate and be active in the process as opposed to being passive. Therefore we recommend going the route of a student art contest in place of commissioning a professional artist.

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List of Abbreviations

UBC	The University of British Columbia
CIRS	Centre for Interactive Research on Sustainability
SUB	Student Union Building
UK	United Kingdom

INTRODUCTION

This report focuses on the in-depth analysis of the inspiring art piece for the Atrium in the new SUB. The purpose of the report is to assess the inspiring art piece project through conducting the triple bottom line assessment. The audience for this paper is the new SUB's stakeholders, APSC 261 professor Dr. Carla Paterson, and APSC 261 students. In order to express the principles of sustainability of the new SUB, the Design Committee is planning on commissioning an inspiring art piece at the Atrium, the main showcase for promoting sustainability. The committee is hoping to promote the sustainability by human contact and inspiration. The triple bottom line assessment includes the following: social, environmental, and economic aspects.

In the first section of the report, the social aspect is assessed. This includes how the sustainable art piece may optimistically influence individuals to contribute to the sustainability project through art contest. In addition, it will analyze the how the art contest may promote UBC, employ students, raise social awareness among students, and improve student experience with the nature and sustainability.

In the second section, the environmental aspect is evaluated. It examines and analyzes several commonly thrown recyclable wastes in UBC campus. This will determine which materials are suitable for using in the inspiring art piece. In addition, by investigating the recycling facts for each material will provide a better understanding of each material's sustainability.

Finally, economic aspect provides the statistical analysis of the cost and the process for commissioning a professional art contest and administering an art contest. These two parameters

will be compared in order to determine which one is the most efficient way of displaying an art piece at the new SUB atrium.

As requested by the new SUB stakeholders, examples of sustainable artists and contests are presented. Ultimately, we will draw conclusions based on our findings.

1 TRIPLE BOTTOM LINE ASSESSMENT

1.1 Introduction

In this section triple bottom line assessment will be conducted on sustainable art contest at UBC. Firstly, the social impacts will be measured mainly focusing on a problem in current environmental education and how the contest can be a solution. Then, environmental analysis will be performed by investigating some commonly used recycled garbage at UBC. Lastly, economic aspects of the contest will be explored by estimating the total cost.

1.2 Social Impact

1.2.1 Introduction

Social impact of administrating an art contest is analyzed in this section. To begin with, a major problem in current sustainability education is discussed followed by a possible solution proposed by environmental psychologists. Subsequently the following questions addressing social impacts of the art contest will be answered:

- Does it employ students?
- Does it promote UBC and its students?
- Does it improve student experience with the nature and sustainability?
- Does it raise social awareness of environmental issues?

1.2.2 Problem in Current Environmental Education, and a Solution

The public opinion on environmental issues illustrates a major problem with current environmental education. Many people today are fully aware of our frightening ecological crises, yet feel helpless. Politicians, schools, and the media too often focus only on environmental

destruction: global climate change, endangered species, and habitat destruction. This method of social control through fear has been developing a generation of informed yet disillusioned public. As an example, one high school student replied, “We don’t have a chance” when interviewed for his opinion on environmental issues (Zeyer, 2009)

The trouble is that more and more people are developing ecophobia - a fear of ecological catastrophe. This is due to the public being haunted with too many concerns without enough contact with the nature. One solution proposed by the environmental psychologists is education through interactive activities with the nature (Sobel, 1995). Upon research sustainable art projects are recommended as an effective way of promoting sustainability in optimistic manner. For example, Pamela G. Taylor introduces recycled art projects that address issues of sustainability like waste disposal at a high school. According to her report, students displayed positive reactions for developing meaningful art pieces that does not only have aesthetic appeal, but also address current ecological issues. This project provided the students with an opportunity to develop much more optimistic view on sustainability than the traditional teachings (Kelsey, 2011).

1.2.3 Further Analysis of Social Impact

Social impacts of the art contest are further analyzed by answering four simple questions.

➤ Does it employ students?

The contest will definitely employ students during all organization cycles. Additionally, it will engage more students to become part of the sustainability projects at UBC, and not just observers.

➤ Does it promote UBC and its students?

Along with the new sustainable showcase building CIRS, new SUB will take a part to demonstrate sustainability leadership as one of the greenest universities in the world.

Additionally, the contest will promote UBC students especially those in fine and visual art programs. It will provide students with opportunities to demonstrate their expertise practically and participate in UBC's ambitious sustainable projects.

➤ Does it improve student experience with the nature and sustainability?

The contest will offer chances to interact with environmental issues directly; thus its participants will develop a better understanding of the nature.

➤ Does it raise social awareness of environmental issues?

The contest will not only raise social awareness of environmental issues but also allow participants to develop sustainable optimism through innovative process that allows student to collaborate and learn about practicality of sustainable exercises.

1.2.4 Conclusion

As illustrated above, sustainable art contest will have many benefits in terms of social impact. As suggested by environmental psychologists the major advantage is that it will help change the public negative view on environmental issues to a more positive one. Moreover, more students will be able to not only witness UBC's aim towards becoming one of the World's greenest universities, but also be part of ambitious sustainability projects. Lastly, the participants will gain direct interactions with environmental issues, and thus gain knowledge of practicality of sustainable exercises.

1.3 Environmental

1.3.1 Introduction

This section analyzes the environmental aspect of sustainable art contest. It presents a list of suitable materials for the contest, and their contribution to sustainability. From student surveys done at the SUB, a number of frequently discarded garbage was recorded. Then the list was filtered to remove materials like food waste that are impractical for producing aesthetically appealing art work. The selected materials are plastic, aluminum, glass, paper, e-waste.

1.3.2 Plastic



Figure 1.1: Example of Sustainable Art using Plastic Bottles

Plastic is the most commonly thrown-away garbage at UBC, and includes plastic bottles, caps, bags, etc. Recycling plastic saves twice as much amount of energy as burning it in an incinerator.

However, recycling of plastics has proven to be a difficult process. The biggest problem is that it is difficult to control the sorting of plastic waste. During our observation, we noticed large number students not recycling plastic materials like plastic bottles. Using plastic for sustainable art can promote recycling.

1.3.3 Aluminum



Figure 1.2: Example of Sustainable Art using Aluminum Cans

Aluminum is durable and sustainable metal. The recycling process creates 97% less water pollution than producing new metal from ore (Mazzoni, 2011). According to our survey aluminum cans were the second most garbage produced by the students. In addition, it was

noticed that they are not being recycled frequently. Yet again, working with aluminum can promote recycling as in case of plastic.

1.3.4 Glass



Figure 1.3: Example of Sustainable Art using Glass Bottles

Although glass is not one of the largest wastes produced at UBC, it is suitable for use in sustainable art contest. It is one of the few materials that can be recycled infinitely without losing strength, purity and quality. Glass bottles are very sustainable and aesthetically pleasing; however, it is not as commonly available as other researched materials. Although we support the use of glass in the contest, students must be cautious due to its fragile characteristic. Art work created with glass can promote recycling and reusability of glass.

1.3.5 Paper



Figure 1.4: Example of Sustainable Art using Toilet Paper Rolls

Paper is the largest waste produced at UBC. Recycling paper causes 35% less water and 74% less air pollution than manufacturing paper from new pulp (Witmer, 2010). Using paper for the recycled art can promote more efficient use and recycling.

1.3.6 Electronic Waste



Figure 1.5: Example of Sustainable Art using Electronics from 1980s

Electronic waste, which includes computers, televisions, printers and etc, is both an environmental problem and a health hazard. Electronics contain substantial amounts of hazardous materials such as lead, mercury and chromium. Some students are unfamiliar with proper recycling of e-wastes. Using e-wastes can promote proper recycling of these products.

1.3.7 Conclusion

Using the recyclable wastes as the materials for the inspiring art piece is a way to reduce the disposal needs and costs. Some materials mentioned above, such as the electronic wastes are difficult to dispose and recycle; therefore, using them as part of the art piece is a way to reduce wastes in the landfill. This approach of environmental awareness will promote reducing waste, which will minimize resources and energy use during the manufacturing and recycling process.

1.4 Economic Analysis

1.4.1 Introduction

The economic consequences of setting up a sustainable art piece in the new SUB as a result of commissioning a professional artist is not the same as that of conducting a contest amongst the students. In this section we will analyze the economic benefits of conducting an art contest and highlight why it is a better idea to do so. To highlight the benefits we will attempt to break down the economic aspects of the art contest and compare that to the standard means of commissioning an artist.

1.4.2 Analysis

Before we estimate the breakdown of the cost of conducting the contest, we will estimate the cost of commissioning a professional artist. For a piece roughly the size of 1m long, 1m wide and 2m high made from recycled material, a local Vancouver artist would likely charge around \$700 or more depending on how long it takes. This amount is an estimation gotten from averaging the typical pricing rates of various local artists found on various websites (Web Urbanist, 2011) and information gotten from the Fine Art Department at the University of British Columbia. Art pieces are usually priced on a time basis, the longer the artist has to take to complete the piece the more the art piece costs.

In contrast to this we may be able to reduce costs drastically or possibly eliminate costs by administering an art contest. To understand the breakdown of cost we will briefly outline the contest procedure. The procedure is as follows:

- I. Promotion of art contest.

- II. Student enrolment and receipt of guidelines.
- III. Students have time to create their piece for competition entry.
- IV. To be chosen to have your art displayed at the exhibition, students have to submit pictures of their artwork. This artwork will be put on the contest website. Members of the public will then vote and the pieces with the highest votes will be selected.
- V. All selected entries will be displayed at the exhibition.
- VI. Students and panel of judges decide the winner.
- VII. Three winning art pieces will be displayed in the new SUB atrium. The grand prize winner receives \$100.

The breakdown of the costs is as follows:

Cost of Posters: The cost to design, print and put up posters promoting the contest.

Other Promotion: The cost to promote the art contest. This does not necessarily have to be in dollar amounts. Student volunteers may be expected to participate by manning booths and passing around flyers.

Cost to pay personnel to set up Gallery for Contest Exhibition: The cost for the judges if not by volunteer and the cost to set up the art gallery.

Cost to Rent Space For Contest Exhibition: The cost to rent space in the gallery for the competition. (NOTE: this may include the cost to set up the gallery above).

Cost of Prizes: The cost of the prizes for the winner.

Cost to set up the winning pieces in atrium: The cost to move the winning pieces to the atrium of the new SUB.

Below is a table of estimated costs.

Table 1.1: Estimated Costs of the Contest

Cost of Posters	\$100
Other Promotion	\$200
Cost to Employ Part-Time Gallery Workers	\$180 (3 workers at rate of \$12/hr for five hours)
Cost to Rent Space	\$120 (\$40/hr for 3 hours)
Cost of 1 st Prize	\$100
Cost to Setup the Winning Piece in the Atrium	\$200
TOTAL	\$900

*NOTE: All costs in table are estimated.

While there are many costs associated with administering an art contest, a great portion can be recovered by collecting entry fee from the participants of the art contest.

From previously held art contests – an example being ‘Recycled Yard Art Contest’ (University of Florida, 2010) – and with a size of over two thousand undergraduate students in the Art Department at UBC (University of British Columbia, 2011), we can estimate that 100 - 125 students will participate. With the estimation of this much student we can set the entry fee around a level of \$10. This will enable us to cover a lot of the costs while at the same time keeping the entry fee per student to a minimum for individual students. An estimated entry fee of \$10 per student will amount to \$1000 which could then be allocated as follows:

Table 1.2: Allocation of the Total Entry Fee

Cost Compensated	Amount (From Entry Fees)	Percentage (of Estimated Total Entry Fee)
Posters	\$100	10%
Others	\$200	20%
Cost to Employ Gallery Workers	\$180	18%
Cost to Rent Space	\$120	12%
Cost of Prize	\$100	10%
Cost to Setup Winning Pieces	\$200	20%

in the Atrium		
Miscellaneous	\$100	10%

*Note: All values above are estimated.

1.4.3 Conclusion

From the information above we can see that while commissioning a professional artist will produce an art piece which we may or may not have control over the appearance, administering an art contest will greatly reduce the cost spent to acquire and set up the art piece. Majority of the cost reduction is caused by the small entry fee, which students pay to register. Incentive for registration includes winning one of three prizes and recognition.

2 EXAMPLES OF SUSTAINABLE ARTISTS AND CONTESTS

As requested by the new SUB stakeholders, examples of sustainable artists and contests are listed in this section. A simple case study will be performed for each.

2.1 Sustainable Artists

2.1.1 Yuken Teruya



Figure 2.1: “Corner Forest” by Yuken Teruya



Figure 2.2: “Notice Forest” by Yuken Teruya

Yuken Teruya transforms commonly disregarded old paper products: toilet paper rolls, paper shopping bags and pizza boxes into stunning sustainable arts. His works are aimed to illustrate common paper garbage as if they are given a second life.

2.1.2 *Michelle Brand*



Figure 2.3: Decorative Fabrics by Michelle Brand

Michelle Brand, an environmental design artist from the UK, creates decorative fabric as shown above from plastic bottles that are often regarded as waste in the Western countries. Her designs originate from her interest in sustainable waste management.

2.1.3 *Paprika Design Studio*



Figure 2.4: “Ice Tree” by Paprika Design Studio



Figure 2.5: Closed-Up View of “Ice Tree”

Paprika Design Studio’s project, “Ice Tree”, is an eco-friendly Christmas tree built using 300 recycled glass bottles, and was displayed at a furniture store in Montreal. It was recorded to have been praised for its aesthetic value, but left a concern in safety issues due to the fragile properties of glass.

2.1.4 Choi Jung Hyun



Figure 2.6: “Viper” by Choi Jung Hyun

Choi Jung Hyun in attempt to promote the importance of recycling of E-wastes created his work, “Viper”, from recycled parts of PC keyboards. As shown above, it was the favorite among children during the artist’s exhibition.

2.1.5 *Christian Ducharme*



Figure 2.7: Decorative Light Lamp by Christian Ducharme

Christian Ducharme using coffee cups and plastic utensils created decorative light lamps for Lafayette Espresso Bar in New York. It was to promote recycling of garbage produced at the cafe shop.

2.2 Sustainable Art Contests

2.2.1 Avelife Organization



Figure 2.8: Avelife Participants Working on Christmas Ornaments



Figure 2.9: Completed Sustainable Christmas Tree

Avelife, a Singaporean organization, aims to educate the public about sustainability mainly through use of arts. They organize competitions with green themes in attempt to raise environmental awareness. In one particular event as shown above, volunteers created eco-friendly Christmas tree ornaments with recycled rubber carpets, plastic bottles, and aluminum cans.

2.2.2 *America Recycles Day*

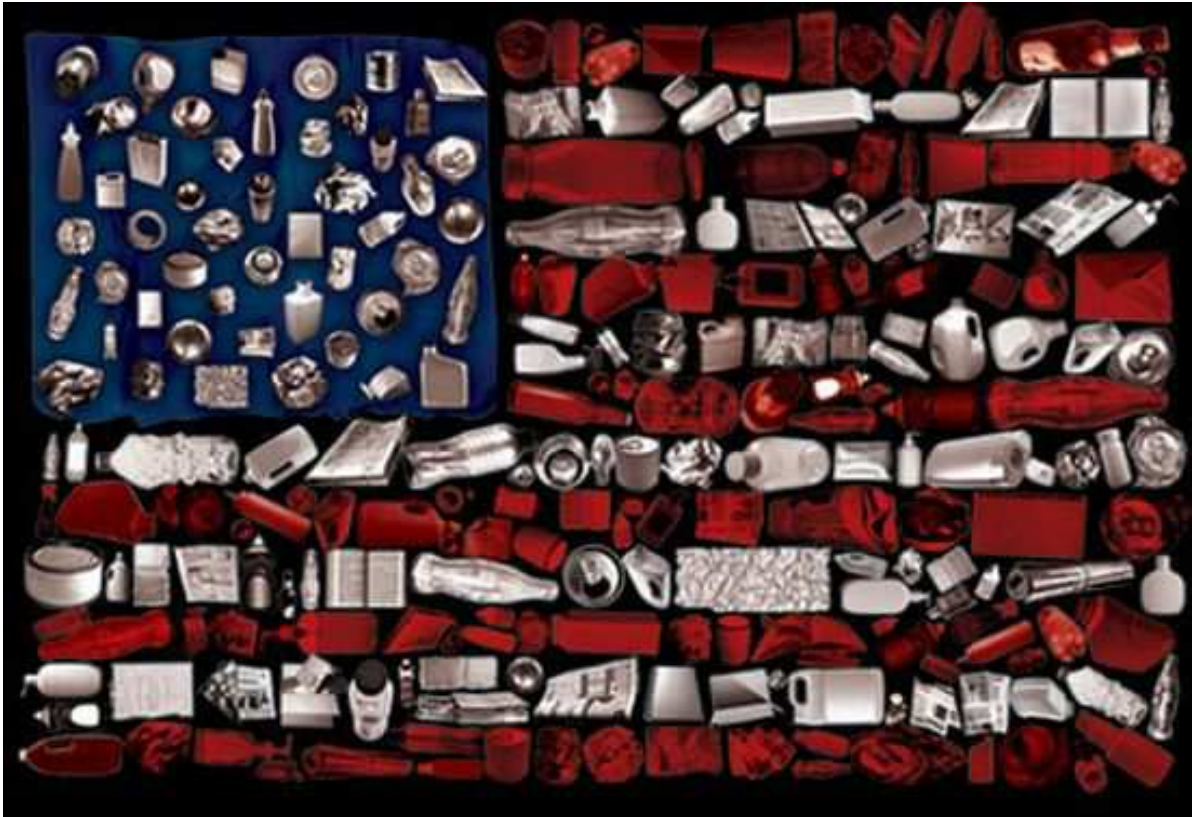


Figure 2.10: Winning Art Piece by Philip Custer in 2009 America Recycles Contest

The Maryland Department of the Environment holds sustainable art contests annually for high school students. The participants must use trash to create an aesthetically appealing art piece.

The goal of the contest is to promote recycling.

2.2.3 *Recycled Yard Art Contest*



Figure 2.11: An Art Piece in Recycled Yard Art Contest

“Recycled Yard Art Contest” is an annual event aimed to promote waste management, organized by Hillsborough County Solid Waste Management Department in association with the Hillsborough County Extension Service and the Hillsborough County Fair. The participants are to create art pieces using recycled materials.

CONCLUSIONS AND RECOMMENDATIONS

After extensive qualitative research, we concluded that administering student art contest for displaying the inspiring art piece in the Atrium of the new SUB is a great way to raise sustainability awareness at UBC.

Sustainable art contest will have many benefits in terms of social impact. We concluded that the art contest will provide a positive means of interaction for students with sustainability. As suggested by environmental psychologists, its major advantage is that it will help change the public negative view on environmental issues to a more positive one. Moreover, more students will be able to not only witness UBC's aim towards becoming one of the World's greenest universities, but also be part of ambitious sustainability projects. Lastly, the participants will gain direct interactions with environmental issues, and thus gain knowledge of practicality of sustainable exercises.

In the environmental section we performed an analysis of the main waste materials produced at UBC. We saw that the majority of the waste materials produced e.g. plastic, paper, aluminum, electronic waste and glass are suitable for use in a sustainable art contest. By properly analyzing how recyclable they are, their re-usability and aesthetic values, we were able to suggest the use of these items for the art contest.

The statistical economic data of commissioning a professional artist and the art contest were compared. This led us to a conclusion that the latter will be a more beneficial way (in terms of money) of obtaining art pieces for the new SUB. We see that it is possible to recover the cost spent to acquire an art piece by administering an art contest as opposed to commissioning a professional. Entry fees are the means by which we will cover the costs. An incentive for students to participate is that they may receive a grand prize as well as recognition.

After analyzing these three aspects of the art contest, we recommend administering a student art contest for making the inspiring art piece.

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